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MESSAGE FROM THE CO-EDITORS-IN-CHIEF OF VALUE IN HEALTH

The abstracts published in this issue were reviewed by the Research Committee Co-Chairs of the ISPOR 20th Annual European Congress and the 6th ISPOR Latin America Conference. The reviews considered the likely level of interest in the topic and its suitability for inclusion in the Congress and Conference, respectively. However, reviews of abstracts do not include the detailed review of data and methods that is conducted for full length papers published in Value in Health. Therefore, any queries of comments regarding the abstracts should be directed to the author(s) of the abstract concerned.

Michael Drummond, MCom, DPhil
C. Daniel Mullins, PhD
Value in Health Co-Editors-in-Chief
ABSTRACTS

ISPOR 20TH ANNUAL EUROPEAN CONGRESS RESEARCH ABSTRACTS

BREAKOUT SESSION I

COST-EFFECTIVENESS STUDIES

CE1
COST-EFFECTIVENESS OF DABIGATRAN WITH REAL WORLD EFFECTIVENESS EVIDENCE
de Pommerville C 1, Guilmot C 2, Cohen AA 3, Le Dessez C 4, Luciani L 1, Le Lay K 5
1ESSEC Business School, Cergy-Pontoise, France, 2MAPi Group, Nanterre, France, 3Hôpital saint Antoine, Paris, France, 4Boehringer Ingelheim France, Paris, France
OBJECTIVES: The goal of this study was to provide with “real world” estimations of the cost-effectiveness of dabigatran (DOA), dabigatran, and rivaroxaban, versus Vitamin K antagonists (VKA), for the prevention of thromboembolic and hemorrhagic events in patients with non-valvular atrial fibrillation (NVAF).

METHOIDS: Using a previously published Markov model, the outcomes for a cohort of 10,000 new users of both DOA and VKA were simulated over lifetime. Clinical outcomes were derived from a two-by-two matched comparisons of events of interest for NVAF patients using high density propensity scores (ENGEL 2 study), based on the claims database of the French National Sickness Fund. Cost data were derived from the same source, and complemented for long term follow-up by data provided by the French National Hospital Discharge Abstract database.

RESULTS: Dabigatran followed by VKA is a dominant strategy compared to an anticoagulation initiated by VKA, with a QALY gain of 0.049 per patient and a cost saving of €1,215. Rivaroxaban followed by VKA was dominated by an VKA initiated treatment with a QALY decrement of 0.0111 alongside with a cost-saving of €651. A probabilistic sensitivity analysis showed that for dabigatran, 62% of simulations were cost-saving and for 100% of cases, the ICER was below €10,000/QALY.

CONCLUSIONS: This study based on the most comprehensive French data sources confirms the dominance of dabigatran in a real-life setting for the prevention of thromboembolic and hemorrhagic events in patients with atrial fibrillation, versus VKAs. Previous estimations of ICER of both DOA in the French context, based on a meta-analysis of clinical trial data and cost data compiled from different sources, led to higher ICER. Main differences were related to effectiveness data and to a better inclusion of the long term consequences of severe thromboembolic and hemorrhagic events.

CE2
COST-EFFECTIVENESS ANALYSIS OF MIDOSTAURIN (MIDO) WITH STANDARD CHEMOTHERAPY (SOC) FOR ACUTE MYELOID LEUKEMIA (AML) IN THE UNITED KINGDOM (UK)

Tremblay G 1, Dolph M 2, Patel S 3, Brandt P 1, Fosyth E 4
1Purple Squirrel Economics, New York, NY, USA, 2Novartis Pharmaceuticals UK Limited, Camberley, Surrey, UK, 3Novartis Pharmaceuticals, East Hanover, NJ, USA
OBJECTIVES: MIDO is under EMA review for treatment of newly diagnosed adult patients with FLT3 mutation-positive AML who are eligible to receive stem cell transplantation (SCT). The objective of this study was to estimate the Incremental Cost Effectiveness Ratio (ICER) of utilizing MIDO+SOC followed by MIDO mono-therapy, compared to SOC for newly diagnosed AML in the UK.

METHODS: A partition survival model was developed to estimate the expected outcomes and costs of treatment with MIDO+SOC vs SOC over a lifetime horizon. The model included the following health states/partitions: induction, consolidation, monotherapy, complete remission (CR), relapse, SCT treatment, SCT recovery, and post-SCT recovery. Data on CR, overall survival (OS), and frequencies of adverse events (AEs) were obtained from the MIDO Phase III clinical trial (RATIFY). OS was extrapolated beyond the trial horizon using a “cure model” approach and data from the Office for National Statistics (2013-2015). Published health state utilities were used. Routine care utilisation was based on the data used in the NICE STA for azacitidine.

RESULTS: Median progression-free survival estimates in both groups, duration of treatment, and median overall survival were 9.4 months and 17.2 months, respectively. The MIDO group also incurred an additional direct medical cost of £33,489 per patient over chemotherapy group (£106,708 vs £73,219) over 10 years. This study shows that MIDO is not likely to be cost-effective in treating patients with have PD-L1 positive NSCLC who have not received systemic treatment, comparing to the current commonly used chemotherapies in clinical practice.

CE3
FIRST-LINE PEMBROLIZUMAB IN PD-L1 POSITIVE NON-SMALL CELL LUNG CANCER: A COST-EFFECTIVENESS ANALYSIS FROM A UK HEALTHCARE PERSPECTIVE

No X, Goldman DP
University of Southern California, Los Angeles, CA, USA
OBJECTIVES: Pembrolizumab has shown clinical effectiveness in treating patients with PD-L1 positive metastatic non-small-cell lung cancer (NSCLC) who are chemotherapy-naive in a Phase III randomized controlled trial. This analysis aims to evaluate the economic benefits of pembrolizumab vs. commonly used chemotherapy

METHOIDS: A different dataset for the Scottish population (2003-2009) was used to examine the reduction in the number of adult smokers due to MMCS. The time series regression with ARIMA error was used. The cost-effective of MMCCs was estimated by extrapolating number of quit attempts attributable to MMCCs, to the Scottish population. Given an average of 243.5 TVRs per month, the MMCCs led to an additional 116,885 quit attempts per annum compared to TVR MMC resulted in an incremental 0.0065 quits per annum compared to MMCCs.

RESULTS: Each month, one increase in television viewer ratings (TVRs) led to 40 additional quit attempts in the Scottish population. Given an average of 243.5 TVRs per month, the MMCCs led to an additional 116,885 quit attempts per annum compared to no TV. TV MMC resulted in an incremental 0.0065 quits per annum compared to no MMC, with an additional cost of £0.66 per smoker in the Scottish population.

CONCLUSIONS: The 1 year outcomes show MMCCs to be extremely cost-effective in comparison to a do-nothing, while the lifetime analysis determined MMC to be dominant strategy, demonstrate little uncertainty in both the cost and QALY outcomes over a wide range of cost-effectiveness thresholds.

CE4
THE EFFECTIVENESS AND COST-EFFECTIVENESS OF TOBACCO CONTROL MASS MEDIA CAMPAIGNS IN SCOTLAND

Hasnipahan H 1, Boyd KA 2, Mackay DF 3, McIntosh E 1, Fell J 2, Hew S 2
1University of Glasgow, Glasgow, UK, 2University of Sterling, Stirling, UK
OBJECTIVES: Television-based smoking cessation mass media campaigns (MMCs) aimed at preventing uptake of smoking and encourage cessation are an important tool of tobacco control. With vast coverage, they can target specific populations. The aim of this study was to assess the effectiveness and potential cost-effectiveness of anti-tobacco TV advertising MMCs in reducing smoking prevalence.

METHOIDS: A different dataset for the Scottish population (2003-2009) was used to examine the reduction in the number of adult smokers due to MMCS. Time series regression with ARIMA error was used. The cost-effective of the MMCC intervention in comparison to background quit attempts (do-nothing), was estimated by extrapolating number of quit attempts attributable to MMCs, to 4-week and 52-week sustained quitters, calculating an incremental cost per 52-week sustained quitter. Markov modelling was employed for lifetime analysis, reporting the incremental cost per quality-adjusted life-year (QALY) gained. RESULTS: Each month, one increase in television viewer ratings (TVRs) led to 40 additional quit attempts in the Scottish population. Given an average of 243.5 TVRs per month, the MMCC led to an additional 116,885 quit attempts per annum compared to no TVT. TV MMC resulted in an incremental 0.0065 quits per annum compared to no MMC, with an additional cost of £0.66 per smoker in the Scottish population.

CONCLUSIONS: The 1 year outcomes show MMCCs to be extremely cost-effective in comparison to a do-nothing, while the lifetime analysis determined MMC to be dominant strategy, demonstrate little uncertainty in both the cost and QALY outcomes over a wide range of cost-effectiveness thresholds.
P2: CANCER STUDIES

CN1 USE OF NEW THERAPIES AND HOSPITAL ADMISSION NEAR THE END OF LIFE IN CASTRATION RESISTANT PROSTATE CANCER (CRPC) IN THE Netherlands

The GREATa STUDy: gENERATINg REAl-wORlD EVIDENCE ABOUT Admission rate and duration in CRPC-patients in the last 3 months of life was higher in the CASTRATION RESISTANT PROSTATE CANCER Registry (CAPRI) IN THE Netherlands than in the national cancer registry. The reasons for these differences need to be investigated to improve symptom management and palliative care for these patients.

Methods: The GREAT study is a retrospective analysis of hospital admission data from 2010 to 2015 in the Netherlands. Admission data were collected from 37 hospitals and the national cancer registry. The primary outcome was admission rate and duration in the last three months before death. The analysis was stratified by age, comorbidity, and site of death.

Results: Admission rate was higher in the GREAT study compared to the national cancer registry, with a rate of 52.4% vs 46.9% in the last three months before death. Admission duration was also longer, with a median of 11 days vs 8 days in the national cancer registry. These differences were statistically significant (p < 0.001).

Conclusions: The GREAT study provides real-world evidence about admission rates and duration in CRPC patients in the Netherlands, highlighting the need for improved symptom management and palliative care.

CN2 THE GREATa STUDY: GENERATING REAL-WORLD EVIDENCE ABOUT BEVACIZUMAB TREATMENT OF METASTATIC COLORECTAL CANCER BY LINKING CANCER REGISTRIES AND HEALTHCARE DATABASES IN Italy

Methods: A retrospective observational cohort study was conducted using data from 10 cancer registries and healthcare databases in Italy. The primary outcome was the rate of patients treated with bevacizumab.

Results: The rate of patients treated with bevacizumab was higher in the Italian registries compared to the national registry (8.3% vs 6.0%, p < 0.001). The rate of patients treated with chemotherapy was also higher in the registries (82.0% vs 73.0%, p < 0.001).

Conclusions: The GREAT study provides real-world evidence about the use of bevacizumab in the treatment of mCRC in Italy, highlighting the need for improved access to this treatment.

P3: STUDIES ON HEALTH TECHNOLOGY ASSESSMENT AGENCIES

HT1 PLAYING IN THE SAME POND - THE IMPACT OF BREXIT ON CLINICAL TRIALS AND ACCESS

Methods: A systematic review and meta-analysis of clinical trials in the UK and EU was conducted to assess the impact of Brexit on access to clinical trials.

Results: The impact of Brexit on access to clinical trials was significant, with a decrease in the number of trials and a decrease in patient recruitment. The impact was greatest for patients receiving targeted therapy.

Conclusions: The impact of Brexit on clinical trials and access to treatment is significant and requires further investigation.

BREAKOUT SESSION II

CN4 UTILIZATION AND TREATMENT PATTERNS AMONG PATIENTS WITH ADVANCED NON-SMALL CELL LUNG CANCER RECEIVING PREDICTIVE MOLECULAR BIOMARKER (BMX) TESTS

Objective: This study aimed to assess the utilization and treatment patterns among patients with advanced NSCLC treated with a BMX test.

Methods: A retrospective cohort study was conducted using data from 10 cancer registries and healthcare databases in Italy. The primary outcome was the rate of patients treated with a BMX test.

Results: The rate of patients treated with a BMX test was lower in the Italian registries compared to the national registry (4.5% vs 6.3%, p < 0.001). The rate of patients treated with chemotherapy was also lower in the registries (82.0% vs 86.0%, p < 0.001).

Conclusions: The impact of Brexit on clinical trials and access to treatment is significant and requires further investigation.

Breakout Session III

CN3 ASSESSING THE CONSISTENCY IN REPORTING OF ADVERSE EVENTS ACROSS DATA SOURCES FOR MULTIPLE MYELOMA TREATMENT

Methods: A systematic review and meta-analysis of clinical trials in the UK and EU was conducted to assess the impact of Brexit on access to clinical trials.

Results: The impact of Brexit on access to clinical trials was significant, with a decrease in the number of trials and a decrease in patient recruitment. The impact was greatest for patients receiving targeted therapy.

Conclusions: The impact of Brexit on clinical trials and access to treatment is significant and requires further investigation.

By grades were abstracted (or calculated) to assess variability. RESULTS: 119 distinct AEs were reported across 10 products. Events occurring in ≥30% of patients included: anemia, diaphoresis, fatigue, leucopenia, lymphopenia, neutropenia, pneumonia and thrombocytopenia. 41 events were found occurring in ≥5% of the population. Nearly 50% (19/41) events had rates reported differently between the trial and PI with 12/19 differences noted in pomalidomide and lenalidomide. For example, lenalidomide was reported in 19.6% and 28.6% of patients, respectively in the trial publication vs PI. A small but potentially clinically meaningful difference in the rate of cardiac failure was noted for cafilizomib (6.4% trial publication v 6.0% PI). Other differences, such as 17.0% vs 9.3% were noted in the pomalidomide trial publication vs PI for asthenia and fatigue. CONCLUSIONS: There is heterogeneity in both the criteria used and the rates reported for common and serious AEs related to MM treatment across and within published materials. Meta-analysis of these data, often with vague references to sources. Source material used should be clarified and investigation of these findings should be confirmed in other tumor types.
PRACTICE: A COMPARATIVE STUDY OF 5 HTA AGENCIES

OBJECTIVES: Immuno-oncology (IO) therapies have emerged as a promising drug class in cancer treatment with targeted mechanisms of action. Some IO therapies have demonstrated durable clinical responses beyond conventional standards of care. As the IO landscape continues to expand, it becomes important to assess their value with regard to clinical benefit and costs. Health technology assessments (HTAs) currently provide the opportunity for agencies to manage access and expense of these treatments to provide cost-effective treatment options. The objective of this analysis was to evaluate recent IO HTA decisions and their rationale to identify trends in selected countries.

METHODS: HTA surveillance was conducted for Australia, Canada, France, Germany, and the Netherlands between 01.01.2011 and 31.12.2016. HTAs for IO therapies were evaluated by therapeutic area, decision, and rationale for each decision. Decisions were categorized as favorable, unfavorable (both favorable and unfavorable), or neutral (eg, deferred decision).

RESULTS: 41 IO HTAs were published during the study timeframe: 23 (56%) in melanoma, 12 (29%) in non-small cell lung cancer, and 6 (15%) in renal cell carcinoma. Across HTAs examined, 26 (63%) decisions were favorable, 11 (27%) were unfavorable, 2 (5%) were mixed, and 2 (5%) were neutral. All decisions were deemed favorable in France (6/6, 100%) and the UK (8/8, 100%), followed by Canada (6/7, 86%), Germany (6/9, 66%), and Australia (2/11, 18%). Favorable decisions were based on demonstrating evidence of unmet need, whereas unfavorable decisions were typically due to inappropriate comparators or unacceptable incremental cost-effectiveness ratios. Mixed and neutral decisions were dependent on effectiveness in specific subpopulations, including patients previously treated, patients with specific gene mutations, or elderly patients.

CONCLUSIONS: As new IO therapies emerge and attain additional indications, it is critical that HTA submissions provide strong clinical and pharmacoeconomic evidence to achieve access.

HT3

ANALYSIS OF FACTORS INFLUENCING THE LEVEL OF ACTUAL BENEFIT IN HEALTH TECHNOLOGY ASSESSMENT

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OBJECTIVES: The reimbursement level of drugs in France is based on their medical assessment by the Transparency Committee. The aim of this study is to understand the rationale behind the assessment of drugs in all therapeutic areas except oncology by determining the criteria that influence the Actual Benefit (AB) level.

METHODS: We performed a retrospective analysis between January 2014 and March 2017 of all HTA reports published in the HTA database of the French National Authority for Health (HAS).

RESULTS: Out of the 93 HTA reports published during this period, 89 of them were included in the analysis: 80 HTA reports were conducted, whereas the remaining nine were published but not conducted. A total of 1,222 AB criteria were identified: median: 18 (7-24); range: 5-28. Among these criteria, 40 (3.3%) were independent and considered in all reports; the remaining 1,182 (96.7%) were specific to each report. A total of 86 reports included at least one criterion classified as medium; the remaining 24 reports included at least one criterion classified as high. Among the criteria, the following were the most frequent: a better clinical efficacy/effectiveness and safety ratio of the medicine (80% of the cases), a better clinical efficacy/effectiveness and safety ratio of the medicine (95% of the cases), and a better clinical efficacy/effectiveness and safety ratio of the medicine (95% of the cases).

CONCLUSIONS: The factors representing the 5 jurisdictions: England (NICE), Scotland (SMC), France (HAS), Germany (IQWIG), and the Netherlands (ZIN). A standardized data-extraction form was used to extract information on RWD inclusion for both REAs and CEAs. A panel of senior HTA assessors representing the 5 agencies was consulted to check the robustness of data extracted and interpreted. RESULTS: Fifty-two reports were retrieved. All 52 reports contained REAs; CEAs were present in 25. RWD was included in 28 of 52 REAs (54%), mainly to estimate melanoma prevalence. RWD was included in 22 of 28 (79%) of CEAs; mainly to extrapolate long-term effectiveness and/or identify drug-related events. The HTA bodies agreed that RWD use in REAs; ZIN and IQWIG cited RWD for evidence on prevalence whereas NICE, and France additionally cited RWD use for drug effectiveness. No visible trend for RWD use in REAs and CEAs over time was observed. CONCLUSIONS: In general, RWD inclusion was higher in CEAs than REAs. It was mostly used to estimate melanoma prevalence in REAs or to predict long-term effectiveness in CEAs. Differences emerged between agencies’ use of RWD. However, no visible trends for RWD use over time were observed. Future research should explore the use of RWD in HTA of drugs in other disease indications and in conditional reimbursement schemes.

BREAKOUT SESSION IV

P4: RESEARCH ON METHODS

RM1

NETWORK META-ANALYSIS OF HAZARD RATIOS VS. FRACTIONAL POLYNOMIALS APPROACH IN A COST-EFFECTIVENESS ANALYSIS CONSIDERING ADVANCED GASTRIC CANCER

Stagner HE, Harvey RC

OBJECTIVES: Network meta-analysis (NMA) is a valuable tool for evidence synthesis, which estimates relative treatment effects between comparators in the absence of head-to-head data, and often in the form of a hazard ratio (HR). Utilising HRs relies on the proportional hazards (PH) assumption, which is often shown to be violated and can have a substantial impact on survival outcomes and thus cost-effectiveness results. A more flexible and informative approach such as an NMA using fractional polynomials (FP) could be considered which adds additional parameters associated with the treatment effect and does not rely on the PH assumption. Our objective is to explore the differences in outcomes within a cost-effectiveness analysis using traditional NMA methods compared with a more sophisticated fractional polynomial approach to evidence synthesis for advanced gastric cancer (AGC).

METHODS: A cost-effectiveness model was built considering the treatment of AGC. The model incorporated a Markov structure considering a UK National Health Service perspective. The model sourced efficacy data from both fractional polynomial analyses presented in Harvey (2017) and a conventional NMA conducted on these data. HRs obtained from the NMA were applied to pooled data for best supportive care (BSC). Health-related quality of life data were obtained from the literature and costs were sourced from UK-specific references (2015-16 cost year).

RESULTS: Results showed that estimating efficacy using fractional polynomials consistently reduced the survival benefit for treatments vs. BSC compared with the traditional NMA approach. The reduction in survival benefit was estimated up to 52.45%. A reduction in the survival benefit increased estimates of incremental cost-effectiveness for all comparators vs. BSC.

CONCLUSIONS: When the model was run with conventional NMA methods compared with a more sophisticated fractional polynomial approach to evidence synthesis for advanced gastric cancer (AGC). It is important to recognize that the conventional approach may underestimate the impact of potential biases and confounders that may arise from the use of fractional polynomials. This result supports the use of more flexible methods to estimate survival outcomes in cost-effectiveness analysis.
RM3

METHODS FOR EXTRACTING TREATMENT PATTERNS FOR RENAL CELL CARCINOMA (RCC) FROM SOCIAL MEDIA (SM) FORUMS USING NATURAL LANGUAGE PROCESSING (NLP) AND MACHINE LEARNING (ML)

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OBJECTIVES: Patients are increasingly turning to SM to research their condition and find support. Patient forums represent a potentially rich source of information on important matters to patients, including treatment. In this study we developed NLP and ML methods to extract and describe treatment histories for RCC patients.

METHODS: We collected a corpus of 70,666 posts spanning fifteen years from 4 popular RCC specific forums. We used ML to identify phrases where patients caregivers were describing treatment histories. Classification methods investigated were: Naïve Bayes, k-Nearest Neighbour and Support Vector Machine. Multiple direct and derived features were incorporated including bigrams and trigrams. The selected phrases were tagged with terms from the Unified Medical Language Thesaurus. Patterns of RCC therapies were extracted manually for a random sample of patients.

RESULTS: The ML algorithm selected phrases where patients/caregivers recounted treatment histories with 85% overall accuracy (precision: 94%; recall: 69%). More than 1,200 unique patients/forums were identified from 2,384 patients. 50 patients were then randomly selected for manual review, and compilation of treatment histories. Posting dates ranged from 2006-2016 and was 48 patients (96%) whose first line therapy was sunitinib (58%) followed by sorafenib and interleukin (both 13%). 22 patients (46%) reported information on 2nd line, most common treatment were: pazopanib, everolimus , sorafenib (all 18%). Most common 3rd line was everolimus (87 patients). Alignment of these findings was seen with published data.

CONCLUSIONS: This preliminary work showed that extracting treatment information from patient forums is challenging but technically feasible. Future work will focus on improving the accuracy of the ML algorithms, and extending automation to the assembly of treatment histories for all patients. If successful, SM can be used to describe real-world treatment sequences that can be especially useful where data options are limited.

RM4

NON-PROPORTIONAL HAZARDS IN NETWORK META-ANALYSIS: EFFICIENT STRATEGIES FOR MODEL BUILDING AND ANALYSIS

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OBJECTIVES: Cancer immunotherapies often show delayed onset of efficacy and long-term survival benefit compared with chemotherapy. This leads to survival data fitting the proportional hazards assumption of the best performing model (NMA) of such data should acknowledge this. Two suitable approaches are fractional polynomial (FP) models and piece-wise constant (PWC) models. FP models can be difficult to fit in practice, and there is a need for efficient model selection strategies. METHODS: We re-formulated the FP and PWC NMA models using ANOVA like parameterization. With this approach, both models are expressed as general linear models with time-changing covariates. We then performed a case study using our in-house cancer immunotherapy programs. The evidence base involved 18 studies, some of which linked to the network via Matching Adjusted Longitudinal, Observational, cross-sectional study conducted in Europe using Carenity Online Community. Adult patients with a chronic disease and comorbidities were describing treatment histories. Caregivers were describing treatment histories. Classification methods investigated were: Naïve Bayes, k-Nearest Neighbour and Support Vector Machine. Multiple direct and derived features were incorporated including bigrams and trigrams. The selected phrases were tagged with terms from the Unified Medical Language Thesaurus. Patterns of RCC therapies were extracted manually for a random sample of patients.

RESULTS: The ML algorithm selected phrases where patients/caregivers recounted treatment histories with 85% overall accuracy (precision: 94%; recall: 69%). More than 1,200 unique patients/forums were identified from 2,384 patients. 50 patients were then randomly selected for manual review, and compilation of treatment histories. Posting dates ranged from 2006-2016 and was 48 patients (96%) whose first line therapy was sunitinib (58%) followed by sorafenib and interleukin (both 13%). 22 patients (46%) reported information on 2nd line, most common treatment were: pazopanib, everolimus , sorafenib (all 18%). Most common 3rd line was everolimus (87 patients). Alignment of these findings was seen with published data.

CONCLUSIONS: This preliminary work showed that extracting treatment information from patient forums is challenging but technically feasible. Future work will focus on improving the accuracy of the ML algorithms, and extending automation to the assembly of treatment histories for all patients. If successful, SM can be used to describe real-world treatment sequences that can be especially useful where data options are limited.

BREAKOUT SESSION V

P5: MEDICATION ADHERENCE STUDIES

AD1

EXPLORING FACTORS EXPLAINING TREATMENT ACCEPTANCE IN PATIENTS SUFFERING FROM A CHRONIC DISEASE

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OBJECTIVES: Patients with chronic diseases generally required to take long-term treatments. However lack of adherence is very common and represents major priorities for action.

METHODS: Observational, cross-sectional study conducted in Europe using Carenity Online Community. Adult patients with a chronic disease were invited to complete an online questionnaire including a validated patient reported outcome measure: the 25-item ACCETpance by the Patients of their health care (ACCEPT) scale. The questionnaire investigated the patients’ adherence across diseases. Acceptance/General score was highly correlated to Acceptance/ Effectiveness (R = 0.61, p < 0.001). The final multivariate linear model explained a large part of the variance in the general acceptance of medications: 9.7% (R² = 0.608, p= 0.45). Two general factors related to Acceptance/General were included. The first factor was self-rated disease impact (OR = 0.49, 95% CI: 0.30-0.81) and the second factor was the patient’s knowledge (OR = 1.09, 95% CI: 1.01-1.17).

CONCLUSIONS: Adherence prediction should be a priority for the medical profession and for patient education as it reduces healthcare costs and improves treating conditions. A large part of the variation of Acceptance/General levels (N = 3,968; R² = 0.608) across diseases. Acceptance/General score was highly correlated to Acceptance/Effectiveness (R = 0.61, p < 0.001). The final multivariate linear model explained a large part of the variance in the general acceptance of medications: 9.7% (R² = 0.608, p= 0.45). Two general factors related to Acceptance/General were included. The first factor was self-rated disease impact (OR = 0.49, 95% CI: 0.30-0.81) and the second factor was the patient’s knowledge (OR = 1.09, 95% CI: 1.01-1.17).
and linking them to a database of filled prescription claims to determine if the prescription was filled within 30 days. Logistic regression analysis and two non-parametric predictive analytic methods—random forests and boosted trees, were used to identify patient characteristics associated with high risk of PMN. **RESULTS**: PMN was observed in 38.6% of the 69,227 patients who met all study criteria. A comparison of the three methods for predicting PMN showed that the boosted tree method had the best performance gauged by area under the curve (88.5%) and precision at 10% recall (98.6%). Lower baseline low-density lipoprotein cholesterol (LDL-C), not having a fill for an antihypertensive medication and older age were associated with higher risk of PMN. The interaction of lower LDL-C and no fills for an antihypertensive medication made the highest contribution to model performance (33.4%), followed by pre-index LDL-C (11.5%), and other predictors including age. Results were consistent across all analytic methods. Among patients who had a fill for an antihypertensive medication, the 30% of patients with the highest predicted probabilities of PMN, 85.7% were classified as PMN and accounted for 66.5% of all PMN patients. **CONCLUSIONS**: These results show that information available to both the prescribing physician and the patient’s pharmacy benefit coordinator (adherence to pre-index medications) could be used to identify patients at highest risk for PMN and to target programs to improve adherence to LIT.

**BREAKOUT SESSION VI**

**P6: MENTAL HEALTH STUDIES**

**MH1**

**DISCRETE EVENT SIMULATION MODELLING OF LONG-TERM COST-EFFECTIVENESS OF INTERNET-BASED BLENDED COGNITIVE BEHAVIOURAL THERAPY TO PREVENT ORAL ANTIPSYCHOTIC DIScontinuation AFTER THE E-COMPARED RANDOMISED CONTROLLED TRIAL**

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**OBJECTIVES**: The E-COMPARED trials aimed to evaluate the cost-effectiveness of blended (face-to-face and internet-based) cognitive behavioural therapy (CBT) compared to treatment-as-usual (TAU) for major depressive disorder (MDD). Five randomised controlled trials (RCTs) were conducted over 12 months in primary care (Germany, UK, Poland, Spain and Sweden), and three in specialised mental health care (France, Netherlands and Switzerland). The current study objective was to use Discrete Event Simulation (DES) to extrapolate the cost-effectiveness of bCBT versus TAU over five years. Interim E-COMPARED RCT results are used at present. **METHODS**: Participants were aged 18-65 years with DSM-IV diagnosed MDD. The results were available for 412 patients (206 patients each arm) at baseline, 3, 6 and 12 months. For years 2-5, the DES model was calibrated using within trial data and data from the literature. Individual patient history was stored with patient characteristics from within trial data (e.g. PHQ9, demographics). Outcomes include QALYs (EQ-5D-5L) and societal costs (health-care, patient and lost productivity costs) using Dutch costs. Missing within trial data were imputed using multiple imputation by chained equations. Uncertainty is estimated using cost-effectiveness acceptability curves. **RESULTS**: Long-term interim results show that the difference in QALYs (bCBT - TAU) is 0.07 (95% CI -2.23, 2.59) and the difference in costs is €7,678 (95% CI +192,280, 212,482). The cost-effectiveness acceptability curve shows a 50% probability that bCBT is cost-effective compared to TAU for willingness to pay values between €0 to €5,000 QALY. **CONCLUSIONS**: Long-term extrapolation of the E-COMPARED trial results showed a significant difference in the cost-effectiveness of bCBT versus TAU, and that bCBT cannot be considered cost-effective as compared to TAU. Results should be interpreted with caution given the high uncertainty shown by the wide confidence intervals and the fact that only interim results are reported now.

**MH2**

**ADHERENCE PATTERNS AMONG PATIENTS USING ORAL ATYPICAL ANTI精神病OTICS AND OTHER MEDICATIONS**

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**OBJECTIVES**: Many patients with serious mental illness (SMI) also have multiple comorbidities that require numerous medications. We measured how patients with SMI varied in their patterns of adherence to atypical antipsychotics, and how this variation predicted adherence patterns to other concurrent medications, including other SMI, anti-diabetes, or anti-hypertension oral medications. **METHODS**: Our sample included patients from Truen Health claims databases with diagnoses of bipolar disorder, major depressive disorder, or schizophrenia. Patients were required to be prescribed an atypical antipsychotic as well as another oral medication to treat other SMI, anti-diabetes, or anti-hypertension oral medications.**RESULTS**: The 69,227 patients in our sample fell into four atypical antipsychotic adherence groups: a non-adherent group that discontinued after one to two months of treatment; a gradual discontinuation group, a group that stopped treatment after a few months but later restarted, and a group that was largely adherent for the full twelve months. Predictive accuracy of atypical antipsychotic adherence patterns across these trajectory groups was 49.6% for SSRI/S, 44.5% for bDzip, and 44.5% for ACE inhibitors. These figures were 24.6%, 19.5%, and 19.5%, respectively, higher than random chance (all p < 0.001). **CONCLUSIONS**: Patterns of adherence to atypical antipsychotics appear to predict similar patterns of adherence to other medications. Better measures of atypical antipsychotic adherence could thus improve the treatment of other conditions.

**MH3**

**MODEL STRUCTURE OF PATIENT-LEVEL MODELS FOR SCHIZOPHRENIA: A SYSTEMATIC LITERATURE REVIEW**

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**OBJECTIVES**: Patient-level models are more and more used in health economics. Our objective was to review main characteristics of patient-level models used to evaluate cost-effectiveness of antipsychotics in schizophrenia. **METHODS**: Cost-effectiveness studies for antipsychotics in schizophrenia using a patient-level model published after 2000 were identified systematically through Medline, Embase, congr. Some exclude websites and grey literature. Main characteristics were extracted: population, treatment strategies, economic outcomes and timeframes. **RESULTS**: After 17,678 studies, a total of 155 studies and a model population of 156,227 patient-level Markov core models were identified. Flexibility of these models in terms of structure, such as treatment switch and consideration of multiple clinical outcomes, may allow more and more adaptations in the future, to answer health technology assessment research questions.

**MH4**

**FAMILY CAREGIVING IN DEMENTIA AND ITS IMPACT ON QUALITY OF LIFE AND ECONOMIC BURDEN IN JAPAN – WEB-BASED SURVEY**

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**OBJECTIVES**: Japanese family caregivers play an important role by supporting patients with dementia. However the caregivers’ burden has not been appropriately measured. The study objective was to assess, using validated instruments, the family caregivers’ burden, their quality of life (QOL) and productivity loss. **METHODS**: An online survey was conducted among family members who lived with dementia patients. Family members were asked to provide information on their QOL, burden of caregiving (ZARIT-8), productivity loss (WPAI), burden of caregiving (ZARIT-8). In addition, monthly medical and nursing costs for their relative with dementia was collected. Standard descriptive statistics and multivariate analyses were conducted to assess factors associated with poorer family caregiver’s QOL and more economic burden. **RESULTS**: 635 family members (female: 49.1%, 51.2 years old, SD:11.3) participated in the survey. Among them, 321 (50.1%) were primary caregivers. Primary caregivers were more often full time employees. Primary caregivers had significantly lower QOL score (EQ-5D-5L: 0.896 vs. 0.873, p=0.02) and higher burden of caregiving (ZARIT-8: 21.1 vs. 24.5, p=0.03) compared to non-primary caregivers. Among family members who work full time, primary caregivers showed significantly higher overall work impairment (80.2% vs. 20.8%, p<0.001), absenteeism (15.3% vs. 5.7%, p<0.001) and presentism-related impairment (33.2% vs. 17.3%, p<0.001) compared to non-primary caregivers. Mean monthly medical and nursing costs for patients with dementia were JPY 251,862 (SD:369,959) and JPY 34,925 (SD:33,239) respectively. Main factors associated with lower health utility score among family members were primary caregivers (p<0.01) and lower health utility score of dementia patients (p<0.01). **CONCLUSIONS**: Primary caregivers showed higher burden of caregiving and negative impact on their QOL compared to non-primary caregivers. Health policies related to dementia need to be developed not only for dementia patients but also for their family caregivers to improve their QOL and productivity.

**BREAKOUT SESSION VII**

**P7: CONCEPTUAL PAPERS**

**CP1**

**INNOVATIVE PRICING AND REIMBURSEMENT SCHEMES – THE WHAT, WHY, WHICH, AND HOW**

**Macaulay E1, Hettle R2**


We are at the advent of a new era of therapies which offer potential transformative/curative patient benefits in areas of severe unmet need after a single treatment (e.g. CAR-T cell and gene therapies). These offer the potential for significant health-care system savings through reduced medium/long-term costs of patient care, but are likely to come at a substantial acquisition cost (per patient costs estimated to
exceed $500,000. In the traditional approach for medicine reimbursement, pay-
ers are irrational. These schemes can offer means for payers and manufacturers to agree coverage by sharing risks and managing affordability but they also involve additional complexity and costs in terms of management and administration. Each of these schemes offers distinct opportunities and risks for both manufacturers and payers with the simpler ones (e.g. budgetary caps) being cruder in how they manage risk/payment but being relatively simple to administer and the more complex ones (e.g. performance-based reimbursement and leasing) being potentially fairer in managing risk/payment. Nevertheless, this may be outweighed by the additional complexity and costs. Indeed, there have been some notable examples of where such complexities have fatally undermined such schemes (the UK Multiple Sclerosis Risk Sharing Scheme and Conditional Financing in the Netherlands). There will not likely be a blueprint that can be applied across all prevalent payer agency needs. In the next 10 years, 2) explore the challenges facing NICE in evaluating them, that fall under the umbrella of precision medicine and are likely to launch within 5 years. The methods that could be involved in such research include investigating new therapies that develop in AD must be put in the context of health and medical care policy while balancing this potential high budget impact. Real World Outcomes across the AD spectrum for better: Multi-modal data Access Platform (ROADMAP) is a public-private consortium funded by the Innovative Medicines Initiative’s Big Data for Better Outcomes programme to evaluate the validity of linking RCT and real world data to demonstrate the benefit of new AD therapies. Using pilot studies, ROADMAP will develop scalable and transferable tools and methods to support disease progression and economic modelling relevant for national and regional HTA bodies, payers, and regulators, with concomitant patient advocacy engagement. Feedback from these key stakeholders will set new standards for the callout and evaluation of real world evidence in AD to support decision making. The value of new AD treatments: ROADMAP will play a role in challenging current paradigms in the assessment of novel treatments by decision makers and describe innovations for assessing new therapies to treat AD. FUNDING: This work has received support from the EU/EFPIA Innovative Medicines Initiative Joint Undertaking (ROADMAP grant n° 116020).

BREAKOUT SESSION VIII

P8: CARDIOVASCULAR STUDIES

CV1 INTERIM RESULTS OF A MULTI-COUNTRY SURVEY TO EVALUATE PRODUCTIVITY LOSS AND INDIRECT COSTS AFTER CARDIOVASCULAR EVENTS IN EUROPE

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OBJECTIVES: To present interim results of a multi-country cross-sectional survey aiming to estimate the productivity losses/indirect costs of patients in the first year after a cardiovascular event (CVD). METHODS: Patients previously hospitalized for myocardial infarction or unstable angina (acute coronary syndrome [ACS]) or a stroke were enrolled during a routine cardiologist or neurologist follow-up of 3-12 months after index hospitalization. Indirect costs were estimated by personal work days. Patients were asked to report productivity losses in the past 4 weeks using the patient-reported Productivity Cost Questionnaire (pPCQ). Hours lost were extrapolated to 1 year, combined with initial hospitalization and sick leave, and valued according to each country’s average labour cost (2015). Hours lost were converted into 8-hour work days. RESULTS: N=104 patients were analyzed (51 ACS, 53 stroke, 87% men, mean age 52 years). On average there were 83.6 (standard deviation – 65.4) work-days missed during the first year after the CVE, which amounts to about 40% of annual working days. Long-term absenteeism (patient’s index hospitalization followed by initial sick leave) accounted for 40.8 (41.3) days. After returning to work, 13.5 (26.3) days were missed due to short-term absenteeism and another 8.2 (10.7) days due to presenteeism. Annual caregiver help time was 21.1 (36.3) days, which represents 25% of the total time lost. In ACS patients, the average indirect costs in the year post-CVE were €5,375 (4,095), €16,922 (12,894) and €26,537 (20,220) for participating countries in Eastern, Southern, and Northern European regions respectively. For stroke the respective indirect costs per patient were €5,004 (4,040), €15,755 (12,720) and €24,707 (19,947). CONCLUSIONS: The interim results suggest that indirect costs of CVE are substantial in the first year following a CVE. The main drivers of indirect costs are the initial hospitalization and post-hospitalization sick leave, followed by caregiver help.

CV2 A FRAMEWORK FOR THE COST-EFFECTIVENESS ANALYSIS OF NOVEL BIOMARKER TESTING IN CARDIOVASCULAR DISEASE

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OBJECTIVES: Individuals are often prioritised for preventive cardiovascular dis-
eease (CVD) therapy based on 10-year risk of experiencing a primary CVD event. In Scotland, this risk is estimated with the ASSIGN risk score. Recent research has focused on identifying novel biomarkers to improve CVD risk diagnosis. The objective of this study was to develop a framework for the cost-effectiveness analysis (CEA) of novel biomarker testing given the inherent sparsity of data related to novel biomarkers. The framework was applied in the CEA of the urinary proteomic biomarker HFI. METHODS: Gompertz regression was performed on data from 104 patients (51 ACS, 53 stroke, 87% men, mean age 52 years). On average there were 83.6 (standard deviation – 65.4) work-days missed during the first year after the CVE, which amounts to about 40% of annual working days. Long-term absenteeism (patient’s index hospitalization followed by initial sick leave) accounted for 40.8 (41.3) days. After returning to work, 13.5 (26.3) days were missed due to short-term absenteeism and another 8.2 (10.7) days due to presenteeism. Annual caregiver help time was 21.1 (36.3) days, which represents 25% of the total time lost. In ACS patients, the average indirect costs in the year post-CVE were €5,375 (4,095), €16,922 (12,894) and €26,537 (20,220) for participating countries in Eastern, Southern, and Northern European regions respectively. For stroke the respective indirect costs per patient were €5,004 (4,040), €15,755 (12,720) and €24,707 (19,947). CONCLUSIONS: The interim results suggest that indirect costs of CVE are substantial in the first year following a CVE. The main drivers of indirect costs are the initial hospitalization and post-hospitalization sick leave, followed by caregiver help.

CV3 THE FUTURE OF PRECISION MEDICINE: WHAT DOES IT MEAN FOR NICE?

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OBJECTIVES: The potential of precision medicine to streamline pathways of tailored prevention and care has been widely discussed. However appraising the costs and benefits of such changes in care pathways is often challenging. This scoping project aims to: 1) identify the types of health technologies and services that fall under the umbrella of precision medicine and are likely to launch within the next 10 years, 2) explore the challenges facing NICE in evaluating them, and, 3) discuss what methods research or piloting, if any, might be a priority for NICE. METHODS: The project covered several NICE programmes including those that produce guidance on pharmaceuticals, diagnostics, medical technologies and clinical guidelines. We identified the types of health technologies and services falling under the umbrella of precision medicine that are likely to launch in the next 10 years, and whether these can be evaluated by existing NICE programmes and methods. To do that, we chose to review both peer-reviewed and grey literature. We also interviewed 13 experts, both from within NICE and external researchers with specialised knowledge in the area. RESULTS: Having identified emerging technologies and potential research needs, we then met the topic-selection criteria for NICE’s existing programmes. Additionally, we identified a number of areas where innovative methods research or piloting could help NICE prepare for the future of precision medicine, including challenges related to data, evidence generation and scope. At the time of writing, this work is in progress – more detailed results will be available by November. CONCLUSIONS: NICE has already published guidance for companion diagnostics and treatments approved for patient subpopulations defined by a specific biomarker. This project will help NICE to focus and target our research and piloting activities, to help us to produce robust evidence-based guidance for future precision medicine technologies and services.
hazard ratios associated with HF1 and key CVD outcomes. The results from this analysis were used to update the Scottish CVD Policy Model (SCDVFPM), a previously published decision-analytic model, and the ASSIGN score. The SCDVFPM was employed to estimate Scottish population-level health and cost outcomes associated with prioritising individuals for preventive CVD therapy using the traditional and updated ASSIGN risk scores. Sensitivity analyses established a price at which HF1 testing would become cost-effective.

**RESULTS:** A framework was developed to generate the CEA of novel CVD biomarkers. HF1 was positively associated with risk of non-fatal cardiovascular heart disease (adjusted hazard ratio, 1.69; 1.11-2.57) and combined CVD (adjusted hazard ratio 1.48, 1.03-2.11) events. Implementing HF1 testing for intermediate risk individuals was estimated to produce 437 QALYs at an incremental cost of £35,600,000 (ICER, £207,000/QALY). HF1 testing would become cost-effective at a price of £160/person, down to £35/person. **CONCLUSIONS:** External datasets can be used to update existing decision-analytic models and CVD risk scores, enabling the CEA of novel biomarkers. Prioritising individuals for preventive CVD therapy with an updated ASSIGN score which includes HF1 as a covariate would not be cost-effective compared to current practice without a large reduction in the price of testing.

**CV3**

**CYP2C19 GUIDED ANTIPLATELET THERAPY: A COST-EFFECTIVENESS ANALYSIS OF 30-DAY AND ONE-YEAR OUTCOMES FOLLOWING PERCUTANEOUS CORONARY INTERVENTION**

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**OBJECTIVES:** To determine the cost-effectiveness of CYP2C19 genotyping in antiplatelet therapy for patients with acute coronary syndrome (ACS) (in 2014 US$) and the cost-effectiveness cohort of CAD patients undergoing PCIs for three antiplatelet treatment strategies: universal clopidogrel, universal prasugrel, and genotype-guided therapy selection. For each strategy, include adverse cardiac events and costs (defined as in-hospital MI, non-fatal MI, non-fatal or fatal CVD, PCI, death world-wide). Yet, diagnosis of CAD is regionally depending on traditions and reimbursement structures. Coronary sounds are a novel target to detect CAD. The economic impact of this new method was researched in the Danish health care setting.

**Methods:** A decision tree model was developed to project the 30-day and one-year outcomes. The model was built with 25% of patients referred to cardiac-CT or diagnostic catheters. Costs were derived from the going percutaneous coronary intervention (PCI) from the US healthcare payer's perspective. METHODS: A decision tree model was developed to project the 30-day and one-year outcomes. The model was built with 25% of patients referred to cardiac-CT or diagnostic catheters. Costs were derived from the going percutaneous coronary intervention (PCI) from the US healthcare payer's perspective.

**Conclusions:** Implementing universal clopidogrel was rarely cost-effective at 30 days and was cost-effective at 30 days and one year in 62% and 70% of simulations, respectively. Universal clopidogrel was rarely cost-effective at 30 days and was cost-effective in 30% of simulations at one year. Universal prasugrel was cost-effective in 38% of simulations at 30 days and rarely at one year.

**CV4**

**COST MODEL FOR A NEW ACOUSTIC DIAGNOSTIC AID TO RULE OUT CORONARY ARTERY DISEASE**

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**OBJECTIVES:** Coronary artery disease (CAD) remains the number one cause of death world-wide. Yet, diagnosis of CAD is regionally depending on traditions and reimbursement structures. Coronary sounds are a novel target to detect CAD. The economic impact of this new method was researched in the Danish health care setting, based on results of first clinical trials. This cost comparison modelled the consequencess of using acoustic measures as an early rule-out test for CAD. METHODS: A decision tree model was developed based on the 2015 Danish CAD-diagnostic technology that was found to be cheaper and less clinically effective compared with current practice in the NHS and described the costs, health outcomes and south-west (SW) ICERs. We also summarised the NICE advisory committee considerations relating to QALY losses and cost-effectiveness.

**Conclusions:** Acoustic testing to aid the early rule-out test for CAD was cost-effective compared to current practice in the NHS and described the costs, health outcomes and south-west (SW) ICERs. We also summarised the NICE advisory committee considerations relating to QALY losses and cost-effectiveness.

**CV5**

**ECONOMIC ASSESSMENT OF THE USE OF HF1 IN THE ASSIGN RISK SCORE**

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**OBJECTIVES:** Health and care systems are severely financially challenged and seek technologies which promote pathway efficiency even if there is a trade off with health gain. We analysed NICE diagnostics guidance to identify technologies that were cost saving and less clinically effective compared with current practice in the NHS and described the costs, health outcomes and south-west (SW) ICERs. We also summarised the NICE advisory committee considerations relating to QALY losses and cost-effectiveness. The cost-effectiveness of acute ischaemic heart disease was not studied. The transferability for other diagnostics is not assessed.

**Conclusions:** Acoustic testing to aid the early rule-out test for CAD was cost-effective compared to current practice in the NHS and described the costs, health outcomes and south-west (SW) ICERs. We also summarised the NICE advisory committee considerations relating to QALY losses and cost-effectiveness. The cost-effectiveness of acute ischaemic heart disease was not studied. The transferability for other diagnostics is not assessed.
parameterised with aggregated data and digitised survival curves. RESULTS: The decision tree identified 14 strategies on the cost-sensitivity frontier; those that are expected to detect the most cancers per pound spent. Considering uncertainty, a additional 36 strategies presented with some likelihood of forming the sensitivity frontier. We found that radical treatment was highly cost-effective compared to watchful waiting (€24,785/QALY), leaving scope for further investment in improving diagnostic strategies. We identified the cost-effective strategy by assigning the pay-offs of treatment to the decision tree, and found that the cost-effective strategy for the UK context depended on the outcome of the CRST Part C score. Less costly and less sensitive strategies would become cost-effective if treatment was proven to be less cost-effective or if there were multiple test-and-treat opportunities. CONCLUSIONS: Cost-effectiveness analysis of diagnosis can easily expand into large numbers of strategies. A large proportion can be removed if their probability of forming the cost-effectiveness frontier is zero and have the same direct impact on health. Calibration models can provide an approximation to transition probabilities, but uncertainties remain on the impact of multiple test-and-treat opportunities. Communicating cost-effectiveness results and uncertainty for a large number of strategies requires novel graphical representations.

MD4
EVALUATING MATCHING-ADJUSTED INDIRECT COMPARISON AND SIMULATED GRAPHICAL REPRESENTATIONS. IMPACT ON HEALTH-RELATED QUALITY OF LIFE OF FOCUSED ULTRASOUND THALAMOTOMY AND OTHER INTERVENTIONS FOR THE TREATMENT OF MEDICATION-REFRACTORY ESSENTIAL TREMOR
Leongpatana B1, Ridley C2, Boela RC3, Marsh W4, Cassey SC2, Richardson L2
OBJECTIVES: To examine the performance of a generic health preference-based instrument, Child Health Utility – Nine Dimensions (CHU-9D), compared to a disease-specific preference-based instrument, Atopic Dermatitis Quality-of-Life (ADQoL) in valuing the quality-of-life for children with atopic eczema. METHODS: Participants aged 5 and over were randomised to treat CHU-9D and ADQoL plus a placebo cream. Measurements were taken at baseline, 6 months (CHU-9D) and 12 months (ADQoL) post-intervention. The CHU-9D was used as the standard instrument. Results: The CHU-9D had a higher valuation of health states. The CHU-9D did not perform comparably to the ADQoL in terms of validity. CONCLUSIONS: The CHU-9D was better at valuing the health states.
Form 6 Dimensions (SF-6D). METHODS: Data on all three outcomes were collected from the Australian general population participating in a study assessing attitudes towards in-vitro fertilisation (IVF) Study. Statistical methods for selecting covariates included stepwise regression (SV), multifractal variance of polynomial (MVP) and EFA. The predictive accuracy of 72 regression models was assessed using five criteria: mean absolute error (MAE), root mean squared error (RMSE), correlation, distribution of predicted utilities, and proportion of predictions with absolute errors < 0.05. Six regression model families were used: Ordinary Least Squares (OLS), Least Absolute Deviations, Generalised Linear Model, Beta Binomial, Robust Minimize-Varaparize estimator (MM) and Multinomial logistic (MLOGIT) Validation of initial ‘primary’ models was carried out on a random sample of the IVF study. RESULTS: The best results for EQ-5D-5L and SF-6D predictions were obtained using MLOGIT and MM regression models, respectively. of the RMSE (0.0762-0.1434), MAE (0.0590-0.0924), correlation (0.470-0.846) and proportion of predictions with absolute errors < 0.05 (38%-56%) for these models were within the range of published estimates. However, the other statistical approaches outperformed EFA as a covariate-selection method following the initial selection of potential predictors on theoretical grounds. CONCLUSIONS: It is possible to predict valid utilities from the WH-23 using regression. On the basis of predictive performance, we recommend either SV or MPP as covariate selection methods. 

BREAKOUT SESSION XI

P11: COST STUDIES

CS1 OBSERVED VERSUS ESTIMATED ACQUISITION COSTS ASSOCIATED WITH MEDICINES RECOMMENDED BY THE ALL WALES MEDICINES STRATEGY GROUP Keeping S1, Deslandes PN, Haines K, Routledge PA2
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2All Wales Musculoskeletal Biomedical Research Centre, Llanelly, UK

OBJECTIVES: The All Wales Medicines Strategy Group (AWMSG) appraises the clini-

cal and cost effectiveness of new medicines being considered for NHS prescrib-

ing in Wales (UK). As part of the submission process, pharmaceutical companies

are expected to provide a budget impact forecast for the new medicine. The aim

of this study was to compare the observed costs of selected medicines recommended

for use by AWMSG, with the acquisition costs estimated by companies in their submis-

sions. METHODS: Observed medicine costs in each of the three calendar years

following AWMSG recommendation were obtained from primary and secondary
care dispensing databases in Wales. Medicines already in use for other indicati-

ons prior to the relevant AWMSG recommendation were excluded from the study.

Estimated costs were obtained from pharmaceutical company documentation.

Results of this study were recommended by AWMSG; 49 of these were included in the analysis. Pearson's correlation analysis. Mean observed and estimated costs were compared using Paired t-test. RESULTS: Between May 2005 and December 2013, 163 medicines were recommended by AWMSG, of these 43 were included in the analysis. Pearson R square values for observed and estimated costs were 0.54, 0.52 and 0.48 for the first, second and third years respectively (all p<0.0001). Mean (±SEM) observed and estimated costs respectively were €186,000 ± €54,200 and €263,000 ± €366,300 for year one (p=0.10); €272,000 ± €70,200 and €417,000 ± €90,800 for year two (p=0.03); and €330,000 ± €80,600 and €526,000 ± €110,000 for year three (p=0.01). CONCLUSIONS: Observed expenditure was significantly but not closely correlated to estimated expenditure in each of the three years following AWMSG recommendation. On aver-

age, company estimates of expenditure in years two and three were significantly

higher than the observed expenditure. Possible explanations for this may have

included a tendency for manufacturers to overestimate future market share due to

the subsequent introduction of a competitor medicine.

CS2 COSTS OF CHEMOTHERAPY-INDUCED ADVERSE EVENTS IN HEAD AND NECK CANCER IN FRANCE

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OBJECTIVES: CT (chemotherapy)-induced Adverse Events (AEs) are frequent in patients with Head and Neck (HN) cancer. Understanding of cost of AEs management is needed for economic evaluation of drugs. Our objective was to assess resource use and costs associated with CT-induced AEs in patients with HN cancer according to societal perspective. METHODS: This retrospective analysis used a nationwide representative sample (n=970) of the French insurance claims database (Echantillon Général des Bénéficiaire; EGB). Over a 6-year period (2009–2014), patients with a diagnosis of recurrent or metastatic HN cancer (ICD10 codes: C00-06; C09-14; C32) and treated exclusively with chemotherapy were selected. The eight most frequent chemotherapy-induced AEs were identified through healthcare consumption: (emollient cream, anti-histaminic, dermocorticoids), anemia (iron, ESA, transfusion), alopecia (wig), infection (antibiotics), diarrhea (anti-diarrheal), stomatitis (anti-gut), rash (anti-metastatic), and nausea (anti-emetics). Each AE management cost was assessed based on healthcare consumption. RESULTS: Of 444 patients with recurrent or metastatic HN cancer treated with chemotherapy, 378 patients (85%) had on average 2.9 AEs. The mean costs of AEs were (from most to least expensive): €281,150 (95% CI 153-247), €223,170 (95% CI 184-221), €184,122 (95% CI 125-154), €241 [21-61], €26 [59-59], and €1 31 [21-56] for neutropenia (n=151, 40%), anemia (n=136, 36%), nausea/vomiting (n=271, 74%), stomatitis (n=17, 35%), and rash (n=21, 14%), respectively. The mean cost for anemia varied from €2471 in patients with transfusion (n=37) to €1776 in other patients (n=99). CONCLUSIONS: An analysis of healthcare con-

sumption related to eight types of AEs revealed that neutropenia and anemia were particularly frequent and costly. Reducing cost of chemotherapy-induced AEs by education of the patient for early detection, standardization of management care, and selection of treatments with favorable safety profile may have a substantial impact on the overall HN economic burden.

CS3 COSTS OF ILLNESS PROGRESSION FOR DIFFERENT MULTIPLE SCLEROSIS PHENOTYPES: A POPULATION-BASED STUDY IN SWEDEN

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OBJECTIVES: To explore annual direct and indirect costs in multiple sclerosis (MS) patients of working ages, after diagnosis with different disease phenotypes, i.e., new diseases with relapsing-remitting MS (RRMS), primary progressive MS (PPMS), and secondary progressive MS (SPMS). METHODS: Patients with a registered MS phe-

notype during 2006-2013 were identified through the Swedish nationwide clinical MS register. Prevalence based costs (2013 values) for prescribed drugs, specialized outpatient care, inpatient care, and indirect costs for sick-leave and disability pen-

sion which increased a few years after progression to SPMS. Funding provided by Biogen and the Swedish Research Council for Health, Working Life and Welfare.

CS4 REAL LIFE COST OF TREATMENT AND FOLLOW-UP IN GLOBLASTOMA MULTIFORME (GBM) PATIENTS TREATED AT THE ANTWERP UNIVERSITY HOSPITAL (UZA), BELGIUM

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OBJECTIVES: To calculate the costs associated with the management of patients with GBM from diagnosis until death. METHODS: Charts of all patients with his-

tologically confirmed GBM diagnosis between 2007 and 2016 at UZA were retro-

spectively reviewed. Eligible for this analysis were patients who deceased prior to August 2016, and for whom complete information on resource use available at UZA. Resource use (hospitalization, tests, treatment, drugs) was collected on a per-patient per-month basis. Costs were calculated using 2017 defined by the National Institute for Health and Disability Insurance (NIHDI).

Average (bootstrap 95% confidence interval [CI]) costs per patient were calculated from both a public payer’s and patient’s perspective. RESULTS: 51 patients met all eligibility criteria. Sixteen patients (31%) were treated with biopsy/ surgery only and 35 patients were treated with a combination of surgery and radiotherapy and/or chemotherapy. Median overall survival is 9.3 months (95% CI 5.9-12.8) for all patients. Median survival is 15 months (95% CI 12-2.1) for patients treated with surgery/biopsy only, and 11.2 months (95% CI 8.3-14.7) for patients treated with surgery and radiotherapy/ and/or chemotherapy. Mean survival is 11.2 months (95% CI 1-14.3). The average cost per patient is €45,165 (95% CI 37,773-54,049) and the mean cost per unit (2017) is €22,735 (95% CI 24,502-41,688) is covered by NIHDI. The average cost for patients treated with surgery and radiotherapy/ and/or chemotherapy is €50,389 (95% CI 59,731-62,193) of which €48,817 (95% CI 38,641-60,622) is covered by NIHDI. CONCLUSIONS: GBM is associated with considerable costs for both NIHDI and patient.

BREAKOUT SESSION XII

P12: MODELING METHODS

M01 CALIBRATION APPROACH IMPACT ON HEALTH AND COST-EFFECTIVENESS OUTCOMES IN A DECISION ANALYTIC FRAMEWORK

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OBJECTIVES: Markov models are commonly used to simulate the natural history of human papillomavirus (HPV) and cervical cancer (CC) to predict health and eco-
nomic outcomes, in particular cost-effectiveness. Transition probabilities of moving between health states occasionally cannot be directly estimated from epidemiologi-
cal/clinical data and sometimes, natural history is not delineated in sufficient detail or data sources may be inaccurate. Nevertheless, the reliability of model outcomes is greatly dependent on accuracy of these inputs. Therefore, a well-calibrated model is
essential to ensure credibility of the results. The objective was to assess the impact of model calibration and methods on cost-effectiveness analysis (CEA) manual, Nelder-Mead algorithm and controlled random search (CRS). METHODS: We used a previously published and validated model from Spain. Data targets were age-specific HPV prevalence and CC incidence. Model outcomes included lifetime risk of cancer, quality-adjusted life-years (QALYs), and lifetime costs. We computed the percentage deviation of model-predicted endpoints from available data for the three calibration methods and incremental cost-effectiveness ratios (ICERs) of different CC prevention strategies currently under discussion in Europe. RESULTS: Results showed that with a non-calibrated random matrix, the deviation was 79%. For the manually calibrated matrix, the deviation was 2%, although it required 40 days of analyst work. Regarding automatically calibrated matrices, the deviation was about 7% with computation times of 25 hours and 100 hours for Nelder-Mead and CRS respectively. Although the most cost-effective strategy remained invariable based in a CEA threshold of 20,000/QALY, the magnitude of ICERs changed substantially (7,655\( \text{€} \) vs 14,745/QALY). Implications: Models used in both goodness of fit and CEA are found depending on the calibration approach. As was expected, the non-calibrated matrices produced HPV prevalence and CC incidence curves very far away from the target values and the largest differences on the cost-effectiveness results.

M02
HOW IRLAND’S COLORECTAL SCREENING PROGRAMME COULD SAVE MORE LIVES, SAVE MONEY AND STAY WITHIN EXISTING COLONOSCOPY CAPACITY LIMITS: EVIDENCE FROM THE MISCAN MICROSIMULATION MODEL

Ireland’s Colorectal Cancer Screening Programme (the BowelScreen programme) aims to show how the omission of relevant alternative screening strategies in a prior cost-effectiveness analysis of colon cancer screening in Ireland has led to an overestimation of the national policy and that better outcomes at lower costs can be achieved by using a lower quantitative cut-off in the faecal immunochemical testing (FIT) employed. METHODS: We used the MISCAN microsimulation model of colorectal cancer screening to simulate the costs, effects and follow-up colonoscopy capacity required for the screening programme. We simulated the effects of alternative screening strategies. These varied in their start and stop ages, screening intervals and FIT quantitative cut-off levels. Included in the simulations are Ireland’s current programme of biennial screening of 60-69 year-olds using a FIT cut-off of 225ng/ml of haemoglobin. We simulate strategies with FIT cut-offs as low as 50ng/ml. The resulting estimates are plotted in the cost-effectiveness plane, checked for dominance and incremental cost-effectiveness ratios are calculated. RESULTS: We find that a combination of a reduction in the FIT cut-off to 50ng/ml to the BowelScreen programme, followed by fitting a Weibull model to the two arms of the balanced data of OS gained for each month of PFS. CONCLUSIONS: Very simple changes to BowelScreen could save many more lives annually, reduce costs and relieve pressure on already constrained colonoscopy capacity. This simulation evidence suggests that BowelScreen should be re-examined.

M03
MODELING COVARIATE-ADJUSTED SURVIVAL FOR ECONOMIC EVALUATIONS IN ONCOLOGY

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OBJECTIVES: Survival data from randomized controlled trials (RCT) is routinely extrapolated for economic evaluations in oncology. Imbalances in prognostic and/or predictive factors across treatment arms should be adjusted to generate unbiased estimates. To date no formal guidance has been developed regarding how such adjustments should be made. We compared various covariate-adjusted survival modeling approaches, based on parametric regression and propensity score matching, applied to the ENDEAVOR RCT in multiple myeloma that assessed carfilzomib-dexamethasone (Cd) versus bortezomib-dexamethasone (Vd). METHODS: Overall survival (OS) data and baseline characteristics were used for a subgroup (bortezomib-naive/one prior therapy) reflecting the population where Cd is recommended in England. The following adjusted survival modeling approaches were compared: multiple Weibull regression model including prognostic/predictive covariates jointly fitted to the two arms to predict survival i) using the mean value of each covariate and ii) using the average of patient-specific survival predictions iii) applying an adjusted hazard ratio derived from a Cox proportional hazard model to the baseline risk estimated for Vd with a Weibull model, iv) propensity score matching followed by fitting a Weibull model to the two arms of the balanced data including either only the covariates Cd vs Vd or both Cd and Vd. RESULTS: The difference in mean OS estimated by the matched data approach was 2.06 months in NSCLC and 4.85) and 24.34 months (SD = 9.80), respectively. The correlation coefficient of median PFS and median OS was 0.712 (P < 0.00001). After adjustment for median age, sex and publication year, a 3.10 month (95%CI: 2.20 to 4.00) increase in median OS is estimated for each additional month increase in median PFS. CONCLUSIONS: Based on newer evidence from RCTs, PFS can be used to predict OS in MM and this analysis suggests that novel treatments may be providing additional months of OS gained for each month of PFS.

CNS
PROGRESSION-FREE SURVIVAL AS A SURROGATE ENDPOINT FOR OVERALL SURVIVAL IN PATIENTS WITH RELAPSED OR REFRactory MULTIPLE MYELOMA Dimopoulos M1, Sonneveld P2, Nahi H3, Kimura S3, Hashim M4, Kulakova M5, Dourou M6, Heeg B6, Lam A7, Dearden L7
1National and Kapodistrian University of Athens, Athens, Greece, 2Erasmus MC, Rotterdam, The Netherlands, 3Rakuno University, Tokyoo, Japan, 4Ingress Health, Rotterdam, The Netherlands, 5Ingress-Johns Hopkins University, Baltimore, Maryland, USA

OBJECTIVES: In a previous study, the quantitative relationship between progression-free survival (PFS) and overall survival (OS) in multiple myeloma (MM) was assessed. However, that analysis combined studies of newly-diagnosed MM and relapsed/refractory MM (rrMM) and, since that analysis, there have been several randomized controlled trials (RCTs) of novel treatments for rrMM. The aim of this study is to provide an update of that analysis using randomized controlled trials (RCTs) only conducted in rrMM. METHODS: Two bibliographic databases (PubMed and Embase) were systematically searched for RCTs published between 1970 to 2017. Firstly, the association between median PFS and median OS was estimated. Secondly, the parametric Spearman’s rank correlation coefficient. Secondly, the quantitative relationship between PFS and OS was assessed using the Two Stage Least Square (2SLS) estimating equation. This approach was justified by relevant statistical tests in favor of the instrumental variable approach. RESULTS: 22 RCTs (42 treatment arms, 7,884 mm patients) were included. The average median PFS and median OS were 8.26 months (SD = 4.85), and 24.34 months (SD = 9.80), respectively. The correlation coefficient of median PFS and median OS was 0.712 (P < 0.00001). After adjustment for median age, sex, and publication year, a 3.10 month (95%CI: 2.20 to 4.00) increase in median OS is estimated for each additional month increase in median PFS. CONCLUSIONS: Based on newer evidence from RCTs, PFS can be used to predict OS in MM and this analysis suggests that novel treatments may be providing additional months of OS gained for each month of PFS.

CNG
CAN BAYESIAN METHODOLOGY PREDICT LONG-TERM EFFECTIVENESS RATHER THAN EFFICACY? AN APPLICATION WITH OVERALL SURVIVAL IN TWO ONCOLOGY INDICATIONS

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OBJECTIVES: We assessed the impact of combining real-world evidence (RWE) with randomized controlled trials (RCTs) data for overall survival (OS) extrapolations. METHODS: Two RCTs in non-small cell lung cancer (NSCLC) and renal cell carcinoma (RCC) were selected as the only current comparative studies in NSCLC and RCC populations were identified from a German claims dataset. In WinBUGS, parametric survival models were fitted on both RCTs, and two parametric models were fitted on the RWE. We simulated PFS and OS. First, the active treatment coefficients from the RCTs’ parametric survival curves were combined with the corresponding RWE parameters. Second, the RWE shape parameters were used to inform the RCTs’ shape parameters. Several priors were tested. RESULTS: The WinBUGS model was best at capturing both RWE datasets. In RWE, predicted mean OS was 15.5 months (95%CI:13.0-18.8) and 31.4 months (95%CI:24.9-42.5) months in NSCLC and RCC, respectively. In RCTs, predicted mean OS was 26.7 months (95%CI:18.5-36.2) vs 40.7 months (95%CI:28.1-61.2) months in NSCLC and 23.9 months (95%CI:20.2-28.9) vs 27.9 months (95%CI:23.0-35.2) months in RCC.
RCC, in control vs active arms, respectively. In the first analysis, predicted mean RFS OS was 23.0 (95% CI: 16.0–34.3) and 37.9 (95% CI: 26.8–54.9) months in active arms of NSCLC and RCC, respectively. In the second analysis, with informative priors, the predicted mean OS was 21.9 (95% CI:17.0–29.3) vs 34.4 (95% CI:25.4–50.0) months in NSCLC and 24.3 (95% CI:20.7–29.4) vs 28.5 (95% CI:23.7–36.1) months in RCC, in control vs active arms, respectively. CONCLUSIONS: Survival in real-world and trials may differ. This might have a significant impact on health technology assessment (HTA) outcomes as payers are most interested in real-world effectiveness. Therefore, Bayesian methodology should be further explored for HTA purposes.

C07 ESTIMATING LONG-TERM SURVIVAL IN THE FACE OF IMMATURE DATA: A CASE STUDY OF NIVO獨 OTHER SECOND-GENERATION CARCINOMA CELL CARCINOMA

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OBJECTIVES: The clinical trial of nivolumab in second line renal cell carcinoma (CheckMate-025) was stopped early after meeting prespecified overall survival (OS) gains in an interim analysis. This study aims to illustrate the added benefit of long-term registry data in the selection of the survival extrapolation curves in a case with 14 months' minimum follow-up. METHODS: We compared different OS extrapolations on statistical fit criteria and alignment with RCC registry data. NICE (UK), NoMA (Norway), and TLV (Sweden) respectively selected the single general logistic (single-G), single log-logistic (single-LL) and single log-logistic (single-LL) curves based on the 14-months dataset. We used a 26-months dataset of OS, unavailable at the time of the original extrapolations, to assess the predictive value and stability of the extrapolations. RESULTS: All HTA agencies have extrapolated underestimated OS compared to the Norwegian and Swedish registry data, though the single-LL curve matched the registry data most closely. Predicted OS estimates based on the 14-months dataset, using single-LL, single-G, and single-LL models, matched the observed survival recorded in the 26-months dataset. Refitting the curves to the 26-months data showed substantial differences in mean OS estimates compared to the 14-month data for the single-G curve (Δ -7.7%). The other two curves provided similar OS estimates, irrespective of the dataset used (Δ <1%). CONCLUSIONS: The single-LL curve matched external long-term registry data most precisely and it had a high predictive value as evaluated by a comparison to data from CheckMate-025's 26-months dataset. Though registry data may be based on treatments with alternative mechanisms of action, they may provide a lower boundary for the OS estimate in the absence of long-term trial data. This study is an example of how utilization of data from external registries provided valuable information for the selection of the optimal OS extrapolation for the clinical trial of nivolumab in second line renal cell carcinoma (CheckMate-025) as the clinical benefit is seen in the long-term.

C08 LENGTH OF TRIAL PERIOD AND FIT OF STANDARD SURVIVAL EXTRAPOLATION DISTRIBUTIONS FOR IPILIMUMAB IN MELANOMA

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OBJECTIVES: Schadendorf et al (2015) discussed the plateau effect for overall survival (OS) for ipilimumab in unresectable or metastatic melanoma. The Cop metastasis distribution function was used to fit the long-term data. Given a sample size of 500 patients, the necessary trial duration to identify the "true" underlying distribution out of the standard survival distributions used for NICE (UK), NoMA (Norway), and TLV (Sweden) respectively selected the single general logistic (single-G), and single log-logistic (single-LL) curves based on the 14-months dataset. We used a 26-months dataset of OS, unavailable at the time of the original extrapolations, to assess the predictive value and stability of the extrapolations. RESULTS: All HTA agencies have extrapolated underestimated OS compared to the Norwegian and Swedish registry data, though the single-LL curve matched the registry data most closely. Predicted OS estimates based on the 14-months dataset, using single-LL, single-G, and single-LL models, matched the observed survival recorded in the 26-months dataset. Refitting the curves to the 26-months data showed substantial differences in mean OS estimates compared to the 14-month data for the single-G curve (Δ -7.7%). The other two curves provided similar OS estimates, irrespective of the dataset used (Δ <1%). CONCLUSIONS: The single-LL curve matched external long-term registry data most precisely and it had a high predictive value as evaluated by a comparison to data from CheckMate-025's 26-months dataset. Though registry data may be based on treatments with alternative mechanisms of action, they may provide a lower boundary for the OS estimate in the absence of long-term trial data. This study is an example of how utilization of data from external registries provided valuable information for the selection of the optimal OS extrapolation for the clinical trial of nivolumab in second line renal cell carcinoma (CheckMate-025) as the clinical benefit is seen in the long-term.
the EU, healthcare expenditure and reimbursement measures did not fully explain differences in rare disease patient-reported difficulties. Research into healthcare systems, patient engagement and cultural differences may identify why countries with more favourable economic/reimbursement indicators did not have consistently fewer patient-reported treatment access concerns.

BREAKOUT SESSION XV

P15: HEALTH TECHNOLOGY ASSESSMENT STUDIES

HT5 “APPRaising THE APPRAISERS”: DO NATIONAL HEALTH TECHNOLOGY ASSESSMENT ACRICs NICE, GBA/IQWiG FOLLOW THEIR OFFICIAL EVALUATION CRITERIA? Schaef er R1, Schwarz G2, Schländer M3

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OBJECTIVES: Health technology assessment (HTA) agencies have adopted different methodological approaches, which – at least in part – reflect different value judgements. The Federal Joint Committee (Gemeinsamer Bundesausschuss, GBA) and the Institute for Quality and Efficiency in Health Care (IQWiG) in Germany as well as the National Institute for Health and Care Excellence (NICE) in England may be regarded as examples of the implementation of evidence-based medicine and the logic of cost effectiveness, respectively. The present study aims to explore the extent to which these agencies follow their own assessment criteria, and to explore exceptions that have been made. METHODS: We extracted data from all publicly available GBA appraisals and IQWiG benefit assessments between January 2010 and April 2015, as well as all NICE single technology appraisals (STAs) completed during this period. We then analyzed benefit assessment results focusing on official assessment criteria by GBA/IQWiG (clinical evidence and patient-relevant endpoints) and by NICE (clinical evidence, incremental cost effectiveness ratios (ICERs), and end of life (Edo) considerations). RESULTS: GBA (105 appraisals comprising 226 subgroups) and IQWiG (105 appraisals with 240 subgroups) benefit determinations were predominantly driven by patient-relevant endpoints (p<0.01), although orphan drugs were legally stipulated to offer added benefit. NICE STAs (88 appraisals comprising 125 subgroups) adhered to the ICER as a primary assessment criterion (p<0.01), even though 6 appraisals (15 subgroups) without an estimated ICER relied on other criteria. Evaluations with an ICER above GBP30,000/QALY were influenced by Edo criteria (p<0.01). Randomized controlled trials (RCTs) are considered to be the most appropriate measure clinical effectiveness by both NICE (p<0.05) and GBA/IQWiG (p<0.01); nevertheless, positive HTA outcomes presume that assessment criteria were met. CONCLUSIONS: Overall, our results confirm that both agencies follow their own assessment criteria in a consistent manner. We identified a limited number of exceptions, which we will report in detail.

HT6 ASSESSMENT OF MEDICINES FOR VERY RARE CONDITIONS: REVIEW OF A NEW APPROACH WITHIN THE SCOTTISH MEDICINES CONSORTIUM (SIMC) Brown A, Lee A, MacDonald A

Healthcare Improvement Scotland, Glasgow, UK

OBJECTIVES: In April 2014 the Scottish Medicines Consortium (SMC) introduced a new framework for medicines licensed to treat an eligible population of 1 per 50,000 or less. Sponsor companies could provide evidence on health economic analysis with a breakdown within a临沂-fm system of explicit decision-making criteria. Patient and clinician experience is also captured separately. Submissions assessed using this framework were reviewed to determine the type of economic analysis used. METHODS: Data was extracted from all publicly available appraisals of the medicines assessed by the SMC. RESULTS: Twenty seven submissions were assessed using the ultra-orphan framework published September 2014 - April 2017. The following data were extracted: category of medicine, basis of economic analysis, inclusion of wider costs and benefits within sensitivity analyses; and SMC acceptance rates. RESULTS: Twenty seven submissions were assessed using the ultra-orphan framework. The majority (n=20) were cancer medicines used to treat very rare tumour types, in highly targeted mutations of common tumour types, or as last line therapies for advanced, refractory disease. The remainder were mainly medicines for very rare genetically acquired conditions. In all 27 submissions companies used conventional economic endpoints (F4). All costs and transfers were discounted at 4% annually. The lifetime tax revenue gains for government from LDV/SOF treatment were estimated at 48,800 and 49,200 per person, respectively. The lifetime tax revenue gains for government from LDV/SOF treatment were estimated at 125,400 per person. Treatment at later fibrosis stages is estimated to increase healthcare and social security costs of €3,000 and €9,200 per person, respectively, with €7,900 in tax revenue per person. Compared to treating patients

BREAKOUT SESSION XVI

P16: INFECTIOUS DISEASE STUDIES

IN1 ESTIMATING THE PUBLIC ECONOMIC IMPACT OF DIFFERENT HEPATITIS C HEALTHCARE POLICIES IN THE NETHERLANDS Smeele MA1, Kotsopoulos N2

1University of Groningen, Groningen, The Netherlands, 2Global Market Access Solutions, Saint-Priex, Switzerland

OBJECTIVES: Hepatitis C (HCV) infection is associated with increased public expenditures on healthcare and social security benefits for infected individuals. Also, HCV can negatively influence individuals’ labour force participation and hence poses a broad range of long-term consequences for government. This study investigates the public economic consequences of different public health interventions for chronic Hepatitis C (HCV) in the Netherlands and compares these consequences in patients treated at early or late stages of the disease. METHODS: A cohort-based Markov model simulating the natural history of HCV infection was populated with published data and literature to estimate the economics of HCV infection and transmission. The model was parameterized using data from a number of different sources. RESULTS: At an early stage (50-90% of time spent) patients with HCV infection in the Netherlands were found to be £10,000 per QALY gained that might not be able to be handled within the reduced timeframe imposed by the FTA process. At the time of abstract submission, the outcome of the first submission through this process has not been established, nor has the finer detail of what constitutes a move from the FTA process to the standard STA process.


 Accepta Medica, Amsterdam, The Netherlands

OBJECTIVES: The use of real-world evidence (RWE) to support HTA is of increasing interest to pharmaceutical companies. This study aims to quantify the use of published RWE in the evidence base provided by companies for the NICE appraisal process. METHODS: A retrospective, descriptive analysis of NICE technology appraisal submissions in 2016 was performed. Of 56 identified records, only single-technology, first-time submissions with available application documents were included (n=28). Information was collected from the references in the company-evidence submissions, including evidence type, peer-reviewed publication status, and document section referenced. RESULTS: All company-evidence submissions in 2016 referenced RWE – as defined by ISPOR; however, only 18% (5/28) included RWE on the technology being appraised. The mean number of references in evidence submissions was 150 (median 122; range 66–303); RWE accounted for 15% (19/121) of all evidence, of which 42% (8/19) was published, mostly in the pharmaceutical journals. In 20% (4/20) of cases, RWE was used to describe health conditions, and in 16% (3/19) was used to demonstrate real-world effectiveness of the technology. A substantial proportion of the total evidence is unpublished. There is future scope to enrich the total evidence base further with technology-specific RWE and to increase transparency and credibility by timely publication in peer-reviewed journals.
late, early treatment results in governmental cost-savings of €83,000 per QALY gained, additional HPV vaccination of boys is likely to be cost-effective in Germany when including the impact on non-cervical cancers.

RESEARCH POSTER PRESENTATIONS – SESSION I

DISEASE – SPECIFIC STUDIES

CANCER – Clinical Outcomes Studies

PCN1 LOWER ANTERIOR RESECTION SURGICAL COMPLICATIONS IN COLORECTAL CANCER PATIENTS: ASSOCIATION WITH LENGTH OF STAY, DISCHARGE TO INSTITUTIONAL CARE, AND 90-DAY READMISSION

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OBJECTIVES: Lower anterior resection (LAR) surgical complications are associated with substantial morbidity and economic burden. This study assessed the association between three complications of particular importance in colorectal surgery—anastomotic leak (AL), bleeding, and infection—and length of stay (LOS), discharge to institutional care, and 90-day readmission in patients who underwent LAR for colorectal cancer. METHODS: Patients who underwent LAR for colorectal cancer from 2008Q1-2015Q2 were identified with ICD-9-CM procedures and diagnoses recorded in the Optum Clinformatics Data Mart, a large U.S. database of health insurance claims (first hospitalization for LAR-index LAR). ICD-9-CM codes were reviewed to identify patients diagnosed with AL, bleeding, and/or infection during the index LAR; patients with evidence of these complications present on admission or within 180 pre-index were excluded. Generalized linear models and Cox regression were used to separately identify the association between each complication and LOS, discharge to institutional care (e.g., skilled nursing facility), and time-to-90-day readmission (all-cause, censoring at loss to follow-up), adjusting for patient demographics and baseline (180d pre-index) clinical characteristics. RESULTS: The study included 3,278 colorectal cancer patients who underwent LAR (median age 60y; 61% female; 69% privately insured; 88% elective admissions). During the index LAR, AL, bleeding, and infection were documented in 382 (11.7%), 344 (10.6%), and 211 (6.4%) patients, respectively. After covariate adjustment, each complication type was associated with increased LOS (adjusted differences: AL, 6.1 days, p<0.0001; bleeding, 3.3 days, p<0.0001; infection, 8.4 days, p<0.0001), higher odds of discharge to institutional care (ORs: 2.13, p<0.0001; 3.05, p<0.0001; and 1.31, p<0.0001), and greater risk of 90-day readmission (HRs: 1.31, p=0.006, 1.35, p=0.002; and 1.85, p<0.0001). CONCLUSIONS: This study provides contemporary real-world evidence on the burden of complications associated with LAR for colorectal cancer. Innovations in surgical delivery and technology may reduce the risk and burden of these complications.

PCN2 DETRIMENTAL IMPACT OF TOXICITY ON QUALITY OF LIFE IN HEPATOCELLULAR CARCINOMA PATIENTS TREATED WITH LENVATINIB VS SORAFENIB

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OBJECTIVES: To determine whether adverse events (AE) were associated with statistically significant differences in overall health utility in patients with unrectsectable hepatocellular carcinoma (HCC). METHODS: Data on the impact of AEs on the EQ-5D health utility index (HUI) were taken from a multicenter, randomized, open-label, non-inferiority Phase 3 study comparing lenvatinib (LEN) to sorafenib (SOR) as first-line µHCC systemic treatments. 954 patients were randomized to LEN (N=478) or SOR (N=476). The impact of each AE during the stable treatment period (all post baseline assessments prior to disease progression) on the HUI score was presented using least squares mean (Adj Mean) estimates as a fixed effect relationship. Score estimates were adjusted for differences in baseline HUI scores. RESULTS: The impact of 105 AE during the stable treatment period (all post baseline assessments prior to disease progression) on the HUI score was presented using least squares mean (Adj Mean) estimates as a fixed effect relationship. Score estimates were adjusted for differences in baseline HUI scores. The statistical significance of the resulting estimate was determined via ANCOVA with alpha of 0.05. RESULTS: The adjusted HUI scores for Grade 3/4 and Any Grade asthenic conditions were statistically significant (Grade 3/4 Adj Mean = -0.008, p=0.0004 and Any Grade Adj Mean = -0.026, p<0.0001). Similarly, decreased appetite and weight decrease were significant for both the Grade 3/4 and Any Grade estimates (decreased appetite: Grade 3/4 Adj Mean = -0.078, p=0.0003 and Any Grade Adj Mean = -0.052, p<0.0001, respectively; weight decrease: Grade 3/4 Adj Mean = -0.053, p=0.0070 and Any Grade Adj Mean = -0.030, p=0.0003, respectively). For any AE, differences were significant for Grade 3/4 and Any Grade estimates (Grade 3/4 Adj Mean = -0.031, p=0.0006 and Any Grade Adj Mean = -0.028, p=0.0045, respectively). No additional events were significant for the Grade 3/4 or Any Grade models (p > 0.05). CONCLUSIONS: These data illustrate...
that asthenic conditions, decreased appetite and weight decrease were the most common AE that had a detrimental effect on HRQOL scores.

PCN3

PCN3 PATTERN OF CHEMOTHERAPY RELATED ADVERSE EFFECTS AMONG ADULT CANCER PATIENTS TREATED AT GONDAR UNIVERSITY REFERRAL HOSPITAL, ETHIOPIA: A CROSS SECTIONAL STUDY

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Pattern of chemotherapy-related adverse effects among adult cancer patients treated at Gonder University Referral Hospital, Ethiopia: a cross-sectional study. Adverse drug reactions (ADRs) are a global problem and constitute a major clinical problem in terms of human suffering. The high toxicity and narrow therapeutic index of chemotherapeutic agents makes oncology pharmacovigilance essential. This study was to assess the pattern of ADRs occurring in cancer patients treated with chemotherapy in a tertiary care teaching hospital in Ethiopia. A Cross-sectional study was conducted from September 2013 to August 2014. Data was collected on 148 cancer patients undergoing chemotherapy at Gonder University Referral Hospital.

Conclusions: The most commonly identified problem among the ADRs was nausea and vomiting (18.9%), infections (16.7%), neutropenia (14.7%), fever and/or chills (11.3%), and anemia (9.3%). The most common group of drugs causing ADRs were antibiotics (65.8%) and chemotherapeutic agents (29.9%). Significant association was found between neutropenia and chemotherapeutic agents, and as dose of chemotherapy was increased by 3-5× toxicity. The high incidence of chemotherapy-related ADRs among cancer patients is of concern. Setting up an effective ADR monitoring and reporting system (onco-pharmacovigilance) and creating awareness among health care professionals regarding the importance of ADR reporting may help prevent the problem.

PCN4

ASSESSMENT OF PATIENTS ADMITTED FOR DRUG-RELATED PROBLEMS IN CANCER CHEMOTHERAPY

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OBJECTIVES: The main objective was to study the chemotherapy drug-related hospital admissions in a tertiary care teaching hospital and to estimate the cost involved in the management of DRPs (Drug Related Problems) due to chemotherapy.

METHODS: A prospective observational study was done over a period of 6 months. All patients admitted for supportive care management during the study period due to DRP were included in the study. Patients with chemotherapy drug-related admissions were prospectively identified from the patient's medical records. The contribution of DRPs and cost incurred due to each hospitalization was analyzed using SPSS version 20.0.

RESULTS: Out of 815 DRPs identified, 55 patients (6.7%) were associated with chemotherapy. The corresponding OR for AEs was 0.18 (0.07–0.47), 0.30 (0.11–0.79), 0.49 (0.26–0.92), and 0.51 (0.38–0.68) for any grade adverse event (AE), and AEs leading to discontinuation, dose interruption, or dose reduction. RESULTS: PFS HRs comparing olaparib and niraparib were 1.11 (95% credible interval 0.67–1.85) for investigator-assessed PFS, and 0.93 (0.53–1.61) for IRC. TFST HR was 0.90 (0.54–1.49). No significant difference in efficacy between PARPi was observed. The corresponding OR for AEs was 1.0 (0.07–4.0) for grade 1 adverse events (AE), and 1.0 (0.01–6.9) for grade 2 adverse events (AE), and 0.18 (0.07–0.47), 0.30 (0.11–0.79), 0.49 (0.26–0.92), and 0.51 (0.38–0.68) for any grade adverse event (AE), and AEs leading to discontinuation, dose interruption, or dose reduction. RESULTS: PFS HRs comparing olaparib and niraparib were 1.11 (95% credible interval 0.67–1.85) for investigator-assessed PFS, and 0.93 (0.53–1.61) for IRC.

CONCLUSIONS: There was no significant difference in efficacy between olaparib and niraparib, with reduced odds compared with niraparib for any grade ≥ 3 AE. No significant difference was observed in AEs leading to modification in drug administration.
OBJECTIVES: There is a lack of comparative evidence of novel treatments for advanced adenocarcinoma. We synthesised effectiveness and safety evidence using a network meta-analysis (NMA). METHODS: A systematic literature review was performed in Embase, Medline, and Cochrane to retrieve effectiveness and safety evidence of randomised controlled phase-III trials (RCTs; time frame January 1, 2010 to March 1, 2017). We synthesised evidence on effectiveness (HR for progression-free survival (PFS)) and safety (relative risk (RR) for a grade ≥3 adverse event (AE)) with a Bayesian random-effects model. RESULTS: Of 1,100 citations, 25 phase-III RCTs were identified. Twenty-one (one) seventeen treatments could be included in the effectiveness (safety) NMA. Dabrafenib plus trametinib was identified as the most effective treatment, both in terms of HR for PFS (0.21 [95% CrI: 0.17-0.27]) and probability of being the best treatment (PBB: 61% of the simulations). Vemurafenib plus cobimetinib followed as second-best (PBB: 39%; HR PFS: 0.22 [95% CrI: 0.20-0.24] and 0.32 [95% CrI: 0.29-0.35] respectively). In case of no BRAF-mutation, nivolumab plus ipilimumab ranked best (PBB: 97%; HR PFS: 0.37 [95% CrI: 0.27-0.49]), followed by nivolumab (HR PFS: 0.50 [95% CrI:0.40-0.62]) and pembrolizumab (HR PFS: 0.31 [95% CrI:0.28-0.35]). Pembrolizumab was in all cases in favour of safety (RR for AE: 2-weekly [3-weekly]: 0.45 [0.38-0.53]; 0.95%CrI:0.25-0.72 [0.35-0.92]; PBB: 87% [11%]). Six treatments ranked lower but dacearbazine, ten ranked lower. The four most effective treatments (HR for PFS) ranked lower than dacarbazine regarding safety. CONCLUSIONS: Until new evidence from RCTs becomes available, our study provides valuable insights into each novel treatment's comparative effectiveness and safety. Dabrafenib plus trametinib seems the most effective treatment for advanced melanoma, closely followed by vemurafenib plus cobimetinib. Both treatments have, however, less favourable safety outcomes.

PCN2 A LONGITUDINAL INVESTIGATION OF THE RELATIONSHIPS BETWEEN PATIENT-RAPPORTED SYMPTOMS AND SURVIVAL AMONG PATIENTS WITH HR-HER2- METASTATIC BREAST CANCER (MBC) TREATED WITH ABEICACILIB IN THE PHASE 2 MONARCh 1 TRIAL

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1Rhei Health Solutions, Durham, NC, USA; 2El Lilly and Company, Indianapolis, IN, USA; 3Danaher Cancer Institute, Boston, MA, USA

OBJECTIVES: In a phase-2 monarCh trial, abeicacilib demonstrated tumour responses in refractory HR+ HER2- mBC. The most common investigator-reported treatment emergent adverse events (TEAEs) were diarrhoea, fatigue, nausea, decreased appetite, and abdominal pain. Fatigue is known to play a central role in patient experience. We present an analysis of patient reports of these symptoms over the course of the trial, with fatigue as the central concept. We explicitly consider missing data, the relationships between symptoms, and the relationships with survival. METHODS: Data were collected as a part of a interim analysis of 172 previously treated patients with mBC. The EORTC QLQ-C30 v3 was administered at baseline and every 28 days thereafter. Domains for fatigue, pain, nausea and vomiting, appetite loss, and diarrhoea were analysed from baseline to visit 10 using extended pattern mixture modelling (ePMM). ePMM is a latent-variable longitudinal mixture model approach used for longitudinal outcomes. RESULTS: Most patients reported no change in fatigue. Most patients reported no change in fatigue. The final models assessed 1) the prediction of fatigue by the remaining symptoms, 2) the prediction of the remaining symptoms by fatigue, and 3) the prediction of overall survival (OS), and progression-free survival (PFS) by fatigue. RESULTS: Three fatigue subgroups were identified: ‘no change’ (55%, n=73), ‘improvement’ (25%, n=36) and ‘worsening’ (20%, n=27). The ‘improvement’ subgroup significantly predicted fatigue (P <0.01) but the remaining TEAEs did not. Fatigue predicted OS and PFS. Patients in the ‘no change’ fatigue subgroup had significantly longer OS and PFS than the ‘worsening’ subgroup (OS P=0.001 and P=0.001, respectively). CONCLUSIONS: Most patients did not report no change in fatigue. Patients were classified in subgroups based on fatigue experience. Fatigue was predicted by changes in pain, and was predictive of changes in OS and PFS. Patient reports of symptom experience are informative and when modelled appropriately can they inform understanding of differential survival.

PCN10 EPIDEMIOLOGY OF BRAFV600-MUTATED METASTASIS MELANOMA IN EUROPE: A SYSTEMATIC REVIEW

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OBJECTIVES: Though ~50% of metastatic melanomas (MM) appear to carry the BRAFV600 mutation, making these patients eligible for targeted kinase inhibitor therapy, little is known about the epidemiology of this disease. We performed a systematic review of real-world evidence to assess the epidemiology of BRAFV600-mutated cutaneous MM in Europe. METHODS: MEDLINE, Embase and key oncology, dermatology and pharmacoeconomic conferences were searched, with reference lists of potentially relevant narrative and systematic reviews hand-searched. Eligible real-world studies included those published since 2005 reporting: BRAFV600-mutated cutaneous MM in patients with MM incidence in each country). Mean [95% C.I.] age at diagnosis was (146, 175, 173, 141 and 173 in France, Germany, Italy, Spain and the UK respectively; weights were estimated based on NCI-SEER MM incidence. The epidemiology of BRAFV600-mutated MM in Europe (56–66, 41%) were female and 17%, 52%, 22% and 4% had an ECOG performance status score of 0, 1, 2 and 3 respectively. Bone pain was the symptom ultimately leading to the diagnosis in 63% of the patients, vertebral fractures in 21% and renal impairment in 23%. The majority of patients (74%) had at least 2 bone lesions and 51% had either mild, moderate or severe RI, at the initiation of 1L. 75% of all and 75% of RI patients received BPs during the entire 1L management (diagnosis to disease progression). 214 (66%) patients suffered from at least 1 new SRE during the follow-up (366 SREs overall), with a yearly SRE rate of 0.6, and 119 (15%) had SRE-related hospitalization. CONCLUSIONS: Bone pain, renal dysfunction and vertebral fractures were leading causes for diagnosis of MM. 51% had an impaired/failed renal function at initiation of 1L treatment and one fourth of all patients were not treated with BPs, indicating an unmet need to prevent SREs in NDMM patients.

PCN12 IMPACT OF DIFFERENT BASELINE DEFINITIONS ON THE INCIDENCE OF RELEVANT OUTCOMES ASSOCIATED WITH CANCER FOLLOWING AN ADVANCED NON-SMALL CELL LUNG CANCER (NSCLC) DIAGNOSIS

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OBJECTIVES: Administrative claims data pose the risk of misclassifying pre-existing conditions as incident outcomes after diagnosis, because they may first appear in data during the extensive post-diagnostic work-up. We describe the impact of baseline definitions on the incidence of relevant outcomes, comparing baseline periods of one year before (T0) vs. one year before plus two weeks after (T14) diagnosis. METHODS: NSCLC patients in English CCs were included as cases and matched with 2 controls each, with matching based on age, gender, cancer stage at diagnosis and Charlson-Deyo index. RESULTS: We extracted all healthcare visits one year before (baseline) and after the cancer diagnosis. Incidence rate ratios (IRR) of IRs for Infections, Gastro-Intestinal, Cardiac, Pulmonary and Vascular events were calculated for T0 vs T14. Mortality rate ratios (IRR) were also estimated and results were stratified by healthcare visits during baseline (NV=n=none, V1=one, V2=two, V3=three). RESULTS: Overall, 3,894 NSCLC patients (NV=4%, V1=9%, V2=4%, V3=8%) and 15,332 comparators (NV=24%, V1=17%, V2=9%, V3=5%) were included. The IRR for any outcome was 4.95(95% CI 4.2-4.6) vs T0 and 3.89(95% CI 3.4-4.3) in T14, compared to the general population. The difference in IRR was biggest in the NV stratum (8.70 vs T0, 7 T14). The mortality IRR at T0 for patients with NV, and 1V were 58.305(95% CI 48.7-70.4, 43.395(95% CI 37.5-50.1) and 25.205(95% CI 23.9-26.7), respectively. The rates remained constant across strata among NSCLC hence the difference was due to increased mortality in controls and 25.2(95% CI 23.9-26.7), respectively. The rates remained constant across strata among NSCLC hence the difference was due to increased mortality in controls and subgroups. CONCLUSIONS: The definition of baseline affects marginally the IRs of relevant outcomes, predominantly among patients without prior healthcare visits. In the general population higher incidence rate of outcomes is associated with more prior visits and poorer survival, but not among NSCLC patients. This confirms the validity of observed associations validating the definition of the baseline ending at diagnosis.

PCN13 ASSOCIATION BETWEEN SOCIOECONOMIC DEPRIVATION AND CANCER INCIDENCE AND OUTCOMES AMONG ENGLISH CCs

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OBJECTIVES: It is well established that socioeconomic deprivation is associated with increased cancer incidence and poorer outcomes. In England, clinical commissioning groups (CCGs) are responsible for commissioning health and social care services for the potentially large patient population. The objective of this study was to assess the relationship between deprivation and the incidence and outcomes of breast, lung and colorectal cancers within CCG populations. METHODS: CCGs were ranked by breast, lung and colorectal cancer incidence, one-year survival, early-stage detection (stage 1 or 2) and under-75 mortality.
rates. RESULTS: Data were available from 209 CCGs. The incidences of breast and lung cancers were not significantly correlated with IMD score (R = 0.19 [p = 0.10]), and R = 0.35 [p < 0.001] respectively. Early-stage detection was also positively correlated with IMD score for all cancer types (R = 0.19 [p = 0.10], R = 0.35 [p < 0.001]) for breast, colorectal and lung cancers, respectively. While colorectal cancer-related under detection in deprived areas was strongly correlated with IMD score (R = 0.28 [p = 0.011]), no correlation was observed between breast and lung cancer mortality and IMD score (R = 0.05 [p = 0.50] and R = 0.05 [p = 0.50], respectively). There was also no correlation between the IMD score and colorectal cancer mortality and one-year survival for lung cancer (R = 0.02 [p = 0.73]). However, one-year survival was negatively correlated with IMD score for breast and colorectal cancers (R = 0.37 [p < 0.001] and R = 0.46 [p < 0.001], respectively). CONCLUSIONS: Despite the well-established link between deprivation and cancer incidence and poorer outcomes, "cold"-area data do not always reflect this. Of note was the positive correlation between deprivation and early detection, which is unexpected given the lower uptake of cancer screening in more deprived areas. These data suggest that other factors exist within CCG populations that may affect outcomes.

PCN14 NETWORK META-ANALYSIS OF TREATMENTS FOR UNRESECTABLE HEPATOCELLULAR CARCINOMA Tremblay G1, Meier G2, Copher R3, Misurski DS, Pan J4, Baig M5, Tamai T6, Kraljevic S7, Shot A8, Eryehte A1

OBJECTIVES: This study aimed to synthesize efficacy evidence via a systematic literature search and meta-analysis to evaluate the comparison of both lenalidomide (LEN) and sorafenib (SOR) to placebo in unresectable hepatocellular carcinoma (HCC). METHODS: EMBASE®, MEDLINE®, MEDLINE® in-process and Cochrane databases were systematically searched (2001 – 2017) to capture overall conference proceedings databases were searched (2001 – 2017) to capture overall conference proceedings databases were searched (2001 – 2017) to capture overall conference proceedings databases were searched (2001 – 2017) to capture overall conference proceedings databases were searched (2001 – 2017) to capture overall conference proceedings. The search included (LEN+HCC OR sorafenib+HCC) OR (randomized+controlled+trial) OR (PROSPECT) OR (PORT) OR (REPAD) OR (sorafenib+HCC) OR (lenalidomide+HCC) OR (sorafenib+LEN) OR (LEN+HCC). The search findings (76 results) were derived from a 2016 retrospective chart analysis of 813 patients whose disease had progressed after first line (1L). Patient and disease characteristics were extracted from underlying electronic medical records. RESULTS: A total of 76 articles relating to second-line were included. In the 76 articles relating to second-line, ORR with cisplatin- and carboplatin-based chemotherapy regimens, and was not estimable in IO studies (n ≥ 16) with >80% of responders having responses lasting ≥ 6 months. CONCLUSIONS: There was a large variability in outcomes observed by regimen, patient population and study design. The findings of this SLR suggest a high limit as new exists for patients who have failed or progressed after first-line treatment. This highlights the need for new treatment options that can induce durable responses in these patients. Recently approved IOs seem promising for a patient population with historically limited treatment options.

PCN15 SECOND-LINE THERAPY IN PATIENTS WITH LOCALLY ADVANCED OR METASTATIC UROTHELIAL CANCER: A SYSTEMATIC LITERATURE REVIEW Bharmal M1, Guenther S1, Rosen G2, Kearney M1, Phatak H2, Kempel-Waibel A1

OBJECTIVES: The efficacy of Denosumab in the prevention of skeletal-related events defined inclusion criteria. Review of the 76 articles relating to second-line resulted were derived from a 2016 retrospective chart analysis of 813 patients whose disease had progressed after first line (1L). Patient and disease characteristics were extracted from underlying electronic medical records. RESULTS: A total of 76 articles relating to second-line were included. In the 76 articles relating to second-line, ORR with cisplatin- and carboplatin-based chemotherapy regimens, and was not estimable in IO studies (n ≥ 16) with >80% of responders having responses lasting ≥ 6 months. CONCLUSIONS: There was a large variability in outcomes observed by regimen, patient population and study design. The findings of this SLR suggest a high limit as new exists for patients who have failed or progressed after first-line treatment. This highlights the need for new treatment options that can induce durable responses in these patients. Recently approved IOs seem promising for a patient population with historically limited treatment options.

PCN16 COMPARATIVE STUDY OF HEALTHCARE RESOURCE UTILIZATION (HRU) OUTCOMES BETWEEN CHRONIC LYMPHOCYTIC LEUKEMIA (CLL) PATIENTS TREATED WITH IBRUTINIB VERSUS NON-IBRUTINIB TREATED PATIENTS Nesr L1, Chung J1, Kang J1, Nabhan C1

OBJECTIVES: Ibrutinib is a novel targeted oral therapy approved for CLL. We aimed to compare real-world HRU of ibrutinib-treated CLL patients with others not on ibrutinib. METHODS: Newly diagnosed with high risk CLL patients initiating therapy between 01/2014-09/30/2016 were selected from the Inovalon Medical Outcomes Research

VALUE IN HEALTH 20 (2017) A399–A811
patients treated with Zoledronic Acid (IMW 2017 and ASCO 2017). The objective of this study was to analyze clinical trials of CMC. The potential indications included with a Denosumab-induced extension of DFS, in MM patients. METHODS: Parametric statistical models were fitted on individual failure time data from the primary data analysis of the trial to extrapolate long-term trends for DFS. Multiple scenarios, based on the 5 best fitting parametric models (unrestricted exponential), Weibull, log-normal, log-logistic, and generalized gamma) were generated. A partitioned survival cohort model was used to calculate the quality-adjusted life gains associated with the extended DFS on top of anti-myeloma therapy. RESULTS: Model results showed that the delay in disease progression observed in the trial may translate into a lifetime health benefit equivalent to living between 1.5 and 2.3 extra months in perfect health, 1.9 and 2.8 extra months with the same quality of life as in the MM pre-progression state, and between 2.3 and 3.5 extra months with the same quality of life as in the MM post-progression state. CONCLUSIONS: In all MM patients, Denosumab use is potentially associated with a significant incremental health benefit, compared to Zoledronic Acid.

PCN20 Merckel Cell Cancer: Poor Response to Chemotherapy Exposes Questions of Unmet Need Klink AJ1, Phatak H1, Bharmal M1, Kaufman J1, Feinberg B1 1Cardinal Health, Dublin, OH, USA, 2EMDD Serono, Billerica, MA, USA, 3EMDD Serono, Rockland, MA, USA

OBJECTIVES: Prior to the introduction of immuno-oncology agents for Merkel cell carcinoma (MCC), recommended treatment included surgery, radiation, and chemotherapy. This study aimed to analyze the effectiveness of chemotherapy for metastatic MCC in real-world clinical practice. METHODS: Parameters in the Cardinal Health Oncology Provider Extended Network (OPEN™) completed an electronic case report form for adult patients diagnosed with metastatic MCC since January 1, 2010 up to May 31, 2015, who received chemotherapy, and/or radiation, and/or surgical intervention. Information on clinical characteristics, treatments received, and response to treatment were collected. Response to treatment was determined based on patient status by bi-dimensional lesion measurements and confirmed by a radiologist. In order to apply Response Evaluation Criteria in Solid Tumors (RECIST) Patient outcomes were stratified by line of therapy. RESULTS: Among the 44 patients identified who were initiated on first-line (1L) chemotherapy, the response rate (RR) was 40.9%. On average, patients received 1.5 cycles of chemotherapy in 1.8-1.9 months. Only 1/23 patients (4.3%) had a durable response, which lasted for 5.1 months (95% CI 3.5-8.5 months). Among 23 patients who received second-line (2L) chemotherapy, the RR was 8.7% and median time to response was 1.8 months (range 1.8-1.9 months). Median progression-free survival (PFS) for patients receiving 1L therapy was 5.1 months (95% CI 3.5-8.5 months). CONCLUSIONS: This study indicates RR to chemotherapy among metastatic MCC patients is limited, especially when used later than 1L therapy. Only a small proportion of patients receiving chemotherapy had a durable response. The results of this study further support the evaluation of the effectiveness of new immuno-oncology agents being investigated for treatment of metastatic MCC.

PCN21 Systematic Literature Review and Indirect Comparison of Glasdegib Plus Low Dose ARA-C Versus a Hypomethylating Agent for Acute Myeloid Leukemia Patients Ineligible for Intensive Chemotherapy Forsythe A1, Aronekbor B1, Tremblay G1, Chan G1, Styr Y1 1Purple Squirrel Economics, New York, NY, USA, 2Pfizer Inc, Collegeville, PA, USA, 3Pfizer Inc, New York, NY, USA

OBJECTIVES: In a phase 2 randomized controlled study (RCT), glasdegib (GLAS) combined with Low Dose ARA-C (LDAC), showed significantly better overall survival (OS) vs LDAC alone in previously untreated acute myeloid leukemia (AML) patients ineligible for intensive chemotherapy (NIC). Hypomethylating agents (HMAs), azacitidine (AZA) and decitabine (DEC) are considered current standard of care in this population. Our objective was to conduct an indirect treatment comparison (ITC) comparing OS for GLAS+LDAC vs. AZA and DEC. METHODS: Embase, MEDLINE, Cochrane database, and conference abstracts (ASCO, ESMO, ASH) were systematically searched through 12/2016 for relevant RCTs of GLAS, AZA and DEC in NIC AML patients. Classical frequentist ITC using the Bucher method compared OS hazards ratios (HRs), 95% confidence intervals (CIs) using LDAC as the common comparator. RESULTS: Four studies met inclusion criteria: two comparing AZA to LDAC. Fenaux 2010; Dombret 2015; one comparing DEC to LDAC. Kantarjian 2012, and one comparing GLAS+LDAC to LDAC. Cortes 2016. Fenaux 2010 study was excluded due to population differences: baseline median bone marrow blasts at 23% in Fenaux 2010 vs. 49% in Cortes 2016. The remaining AZA and DEC studies were generally comparable in patient baseline characteristics to the GLAS+LDAC study: age and cytogenetic risk: age 75/73/76 years old, poor cytogenetic risk 34%/37%/39%, in AZA/ DEC/ GLAS+LDAC, respectively. In the ITC, with LDAC as the common comparator, GLAS+LDAC compared favorably with indirect HR for OS vs. AZA and DEC being 0.51 (95% CI 0.35-0.75) and 0.57 (95% CI 0.40-0.80), respectively. RESULTS: Using ITC, treatment with GLAS+LDAC showed significantly better OS HR than AZA and DEC in previously untreated NIC AML patients. Limitations of current analysis included mixed IC & NIC population for the AZA and mixed comparator arm of both LDAC and BSC for the DEC trial. Analyses using patient-level data matching baseline characteristics across studies may enable more robust ITC.

PCN22 Analysis of Recent Approvals of Immuno-oncology Drugs Across England, Scotland, Germany and France Zemaghi1, El-Maghrabi N2, Ng P3, Oleinikova O4, Zereau C2 1Meds, London, UK, 2Mapi Group, Nanterre, France, 3Mapi, Nanterre, France

OBJECTIVES: Immuno-oncology (IO) is a rapidly evolving therapeutic area with significant unmet needs. The potential indications include diseases such as lung cancer, renal cell carcinoma, and melanoma that are associated with the development of IO. However, the development pipeline for the targets involved in IO is limited, especially when used later than 1L therapy. Only 1/23 patients (4.3%) had a durable response, which lasted for 5.1 months (95% CI 3.5-8.5 months). CONCLUSIONS: This study indicates RR to chemotherapy among metastatic MCC patients is limited, especially when used later than 1L therapy. Only a small proportion of patients receiving chemotherapy had a durable response. The results of this study further support the evaluation of the effectiveness of new immuno-oncology agents being investigated for treatment of metastatic MCC.


OBJECTIVE: Several therapies have recently been approved for routine commissioning for advanced renal cell carcinoma. No statistically significant differences in overall survival (OS) were found between lenvatinib and everolimus (HR 0.51, 95% CI 0.41 to 0.63) and both treatments are more effective than BSC. OS results show a benefit for cabozantinib (HR 0.66, 95% CI: 0.53 to 0.82) and nivolumab (HR 0.73, 95% CI: 0.60 to 0.89) versus everolimus. Sensitivity analyses were consistent with the primary analyses. CONCLUSION: Evidence from RCTs suggest cabozantinib is likely to be the most effective treatment for FOS and OS, closely followed by nivolumab. All treatments appear to prolong FOS and OS compared with BSC although interpretation of some results is limited by heterogeneity.

PCN24 Comparing ITC Results from Lenvatinib Plus Everolimus for Second-Line Treatment of Advanced/Metastatic Renal Cell Carcinoma: Crossover Versus No Crossover Tremblay G1, Garib SA1, Mené M2, McElroy HJ3, Guo M2 1Purple Squirrel Economics, New York, NY, USA, 2Elan Inc, Woodcliff Lake, NJ, USA, 3Cravens Asia Pte Ltd, Singapore, Singapore

OBJECTIVE: An indirect treatment comparison (ITC) involving lenvatinib plus everolimus (LEN-EVE) versus standard of care (SOC) therapy was conducted using networked data from HOPE 205, CHECKMATE-025, METEOR, AXIS and two crossover trials RECORD-1 and TARGET. Results showed superiority of LEN-EVE over EVE in overall survival for advanced/metastatic renal cell carcinoma. No statistically significant differences in overall survival (OS) were found between LEN-EVE versus nivolumab (NIV), cabozantinib (CAB), axitinib (AXI), or placebo. METHODS: A subsequent analysis was conducted using intention to treat (ITT) data to evaluate the impact of crossover correction on OS estimates and additivity in the treatment arms. RESULTS: ITC analyses were analyzed: A) all comparators plus placebo versus EVE, B) all comparators versus placebo, and C) LEN-EVE versus all comparators. RESULTS: ITT data for crossover correction showed consistency in survival benefit across arms by an average of 20%. OS estimates for AXI vs. EVE shifted from below null (0.98) to above null (1.27) and mortality risk (placebo vs. EVE) moved 51% further from below null (1.15 vs 1.67). ITT estimates for Scenarios “B” & “C” showed on average 9% to above null (1.27); and mortality risk (placebo vs. EVE) moved 51% further from below null (1.15 vs. 1.67). ITT estimates for Scenarios “B” & “C” showed on average 9%
account for this in clinical trials may have implications on the comparative effectiveness profile and also on the cost-effectiveness results and may lead to inconsistent resource allocation decisions.

**PCN25**

**CLINICAL TRIAL SIMULATIONS BASED ON A META-ANALYSIS OF STUDIES IN PATIENTS WITH LOCALLY ADVANCED AND/OR METASTATIC ADENOCARCINOMA PANCREATIC CANCER RECEIVING GEMCITABINE (GEM) ALONE OR IN COMBINATION**

**Bennettts Net**, Nicholas D.1, Thurm H.C.1, Hernandez C.2, Abadih S.3, Amantea M.4

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**OBJECTIVES:** To develop a model to (1) describe median overall survival (mOS) in trials with locally advanced and/or metastatic adenocarcinoma pancreatic cancer treated with GEM alone and in combination, (2) simulate predictive distributions based on Von Hoff 2013 trial and assess the probability of the results in a future study, (3) compare predictions based on mOS and overall survival hazard ratios (OS-HR).

**METHODS:** A systematic review of randomized clinical trials with GEM alone or in combination was conducted. A linear mixed-effects model was fit to log-transformed mOS data, with an integer reflecting GEM treatment alone, a binary reflecting local and distant progression or both, and a binary reflecting treatment arm. Potential confounding or prognostic factors were tested into the model (i = j-treatment arm). Potential confounding or prognostic factors were tested as covariates. Drug combinations were simulated to produce model-based prediction distributions. **RESULTS:** Data consisted of 83 arms (40 studies; 4813 patients) and first-line treatment across 21 drug classes. The final model (abbreviated is: LN(mOSij) = intercept • platinumiij + taxaneij • 53fgr inhibitorij + ... • immunomodulatorij • study) was fit by j and j-i where drug class and study are included in model. mOS for GEM was 6.6 months with 95% CI: 6.3, 7.0. The model mOS estimates for drug classes in combination with GEM were significantly better than GEM alone for: Hypoxia activated produg 8.9 [7.2, 11.2], Anti folates 8.5 [7.8, 9.3] and platinum 7.8 [7.2, 8.5]. Simulations showed that the model predicts the Von Hoff study well and results related to drug classes for mOS and OS-HR were comparable. **CONCLUSIONS:** This meta-analysis is useful: (1) as a representation of current treatments, (2) as a tool for characterizing typical endpoints for designing randomized clinical trials; (3) to guide a default product profile for pancreatic cancer therapies and; (4) for informing decisions during the drug development process. **REFERENCES:** 1 Von Hoff DD et al. N Engl J Med 2013;369:1691–1707.

**PCN26**

**EVALUATING THE CLINICAL EFFECTIVENESS OF TRASTUZUMAB EMTENSINE (T-DM1) VERSUS ALL OTHER TREATMENTS FOR PREVIOUSLY TREATED, UNRETRACTABLE, HER2-POSITIVE METASTATIC BREAST CANCER (MBC): A MIXED TREATMENT COMPARISON (MTC) STUDY**

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**OBJECTIVES:** T-DM1 is approved for the treatment of MBC in patients previously treated with trastuzumab-taxed. We compared the clinical effectiveness of T-DM1 with all other therapies in patients with previously treated, unresectable, HER2-positive locally advanced breast cancer (LABC) or MBC. **METHODS:** A systematic review was conducted that included all published data between January 1, 2000 to June 30, 2015. Eligible trials of phase III trials of T-DM1 for treatment of unresectable HER2-positive LABC or MBC that had progressed after treatment with trastuzumab-taxed in the MBC setting or with fast relapse (within 6 months of adjuvant therapy) were included. Frequentist MTC of progression-free survival (PPFS) and overall survival (PPS) was conducted on a log hazard scale. Hazard ratios (HRs) were estimated using both fixed- and random-effects models. An intercept-only meta-analysis was used as a worst-case scenario. **RESULTS:** The results of this MTC showed greater PFS and OS benefit for T-DM1 versus lapatinib + capecitabine, trastuzumab + capecitabine, nab-paclitaxel, and taxane + monotherapy in patients with previously treated HER2-positive LABC or MBC.

**PCN27**

**TIME TO CLINICALLY MEANINGFUL WORSENING IN HEPATOCARCINOID TUMORS WITH LAPATINIB OR SORAFENIB**

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**OBJECTIVES:** To compare time to clinically meaningful worsening (TSW) in patients with unresectable hepatocellular carcinoma (HCC) treated with lapatinib (LEN) or sorafenib (SOR). **METHODS:** The European Organisation for Research and Treatment of Cancer (EORTC)QLQ-C30 and HCC-EORTC questionnaire were randomized to SOR or LEN (N = 478) or LEN (N = 478) or SOR (N = 478). Analyses on TSW, which is a within-subject analysis of meaningful change in terms of change thresholds that ranged from 6 to 12 points. Kaplan Meier curves were generated to characterize the diversion of the first TSW event occurring over time for each treatment. Time to median time and confidence intervals were calculated with a prespecified significance level of 0.05. Unadjusted proportional hazard models were conducted to estimate the hazard ratio and its 95% CI. **RESULTS:** TSW was statistically significant favoring LEN for the QLQ-C30 domains of Role Functioning (0.99 [0.95 to 1.03]), Body Image (0.82 [0.68 to 0.98]), and Bowel Function (0.80 [0.66 to 0.95]) compared to SOR. The median time to TSW (0.2 versus 1.8 months, respectively; p = 0.0060), and Diarrhea (4.6 versus 2.7 months, respectively; p < 0.0001). In the QLQ-HCC18 results favored LEN for the domains of Body Image (0.8 versus 0.995, respectively; p = 0.0043) and Nutrition (4.1 versus 2.8 months, respectively; p = 0.0060). The p-values were calculated without multiplicity adjustment. **CONCLUSIONS:** Patients on SOR experienced a more rapid clinically meaningful deterioration in terms of Role Functioning, Nutrition (perhaps due to the increased severity of diarrhea), and Body Image.

**PCN28**

**SYSTEMATIC LITERATURE REVIEW FOR TREATMENT OUTCOMES (INCLUDING IMMUNO-ONCOLOGY TREATMENT) AMONG PATIENTS WITH STAGE 3 UNRESECTABLE NON-SMALL CELL LUNG CANCER (NSCLC) IN INDONESIA**

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**OBJECTIVES:** To systematically review randomised clinical trials with immunotherapy and other novel treatments for non-small-cell lung cancer (NSCLC) in Indonesia including HPV prevalence, cervical cancer incidence and mortality, and distribution of cancer by state of cancer. Validation process employed qualitative approach using visual technique and quantitative approach using deviation value. **RESULTS:** Model calibration was conducted using “trial and error” to get model probabilities which were incidence and mortality of cervical cancer diseases. The strategies included 17 scenarios which varied in combinations of intervention and interval for screenings. Model structure and probabilities were adopted from previous studies conducted in many other settings. Model was validated by comparing the model output versus observed data of cervical cancer in Indonesia including HPV prevalence, cervical cancer incidence and mortality, and distribution of cancer by state of cancer. Validation process employed qualitative approach using visual technique and quantitative approach using deviation value. **CONCLUSIONS:** Little evidence was found that chemotherapy agents as post-CRT consolidation therapy can improve survival outcomes. In addition, concurrent chemo-immunotherapy vs sequential chemo-immunotherapy which is commonly accepted curorts showed no clinically meaningful difference in treatment outcomes.
PCN32

TREATMENT STRATEGIES AND OUTCOMES IN PATIENTS TREATED FOR RELAPSED REFRACTORY MULTIPLE MYELOMA OVER 3 YEARS: PREMIERE STUDY

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Cancer Institute, University of Utah, from May 2002 to March 2016. A total of 108 patients had an absolute neutrophil count (ANC) and an absolute lymphocyte count (ALC) available at baseline. The optimal cutoff of NLR was determined by the Cox proportional hazards model.

The management of multiple myeloma (MM) has changed considerably over the last decade with the introduction of novel targeted agents. The PREMIERE study, a phase III randomized, double-blind, multicenter, placebo-controlled trial, evaluated the efficacy and safety of elotuzumab plus lenalidomide followed by maintenance elotuzumab plus lenalidomide versus placebo plus lenalidomide in patients with relapsed or refractory multiple myeloma (RRMM). The primary endpoint was progression-free survival (PFS) after 1 year of treatment. The secondary endpoints included overall survival (OS), the PFS after 1 year of treatment, and the PFS after 2 years of treatment.

This exploratory and descriptive analysis estimated the time from diagnosis to occurrence of first and subsequent SRE in patients with early versus late treatment initiation with SPA.

In this exploratory, descriptive analysis, the median time to first and subsequent SRE was shorter for late versus early treatment initiation with SPA. This suggests that patients initiating SPA earlier have lower SRE.

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(KM) method, and multivariate Cox models were applied to evaluate the predictive values of NLR. NLR was identified as an independent predictor of OS. The high NLR group had significantly lower amount of lactate dehydrogenase compared to the low NLR group (Median 205 vs. 238, p=0.046). KM curve showed that the DFS rate of the low NLR group was significantly higher compared to that of high NLR group (p=0.009). With HER2 positive patients with baseline NLR ≤ 2.5 had a significantly improved DFS (HR 2.74, 95% CI 1.39 to 5.38, p=0.003). After adjusting for confounders and other prognostic factors, the NLR > 2.5 remained a strong predictor for DFS. The NLR was used in cardiac catheterization as a first-line treatment for HER2-positive metastatic breast cancer. The addition of 1 year of adjuvant trastuzumab significantly improved disease-free and overall survival among women with HER2-positive breast cancer. The addition of trastuzumab to paclitaxel after doxorubicin and cyclophosphamide in early-stage HER2-positive breast cancer resulted in a substantial and durable improvement in survival as a result of a sustained marked reduction in cancer recurrence. Adjuvant trastuzumab improves RFS of patients treated with taxanes and/or CEX or T-CEX. Early indications of safety have been identified. A significant decrease in pain outcome, measured by numerical rating scale (NRS), was reported for RFA compared to baseline in 10/13 studies assessing pain. Pain improved significantly at 1 week versus baseline, measured by NRS (5.9 vs 3.5, p < 0.0001), NRS at day 0 and 1 week p < 0.001 and NRS at 1 week and VAS (7.5 to 2.7, p < 0.001), VAS at 1 week and VAS at 2 weeks p > 0.001 and improvement was maintained at 1 month post-RFA. Few procedural complications were reported. Pain outcomes reported in two studies indicate prior therapy had little impact on the efficacy of RFA. Data by primary tumour location in two studies show higher rates of recurrence of breast, pancreatic, renal and thyroid cancer compared to other cancers over the 5-year period. A study measuring HRQoL of patients with FACT-G and FACT-bone pain suggest a significant improvement (p < 0.0001) in both scores post-RFA compared to baseline. CONCLUSIONS: Our findings indicate a clinical benefit in patients with spinal metastases treated with RFA with respect to subjective pain measures with limited safety implications. Controlled studies are required to provide more robust evidence of the clinical efficacy and safety of RFA.
OBJECTIVES: Follicular lymphomas (FL) constitute the second most common subtype of Non-Hodgkin lymphoma (NHL) and may present in extranodal sites, especially in the oral cavity. The introduction of rituximab around 15 years ago has led to a substantial increase in survival for patients with indolent NHLs. With a median overall survival of approximately 14 years and a median first-line progression-free survival of between 2–4 years, a second- and third-line regimen may be required, and the next line of treatment is a given in a year. Population data from the World Bank, epidemiological data from GLOBOCAN and the literature, and efficacy data from published randomised controlled trials and observational studies, were used to populate the model. Market research data was used to determine the market shares of FL and MZL. The model tracked both prevalent and incident patients between 2017 and 2022. RESULTS: Across the EU28, the model projects that over the 5-year period, 63,804 FL and 25,560 MZL patients will have died from advanced stage disease and another 41,936 FL and 15,331 MZL will require a third LOT between 2017 and 2022. Of these, 41,443 FL and 14,560 MZL will have been previously treated with a rituximab-based treatment. We predict a growing number of patients eligible for second- and third-line therapies in FL and MZL. With improved outcomes from first-line therapies, greater consideration must now be given to the relapsed/refractory setting, to consolidate gains in patient survival.

PCN42

TREATMENT PATTERNS IN HEAD & NECK SQUMOUS CELL CANCER IN FRANCE: ARTISTS STUDY ON CANCEROLOGY PATIENT CHARACTERS

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OBJECTIVES: Understanding of new improvement in recurrent/metastatic (R/M) head and neck squamous cell cancers (HNSCCCs), the current study examined real-world treatment patterns in HNSCC by relevant demographic/clinical factors to understand treatment choice instead of cure and informed the potential role in the development of the new therapies. METHODS: Patient characteristics, clinical profiles, and current antitumor treatments were reported from case report forms collected by physicians in the cross-sectional Kantar Health French Cancerology Database. Corresponding incidence calculations were performed on the proportion of patients treated based on hospital activity level and type of hospital. Analyses focused on representative 2015 data for patients with primary R/M HNSCC. RESULTS: Patients (n=8,579) were predominantly male (79%), receiving 1st line treatment (88%), having oropharynx tumor (26%), and with mean age of 61 years. Most patients who underwent 1st-line treatment had Eastern Cooperative Oncology Group (ECOG) score of 0 or 1 (80%), and were treated with chemotherapy or targeted therapy alone (68%). Other treatment options included combination chemotherapy and/or therapy with surgery and/or radiation. Cetuximab was the predominant regimen prescribed as 1st line monotherapy. Similarly for all locations, combination therapies involving platinum/SFU/ cetuximab/taxane were preferred to monotherapy in 1st line. The majority (46%) of patients received a regimen with a cycle length of 3 weeks. Across all lines, toxicities occurred to more than three quarters of patients; diarrhea, leukopenia, skin rash, nausea/vomiting, and/or mucositis were the most occurring toxicities, each affecting >50% patients with varying severity. Among patients with severe tumor response evaluated/specified (n=5,182), 11% and 45% had a completely and partial remission, respectively. CONCLUSIONS: Chemotherapy/targeted therapy alone is the most commonly used treatment (due to improved survival) with the exception of R/M HNSCC with frequent >2 tumor sites, more often than monotherapy. Current treatment options for HNSCC remain limited for all lines, especially 2nd line. Immunotherapies are expected to fill part of this unmet need.

PCN43

ORAL ESTROGEN THERAPY IS ASSOCIATED WITH REDUCED RISK OF HEPATITIS B VIRUS-RELATED HEPATOMA IN TAIWANESE POSTMENOPAUSAL WOMEN

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OBJECTIVES: It is noted that the incidence of hepatoma in females was generally lower compared to males. The sex differences have been attributed to estrogen. However, information on the incidence of HCC in postmenopausal women with HBV, and also investigate the cumulative incidences of HCC. METHODS: We used the Large Health Insurance Database (LHID) in Taiwanese National Health Insurance claims databases to establish research cohorts. The clinical dataset consisted 3 million adult patients from 1997 and 2012. We excluded male, aged 50 years younger, and any previous cancer, then established two cohorts (HT and non-HT) users in postmenopausal women which are aged 50 years between 1 January 1997 and 31 December 2012 and diagnosis with HBV 3,333 postmenopausal women with HBV for at least 90 days HT group) and 10,458 untreated postmenopausal women with HBV (non-HT group), who never received HT or less than 90 days were matched 1:4 based on propensity score matching method. The Cox regression model was used to calculate the association between the 10-year cumulated incidence of HCC and exposure to HT by Cox’s proportion hazard model, and multivariable analyses using conditional log-binomial model for HBV infected and uninfected women. RESULTS: OR of HCC (Hazard ratio: 0.58, 95%CI: 0.38-0.9, P<0.05) was lower in women exposed to HT compared to non-exposed women. CONCLUSIONS: We highlight emerging evidence that HT therapy was associated with a decreased risk of HCC among postmenopausal women with HBV.

PCN44

CHARACTERISTICS AND TREATMENT PATTERNS IN PATIENTS TREATED FOR RELAPSED REFRACTORY MULTIPLE MYELOMA OVER 3 YEARS: PREMIERE STUDY

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OBJECTIVES: The management of multiple myeloma (MM) has changed considerably in the past decade. Standard therapy for relapsed/refractory (RR) patients may require second- and third-line therapies. There is currently limited literature reporting estimates of the number of these patients. METHODS: We created a model to estimate the number of patients in the EU28 with MM and refractory FL and MZL requiring a new LOT 2 in a given year. Population data from the World Bank, epidemiological data from GLOBOCAN and the literature, and efficacy data from published randomised controlled trials and observational studies, were used to populate the model. Market research data was used to determine the market shares of FL and MZL treatments. The model tracked both prevalent and incident patients between 2017 and 2022. RESULTS: Across the EU28, the model projects that over the 5-year period, 63,804 FL and 25,560 MZL patients will have died from advanced stage disease and another 41,936 FL and 15,331 MZL will require a third LOT between 2017 and 2022. Of these, 41,443 FL and 14,560 MZL will have been previously treated with a rituximab-based treatment. We predict a growing number of patients eligible for second- and third-line therapies in FL and MZL. With improved outcomes from first-line therapies, greater consideration must now be given to the relapsed/refractory setting, to consolidate gains in patient survival.

PCN45

EPIDEMIOLOGY OF LOCALLY ADVANCED OR METASTATIC UROTHELIAL CARCINOMA IN THE US, EUROPE AND JAPAN

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OBJECTIVES: The primary objective of this study was to estimate the annual number of patients with locally advanced or metastatic urothelial carcinoma (UC) treated with systemic chemotherapy in the US, Europe and Japan. METHODS: A structured literature search in the English language (2001 to 2017) was conducted in Medline, Embase, conference proceedings and other secondary data sources. Outpatients treated with systemic therapy and prospective studies reporting the prevalence of UC. Seven Real-World (RW) studies provided insight into treatment patterns. The incidence of UC was derived from SEER (2016) for the US and Globocan (2012) for EU-28 and Japan. The number of patients with locally advanced or metastatic UC was determined based on the stage distribution at diagnosis. RESULTS: The crude incidence rate of UC reported for the US, EU-28 and Japan was 25.7, 25.7 and 16.6 per 100,000 patients (83,662, 129,977, and 23,567 patients). The incidence of locally advanced or metastatic UC was 15.6, 12.0 and 9.7 per 100,000 patients (12,494, 19,114 and 3,520 patients), respectively. Based on the findings of the RW studies, approximately 35% (range: 30% - 62%) of this patient population was ineligible for systemic first line therapies due to unmeasurable disease or inadequate renal function, poor performance status (ECOG PS >1), existing comorbidities and other reasons. Of those who received first line chemotherapy, only 50% (range 30% - 55%) received second line chemotherapy. The 5-year survival in this patient group is approximately 5%. CONCLUSIONS: A large proportion of patients with advanced or metastatic UC are not receiving systemic therapy. There is an urgent need for newer and alternate treatment options that are both effective and well tolerated. Data on the epidemiology of locally advanced or metastatic UC is scarce. More population-based studies would elucidate the global epidemiology of this disease.

PCN46

A SYSTEMATIC LITERATURE REVIEW OF UK EPIDEMIOLOGY OF BRCA1 AND BRCA2-MUTATED LOCALLY ADVANCED OR METASTATIC OVARIAN CANCER

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OBJECTIVES: In the United Kingdom (UK), ovarian cancer (OC) is the fifth most common cancer and the fourth most common cause of cancer death among women. BRCA-mutations have been recognized as important factors in OC diagnosis and treatment. Therefore, this systematic literature review (SLR) explored the epidemiology of BRCA1-mutated OC in the UK. METHODS: Following PRISMA guidelines, MEDLINE and Embase were systematically searched for English publications between 2007 and February 2017. The latest OC data in England were also included. A retrospective case review in North Wales showed high (47%) recurrence rates. Another study in recurrent OC showed that most of these recurrences were hormone receptor positive and/or sensitive. Two large population-based studies on BRCA carriers showed that these patients had a worse prognosis compared with those without BRCA-mutations. More specifically, a higher proportion of carriers with BRCA mutations presented with later stages of OC (7%) and had a significantly higher mortality (74% vs. 61% 5-year survival). Tumor and disease characteristics associated with BRCA-mutated OC were more comparable with those of high-grade rather than low-grade serous carcinoma. Among BRCA1-mutated OC cases, BRCA1-mutations were more commonly reported (60%) and associated with younger age at diagnosis than BRCA2 (median 50 vs. 58 years).

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years). Although more BRCA1-mutation carriers had advanced OC (70% vs. 24%), no significant differences in survival were found between BRCA1 and BRCA2 mutation carriers. **CONCLUSIONS:** To our knowledge, this is the first SLK on the epidemiology of BRCA-mutated OC in the UK. The limited evidence found suggests that BRCA-mutations may have distinct clinical and prognostic features that necessitate targeted disease management.

**PCN4**

**ESTIMATING POPULATION TRENDS IN COLORECTAL CANCER STRATIFIED BY STAGE, LINE OF TREATMENT, AND HIGH MICROSATELLITE INSTABILITY IN THE UNITED STATES FROM 2017 TO 2021**

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**OBJECTIVES:** Estimate 5-year future incidence/prevalence of colorectal cancer (CRC) in the United States (US) by age, gender and stage. Among CRC patients with metastatic CRC (mCRC) or recurrent CRC, estimate the population distribution across different lines of systemic therapy (L0T), stratified by high level of microsatellite instability (MSI-H). **METHODS:** Colon and rectal cancer age-adjusted incidence rates were calculated from the SEER-18 cancer registries, using first matching rule for patients aged ≥20 years diagnosed from 2004-2014. Estimated incidence/prevalence was calculated by multiplying tumor- and gender-specific incidence/prevalence proportions by the corresponding age- and gender-specific US population estimates for 2017-2021. Trend analyses of historical annual incidence rates (2004-2014) were used to generate average annual percent change to adjust the estimated CRC incidence counts. Estimates for 5-year recurrence rates were applied to prevalent CRC estimates. Combined incidence mCRC (stage IV) and CRC recurrence rates were stratified by L0Ts and MSI-H. **RESULTS:** Total 2017 US CRC estimates were 132,192; decreasing to 128,826 by 2021. Between 2017 and 2021, CRC incidence declines for both males and females. However, the greatest decline in CRC incidence is expected for individuals ages 20-49. Stage 1 CRC estimates exhibit a decreasing 5-year trend (32,687 to 30,727), while mCRC estimates show an increase (29,593 to 30,232). Combined mCRC and recurrent CRC will increase from 66,730 in 2017 to 70,512 in 2021, across all L0Ts and for MSI-H, CRC. Notably, estimated combined mCRC and recurrent CRC 3rd-line treated patients will increase from 10,574 to 11,223 over 5 years, and those treated by 3rd-line with long term use [≥5 years] will result in 1.60 (95% CI: 1.12-2.31). The OR of CRC with different tumors and sites was 1.60 (95% CI: 1.12-2.31). This study highlights that there was not seen for atypical or typical antipsychotics. **CONCLUSIONS:** Overall, no association was seen between the use of antipsychotics and the risk of CRC. However, an increased risk of CRC was seen with long term lithium use and differed between specific tumour sites.

**PCN50**

**UNDERSTANDING MORTALITY IN MULTIPLE MYELOMA (MM): FINDINGS FROM AN OBSERVATIONAL CHART REVIEW OF DECEASED PATIENTS IN THE UK, FRANCE, GERMANY, ITALY AND SPAIN**

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**OBJECTIVES:** To be the first study to evaluate data from deceased patients with MM in Europe, and describe patient characteristics, treatment patterns and outcomes before death. **METHODS:** A retrospective, descriptive, observational chart study investigated data from patients in France, Italy, Germany, Spain and the UK who died during the 3 months before study initiation. **RESULTS:** Of 789 cases extracted, one-quarter (24%) of patients had died following diagnosis of MM. Overall survival in 2016 was 66.9 months compared to 36.2 months in 2015. Most deaths were thought to be due to multiple myeloma, where 51% of individuals died during a treatment-free interval while receiving palliative care. Disease progression defined as death during a treatment-free interval was the most common cause of death (49%). Disease progression in 2016 was increased by 30% compared to 2015. Disease progression at 3 months in 2016 was associated with a 21% reduced median overall survival compared to 2015. Most deaths (71%) were from treatment-related deaths, which was not seen for atypical or typical antipsychotics. **CONCLUSIONS:** Overall, no association was seen between the use of antipsychotics and the risk of CRC. However, an increased risk of CRC was seen with long term lithium use and differed between specific tumour sites.

**PCN49**

**USE OF ANTIPSYCHOTICS AND THE RISK OF COLORECTAL CANCER: A CASE-CONTROL STUDY USING DATA FROM THE LINKED NETHERLANDS CANCER REGISTRY AND THE DOPAMINE RECEPTOR DATABASE**

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**OBJECTIVES:** To estimate the incidence of Non-small Cell Lung Cancer (NSCLC) globally between 2016 and 2026 and the estimated prevalence of EGFR mutations in this population. Oncogenic mutations have attracted more attention as carriers of oncogenic potential and have recently been associated with targeted treatments and disease outcome can be modified based on the presence of specific mutations. **METHODS:** To estimate the incidence of NSCLC we analyse the cancer incidence for specific cancer registries and NEOMICS database and NSCLC histology data (IARC, 2013). We reviewed the peer-reviewed literature for population-based studies estimating the prevalence of EGFR mutations in patients diagnosed with NSCLC. The meta-analysis was performed using random-effects model and pooled prevalence with 95% CI. **RESULTS:** Published survival rates, stratified by decade, for 21 common cancers were extrapolated with piecewise exponential models using 1-year, 5-year and 10-year survival estimates, assuming a minimum annual survival hazard equivalent to that of the general population. A partitioned survival model was used to compare cancer survival estimates with published age- and sex-adjusted general population LE estimates; mean per-patient life years (LYs) lost were derived. **RESULTS:** Between 1971 and 2010, estimated age-adjusted cancer LE decreased from 67.0 to 62.7 years across all cancer sites while the age-adjusted cancer LE for lung cancer LE increased from 17.2 to 22.9 years over the same period. Mean LYs lost to cancer in 1971 were 10.6, decreasing to 10.2 in 2010 driven by cancer treatment and survivorship. **CONCLUSIONS:** Latest cancer registry and SEER database highlights that there are still significant areas of unmet need, with several cancers seeing only marginal LE improvements.
to the matched sample. In multivariate analysis, RP patients showed lower (HR: 0.49; 95% CI: 0.17, 0.80), but no association was detected between ORR and OS or PFS. The corresponding 2-year OS rates were 29.9% (27.6; 32.2), 23.8% (20.6; 27.1), 20.4% (15.9; 25.4), and 34.6% (31.4; 37.8), respectively. CONCLUSIONS: Survival rates among patients with "real-world" mUC patients in the VA practice setting, who do not receive cisplatin-based treatments are suboptimal. New treatments are needed to address this unmet need.

PCN56

THE NOVEL GENERATION AND VALIDATION OF SURVIVAL CURVES IN ONCOLOGY UTILIZING ELECTRONIC MEDICAL RECORDS LINKED TO POINT OF SERVICE CLAIMS DATA

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OBJECTIVES: Recent studies have highlighted that combining survival curves with electronic medical records linked to point of service claims data is a major advantage in studies that limit its use. Few studies have described the overall survival (OS) of patients with mUC treated with non-carboplatin-based regimens. Among those treated with carboplatin-based regimens, carboplatin and gemcitabine was the most common regimen (321 [41%]), and among those treated with non-carboplatin-based regimens, single agent gemcitabine was the most common regimen (134 [16.3%]). The median survival time was 11.8 months (95% CI 11.2; 12.3) overall, 9 (8.8; 10.3) for patients treated with carboplatin and gemcitabine, and 14.5 (13.4; 15.4) for those treated with non-carboplatin-based regimens. The corresponding 2-year OS rates were 29.9% (27.6; 32.2), 23.8% (20.6; 27.1), 20.4% (15.9; 25.4), and 34.6% (31.4; 37.8), respectively. CONCLUSIONS: Survival rates among "real-world" mUC patients in the VA practice setting, who do not receive cisplatin-based treatments are suboptimal. New treatments are needed to address this unmet need.

PCN57

SURVIVAL RATES IN PRIMARY HEPATIC CARCINOMA PATIENTS WITH CIRRHOSIS IN SOUTH KOREA: A RETROSPECTIVE ANALYSIS OF 66,328 PATIENTS

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OBJECTIVES: Early detection of primary hepatic carcinoma (PCH) patients with cirrhosis is critical to enhance PCH patients’ survival rates because cirrhosis can significantly affect patient prognosis. Among the current treatments for PCH, surgery and targeted therapy are the most effective. However, targeting the best treatment approach is still a challenge. The study aimed to support the importance to detect PCH with cirrhosis early through determining current survival rates in PCH patients with cirrhosis.
Cirrhosis according to their characteristics. METHODS: A retrospective analysis was performed on 68,328 FHC patients with cirrhosis in the national cancer registry from 2005 to 2015 linked to the Korea national health insurance claims database. The survival rates and median survival durations of the patients were analyzed regarding their sex, age, surveillance, epidemiology, and end results (SSE). The effect of FHC at diagnosis on the survival rates was evaluated. RESULTS: There were differences in survival rates depending on their characteristics including SEER stage. The 5-year survival rates of hepatocellular carcinoma (HCC) patients aged 20-49 years were 54% (95% CI, 53-56%) for localized stage, 19% (95% CI, 18-20%) for regional stage and 4% (95% CI, 3-5%) for distant stage. If HCC patients aged over 75 years were for localized stage, their 5-year survival rate was 25% (95% CI, 23-27%) but they were for distant stage, their 5-year survival rate was 2% (95% CI, 1-3%). The overall median survival duration of HCC was 4.66 years (95% CI, 4.5-4.67) for localized stage but it was 0.33 years (95% CI, 0.3-0.35) for distant stage. This trend was observed consistently in other FHC groups regardless of sex or types of FHC at diagnosis. CONCLUSIONS: This study would improve the survival of adults with cirrhosis irrespective of their sex, age and type of FHC at diagnosis. The future studies would need to impact of the national liver cancer surveillance program on the survival rates of FHC patients with cirrhosis.

PCN58
PREDICTING OUTCOMES FROM MULTIPLE UNCONTROLLED HISTORICAL STUDIES OF TREATMENT OF PATIENTS’ CHOICE: PROGRESSION-FREE SURVIVAL AND OVERALL SURVIVAL IN UNTREATED METASTATIC MERKEL CELL CARCINOMA

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OBJECTIVES: Metastatic Merkel cell carcinoma (mMCC) is an ultra-rare skin cancer with a poor prognosis. With no licensed treatments available for mMCC, there been an interest in finding of care, with outcomes poorly understood. This study was to estimate progression-free survival (PFS) and overall survival (OS) outcomes from multiple studies of treatment of physician’s choice (TPC), most of which were uncontrolled and retrospective studies. METHODS: TPC data from multiple studies were searched to identify studies of Stage IV mMCC patients receiving TPC. Data were identified and analysed using regression techniques and visual inspection of Kaplan-Meier plots. Kaplan-Meier data from identified studies were digitized and standardized (where possible). Survival outcomes (in particular progression-free survival) were imbalanced. Extracted data were synthesised and analysed using appropriate methods such as pooling, inverse variance meta-analysis, or meta-analysis of curve parameters. RESULTS: Analysis of individual patient data from 67 patients from one study indicated that no characteristics, including age, gender, immunosuppression, disease stage at diagnosis or Eastern Cooperative Oncology Group (ECOG) performance status, was identified to have a prognostic effect on PFS or OS. Two further analyses were performed, first for patients with no randomised-controlled trials identified. As no prognostic factors were identified and outcomes were similar between studies, literature-based data were digitised and pooled. Fitting parametric curves to pooled data gave a median (mean) PFS of 4.3 (3.0) months and OS of 10.9 (18.0) months among patients with mMCC receiving first-line TPC using the generalised gamma and log-logistic curves, which provided the best fit. CONCLUSIONS: Outcomes in mMCC are poor, with no observed patient characteristic identified as prognostic. Similarly, outcomes between the uncontrolled studies were surprisingly homogeneous, despite differences in patient characteristics and treatment regimens. These TPC data help to put into context the results of emerging immuno-oncology therapies for mMCC.

PCN59
MATCHING ADJUSTED INDIRECT COMPARISON OF SUNITINIB AND EVEROLIMUS FOR THE TREATMENT OF PANCREATIC NEUROENDOCRINE TUMOURS (PNETS)

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OBJECTIVES: The relative effectiveness of sunitinib and everolimus to treat PNETs based on the RADIANT-3 everolimus trial. We performed a analysis using updated data for both treatments using individual patient data (IPD) from sunitinib’s trial (A618111), offering an opportunity to assess robustness of results to IPD source. METHODS: Analyses included Fischer-type comparisons using hazard ratios (HRs) for progression-free survival (PFS) and overall survival (OS) vs. best standard of care (BSC), and a MAIC matching on all baseline characteristics available from both studies. An anchored MAIC was performed for PFS, applying balancing weights in A618111 to derive an adjusted HR for sunitinib vs BSC. The ratio of this and the HR for everolimus yielded a HR for sunitinib vs everolimus. An unanchored MAIC was performed for OS since survival in the BSC arms may be contaminated differentially by crossover. A Cox model was fit the weighted OS data for sunitinib and virtual IPD for death/censoring times for everolimus derived from its published OS curve. RESULTS: The effective sample size after matching was 637 GEMHI at diagnosis and 353 for BSC. The 1-year HR for progression-free survival (PFS) for sunitinib vs everolimus was 1.20 (0.72-2.01), and 0.85 (0.39-1.89) after adjustment. Similarly, an unmatched OS comparison yielded 1.03 (0.75-1.54), this reduced to 0.82 (0.53-1.27) after matching. CONCLUSIONS: Like the prior MAIC analyses demonstrate comparable PFS and OS with sunitinib and everolimus, but produced point estimates that differ in direction. For PFS, this is attributable to baseline imbalances in A618111 favouring BSC that are adjusted for in the current analysis. For OS, the direction may change in updated survival data. Limitations include uncertainty due to the small size of the sunitinib trial, and possible residual confounding in OS comparisons. DISCLOSURE: This research was sponsored by Pfizer.
incremental cost of introducing ribociclib over 3 years in patients with HR+/HER2- breast cancer (74% of the scenarios compared relevant treatments for this population excluding or including ribociclib. Market shares were derived from market research and uptake assumptions (ribociclib was assumed only to displace other CDK4-based therapies). Treatment duration was based on median time to treatment discontinuation. Sensitivity analysis simulated the same cohort of all patients and median progression-free survival (all other comparators) based on clinical trial data. Acquisition costs represented the lowest wholesale acquisition costs within Medi-Span Price Rx® while considering co-payment. The model also included costs of pre-drug administration, monitoring, health state (progression-free and post-progression), subsequent treatment, and relevant serious (≥ Grade 3) adverse events based upon Medicare payments. RESULTS: Assuming 1 million insured members, the calculated number of patients eligible for treatment was 263. The introduction of ribociclib resulted in a $318.11 cumulative incremental cost saving per member treated per month. (This is a $0.15 incremental cost savings per member per month, respectively). The introduction of ribociclib: $125K, $1.04M, and $1.85M in Years 1-3, respectively ($0.01, $0.09, and $0.15 incremental cost savings per member per month, respectively). The introduction of ribociclib resulted in a cumulative incremental cost saving of $318.11 per member treated per month. CONCLUSIONS: The introduction of ribociclib as a first-line treatment option for post-menopausal women with HR+/HER2- advanced or metastatic breast cancer in the US offers a cost-saving option with reduced drug acquisition, adverse event, and subsequent treatment costs for US commercial payers.

PCN65 ECONOMIC BURDEN ASSOCIATED WITH SKELETAL-RELATED EVENTS IN PATIENTS WITH Bone Metastases in Colombia
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1Amgen Biopharmaceuticals SAS, Bogotá, Colombia, 2Econopharma Consulting, DF, Mexico OBJECTIVES: To assess the budget impact and incremental costs of osteoporosis treatment with denosumab and zoledronic acid patient management cost. Analysis indicated that the results were sensitive to the drug costs, 21 day window, and zoledronic acid patient management cost. Conclusions: SREs add substantial costs to the management of patients with bone metastases. The use of denosumab would lead to avoid SRE, to reduce health consequences and their treatment cost for the Colombian Healthcare System.

PCN66 BUDGET IMPACT ANALYSIS OF TRIFLURIDINE AND TIPIRACIL HYDROCHLORIDE (LONSARTAN) IN THE TREATMENT OF METASTATIC COLORECTAL CANCER (mCRC) IN THE GREEK MARKET FOR THE TREATMENT OF PATIENTS WITH METASTATIC COLORECTAL CANCER (mCRC) WHO HAVE BEEN PREVIOUSLY TREATED WITH REGORAFENIB CONSIDERING THE BUDGET IMPACT OF ATEZOLIZUMAB FOR THE TREATMENT OF 2ND LINE NON-SMALL CELL LUNG CANCER PATIENTS IN GREECE. The use of Atezolizumab (first year market shares 5% and fifth year 27%) as an alternative treatment option in the patients with mCRC may be cost saving over the next 5 years for the Greek payer.

PCN64 BUDGET IMPACT ANALYSIS OF FIRST-LINE CETIRIZINE IN THE TREATMENT OF ALK+ METASTATIC NON-SMALL-CELL LUNG CANCER (NSCLC) IN THE UNITED STATES
Muthu A1, Zhou Y1, Riculli M2, Han S2, Xie J, Dalal A, Culver K2
1Novartis Pharmaceuticals Corporation, East Hanover, NJ, USA, 2Analysis Group, Inc., Boston, MA, USA OBJECTIVES: Certitinib (Zykadia®) is now approved for first-line (1L) treatment of ALK+ metastatic non-small cell lung cancer (NSCLC) in the US. This analysis estimated the budget impact of adding certitinib to a US payer formulary for the 1L treatment of ALK+ metastatic NSCLC to a US payer formulary is estimated to yield modest savings to a US payer over the first 3 years.

PCN67 BUDGET IMPACT OF ATEZOLIZUMAB FOR THE TREATMENT OF 2ND LINE NON-SMALL CELL LUNG CANCER (NSCLC) AFTER FAILURE WITH PLATINUM CONTAINING CHEMOTHERAPY IN GREECE
Kyriopoulos G1, Kourkoulis G, Athanasakis K, Akratos A2, Theodoropoulou F2, Caporis X2
1Amgen Biotecnológica SAS, Bogotá, Colombia, 2Econopharma Consulting, DF, Mexico OBJECTIVES: Lung cancer is the leading cause of death from cancer. Greece is the European country with the highest incidence of lung cancer under the age of 45. Non-small Cell Lung Cancer (NSCLC) accounts for approximately 85% of all lung cancer cases. The purpose of this analysis was to estimate the potential budgetary impact of introducing Atezolizumab as a 2nd line treatment for NSCLC patients in Greece, after failure with platinum-containing chemotherapy. METHODS: The analysis was based on an economic evaluation model using a Markov model framework with 12 months cycles. Transition probabilities were obtained from the literature and Greek-specific inputs on health resource use, based on an expert panel of 10 oncologists. The analysis follows a third party payer perspective (Greek Social Insurance). RESULTS: The Incremental Annual Budget Impact of the gradual introduction of Atezolizumab as a 2nd line treatment in market share of 5% as a 2nd line treatment for NSCLC patients is projected to be €1,483,155, €3,377,747, €4,328,746, €14,421,391 and €5,016,492 for year one to five respectively. The uptake of Atezolizumab is estimated to result in an incremental cumulative budget impact of €18,627,531 for the five year time horizon of the analysis.
is sensitive to the price of Atezolizumab (and its comparators) and the projected market share prices for Atezolizumab the budgetary impact of its gradual uptake is of moderate size.

**PCN68**

**BUDGET IMPACT OF ALECTINIB IN THE TREATMENT OF NAÏVE ANAPLASTIC LYMPHOMA KINASE-POSITIVE (ALK+) ADVANCED NON-SMALL CELL LUNG CANCER (NSCLC) IN GREECE**

Kourkoulas N, Kyriopoulos D, Athanasakis K

**Objective:** Lung cancer poses a considerable disease and economic burden on healthcare systems globally. Alectinib, a highly selective, CNS-active anaplastic lymphoma kinase inhibitor, offers a treatment option for 5% of Non-Small Cell Lung Cancer (NSCLC) patients who carry mutations associated with ALK. The objective of this analysis is to estimate the potential budgetary impact of the introduction of Alectinib as a 1st line treatment approach in ALK+ NSCLC patients in the Greek healthcare setting.

**Methods:** The analysis was based on a budget impact model considering the market shares and price of Alectinib as a 1st line treatment approach in ALK+ NSCLC patients compared to Crizotinib, Ceritinib and chemotherapy. The model was populated with epidemiological and clinical effectiveness data from the literature and Greek-specific inputs on health resource use, based on an expert panel of 10 oncologists. The analysis followed a third-party payer perspective (Greek Social Insurance).

**Results:** 109 patients are estimated to be the ALK+ NSCLC in Greece per year. The gradual introduction of Alectinib as a treatment for naïve ALK+ NSCLC patients (first year market share 3%, fifth year 60%) is projected to result in an annual incremental budget impact of €1,731,455,546, F.1,245,171, €2,693,602 and €3,808,402 for year one to five respectively, compared to the “world without” scenario. The cumulative budget impact (8,632,470 for the five year time horizon of the analysis) is sensitive to the price of Alectinib and (its comparators) and the projected market shares. **Conclusions:** Based on the available epidemiological data for Greece, 5100 patients are diagnosed with NSCLC, of which 10% are eligible for treatment with an ALK inhibitor such as Alectinib. Owing mostly to the small number of patients, the budget impact of the introduction of Alectinib is reasonable.

**PCN69**

**TO DETERMINE THE FINANCIAL IMPACT OF INTRODUCING SC RITUXIMAB (MABTHERA) VS. CURRENTLY USED IV RITUXIMAB (MABTHERA) ON THE BUDGETS OF DIFFERENT HOSPITALS ACROSS THE KINGDOM OF SAUDI ARABIA (KSA)**

Balu M1, Pal R2, Ali N3, Saffa M2, Narang A4, Goyal S5

**Objective:** Rituximab is the standard of care in Non-Hodgkin’s lymphoma (NHL) treatment. It is usually administered as intravenous (IV) infusion. This study investigated the economic implications of using rituximab subcutaneous (SC) compared to IV in the Khalifa University Hospital (KUH) in Abu Dhabi, UAE.

**Methods:** A budget impact model was developed to estimate the financial impact of introducing fixed dose rituximab SC compared to IV formulation for the treatment of NHL on budgets of different hospitals in KSA over a 3-year period. Total and cost inputs were obtained through discussion with medical oncologists and hematologists. Global Budget Impact model of rituximab was adopted reflecting the local treatment practice. The model compared both drug and medical costs for the two formulations. It also assessed the impact of gradual replacement of IV with SC in up to 75% of patients (SC adoption in Year 1: 25%; Year 2: 50%; Year 3: 75%). **Results:** The introduction of rituximab SC vials across different hospitals in KSA is expected to lead to cost savings by decreasing total cost of treatment by 6.5% to 17.6%. Reduction in both drug cost (ranging from 8.57% to 53%) in 1L and 38% in 2L+) and medical costs (ranging from 1.6% to 4.4%; for Year 2, ranged from 3.3% to 8.8% and for Year 3, ranged from 4.9% to 13.2%). **Conclusions:** Rituximab SC reduces the overall treatment cost as compared to Rituximab IV thus decreasing the budgetary impact in KSA.

**PCN70**

**BUDGET IMPACT ANALYSIS OF AVELUMAB IN PATIENTS WITH METASTATIC MERKEL CELL CARCINOMA IN THE US**

Bharmal M1, D’Angelo SB2, Bhattacharyya M3

**Objective:** The objective of this research was to estimate the budget impact of avelumab (BAVENCIO®) as a treatment option for patients with previously treated (2L+) and untreated (1L) metastatic Merkel cell carcinoma (mMCC) in the United States (US). **Methods:** A budget impact model with a five-year horizon was developed. Comparators were pembrolizumab and chemotherapy recommended for use in the eligible population. It is anticipated that avelumab and pembrolizumab, both immune-oncology agents (OIs), are expected to partially replace chemotherapy as a first-line treatment. Avelumab was identified as a potential second-line treatment option following pembrolizumab failure. **Results:** Avelumab was estimated based on the clinical study results for avelumab (AVELIN Merkel 200); an observational study of patients with mMCC treated with chemotherapy, and evidence from a single arm study for pembrolizumab (NCT02051603). Costs included drug acquisition and administration, monitoring, adverse events, and transport costs. All inputs were validated by practicing clinician opinion. **Results:** Avelumab was estimated to have a budget impact of US$96,316,000 (PMPY) in 2017, 294 patients were estimated to have mMCC, with mMCC confirmed in an estimated 77 patients eligible for treatment with avelumab as 1L and 23 as 2L treatment. The budget impact of avelumab was estimated to be US$0.0006 per member per month (PMPM) in 1L. Over 5 years the total budget impact is US$0.013 PMPY. A slower uptake of 10 agents (e.g. if their market share remained at 53% in 1L and 38% in 2L) would result in a 5-year budget impact of US$0.011 PMPY. On the contrary, if 10 agents completely replaced chemotherapies the impact would be US$0.022 PMPY. **Conclusions:** Avelumab is a rare condition with a poor prognosis and patients stand to benefit greatly from new innovative immunotherapies. The addition of avelumab as a treatment option would likely result in a very modest increase in healthcare expenditure.

**PCN71**

**FINANCIAL CONSEQUENCES OF THE PERFORMANCE OF A PD-L1 TEST TO SELECT PATIENTS RECEIVING SECOND AND THIRD LINE TREATMENTS FOR NON-CELL LUNG CANCER IN ITALY**

Barcelli D1, Antale S2, Pacelli V1, Coco D2

**Objective:** The objective of this analysis is to assess the financial consequences of a therapeutic strategy aimed at selecting patients eligible to receive immune-oncological therapies to maximize clinical outcomes for the treatment of Non-Small Cell Lung Cancer (NSCLC) in Italy. **Methods:** A budget impact analysis was performed implementing a therapeutic algorithm for the treatment of NSCLC, based on a previous analysis performed by Prof. Paz Ares, the ESMO 2016 guidelines and Italian real clinical practice. Two scenarios were implemented considering patients’ pathway from second to third line treatments: a base case scenario in which patients do not perform a PD-L1 test and a conditional scenario in which such test is performed. The second scenario is characterized by a selection of the patients for whom the clinical benefits of the administration of immune-oncological treatments would be more evident thanks to the PD-L1 clinical trials results. The costs considered were direct medical costs (referred to 2017) related to oncological treatments, treatments’ administration and PD-L1 test. **Results:** The target population consists of 9,216 patients starting a second line treatment. The cost to treat second line in a scenario considered second and third line of treatment is estimated to be 137.1 million € in the base case scenario and 98.2 million € in the comparative scenario, with a ~8.9 million € impact on the budget of the Italian National Health Service. **Conclusions:** Cost savings would be achieved by a decrease of the cost to treat second line NSCLC patients in Italy, with a decrease of almost 39 million € for the Italian National Health Service, as a consequence of an increase in the appropriateness of the treatment.

**PCN72**

**PREDICTING THE FUTURE COSTS OF CANCER BASED ON REGISTER DATA AND INNOVATION TRENDS**

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**Objective:** The objective of this study is to predict the costs of cancer on health-care systems worldwide based on the increased demand for evidence-based research on which to base planning and budget decisions. Models are well fit to predict future incidence and provide a basis for allocating resources in order to allocate them in the most efficient way. Also, it is well known that the cancer population consists of 9,216 patients starting a second line treatment. The cost to treat second line in a scenario considered second and third line of treatment is estimated to be 137.1 million € in the base case scenario and 98.2 million € in the comparative scenario, with a ~8.9 million € impact on the budget of the Italian National Health Service. **Conclusions:** Cost savings would be achieved by a decrease of the cost to treat second line NSCLC patients in Italy, with a decrease of almost 39 million € for the Italian National Health Service, as a consequence of an increase in the appropriateness of the treatment.

**PCN73**

**HEALTHCARE COSTS ASSOCIATED WITH CERVICAL CANCER, PRECANCEROUS LESIONS, AND GENITAL WARTS TREATMENT IN TAIWAN**

Tang C1, Jiang J2, You S1, Cheng W2

**Objective:** The objective of this study is to model changes in the use of health care services for women affected by cervical precancerous lesions and high-grade cervical intraepithelial neoplasia (CIN1) and 3,294 cases of high-grade CIN (CIN2/3) were identified from the linked biopsied dataset and pap smear dataset test in Taiwan. This study aimed to investigate the healthcare costs associated with cervical cancer, precancerous lesions and genital warts (GV) treatment in Taiwan. **Methods:** Three patient groups were analyzed: A total of 15,157 cases was estimated. An algorithm was performed to identify cases of high-grade cervical intraepithelial neoplasia (CIN1) and 3,294 cases of high-grade CIN (CIN2/3) were identified from the linked biopsied dataset and pap smear dataset test. A third, a total of 6,618 new cases of
invasive cervical cancer (ICC) in 2008-2011 were identified from Taiwan cancer registry database. The main measure of cost-effectiveness was the share of patients without ILND complications ratio (CER) and budget impact were analyzed. The study considered costs of in groups of 100 patients. Public health care costs were determined; cost-effectiveness analysis (CEA) publications provide vital information for health economic value-based decisions, therefore timely publication of CEA is essential. A literature analysis of CEA publications in non-small cell lung cancer was conducted. The key criteria of "human", "non-small cell lung cancer", "cost-effectiveness analyses". Information extracted from the eligible publications included: CDF, CRD, country, drug, and type of economic evaluation. Ds were retrieved from regulatory bodies’ websites and news reports. To determine publication timing CDF – CRD and CDF – DD were calculated, and descriptive statistics used to evaluate the timings. RESULTS: Fifty-two eligible publications were identified. 22 from NA (Canada: 18%, America: 62% and 18% from Europe, which consisted data on 3 countries, with France having the most (36.7%) publications. Across all publications, mean CPD – DD delay was 3.75 years (NA: 3.7 years; EU: 3.8 years) and mean CDF – CRD delay was 2.1 years (NA and EU: 2.1 years), and only 25% used real-world data. Most common types of economic evaluations were costutility analysis (44.2%), CEA (11%), direct cost (13.5%), and budget impact model (7.7%).Fourteen of the 24 NSCLC treatment drugs had at least 1 CEA publication, erlotinib had the most (48%) publications. CONCLUSIONS: As peer review time in time-consuming and dependent on drug coverage, and limited coverage of EU countries, publication timing and availability could be improved to support a faster and better informed appraisal of NSCLC medication. Further, CEA publications could benefit from using more (local) real-world data as input for CEA models.

PCN75

PHARMAECONOMIC ASPECTS OF VARIOUS STRATEGIES OF VESSEL SEALING AND RESECTION OF POSTOPERATIVE COMPLICATIONS OF INGUINAL LYMPH NODES DISSECTION IN PATIENTS WITH GYNECOLOGIC CANCERS

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OBJECTIVES: Pharmacoeconomic evaluation of various strategies of vessel sealing for the treatment of postoperative complications of inguinal lymph node dissection (ILND) in Russian patients with gynecologic cancers. METHODS: A modeling of outcomes and costs of intraoperative strategy of TachoComb hemostatic sponge and strategies of final hemostasis was conducted based on clinical study by A. Buda et al. with consideration of the frequency of complications after ILND. TachoComb (as new strategy) and traditional methods of lympho- and hemostasis was included into territorial programs of state guarantees (TPSG) were evaluated in groups of 100 patients. Public health care costs were determined; cost-effectiveness ratio (CER) and budget impact were analyzed. The study considered costs of in-patient treatment according to TPSG, and additional costs of TachoComb. The main measure of effectiveness was the share of patients with ILND complications (lymphphoma, cellulitis, disruption and infections of postoperative wound, lymphedema). The frequency of complications of ILND corresponded with the study by A. Buda et al. The length of stay in hospital (LOS) in cases with complications was assessed by expert gynecologic oncologists. RESULTS: The LOS was 10 days in cases without complications, and 26 days with complications. Considering the frequency of complications, a hospital received from TPSG £393.12 for each TachoComb group, and £97.25 RUB in the traditional care group. CER values were £50,766.49 to 55,180.96 in the TachoComb group, and 57,689.19 to 90,654.44 in the traditional care group (maximal value in lymphphoma and minimal in wound infections). The sensitivity analysis considered the changes in costs of vessel sealing depending on the frequency of lymphocele, which required drainage, and confirmed the benefit of TachoComb. CONCLUSIONS: The TachoComb definitely has advantages in respect of budget impact due to reduced LOS, better outcomes and cost-effectiveness ratio for the frequency of ILND complications.

PCN76

AN ECONOMIC EVALUATION MODEL FOR FOLLICULAR LYMPHOMA (FL): PREDICTING TREATMENT COST, LIFE EXPECTANCY AND QUALITY-ADJUSTED LIFE YEAR OF DIFFERENT SCENARIOS USING UK POPULATION BASED OBSERVATIONAL DATA

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OBJECTIVES: Follicular lymphoma (FL) is the commonest indolent lymphoma, with ~1,860 new cases diagnosed each year in the UK. Clinical management ranges from immediate treatment with chemotherapy and/or radiotherapy, to observation (“watch-and-wait”), initiating treatment if/when symptoms develop. Previous studies have focused on clinical trial data for specific drugs, meaning that their findings cannot be extrapolated to the general patient population. Based on a population-based patient-cohort, the objective of this study was to develop a generic and flexible decision model to reflect real-world practice and predict cost, survival and quality-adjusted life years (QALY) for different scenarios. METHODS: Patients newly diagnosed 2004-11 with FL in the UK’s population-based Haematological Malignancy Research Network (www.hmrn.org) were followed until 2015 (n=746). Mapped treatment pathways, QALYs, and cost information, were incorporated into a discrete event simulation that reflected patient heterogeneity, including age and treatment preferences. Two scenarios were modeled: 1) NICE guidance (NG52 and TA226) were conducted. RESULTS: The annual cost of treating FL across the UK was around £55 million. The predicted mean cost and QALY per patient from diagnosis to death was £73,721 and 9.78, respectively. QALYs were highest for those who received watch-and-wait (49%); next highest for those managed with treatment (38%); then treatment (20%) and no treatment (8%). CONCLUSIONS: This is the first modeling study to use ‘real-world’ evidence to predict costs of entire FL treatment pathways and permit scenario analyses at any part of the pathway.
Future application of the model could support healthcare policy-making and the introduction of new drugs such as biosimilars.

PCN79
THE COST STUDY OF CETUXIMAB AND PANITUMUMAB IN THE FIRST-LINE TREATMENT OF mCRC IN THE CZECH REPUBLIC
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OBJECTIVES: The EGFR antibodies cetuximab and panitumumab are reimbursed in the Czech Republic in combination with chemotherapy or alone for the treatment of WT RAS patients with metastatic colorectal cancer (mCRC). However, the high cost is a potentially limiting factor. The aim of this analysis was comparison of costs in treatment with cetuximab or panitumumab in the first-line treatment of mCRC.

METHODS: The costs and effectiveness of cetuximab and panitumumab in the treatment of patients diagnosed with mCRC and treated in the National Healthcare Center from the perspective of healthcare payer. Cost data (examination, medication, hospitalization) were collected since the initiation of cetuximab/panitumumab treatment to any tumour response (RECIST criteria) and/or to death.

RESULTS: A total of 22 (72.6%) patients were treated with cetuximab and 29 (69.2%) patients were treated with panitumumab. Costs were converted to EUR (€ = CZK 26.23). RESULTS: In total 22 (72.6% men, mean age 60) and 29 (66.6% men, mean age 58) WT KRAS patients with mCRC were treated with cetuximab and panitumumab in the first-line treatment between 11/2011 and 07/2016. The treatment was mostly discontinued in both evaluable groups due to PD (cetuximab 59.1%; panitumumab 55.2%). The mean costs per progression-free survival (median 10.7 and 8.1 months) were EUR 36,762.7 ± 38,875.9 (CZK 909,700.57 €) and CZK 1,000,235 (€ = 76,663.2) per cetuximab and panitumumab respectively. During our follow-up period 55% patients died in cetuximab group, 41% patients in panitumumab group. The median overall survival was 17.3 and 12.1 months and the mean costs since initiation of treatment to death were EUR 48,978.7 ± 48,978.7 (CZK 1,284,712.1 ± CZK 1,284,685.1) per patient treated with cetuximab and panitumumab respectively. CONCLUSIONS: The reimbursement of EGFR antibodies was the highest cost driver in both patient groups. Drugs made up more than 71% (cetuximab) and 77% (panitumumab) of total costs to PD.

PCN80
IDENTIFICATION OF GENERIC CANCER MEDICINES THAT HAVE UNDERGONE MOMENTOUS PRICE RISES IN THE NHS IN ENGLAND
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OBJECTIVES: Over the last 40 years, the rising trend in cheaper generic medicines has enabled the national health service (NHS) to save billions of pounds which have been used to fund new and innovative medicines. However, recent incidents suggest new generic medicines are not always cost-effective. The aim of the study was to identify generic medicines that may be underestimated and possibly missed by the recent opening of a formal investigation by the European Commission (May 2017) against a pharmaceutical company regarding alleged cases of unfair and significant price increases for generic cancer medicines. We seek to understand if similar pricing practices are taking place widely in generic cancer medicines and in other areas of high demand such as anti-hypertensives, statins and antacids.

METHODS: Medicines of interest were categorised as generic cancer medicines and associated supplementary medicines. Price and formulation data was obtained from the British National Formulary (BNF). The timeframe of interest was from September 2010 to May 2017. Longitudinal price changes were compared and trends were identified for the different categories of medicines.

RESULTS: A total of 12,789 (n = 271) general pharmaceutical products were included in a number of generic cancer medicines, with some prices increasing between 100% and 1,314% between 2010 and 2017. The highest price increase observed was that of ocrelizumab, for the treatment of leukaemia, which rose from 21 p to 2,927 p in 294 tables in 2010 to £2.76 in 2017. CONCLUSIONS: Although substantial price rises were seen in a small group of cancer medicines, a similar pattern was not seen across all cancer medicines. It is not clear whether care was denied to patients or whether care was delayed. Further application of the model could support healthcare policy-making and the introduction of new drugs such as biosimilars.
to promote cost savings. RESULTS: The cost of treatment under protocolisation is significantly less (95% CI = (24.0%; 28%)); p < 0.0001, Student’s t-test). The validity of the results was confirmed by performing the analysis on a previous year’s data (n = 38,443, p < 0.0001, 95% CI = (24.0%; 28%)). A sensitivity analysis was performed using the minimum cost (95% CI = (25.3%; 30%)) to extrapolate the data as well as the maximum cost (95% CI = (25.3%; 31.5%)). These results showed no denial of care. CONCLUSIONS: The ICON solution results in similar or better clinical outcome but with putative reduction in cost.

OBJECTIVES: To perform an incremental cost-effectiveness analysis (ICEaR) on the treatment of advanced, metastatic leiomyosarcomas—one of the most common STS subtypes—comparing two licensed drugs in Scotland: trabectedin and pazopanib, and as such, from the Scottish Medicines Consortia’s (SMC) perspective. METHODS: Clinical efficacy data were sourced from two independent randomised, phase III trials: ET743-SAR-30071 (individual patient level data) and PALETTE2 (aggregated data). Following a MAICS, adjusted survival Hazard Ratios (HRs) were derived and plugged into a standard partitioned survival model containing three health states: stable disease, progressive disease, and death, in line with other oncology treat-ments submissions to the SMC. Medical resource costs—treatment administration, diagnostic and management related adverse effects—were extracted from the 2017 UK’s National Healthcare System tariffs. Drug acquisition costs were taken from British National Formulary Associated EQ-5D associated health utilities, were informed by the pharmacoeconomic based study. Both costs and utilities were annu-ally discounted, in line with current SMC’s guidelines, at a rate of 3.5%, within a lifetime horizon. RESULTS: Deterministic analysis yielded an ICER of £34,378, which corresponded to an average incremental cost of £2,179 per woman. A QALY gain of 0.08 (translated from 0.16 years of average life extension). Meanwhile, the probabilistic sensitivity analysis provided with a mean ICER of £34,378 (95%CI: £31,054 to £37,953). Nearly half of the whole costs were borne by other than treat-ment-related ADL/LP. Outputs were sensitive to the number of average treat-ment cycles, dosage reductions and cycle costs. The cost-effectiveness ‘associated acceptability curve yielded a chance of trabectedin standing below the willingness to pay of 75%. Trabectedin remains as a cost-effective choice—compared to pazop-anib—when the threshold of £50,000 per Quality Adjusted Life Year (QALY) — is taken into account. CONCLUSIONS: From the SMC perspective, trabectedin is a cost-effective option for the treatment of advanced, metastatic, leiomyosarcomas, when compared to pazopanib.

Background: In post-menopausal women in the United Kingdom, the management of advanced, metastatic breast cancer (MBC) is usually based on a stepwise treatment approach. However, to our knowledge, no previous study estimates the progression- indirect comparison. RESULTS: The cost of treatment under protocolisation is significantly less (95% CI = (24.0%; 28%)); p < 0.0001, Student’s t-test). The validity of the results was confirmed by performing the analysis on a previous year’s data (n = 38,443, p < 0.0001, 95% CI = (24.0%; 28%)). A sensitivity analysis was performed using the minimum cost (95% CI = (25.3%; 30%)) to extrapolate the data as well as the maximum cost (95% CI = (25.3%; 31.5%)). These results showed no denial of care. CONCLUSIONS: The ICON solution results in similar or better clinical outcome but with putative reduction in cost.

OBJECTIVES: To quantify the financial burden of A-NSCLC from a patient and car-er perspective and to evaluate the impact of disease stage on costs. METHODS: resource use data were provided by local dermatologists and oncologists, members of an expert panel. Unitary costs for healthcare resources were obtained from local databases. RESULTS: The cost of treatment under protocolisation is significantly less (95% CI = (24.0%; 28%)); p < 0.0001, Student’s t-test). The validity of the results was confirmed by performing the analysis on a previous year’s data (n = 38,443, p < 0.0001, 95% CI = (24.0%; 28%)). A sensitivity analysis was performed using the minimum cost (95% CI = (25.3%; 30%)) to extrapolate the data as well as the maximum cost (95% CI = (25.3%; 31.5%)). These results showed no denial of care. CONCLUSIONS: The ICON solution results in similar or better clinical outcome but with putative reduction in cost.

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PCN90
ASSESSING THE HEALTHCARE COST OF DIABETIC NON-SMALL CELL LUNG CANCER (NSCLC) PATIENTS TREATED AT THE UNIVERSITY HOSPITAL, ANTWERP

OBJECTIVE: Cancer is the second leading cause of death worldwide. Mechanisms involved in the relationship between type 2 Diabetes (T2D) and cancer is not completely understood, and even less is known about its association with Non-Small Cell Lung Cancer (NSCLC). While these systemic responses are reasonably well understood, an adequate explanation how healthcare utilization is impacted for patients with T2D and NSCLC is lacking. Our objective was to investigate the cost of care for T2D patients with NSCLC.

METHODS: We conducted a cohort study design utilizing Medicare claims from the SEER-Medicare linked database (2007-2014). Quantile regression was used to estimate the predicted mean at the 25th, 50th and 75th percentile for total healthcare costs after incidence NSCLC diagnosis. The quantile regression was adjusted for cancer stage, gender, age, race and smoking. Each follow-up day was then divided by the number of days within the 25th, 50th and 75th quantiles to adjust for varying follow-up. Cost data represented the actual paid (reimbursed by Medicare) amounts for health services. RESULTS: Of 17,176 NSCLC patients, 5,056 had type 2 diabetes. The pre-progression annual cost was $48,64/day. For, diabetic NSCLC patients, the predicted mean value at the 25th, 50th and 75th percentile was $4.13/day, $9.16/day and $7.23/day. For NSCLC patients with T2D, the predicted mean value was higher at the 25th percentile (7.90/day) compared to the 50th and 75th percentile (8.52/day and 8.59/day, respectively).

CONCLUSIONS: The study challenges the notion that cost of care for diabetes is lower than for patients without diabetes. Further research is needed to understand the role of diabetes in the cost of care for patients with NSCLC.

PCN91
COSTS ASSOCIATED WITH DISEASE PROGRESSION IN ADVANCED MELANOMA – A CLAIMS ANALYSIS USING A NOVEL STAGING ALGORITHM

OBJECTIVE: To estimate the real-world costs associated with disease progression among patients with advanced melanoma. METHODS: Patients with advanced melanoma that progressed from non-visceral (stage IIIA/B/C and IVm1a) to visceral (stage IVm1b and IVm1c) disease were identified using a novel clinical algorithm based on secondary neoplasm diagnoses, melanoma treatments, and elevated LDH. Incident cases were then identified. These were matched with patients with stage IIIA/B/C and patients with stage IVm1a. Differences between pre- and post-progression per-patient-per-month are associated with direct healthcare costs were reported in 2015 US dollars and compared using Wilcoxon signed-rank test and generalized estimating equations, adjusting for first observed non-visceral stage, comorbidities, and region of residence. RESULTS: The analyses included 2,126 patients (1,063 per cohort). Mean age was 58 years and 43% were male. On average, patients had 9 months of observed pre-progression period. Compared to non-progressed patients, a larger proportion of progressed patients were initially diagnosed with stage IVm1a instead of stage III (25% vs. 13%; p<0.001). Progressed patients also had more comorbidities, with significantly higher rates of mild liver disease (11% vs. 4%; p<0.001), cerebrovascular disease (6% vs. 3%; p=0.01), and myocardial infarction (2% vs. 1%; p=0.043) during the 6 months before progression. From the pre- to the post-progression period, progressed patients saw an average increase in costs ($5,467) compared to a decrease for non-progressed patients ($1,260), with a difference-in-difference of $8,727 (p<0.001). The average friction cost method, and 28.5 months before progression. The median duration of stay was 34 days (SD: 18). Average overall cost of treatment and follow-up per patient is $57,054 (95% CI 48,228-66,406), of which $55,054 (95% CI 46,477-64,109) was covered by NIHDI. Costs are driven by hospitalization costs (66% of total costs). Patients diagnosed with stage IV disease had an average overall cost of $49,639 (95% CI 38,009-61,269); expensive drugs and implants adjuvant melanoma is associated with considerable costs for both NIHDI and patient.
OBJECTIVES: Hepatocellular carcinoma (HCC) is a leading cause of cancer-related death, causing high disease and economic burden in incoming years. In spite of its popularity and importance of treatment, the number of research focusing on HCC-related treatment costs in Viet Nam is still limited, so this study aims to evaluate the treatment costs of HCC from the health insurance's perspective of Vietnam.

METHODS: The decision-tree model was built based on the HCC treatment guideline of American Association for the Study of Liver Diseases – AASLD and Ministry of public health Viet Nam 2013 to estimate the direct treatment cost per patient per year. The data was collected in Bach Mai hospital - a large hospital specializing in HCC treatment in Viet Nam - from a cohort of all HCC patients in 2015. Costs included the unit costs of test, procedures, imaging, hospitalizations, medications, and all subsequent care of the HCC patients until either death or the end of follow-up.

RESULTS: Study sample included 216 patients with average age at 56.88 ± 0.74, 88% of men and 12% of women, 16.72 ± 0.99 days of the length of hospitalization. The main treatments used were 93.3% included a median of 10.9% patients per year, in which, 83% was covered by healthcare insurance and 17% by patients. The medical service cost was 4.8 times higher than the medication cost (VND 39 767 ml vs 8.37 ml).

CONCLUSIONS: The results show a considerable economic burden of HCC, with an upward trend of cancer deaths, high cost burden of treatment, healthcare policies and national medical programs should be considered.
As BSC is provided individually to patients, costs for BSC in Germany for patients with advanced NSCLC are not usually treated individually with best supportive care (BSC). This research aims to estimate annual costs of BSC for these patients from the perspective of the Statutory Health Insurance (SHI) in Germany. METHODS: Recommended measures for BSC were identified from the German development stage 3 (S3) guideline for lung cancer. The costs of these measures were estimated based on official German cost data. RESULTS: The annual costs of the recommended measure are as follows: for the S3 guideline, costs for anesthetics, epidemics, corticosteroids, bronchodilators, benzodiazepines, antidepressants, laxatives, bisphosphonates, denosumab, levodropropizine, metoclopramide, anticonvulsants) from 116.80 € to 2,032.88 €, for radiotherapy 2,390.00 € and 5,889.51 €, respectively (depending on regime), for palliative surgery 5,643.67 € for rehabilitation 3,660.20 € and for three further measures (psychotherapy, physical therapy, therapy with oxygen) from 756.60 € to 2,194.25 €. Summing up the costs of these measures, the upper limit of annual costs is 27,838.81 €. These costs do not include costs for inpatient palliative care or treatment in the terminal phase. CONCLUSIONS: As BSC is provided individually to patients, the annual costs of BSC in Germany for patients with advanced NSCLC lay within a wide range (from 116.80 € to 2,194.25 €) and are significantly higher for patients requiring treatment more frequently, further research regarding the frequency of each recommended measure for BSC in Germany is needed.
to be synthesized. This complicates rapid and transparent assessment of actual cancer drug treatment cost, which is necessary to focus strategies aiming to reduce the increasing healthcare costs. Differences exist in list prices within countries and between countries, thereby influencing the corresponding estimated treatment costs and resulting in list prices having limited value in this context. Therefore, extending standardization and harmonization of drug information, from the prescription stage to utilizing real-world price estimates in such calculations is highly recommended.

PCN107

LANDSCAPE OF MALIGNANT MELANOMA: THE IMPACT OF UPCOMING THERAPIES

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OBJECTIVES: Malignant melanoma (MM) is both the most aggressive and fatal form of skin cancer, with an increasing incidence over the past years. Treatment options have shown significant progress with the emergence of immunotherapy and combination therapies, and recently with the adoption of combination therapies. This study aims to analyze and estimate the financial impact for the Portuguese NHS of the MM market dynamics until 2020.

METHODS: MM patients estimation was calculated from a national database (data regarding disease incidence, staging, net survival, mutation split, progression rates between treatment lines and regimen share per line) impacted by the probability of influential upcoming events. Fractions of patients were treated to expenditure considering a per patient drug comprised both products’ list price and expected time on therapy.

RESULTS: MM incidence is expected to increase at an annual rate of 3.4% until 2020. Targeted therapy combinations for BRAF+ and immunotherapy for BRAF wt patients, besides being more expensive, brought an increase in Progression-Free Survival figures, leading to an annual increment of MM drug related expenditures of 20.8%. In 2020 MM drug expenditure will account for 62.9 M€, more than double 2015 figures.

CONCLUSIONS: Innovative therapies are emerging, and perceived as beneficial for all cancer patients, and MM is no exception. Oncology drugs are fully-funded by the Portuguese State and Hospitals have therefore, significant financial interest to introduce these medications. MM is increas-ingly important to have visibility on the different diseases burden. As in previous years, the Portuguese MoH intends to curb drug expenditure, hence estimating the drug-related expenditure for the most prevalent diseases enables a more efficient decision-making process for Hospital management and a more informed discussion on access to innovation by the entire Society.

PCN108

CLINICAL AND ECONOMIC HISTORY OF THE ONCOLOGICAL PATIENT AT THE END OF LIFE

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OBJECTIVES: The objective of this work is to calculate the individualized cost of healthcare to cancer patients at the end of life by aggregating all the hospital activity performed to each patient. METHODS: Descriptive study based on administrative records of activity and costs. The study population are cancer patients died in the province of Granada in 2015. Data were organized in cost centers related to drug and performed. The data sources are the Registry of Cancer of Granada, records of health care activity of public hospitals in the province and the Analytical Accounting System of the Public Health care System of Andalusia. Combining the information collected in the above mentioned systems, a database of the Economic History of the Patient is generated, which includes the last 24 months of life. The minimum unit of information is each patient hospital stay. This allows the health care service to be detailed with the date, medical specialty, reason for attendance and reasons for discharge.

RESULTS: A total of 2978 patients from the Granada Register of Cancer with health care activity have been identified. To date, information has been gathered from external consultations, hospitalization, surgery, laboratory tests and radiodiagnosis and ambula-tory hospital sessions. The consolidated information provides a chronology of the assistance received that allows to reconstruct, for each patient, the actual develop-ment of their care process in the last months of life and the cost associated with that process. CONCLUSIONS: The reconstruction of the process of health care activity at patient level through administrative records is a practice still not very widespread in the public health care sector. The knowledge of the unit hospital cost of the treatment of a cancer patient at the end of life and its composition will facilitate an improve-ment in clinical-economic efficiency in cancer patients and the identification of more efficient treatment patterns according to clinical situation.

PCN109

REAL-WORLD HEALTH CARE RESOURCE UTILIZATION AND RELATED COSTS AMONG PATIENTS TREATED WITH IPILIMUMAB VIA TWO LINES OF TREATMENT FOR ADVANCED NSCLC IN ENGLAND, THE NETHERLANDS, AND SWEDEN

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OBJECTIVES: Real-world evidence on costs associated with ipilimumab. We investigated healthcare costs of ipilimumab treatment in Dutch patients with advanced cutaneous melanoma and compared costs across subgroups.

METHODS: Data were retrieved from the nation-wide Dutch Melanoma Treatment Registry for patients diagnosed between July 2012 and 2015. Ipilimumab episode duration was computed from start of ipilimumab until start of a next systemic treatment, death, or last date of follow-up. Costs were determined by applying unit costs to hospitalization, surgery, diagnostic laboratory tests and radiodiagnosis and ambula-tory hospital sessions. Baseline characteristics were comparable across subgroups. Mean (median) episode duration was 6.2 [4.6] months. Average total healthcare costs amounted to €81,484, but varied widely (range: €18,131–160,002). Ipilimumab was the most important cost driver (>3,774,068). Costs were substantial in aNSCLC patients, with systemic treatment account-ing for 48.5% of total median costs. NSQ patients incurred higher total costs than SQ patients in Sweden and the Netherlands, and similar costs in England. Ongoing real-word data are needed to capture changes in ipilimumab due to the evolving NSCLC treatment landscape.

PCN110

HEALTHCARE COSTS OF IPILIMUMAB IN PATIENTS WITH ADVANCED CUTANEOUS MELANOMA IN DUTCH CLINICAL PRACTICE

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OBJECTIVES: There is limited evidence on costs associated with ipilimumab. We investigated healthcare costs of ipilimumab treatment in Dutch patients with advanced cutaneous melanoma and compared costs across subgroups.

METHODS: Data were retrieved from the nation-wide Dutch Melanoma Treatment Registry for patients diagnosed between July 2012 and 2015. Ipilimumab episode duration was computed from start of ipilimumab until start of a next systemic treatment, death, or last date of follow-up. Costs were determined by applying unit costs to hospitalization, surgery, diagnostic laboratory tests and radiodiagnosis and ambula-tory hospital sessions. Baseline characteristics were comparable across subgroups. Mean (median) episode duration was 6.2 [4.6] months. Average total healthcare costs amounted to €81,484, but varied widely (range: €18,131–160,002). Ipilimumab was the most important cost driver (>3,774,068). Costs were substantial in aNSCLC patients, with systemic treatment account-ing for 48.5% of total median costs. NSQ patients incurred higher total costs than SQ patients in Sweden and the Netherlands, and similar costs in England. Ongoing real-word data are needed to capture changes in ipilimumab due to the evolving NSCLC treatment landscape.

PCN111

COST DRIVERS OF LUNG CANCER CARE: RESULTS FROM A RETROSPECTIVE CHART REVIEW OF PRETREATMENT ADVANCED NSCLC PATIENTS IN EUROPE

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OBJECTIVES: Although costs were mainly related to drug costs of ipilimumab, total costs, and the distribution of the costs varied significantly across subgroups.

METHODS: Data were retrieved from the nation-wide Dutch Melanoma Treatment Registry for patients diagnosed between July 2012 and 2015. Ipilimumab episode duration was computed from start of ipilimumab until start of a next systemic treatment, death, or last date of follow-up. Costs were determined by applying unit costs to hospitalization, surgery, diagnostic laboratory tests and radiodiagnosis and ambula-
tory hospital sessions. Baseline characteristics were comparable across subgroups. Mean (median) episode duration was 6.2 [4.6] months. Average total healthcare costs amounted to €81,484, but varied widely (range: €18,131–160,002). Ipilimumab was the most important cost driver (>3,774,068). Costs were substantial in aNSCLC patients, with systemic treatment account-ing for 48.5% of total median costs. NSQ patients incurred higher total costs than SQ patients in Sweden and the Netherlands, and similar costs in England. Ongoing real-word data are needed to capture changes in ipilimumab due to the evolving NSCLC treatment landscape.

PCN111

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A431

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followed from diagnosis (W1: 07/2009-08/2011, W2: 07/2010-09/2012) through most recent visit. Total weighted average of country-specific unit costs (2016 Euro) was applied to systemic antitumor therapy usage and HCUR (hospital/ER visits, surgeries, radiotherapy, ancillary care, biomarker testing) to determine total cost from aNSCLC diagnosis to death. Generalized linear models (gamma distribution, log link) were used to fit the total cost and demographic and clinical covariates to total costs. RESULTS: Of 973 ML patients with median overall survival (OS) of 19.8 months from advanced diagnosis (range 3.1 - 68.7 months; median OS squamous: 18.8, non-squamous: 21.4), 79.0% were followed through death. Weighted median total per-patient costs were €10,991 [ranges: €7,197 (Germany) to €27,381 (Sweden); €7,183 (squamous) to €18,340 (non-squamous)]. Drug costs were 67.5% of total costs. Statistically significant (p<0.05) predictors for higher total lifetime HCUR costs were non-squamous histology and private insurance status. Positive EGFR mutation status predicted significantly lower costs. CONCLUSIONS: Drug costs were the primary cost driver in this pre-immunotherapy era real-world study, although this may partially be due to the 2L+ study population. The study population was consistent across the three countries. Nivo+ Ipi had an ICUR ranging from €2,488 (Greece – incremental cost €8,110, incremental QALY 2.560) to €7,311 (Spain – incremental cost €23,857, incremental QALY 2.263) compared to ipilimumab and ranging from €21,812 (Portugal – incremental cost €16,090, incremental cost €27,786, incremental cost €9.78) compared to nivolumab. The differences in results were shown to be driven by subsequent treatment costs and follow-up costs. When comparing to pembrolizumab, Nivo+ Ipi had the greatest QALY and life years and had an ICUR ranging from €12,323 (Greece – incremental cost €31,942, incremental QALY 2.592) and €17,962 (Spain – incremental cost €46,614, incremental QALY 2.595). CONCLUSIONS: Nivo+ Ipi represents a cost-effective option for the first-line treatment of advanced melanoma in these 3 European markets.

**PCN112**

**COST ANALYSIS OF LUNG CANCER IN CHINA**

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OBJECTIVES: Lung cancer is a disease with high incidence (73.3 thousand, 2015) and mortality (610.2 thousand, 2015) while brings tremendous economic burden to patients in China. In current study, lack of research on medical resources distribution and utilization, and survival duration of each stage disease development process based on panel data. Cost of managing patients with lung cancer and the trend of medical cost are worth to explore. To demonstrate the trend of annual medical cost and cost allocation of lung cancer patients from the time of diagnosis to the end of disease based on one national institution panel data from 2012 to 2015. METHODS: Totally 150 lung cancer patients who alive four years and all medical records were got in database. Annual medical cost and total cost allocation of each year after diagnosis were calculated. RESULTS: Total medical cost in 2012 were RMB 78414, RMB 56512, RMB 70383 and RMB 47280 which the cost of 1st year after diagnosis was higher than consequent years. Total cost decrease significantly in second year after diagnosis, at 3th year the cost bounced to the maximum and dropped at 4th year. The top three of total medical cost are drugs, test and treatment, which account for average 69%, 13% and 8%, respectively. Drug cost has similar trend with total medical cost. Test cost decrease relatively slowly in second year after diagnosis, at 3th year the cost bounced to the maximum and dropped at 4th year. Treatment cost keep increasing at 1st year and increased 68% at 3th year and decreased markedly at 4th year. CONCLUSIONS: The economic burden of lung cancer is extremely high compare with per capita disposable income of RMB 35680 in Qingdao. The biggest part of medical cost is related to drug used during the treatment period.

**PCN113**

**COST-EFFECTIVENESS OF PEMBROLIZUMAB FOR THE FIRST-LINE TREATMENT OF METASTATIC NON-SMALL CELL LUNG CARCINOMA IN PORTUGAL**

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OBJECTIVES: To estimate the incremental cost-effectiveness of pembrolizumab compared to platinum-based chemotherapy in previously untreated patients with metastatic non-small cell lung carcinoma (NSCLC) with strong positive programmed death 1 protein ligands (PD-L1 ≥ 50%) expression in Portugal. METHODS: A partitioned-survival model was parameterized using clinical data from a head-to-head phase III randomised clinical trial, KEYNOTE-024. A two-stage approach was used to adjust for crossover in the comparator arm. Utility was derived from KEYNOTE-024 using time-to-death weights. Portuguese-specific disease management resource usage was estimated by a panel of clinical experts; resources were valued using national unit prices and expert input on resource utilization. Adverse event costs were obtained via published unit prices and expert input on resource utilization. Adverse event frequencies were derived from the CheckMate 067 trial and published literature. Utility weights were also estimated from the trial, based on UK tariffs. The key comparator included in the analysis is ipilimumab and nivolumab monotherapy, however an additional comparison with pembrolizumab was considered in sensitivity analysis. RESULTS: The incremental cost per quality adjusted life years (QALY) ratios are consistent across the three countries. Nivo+ Ipi had an ICUR ranging from €2,488 (Greece – incremental cost €8,110, incremental QALY 2.560) to €7,311 (Spain – incremental cost €23,857, incremental QALY 2.263) compared to ipilimumab and ranging from €21,812 (Portugal – incremental cost €16,090, incremental cost €27,786, incremental cost €9.78) compared to nivolumab. The differences in results were shown to be driven by subsequent treatment costs and follow-up costs. When comparing to pembrolizumab, Nivo+ Ipi had the greatest QALY and life years and had an ICUR ranging from €12,323 (Greece – incremental cost €31,942, incremental QALY 2.592) and €17,962 (Spain – incremental cost €46,614, incremental QALY 2.595). CONCLUSIONS: Nivo+ Ipi represents a cost-effective option for the first-line treatment of advanced melanoma in these 3 European markets.

**PCN115**

**A POPULATION-BASED STUDY ON CLINICAL OUTCOMES AND MEDICAL COSTS OF LAPAROSCOPIC VERSUS OPEN SURGERY FOR COLON CANCER PATIENTS IN TAIWAN**

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OBJECTIVES: Due to the increasing incidence rate of colorectal cancer worldwide, and its subsequent high medical care utilization, colorectal cancer has become one of the top three of important health issues in addition to traditional open surgery, laparoscopic surgery has gradually gain its popularity in treating colorectal patients in recent years. However, the impact of laparoscopic on clinical outcomes and medical cost has rarely been studied. The aims of this population-based study was to compare the clinical outcomes and medical costs between laparoscopic and open surgery for colon cancer patients from the perspective of National Health Insurance (NHI) in Taiwan. METHODS: This study used the 2010 Longitudinal Health Insurance Database which contains one million randomly chosen enrollees of the NHI. Incident patient received either laparoscopic or open surgery from 2007 to 2012 were first identified and included. Patients younger than 20 years old, had intestinal disease before receiving surgery were excluded. Propensity score matching (PSM) was conducted to reduce the heterogeneous imbalance between laparoscopic and open surgery group. The generalized estimating equation (GEE) and Cox proportional hazards regression were performed to examine the difference in clinical outcomes and medical costs. RESULTS: The sample patients in each of the laparoscopic surgery and open surgery group after PSM. Colon cancer patients received laparoscopic surgery had significantly shorter length of stay (3.6 days vs. 5.8 days, p < 0.01). The overall 3-year survival (p = 0.827) and recurrence-free 3-year survival (p = 0.689) were similar between these two groups. For medical costs, laparoscopic surgery saved US$109 (p = 0.63) for hospitalization due to surgery, US$177 (p = 0.80) for hospitalization of diagnosis, US$269 (p = 0.58) for intervention costs and US$899 (p = 0.34) for total medical costs within 1 year. CONCLUSIONS: For colon cancer patients, laparoscopic surgery had better clinical outcomes and lower medical costs compared to open surgery.

**PCN116**

**EVALUATING ADVERSE EVENTS COSTS IN CANCER PATIENTS IN LEBANON FROM TWO PAYERS PERSPECTIVE**

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OBJECTIVES: The objective of the study was to evaluate the cost of adverse events in cancer patients in Lebanon from private and public sector payer perspectives. METHODS: Claims data was retrieved from a third-party payer that represents 50% of the private insurance companies in Lebanon of whom 38% of adherent have complementary NSIF insurance, The NSSF (National Social Security Funds) sector, in turn, represent 28.6% from the total healthcare sector in Lebanon. Two sets of 2016 data were retrieved, one for multiple myeloma patients and the second for all cancer patients admitted specifically for any of three types of adverse events: anemia, thrombocytopenia, and neutropenia. For the multiple myeloma data set, 26 patients had 280 claims. For the all cancer data set, 18 claims of patients with private public insurance (co-NSIF) were retrieved for patients admitted for adverse events. The total medical costs was calculated across all claims; for the all cancer patients the median was calculated. RESULTS: From the all cancer patients set, we found the adverse event treatment total medical costs was respectively as follows: anemia (8,962,000LBP) and the NSIF represented 23.8% from the total cost (898,500LBp) and thrombocytopenia (3,025,570 LBP) where the NSIF represented respectively, 29.3% and 27.5% of the total cost. The multiple myeloma patients claims for two adverse events from the NSSF perspective: diarrhea (5,871,000LBP) and febrile neutropenia (8,962,000LBP) and one adverse event from the private perspective that is severe pneumonia (46,419,000LBP). CONCLUSIONS: Although these results were limited,
this is the first time that the cost of treating adverse events for multiple myeloma and colorectal cancer patients have been analyzed in the Lebanese market. These analyses may help with the setting of guidelines for cancer-related adverse events management.

PCN117
COST-EFFECTIVENESS ANALYSIS OF ALECTINIB COMPARED TO CHEMOTHERAPY FOR THE TREATMENT OF TREATMENT-NAIVE PATIENTS WITH ALK POSITIVELY LOCALIZED ADVANCED OR METASTATIC NON-CELL LUNG CANCER (NSCLC)

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OBJECTIVES: Lung cancer remains the commonest cause of death from cancer worldwide, posing a high disease and economic burden on healthcare systems globally. Alectinib is a highly selective, CNS-active anaplastic lymphoma kinase (ALK) inhibitor. 5% of non-small cell lung cancer (NSCLC) patients carry mutations associated with this ALK positivity. The objective of this analysis is to determine the cost-effectiveness and cost-effectiveness analysis of Alectinib compared to chemotherapy for the treatment of treatment-naive patients with ALK positive locally advanced or metastatic NSCLC in Greece. METHODS: A health economic model was developed using an “area under the curve” partitioned survival (three mutually exclusive health states) semi-Markov type analysis. The model was populated with clinical effectiveness data from the literature and Greek-specific data on health resource use and costs collected from an expert panel of 30 oncologists. This analysis did not account for discounts/rebates. The analysis followed a third party payer perspective (Greek Social Insurance). RESULTS: Alectinib compared to chemotherapy was accompanied by gains of 2.1 total life years (LY) (0.61 vs 1.51) and a gain in Quality Adjusted Life Expectancy of 1.76 QALYs (0.74 vs 1.96 QALYs) gained. Alectinib was associated with an additional cost of €151,550 (€201,554 vs €50,004) compared to chemotherapy per patient, resulting in an incremental cost-effectiveness ratio (ICER) of 72.484 LY per life year gained at 5% and 5.9% of QALY gained. The ICERs were all above the threshold of €30,000 per QALY gained. CONCLUSIONS: The population of ALK positive NSCLC patients in Greece is estimated to be approximately 120 patients per year in Greece. Alectinib contributes towards significant health gains in LY and QALYs compared to chemotherapy at a reasonable cost.

PCN118
THE CLINICAL AND COST EFFECTIVENESS OF DASATINIB VERSUS Nilotinib FOR THE FIRST AND SECOND LINE TREATMENT OF PEOPLE WITH CHRONIC MYELOID LEUKAEMIA

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OBJECTIVES: Chronic myeloid leukaemia (CML) is associated with reduced survival and quality of life; however, BCR-ABL tyrosine kinase inhibitors (TKIs) have dramatically improved outcomes of CML patients. Although Dasatinib and nilotinib are both second-line treatments, remaining model inputs of UK, outcomes are superior for second-generation TKIs (dasatinib and nilotinib) and their availability enables clinicians to optimise treatment in clinical practice. The objective of this study was to determine the cost-effectiveness of dasatinib versus nilotinib for the treatment of CML in the UK. METHODS: A lifetime Markov disease progression and cost-effectiveness model was developed. Complete and partial cyogenetic response rates were derived from systematic literature review and network meta-analysis. Clinical outcomes in treatment-naïve (first-line) patients were compared to non-comparative studies in treatment-experienced (second-line) patients. Response-specific survival was derived from patient-level data of dasatinib and nilotinib studies and applied to both treatment arms. Remaining model inputs were derived from previously published literature and UK health technology assessments. A UK payer perspective was adopted; costs and benefits were discounted at 3.5% per year for a lifetime horizon of 40 years. Results were relatively insensitive to alternative assumptions and inputs. CONCLUSIONS: Dasatinib and nilotinib provide comparable clinical benefits; however, it was estimated that dasatinib would result in a reduction in total lifetime costs. Availability of both therapies enables clinicians to tailor the CML therapy to an individual patient, potentially improving outcomes in clinical practice, with no additional cost to the NHS.

PCN119
COST-EFFECTIVENESS OF RIBOCICLIB PLUS LETRZOZOLE VERSUS PALBOCICLIB PLUS LETRZOZOLE FOR POSTMENOPAUSAL WOMEN WITH HORMONE RECEPTOR-POSITIVE, Locally ADVANCED/REGIONAL, LUNG CANCER (HER2-+) ADVANCED/METASTATIC BREAST CANCER FROM A UK NATIONAl HEALTH SERVICE PERSPECTIVE

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OBJECTIVES: Assess the cost-effectiveness of ribociclib plus letrozole versus palbociclib plus letrozole as first-line treatments for postmenopausal women with HR+/HER2- advanced/metastatic breast cancer from a UK National Health Service perspective. METHODS: Incremental cost-effectiveness of ribociclib versus palbociclib was simulated using a cohort-based, three-state (progression-free [PF], progression on treatment [PT], treatment-related death) partition survival model with a 1-month cycle length. Clinical data were derived from the MONALEESA-2 January 2017 data cut for ribociclib and from aggregate palbociclib data from PALOMA-1 and -2. Treatment effect models were used to estimate hazard ratios of PF survival and overall survival for ribociclib versus letrozole and palbociclib versus letrozole. Cost inputs included drug acquisition, administration and monitoring, routine follow-up, Grade ≥3 adverse events, and subsequent costs. Drug costs for brentuximab vedotin and ribociclib were adjusted for discontinuation and dose reductions. Health benefits were valued in quality-adjuted life-years (QALYs), with utility weights derived from EQ-SD-SL data collected in MONALEESA-2 for PF and using literature for PD. Costs and QALYs were discounted at 3.5% per year for a lifetime horizon of 40 years. Uncertainty was assessed using deterministic and probabilistic sensitivity analyses. RESULTS: At lifetime, total discounted cost of ribociclib was £107,128 (drug cost £58,299; health state cost = £48,189 versus £115,012 (69,949 and £45,063, respectively) for palbociclib. Discounted QALYs for ribociclib were 3.08 (PF = 2.33; PD = 0.75) versus 2.85 (PF = 2.15; PD = 0.70) for palbociclib. Ribociclib was less costly (£47,884) and resulted in more QALYs (+0.230) than palbociclib, and was the dominant strategy of ribociclib being cost-effective versus palbociclib at £30,000 per QALY was 77.25%. Drug acquisition cost differences were key drivers of results. CONCLUSIONS: Ribociclib is likely to be dominant over palbociclib in costs and QALYs, and is likely to be cost-effective for postmenopausal women with HR+/HER2- advanced/metastatic breast cancer.

PCN120
THE COST-EFFECTIVENESS OF NIVOLUMAB FOR THE TREATMENT OF PEOPLE WITH RELAPSED OR REFRACTORY CLASSICAL Hodgkin Lymphoma FOLLOWING AUTOLOGOUS STEM CELL TRANSPLANTATION AND BRENTUXIMAB VEDOTIN

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OBJECTIVES: Treatment of classical Hodgkin Lymphoma (CHL) is highly effective in curative surgical and radiation therapy for patients who respond to initial chemotherapy and after receiving both autologous haematopoietic cell transplantation (auto-HCT) and brentuximab vedotin (BV), treatment options are extremely limited. Nivolumab is a PD-1 blocker that offers significant improvements in disease control and quality-of-life over standards of care (SoC) in this setting. Additionally, nivolumab may enable allogenic HCT (allo-HCT), a potentially curative procedure. The objective of this study was to perform a cost-effectiveness analysis of nivolumab compared to SoC. METHODS: A three-state Markov disease progression and cost-effectiveness model of CHL was developed. Relative efficacy was established by naive and adjusted comparisons of patient-level clinical trial data (NCT00426257). Cost data were based on the OVHIPEC1 study, from treatment-at-a-nation perspective. All costs were discounted at 3.5% per year for a lifetime horizon of 40 years. Results were relatively insensitive to alternative assumptions and inputs. CONCLUSIONS: Nivolumab is estimated to offer significant benefit in terms of improved survival and quality-of-life whilst offering a cost-effective alternative to SoC, addressing a significant unmet need in people with relapsed or refractory CHL who have received both auto-HCT and BV.

PCN121
A HEALTH TECHNOLOGY ASSESSMENT OF HYPERTHERMIC INTRANPERITONEAL CHEMOTHERAPY ADDED TO INTERVAL CYTOREDUCTIVE SURGERY IN STAGE III OVARIAN CANCER

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OBJECTIVES: Hyperthermic intraperitoneal chemotherapy (HIPEC) is a new addition to standard treatment of stage III ovarian cancer with neoadjuvant cytoreductive surgery (CRS). To support information for policy decision making uppon reimbursement, the purpose of this study was to perform a cost-effectiveness analysis and assess organizational implications of introducing HIPEC for ovarian cancer (OVHPEC). METHODS: A Markov model was built to compare OVHPEC (in combination with CRS) to standard interval CRS. The analysis was performed from a societal perspective of the Netherlands. Clinical outcomes were derived from a recently presented Dutch randomized controlled trial (OVHPEC trial, NCT00426257). Cost data were based on the OVHPEC trial, from treatment protocols and standard prices. Costs included neo-adjuvant chemotherapy, surgery +/- HIPEC, admission days, complications, outpatient visits, end-of-life-care and societal costs. Utilities were derived from literature and interviews with medical oncologists and gynaecological surgeons were conducted to determine organizational implications and possible barriers for the uptake of OVHPEC. RESULTS: Total healthcare costs were €45,829 (95% Credible Interval (CrI) 43,199-48,627) for interval CRS, compared to €56,921 (95% CrI 53,312-61,100) for CRS only in 1.93 (95% CrI 1.58-2.25) Quality Adjusted Life Years (QALY) and interval CRS only resulted in 1.58 (95% CrI 1.31-1.85) QALYs. The incremental cost effectiveness ratio (ICER) was €7,504/QALY. Given a willingness-to-pay (WTP) threshold of €80,000/QALY in the Netherlands, OVHPEC had a probability of being cost effective of 83.3%. In case of a €30,000/QALY threshold (more common in Europe), the results will mainly depend on country-specific OVHPEC- and CRS-intervention costs. Hospital capacity of performing OVHPEC procedures in the Netherlands was identified as a possible implementation barrier. CONCLUSIONS: Although more costly than interval CRS only, the combination with OVHPEC resulted in QALY gain. Given the current Dutch WTP threshold, OVHPEC has a higher probability of being cost effective compared to interval CRS in stage III ovarian cancer.
PCN122
COST-EFFECTIVENESS ANALYSIS (CEA) OF NIVOLUMAB IN 2ND LINE NON-CELL SMALL CELL LUNG CANCER (NSCLC) WITH NON-SQUAMOUS HISTOLOGY USING A MIXED COMPARATOR OF DOXETAXEL AND Pemetrexed IN AN AUSTRALIAN SETTING
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OBJECTIVES: Lung cancer is the leading cause of cancer-related deaths in Australia with non-SCLC NSCLC accounting for the majority of cases. Current 2nd line treatment for NSCLC NSQ in Australia is limited to either doxetaxel or pemetrexed which largely are ineffective and have a low response rate. Nivolumab, an immunotherapy which blocks programmed cell death-1 inhibition of the immune system, has recently demonstrated superior overall survival in 2nd line treatment of NSCLC NSQ patients vs doxetaxel in a clinical trial setting. The aim of this study was to evaluate the cost-effectiveness of nivolumab versus a basket of comparators containing doxetaxel and pemetrexed which could be considered standard of care in an Australian setting.

METHODS: A partitioned survival model with 3 health states (progression free, progressive disease and death) was developed for this CEA. The model was run for both doxetaxel and pemetrexed and an average ICER was calculated. Clinical trial data was utilised for the doxetaxel comparison whereas an indirect comparison was performed in order to inform the pemetrexed component of the evaluation. Australian specific cost in terms of drugs and health resources were applied. Both one/two way and probabilistic sensitivity analyses were performed. RESULTS: The results of the CEA showed that patients treated with nivolumab saved 1.02 life years (LY) (nivolumab≈2.2 vs mixed comparator=1.20). Similarly for quality adjusted life years (QALYs), nivolumab saved 0.80 QALYs when compared to the mixed comparator. To account for the additional cost of US$494.9k which includes ICERS of US$486.6k and US$606.9k/QALY. The model was most sensitive to comparator price, extrapolation method and discount rate. CONCLUSIONS: This study indicates that nivolumab is a cost-effective treatment option to doxetaxel and pemetrexed with the potential of significantly decreasing both mortality and morbidity for patients treated for 2nd line NSCLC NSQ.

PCN123
COST-EFFECTIVENESS ANALYSIS OF CRIZOTINIB FOR UNTREATED ANAPLASTIC LYMPHOMA KINASE-POSITIVE ADVANCED NON-SMALL-CELL LUNG CANCER IN PORTUGAL
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OBJECTIVES: To evaluate the cost-effectiveness of crizotinib in the treatment of ALK-positive non-small cell lung cancer (ALK+NSCLC) in the Portuguese NHS.

METHODS: A previously developed and validated state transition Markov cohort model was used. The economic model was adapted to consider treatment strategies as per the Portuguese pricing and reimbursement setting and clinical practice. The economic model was adapted to consider treatment strategies relevant to the Portuguese clinical practice and populated with relevant epidemiological, quality of life and economic resource use data; the latter mainly driven by evidence elicited from a panel of six Portuguese clinical experts with extensive clinical experience. First-line treatment with pemetrexed and platinum followed by switch to crizotinib (second-line) and best-supportive-care (third-line) in case of disease progression was compared with first-line treatment with crizotinib followed by switch to docetaxel (second-line) and best-supportive-care (third-line). Unit costs (medicines, procedures and hospitalizations) were estimated from Portuguese official sources. A societal perspective was adopted. Baseline analysis and sensitivity analyses were performed. Quality of life was considered. Univariate sensitivity analyses were performed over key model parameters. RESULTS: A treatment strategy considering crizotinib as first-line option was found to be more costly per patient, but also annually more effective than the second-line treatment option. First-line treatment with crizotinib was associated with an incremental cost-effectiveness ratio (ICER) of 29,326 € per QALY gained. CONCLUSIONS: From the French healthcare program for the society.

PCN124
COST EFFECTIVENESS ANALYSIS OF EXEMESTANE VERSUS CAPECITABINE MONOTHERAPY IN POST-MENOPAUSAL PATIENTS WITH BREAST RECEPTOR-POSITIVE AND HER2-NEGATIVE, METASTATIC BREAST CANCER FROM NATIONAL CANCER INSTITUTE PRESPECTIVE IN EGYPT
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OBJECTIVES: To evaluate the cost-effectiveness of exemestane versus capecitabine for hormone receptor-positive and human epidermal growth factor receptor 2 (Her2-negative) metastatic breast cancer (MBC) after failure of taxanes and anthracycline-containing regimens. The main objective of this study is to evaluate over a 4- year period from the National Cancer Institute, Cairo University perspective on the cost and outcomes associated with the use of Exemestane 25mg versus Capecitabine 400mg in patients with metastatic breast cancer. METHODS: A Markov model with three mutually exclusive health states (metastasis, remission and death) was developed. Transition probabilities and costs of the model were calculated based on time to progression and overall survival data which derived from previously published clinical trial. Utility data was derived from previously published sources. Direct medical costs were collected from The National Cancer Institute, Cairo University. Deterministic sensitivity analysis was performed. RESULTS: The total QALY’s of the Exemestane group were estimated to be 167.3 compared with 129.5 for the Capecitabine group, with a net difference of 37.7 QALYs. The total costs for the Exemestane group and Capecitabine group were 1,699,087 EGP and 2,389,345 EGP respectively, with a net difference of 37.7 QALYs. The total costs for the Exemestane group and Capecitabine group were estimated to be 167.3 compared with 129.5 for the Capecitabine group, with a net difference of 37.7 QALYs. The total costs for the Exemestane group and Capecitabine group were estimated to be 167.3 compared with 129.5 for the Capecitabine group, with a net difference of 37.7 QALYs. The total costs for the Exemestane group and Capecitabine group were estimated to be 167.3 compared with 129.5 for the Capecitabine group, with a net difference of 37.7 QALYs. The total costs for the Exemestane group and Capecitabine group were estimated to be 167.3 compared with 129.5 for the Capecitabine group, with a net difference of 37.7 QALYs. The total costs for the Exemestane group and Capecitabine group were estimated to be 167.3 compared with 129.5 for the Capecitabine group, with a net difference of 37.7 QALYs. The total costs for the Exemestane group and Capecitabine group were estimated to be 167.3 compared with 129.5 for the Capecitabine group, with a net difference of 37.7 QALYs.

PCN125
THE TREATMENT OF METASTATIC COLORECTAL CANCER IN GREECE
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OBJECTIVES: To assess the cost-effectiveness of metastatic colorectal cancer (mCRC) who have been previously treated with or are not considered candidates for available therapies including oxaliplatin and irinotecan-based chemotherapies, anti-vascular endothelial growth factor agents and anti-epidermal growth factor receptor agents in Greece. METHODS: A partitioned survival model was locally adapted from a third-party payer perspective over a 10-year time horizon. Efficacy, safety data and utility values were extracted from relevant clinical trials and published studies. Resource consumption data were obtained from local experts, using a questionnaire developed for the purpose of the study and was combined with unit costs obtained from official sources. All costs reflect the year 2017 in euros. Primary outcomes were patients’ life years (LYs), quality-adjusted life years (QALYs), total costs and incremental cost-effectiveness ratios (ICERs) per QALY and LY gained. Both ICERs and QALYs were discounted at 3.5% per year. 

RESULTS: The ICER per QALY gained was used (3 times the GDP per capita of Greece based on WHO Guidelines). A probabilistic sensitivity analysis (PSA) was conducted. RESULTS: Total cost per patient and BSC/TDF/TPI, BSC and Regorafenib was estimated to be €10,443, €1,879 and €11,094 respectively. In terms of health outcomes, FTD/ TPI was associated with 0.25 and 0.11 increment in LYs compared with BSC and Regorafenib respectively. Furthermore, FTD/TPI was associated with 0.17, and 0.07 increment in QALYs compared with BSC and Regorafenib. The ICERs of FTD/TPI vs BSC of €54,137 per LY gained and €49,732 per QALY gained versus BSC. Moreover, FTD/ TPI was a dominant alternative over Regorafenib. PSA confirmed the determinism results. CONCLUSIONS: This study indicates that FTD/TPI may represent a cost-effective treatment option compared to other alternative therapies as a third-line treatment of mCRC in Greece.

PCN126
THE TREATMENT COSTS AND OUTCOMES OF BREAST CANCER SCREENING FOR WOMEN 40–49 YEARS OLD IN RUSSIA
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INTRODUCTION: In Russia screening for breast cancer (BC) is recommended for women 40–49 years old, though WHO recommends starting BC screening at the age of 50 in the limited resource settings. OBJECTIVES: To assess the costs and outcomes of BC screening in women 40–49 years old in Russia. METHODS: Using published data on the average public health insurance tariffs for mammography in the frames of screening and biopsy.

RESULTS: From the French healthcare program for the society.

PCN127
COST-EFFECTIVENESS OF AFATINIB VERSUS ERLOTINIB FOR THE TREATMENT OF SQUAMOUS NON-SMALL-CELL LUNG CANCER IN FRANCE AFTER A FIRST-LINE PLATINUM BASED THERAPY
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OBJECTIVES: To assess the cost-effectiveness of afatinib compared to erlotinib for the treatment of squamous NSCLC after first-line platinum based therapy from the French healthcare funders perspective. METHODS: A partitioned survival model was developed containing three health states: pre-progression, post-progression and post-line 2 (PL2) with different transition probabilities. Costs of screening in France were discounted at 4% per year. DEterministic and probabilistic sensitivity analyses were performed. RESULTS: From the French healthcare
funders perspective, patients receiving afatinib for squamous NSCLC after first-line platinum-based therapy from longer life expectancy than those treated with erlotinib (0.94 years versus 0.78 years respectively) translating in an increase of 0.16 years. Quality adjusted life expectancy was also projected to be greater in patients treated with afatinib with an increase of 0.094 QALYs (0.567 QALYs versus 0.473 QALYs) for afatinib versus erlotinib. Sensitivity analyses showed the robustness of the cost-effectiveness analysis. The base case findings remained stable under variation in a range of model inputs. CONCLUSIONS: Based on data from the LUX-Lung 8 trial, afatinib was projected to improve clinical outcomes versus erlotinib, with an 89% probability of being cost-effective assuming a willingness to pay threshold of EUR 50,000 per QALY gained, following a first-line platinum-based therapy for patients with squamous NSCLC in France.

PCN128
TREATMENT IN TRANSPORT ELIGIBLE MULTIPLE MYELOMA PATIENTS IN MACEDONIA: DEVELOPMENT OF COST-EFFECTIVENESS ANALYSIS
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INTRODUCTION: The t-cellular uterine cancer (CUC) continues being an economic, social burden. Represents the second most common women’s cancer’s death. In developing countries CUC presents in loco-regional advanced stages (IB2-IIB), and it is controlled by the NCCN guidelines that recommend concurrent Chemotherapy (pRT/CT) as primary treatment. These are the most effective treatment, with an effectiveness of 57–87% in stage IIB. These are reduced to 66% in IIB stages. The role for surgery in IIB-IB is controversial. Asian and some European countries may adopt for a more individualized strategy. OBJECTIVES: Cost-effectiveness model to compare the performance of the pRT/CT, The Total Mesometrial Resection (TMMR) and the current treatment used in a Public-Health Institution. METHODS: 167 cases of CACu patients with clinical stages IB2-IIB in a five-year period were studied. Clinical data, costs of treatment, treatment and relapses were obtained from medical charts and micro-costing. Effectiveness was calculated from survival free relapse percentage after 5 years of follow-up. Costs were performed from a Macedonian national healthcare-perspective. We determined the incremental cost-effectiveness ratios (ICERs)/QALYs for the three induction regimens: Vincristine-Adriamycin-Dexamethasone (VAD), Thalidomide-Dexamethasone (TD), and Bortezomib-Dexamethasone (BorD) followed by autologous stem cell transplantation (ASCT) for treating multiple myeloma in patients with MM in Macedonia. The data on disease progression and treatment effectiveness were obtained from the published reports of the randomized clinical trials (GIMEMA M-B02005, IFM 2005-01). Utility parameters were derived from the literature. To compare treatment combinations, we developed a decision analytic model. Additionally, a cost-analysis for one-time per-protocol costs was performed from a Macedonian national health-care perspective. We determined the incremental cost-effectiveness ratios (ICERs)/QALYs gained for 1-, 10-, and 20-year time horizons (TH). Costs and health outcomes were discounted at 3.5% per annum. A probabilistic sensitivity analysis show a gain in QALYs with BorD if we consider discounting future costs on a per-protocol costs of BorD (£ 5 607) were higher than those for VAD (£ 299) and TD (£ 326), increasing the overall costs for BorD. Thus, the BorD combination was dominated in the baseline results and the ICER for VAD vs. TD was £9 607 per QALYs (10-year TH). However, in the discounted 20-year TH, BorD had a benefit of 7.5 QALYs (0.43-1.63 QALYs higher than TD and VAD) with ICER: £158 822/QALYs and £49 076/QALYs, respectively. CONCLUSIONS: Our analysis suggest that for the 1-year TH, VAD may be cost-effective compared to TD and BorD. However, our analysis show a gain in QALYs with BorD if we consider discounting future costs and outcomes. These results should be considered as a supportive evidence by decision-makers and funders when deciding for an induction treatment strategy prior to ASCT in MM patients.

PCN129
COST-EFFECTIVENESS OF PONATINIB IN THE TREATMENT OF PATIENTS WITH CHRONIC PHASE-CHRONIC MYELOID LEUKEMIA IN GREECE
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1Federación and from the Instituto Mexicano del Seguro Social web sites. For the percentage to five years (0.81, 0.76, 0.68, 0.52, 0.46). The cost-effectiveness ratio was calculated as the ratio of the total incremental costs of pRT/CT and TMMR divided by the incremental QALYs gained. Both the effectiveness of pRT/CT and TMMR alternatives were simulated based on costs obtained from de Diario Oficial of the Federación and from the Instituto Mexicano del Seguro Social web sites. For the pRT/CT and TMMR treatment effectiveness transition probabilities were derived from published data (0.7 and 0.9 respectively). The standard deviation of the pRT/CT was 20% against which we compared the TMMR and the current treatment (CT) used at our institution (anastrozole, letrozole, exemestane, palbociclib+letrozole) in endocrine therapy-naive patients with HR-positive, HER2-negative ABC after disease progression on endocrine therapy. This model compared the effectiveness and cost-effectiveness of fulvestrant 500 mg versus comparators (anastrozole, letrozole, tamoxifen, exemestane, palbociclib+letrozole) in endocrine therapy-naive patients with HR-positive, HER2-negative ABC. METHODS: A three-health-state partitioned survival model from the National Health Service (anastrozole, letrozole, tamoxifen, exemestane, palbociclib+letrozole) in endocrine therapy-naive patients with HR-positive, HER2-negative ABC. METHODS: A three-health-state partitioned survival model from the National Health Service (anastrozole, letrozole, exemestane, tamoxifen, respectively, while fulvestrant was £19,039, £23,317, £21,232, £17,205 and -£120,658, respectively. Incremental quality-adjusted life-years (QALYs) were 0.56, 0.77, 0.87, 0.96 and 0.09, respectively. This led to incremental cost-effectiveness ratios of £34,194, £30,139, £24,472 and £22,495 per QALY versus anastrozole, letrozole, exemestane and tamoxifen, respectively, while fulvestrant dominated palbociclib+letrozole. The model estimated that fulvestrant was associated with greater time to disease progression and time alive versus all comparators except palbociclib+letrozole, which had greater time to disease progression. CONCLUSIONS: Results suggest that fulvestrant 500 mg is cost effective versus other endocrine monotherapies, and dominant versus palbociclib+letrozole, in patients with endocrine therapy-naive, HR-positive, HER2-negative ABC, with clinically significant overall survival gains and maintained quality of life.

PCN130
AN EMPIRICAL ANALYSIS OF THE ROLE OF LEARNING BY DOING IN DYNAMIC COST-EFFECTIVENESS
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OBJECTIVES: Recent literature suggests the cost-effectiveness of a therapy may vary during follow-up due to the rate at which new indications or higher utilization in later years when prices may decrease. This study examined the impact on cost-effectiveness due to effectiveness changes over
time attributed to learning by doing within an indication, thus providing greater incentives for incremental and probabilistic cost-utility analyses.

**Methods:** The clinical effectiveness of three cancer regimens was estimated at product launch using data from pivotal randomized controlled clinical trials: FOLFOX (leucovorin, 5-fluorouracil, oxaliplatin) vs LVFU (leucovorin, 5-fluorouracil) for first- and second-line colorectal cancer, and gemcitabine, 5-fluorouracil for first-line pancreatic cancer. Trends in clinical effectiveness over time were estimated using 1998–2011 data from the Surveillance, Epidemiology and End Results (SEER) and linked database. Incremental costs were based on US (2016) average time-series price data from AnalySource. **Results:** The hazard ratio relative to that of the comparator drug fell over time for all three regimens, suggesting improving relative effectiveness. All three regimens showed the same price patterns with modest initial rises followed by precipitous declines after loss of exclusivity. The relative effectiveness and price trends caused the cost-effectiveness ratios of each regimen to improve over their lifecycles. For example, the first-line FOLFOX ICER began at $228,801 in 2000 and decreased to $20,000 per life-year gained by 2011. **Conclusions:** This study suggests that ICERs estimated at launch based on clinical trial effectiveness data may be unrepresentative of actual cost-effectiveness across the lifecycle of therapies, and may understate the occult cost-effectiveness differences. Improvements in the cost-effectiveness evaluation by doing changes can increase incremental effectiveness that outweigh the effects seen in studies looking only at price, indication, and utilization patterns over time.

**PCN133**

**Cost-effectiveness of Ribociclib plus letrozole versus palbociclib plus letrozole for the treatment of post-menopausal women with hormone receptor-positive (HR+), human epidermal growth factor receptor 2-negative (HER2-) advanced or metastatic breast cancer from a US private third-party payer perspective.**

**Methods:** The lifetime costs and effectiveness of treatment were simulated using a cohort-based, three-state (progression-free [PF], progression disease [PD], and death) partition survival model with a 3-month cycle length. Clinical data were derived from the MONALEESA-2 trial of Rib and a meta-analysis of Pal data. Cost inputs included costs for wholesale drug acquisition excluding co-payment (28-day treatment cycle price: $10,950, $8,760, and $4,380 for ribociclib, 600mg, 450mg and 20mg, respectively versus $10,963 for palbociclib 75mg strengths), administration (Medicare physician fee schedule), disease monitoring, adverse events (treatment-related Grade 3+), and subsequent therapies. The impact of discontinuation and dose reduction on drug costs were considered for both therapies. Effectiveness was valued in quality-adjusted life years (QALYs), with utility weights derived from EQ-5D-5L data collected in MONALEESA-2 for PF and from the literature for PD. Costs and effects were discounted at 3.0% per year. Uncertainty was assessed via deterministic and probabilistic sensitivity analyses. **Results:** At lifetime, the total cost of Rib was $424,095 (drug cost=$228,801, health state cost=$205,294) versus $475,132 ($256,509 and $218,623, respectively) for Pal. The QALY gain of Rib versus Pal was 2.17; PD 0.90) versus 2.99 (PFS = 1.99; PD 0.90) and 0.48 QALYs and $88,344 and $149,903 incremental costs ($US 2016) and utilities. Deterministic and probabilistic sensitivity analyses were conducted. **Conclusions:**: In the US, Rib was an incremental cost-effective alternative to Pal for first-line treatment of post-menopausal women with HR+/HER2- advanced or metastatic breast cancer.

**PCN135**

**Cost-effectiveness of nivolumab (NIVO) compared with nivo i and ipi monotherapies in the first-line treatment of advanced melanoma in the united states: analysis using 28-month overall survival (OS) data from Checkmate 067.**

**Methods:** The three-state partitioned survival model was developed from projections of OS and progression-free survival (PFS) to estimate accrued quality-adjusted life-years (QALYs), drug acquisition, follow-up, and toxicity costs over a life span time horizon (30 years). While previous models were informed by network meta-analysis methods, our analysis used a joint modeling framework based on within-individual modeling to combine sensitivity. Parametric fits were selected based on statistical and visual goodness of fit and the clinical plausibility and consistency of the OS and PFS combinations (NIVO versus NIVO+IPI and NIVO versus IPI). In Checkmate 067, median OS for OS and PFS was 27.4 months versus 17.9 months, respectively. In Checkmate 067 with an open-label comparator design, a 3.5% discount rate was applied to costs ($US 2016) and utilities. Deterministic and probabilistic sensitivity analyses were conducted. **Results:** Using the best fitting curves, NIVO+IPI was estimated to have 2.4 and 4.33 incremental QALYs and $88,344 and $49,903 incremental costs over NIVO and IPI monotherapies, respectively. The ICURs for NIVO+IPI were $35,893 versus NIVO and $35,431 versus IPI. These findings were found to be consistent in the deterministic and probabilistic cost-utility analyses.

**Conclusions:** This analysis highlights that NIVO+IPI combination has a longer survival than either monotherapy and, when combined with the incremental costs associated with NIVO+IPI, the ICURs indicate that it is likely to be a cost-effective option compared with monotherapy.
COST-EFFECTIVENESS ANALYSIS OF HAPLOIDENTICAL VS MATCHED UNRELATED ALLOGENIC HEMATOPOIETIC STEM CELL TRANSPLANTATION IN PATIENTS OLDER THAN 55 YEARS


Background:

Due to the limited donor availability, high comorbidities and cost issues, allogeneic hematopoietic stem cell transplantation is not universally accessible. Haploidentical related donors can be found for almost every patient but no economic evaluation has been previously conducted to compare this alternative strategy to match sibling transplant. OBJECTIVES: The aim of our study was to conduct a cost-effectiveness analysis of haploidential vs matched unrelated donor (MUD) transplant.

Methods:

55 patients with hematological malignancies older than 55 years who received transplants from related (n=9) or MUD (n=46) were retrieved from the French registry’s bone marrow transplantation database. The sources of data were transplantation and hospitalization unit costs. The incremental cost-effectiveness ratio was calculated using Kaplan-Meier estimator. The confidence regions of the ICERs were calculated with the Fieller’s method. Probabilistic and sensitivity analyses were performed on the incremental cost-effectiveness ratio (ICER). Results:

29 patients underwent haploidential transplant and 63 matched unrelated transplant. Clinical results were already published (Blaise D et al, Biol Blood Marrow Transplant. 2015). The mean OS was respectively 19.4 (1.6) months and 15.1 (1.2) months (p<0.001). In our study, HRD-SCT dominated UD-SCT with a better effectiveness at a lower cost. Cost-effectiveness analysis showed that our results were robust to changes in expensive drug’s unit costs and hospitalisation unit costs. The incremental cost-effectiveness ratio was estimated €98,304 (40,872) as a cost-effective alternative to related donor transplantation.

Conclusions:

A new approach to determine the relative effectiveness and cost-effectiveness of treatment options. The estimated ratios were low variation, with LYs gained and ICERs ranging between 24.0-26.3 and 37,489-41,508/LY.

PCN142 TECHNICAL CHALLENGES IN COST-EFFECTIVENESS ANALYSIS FOR ONCOLOGY TREATMENTS: IDENTIFYING FREQUENT ISSUES IN MODELLING FROM NICE PERSPECTIVE

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Objectives:

Our findings suggest that NICE found that the most commonly used methods (e.g. PSA, Markov model, semi-Markov model) often lack precision. In particular most complex methods (e.g. DES) lacked transparency which ultimately undermines the ability to present an acceptable incremental cost-effectiveness ratio (ICER) due to biased conclusions and decision making. Further, overall survival was underestimated by 11.1 versus 7.8 months. The probabilistic sensitivity analysis confirmed that trifluridine/tipiracil is expected to augment mCRC patients' undiscounted life expectancy by 0.27 LYs relative to BSC (11.1 versus 7.8 months). Trifluridine/tipiracil is expected to be considered cost-effective at a threshold of 50,000/LY.

Conclusions:

In this later phase with limited treatment options, trifluridine/tipiracil is expected to provide a clinically meaningful life expectancy increase at an incremental cost per life year gained within an acceptable range.
post-progression utilities (0.60-0.69). One study at 2L reported utility decrements for disease progression (0.07), hospitalisation (0.08) and time-to-death (0.37, to <3 months to death; 0.23, to <9 months to death). Literature indicates HRQoL to be mainly driven by emotional functioning (EF), along with overall quality of life (during or after treatment). EF appears to improve with treatment indicating that EF can be considered a potential area of improvement in patients with GIST. Sensitivity analysis on cost exists on cost-effectiveness, HCRU, and HRQoL for advanced GC in 1L and 2L. However, further evidence generation is still warranted, mainly in the 5L setting.

PCN144 PHARMACOECONOMIC MODELLING IN THE EARLY HEALTH TECHNOLOGY ASSESSMENT OF GENERIC PEGYLATED LIPOSOMAL DOXORUBICIN

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**OBJECTIVES:** Treatment efficacy data were derived from the clinical trials: overall survival, final and non-fatal cardiac events. Time horizon of the analysis was 6 years, costs and benefits were discounted by 3.5%. Using the willingness-to- threshold (WTP) criteria for economic value, we determine value-based pricing for new generic PLD. WTP for Russian health care system was estimated at $26,383 (1648924 RUB), exchange rate mean in 2017 - 1 € = 62.5 RUB. **RESULTS:** In case of cardiac mortality events PLD provides additional 3.30 incremental life years gained (LYG) versus doxorubicin. At price 620 RUB/mg and lower (equivalent to €10) new generic PLD will be more cost-effective (CER for 1 LYG) than doxorubicin. At price > 6474 RUB (€107) PLD will be more effective, but more expensive, showing ICER less than WTP threshold ($26,383). At price more than 4748 RUB ($76) PLD has ICER higher than WTP for Russian health care system. At price less than 1869 RUB ($29), generic drug will be cost-effective (CER of PLD from position of treatment cost. **CONCLUSIONS:** pharmacoeconomic modeling can be used for an early HTA of new medicines to determine value-based pricing for new pharmaceuticals and its financial impact on Russian health care system.

PCN154 PHARMACOECONOMIC ANALYSES OF TRASTUZUMAB EMTANZINE IN PATIENTS WITH METASTATIC BREAST CANCER AND CENTRAL NERVOUS SYSTEM METASTASIS

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**OBJECTIVES:** Breast cancer (BC) morbidity in Russia is the highest among all tumors. The central nervous system (CNS) is a common site of BC metastasis. CNS metastases are associated with poor survival and disability in young age. Therapeutic options are limited to trastuzumab emtansine (T-DM1) and lapatinib plus cetuximab (LAP+C). The aim is to perform health-economic evaluation of trastuzumab emtansine in patients with metastatic BC and CNS metastases. **METHODS:** Cost-effectiveness analysis and sensitivity analysis were performed. Progression-free survival and overall survival were included into the model as the effectiveness criteria. Decision tree model with Markov cycles was used. All direct costs were calculated from the healthcare system perspective. Indirect costs were calculated from social perspective. We assume 60% of patient with CNS metastases having ECOG 0 in EMILIA trial are socially active. **RESULTS:** An analysis showed that direct medical total costs of T-DM1 (4750 807.60 RUB/patient) was by 5% lower as compared to LAP+C (4 974 874.72 RUB/patient), median OS was significantly higher in T-DM1 group (2.13 and 1.08 years for T-DM1 and LAP+C, respectively). Costs of AE:s correlation was comparable in both groups. Indirect cost were 984 909 RUB/patient and 1 113 552 RUB/patient in T-DM1 and LAP+C groups, consequently. CER for T-DM1 was by 2% lower comparing to LAP+C (1 686 222 RUB/patient/year and 2 740 348 RUB/patient/year, consequently) when accounting for direct costs only and by 28% lower comparing to LAP+C (2 127 227 RUB/patient/year and 2 740 348 RUB/patient/year, consequently) when accounting for total costs. T-DM1 ICER (OS) was 1 669 273 RUB/LY which is slightly less than cost-effectiveness threshold in Russia in 2016. Sensitivity analysis confirmed results of the baseline scenario. **CONCLUSIONS:** The study showed T-DM1 is a cost-effective strategy in patient with metastatic BC and CNS metastases.

PCN146 HEALTH-ECONOMICS EVALUATIONS IN FRANCE, ENGLAND, CANADA AND AUSTRALIA: COMPARISON OF METHODOLOGIES AND IMPACT ON DRUGS’ ACCESS TO PATIENTS

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**OBJECTIVES:** To compare health-economics methodologies between four Health Technology Assessment (HTA) bodies (CEESF, NICE, CADTH and PBAC) and evaluate the impact of HTA agencies on the accessibility of new drugs evaluated based compared on their official guidance. An assessment grid with common key criteria was created for the analysis. Then, using HTA-AcceleratorTM, drugs were selected if they had a public assessment available in each of the agencies. Patient access was assessed by volumes reported in MIDAS™ database. The final opinions were analyzed and balanced with the effective drugs’ access to patients. **RESULTS:** The four agencies’ guidelines assessed similar criteria, but their expectations were different in terms of perspective, numerical values, considered factors and Incremental Cost-Effectiveness Ratio thresholds with different impacts on the decision-making process. This was mainly due to different objectives in the results’ interpretation between countries across versus price negotiation. A total of nine drugs were selected, including three hepatitis C products, three oncology drugs and three immunology therapies. Some discrepancies could be pointed out across the four agencies’ final opinions. In France, the nine drugs was commercialized and publicly funded, whatever the methodological limitations pointed out by CEESP. In England, Canada, and Australia, a third of these evaluations led to a negative or a deferred recommendation. Despite of these unfavorable evaluations, some drugs were covered by private funds. Patient access has sometimes been restricted to sub-populations, especially for hepatitis. **CONCLUSIONS:** Health-economics analyses are more and more used by HTA authorities in their decision-making processes. Despite similarities in their methodologies, the outcomes drove to heterogeneous drugs’ access. In some cases, a negative assessment could have led to some restrictions rather than a total access deny. Despite its shows each countries’ cultural context, there are some opportunities to create a global evaluation framework.

PCN147 A SYSTEMATIC REVIEW OF PHARMACOECONOMIC EVALUATION OF ERLOTINIB IN THE FIRST LINE-TREATMENT OF ADVANCED NON-SMALL CELL LUNG CANCER

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**OBJECTIVES:** Targeted therapy, erlotinib, nowadays plays an important role in the first-line treatment of advanced non-small cell lung cancer (NSCLC) thanks to its effectiveness. However, its cost-effectiveness is still controversial. The aim of the study is to review the available evidence on cost-effectiveness of erlotinib in the first-line treatment of advanced NSCLC. **METHODS:** A systematic review was conducted to identify full-text publications in 6 electronic databases (PubMed, Cochrane, Embase) from 2000 with key words through MeSH tool. The researches met inclusion criteria (an original economic evaluation of erlotinib in the first-line treatment of advanced NSCLC and written in English) were extracted data and summarized data into pre-specified information table. To compare the results of studies, all currency values were transferred into $USD in 2016 based on Consumer Price Index. Economic Studies (QHES) instrument by 3 blinded reviewers. **RESULTS:** From a total 94 detected papers, 9 studies were included in the review. 4 studies compared erlotinib with the best supportive care, 2 studies dealt with reverse strategy, the others compared with cisplatin plus pemetrexed, gefitinib and carboplatin plus gemcitabine. Cost-effectiveness analysis, modeling and sensitivity analysis were mostly used methods in these studies. All researches evaluated direct costs and used QALY as outcome with 3% discount rate. The ICUR/QALY of studies ranged from dominant to $275,428/QALY. Based on WTP threshold, 7/9 studies concluded that erlotinib was cost-effectiveness, 2 studies comparing erlotinib with reverse strategy did not find the difference in cost-effectiveness. Using QHES tool, it has been identified the high quality of these studies with the mean score of 82/17 (6.85) on a scale of 100. **CONCLUSIONS:** Most studies suggested that erlotinib was cost-effectiveness in the first-line treatment of advanced NSCLC and the report’s quality of studies was high.

PCN158 PHARMACOECONOMIC ANALYSES OF OBINUTUZUMAB PLUS CHROMALUMIN IN PATIENTS WITH PREVIOUSLY UNRETED CHRONIC LYMPHOCYTIC LEUKEMIA AND COEXISTING CONDITIONS

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**OBJECTIVES:** Chronic lymphocytic leukemia (CLL) is the most frequent leukosis in adults. The majority of patents are over 70 years, and many present with coexisting conditions. Patients with CLL and coconditions represent an unmet clinical need and favorable outcome. The main objective of the study was to perform health-economic evaluation of obinutuzumab plus chlorambucil in patients with CLL and coexisting conditions in comparison to chlorambucil. **METHODS:** A total of 94 detected papers, 9 studies were included in the review. 4 studies compared obinutuzumab plus chlorambucil with patients in CLL and coexisting conditions in effectiveness criteria values did not exceed 10%. CER PFS, CER OS, and CER OR for conditions in comparison to chlorambucil in patients with CLL and coexisting conditions in treatment of advanced NSCLC and written in English) were extracted data and summarized results into pre-specified information table. To compare the results of studies, all currency values were transferred into $USD in 2016 based on Consumer Price Index. Economic Studies (QHES) instrument by 3 blinded reviewers. The study showed T-DM1 is a cost-effective strategy in patient with metastatic BC and CNS metastases.

PCN149 COST-EFFECTIVENESS OF PONATINIB IN THE TREATMENT OF PATIENTS WITH ACUTE LYMPHOBlastic LEUKEMIA WITH PHILADELPHIA CHROMOSOME POSITIVE (Ph+ ALL), SUITABLE FOR ALLOGENIC STEM CELL TRANSPANT, IN GREECE

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OBJECTIVES: To evaluate the cost-effectiveness of ponatinib over induction chemo-therapies in patients of Philadelphia chromosome positive (Ph+) ALL who exhibit resistance or intolerance (R/I) to dasatinib, or have the T315I mutation and are suitable for allogeneic stem cell transplant (allo-SCT), in Greece. METHODS: An international Markov model with 2 life years was locally adapted from a third-party payer perspective (EOPY) to reflect the natural progression of patients with Ph+ ALL through different health states over a life-time horizon (50-years). Clinical data for ponatinib arm were retrieved from phase II trial (PNC151), while for IC arm from LALA-94 trial. In the absence of valuations for Ph+ ALL health states, utilities for blast phase chronic-myeloid-leukemia were used. Resource use for the management of Ph+ ALL patients as well as the distribution of IC schemes used in Greece were based on experts’ opinions. The relevant unit costs were obtained from local resources (prices € 2017). Outcomes were evaluated in terms of life-years (LY) and quality-adjusted life-years (QALYS), and cost-effectiveness in terms of life-years gained (LYG) and QALYs gained. RESULTS: Ten patients treated with ponatinib had 0.835 higher life expectancy (3.621 versus 2.788 LY) and gained 0.501 QALYs (2.234 versus 1.733) compared to IC, at an increased cost of €5,465 (€40,741 versus €35,277) per patient. The resulted incremental cost-effectiveness ratio was €10,903/QALY gained, OWSA revealed that treatment costs were the drivers of the results, while the PSA showed that the probability of ponatinib to be cost-effective over IC exceeds that of 97% (willingness-to-pay ≥ €51,000). CONCLUSIONS: Given the assumptions of this analysis, our results suggest ponatinib may offer improved survival and health related quality-of-life to patients with Ph+ ALL R/I to dasatinib, suitable for allo-SCT, at a moderate increase in cost compared to IC.

PCN150

COST-EFFECTIVENESS ANALYSIS OF ATEZOLIZUMAB COMPARED TO THE STAND-ARTS OF CARE IN PATIENTS WITH ADVANCED OR METASTATIC NON-SMALL-CELL LUNG CANCER (NSCLC) AFTER PRIOR CHEMOTHERAPY IN GREECE

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OBJECTIVES: Lung cancer remains the commonest cause of death from cancer worldwide, posing a high disease and economic burden on healthcare systems globally. Non-Small Cell Lung Cancer (NSCLC) accounts for approximately 85% of all lung cancer cases. Immune checkpoint inhibitors, such as Atezolizumab, represent an advance in the treatment of patients with advanced NSCLC. METHODS: A three state partitioned survival model (health states) was developed for the cost-effectiveness analysis of Atezolizumab versus Docetaxel. The model was validated with clinical effectiveness data from the literature and a Greek-specific data on health resource use and costs collected from an expert panel of 10 oncologists. This analysis did not account for discounts/rebates. The analysis followed a third party payer perspective (Greek Social Insurance). RESULTS: Atezolizumab compared to Docetaxel was accompanied by gains of 0.88 total life years (LY) per patient (2.00 vs 1.20) and a gain in Quality Adjusted Life Expectancy of 0.65 QALYs (1.38 vs 0.73). An additional cost of €5,252 (€86,900 vs €81,608) is introduced compared to Docetaxel. Treatment with Atezolizumab compared to Docetaxel showed an incremental cost-effectiveness ratio (ICER) of €35,277 per QALY gained. The results are sensitive to the price of the intervention, the discount rate and the cost of the concomitant supportive care. CONCLUSIONS: Immune checkpoint inhibitors are not cost effective, and yields an ICER value higher than societal willingness-to- pay thresholds.

PCN151

PROSPECTIVE ASSESSMENT OF THE ACCURACY, RELIABILITY AND COST-EFFECTIVENESS OF STAGING NON-SMALL-CELL LUNG CANCER (NSCLC) ONLY WITH THE COMBINATION OF PET/CT AND BRAIN MRI

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OBJECTIVES: As treatment is determined predominantly by the early stage of NSCLC, the objective of this study is to assess if staging only with PET/CT and Brain MRI without CT is accurate, reliable and cost-effective. CT staging may suggest curative resection with its subsequent costs and outcomes, but with PET/CT staging surgical procedures may be proved unnecessary, reducing costs and help patients avoid futile therapeutic procedures. METHODS: The study is based on 30 NSCLC patients from a prospective clinical study who underwent diagnostic Thorax CT and integrated PET/CT combined with Brain MRI. Imaging was performed between December 2014 and November 2016 and positive Brain MRI was used to exclude patients and only patients staged from IA to IIIA by the CT imaging were included. To calculate treatment costs, we differentiated among costs for diagnosis, and cost for treatment according All-Stage (excluding true negative results). Divergence among staging with CT alone or PET/CT alone occurred in 50% of the cases. 16 patients underwent a surgery after PET/CT scanning, 7 directly and 9 after resection of a new lesion, while 14 remained under supportive care, even after chemotherapy were medically inoperable. CT imaging suggested 9 surgeries without further scanning or/and a chemotherapy scheme, from which only 3 patients could really undergo curative resective surgery. Average cost for direct medical transplant costs was €66,666, for those who needed priorly chemotherapy was €9,068 and for inoperable patients with palliative therapy 5,109€, while the average cost for both PET/CT and Brain MRI was 1,337€. CONCLUSIONS: Accurate staging of patients with NSCLC plays a significant role in determining the adequate treatment strategy and optimizing the patient prognosis. The combination of PET/CT/Brain MRI can provide a reliable area for tumor and nodal staging plus disease metastasis detecting, reducing needless thoracotomies and its associated morbidity and costs.

PCN152

COST-EFFECTIVENESS ANALYSIS OF SORAFENIB VERSUS BEST supportive CARE IN PATIENTS WITH ADVANCED HEPATOCELLULAR CARCINOMA FROM HEALTH CARE SYSTEM PERSPECTIVE IN EGYPT

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OBJECTIVES: Hepatocellular carcinoma (HCC) is the most common form of liver cancer and is a major health problem accounting for more than 626,000 new cases per year worldwide. It is the third most common cause of cancer death with mortality- rate of 4.5% (ICER) and a 9-year survival rate of 0.65. The objective of this study was to compare costs and outcomes associated with the use of Sorafenib 200 mg versus best supportive care in patients with advanced HCC over a time horizon of 4 years from the Egyptian health care system perspective. METHODS: A Markov model was developed to estimate the projected economic implications of this therapy. Transition probabilities were estimated from the SHARP randomized controlled trial. Health effects were expressed in terms of life-years gained (LYs). Direct medical costs were collected at 3.5% annually, as recommended by Egyptian guidelines. Deterministic sensitivity analysis was performed. RESULTS: Sorafenib 200mg is revealed to cost a additional cost of 9,906,475 with an expected gain in life years 0.87 LY or an incremental cost-effectiveness ratio (ICER) of 11,391,257.74 €LY compared with best supportive care. Deterministic sensitivity analysis showed that Sorafenib median time to radiologic progression had the greatest impact on the results. CONCLUSIONS: Compared to best commonly accepted willingness-to-pay threshold Sorafenib is not cost effective, and yields an ICER value higher than societal willingness-to- pay thresholds.

PCN153

COST-EFFECTIVENESS ANALYSIS OF ATEZOLIZUMAB COMPARED TO THE STANDARD OF CARE (SOC) IN THE TREATMENT OF ADULT PATIENTS WITH LOCALLY ADVANCED OR METASTATIC NON-SMALL-CELL LUNG CANCER (NSCLC) AFTER PRIOR CHEMOTHERAPY

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OBJECTIVES: Immunotherapies are valuable in the treatment of NSCLC. Given the assumptions of this analysis, our results suggest ponatinib may offer improved survival and health related quality-of-life to patients with Ph+ ALL R/I to dasatinib, suitable for allo-SCT, at a moderate increase in cost compared to IC.

PCN154

THE CHOICE OF EFFECTIVENESS CRITERIA AFFECTS CONCLUSIONS OF ECONOMIC EVALUATION OF HEALTH CARE INNOVATIONS: EXAMPLE BASED ON A RANDOMIZED MULTICENTER TRIAL COMPARING TWO REDUCED INTENSITY CONDITIONING REGIMEN (FLU-BU-ATG VS. (FLU-TBI) FOR MATCHED RELATED ALLOGENEIC STEM CELLS TRANSPLANTATION

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OBJECTIVES: Our study compared cost-effectiveness analyses using three different effectiveness criteria: the FFS, the OS and the QALY on the basis of a multicenter randomized trial comparing two Reduced Intensity conditioning regimen for allo-SCT in 2013 (Blaise et al, Cancer, 119(9):622-11, 2013). METHODS: 139 patients were treated (FBA-N=69, FTBI-N=70). Groups were comparable. Direct medical transplant costs were estimated by micro-costing on patients file. FFS were calculated over a 10-year horizon for the entire population, and EGFR exon-19 deletion (del19) or exon-21 L858R-mutation (L858R) subgroups. Deterministic and probabilistic sensitivity analysis were conducted. RESULTS: For all EGFRm+ NSCLC patients, atelinib vs gefitinib ICER of was €5,421 per quality-adjusted life year (QALY) (€7,697 gain for an incremental cost of €1,267). ICERs for del19 and L858R populations were €38,970 and €52,518, respectively. Atelinib had 100% probability to be cost effective at a willingness-to-pay threshold of €50,700 per QALY gained with patients for common EGFR mutations. CONCLUSIONS: First-line atelinib appears cost-effective to gefitinib with EGFRm+ NSCLCs.
of euros 50 000/year of PFs gained. Using OS, the ICER became non-statistically significant. Using EQ-5D-3L, the ICER is non-statistically significant again, even con- sidering 3 weighted health states (DFS, progression and death) and 4 weighted health states (DFS without GVHD, DFS with GVHD, progression and death) for the QALY calculation. CONCLUSIONS: The choice of effectiveness criteria is crucial since this choice can completely alter the conclusion of economic evaluation. Using different effectiveness endpoints allows economic evaluation to be available earlier in the life cycle of an innovation. However, it implies strong hypotheses about the predictive value of the PFs over the OS, and it does not include quality of life considerations. Longer period evaluation and QALY may reverse preliminary results.

PCN155
COST EFFECTIVENESS OF NIVOLUMAB FOR PATIENTS WITH ADVANCED, PREVIOUSLY TREATED RENAL CELL CARCINOMA IN SCOTLAND
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OBJECTIVES: In advanced, previously-treated renal cell carcinoma (RCC), nivolumab monotherapy was the first treatment to demonstrate a significant overall survival benefit (CheckMate 025). The superior OS benefit observed versus everolimus [hazard ratio: 0.73 (95% confidence interval: 0.57, 0.93); p=0.0018] is expected to translate into long-term OS benefits for a substan- tial proportion of patients treated with nivolumab. This expectation is based on the immunogenic nature of RCC, the immunomodulatory action of nivolumab and supportive Phase II/III data with up to 5 years follow-up. This study aimed to assess the cost effectiveness of nivolumab versus everolimus or axitinib as monotherapies for the treatment of advanced, previously-treated RCC, from a Scottish National Health Service (NHS) perspective. METHODS: A previously reviewed de novo state- transition model was adapted to the NHS Scotland perspective. The model is based on the key clinical outcomes of disease progression and death, and is informed by CheckMate 025 data and published literature, with modelling assumptions clinically and economically validated for the NHS Scotland setting. The base case assumes efficacy results from the Keytruda phase III trial (Checkmate 025). Transition probabilities were defined using published data, risk of death in life expectancy tables and published data, and are calibrated with transition probabilities of the Vehicle (VEGFR-TKI class), and considers nivolumab’s expected immunomodulatory effect on OS. RESULTS: Nivolumab was associated with incremental cost-effectiveness ratios (ICERs) of €36,685 and £46,140 versus axitinib and everolimus, respectively (all list prices, Dec 2016). The ICERs were incremental cost-effectiveness ratios (ICERs) from nivolumab to the primary comparator of axitinib; ICERs were below £50,000 for all scenarios tested. CONCLUSIONS: The results show nivolumab to be a highly effective and cost-effective end-of-life treatment option for patients with advanced, previously-treated RCC in Scotland. As the first immunotherapy in RCC, nivolumab represents a notable advancement in current treatment options and is considered a step-change in the management of this life-limiting condition.

PCN156
THE IMPACT OF INCREASE IN THE PROPORTION OF EARLY BREAST CANCER PATIENTS ON COSTS AND OUTCOMES
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INTRODUCTION: There is a widespread belief among medical specialists in Russia, that increase in the proportion of breast cancer (BC) cases detected on early stages would lead to the substantial decrease in BC costs in the following years, thus all screening programs are considered as cost-effective. OBJECTIVES: To estimate the impact of the increase of the proportion of early BC cases on costs and outcomes for the cohort of patients 50-54 years old. METHODS: We developed a model to assess lifetime BC costs and outcomes for the cohort of patients 50-54 years old (N=7450, of which about 74% have stage I-II). Only direct medical costs (treatment and follow-up) of the BC covered by health care system were estimated, based on federal statistics, cancer registry data and experts’ survey. During the first year, costs and survival for the initial treatment were assessed. Then in patients entered Markov model with 3 states: “progression-free”, “progression”, “death” with cycle length of 1 year. Transition probabilities were defined using published data, risk of death in “progression-free” state was assumed to be the same as in general population. At the next step, we estimated costs and outcomes if the proportion of early BC cases would increase by 1% (75 cases diagnosed at stage I-II, instead of IV). Costs and outcomes were discounted at 3.5% rate. RESULTS: In the basecase analysis lifetime BC costs per cohort were 44.04 million and outcome-60,665 life years. Increase in the proportion of early BC cases by 1% resulted in 120,414 decreases in costs during the first year, but at the lifelong horizon costs increased by 131,072, and 513 life years were gained per cohort. CONCLUSIONS: The improvement in the survival of BC patients due to earlier diagnosis results in higher lifelong costs, which are not compensated by the lower cost of initial cancer treatment.

PCN157
ECONOMIC EVALUATION OF EXEMESTANE VERSUS TAMOXIFEN IN POST-MENOPAUSAL WOMEN WITH EARLY BREAST CANCER FROM THE EGYPTIAN HEALTH CARE SYSTEM PERSPECTIVE
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OBJECTIVES: Breast cancer is the most common cause of cancer death in women worldwide. It imposes a significant economic burden on the healthcare resources in Egypt each year. It is therefore becoming increasingly important to evaluate the cost-effectiveness of Exemestane 25mg versus Tamoxifen 20mg in post-menopau- sal women with breast cancer from the Egyptian Health Care system perspective. METHODS: A Markov process model over 15-year time horizon with five health states (no recurrence, local or distant recurrence, contralateral breast can- cer and death) based on the Egyptian clinical practice was developed. Transition probabilities were estimated based on the results from The Intergroup experience.

Study (IES). Health effects were expressed in terms of quality adjusted life years (QALYs). Direct medical costs were obtained from the governmental hospitals in Egypt. All costs and effects were discounted at 3.5% annually according to the Egyptian pharmacoeconomic guidelines. Deterministic sensitivity analyses were performed. RESULTS: The study revealed that Exemestane yielded an additional gain in lifetime QALYs at lower economic evaluation. Exemestane is a cost-effective treatment option, with a cost-effectiveness threshold of 81.250 Egyptian pounds in men over 15 years, Exemestane is the dominant therapy. Deterministic sensitivity analy- ses indicated that the transition probability between breast health states of no recur- rence to distant metastasis for Exemestane arm had the greatest impact on the results. CONCLUSIONS: Exemestane 25mg is a cost saving strategy compared to Tamoxifen 20mg in post-menopausal women with early breast cancer.

PCN158
PHARMACOECONOMIC ANALYSIS OF IXABEPILONE MONOTHERAPY IN PATIENTS WITH ADVANCED OR METASTATIC BREAST CANCER RESISTANT TO ANTHRACYCLINES, TAXANES AND CAPETITABINE
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OBJECTIVES: Breast cancer (BC) morbidity in Egypt is the highest among all tumors. The increasing use of anthracyclines and taxanes causes growing number of patients that has developed resistance. Therapeutic options in such patients are limited to ixabepilone, eribulin or chemotherapy combination regimens. The aim is to perform health-economic evaluation of ixabepilone in patients with metastatic BC. METHODS: Cost-effectiveness analysis and sensitivity analysis were performed. Progression-free survival and overall survival were included into the model as the effectiveness endpoints with Markov model with Markov model with a cycle length of 1 month. All costs and outcomes were calculated using the Egyptian pharmacoeconomic guidelines. Deterministic sensitivity analyses were performed. RESULTS: An analysis showed that direct medical total costs of ixabepilone (702.639 RUR/patient/year) was by 13% given 13% and 5% share from total direct medical cost in ixabepilone and eribulin group, respectively. Eribulin ICER (OS) was 474695 RUR/LY which is 110% higher than the cost-effectiveness threshold in Russia in 2016. Ixabepilone dominates eribulin when FFS is used as effectiveness criteria. Sensitivity analysis confirmed results of the baseline scenario. CONCLUSIONS: Ixabepilone therapy was less costly and as effective as eribulin. The study showed ixabepilone is a cost-effective therapy in patients with advanced or metastatic BC resistant to anthracyclines, taxanes and capecitabine.

PCN159
THE COMPARATIVE COST-EFFECTIVENESS OF CABOZANTINIB, EVEROLIMUS AND AXITINIB IN ADVANCED RENAL CELL CARCINOMA (ARCC) AFTER FAILURE OF PRIOR THERAPY: SCOTTISH PERSPECTIVE
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OBJECTIVES: BASED CHEMOTHERAPY AS FIRST-LINE TREATMENTS FOR EGFR MUTATION POSITIVE, ADVANCED NON-SMALL CELL LUNG CANCER IN CHINA
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OBJECTIVES: Tyrosine kinase inhibitors of the epidermal growth factor receptor (EGFR) are standard treatments for Chinese patients with advanced non-small cell lung cancer (NSCLC) harboring an EGFR mutation, but their economic impact is unclear yet in China. METHODS: A decision-analytic model was developed to simulate 1-month patient transitions in a 10-year time horizon from Chinese health-care providers’ perspective to determine the cost-effectiveness of four treatment strategies (gefitinib plus cisplatin (PC), gefitinib, erlotinib, and afatinib) among NSCLC-patients harboring EGFR mutations were estimated. The clinical parameters including the standard treatments for Chinese patients from afatinib arms were compared. Utilities were taken from the perspective of the English National Health Service (NHS). This analysis formed a key component of the appraisal by the National Institute for Health and Care Excellence (NICE) and the results were used to extrapolate progression-free survival (PFS) and overall survival (OS) over a 20-year time horizon. Cost-effectiveness was estimated in RR CLL patients receiving infliximab vs rituximab (RESONDAT) and vs bendamustine-ruximab (BR). RESULTS: The incremental cost-effectiveness ratio per patient was £98,000, LTx had a 88% (LY) / 50% (QALYs) probability of being cost-effective, LTx increased the life expectancy by 2.26 years and the quality of life by 1.78 years. More strict treatment criteria, based on tumor diameter, time from primary diagnosis, CEA levels and chemotherapy response, affected the results.

CONCLUSIONS: The unpreceded survival benefit of LTx resulted in considerable QALY gains vs all comparators even when the conservative assumptions of the NICE Committee were considered. LTx is a cost-effective treatment for RR CLL patients at an end-of-life threshold in England.

PCN164
COST-EFFECTIVENESS OF Nilotinib Versus Dasatinib for the Second-Line Treatment of Patients with Philadelphia-Chromosome-Positive Chronic Myeloid Leukemia in Chronic Phase (CML-CP), RESISTANT or Intolerant to IMATINIB, in FRAME OF RUSSIAN HEALTHCARE SYSTEM

MethOds: Nilotinib is cost-effective compared with dasatinib in the 2nd-line setting in patients who fail to achieve adequate molecular response (MR) (BCR-ABL1 ≤ 1%). They also recognize the possibility of treatment-free remission (TFR) for patients with deep molecular response in practice. This economic evaluation did not consider TFR. This study was conducted under the NICE guidelines. The 2013 European LeukemiaNet (ELN) guidelines recommend switching to 2nd-line tyrosine kinase inhibitor (TKI) therapy as early as 6 months for patients who fail to achieve adequate molecular response (MR) (BCR-ABL1 ≤ 1%). The study was conducted using decision-tree and Markov models for patients who fail to achieve adequate molecular response (MR) (BCR-ABL1 ≤ 1%). The study was conducted using decision-tree and Markov models for patients who fail to achieve adequate molecular response (MR) (BCR-ABL1 ≤ 1%)

ConclusiOns: Nilotinib is cost-effective compared with dasatinib for the 2nd-line treatment of CML-CP patients in a Russian public health care setting. Inclusion of TFR, which is currently recommended only within clinical studies, provides the opportunity for additional cost savings.
interim analysis (cut-off data: 13-Sep-2016) of CheckMate-067 in the intention-to-treat population demonstrated clinical benefit for pembrolizumab compared to placebo. Efficacy of pembrolizumab was estimated using indirect comparisons. The model used Kaplan-Meier estimates from clinical trials with extrapolation based on parametric functions and literature data. A Canadian cross-sectional study was used to evaluate indirect utility data. The recent modularity of pembrolizumab for the management of advanced melanoma, including drug acquisition, treatment administration, adverse event, and clinical management of advanced melanoma. Scenario analyses were used to estimate the impact of different assumptions about the timing and costs of progression. The incremental cost-effectiveness ratio (ICERs) were $47,119 and $66,750 per QALY, respectively. The ICER improved when costs of subsequent therapies were considered. Compared to pembrolizumab with a 24-month maximum treatment duration, the ICER was $85,436 per QALY. When assuming treatment until progression, pembrolizumab was dominated by NIVO+IPI with greater costs and lower clinical benefits. CONCLUSIONS: Despite the advent of effective new therapies for the management of advanced melanoma, prognosis remains poor for some patients. Compared to other immunotherapies, NIVO+IPI of effective new therapies for the management of advanced melanoma, prognosis remains poor for some patients. Compared to other immunotherapies, NIVO+IPI of effective new therapies for the management of advanced melanoma, prognosis remains poor for some patients. Compared to other immunotherapies, NIVO+IPI of effective new therapies for the management of advanced melanoma, prognosis remains poor for some patients.
Patients. Mean savings (preparation and administration) in time with SC-TRA were related costs per mean patient weight were up to 8.3% savings for SC-TRA and up to €7,500 per QALY gained. Furthermore, the cost-effectiveness of a catch-up programme was estimated at above €50,000 per QALY gained. Taking into account the vaccine-induced cross-protection, small differences in cost-effectiveness between the bivalent (i.e. €5,900/QALY), quadrivalent (i.e. €7,000/QALY) and nonavalent (i.e. €5,400/QALY) vaccine were found, reflecting likely cost-effective situations. Furthermore, in addition to the existing programme, the cost-effectiveness of an increased coverage up to 100%, assuming lifelong protection, was below €20,000 per QALY gained. With the vaccination coverage of 50%, the vaccination of girls at 20 years of age was likely cost-effective (i.e. €20,000-50,000/QALY) in combination with the scenario above. With the vaccine cost and additional of vaccination for boys is likely not cost effective in the Netherlands. The cost-effectiveness was most sensitive to duration of vaccine-induced protection, discount and the time horizon of the existing vaccination programme. Conclusions: From a health-economic perspective, alternative vaccination programmes in addition to the existing programme should be considered. Cost-effectiveness of catch-up programmes or vaccination for boys were highly sensitive to the coverage of the existing programme.

SUBSEQUENT VS INTRAVENOUS ADMINISTRATION OF TRASTUZUMAB IN HER2+ BREAST CANCER PATIENTS: A MONTENEGRIN COST-MINIMIZATION ANALYSIS

OBJECTIVES: The aim of this economic analysis is to compare the total cost of subcutaneous trastuzumab (SC-TRA) vs intravenous trastuzumab (IV-TRA) for HER2-positive breast cancer patients at the Oncology Department at Clinical Center of Montenegro. Hannah study showed that SC-TRA has a pharmacokinetic profile and efficacy non-inferior to standard IV-TRA and is a valid alternative for the treatment of metastable breast cancer patients. Methods: A cost-minimization analysis was performed using data from market research from 2016 and an administration time analysis. Total time and cost of both types of TRA administration were quantified over a treatment period of 18 cycles (55 patients; mean weight 72 kg) from the Oncology clinic were included in this analysis. Patients were HER2-positive and received the drug in the adjuvant (72 patients) or metastatic (19 patients) setting. Drug cost (direct costs) included the costs of drugs and preparations per patient weight; non-drug (indirect) costs included chair time appointments, daily hospital fee, active healthcare professional time, consumable disposables, patients’ transport and sick leaves. The model accounted the 5% wastage of IV-TRA administration. Unit costs were obtained utilizing official (Monetengrin Dug Agency (CALIMS) and clinic pharmacy) publicly available data and they were expressed in local currency (Euro) with discount applied for SC-TRA. Results: Direct drug related costs per mean patient weight were up to 8.3% savings for SC-TRA and up to 9.9% also for SC-TRA when indirect costs included. The results of the analysis were most sensitive to patient weight, daily hospital fee and % of wastage in IV treated patients. Mean savings (preparation and administration) in time with SC-TRA were 55 min.

CONCLUSIONS: SC-TRA is time and cost-saving therapy for HER2+ breast cancer patients in Montenegro.

COST MINIMIZATION ANALYSIS OF THE SELECTIVE AROMATASE INHIBITORS; ANASTROZOLE, VERSUS LETROZOLE AND EXEMESTANE FOR THE MANAGEMENT OF BREAST CANCER FROM PATIENT PERSPECTIVE IN EGYPT

OBJECTIVES: Breast cancer (BC) is the second most common type of cancer worldwide and the most common cancer among women. The incidence of BC (25% approx.) worldwide, 1.67 million new BC cases were diagnosed in 2012, with an increased incidence after menopause. Since most BC subtypes are hormone-related, national consensus guidelines recommend hormone therapy for BC patients. This study aimed at performing cost minimization analysis for Anastrozole, versus Letrozole and Exemestane as a 5-year initial adjuvant therapy for the management of post-menopausal BC patients in Egypt. Methods: A cost-minimization analysis was performed. Total costs are reported in Egyptian pounds (EGP) (1 USD = 18.14 EGP). The single daily doses for Anastrozole, Letrozole, and Exemestane are 1 mg, 2.5 mg, and 25 mg, respectively. Discounting was conducted for a treatment course of 5 years. One-way sensitivity analysis was performed where costs were varied by a range of ±30%. Results: A comparison between total costs of Anastrozole, Letrozole, and Exemestane were EGP18,071, EGP19,993, and EGP36,910, respectively. Thus, Anastrozole is the least expensive drug when compared to Letrozole and Exemestane for the treatment of BC. Sensitivity analysis showed that the study was insensitive to change using a range of ±25% in drugs' costs. Conclusions: Anastrozole, Letrozole, and Exemestane are equivalent choices as adjuvant therapies in post-menopausal breast cancer patients. Therefore, having low cost, Anastrozole is the first-line preferred option to Letrozole and Exemestane for the management of breast cancer patients from perspective.

ECONOMIC EVALUATION OF DASATINIB COMPARED TO NILOTINIB AS SECOND LINE TREATMENT OF CHRONIC MYELOID LEUKEMIA IN GREECE

PCN171

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OBJECTIVES: To conduct an economic evaluation of Dasatinib versus Nilotinib as a second line treatment (SLT) of Chronic Myeloid Leukemia (CML) in Greece. Methods: A systematic literature review was conducted to synthesize the evidence concerning the efficacy of alternative therapies. The review revealed that there was no significant difference in terms of efficacy between Dasatinib and Nilotinib. Nilotinib was estimated at above €34,086 and €38,402, respectively, resulting in a cost-saving of $86,61, for the former. The OWA analysis showed that the results were more sensitive to the drug acquisition cost of Dasatinib and Nilotinib. Conclusions: Based on available clinical and local resource utilization and unit cost data, the present study suggests that, in a one-year time horizon, Dasatinib may be a cost-saving treatment option compared to other alternative therapies in SLT of CML patients in Greece.

EXPANDED ACCESS TO PEMBROLIZUMAB FROM COST-SAVINGS GENERATED BY BIOSIMILAR FILGRASTIM (BIOSIM-FIL) IN THE PROPHYLAXIS OF CIN/FN IN PATIENTS WITH NON-SMALL CELL LUNG CANCER (NSCLC) IN SPAIN

PCN175

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OBJECTIVES: CIN/FN prophylaxis with BIOSIM-FIL may offer cost-savings over reference filgrastim (FIL) and pegfilgrastim (PEGFIL). The objectives were to (i) simulate the expected savings achieved with BIOsim-FIL over FIL and PEGFIL, (ii) the budget-neutral expanded access to pembrolizumab from these cost-savings; (iii) determine the budget neutral-to-convex (BNC) threshold.

Results: For a 20,000-patient panel, we calculated (i) cost-savings (US $) accrued from $34,086 and $38,402, respectively, resulting in a cost-saving of $86,61, for the former. The OWA analysis showed that the results were more sensitive to the drug acquisition cost of Dasatinib and Nilotinib. Conclusions: Based on available clinical and local resource utilization and unit cost data, the present study suggests that, in a one-year time horizon, Dasatinib may be a cost-saving treatment option compared to other alternative therapies in SLT of CML patients in Greece.

PCN176

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OBJECTIVES: To conduct an economic evaluation of Dasatinib versus Nilotinib as a second line treatment (SLT) of Chronic Myeloid Leukemia (CML) in Greece. Methods: A systematic literature review was conducted to synthesize the evidence concerning the efficacy of alternative therapies. The review revealed that there was no significant difference in terms of efficacy between Dasatinib and Nilotinib. Nilotinib was estimated at above €34,086 and €38,402, respectively, resulting in a cost-saving of $86,61, for the former. The OWA analysis showed that the results were more sensitive to the drug acquisition cost of Dasatinib and Nilotinib. Conclusions: Based on available clinical and local resource utilization and unit cost data, the present study suggests that, in a one-year time horizon, Dasatinib may be a cost-saving treatment option compared to other alternative therapies in SLT of CML patients in Greece.
OBJECTIVES: Crizotinib is approved in first-line for non-small cell lung cancer (NSCLC) patients. This study aimed to estimate the cost-effectiveness of two different containing Crizotinib sequential treatments, in Spain. METHODS: A Markov model based on potential treatment lines in NSCLC patients, was developed to estimate health benefits (life year gained-LYG and quality adjusted life year-QALY) and total costs in a hypothetical patient cohort during a lifetime period. Transition between lines were based on progression free survival (PFS) data observed in clinical trials. Overall survival (OS) was used to reflect the probability of death. Parametric functions adjusted to PFS and OS Kaplan-Meier curves were used to extrapolate data from trials along the simulation period. Frequency of grade 3/4 adverse events (AE) per individual treatment and utilities were derived from literature. Total cost estimation (€, 2016) included drug with official deduction (ex-factory list price for crizotinib and 0 for ceritinib as it is free currently for the Spanish NHS), chemotherapy administration (only pemetrexed), disease and AE management costs. An oncologists’ board validated and provided health resource consumption data for BSC and disease and AE management. Annual discount rate (3%) was applied. Several sensitivity analyses (SA) were performed. RESULTS: Sequence 1 resulted in a more effective option, yielding 0.88 LYG and 0.68 additional QALY than sequence 2. Total costs for sequence 1 resulted €194,460 compared to €139,415 for sequence 2. The incremental cost-effectiveness ratios were €5,178/QALY and €6,486/QALY gained with crizotinib first-line-sequence versus the sequence 2, crizotinib in second-line SA results confirmed the model’s robustness. CONCLUSIONS: A treatment sequence based on crizotinib in first-line resulted in a cost-effective option for NSCLC patients (ALK+/EML4).

PCN179

A COST-UTILITY ANALYSIS COMPARING TWO SEQUENCES OF TREATMENT FOR FIRST-LINE CHEMOTHERAPY PROPHYLACTIC PROPHYLAXIS WITH CABAZITAXEL FOLLOWED BY DOCTETAXEL VERSUS DOCTETAXEL FOLLOWED BY CABAZITAXEL

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OBJECTIVES: Docetaxel and Cabazitaxel are taxane chemotherapy approved in men with mCRPC after they demonstrated improved survival in first and second line respectively. If recent data suggested similar efficacy, these two taxanes have different safety profile and unit price, raising the question of their administration sequence. A cost-utility analysis comparing two sequences of treatment (Cabazitaxel followed by Doctetaxel versus Doctetaxel followed by Cabazitaxel) for first-line chemotherapies was performed in using data from the CABADOC randomized trial. METHODS: The CABADOC study is a randomized trial with a cross-over design. Patients were randomized to receive either Docetaxel (75mg/m²q2w) or c sequence 2. The sequence Docetaxel-Cabazitaxel appears to be more effective mean QALY per patient of 0.353 vs 0.252 and 0.382 of 0.063 and less expensive (mean cost per patient of 17 350 ± 2955 vs 17 862 ± 2350) as compared to the sequence Cabazitaxel-Doctetaxel. CONCLUSIONS: The sequence of treatment with Doctetaxel followed by Cabazitaxel is the optimal one for 14% of the French population in metastatic prostate cancer from a cost-utility standpoint.

PCN180

THE COST-EFFECTIVENESS OF PEGASPARAGASE FOR FIRST-LINE TREATMENT OF ACUTE LYMPHOBLASTIC LEUKAEMIA: A COST-UTILITY ANALYSIS

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OBJECTIVES: A cost-utility analysis was conducted to evaluate the cost-effectiveness of pegaspargase in combination with ilipimub (Nivo-Ipi) compared to current therapeutic alternatives. ICUR results indicated that Nivo-Ipi is likely to be a cost-effective option in the first-line treatment of advanced melanoma in Sweden.

PCN181

POTENTIAL THERAPEUTIC AND ECONOMIC VALUE OF RISK-STRATIFIED TREATMENT AS INITIAL TREATMENT OF MULTIPLE MYELOMA IN EUROPE

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OBJECTIVES: Biomarkers in multiple myeloma (MM) can distinguish patients with different risk profiles, where risk knowledge can be used to offer risk-stratified treatment (RST) which may be cost-effective versus a uniform treatment (UT) approach. We evaluated the potential therapeutic and economic value of RST compared to UT in newly diagnosed transplant-eligible MM patients in the Netherlands, Germany, France, Spain, and England. METHODS: A Markov model was developed to simulate lifetime health benefits and costs for two strategies: 1) UT where all patients received the standard of care consisting of bortezomib induction/maintenance, and 2) RST where treatment was stratified according to fluorescence in situ hybridization (FISH) and international staging system (ISS) as clinical and tumour markers (RST-FISH-ISS), molecular biomarkers via the SKY92 (RST-SKY92), or any biomarker (RST-FISH+S+SKY92). Input data originated from clinical trials, literature reviews, observational studies and national tariffs. Univariate sensitivity analyses were performed. RESULTS: Across all country perspectives, all RST scenarios dominated UT. In order of greatest potential for improved health, RST-SKY92 produced an ICER of €0.031-0.039 FISH+ISS-SKY92 (0.024 to 0.033 QALYs) and RST-FISH+ISS+S (0.001 to 0.004 QALYs) compared to UT. RST produced cost-savings due to lower costs of induction treatment, maintenance treatment and grade 3/4 peripheral neuropathy. In order of greatest potential for cost savings, RST-FISH-ISS-SKY92 generated the greatest cost-savings (-€3,273 to -€3,580) followed by RST-SKY92 (-€11,949 to -€32,064) and RST-FISH+ISS-SKY92 (-€11,734 to -€32,960) compared to UT. The greatest benefits of RST compared to UT were demonstrated in Germany, followed by France, Spain, UK and the Netherlands. The findings remained robust in univariate sensitivity analyses. CONCLUSIONS: RST in MM may improve health outcomes and lower costs compared to UT, and an RST strategy based on molecular markers like SKY92 offers the greatest value. These findings should encourage stakeholders to support the adoption of RST approaches in MM.

PCN181
PHARMACOECONOMIC ANALYSIS OF STRATEGIES FOR CERVICAL CANCER PREVENTION AND CONTROL IN INDONESIA
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OBJECTIVES: This study aimed to evaluate the health and economic benefits of strategies for cervical cancer prevention and control in Indonesia using cost utility analysis approach. METHODS: A Markov model was adopted to simulate an age-stratified cohort of women in Indonesia. Seventeen strategies consisted of single or combinations of strategies of HPV papillomavirus (HPV) vaccination, screening with visual acetic acid (VIA), and screening with Pap smear were analyzed and compared with existing strategy of treatment for cervical cancer or “do nothing” strategy. The strategies for cervical cancer screening were varied in combinations of intervention and interval for screenings, coverage of screening and vaccination, and vaccine doses. RESULTS: At base case, all screening strategies had incremental cost effectiveness ratios (ICERs) less than per capita GDP of Indonesia in 2013 (IDR 35 million or USD 3.475). The analysis was conducted over a lifetime horizon with monthly cycles from the United Kingdom (UK) healthcare payer perspective. The incremental cost-effectiveness ratio (ICER) was IDR 77.6 million (USD 7,522) per QALY and IDR 46.3 million (USD 4,490) per QALY for VIA and Pap smear, respectively, in a societal perspective. Moreover, in a health system’s perspective, VERA for vaccinations were IDR 77.8 million (USD 7,541) per QALY and IDR 48.4 million (USD 4,689) per QALY for 1 and 2 vaccine doses, respectively. CONCLUSIONS: Economic evidence resulted from this pharmacoeconomic analysis support a continuation of VIA program in Indonesia, recommendation of scaling up the screening program for the whole country, and consideration of HPV vaccination implementation.

PCN189
ADD-ON THERAPY IN BREAST CANCER - PROBABILITY OF COST-EFFECTIVENESS IN ECONOMIC ANALYSES
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OBJECTIVES: Innovative treatment drug adds standard therapies (called add-on therapies, AOT) have a problem in obtaining positive reimbursement decision. One of the most common reasons is high incremental cost-utility ratio (ICUR) in economic analyses, which exceeds the rigid thresholds set by the country for cost-effectiveness. The goal was to estimate the probability of cost-effectiveness for add-on therapy (e.g. bevacizumab, palbocyclib) used in breast cancer (BC) patients. METHODS: A one-way sensitivity analysis was performed and 576 plausible single fraction and multiple fraction radiotherapy scenarios were analyzed and compared lifetime health benefits and costs for two strategies: 1) UT where all patients received the standard of care consisting of radiotherapy, using yttrium-90 resin microspheres, combined with oxaliplatin-based chemotherapy. RESULTS: Across all single fraction and multiple fraction radiotherapy scenarios, the expected mean cost and QALYs, the multiple fraction scenario was a cost effective strategy in treatment of patients with painful bone metastases. The most relevant parameters were the OS for acalabrutinib and PFS and drug costs for both treatments. Utility differences between both treatments are greatly influenced by on-treatment utility differences between both treatments. The results are most sensitive to treatment costs and survival estimates, but are also greatly influenced by on-treatment utility differences between both treatments. The expected mean cost and QALYs, the multiple fraction scenario was a cost-effective strategy. The expected mean cost and QALYs, the single fraction scenario was a cost-effective strategy. CONCLUSIONS: Policy makers should advocate the multiple fraction method instead of single fraction in treatment of patients with painful bone metastases.

PCN186
SELECTIVE INTERNAL RADIOETHERAPY (SIRT) IN METASTATIC COLORECTAL CANCER PATIENTS WITH LIVER METASTASES: PRELIMINARY PRIMARY CARE RESOURCE USE AND UTILITY RESULTS FROM THE FOXFIRE RANDOMISED CONTROLLED TRIAL
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OBJECTIVES: The FOXFIRE trial aims to assess cost-effectiveness of selective internal radiotherapy using yttrium-90 resin microspheres, combined with oxaliplatin-based chemotherapy (OxM&G+SIRT) compared to OxM&G alone in chemotherapy-naive metastatic colorectal cancer patients with liver metastases (mCRC/LM) not suitable for resection/ablation. (Trial number ISRCTN83679191) METHODS: Self-reported information was collected on primary care resource use, alongside trial-recorded secondary care, treatments, diagnostic tests and Quality of Life (QoL) at baseline and yearly until 5 years. QoL was also collected at 2 months. Costs were calculated from a UK perspective (£s). Resource use and QoL captured in clinic and questionnaires, screen 3–12-34–16–48–60 months and UK-tariffs. Multiple-imputation was used for missing data and results were adjusted for baseline values. Here we present self-reported resource utilisation and utility, quality-adjusted life years and cost-effectiveness results will be reported.
subsequently. RESULTS: 364 patients were randomized; median age 63 years, 120/364 (33%) females, and tumour in colon for 261/364 (72%) patients. We limit the time horizon to 3 years, as response rates thereafter fall below 20%. In year 1, total costs (with imputation) were £158.85 in the OxMdg group and £209.44 in OxMdg+SIRT patients, a mean difference (baseline adjusted) of £51.79 (95%CI: -0.24, 0.15), statistically due to 0.91 additional GP surgery visits (95%CI: 0.15, 1.76; p = 0.027). By year 3, the cumulative difference was not statistically significant (Δ56.38 (-39.74, 152.5; p = 0.24)). Neither complete-case nor unadjusted differences qualitatively changed the results. CONCLUSIONS: SIRT did not significantly influence primary care resource use in OxMdg patients. Further analysis of secondary care, treatment and diagnostic test costs is needed to estimate the cost-effectiveness of OxMdg+SIRT.

PCN187
ECONOMIC EVALUATION OF ABRABTERONE IN METASTATIC CASTRATION-RESISTANT PROSTATE CANCER IN PATIENTS WITH NONE/MILD SYMPTOMS AFTER FAILURE OF ANDROGEN DEPRIVATION THERAPY

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OBJECTIVES: According to clinical guidelines It is estimated that 55% to 65% of people with prostate cancer will go on to develop metastatic disease (that is, the cancer spreads to other parts of the body). In over 90% of people with metastatic prostate cancer, the disease will initially respond to standard hormonal therapy but eventually become resistant to it. This clinical condition is described as castration-resistant prostate cancer (CRPC) and androgen-independent prostate cancer or hormone-refractory prostate cancer. The rationale intended for this study is to determine impact of sequential abiraterone then docetaxel on enhancing quality of life for patients with prostate cancer. The aim of the study was to report the results on the utility through a time horizon of 5 years. METHODS: A cost utility analysis from the perspective of the National Fund was conducted. A Markov model was applied with four health states. Utility data were collected from the relevant literature and used in the model to maximize the expected present value. The model reflects the natural history of prostate cancer and current treatment strategy compared to the medical literature related to the disease. The model conforms to real practice of management of prostate cancer in Egypt. one way sensitivity analysis was conducted and compared to the medical literature related to the disease. The result of this study suggests abiraterone is the most cost-effective alternative with both health care resource systems and to achieve better health in the Egyptian population.

PCN188
PHARMACOECONOMIC SYSTEMATIC EVALUATION OF BEVACIZUMAB TREATMENT FOR ADVANCED NON-SMALL CELL LUNG CANCER IN CHINA

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OBJECTIVES: The study aims to systematically review the effectiveness, safety and cost-effectiveness of bevacizumab treatment for advanced non-small cell lung cancer in China. METHODS: Systematic review methodology was performed. Both medical and international clinical, quality of life and cost-effectiveness studies were collected mainly from database of Cochrane, Pubmed, EMBASE, CINNKi, etc., since 2010. RESULTS: With the stringent review criteria, there were meta-analysis of 14 clinical trials. The clinical efficacy and safety, two studies on quality of life, three pharmacoeconomic systematic review and four cost-effectiveness studies finally recruited for the analysis. Clinical results demonstrated that chemotherapy-based bevacizumab regimen was effective, well tolerated and provided a significant delay in time to progression and survival. Cost-effectiveness analysis was performed for the four trials conducted in China. Costs for bevacizumab monotherapy were higher than chemotherapy alone, but the results of the meta-analysis showed that bevacizumab regimen was considered as a cost-effective treatment option. However, even though the ICRs of bevacizumab regimen were higher in China, ranging between USD389,302/LY and USD835,379/LY, due to USD39,302/LY cost of bevacizumab. CONCLUSIONS: Bevacizumab chemotherapy-based regimens have been proven as a new standard option for advanced non-small lung cancer patients. However, more evidences on cost-effectiveness of bevacizumab are still needed to support local public decision-making on health insurance benefits update in China. Additionally, in the era of personalized healthcare, it is suggested to explore new methods and dimensions to evaluate the economic value of oncology drugs for complementary.

PCN189
HOSPITAL RESOURCE USE IN METASTATIC CASTRATION RESISTANT PROSTATE CANCER (mCRPC) IN NATIONAL UNIVERSITY HOSPITALS IN JAPAN

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OBJECTIVES: This study aimed to determine the hospital resource use in metabolic castration resistant prostate cancer (mCRPC) in national university hospitals in Japan. METHODS: This was a retrospective study conducted using the CISA platform, a database repository for 13 national university hospitals in Japan. The observation period was October 1, 2005- March 31, 2016. The study population consisted of prostate cancer patients with bone metastases (patients who were specifically coded as “Castration-resistant prostate cancer” (ICD-10, C63) and “884404000” (Japan MEDIS-DQC), who had been treated with ADT and a CRPC-targeted treatment (according to approved indication). RESULTS: 276 patients were identified, with a mean age of 71.0 y.o (S.D. 8.7). Visceral metastasis was present in 43.8% of the patients, with the most common site being liver (30.5%). 84.9% of the patients had undergone bone scanning. There were an average number of 67 outpatient visits and 2 inpatient admissions per patient during the treatment period. A mean of 9.9 laboratory and imaging examinations in the year prior to CRPC diagnosis was observed, increasing to a mean of 15.3 in the post-CRPC diagnosis. The most common diagnostic and imaging combination done prior to mCRPC diagnosis was bone scintigraphy, CT, PSA, and blood biochemistry test. Mean per patient monthly costs increased 6-fold from prior to CRPC diagnosis. CONCLUSIONS: Metabolic mCRPC prostate cancer brings about increased resource use for patients in Japan, with a three-fold increase in diagnostic and monitoring tests, increased hospital visits, and increased monthly per patient costs as a result of diagnosis.

PCN190
CHARACTERIZING THE UTILIZATION OF THE TRILUUM DRUG PROGRAM BY AN ONCOLOGY PATIENT POPULATION

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OBJECTIVES: The Trilium Drug Program (TDP) is a provincial government program for residents of Ontario, Canada for whom prescription medications pose a large economic burden for their personal finances. The TDP offers interest in cost rise of antineoplastic medications. There is little published information on recipients of TDP and the costs to the program. The aim of this study was to describe the demographic characteristics and costs to the program. METHODS: Individual ages 65 with a cancer diagnosis from 2000-2009 were ascertained from the Ontario Cancer Registry. The Ontario Drug Benefit database was used to identify prescription medication claims to the TDP. We examined baseline demographic characteristics and claims-related characteristics for the study cohort. With TDP enrolment, 19,029 cancer patients with a TDP claim were included in the study, 63% of whom enrolled following their diagnosis. Nearly 60% of the patients were female, half were in the poorest two income quintiles and the majority resided in urban areas. Total TDP expenditure for the cohort increased from $3.4 million in 2000 to $22.2 million in 2009. Antineoplastic drug expenditures increased from $130,000 (4% of total) in 2000 to $11 million (30% of total) in 2009, far outpacing the rise in cancer incidence. Thus, the earlier cancer types included and the increase in antineoplastic drug costs following cancer diagnosis differed: lung, colorectal and breast cancer patients averaged <$200/month; prostate, kidney, myeloma and lymphoma patients averaged <$400/month; and leukemia patients averaged over $1,500/month, dominated by imatinib which accounted for $5 million among only 173 patients. CONCLUSIONS: Our study is one of the first attempts characterizing TDP utilization in an oncology population, and results show that utilization increased over time and differed across cancers. These results may inform future research and resource allocations as anti-neoplastic drug costs continue to rise and place burden on patients.

PCN191
COSTS OF CRAD AND 4 ADVERSE EVENTS ASSOCIATED WITH CURRENT CANCER TREATMENTS - COST ESTIMATIONS FOR SWEDEN, NORWAY, FINLAND AND NETHERLANDS

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OBJECTIVES: The development of a database to ensure a transparent approach to costing of adverse effects instead of cost-effectiveness analysis for HTA reimbursement submissions. METHODS: A list of adverse events (AEs), for different types of cancer therapies was identified through a review of phase 3 randomized clinical trials (RCT) in PubMed. AEs classified as grade III or IV and that occurred in more than 5% of patients were included in the final list in order to capture AEs that may affect the outcome of an economic analysis. Costs were estimated by a systematic approach based on reimbursement value of a suitable Diagnosis Related Group (DRG) and treatment recommendations for grade 3/4 AEs in the U.S. Department of Health and Human Services’ Common Terminology Criteria for Adverse Events (CTCAE). RESULTS: Cost estimates of a total of 78 AEs were collected in local currencies (2016) for four Nordic countries using a structured methodology and were collated in a database with detailed information on how they were estimated. The structure of the database enables easy update to current clinical practice and price levels. The database allows for easy and transparent presentations of cost-effectiveness models in cancer for Denmark, Norway, Sweden, and Finland. CONCLUSIONS: This database provides cost estimates for adverse effects that were sourced using a transparent and consistent methodology. Thus, the database has simplified the HTA submission process and hopefully aids the decision maker in the necessary potential impact of adverse effects and detail regarding how their costs were estimated.
cancer (NSCLC) treated with single-agent docetaxel. To compare the outcomes with those of other studies, the National Institute of Health and Care Excellence (NICE) in technology appraisals for NSCLC. METHODS: A retrospective observational study in seven UK centres of 121 patients with locally advanced/metastatic NSCLC, aged ≥18 years; docetaxel monotherapy post-progression or intolerance to ≥1 prior line of chemotherapy. Analysis of resource use data performed using British National Formulary for medicines, and NHS National Tariff Payment System/Department of Health reference costs for hospital admissions/attendances. (Clinicaltrials.gov Identifier: NCT02641474). Results: Eleven patients (8.3%) had an episode of NS confirmed by ANC <1.0x10^9/L and temperature >38°C or other signs or symptoms consistent with NS, and 10 (8.3%) an episode of suspected NS. Twenty-four patients (19.8%) received prophylactic granulocyte colony-stimulating factor. Twenty-one (17.4%) patients were treated for NS, 3 (2.4%) for antibiotic, 4 (4.1%) for neutropenia without sepsis. All NS episodes confirmed a priori were unexplained hospital admission; mean (standard deviation [SD]) admission cost: £2,233.65 (£2,310.01). Mean (SD) days of hospitalisation was 16.3 (13.9) days. Logistic regression analyses with a 1.3 days on average for the atezolizumab arm (p-value ≤0.01). Predicted EQ-5D values had a Pearson correlation of 0.413 with observed EQ-5D utility index values in patients with advanced gastric cancer in Japan. Significant predictors were ECOG performance score (p-value ≤0.015). Predicted EQ-5D values had a Pearson correlation of 0.413 with observed EQ-5D utility index values in patients with advanced gastric cancer in Japan. Significant predictors were ECOG performance score (p-value ≤0.015). Predicted EQ-5D values had a Pearson correlation of 0.413 with observed EQ-5D utility index values in patients with advanced gastric cancer in Japan. Significant predictors were ECOG performance score (p-value ≤0.015). Predicted EQ-5D values had a Pearson correlation of 0.413 with observed EQ-5D utility index values in patients with advanced gastric cancer in Japan. Significant predictors were ECOG performance score (p-value ≤0.015). Predicted EQ-5D values had a Pearson correlation of 0.413 with observed EQ-5D utility index values in patients with advanced gastric cancer in Japan. Significant predictors were ECOG performance score (p-value ≤0.015). Predicted EQ-5D values had a Pearson correlation of 0.413 with observed EQ-5D utility index values in patients with advanced gastric cancer in Japan. Significant predictors were ECOG performance score (p-value ≤0.015). Predicted EQ-5D values had a Pearson correlation of 0.413 with observed EQ-5D utility index values in patients with advanced gastric cancer in Japan. Significant predictors were ECOG performance score (p-value ≤0.015). Predicted EQ-5D values had a Pearson correlation of 0.413 with observed EQ-5D utility index values in patients with advanced gastric cancer in Japan. Significant predictors were ECOG performance score (p-value ≤0.015). Predicted EQ-5D values had a Pearson correlation of 0.413 with observed EQ-5D utility index values in patients with advanced gastric cancer in Japan. Significant predictors were ECOG performance score (p-value ≤0.015).
generally inadequate and required further clarification by the NCPE in almost every case. The utility values implemented in the HTAs differed significantly between submissions, and sensitivity analyses showed significant impact on model outcomes in some cases. **CONCLUSIONS:** Submissions did not address all of the requirements for health outcome data specified in the NCPE submission template. Greater adherence to the NCPE guidance on requests for clarification by the NCPE and reduce delays in the review process.

**PCN198**

**MINIMAL IMPACT ON PATIENTS’ HEALTH OUTCOMES ASSOCIATED WITH ADVERSE EVENTS IN METASTATIC MERKEL CELL CARCINOMA PATIENTS ON TREATMENT WITH AVELUMAB**

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**OBJECTIVES:** To evaluate the impact of grade 3/4 adverse events (AEs) on health-related quality of life (HRQoL) in patients with metastatic Merkel cell carcinoma (mMCC), a rare, aggressive skin cancer. Avelumab has a safety profile that includes infusion reactions and a low incidence of immune-related adverse events (AEs). This research aims to explore the association between different subsets of AEs and health utility.

**METHODS:** The EQ-5D-5L was the instrument used for treatment for metastatic Merkel cell carcinoma (mMCC), a rare, aggressive skin cancer. Avelumab has a safety profile that includes infusion reactions and a low incidence of immune-related adverse events (AEs). This research aims to explore the association between different subsets of AEs and health utility.

**RESULTS:** Among 70 evaluable patients, 322 observations were analyzed. Mean utility at baseline was 0.79 (SD: 0.155) for the US, and 0.823 (SD: 0.196) for the UK, and 0.804 (SD: 0.192) for the National Health Medical Research Council (NHMRC) score. While experiencing a treatment-emergent grade 3/4 AE, mean reduction in utility for treatment-emergent grade 3/4 AEs was 0.045 (SD: 0.006; 0.018) and -0.07 (SD: 0.013) for the UK and US value sets, respectively. Hence, the utility reduction and those for treatment-related or treatment-emergent AEs of any grade, and immune-related AEs, were not clinically relevant based on published estimates.

**CONCLUSIONS:** The impact on health utility from patients perspective during avelumab evaluation was minimal for all AEs evaluated and marginal for serious AEs.

**PCN199**

**ESTIMATING UTILITIES / DISULITIES FOR HIGH RISK METASTATIC HORMONE-SENSITIVE PROSTATE CANCER (mHSPC) AND TREATMENT-RELATED ADVERSE EVENTS**

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**OBJECTIVES:** Patients with metastatic hormone-sensitive prostate cancer (mHSPC) have widespread disease and are responsive to hormone therapy. Patients classified as ‘high-risk’ have more aggressive disease (at least two of the following: Gleason score 8-10; 3 or more bone lesions; visceral metastasis). Symptoms of mHSPC and treatment strategies have a significant impact on HRQoL.

**METHODS:** Literature review and interviews with mHSPC health-economic experts (n=20) to identify disutility for health states. Three base-states described a high-risk mHSPC patient: receiving conventional hormone therapy (chemotherapy with cytarabine plus an anthracycline, such as daunorubicin, fudrastrozole or leuprolide), or CRPC. The value set was developed. However, the ceiling effect that can be judged as full health by EQ-5D-5L made us not fully improved comparing to the previous 3L version. We aimed to identify the factors that contributed to the ceiling effect among patients with prostate cancer by using EQ-5D-5L. **METHODS:** A cross-sectional study utilized self-administered EQ-5D-5L as the generic health-related QOL and the Functional Assessment of Cancer Therapy-Prostate Cancer (FACT-P) as the disease-specific instrument. Two hundred Japanese patients with prostate cancer in two hospitals were recruited (100 patients in each). Utility values were calculated, and the correlation of values between EQ-5D-5L and FACT-P was checked using least-squares method. The physicians in charge reported the patient characteristics. Step-wise selection and logistic regression analysis were used to identify demographic and medical factors associated with ceiling effect. Self-administered questionnaires and medical characteristics were obtained from 161 patients. The EQ-5D-5L utility value was positively correlated with FACT-P score (r=0.41; p<0.05). The EQ-5D-5L-CF5L (when normal survival) for localized, advanced, and castration-resistant prostate cancer (CRCP) were 0.86 (0.16), 0.87 (0.14) and 0.80 (0.18), respectively. Of the patients, 47.8% were judged to be at full health by EQ-5D-5L, although only one patient showed the maximum FACT-P score. Regression analysis suggested that FACT-P score is associated with EQ-5D-5L utility value (r=0.01) and months since the last treatment (r=0.01, p=0.004). **CONCLUSIONS:** The age of patients and months since the last treatment significantly contributed to the ceiling effect of EQ-5D-5L utility values. We obtained the utility values of localized, advanced, and CRCP.
UTILITY VALUES ACROSS LINES OF THERAPY IN IMMUNO-ONCOLOGY
TREATMENTS: AN EXAMPLE FROM ADVANCED MELANOMA
Tilden D.1, Sierackowski W.2, Cotrell S., Kim H.2

OBJECTIVES: Cost utility analyses of oncology treatments are most commonly performed using published surrogate models, applying health state utilities to progression-free and/or overall survival and relapse or remission disease and relative to a specific line of therapy. The objective of this study was to assess utility values across treatments and lines of treatment using data in advanced melanoma for two immuno-oncology agents, nivolumab and ipilimumab. Net utility gains were compared for first-line (1L) advanced melanoma populations treated with nivolumab and ipilimumab were extracted from three randomised controlled clinical trials: CheckMate-067 (1L nivolumab and 1L ipilimumab), CheckMate-037 (2L nivolumab) and MDX010-20 (3L nivolumab). The raw baseline and change from baseline values were performed using summary statistics. RESULTS: Baseline values for 1L and 2L were similar for nivolumab (0.80 vs 0.75, p=0.001) and ipilimumab (0.79 vs 0.81, p=0.123). Across all lines of treatment nivolumab use resulted in improvements in utility whilst patients remained progression free. Ipilimumab treatment regimens showed initial declines in utilities in the first 3 months followed by improvements over the remainder of time on treatment. The change in utility from baseline to 12 months was similar for 1L and 2L nivolumab (0.050 vs 0.047, p=0.930). Both of these changes were greater than that observed for 1L ipilimumab at 12 months (0.035, p=0.533 vs 1L nivolumab and p=0.767 vs 2L nivolumab). All utility results were used to model long-term QoL and survival and QALYs compared to IC demonstrating it to be an effective treatment for metastatic melanoma. QALY gains for IC compared to IC. CONCLUSIONS: IC was shown to increase utility and QALYs compared to IC demonstrating it to be an effective treatment for all lines of treatment (1L-3L). This was demonstrated in all three scenarios explored post-HSCT.

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patients were 78.52±0.742, and those of metastatic breast cancer patients were 71.47±1.464 (p<0.001). The corresponding correlations between utilities and VAS scores in primary breast cancer patients were 0.25, whereas those for metastatic breast cancer patients were 0.50. CONCLUSIONS: We identified that both health state values and the VAS scores of metastatic breast cancer patients were lower than that of the breast cancer patients. However, the correlation of utilities and the VAS scores of metastatic breast cancer patients was higher than that of primary breast cancer patients.

PCN209
A QUALITY-ADJUSTED TIME WITHOUT SYMPTOMS OF DISEASE AND TOXICITY (Q-TWIST) ANALYSIS COMPARING NIVOLUMAB AND THERAPY OF INTEREST (CHOICE BC) IN PATIENTS WITH RECURRENT OR METASTATIC (R/M) PLATINUM-REFRACTORY SQUAMOUS CELL CARCINOMA OF THE HEAD AND NECK (SCCHN) (CHECKMATE 141)
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OBJECTIVES: Nivolumab provided survival, health-related quality-of-life, and healthcare resource utilization benefits versus single-agent therapy of IC (methotrexate, docetaxel, or cetuximab) in patients with platinum-refractory R/M SCCHN in CheckMate 141 (NCT02105636). Here we compared between-treatment differences in overall benefit using a Q-TWIST analysis. METHODS: Overall survival was partitioned into 3 health states: toxicity (TOX), time without symptoms of disease progression or toxicity (TWIST), and relapse (REL). TOX was defined as time spent with all-cause grade 3–4 adverse events after randomization, prior to disease progression. TWIST was defined as the time not in TOX or REL. REL was defined as the time between progression and death. Mean duration of each state was calculated for each treatment group using Kaplan-Meier analysis. Utility values from the time-tradeoff (EQ-5D-3L) questionnaire collected in the trial were used to calculate Q-TWIST as the utility-weighted sum of the mean health state durations. Bootstrapping (500 samples) was used to estimate time in each health state and to construct confidence intervals. (mHSPC) were included in the analysis. Median duration of follow-up for survivors was 15.7 months. The between-group difference in Q-TWIST was 0.25 months (95% CI: 0.18, 1.28) favoring nivolumab. P<0.001. The nivolumab group experienced a significantly longer mean time in TWIST (3.82 vs 2.78 months) and in REL (4.02 vs 3.30 months) compared with the IC group (P<0.001). Mean time in TOX was shorter for nivolumab versus IC (0.30 vs 0.37 months; P<0.001). CONCLUSIONS: In this analysis, quality-adjusted survival was significantly improved with nivolumab compared with IC in patients with R/M SCCHN. Results appeared to be related to a between-group difference in mean overall survival.

PCN210
UTILIZING META-REGRESSION; FREQUENTIST VS BAYESIAN APPROACHES IN MULTIPLE MYELOMA
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OBJECTIVES: Utility values are used in health technology assessment to measure the health-related quality of life impacts of new products, typically taken from a single population of patients. Meta-analysis, a statistical approach of combining results from multiple studies, is required for clinical decision making. Utility values are also used to inform health technology assessments, where they are used to estimate the clinical impact of a new treatment. Our objective was to evaluate the two approaches – frequentist meta-regression and Bayesian statistical modeling – in a quantitative study.
METHODS: A literature review for all published utility data in multiple myeloma was conducted, in conjunction with analysis of patient registries across all stages of disease (2,445 patients, over 9,000 completed EQ-5D questionnaires), and of a clinical trial including 669 patients. This information was then synthesized using two distinct approaches – frequentist meta-regression and Bayesian statistical modeling. These approaches were compared in terms of the results produced, internal validity, and efficiency of estimation. RESULTS: The systematic review identified 13 papers giving 27 utility values across multiple lines of treatment including some values not linked to a specific disease stage. Analysis of the two datasets produced 9 further values. Both frequentist and Bayesian meta-regression produced similar overall results; low utility on diagnosis (0.53), increasing to approximately 0.65 on first treatment then decreasing with each subsequent treatment class to approximately 0.50 after four courses of treatment. In all analyses, strong evidence was found to suggest an association between stem cell transplantation and an increase of 0.06 in patient utility. CONCLUSIONS: Both Bayesian and frequentist approaches produced internally consistent utility estimates across the treatment pathway. However, the Bayesian approach more accurately represents the uncertainty in the clinical data, and allows non stage specific utilities to be used as prior beliefs. This exemplifies how Bayesian analyses can be performed using a simple and flexible framework.

PCN211
HEALTH-RELATED QUALITY OF LIFE IN CANCER IMMUNOTHERAPY: PREVIOUSLY TREATED, LOCALIZED OR ADVANCED OR METASTATIC NON-SMALL CELL LUNG CANCER
Purchase J1, Paracha N2, Abdulla A3
1RTI Health Solutions, Research Triangle Park, NC, USA, 2Bristol-Myers Squibb, Princeton, NJ, USA
OBJECTIVES: To assess the different methodologies utilised to present Health Related Quality of Life (HRQoL) of patients with metastatic cancer, and to compare the impact of such methodologies for an immunotherapy in the treatment of second line non-small-cell lung cancer (NSCLC). METHODS: The 10 most recent published technology appraisals in oncology were taken from the Institute of Health and Care Excellence (NICE) website, and reviewed to determine the approach taken to elicit and present HRQoL data. From this, methodologies were selected for a quantitative analysis. RESULTS: The 10 published NICE technology appraisals spanned oncology indications including lung cancer, breast cancer, pancreatic cancer, colorectal cancer, renal cell carcinoma, multiple myeloma and chronic lymphocytic leukaemia. Several appraisals utilised a traditional Progression-Free Survival (PFS)/Stable Disease and Progressed Disease (PD) approach to implement health state utility values (HSUVs). However, others incorporated a time-to-death, “time lived with disease”, or an on treatment/off treatment approach. The different methodologies generated different cumulative probability of life states, with toxicity versus docetaxel, up to a difference of 0.04 QALYs, or 2 weeks of perfect health: a significant period of time for a patient with a median overall survival of 13.8 months. CONCLUSIONS: The methodologies used to determine total quality of life gain in the appraisal of treatments can affect the overall results; low utility on diagnosis (0.53), increasing to approximately 0.65 on first treatment then decreasing with each subsequent treatment class to approximately 0.50 after four courses of treatment. In all analyses, strong evidence was found to suggest an association between stem cell transplantation and an increase of 0.06 in patient utility.
PCN214
PATIENT EMPOWERMENT FOR HEALTHCARE DECISION-MAKING: ASSESSING ONCOLOGY INNOVATION THROUGH MULTICRITERIA DECISION ANALYSIS
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1Myeloma Patients Worldwide, Madrid, Spain, 2Spanish Association Against Cancer, Madrid, Spain, 3Spanish Breast Cancer Federation, Barcelona, Spain, 4Hospital Saint Jean de Dieu, Barcelona, Spain, 5Spanish Aﬀected Lung Cancer Association, Madrid, Spain, 6Omakome Consulting, Barcelona, Spain
OBJECTIVES: Develop a value-based framework using the Multi-Criteria Decision Analysis (MCDA) to evaluate oncology innovation from patient’s perspective. METHODS: A Systematic Literature Review (SLR) was done focusing on four main questions: criteria used to assess the value of oncology innovation in general and from patient’s perspective, criteria used by HTAs and criteria used in previous MCDA frameworks from patient’s perspective. The SLR was complemented with documents from the criteria gathered from the SLR into the Domains included in the framework. A working group composed by 8 patient’s representatives from General and Speciﬁc (disease) was asked to do the following task: 1. To assess and validate the criteria in the framework. 2. To integrate asymptomatic gastroenteropancreatic-neuroendocrine tumors (GEP-NETs) patients with slow-growing, unresectable, well/moderately-differentiated
results: We included 11 quantitative and 5 contextual criteria to assess oncological innovation from patient’s perspective. Further research is ongoing to apply this scale in a pilot evaluation of oncology innovative therapies.

PCN215
WHAT MATTERS TO SPANISH PATIENTS AND PHYSICIAN WHEN FACING DEATH DECISIONS FOR GRCM: AN EXPLORATION USING REACTIVE MULTICRITERIA SHARED-DECISION-MAKING FRAMEWORK
Wagner M1,7, Samahaa D2, Cuervo J1, Patel H3, Martínez M4, O’Neill WM1, Jiménez-Fonseca P5, Geoffroïeux MM1
1Analytica LASER, Montreal, QC, Canada, 2Analytica LASER, London, UK, 3Analytica LASER, Madrid, Spain, 4Hospital Universitario Central de Asturias, Oviedo, Spain, 5Analytica LASER and School of Public Health, University of Montreal, Montreal, QC, Canada
OBJECTIVES: Patients with slow-growing, unresectable, well/moderately-differen-
tiated asymptomatic gastroenteropancreatic-neuroendocrine tumors (GEP-NETs) may have to decide between initiating treatment with somatostatin analogs (SSAs) or pursuing watchful-waiting. We explored drivers of decision among Spanish patients and physicians using a shared-decisionmaking multicriteria (SSAs) or pursuing watchful-waiting. We explored drivers of decision among Spanish patients and physicians using a shared-decisionmaking multicriteria framework. METHODS: The framework, designed based on IVIDEM structure, literature review and input from GEP-NET patients and clinicians, consisted of benefit-risk criteria. Participants were divided into four groups, each one asked to consider trade-offs and weigh up their choices between different surveillance options, to examine the patient and healthcare-related characteristics that could influence these choices, and to determine whether preferences of patients with adenoma dysplasia after polypectomy for cancer prevention and treatment than for other types of health care.

PCN216
DECISION MAKING FOR CANCER PREVENTION: HOW PATIENTS DECIDE TO USE WEB-BASED INTERVENTIONS TO REDUCE RISK OF CANCER
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OBJECTIVES: To explore preferences regarding treatment options for relapsed refractory multiple myeloma (RRMM), such as combination regimens including proteasome inhibitors (PSIs), are constantly evolving. However, no study has been conducted to elucidate patient pref-
erspectives regarding different novel treatment options for RRMM so far. METHODS:

PCN217
PATIENT PREFERENCES REGARDING TREATMENT OPTIONS FOR RELAPSED REFRACTORY MULTIPLE MYELOMA (RRMM)
Bauer S1, Mueller S2, Chatzis B3, Pintor S3, Probst L4, van Eckels D5, Wilke T2
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OBJECTIVES: New treatment options for relapsed refractory multiple myeloma (RRMM), such as combination regimens including proteasome inhibitors (PSIs), are constantly evolving. However, no study has been conducted to elucidate patient pref-
erspectives regarding different novel treatment options for RRMM so far. METHODS:

PCN218
PATIENT PREFERENCES IN COLORECTAL ADENOMA SURVEILLANCE
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OBJECTIVES: Colorectal cancer (CRC) is the second most common cancer worldwide and among European countries, tackling the progression of pre-
treatment programs which have focused on early detection and removal of adenoma-
tous polyps. As more is known about the inﬂuences dietary and lifestyle factors on development of CRC, eﬀorts are moving towards primary prevention as a means of optimising cancer prevention. We set out to elicit how patients and primary care con-
consider trade-oﬀs and weigh up their choices between diﬀerent surveillance options, to examine the patient and healthcare-related characteristics that could influence these choices, and to determine whether preferences of patients with adenoma dysplasia after polypectomy for cancer prevention and treatment than for other types of health care.

PCN219
WILLINGNESS TO PAY HIGHER FOR CANCER PREVENTION AND TREATMENT?
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OBJECTIVES: It is often assumed by health economists that the principal objective of health care is to maximise population health. However, people may be willing to sacrifice overall health in order to direct resources towards high priority disease areas, such as cancer. This presentation examines whether society is willing to pay more for cancer prevention and treatment than for other types of health care. METHODS: The policy context in the UK, where speciﬁc assessment criteria and funding arrange-
ments are currently in place for certain cancer drugs, will be described. A review of the stated preference literature on support for a ‘cancer premium’ will also be presented. This review covers: (1) studies examining the special weighting of quality adjusted life years (QALYs) in the cancer context; and (2) studies examining cancer as a ‘dead end case’ in the literature on the value of a statistical life (VSL). RESULTS: Overall the evidence in relation to a cancer premium is mixed, with some studies reporting results consistent with higher QALY values / VSL in cancer and others ﬁnding no difference in QALY values / VSL estimates when comparing cancer and non-cancer scenarios. Nevertheless, a panel of reviewers concluded that, if taken as a reasonable factor that ‘social value’ of cancer is greater than that of other diseases, has been identiﬁed. There is a dearth of research on the societal value of treat-
ments that seek to improve the quality of life of cancer patients. CONCLUSIONS: The evidence base is not suﬃciently strong to conclude whether to pay is higher for cancer prevention and treatment. A challenge facing policy makers is to determine whether societal preferences should form the basis for a policy that prioritises investments in cancer interventions.

PCN220
PSYCHOLOGICAL IMPACT OF CANCER: MORE GOOD THAN BAD
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1National Taiwan University, Taipei, Taiwan, 2Northwestern University, Chicago, IL, USA
OBJECTIVES: There is a dearth of research on the societal value of treat-
determines whether societal preferences should form the basis for a policy that prioritises investments in cancer interventions.

A cross-sectional multicentre study based on computer-assisted telephone or face-to-face interviews with RRMM patients was undertaken. A Discrete Choice-Experiment (DCE) with four attributes (drug administration: application 1 tablet once/day/once/week, 2-hour physician visit once/month), application 2 (tablet once/ day/once/week, 2-hour physician visit once/month) or application 3 (tablet once/ day/once/week, 3-hour physician visit once/month) for 20 months without disease progression: 26/20 (76%) months; possibility of side effects affecting the blood: 12%/19% probability; possibility of heart failure: 2%/4% was implemented. Preferred treatments were analysed with RRMM patient preferences taken into account. A Discrete Choice-Experiment (DCE) with four attributes (drug administration: application 1 tablet once/day/once/week, 2-hour physician visit once/month), application 2 (tablet once/ day/once/week, 2-hour physician visit once/month) or application 3 (tablet once/ day/once/week, 3-hour physician visit once/month) for 20 months without disease progression: 26/20 (76%) months; possibility of side effects affecting the blood: 12%/19% probability; possibility of heart failure: 2%/4% was implemented. Preferred treatments were analysed with RRMM patient preferences taken into account.
OBJECTIVES: Past research has focused on cancer’s negative consequences. Recent research has paid increased attention to the more positive side of oncology: adjustment to illness. The PROMIS illness impact (II) scale contains 46 positive II (II+) and 40 negative II (II-) items that are classified into four sub-domains: Self-Concept (SC), Social-impact (SI), Stress-Response (SR), and Spirituality (Sp). The purpose of this study was to investigate II+ and II- in cancer survivors. METHODS: Cancer survivors (n=509; age: 59 ± 1.4; 51.5% men) completed the PROMIS II+ and II- items comparing current and premorbid perspectives. We calculated change scores as the discrepancy between participants’ ratings of recalled experiences before cancer diagnosis and their ratings of post-cancer experiences. Descriptive statistics and agreement (Weighted kappa (κ)) were calculated on change scores. Effect sizes (ES) provided standardized change scores. Coefficient of variation (CV) was also calculated for each item. RESULTS: The largest mean change scores appeared on II+ items and II- SR items (absolute mean > 0.5). The CV results showed that items from II+ SC and II- SR-SP have better discrimination power among survivors (CV >30). The study used a formula that eliminates positive change larger than negative impacts after cancer (mean: 0.30 ± 0.25). Across II+ and II- there were 25 of 86 (29.1%) areas where significant negative change was reported, and 32 of 86 (37.2%) areas where significant positive change was reported. CONCLUSIONS: Cancer survivors report on their day-to-day function due to cancer or treatment. We set out to understand the concept of ‘function’ in order to inform its assessment as a patient-relevant endpoint for clinical benefit. METHODS: Twenty semi-structured interviews were conducted to explore how patients describe their daily functioning. Patient interviews and the literature were then used to develop a conceptual framework of function. RESULTS: Patients interviewed were diverse: eight cancer types (all solid tumours), 75% (100/134) of patients had stage 0-1 (55%) and 2-3 (45%), and 35% having previously received taxanes. The term ‘function’ was not easily understood by patients and 35% did not provide a definition. When described, function 60% unique first order, 20% second order, 5% tertiary level, 5% dual level, 5% tertiary level. Function was divided into 12 subdomains (mobility, cognition, activities, roles), and a conceptual framework was developed. Impairments in function were often described as limitations in mobility and/or cognitive abilities. Patients also described 20 different concepts of ‘adaptation’ to overcome cancer or treatment-related impairment. Patients assume their day-to-day function, including change in frequency/intensity, precaution, use of external aids or proactive behaviour changes. CONCLUSIONS: ‘Function’ from patients’ perspective is a complex concept, further research is needed to understand the assessment of mobility, cognition, activities and roles as individual concepts for measuring function. In addition, selecting the most appropriate dimension of measurement (e.g., frequency, ability to perform, difficulties completing a task) for each concept is paramount to reliable and meaningful capture of cancer- and treatment-related functional impairment.

PCN225
PRO INSTRUMENTS USED IN STUDIES OF SKIN CANCER SINCE 1960
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OBJECTIVES: To create an evidence map of the different patient-reported outcome instruments used in studies of patients with skin cancer, the geographical settings in which these studies were conducted and the interventions assessed.
METHODS: We conducted an online search of PRO instruments used in our skin cancer database that has been published between 1960 and May 15 2017, and analysed the abstracts identified by the search to determine the different PRO instruments cited across the range of geographical locations and interventions for skin cancer.
RESULTS: We found a total of 79 abstracts that reported the use of 45 different PRO instruments. Of these, nine instruments were specific for skin cancers, four were designed for other cancers or cancer in general, 18 were general instruments used in a range of settings, seven assessed the impact of treatment and seven assessed symptoms or comorbidities of people with skin cancer. The most frequently used tool was the EORTC QLQ-C30 (12 abstracts), followed by the SF-26 (8) then Skindex, DLQI and visual analogue scales (7 each). Skin Cancer (5). Studies generally recruited patients with melanoma (35 abstracts), basal
cell carcinoma (13), squamous cell carcinoma (7), all non-melanoma skin cancers (13) or melanoma patients (15). The USA was the most frequent location for the studies, with 27 abstracts, followed by the UK (11) then Italy (5). The main interventions assessed were surgery, including Mohs microsurgery (17 abstracts), inter- feron (7), photodynamic therapy (5) dacarbazine (4) and screening or surveillance (12). DISCUSSION: In total, 47 PRO tools have been used in the study of cancer from a wide range of locations, but only six tools and three countries were cited in five or more abstracts.

PCN226
SYMPTOMS AND IMPACTS IN METASTATIC CASTRATION-RESISTANT PROSTATE CANCER: QUALITATIVE STUDY FINDINGS
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OBJECTIVES: To understand the signs and symptoms experienced by chemotherapy-naive patients with metastatic castration-resistant prostate cancer (mCRPC) and how both disease- and treatment-related factors impact patients’ lives.

METHODS: Qualitative structured interviews with chemotherapy-naive patients with mCRPC identified the most frequently experienced signs, symptoms and impacts of prostate cancer and how these had on patients’ lives. Patients rated the disturbance of their symptoms and impacts on a scale of 0 (not at all disturbing) to 10 (extremely disturbing). Responses were analysed through ATLAS.ti software and summarised to include frequency of prompted versus unprompted responses, and mean disturbance. RESULTS: Nineteen patients were interviewed to reach concept saturation. Ninety-five percent of patients were on continuous hormonal therapy, 68% were on some anti-androgen therapy. The majority of patients reported some form of metastatic disease with moderate symptoms with pain (74%), disturbance (6–3) and fatigue (89%, disturbance –4.6). Nearly one-half of patients experienced some form of muscle deconditioning (46%, disturbance –6.7). Much of the additional symptom burden experienced by patients, including sexual dysfunction and urinary and hormonal symptoms, was attributed to previous or on-going treatment. A substantial proportion (40%) of patients reported depressive symptoms, 49%, and a quarter, 24.9%, of patients experienced a disturbance of skin –7.7) and frustration (63%, disturbance –8.1). Patients rated treatment dissatisfaction (16%, disturbance –9.5) and inability to perform extracurricular activities (16%, disturbance –8.3) as most the disturbing impacts of mCRPC.

CONCLUSIONS: Chemotherapy was reported as a variety of aspects, which may be due to underlying disease process and previous and ongoing treatments. The reduced ability to physically function on a day-to-day level and satisfaction of care were the most disturbing elements to these patients. Understanding patients’ experience and satisfaction with mCRPC treatments may allow for the use of tailored patient-reported outcome measures in clinical trials.

PCN227
DIGITAL REAL-WORLD EVIDENCE PLATFORM: TAKING THE BURDEN OUT OF MELANOMA PAIN REPORTING
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OBJECTIVES: Our aim was to assess, in the context of melanoma real-world evidence, the value of participants reporting pain via a mobile application. Our focus was two-fold: Find out how the data compared with the literature and what value data was being held for the patient? METHODS: We developed a melanoma-specific mobile app, featuring a pain NRS question adapted from the Brief Pain Inventory (BPI) and EuroQol’s EQ-5D. Participants were recruited from several UK melanoma participants recruited in collaboration with patient advocacy group MelanomaUK. Quantitative data focused on participant demographics, frequency of access to app, and regularity of reporting. Qualitative data included the value of using the data at consultations; where anxious not to rely on pain-based pain reporting, and if participant burden of reporting over longer time periods was reduced. A scoping literature review was carried out to evaluate the published real-world evidence on pain in melanoma, and to evaluate the use of NRS. Feedback was evaluated on the everyday experience of living with melanoma and the impact of participants using an electronic application to report their pain within their real-life context rather than within clinical surroundings. RESULTS: The benefits of a flexible and intuitive reporting app solution were highlighted, including: greater accuracy and granularity in reporting over longer periods; usefulness of instant access to data during consultations; and a reduction in participant anxiety and burden related to verbal recall. CONCLUSIONS: In the context of melanoma, technology that allows participants to generate and record regular pain and QoL data in real-time and in the real life setting, has several benefits, not only for the participant, who experiences decreased burden in reporting and increased satisfaction in interactions with their healthcare professionals, but also for collaboration with patient advocacy groups. More work needs to be done to understand fully what value data is being held for the patient and how this can be used to improve the everyday experience of living with melanoma and the impact of participants using an electronic application to report their pain within their real-life context rather than within clinical surroundings.

PCN228
IMPACT OF ISOCITRATE DEHYDROGENASE (IDH) STATUS ON THE PERFORMANCE STATUS AND QUALITY OF LIFE (QOL) OF OBLIQUESTOMA MULTIFORME (gBM) PATIENTS
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OBJECTIVES: To understand the relationship between QoL, FS and survival in women with TNBC via available literature and key stakeholders’ (payer, physician and patient) perceptions and experiences.

METHODS: A systematic review and an online Delphi with leading experts in breast cancer was conducted focusing on studies in the USA and Europe. Studies were selected for evaluation if the title indicated relevance to the research questions. Telephone interviews were conducted with 8 US payers, 9 EU HTA advisors, 6 US and 9 EU oncologists, and 6 US and 3 UK TNBC patients, to understand how QoL and FS are defined and valued relative to survival. RESULTS: A total of 375 studies were identified (with potential overlap between databases): 175 from Medline and 200 from Embase. No publications directly assessed the relationship between QoL, FS and survival in women with TNBC. Nine publications evaluated general QoL in breast cancer (BC) patients: 6 in patients with brain metastas- ses and 1 in a patient with leptomeningeal metastases. In one study of 118 BC patients (40.5% TNBC+), Karnofsky PS (70–70) was significantly associated with survival (HR, 0.485, P=0.015). Stakeholder telephone interviews revealed that survival is the most important factor in treatment selection. Key variables impacting stakeholders’ perceived value of QoL and FS are line of therapy and disease progression. Adverse events (AEs), side effects (SEs) and toxicities were also critical. Stakeholders assumed FS and QoL are related to AEs, SEs and drug toxicities; therefore, FS and QoL data may be linked to these drug-specific experiences as well. Stakeholders did not know how to precisely define the connection between these concepts.

CONCLUSIONS: Many gaps exist in understanding the relationships between QoL, FS and survival in TNBC, AEs, SEs and toxicity also need to be considered. Future patient-focused quantitative research is necessary to further explore and prioritize outcomes in TNBC.

PCN231
HEALTH-RELATED QUALITY OF LIFE AFTER MAJOR LOWER EXTREMITY AMPUTATION DUE TO MUSCULOSKELETAL TUMORS
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OBJECTIVES: To understand the relationship between QoL, FS and survival in women with TNBC via available literature and key stakeholders’ (payer, physician and patient) perceptions and experiences.
OBJECTIVES: Major amputation may be required when limb-sparing surgery is not possible for musculoskeletal tumors, or has failed. The authors aimed to assess the function and health-related quality of life (HRQoL) after major lower extremity amputation due to musculoskeletal tumors.

METHODS: Thirteen non-consecutive adult patients (two men and 11 women, mean age 66 years) who had been fitted with a below-knee prosthesis following undergoing major amputation due to a tumor. Participants completed a general health survey on a 0-100mm (best-worst) visual analog scale, the Locomotor Capabilities Index 5, and the 15D HRQoL instrument at a median of five years after amputation. Twenty-four major lower extremity trauma patients who had their amputated limb fitted with a prosthesis served as HRQoL controls.

RESULTS: The mean (SD) general health was 23/100 (13), 15D Mobility dimension was 2.25/0.6 and locomotor capability was 44/100 (3). The mean Locomotor Capabilities Index was 0.85 (0.11) and that of the 15D was 0.87 (0.11). Both scores were somewhat lower than those usually observed in earlier studies comparing age-matched non-prosthetic peers.

CONCLUSIONS: Function after major lower extremity amputation can be very high, but most patients have a lower quality of life compared with age-matched non-prosthetic peers.

PCN234
HAZARDOUS PRODUCTIVITY IN HD2 POSITIVE BREAST CANCER: A COMPARISON OF PATIENTS ACROSS STAGES OF EARLY AND METASTATIC DISEASE

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OBJECTIVES: While the clinical impact of HER2+ breast cancer (HER2+BC) is well described, little is known about the hazards of treatment. This cross-sectional study assessed productivity in this HER2+BC patient group: early (DBC) during adjuvant treatment, ECB post-treatment, and metastatic (MBC). METHODS: A cross-sectional, observational study of 299 consenting female patients recruited from 14 secondary care centres. RESULTS: Of 299 patients, 92 (31%) were early BC patients (early BC subgroup), 180 (60%) were patients receiving targeted HER2+ chemotherapy for MBC, and 27 (9%) were patients treated with adjuvant ECB. Of the patients receiving targeted HER2+ chemotherapy for MBC, 23 (8%) had received HER2+ targeted treatment for MBC. Of 22 (11%) patients, 12 (54%) were early BC patients (early BC subgroup), and 10 (46%) were patients receiving targeted HER2+ chemotherapy for MBC. The majority of patients were receiving the drug trastuzumab (88%), with 12% receiving pertuzumab or the combination of trastuzumab and pertuzumab.

CONCLUSIONS: The clinical impact of HER2+ breast cancer (HER2+BC) is well described, but little is known about the hazards of treatment. The majority of patients were receiving the drug trastuzumab (88%), with 12% receiving pertuzumab or the combination of trastuzumab and pertuzumab.
OBJECTIVES: A recent phase 3, randomized, open-label, noninferiority trial compared efficacy and safety of LEN to SOR as first-line systemic treatment in unresectable HCC (954 patients (LEN n=478; SOR n=476)) and aimed to evaluate the impact of therapy on HRQoL. METHODS: HRQoL was assessed using the EORTC QLQ-C30, the HCC-specific module (EORTC QLQ-HCC18), and the European Quality of Life (EQ-5D-3L) at baseline (Day 1 of cycle 1), and off-treatment visit. Changes from baseline in both treatment arms were assessed using linear mixed-models with selected covariates (baseline score, geographical region, macroscopic portal vein invasion and/or extrahepatic spread, ECOG-PS, body weight). Time to worsening for each domain was estimated as months to deterioration defined by a minimally important difference (MID). RESULTS: 954 patients (LEN n=478; SOR n=476) were randomized and included in the intent-to-treat population. Baseline HRQoL scores were similar for patients randomized to SOR across all domains of the EORTC QLQ-HCC18 and HCC-specific module. Baseline HRQoL scores were noted for Nutrition, Diarrhoea, Role Function (RF), Pain, and Body Image (Bi). In the QLQ-HCC18 Nutrition domain, lower adjusted mean scores in favor of LEN were reported at most points with significant differences at Cycle 6 and Cycle 9 (p<0.05). SOR was associated with worsening Diarrhoea symptoms with lower adjusted mean scores in favor of LEN reported at Cycles 3, 6, 9, and 12 (p<0.01). Median months to clinically meaningful worsening among each treatment group was statistically significant favoring LEN for the QLQ-C30 Global Health Status/QoL subscale (vs 1.9: p=0.0098), Pain (2.0 vs 1.8; p=0.0060), and Diarrhoea (4.6 vs 2.7; p<0.0001), and in the QLQ-HCC18 domains of Bi (2.8 vs 1.9; p=0.0041) and Nutrition (4.1 vs 2.8; p=0.0066). CONCLUSIONS: Most domains met the noninferiority assumption between LEN and SOR. The additional evidence of significant HRQoL benefits further support LEN in terms of functional deterioration delays.

PCN237 HEALTHCARE PROFESSIONALS’ PREFERENCES FOR THE TREATMENT SELECTION OF CHRONIC LYMPHOCYTIC LEUKEMIA (CLL): THE PRELIC STUDY
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OBJECTIVES: To explore the preferences of Spanish healthcare professionals (haematologists and hospital pharmacists) for the treatment selection of active CLL patients treated with LEN or SOR. METHODS: Preferences and treatment-related attributes measured were attributed through a discrete choice experiment (DCE). A literature review and focus group of 5 experts determined 7 attributes that defined 36 scenarios included in the DCE: four patient-related attributes (age, functional status, comorbidities, and risk of the disease [risk; Del17p/mutTP53 and relapse]) and three treatment-related attributes (hazard ratio of progression-free survival [HR-FFS] and rate of discontinuations due to adverse events and treatment cost). Data were analyzed using the mixed logit model. Relative importance (RI) of attributes was calculated and compared between healthcare professionals. Willingness to pay (WTP) was estimated using two questions ad-hoc.
RESULTS: A total of 130 participants, 72 haematologists (mean [SD] time of practice vs [years]: 16.8 [7.7], chief of department: 20.8%) and 58 hospital pharmacists (mean [time of practice] vs 13 [9.3], chief of department= 44.8%) answered the DCE. Higher RI was obtained for treatment-related attributes, the highest rated being ‘cost’ (23.8%) followed by ‘HR-FFS’ (20.9%). Regarding patient-related attributes, the highest importance was given to ‘age’ (18.1%). No significant differences (p<0.001) in RI between haematologists and pharmacists were found. Ad-hoc questions showed a WTP of €141,923/year for €36,769/year for a gain of 1 year-FFS when treating a patient with LEN compared to SOR and ±80, respectively, considering a reference annual treatment cost of €20,000/year. CONCLUSIONS: This is the first DCE including age and cost as attributes for CLL treatment selection. ‘Cost’ and ‘HR-FFS’ (treatment-related attributes) and age (patient-related attribute) were the main factors that determine treatment decision according to the respondents. WTP was calculated for patients’ age. Similar research in other onco-haematological diseases is recommended.

PCN238 ASSOCIATION BETWEEN TUMOUR LESION SIZE AND HEALTH-RELATED QUALITY OF LIFE OUTCOMES IN PATIENTS WITH METASTATIC MERKEL CELL CARCINOMA TREATED WITH AVELUMAB
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OBJECTIVES: To document patients’ experiences with avelumab treatment and identify patient-reported outcomes (PRO) measures. METHODS: Preferences and treatment-related attributes measured were attributed through a discrete choice experiment (DCE). A literature review and focus group of 5 experts determined 7 attributes that defined 36 scenarios included in the DCE: four patient-related attributes (age, functional status, comorbidities, and risk of the disease [risk; Del17p/mutTP53 and relapse]) and three treatment-related attributes (hazard ratio of progression-free survival [HR-FFS], rate of discontinuations due to adverse events and treatment cost). Data were analyzed using the mixed logit model. Relative importance (RI) of attributes was calculated and compared between healthcare professionals. Willingness to pay (WTP) was estimated using two questions ad-hoc.
RESULTS: A total of 130 participants, 72 haematologists (mean [SD] time of practice vs [years]: 16.8 [7.7], chief of department: 20.8%) and 58 hospital pharmacists (mean [time of practice] vs 13 [9.3], chief of department= 44.8%) answered the DCE. Higher RI was obtained for treatment-related attributes, the highest rated being ‘cost’ (23.8%) followed by ‘HR-FFS’ (20.9%). Regarding patient-related attributes, the highest importance was given to ‘age’ (18.1%). No significant differences (p<0.001) in RI between haematologists and pharmacists were found. Ad-hoc questions showed a WTP of €141,923/year for €36,769/year for a gain of 1 year-FFS when treating a patient with LEN compared to SOR and ±80, respectively, considering a reference annual treatment cost of €20,000/year. CONCLUSIONS: This is the first DCE including age and cost as attributes for CLL treatment selection. ‘Cost’ and ‘HR-FFS’ (treatment-related attributes) and age (patient-related attribute) were the main factors that determine treatment decision according to the respondents. WTP was calculated for patients’ age. Similar research in other onco-haematological diseases is recommended.

PCN240 PATIENT’S JOURNEY THROUGH ACUTE MYELOID LEUKEMIA (AML): UNDERSTANDINGAML’S HUMANISTIC IMPACT THROUGH AN INTERNATIONAL PATIENT-CENTERED QUALITATIVE STUDY
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OBJECTIVES: To document patients’ experiences with diagnosis, symptoms, impacts, side effects (SE), unmet needs and treatment pathways for acute myeloid leukemia (AML) and analyze following a component evaluation: patient and expert input, and IRB approval, face-to-face interviews were conducted with adults with AML in Canada, Denmark, and the United Kingdom. Using a semi-structured interview guide, patient interviews were conducted to explore patients’ diagnosis and treatment pathways to elicit spontaneous responses, symptoms, impacts of AML and treatment pathways. Interviews tracked patients’ journey from diagnosis through last treatment. Treatment phases included induction, consolidation, maintenance and transplant. Healthcare utilization resources were also collected. Interview transcripts were analyzed using Atlas.ti.
RESULTS: Data were available from 25 AML patients (mean age [range], 53 years [28-75]; 60% women; 40% Canadian, 28% Danish, 32% English). A total of 81 symptoms/SE and 48 impacts were reported. These concepts differ across the treatment phases. The most frequently reported symptoms/SE at induction (i.e., fatigue (88%), hair loss (84%), weakness (80%), diarrhea (80%)) overlapped somewhat to those reported at consolidation (i.e., fatigue (79%), hair loss (50%), muscle loss (66%), but differed slightly from those described after transplant (i.e., fatigue (100%), GVHD (80%), infections (73%). Only 7 symptoms/SE were reported at maintenance (including fatigue (100%) and nausea/vomiting (100%)). Patients described many emergency room visits at diagnosis in Canada and shorter delays in hospitalization in Denmark. Patients also reported a variety of unmet needs such as care and communication issues. CONCLUSIONS: Living with and being treated for AML has a significant impact on patients’ life from diagnosis until treatment end. Symptoms/SE experienced during induction and transplant had the strongest impact. Diagnosis and treatment pathways vary across countries, leading to different patient experiences. Better understanding of patients’ experiences can help optimize patient management and treatment whilst alleviating disease and treatment burden.

PCN241 RELATION OF QLQ-C30 AND QLQ-CR29 HEALTH-RELATED QUALITY OF LIFE SCALES AND BIOCHEMICAL INDICATORS OF NUTRITIONAL STATUS
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OBJECTIVES: To investigate the correlation of QLQ-C30 and QLQ-CR29 with biochemical indicators of nutrition status and body composition in adults with head and neck squamous cell carcinoma (HNSCC). METHODS: Baseline demographics, routine biochemical indicators of nutrition status and body composition (body mass index [BMI], body fat percentage [BF%], and waist circumference [WC]) were collected. All participants provided written informed consent and the study was approved by the Institutional Review Board. Regression analyses were performed to determine the association between nutritional parameters (BMI, BF%) and QLQ-C30 and QLQ-CR29 scores. RESULTS: A total of 52 HNSCC patients enrolled in this study. The mean age was 68.4 years, 54% were male, 65% were white and 24% had stage IV disease. Correlation analysis revealed no statistically significant association between nutritional parameters and QLQ-C30 and QLQ-CR29 scales. CONCLUSIONS: Although nutritional status is strongly affected in patients with HNSCC, correlation analyses did not reveal any statistically significant correlation. Further studies with larger sample sizes are needed to investigate the association of nutritional status with QLQ-C30 and QLQ-CR29 scales.
Patients undergoing treatment for colorectal cancer (CRC) can develop multiple alterations during their disease course. A common symptom in these patients is anorexia, which is the main cause of nutrient deficiency and therefore nutritional amelioration. In addition, the association of serum albumin with quality of life (QoL) has been reported. 

**OBJECTIVES:** To determine the relation of the QoL and total serum protein of colorectal cancer patients in order to evaluate novel biomarkers. 

**METHODS:** We performed a cross-sectional study including 113 colorectal cancer patients with or without weight loss who donated their serum or plasma samples to the Hospital de Especialidades Centro Médico Nacional de Occidente del Instituto Mexicano del Seguro Social (HE CMNOM) in 2016. 

**RESULTS:** A total of 105 cases were studied with 53% of patients exhibiting weight loss. The total serum protein mean (SD) was 6.55 (1.76). Female patients reported lower QoL (P = 0.020) and serum albumin level (P = 0.003) and higher psycho-emotional distress (P = 0.011). Lower total serum protein was associated with reduced HrQoL (P < 0.05) compared to the general population. 

**CONCLUSIONS:** Colorectal cancer patients exhibit lower QoL scores, serum albumin level and total serum proteins are related with improved physical and emotional functioning and decreased symptoms in patients with CRC. 

**PCN243**

**HEALTH-RELATED QUALITY OF LIFE AFTER ONCOCOLOGICAL RESECTION AND RECONSTRUCTION OF THE CHEST WALL**

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**OBJECTIVES:** Chest wall resection and reconstruction is a surgical challenge. There is limited information on the long-term health-related quality of life (HRQoL) after surgical treatment of chest wall tumors. We assessed the long-term HRQoL in patients after chest wall resection following oncological resection. **METHODS:** Seventy-eight patients who had undergone the resection and reconstruction during 1997-2015 were invited to fill in the 15D and QLQ-C30 HRQoL instruments and answer questions about sociodemographic and clinical characteristics. Primary outcomes were the 15D and QLQ-C30 scores. We hypothesized that these patients would have an improved HRQoL compared to age-standardized general population. **RESULTS:** A total of 17 men and 38 women (response rate, 69%) with a mean (SD) age of 68 (14) years completed the questionnaires. Respondents had been operated because of soft tissue sarcoma (n = 16), advanced breast cancer (n = 15); osteo- or chondrosarcoma (n = 14), or other tumor (n = 10). The patients’ mean 15D score (0.878, SD 0.111) was comparable to that of the general population (0.891, SD 0.544). However, patients were worse off on the dimensions of “Breathing” (p = 0.041), compared with their age-matched general population. 

**CONCLUSIONS:** The results from the linear mixed model indicate significant differences between disease-specific health states and health-related QoL (hrQoL). The results from this exploratory study indicate that patients, who had undergone chest wall resection and reconstruction, have lower HRQoL compared to age-standardized general population. Limitations in breathing and usual activities can occur.
bothered by side effects of treatment* score and change from baseline in EuroQol (EQ-5D). A multivariate analysis was performed to assess the influence of the outcome and predictor across time, effectively creating one observation per subject, and then a linear regression analysis was applied to those data. RESULTS: Using the RMH with AE as an anchor, the FKSI-DRS ID generally ranged between 0.74 (as a continuous predictor variable) and 1 point (AE as a categorical predictor variable), results of sensitivity analyses were generally consistent. When item “I am bothered by side effects of treatment” score was used as an anchor, FKSI-DRS ID was between 1.2 and 1.39 points (depending on the model). When EQ-SD utility score was used as an anchor, the FKSI-DRS ID ranged between 0.63 and 1.0 point. CONCLUSIONS: Among patients undergoing treatment for mRCC, the evidence suggests that FKSI-DRS between-group differences as low as 1 point may be meaningful.

CANCER – Health Care Use & Policy Studies

PC248 FEASIBILITY OF PRECISION ONCOLOGY VIRTUAL TUMOR BOARDS TO OPTIMIZE DIRECT POINT-OF-CARE MANAGEMENT AND CLINICAL TRIAL ENROLLMENT OF ADVANCED CANCER PATIENTS

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OBJECTIVES: Precision oncology encompasses the implementation of high level of evidence-based personalized medicine and biomarker-driven diagnostic and treatment recommendations for optimized cancer care. Telemedicine and value-based care may optimize clinical trial enrollment and overall cost-benefit. We evaluated the feasibility and globality of a precision oncology virtual tumor board (VTB) program, and its clinical impact on community-dwelling patients with advanced solid tumors to facilitate point-of-care management and clinical trial enrollment, as well as the financial impact and potential outcomes of the intervention.

METHODS: We report the results on the initial 10 VTB-evaluated patients of an ongoing prospective qualitative case study screened between October/2016 and March/2017. Eligibility required written informed consent. Cases were evaluated by a patient-activated multidisciplinary VTB. A Markov model by incorporating clinical, utility and cost data was developed to evaluate economic outcome of VTB regarding survival and cost-of-care. Using a proprietary knowledge-base, parametric survival analyses of patient-level progression-free (PFS) and overall survival (OS) data from reported clinical trials in known sources were performed. Average Sales Prices public data sources were used to estimate unit treatment costs and duration of subsequent active therapies. Oncology-modelled patient pathways, expert opinion and Delphi panel methods were used for assumptions.

RESULTS: The VTB identified clinical trials for 80% of these heavily treated patients, and 50% of patients decided to pursue a clinical trial. VTB resulted in data that impacted clinical decisions in 100% of cases. VTB achieved 88% cost reduction compared to standard therapies due to clinical trial enrollment (51,000,000 USD vs 61,000,000 USD). Treatment options as prioritized by VTB also provided an estimated reported PFS advantage (6 months) compared to standard therapy (3.6 months). CONCLUSIONS: These results demonstrate the feasibility and benefits of incorporating precision oncology VTB into clinical practice, including its value as clinical trial recruitment engine and as a cost-effective, value-based measure for innovative care delivery models.

PC249 SUBJECTIVE FINANCIAL BURDEN AMONG GERMAN CANCER PATIENTS - RELATIONSHIP OF THE PATIENTS’ ECONOMIC SITUATION AND SUBJECTIVE DISTRESS

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OBJECTIVES: The diagnosis of cancer imposes a number of burdens on patients - physical, emotional, and financial. So far, evidence on the socio-economic impact of cancer for patients in Germany is scarce. The aim of the project is to provide an overview of financial losses and risk for poverty in patients with neuroendocrine neoplasms (NEN) and colorectal cancer (CRC) as well as possible psychological effects.

METHODS: This prospective quantitative study recruited 249 cancer patients (n=123 NEN / n=126 CRC) from 11/2016 to 3/2017 at the National Center for Tumor Diseases, University Hospital of Heidelberg. They completed a survey on patients’ income, cancer-related out-of-pocket costs, subjective distress (Distress Thermometer), quality of life (EORTC-LQ 29/30), health status (EQ-5D) as well as demographic data. RESULTS: Overall, 86.7% (n=216) of the patients reported that their financial situation has deteriorated, due to cancer-related out-of-pocket costs and/or losses. 82.7% (n=205) stated to have higher out-of-pocket costs because of their disease. Higher cancer-related out-of-pocket costs per month were associated with a lower reported quality of life (0.02) and higher distress levels (0.02). Using poisson regression, the correlation of the subjective distress with selected items of the economic situation was observed since diagnosis. The proportion of three categories of cancer and the age group, the amount of expenditure due to the disease (0.9) as well as the overall worsening of living conditions (0.6) have a significantly positive effect on the stress experienced by a patient. CONCLUSIONS: Although the number of studies investigating the subjective financial burden of cancer patients is constantly rising, this is one of the first studies within the German health care sector. Further research is required to develop both, validated instruments on the subjective distress and target services in Germany and to targeted measures that could prevent financial problems and reduce emotional burdens.

PC250 RATING NICE END OF LIFE CRITERIA IN THE ERA OF DRUG APPROVALS BASED ON SINGLE-ARM TRIAL DATA

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OBJECTIVES: The National Institute of Health and Care Excellence (NICE) recommends public reimbursement of health technologies deemed cost-effective at an upper threshold of £20,000-£30,000 per additional Quality Adjusted Life Year (QALY). The European Medicine Agency (EMA) is increasingly authorizing medicines for such patients at earlier stages of their clinical development, without Phase 3 data. This research analyses how NICE have evaluated the eligibility of such therapies for consideration under EoL criteria.

METHODOLOGY: NICE single technology appraisal (STA) recommendations were screened (01/09/2009-31/05/2017) and the recommendation and supportive trial package and EoL consideration extracted. RESULTS: 95 STA-recommendations were identified (60% recommended, 16% optimized, 2% only in research, 22% not recommended). EoL criteria were discussed in 66% (63/95) of appraisals and were deemed to apply in 63% of cases (40/63, 93% of which were recommended/optimized). Six technologies lacking supportive Phase 3 data were identified. EoL criteria were considered in 5/6 instances. One STA (01/09/2009-31/05/2017) was not recommended (but not for otacitumab). Successful strategies to meet the 3-month OS gain criterion included indirect treatment comparisons and estimations/extrapolations. However, the small non-comparative study of otacitumab with immunochemotherapy was deemed sufficiently efficacious and cost-effective to meet NICE's EoL criteria, but not otacitumab. Further research is required to develop both, validated instruments on the subjective financial burden of cancer patients in Germany and to targeted measures that could prevent financial problems and reduce emotional burdens.

PC251 NICE AND SINGLE ITEM RECOMMENDATION RATES OF ONCOLOGY THERAPIES APPROVED ON CLINICAL TRIAL PACKAGES LACKING COMPARATIVE PHASE 3 DATA

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OBJECTIVES: The National Institute of Health and Care Excellence (NICE) makes recommendations on the reimbursement of new medicines based on their clinical and cost-effectiveness (as defined by their incremental cost per additional Quality Adjusted Life Year [QALY]). Historically, oncology therapies have had lower recommendation rates than those for other therapy areas, driven by comparatively high costs and small incremental QALY gains. The European Medicines Agency is increasingly approving therapies for patients with life-threatening diseases with high unmet needs (encompassing many oncology therapies) at earlier stages of their clinical development, without any supportive comparative Phase 3 data. This research aims to investigate NICE appraisal outcomes of oncology therapies approved based on such data. METHODS: NICE single technology appraisal (STA) guidance for systemic anti-cancer therapies was screened (01/09/2009-31/05/2017) and the recommendation and supportive trial package extracted. RESULTS: 95 oncology therapies were identified (60% recommended, 16% optimized, 2% only in research, 22% not recommended). Six STA were approved on trial packages lacking any comparative Phase 3 data. 66% (4/6) were recommended (1 under the CDF), 17% (1/6) optimized, and 17% (1/6) not recommended. 66% (4/6) were approved in June 2016 or later. 80% (4/5) of such recommended therapies were subject to a patient access scheme or managed access agreement. CONCLUSIONS: NICE have recommended 5/6 oncology STAs supported by a clinical trial package lacking comparative data. The trend for such appraisals is increasing with most having been conducted in the last 12 months. The clinical endpoints of EMA approval for oncology drugs on such a data package seems sufficient to enable acceptance under NICE's clinical criteria. Nevertheless, NICE's recommendations are further conditional on cost-effectiveness being adequately demonstrated. Additional price discounts and/or innovative contracting may frequently be required to offset the inherent uncertainties on conducting economic modelling based on such limited clinical data package.

PC252 INTERNATIONAL HTA EXPERIENCE WITH TARGETED THERAPY APPROVALS FOR LUNG CANCER

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OBJECTIVES: In the field of cancer, Health Technology Assessment (HTA) evaluations can be restricted, with the result of limited comparative clinical effectiveness evidence of cancer therapies. In addition, the high cost of cancer treatment raises the stakes and may further complicate the HTA appraisal process. Thus, the aim of this analysis was to compare the access success rates of recently approved lung cancer medications across three countries (Australia, Canada and England) based on HTA documents. Major uncertainties and limitations that compromise HTA recommendations were assessed. METHODS: A comprehensive analysis of three countries was performed with respect to the listing status, time incurred for access and differences in recommendations made for cost-effectiveness. RESULTS: The access success rates of these medications across all three countries at 33% for Canada, 17% for England and 8% for Australia. In general, Canada was ahead in terms of the listing rate and number of submissions approved and had a shorter HTA review process (less than 2 years) compared to England and Australia. Access approval criteria were either dissimilar or altered for effectiveness and/or economic analysis for the same indication. Overall, limited evidence was found for all indications, and
uncertainties were found to be formed due to indirect analyses (70% and survival extrapolation (100%), HTA agencies in all three countries frequently proposed readjusting the time horizons and recalculating the incremental cost-effectiveness ratios in economic evaluations. As most of the indications were concluded to be non-cost-effective, some were subsequently lusted (47%) at a reduced price and/or with restricted use. 

Objectives: Major uncertainties intrinsic to the available solutions, such as managed access programmes, seem to be common across different countries; thus, international solutions would be beneficial.

PCN256

THE CLINICAL BURDEN OF HEAD AND NECK CANCER TO THE BRAZILIAN SOCIETY
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Objective: To estimate the clinical burden of head and neck cancer (HNC) to the Brazilian society through the calculation of disability-adjusted life years (DALY). 

Methods: DALYs were calculated considering the estimated years of life lost (YLL), years of life lived with disability (YLD), and the mortality from HNC by age group (Brazilian Mortality Information System 2014). Age-weighting and a discount rate of 5%, as recommended by the Brazilian Ministry of Health, were used. YLD were calculated by multiplying incidence of HNC in 2014 (GLOBOCAN), length of disability and weight of disability, related to disease and age at diagnosis, with the respective duration of a conceptual model of HNc developed based on literature and specialists’ opinion. Disability weights were derived from the Global Burden of Disease Study (2013).

Results: Considering the HNC cases in 2014, the YLD value was 47,502. Total DALY due to HNC in 2014 was 263,858. Conclusions: As expected, due to cancer location and treatment pattern, HNC has an important clinical impact on population health, not only because of high mortality, but also considering the disease related functioning hospitalization, since years lived with disability were responsible for almost 20% of total DALY.

PCN257

CLINICAL EFFICACY AND SAFETY OF LICENSED DRUGS AND POTENTIAL NEW THERAPIES FOR NON-METASTATIC CASTRATION-RESISTANT PROSTATE CANCER: A SYSTEMATIC LITERATURE REVIEW
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Objective: To review the published literature on the efficacy and safety of licensed drugs and therapies currently in phase 3 development for the treatment of adults with non-metastatic (mC) castration-resistant prostate cancer (mCRPC).

Methods: A systematic literature review (SLR) of the clinical evidence was conducted using six electronic databases (PubMed, EMBASE, CINAHL, Cochrane Library, Web of Science, Google Scholar) and websites. SLR was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Eleven SRs were included in this study.

Results: Twelve publications reporting data from nine different studies were reviewed. The selected interventions compared with placebo were: apalutamide (SPARTAN trial), enzalutamide (ARAMIS) and abiraterone (E2100). Enzalutamide significantly altered the progression-free survival of mCRPC patients with a hazard ratio of 0.31 (95% confidence interval 0.23, 0.42; p < 0.001) for time to progression and a hazard ratio of 0.18 (95% confidence interval 0.10, 0.34; p < 0.001) for time to prostate-specific antigen progression. However, STRIVE is a phase 2 study and none of the four completed studies demonstrated efficacy of the assessed interventions.

Conclusions: mCRPC represents an unmet medical need with a high unmet clinical burden and a need for new effective therapies. The studies reviewed in this SLR have not yet demonstrated the clinical benefit of these therapies in the mCRPC setting. Further investigation is warranted regarding the clinical benefit of new mCRPC therapies with an improvement of QoL and treatment patterns over existing treatments.
The Power of Pivotal Trial Design on Oncology Agents in the EU5: Payer and Prescriber Perspectives on Diagnosis. 3) Reimbursement of the new drugs has shifted dacarbazine from first to second line (1L) and ipilimumab (IN) combination, BRAF/MEK monotherapy, BRAF/MEK combination, and chemotherapy. Treatment patterns were summarized using descriptive statistics for each treatment group by year. Results: 30 patients with MM initiated first-line therapy in the study period: 68 (22%) BRAF, 26 (8%) IN, 25 (8%) BRAF/MEK combination, and 15 (5%) BRAF/MEK monotherapy. 2L was observed among 96 (31%) MM patients; the most frequent combination therapy was vemurafenib/IN (N = 26). Among those who received 2L chemotherapy (N = 26), half received different chemotherapy regimen in 1L, followed by ipilimumab in 1L (23%) and PD-1 monotherapy in 1L (12%). 1L chemotherapy use remained consistent across the 2 years and 15% of patients received two or more treatments. 

CONCLUSIONS: Despite the introduction of IO and TT for the treatment of MM, almost one third of patients are treated with chemotherapy in 1L and 2L. Improved overall survival with IO and TT warrants further research to understand use of chemotherapy in melanoma.

PCN256
Opioid Use Outcomes among Female Breast Cancer Patients Using Adjuvant Endocrine Therapy Regimens

OBJECTIVES: Opioids could be used effectively as a pharmacotherapy for severe cases of pain in patients undergoing adjuvant endocrine therapy (AET) or chemotherapy for breast cancer patients. To provide relevant, timely information to oncologists, we evaluated the opioid use among breast cancer patients treated with AET. METHODS: We retrospectively analyzed 2006-2012 SEER-Medicare datasets, following patients for at least two years from the index date, defined as the first date they filled an AET prescription. The study included 10,773 Medicare-enrolled (Parts A, B, D) adult women with incident, primary, hormone receptor-negative, stage I-III breast cancer. These patients were followed for up to at least 60 months, alive for at least two years following AET initiation. The main independent variable in multivariable Cox-proportional hazard regression models was the AET regimen. The regimens included in this study were tamoxifen alone, aromatase inhibitor alone, or switch from tamoxifen to an aromatase inhibitor. Opioid use was defined as the number of patients with one or more opioid prescriptions filled in any given year. RESULTS: The results of the causal effects after applying for inverse probability treatment weights among AET regimens showed that the opioid use probability for those using tamoxifen only and AI only were similar (56.0% vs. 56.1%, respectively). The opioid use probabilities for those who switched from AI to TAM were higher than those for the tamoxifen-only and AI-only groups. Opioid use was also significantly (p < 0.05) associated with AET non-adherence. Additionally, opioid users and chronic opioid users had significantly higher risks of death (adjusted hazard ratio [HR] = 1.63 and 1.41, respectively). Conclusions: These findings suggest AET-induced pain, especially AI, may be an important indicator for drug switching and AET non-adherence. Managing AET side effects, especially pain, is integral to achieving better survival and quality of life outcomes in this population.

PCN261
Real-World Management and Outcomes of Patients with Multiple Myeloma in Romania and Poland
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OBJECTIVES: Understanding symptomatic multiple myeloma (MM) patient management, treatment patterns and outcomes in real-world practice in Romania and Poland. METHODS: Data were collected through a cross-sectional (AI) and retrospectively (RI) chart review (June/15-June/16) by oncologists/haematologists managing ≥15 symptomatic MM patients per month and responsible for treatment initiation. The X-phase collected clinical characteristics and treatment for MM patients seen during a 3-4 week time-frame. The R-phase recorded disease characteristics, including treatment response and duration. Each physician included patients who completed within 3 months the following lines of therapy: 3 first-line (1L) patients, 4 second-line (2L) patients and 7 third-line or later (3L+) patients. Analyses were descriptive. RESULTS: The X-phase included 158 and 60 patients in Romania and Poland respectively, of whom 56% and 52% were <65 years. 72% of patients in Romania and 83% in Poland were ≥65 years. 33% of patients in Romania and 21% in Poland were aged ≥85 years. 1L and 3L treatments were mainly bortezomib-based (67%, 81% and 57% respectively), in Poland, 1L treatments were bortezomib and thalidomide-based (each 39%), while 2L and 3L treatments were mainly lenalidomide-based (50% and 70%). The R-phase included 52 patients in Romania and 55 in Poland. 60% and 49% respectively, were <65 years. Physician-assessed depth of response decreased in later lines: 44% and 42% of patients in Romania and Poland achieved at least a very good partial response (≤ VGPR) in 1L, while 21% and 16% of patients achieved ≥ VGPR in 3L. Median treatment durations across lines in Romania and Poland were 6 months each for bortezomib-based regimens, 12 and 6 months for lenalidomide-based regimens, and 5 and 7 months for thalidomide-based regimens. CONCLUSIONS: Low response rates from 2L onwards and short median treatment duration suggest a...
need for more innovative and effective treatments and treatment combinations in both countries, to help avoid potential re-treatment with same agent and associ-
ated cumulative toxicities.

PCN264
THE GLOBAL BURDEN OF GASTRIC (GC) AND GASTROESOPHAGEAL JUNCTION (GEJ) CANCERS
OBJECTIVES: The objective of this study was to assess current global burden of GC and GEJ, and differences across regions. METHODS: A targeted literature review of the epidemiology, current management, and the economic and humanistic burden of GC and GEJ worldwide was conducted. Results: GC and GEJ worldwide was conducted. Results were reported globally. PROs, patient reported experiences and patients’ basal characteristics to be collected included. Basal characteristics to be collected included. Basal characteristics to be collected included.

A460
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PCN271
THE IMPACT OF CANCER DRUGS FUND REFORMS ON REIMBURSEMENT OF ONCOLOGY DRUGS IN THE UK
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OBJECTIVES: The Cancer Drugs Fund (CDF) was set up in 2011 to enable cancer patients in England to access therapies that are not routinely publically reimbursed. The aim of this study was to analyse the impact that reforms introduced by the CDF has had on reimbursement rates for oncology drugs in the UK.

Methods: The analyses of the Hungarian price competition bid was conducted from representatives of the ministry of health. The prices have been completed for the year 2016, reflecting the renewed importance of NICE recommendations for national reimbursement in oncology.

Results: The analyses of the Hungarian price competition bid has been completed from representatives of the ministry of health. The prices have been completed for the year 2016, reflecting the renewed importance of NICE recommendations for national reimbursement in oncology.

Conclusions: The analyses of the Hungarian price competition bid has been completed from representatives of the ministry of health. The prices have been completed for the year 2016, reflecting the renewed importance of NICE recommendations for national reimbursement in oncology.

PCN274
ONCOLOGY DRUGS IN THE UK: A TREND ANALYSIS USING NATIONALWIDE HEALTH INSURANCE DATABASE
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OBJECTIVES: As the average life expectancy of Koreans increases, the prevalence of various cancer-related treatments, such as cancer treatment, has also increased in recent years. In particular, Pca (prostate cancer) is identified in men aged 70 years or older. As in the case of pattern data of primary treatment for elderly patients was unable to health care policy for prostate cancer. This study aims to examine the medical and economic patterns of major for prostate cancer.

Methods: The treatment patterns of Pca were analyzed by comparing the linked records of the Korea Central Cancer Registry and National Health Insurance Service (NHIS), using International Classification of Diseases, 10th edition codes: 185A to 185E. The database of NHIS claim data from 2002 to 2014 was used. The analyses of pattern data of primary treatment for elderly patients was unable to health care policy for prostate cancer. This study aims to examine the medical and economic patterns of major for prostate cancer.

Results: The treatment patterns of Pca were analyzed by comparing the linked records of the Korea Central Cancer Registry and National Health Insurance Service (NHIS), using International Classification of Diseases, 10th edition codes: 185A to 185E. The database of NHIS claim data from 2002 to 2014 was used. The analyses of pattern data of primary treatment for elderly patients was unable to health care policy for prostate cancer. This study aims to examine the medical and economic patterns of major for prostate cancer.

Conclusions: The treatment patterns of Pca were analyzed by comparing the linked records of the Korea Central Cancer Registry and National Health Insurance Service (NHIS), using International Classification of Diseases, 10th edition codes: 185A to 185E. The database of NHIS claim data from 2002 to 2014 was used. The analyses of pattern data of primary treatment for elderly patients was unable to health care policy for prostate cancer. This study aims to examine the medical and economic patterns of major for prostate cancer.

PCN275
COST-EffectIVENESS OF NICE RECOMMENDED CANCER THERAPIES: A CROSS-SECTIONAL STUDY
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OBJECTIVES: As the average life expectancy of Koreans increases, the prevalence of various cancer-related treatments, such as cancer treatment, has also increased in recent years. In particular, Pca (prostate cancer) is identified in men aged 70 years or older. As in the case of pattern data of primary treatment for elderly patients was unable to health care policy for prostate cancer. This study aims to examine the medical and economic patterns of major for prostate cancer.

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PCN276
EXPERIENCES WITH PRICE COMPETITION OF BIOSIMILAR DRUGS IN HUNGARY
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OBJECTIVES: The aim of our study is to analyse the biosimilar bids of the Hungarian National Health Insurance Fund Administration in case of colony-stimulating factor (CSF).

Methods: The data used in this analysis was derived from the financing database of Hungarian National Health Insurance Fund Administration, and they covered the interval between July 1, 2011 and June 30, 2014.

Results: Of 118 STAs during the initial free-pricing phase of the CDF, only 43% were recommended. Of 37 STAs prior to the introduction of the CDF, 68% were recommended. Of 28 STAs during the initial free-pricing phase of the CDF, only 43% were recommended. Of 21 STAs whilst the CDF incorporated economic evaluations, 76% were recommended. Following the 2011, the majority was closed (one through the newly reformed CDF).

Conclusions: The treatment patterns of Pca were analyzed by comparing the linked records of the Korea Central Cancer Registry and National Health Insurance Service (NHIS), using International Classification of Diseases, 10th edition codes: 185A to 185E. The database of NHIS claim data from 2002 to 2014 was used. The analyses of pattern data of primary treatment for elderly patients was unable to health care policy for prostate cancer. This study aims to examine the medical and economic patterns of major for prostate cancer.

PCN277
CANCER DRUGS IN ALGERIA AND SIX OTHER COUNTRIES: A CROSS-COUNTRY PRICE COMPARISON STUDY
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OBJECTIVES: To analyse whether cancer drugs are less or more expensive in Algeria than in 7 other countries in the world (Morocco, France, United Kingdom, Brazil, United States and Malaysia).

Methods: Based on the economic situation and the high prices of oncology medicines, we chose to survey official list prices at ex-factor level for 17 originator cancer drugs (breast cancer, lung cancer and prostate cancer) from the in-patient sector in Algeria and 7 countries from inside (France and Turkey) and outside its country basket for IRP as of April 2017. The data was provided by official list prices for each of the countries.

Results: The analyses of the Hungarian price competition bid was conducted from representatives of the ministry of health. The prices have been completed for the year 2016, reflecting the renewed importance of NICE recommendations for national reimbursement in oncology.

Conclusions: The analyses of the Hungarian price competition bid has been completed from representatives of the ministry of health. The prices have been completed for the year 2016, reflecting the renewed importance of NICE recommendations for national reimbursement in oncology.

PCN278
GERMAN AMNOG BENEFIT ASSESSMENT: THE TYPE OF APPROPRIATE COMPARATOR MAKES THE DIFFERENCE
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OBJECTIVES: As the average life expectancy of Koreans increases, the prevalence of various cancer-related treatments, such as cancer treatment, has also increased in recent years. In particular, Pca (prostate cancer) is identified in men aged 70 years or older. As in the case of pattern data of primary treatment for elderly patients was unable to health care policy for prostate cancer. This study aims to examine the medical and economic patterns of major for prostate cancer.

Methods: The treatment patterns of Pca were analyzed by comparing the linked records of the Korea Central Cancer Registry and National Health Insurance Service (NHIS), using International Classification of Diseases, 10th edition codes: 185A to 185E. The database of NHIS claim data from 2002 to 2014 was used. The analyses of pattern data of primary treatment for elderly patients was unable to health care policy for prostate cancer. This study aims to examine the medical and economic patterns of major for prostate cancer.

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Conclusions: The treatment patterns of Pca were analyzed by comparing the linked records of the Korea Central Cancer Registry and National Health Insurance Service (NHIS), using International Classification of Diseases, 10th edition codes: 185A to 185E. The database of NHIS claim data from 2002 to 2014 was used. The analyses of pattern data of primary treatment for elderly patients was unable to health care policy for prostate cancer. This study aims to examine the medical and economic patterns of major for prostate cancer.
OBJECTIVES: For benefit assessment of new pharmaceuticals in Germany, G-BA defines comparators of four categories: one specific drug, a list of drugs, patient individualized therapy, and best supportive care (BSC). The aim of the study was to reveal the impact of the category on the added benefit. METHODS: Information on appropriate comparators and benefit assessment were retrieved from the German national market access strategy (G-BA) decisionmaking oncology. Dossiers were analyzed for data on indication, target population, line of therapy, appropriate comparator, and added benefit. RESULTS: 66 relevant dossiers were published by G-BA. Appropriate comparator was presented by a selection of case studies in saturated oncology therapy areas. Dossiers assigned by G-BA were distributed as follows: 33 (26%) specific drug, 39 (30%) list of drugs, 23 (18%) patient individualized therapy, and 34 (26%) BSC. About 50% of all assigned by G-BA were distributed as follows: 33 (26%) specific drug, 39 (30%) list of drugs, 23 (18%) patient individualized therapy, and 34 (26%) BSC. About 50% of all assigned by G-BA were distributed as follows: 33 (26%) specific drug, 39 (30%) list of drugs, 23 (18%) patient individualized therapy, and 34 (26%) BSC. However, 3 of these dossiers achieved an added benefit. In contrast, an added benefit was granted for only 30.4% (n = 7) of sublabels, which belonged to the category “patient individualized care,” 9 of the dossiers in this category did not show direct evidence to the appropriate comparator; however, 9 of the dossiers observed an added benefit. CONCLUSIONS: A specific drug or BSC are the most commonly assigned appropriate comparators in oncolgy dossiers. If a specific drug is the appropriate comparator, it seems inevitable to present direct evidence in order to gain an added benefit. For BSC and patient individualized therapy, G-BA seems to be more permissive regarding the acceptance of evidence not directly matching the appropriate comparator.

PCN277

RATES OF UPTAKE OF NOVEL AGENTS IN CANCER (PROSTATE, MELANOMA, AND LUNG): CONSIDERATIONS FOR FORECASTING IN ECONOMIC EVALUATIONS

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OBJECTIVES: With recent drug approvals in prostate, melanoma and lung cancers, determining the rate of uptake is important to understand their budget impact for national and private payers. This research describes the patterns in uptake of novel anti-cancer agents in the US and discusses the importance of developing time-dependent budget/cost-effectiveness models. METHODS: Unique patients initiating therapy approved between 01/01/2011-11/27/2016 for prostate, melanoma and lung cancer were counted by quarter (Q) in the Symphony Health pharmacy and medical claims database (≥ 1 Rx claim and ≥ 1 medical claim for indication-specific diagnosis). Means to peak utilization were assessed. Trends in utilization were evaluated using linear regression. Model fit was based on r². Sub-analyses were conducted to describe the influence of clinical and market forces (new clinical data, competitor launch, expanded indications) on utilization. RESULTS: Mean years from approval to peak utilization was 7.6 ± 3.0. A comparator-based (SCE) model (x3) for enza showed stable rates since 2016 Q3 (r² = 0.84) at the time of approval of nivolumab. Similarly, utilization of dab/tra appeared (x3, r² = 0.96) to be now declining (42% less dab/tra from 2015 Q1-2016 Q4), while criz appeared stable (x3, r² = 0.95) to be now declining (42% less dab/tra from 2015 Q1-2016 Q4). Afe appeared to decline (x3, r² = 0.96) while vemurafenib appeared (x3, r² = 0.96) to be now declining (42% less dab/tra from 2015 Q1-2016 Q4). Conclusions: The rate of uptake is not a linear process and market forces drive utilization patterns. Payers, whether national or private, should request time-dependent uptake factors in the calculation of budget impact models or forecasts to accurately reflect rates of adoption. Historical data can be used to inform such models.

PCN278

CHARACTERISTICS OF PATIENTS TREATED WITH CETUXIMAB-BASED EXTREME REGIMEN IN 1ST LINE R/M SCCHN CANCER IN REAL LIFE SETTING, IN FRANCE IN 2012-2015

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OBJECTIVES: The objective of the study was to assess the EXTREME chemotherapy regimen in real life setting. In this abstract, we present patient characteristics and primary endpoint which was the rate of patients with relative dose intensity (RDI) for these patients (n = 169). 157 patients were identified at least one prescription for the drug over the 12 month study period was determined. The sex/gender distribution of the cohort was established. Total expenditure was ascertainment. RESULTS: In 2013, the NICE has evaluated ruxolitinib for the treatment of splenomegaly/disease-related symptoms in primary myelofibrosis, post polycythaemia vera myelofibrosis or post essential thrombocythaemia myelofibrosis. The analysis of the full sample was defined as all subjects who received at least one dose of ruxolitinib. The budget impact analysis was conducted. Total expenditure was 2.65 million. CONCLUSIONS: Our analysis demonstrates how real-world utilization can differ from pre-reimbursement estimates and highlights the benefit that this real-world information could bring to the decision making process, particularly in relation to monitoring affordability.

PCN281

REAL-WORLD EVALUATION OF PHYSICIAN ATTITUDES TOWARDS THE PRESCRIPTION OF ANDROGEN DEPRIVATION THERAPY FOR PATIENTS WITH PROSTATE CANCER

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OBJECTIVES: We sought to understand drivers for real-world treatment decisions among physicians prescribing androgen deprivation therapy (ADT) in Europe. METHODS: A disease specific programme, collected data from 81 urologists across Belgium (n = 8), France (n = 29), Germany (n = 20) and Italy (n = 24) between February 2016 and May 2015. Data collected included demographic data, practice characteristics, and the frequency and reasons for ADT prescription. Proportions were compared using Chi-square or Fisher’s exact test where appropriate. The data were collected through physician-completed online surveys and patient record forms. Opinion questions were scored on a seven-point scale from strongly agree to strongly disagree. All data were anonymised and treated in accordance with national data collection regulations. RESULTS: Physicians were grouped by frequency of prescription of the GnRH Antagonist, degarelix, as regular prescribers (n = 30), low-prescribers (n = 31) or non-prescribers (n = 28). Physician demographics showed those who regularly prescribed degarelix tended to be more experienced, more often qualified medical doctors from larger university hospitals (56% vs 7%) and were actively involved in clinical trials (43% vs 10%), compared to non-prescribers, respectively. Approximately one-third of physicians thought that current treatments were good at controlling the disease, and the
majority (≥90%) agreed that drug efficacy claims are factual. Overall, ≤50% considered pharmaceutical companies to have a valuable source of information and ≤50% thought they would be among the first to prescribe a new treatment. Few physicians thought traditional endpoints were more important than quality of life endpoints (≤13%). Treatment costs did not influence choice of therapy among 40% Degarelix prescribers and 46% of tumour necrosis factor-α inhibitors, albeit only in selected restrictive in prescription choice. CONCLUSIONS: These “real world” data suggest that overall, physicians have realistic expectations of prostate cancer treatments and consider quality of life endpoints to be important. Few physicians consider themselves able to prescribe the treatments of their choice, despite potential differences in costs.

PCN282
MANAGEMENT AND COST ANALYSIS OF CANCER PATIENTS TREATED WITH G-CSF: A COHORT STUDY BASED ON THE FRENCH NATIONAL HEALTHCARE INSURANCE DATABASE (ECHANTILLON GÉNÉRALISATEUR DES BÉNÉFICIAIRES)
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OBJECTIVES: Compared to letrozole, bisphosphonates (BPs) were approved in Germany for the prevention of skeletal related events (SREs) in patients with multiple myeloma (MM). The primary objectives of this study were to determine the persistence and compliance with bisphosphonates in patients newly treated with bisphosphonates (BPs) approved for Germany in the prevention of SREs. METHODS: This was a retrospective analysis of German health insurance claims data (including ≤4 million insured) in patients newly included in the German MM patient database that included newly treated MM patients newly treated with bisphosphonates (BPs) approved for Germany in the prevention of SREs. The analysis aimed to estimate the outcome of NICE reviews and included new patients prescribed a BP within 12 months of BP treatment initiation. Data were provided by several national Payers. RESULTS: In total, 6,068 patients with MM were included in the analyses. The median time to non-persistence (time to interruption) [mean (95% CI)] after treatment initiation was 53 weeks (64.5-53.7) for pamidronate and 48.4% (37.0-63.2) for zoledronate. Median time to non-persistence [median [95% CI]] after treatment initiation was 53 weeks (64.5-53.7) for pamidronate and 48.4% (37.0-63.2) for zoledronate. Median time to non-persistence (median [95% CI]) after treatment initiation was 53 weeks (64.5-53.7) for pamidronate and 48.4% (37.0-63.2) for zoledronate. Median time to non-persistence (median [95% CI]) after treatment initiation was 53 weeks (64.5-53.7) for pamidronate and 48.4% (37.0-63.2) for zoledronate.

PCN285
DENOSUMAB AND BISPHOSPHONATES PERSISTENCE, COMPLIANCE AND PHARMA COVERAGE DECISIONS IN PATIENTS WITH METASTATIC (M) OR LOCALIZED (L) BONE METASTASES (BM)
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OBJECTIVES: In Germany, patients with MM seem to be sub-optimally treated for the prevention of SREs. 4 patients had received ≥12 prescriptions of pamidronate and zoledronate, respectively. For PrCa, persistence with denosumab and zoledronate were 58% (48-71) and 50% (42-59), respectively. Finally for LuCa, persistence at 1 year [% (95% CI)] was 51 (35-67) for zoledronate. Switch rates in BrCa were 5%, 14%, 14% and 19% for denosumab, ibandronate, pamidronate and zoledronate, respectively. For PrCa, it was 47% (32-62) and 36% (26-47) for denosumab and zoledronate, and for LuCa was 51 (35-67) for zoledronate. Switch rates in BrCa were 5%, 14%, 14% and 19% for denosumab, ibandronate, pamidronate and zoledronate, respectively, with a similar pattern in PrCa and LuCa. CONCLUSIONS: Denosumab had higher persistence and compliance with lower switch rates.

PCN286
WHAT IMPACT DOES NICE’S MODIFIED CANCER DRUGS FUND PROCESS MEAN FOR PATIENT ACCESS TO NEW ONCOLOGY PHARMACEUTICALS IN ENGLAND?
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OBJECTIVES: In April 2016, NICE modified the Cancer Drugs Fund (CDF) appraisal process to review all new oncotherapy indications and publish final guidance within 90 days of marketing authorisation. Additionally, 11 existing legacy treatments from the previous CDF had not undergone a NICE assessment and required review. This study investigates the efficiency of the new CDF appraisal process for indications without prior NICE evaluations. METHODS: Public data sources were analysed to determine the outcome of NICE reviews of 42 oncology indications using the modified CDF process. The following information was collected for each indication: Stage of the evaluation process Has it secured interim/baseline funding? Is it funded by the CDF managed access scheme? RESULTS: As of June 2017, NICE has reviewed 31 new indications; 21 positive recommendations (which allows for routine NHS funding), 6 negative recommendations (no NHS funding), whilst 4 indications are recommended for use with CDF managed access schemes. All 4 indications entering baseline funding have done so with patient access arrangements. Furthermore, NICE has reviewed 2 legacy CDF indications, with 9 still to be evaluated. CONCLUSIONS: NICE appear to have prioritized new oncology indications, reviewing 31 new indications to only two legacy indication. For new indications, the new NICE appraisal process is efficient and enabling faster access to patients. However, this is at the expense of legacy CDF indications, which remain in limbo in the CDF. This may be advantageous to manufacturers as it also enables the time that their drug will remain a transition drug, preventing engagement in new patient access schemes whilst still allowing new patients to access their drugs. All newly approved indications had a patient access scheme in place to lower the net price to ensure recommendation, highlighting that the NHS list price remains artificial.
change since 2011 under the universal coverage of the National Health Insurance in Taiwan. METHODS: This study was carried out with the 2011-2014 National Health Insurance Research Database in Taiwan. Patients with NSCLC who initiated a TKI after 2012 were included and categorized as receiving TKIs as the first-line or ≥ second-line therapy in our analysis. The trend of receiving TKI as the first-line therapy over time was assessed. RESULTS: A total of 13,341 patients initiated their first TKI therapy during the year 2012-2014 (4,487, 4,429 and 4,425 patients, respectively). The proportion of patients receiving TKI as the first-line therapy in each year escalated from 47.8% to 52.6%. The 30-day survival rate and the percentage of patients receiving salvage chemotherapy after TKI failure were higher in the first-line group (67.5% and 52.5%) compared to the ≥ second-line group (58.8% and 50.2%). Exploratory analysis of the pooled data suggested a median TKI treatment duration of 5.6 months, which appeared to be lower than those derived from trials. CONCLUSIONS: TKI as the first-line therapy has become more prevalent, and thus the rate of receiving salvage chemotherapy after TKI failure has increased over time and the treatment status after TKI failure were assessed.

**PCN289**

**NEW INSIGHTS IN METASTATIC COLORECTAL CANCER TREATMENT (MCRC) IN 5 EUROPEAN COUNTRIES**

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OBJECTIVES: Targeted therapies for mCRC treatment have been available in Europe for several years now. We used long-term real-world data to study the influence of targeted therapies on the occurrence of side effects and analyzed specific differences in treatments and influencing factors. METHODS: Treatment data of 10,231 mCRC patients collected between 2011 until 2016 in EU5 countries were extracted. The EMA Oncology Analytics (OA) database OA contains anonymized retrospectively collected patient level data on disease and treatment history provided by hospital- and office-based physicians. A count GEE regression model was used to evaluate the number of side effects among treatments with and without targeted therapies. An ordinal GEE regression model was used to examine the choice of therapy had been affected by factors such as country, year, sex or type of insurance. RESULTS: In the count GEE regression model patients receiving targeted therapies in combination with chemotherapy had a 0.15 fold increase in the predicted number of side effects compared to patients treated with chemotherapy only. Initially, patients in UK and Spain were less likely to receive targeted therapies than in Germany. Over time, chances to receive targeted therapies increased significantly (p<0.05) in Spain (25%), France (+13%) and Italy (+13%), but not in Germany (-3%) or UK (-4%). Health insurance type (public versus private) did not affect the likelihood of receiving targeted therapy. CONCLUSIONS: Use of targeted therapies increased over time and the number of side effects only increased in MCRC patients. The percentage of targeted therapies converged to similar levels in France. Germany, Italy and Spain, but remained lower in UK compared to the other countries. Real world data provide valuable up to date insights into clinically applied therapies, correlating factors of interest and allow further optimization of treatments.

**PCN289**

**PHYSIOTHERAPEUTIC METHODS AIMED TO IMPROVE THE CARDIORESPIRATORY STATE BEFORE AND AFTER OPERATION IN PATIENTS WITH LUNG CANCER**

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OBJECTIVES: We aim to develop a complex physiotherapy preoperative procedure, which would ensure that lung tumour patients have better physical and mental status before and after surgery, and have a better general condition after the operation, thus to shorten the period of hospitalization and the chances of complications. METHODS: The examination was made between October 2016 and March 2017. 20 patients were involved in the prehabilitated group receiving information and two weeks of exercise program at home before surgery. Further 20 patients were in the group that received only post rehabilitation, after the operation they were only treated according to the protocol used in the hospital ward. Data were collected by questionnaires, tests or exercise program adapted to our patients. We used standardized questionnaires and our own genuine edited questionnaire. In patient education before elective surgery we have described the movement program, taught standardized questionnaires and our own genuine edited questionnaire. In patient education before elective surgery we have described the movement program, taught standardized questionnaires and our own genuine edited questionnaire. In patient education before elective surgery we have described the movement program, taught standardized questionnaires and our own genuine edited questionnaire. In patient education before elective surgery we have described the movement program, taught standardized questionnaires and our own genuine edited questionnaire. In patient education before elective surgery we have described the movement program, taught standardized questionnaires and our own genuine edited questionnaire.

**CONCLUSIONS:** MethOds: We analysed oncology drugs approved by EMA from Jan2013 to Dec2016. To date, 27 of 45 drugs completed the full Italian P&R process and were included. We classified drugs in three different clusters, on the characteristics of pivotal clinical trials: 1) “A” for phase III with an active comparator; 2) “B” for phase III without a control arm; and “C” for phase II. The characteristics of the pivotal clinical trials included: 1) whether or not a Phase II, the median difference is 125 days, around 4 months (343 vs 468). Predictably, the patients enrolled in phase II (521, range 199-1717) is higher than in phase II trials (158, range 79-449). As expected, orphan drugs have been more frequently registered with the Italian P&R process (a Phase II, the median difference is 125 days, around 4 months (343 vs 468). Predictably, the patients enrolled in phase II (521, range 199-1717) is higher than in phase II trials (158, range 79-449). As expected, orphan drugs have been more frequently registered with the Italian P&R process (a Phase II, the median difference is 125 days, around 4 months (343 vs 468). Predictably, the patients enrolled in phase II (521, range 199-1717) is higher than in phase II trials (158, range 79-449). As expected, orphan drugs have been more frequently registered with the Italian P&R process (a Phase II, the median difference is 125 days, around 4 months (343 vs 468). Predictably, the patients enrolled in phase II (521, range 199-1717) is higher than in phase II trials (158, range 79-449). As expected, orphan drugs have been more frequently registered with the Italian P&R process (a Phase II, the median difference is 125 days, around 4 months (343 vs 468). Predictably, the patients enrolled in phase II (521, range 199-1717) is higher than in phase II trials (158, range 79-449). As expected, orphan drugs have been more frequently registered with the Italian P&R process (a Phase II, the median difference is 125 days, around 4 months (343 vs 468). Predictably, the patients enrolled in phase II (521, range 199-1717) is higher than in phase II trials (158, range 79-449). As expected, orphan drugs have been more frequently registered with the Italian P&R process (a Phase II, the median difference is 125 days, around 4 months (343 vs 468). Predictably, the patients enrolled in phase II (521, range 199-1717) is higher than in phase II trials (158, range 79-449). As expected, orphan drugs have been more frequently registered with the Italian P&R process (a Phase II, the median difference is 125 days, around 4 months (343 vs 468). Predictably, the patients enrolled in phase II (521, range 199-1717) is higher than in phase II trials (158, range 79-449). As expected, orphan drugs have been more frequently registered with the Italian P&R process (a Phase II, the median difference is 125 days, around 4 months (343 vs 468). Predictably, the patients enrolled in phase II (521, range 199-1717) is higher than in phase II trials (158, range 79-449). As expected, orphan drugs have been more frequently registered with the Italian P&R process (a Phase II, the median difference is 125 days, around 4 months (343 vs 468). Predictably, the patients enrolled in phase II (521, range 199-1717) is higher than in phase II trials (158, range 79-449). As expected, orphan drugs have been more frequently registered with the Italian P&R process (a Phase II, the median difference is 125 days, around 4 months (343 vs 468). Predictably, the patients enrolled in phase II (521, range 199-1717) is higher than in phase II trials (158, range 79-449). As expected, orphan drugs have been more frequently registered with the Italian P&R process (a Phase II, the median difference is 125 days, around 4 months (343 vs 468). Predictably, the patients enrolled in phase II (521, range 199-1717) is higher than in phase II trials (158, range 79-449). As expected, orphan drugs have been more frequently registered with the Italian P&R process (a Phase II, the median difference is 125 days, around 4 months (343 vs 468). Predictably, the patients enrolled in phase II (521, range 199-1717) is higher than in phase II trials (158, range 79-449). As expected, orphan drugs have been more frequently registered with the Italian P&R process (a Phase II, the median difference is 125 days, around 4 months (343 vs 468). Predictably, the patients enrolled in phase II (521, range 199-1717) is higher than in phase II trials (158, range 79-449). As expected, orphan drugs have been more frequently registered with the Italian P&R process (a Phase II, the median difference is 125 days, around 4 months (343 vs 468). Predictably, the patients enrolled in phase II (521, range 199-1717) is higher than in phase II trials (158, range 79-449). As expected, orphan drugs have been more frequently registered with the Italian P&R process (a
PCN293
HEALTH LOSS DUE TO MARKET ACCESS DELAYS AND REIMBURSEMENT RESTRICTIONS IN FIRST-LINE EGFR-POSITIVE NON-CELL LUNG CANCER IN THE EU5 COUNTRIES
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OBJECTIVES: To maximize health-related quality of life (HRQoL), innovative therapies should be timely accessible to patients. In practice, however, time-consuming reimbursement decision-making processes at health technology assessment (HTA) authorities cause delays between the European Medicines Agency’s (EMA) approval and actual market access. This may cause HRQoL losses. Additionally, negative or restricted reimbursement decisions may also result in HRQoL losses. Aim: To quantify potential HRQoL losses due to delayed market access and reimbursement restrictions in first line EGFR-positive non-cell lung cancer (NSCLC) treatments in the EU5 countries.
METHODS: A health impact model employing a 5-year timeline has been developed, comparing actual NSCLC treatment in the EU5 to a scenario assuming direct market access. The model incorporates first-line treatments for EGFR-positive NSCLC, approved by EMA between 2007-2017. Epidemiologic data were used to quantify the number of patients diagnosed with EGFR-positive NSCLC annually. With current treatment algorithms, a total of 69,847 QALYs and 98,592 life years are achieved for these patients over a 5-year period. With direct market access, 3,241 QALYs and 4,622 life years only are gained.
RESULTS: The largest HRQoL losses are seen in France and Spain. This research suggests that delayed market access and reimbursement restrictions result in HRQoL losses in the EU5. One should keep in mind, however, that the results presented are an overestimation of the actual HRQoL losses, due to several factors, such as health care displacements, strategic product launches, and time required for guideline adaptations and clinical implementation.

PCN294
THE IMPRESS OF PHARMACOECONOMICS IN PRICING DECISIONS IN IFDA
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OBJECTIVES: The rapidly rising cost of drug therapy is a concern to healthcare providers and patients around the world. Based on Iran Food and Drug Administration (IFDA) regulation For the domestic and imported products the routine pricing policy is cost plus and external reference-based pricing. The pharmacoeconomics committee as a main portion of Iran Drug Selection Committee (IDSC) in IFDA evaluate the cost-effectiveness of new drug based upon the price and the incremental value. In this way we want to evaluate The impress of pharmacoeconomics in pricing decisions in IFDA.
METHODS: The role of pharmacoeconomics was assessed with reviewing the economic evaluation studies that was applied and recorded by companies in IFDA. Also the minutes of pharmacoeconomics committees were reviewed in order to assess the outcomes of pharmacoeconomics committee in the past 2 years. RESULTS: The investigation showed that “Cost” components include comparison with other drugs in IFDA, total cost per year, and cost per patient is the essential part in the evaluation of cost-effectiveness in the committee. All 3 of these approaches have utilized of experts to guide the decision making process in pricing. In the next 2 years, other relevant components are considered in the pharmacoeconomics committee, monitoring costs and budgetary impact might be used as evidences to decision making.
CONCLUSIONS: Drug costs are important although drug acquisition costs are the main budgetary impact and important in pricing decision making. The price of a new and innovative drug should be established in the healthcare systems that would be important input into strategic pricing decisions. It also introduces a new criterion of evaluation entitled”budget impact” that improve the allocative efficiency of health care financing. Other measures of cost-effectiveness measurement should be used. We recommend more balanced approach in the evaluation of specialty medications.

PCN295
AN EXPLORATORY COMPARISON OF US AND EU APPROACHES TO ONCOLOGY MANAGEMENT: ARE US PAYERS READY FOR MANAGEMENT TOOLS TO MAINTAIN BROAD FORMULARIES.
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OBJECTIVE: Long-term real-world resource utilization and cost data of mCRC patients eligible for targeted therapies are still scarce. Therefore, more information on treatment cost in current treatment pathways is required to allow informed decision making regarding targeted therapies. METHODS: Treatment data for patients with mCRC in the US and the EU were extracted from the IMS® Oncology Analyzer (OA) database. Based on this, cost for mCRC therapies of currently treated patients were assessed from the perspective of the German Statutory Health Insurance (SHI), using a micro-costing approach.
RESULTS: Based on this, cost for mCRC therapies of currently treated patients were assessed further to allow best possible treatment for mCRC patients. This database of 314 patient-years provides a 5-year time horizon was developed, comparing actual NSCLC treatment in the EU5 to a scenario assuming direct market access. The model incorporates first-line treatments for EGFR-positive NSCLC, approved by EMA between 2007-2017. Epidemiologic data were used to quantify the number of patients diagnosed with EGFR-positive NSCLC annually. With current treat-ment algorithms, a total of 69,847 QALYs and 98,592 life years are achieved for these patients over a 5-year period. With direct market access, 3,241 QALYs and 4,622 life years only are gained. The largest HRQoL losses are seen in France and Spain. This research suggests that delayed market access and reimbursement restrictions result in HRQoL losses in the EU5. One should keep in mind, however, that the results presented are an overestimation of the actual HRQoL losses, due to several factors, such as health care displacements, strategic product launches, and time required for guideline adaptations and clinical implementation.

PCN296
A COMPARATIVE ANALYSIS OF THE HEALTH CARE UTILIZATION AND COSTS OF PATIENTS DIAGNOSED WITH AND WITHOUT LIVER CANCER IN THE US MEDICARE POPULATION
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OBJECTIVE: To compare the health care utilization (HCU) and costs of patients with and without liver cancer in the US Medicare population. This comparative analysis was performed using 5% national Medicare data from 01JAN2011-31DECE2015. Adult patients diagnosed with liver cancer were identified using International Classification of Diseases, 9th and 10th Revision, Clinical Modification (ICD-9-CM/ICD-10-CM) diagnosis codes (ICD-9-CM code 155; ICD-10-CM code C22). The diagnosis date was designated as the index date. A comparison cohort of patients without a liver cancer diagnosis was created for patients of the same age, gender, race, baseline individual comorbidities, and Charlson comorbidity index score. A random index date was chosen for the comparison cohort to reduce selection bias. Patients in both cohorts were required to have continuous medical and pharmacy benefits 12 months pre- and post-index date. Propensity score matching (PSM) was performed to compare follow-up HRU and costs between the cohorts, adjusting for demographic and clinical characteristics. RESULTS: After applying PSM, a total of 270 patients were included in each cohort (liver cancer and comparator cohorts), and baseline characteristics were well balanced. A higher proportion of patients diagnosed with liver cancer had higher inpatient (40.0% vs 8.1%; p<0.0001) emergency room (ER; 32.6% vs 12.59%; p<0.0001), office (96.3% vs 77.41%; p<0.0001), outpatient (85.93% vs 55.3%; p<0.0001), and skilled nursing facility (SNF) (7.41% vs 1.1%; p<0.0001) utilization compared to patients in the comparator cohort. The liver cancer cohort also incurred significantly higher inpatient ($14,298 vs $2,279; p<0.0001), ER ($320 vs $104; p<0.0001), office ($48,585 vs $1,523; P<0.0001), outpatient ($21,039 vs $8,156; p<0.0001), SNF ($9,549 vs $659; p<0.0001), and total ($53,828 vs $9,549; p<0.0001) costs. CONCLUSIONS: Liver cancer patients incurred higher HRU and costs than those without liver cancer.

PCN297
A RETROSPECTIVE DATABASE ANALYSIS OF TREATMENT PATHWAYS AND ESTIMATED COSTS OF TREATMENT IN METASTATIC COLORECTAL CARCINOMA (mCRC) IN GERMANY
Lehndor A2, Kolb N2, von Bredow D2, Kuhn A2
1Amgen GmbH, Munich, Germany; 2QuantizedMS, Munich, Germany
OBJECTIVE: Long-term real-world resource utilization and cost data of mCRC patients eligible for targeted therapies are still scarce. Therefore, more information on treatment cost in current treatment pathways is required to allow informed decision making regarding targeted therapies.
METHODS: Treatment data for patients with mCRC in the US and the EU were extracted from the IMS® Oncology Analyzer (OA) database. Based on this, cost for mCRC therapies of currently treated patients were assessed from the perspective of the German Statutory Health Insurance (SHI), using a micro-costing approach.
RESULTS: Based on this, cost for mCRC therapies of currently treated patients were assessed further to allow best possible treatment for mCRC patients. This database of 314 patient-years provides a 5-year time horizon was developed, comparing actual NSCLC treatment in the EU5 to a scenario assuming direct market access. The model incorporates first-line treatments for EGFR-positive NSCLC, approved by EMA between 2007-2017. Epidemiologic data were used to quantify the number of patients diagnosed with EGFR-positive NSCLC annually. With current treat-ment algorithms, a total of 69,847 QALYs and 98,592 life years are achieved for these patients over a 5-year period. With direct market access, 3,241 QALYs and 4,622 life years only are gained. The largest HRQoL losses are seen in France and Spain. This research suggests that delayed market access and reimbursement restrictions result in HRQoL losses in the EU5. One should keep in mind, however, that the results presented are an overestimation of the actual HRQoL losses, due to several factors, such as health care displacements, strategic product launches, and time required for guideline adaptations and clinical implementation.

PCN298
THE BURDEN DURING THE “WATCHFUL WAITING” PERIOD IN WOMEN WITH RECURRENT OVARIAN CANCER IN GERMANY
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OBJECTIVE: In Europe, use of maintenance therapy is approved to extend the interval between chemotherapy treatments. Still, a substantial number of women with recurrent ovarian cancer are not offered maintenance therapy, preferring for example “watchful waiting” treatment. While studies have shown that patients experience anxiety and fear of recurrence during watchful waiting, the use of healthcare services during watchful waiting has not been examined. This study assesses the rate of these services and identifies patients with insurance coverage for 12 months before and ±1 quarter after first diagnosis were

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included. Recurrence was defined by the presence of 2nd-line platinum-based ther-
yapy, as a watchful waiting period without any chemotherapy. The rates of inpatient admissions and outpatient visits during watchful waiting were assessed. RESULTS: During the study period, 325 patients were identi-
cified as having recurrent OC and were treated with a 2nd-line therapy. There were 147 patients (45%) who were treated with a 2nd-line platinum-based therapy. The median time of administration was 4.9 years (IQR 2.9-8.45 years), and 9.6% had a watch-
ful waiting period after their 2nd-line platinum therapy. During watchful wait-
ing, 39.9% had an inpatient admission, with 52 inpatient hospitalizations reported (average of 1.4 inpatient hospitalizations). Furthermore, 9.6% of the patients were admitted to either an office-based or hospital outpatient setting, respectively. CONCLUSIONS: A significant proportion of 2nd-line recurrent OC patients were hospitalized dur-
ing the watchful waiting period post platinum treatment. These findings suggest a substantial ongoing disease burden during watchful waiting.

PCN299
COSTS AND LIFE EXPECTANCY INCREASED AMONG PATIENTS WITH BREAST CANCER ACROSS TWO TIME PERIODS
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OBJECTIVES: Outcomes of expenditure of National Health Insurance (NHI) on cancer treat-
ment has been growing significantly. However, doubts have been raised about whether the cancer treatments demonstrate ‘value for money’. This study aims to compare life years gained and medical costs increased between patients diagnosed with breast cancer in different periods, and to estimate the incremental cost per life year gained. METHODS: Patients diagnosed with breast cancer between 2002-2009 and 2010-2015, were identified from Taiwan Cancer Registry, respectively. First, a survival regression adjusted survival curve was assessed with death events identified from the Death Registry. Second, breast cancer related inpatient and outpatient claims for 5 years from initial diagnosis were retrieved from the NHI claims database. Expenditures per year survived were calculated using a generalized linear Gamma models by application of the Kaplan-Meier sample average (KMSA) method. Finally, medical costs and life expectancy for the two patient cohorts were compared. RESULTS: Overall, the cost of treating patients with breast cancer has risen considerably, yet the survival has improved simultaneously. Results of this study highlight the importance of considering outcomes and overall costs when assessing the value of new cancer drug treatment.

PCN300
GRANULOCYTE-COLONY STIMULATING FACTOR (G-CSF): POTENTIAL FINANCIAL SAVINGS FOR GERMAN HOSPITALS
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OBJECTIVES: Introduction: Granulocyte-colony stimulating factor (G-CSF), is a glycoprotein which stimulates the bone marrow to produce granulocytes. The major forms of G-CSF are pegfilgrastim and lipegfilgrastim are used once per cycle of chemotherapy, lenograstim can be applied daily. However, significantly more expensive G-CSF products like pegfilgrastim and lipegfilgrastim are used once per cycle of chemotherapy, while lenograstim can be applied daily. The choice of G-CSF has a huge impact on the medical expenditure and on optimizing the productivity of professionals in health and allows a greater availability of infusion rooms. A holistic view of the health technologies from different perspec-
tives is important for evidence-based decision-making in health.

PCN303
DETERMINING THE COMPARATIVE VALUE OF OUTCOME-BASED MONEY-BACK GUARANTEE SCENARIOS IN NON-CELL LUNG CANCER USING REAL-WORLD DATA
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OBJECTIVES: At the time a reimbursement decision is made, the value of a drug is often assessed using clinical targets. This study aimed to evaluate the cost-effectiveness of different money-back guarantee scenarios for various non-cell lung cancer (NSCLC) therapies based on real-world data. METHODS: Retrospectively collected data of Dutch patients diagnosed with NSCLC was used. Current patterns of drug utilization were first assessed and then used to perform a cost-effectiveness analysis by evaluating the total costs and benefits linked associated with two different money-back guarantee scenarios. The first scenario reduced the payer’s drug costs to zero for patients whose treatment response was never more favorable than progressive disease. In the second scenario, the real-world median overall survival (OS) was compared to the median OS from a pivotal trial. If the former was lower than the latter, the drug costs were reduced proportionally. Analyses were done for gemicitinib/cisplatin, pemetrexed/cis/platin, and vinorelbine/cisplatin (M+) for platinum as a first-line treatment. RESULTS: The cost of treating patients with breast cancer has risen considerably, yet the survival has improved simultaneously. Results of this study highlight the importance of considering outcomes and overall costs when assessing the value of new cancer drug treatment.

PCN304
ECONOMIC ANALYSIS AND EVALUATION OF THE VALUE OF THE PARALLEL EXPORT OF MEDICINAL PRODUCTS FOR TREATMENT OF ONCOLOGICAL DISEASES IN BULGARIA, 2016 T. VEKOV 1 AND G. KOLEV2
Vekov T1, Kolev G2
1PRMA Consulting, Fleet, UK, 2Bristol-Myers Squibb, Uxbridge, UK
OBJECTIVES: The aim of the research is to analyze and assess the parallel export of medicines with annual sales of >3 million BGN for treatment of oncological diseases from Bulgaria in the year 2016. Risk assessment for the shortage of life-saving medicinal products. METHODS: A documentary method and analysis was used to compare the quantity and value of oncological medicinal products sold to distributors in Bulgaria in 2016 and paid by the National Health Insurance Fund (NHIF). The study included products with annual sales of >3 million BGN. RESULTS: The economic analysis carried out estimated the value of the parallel export of medicinal products for treatment of cancer from Bulgaria in 2016 at 43.2 million BGN. Products of 5 pharmaceutical manufacturers account for 87.2% of the value of the parallel export: Roche (25.8%) - bevacizumab, trastu-
zumab, rituximab, erlotinib, pertuzumab, vemurafenib; BMS (14.3%) - dasatinib; genentech (9.2%) – enzalutamide. The most expensive parallel exported products were Roche products, followed by BMS products. The average unit price of the parallel exported products was €2,699.11 (20%) per patient, respectively. Given that real-world median OS was lower than the trial OS in the case of gemicitinib/cisplatin (M+), proportional cost reduc-
tion yielded v184.5 (6.1%) lower drug costs per patient. CONCLUSIONS: Money-
back guarantees for such drugs are necessary. However, the design of such guarantees substantially affects the outcomes.

PCN305
DO COUNTRIES WITH SIMILAR GDPS AND HEALTH EXPENDITURES REIMBURSE THE SAME CANCER DRUGS? P. LEE1,2, K. A. COWAN3, M. H. KELLOGG1,4
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OBJECTIVES: Evidence of either medical product shortage nor limited access to treatment for cancer treatments is important for evidence-based decision-making in health.

PCN306
ECONOMIC ANALYSIS AND EVALUATION OF THE VALUE OF THE PARALLEL EXPORT OF MEDICINAL PRODUCTS FOR TREATMENT OF ONCOLOGICAL DISEASES IN BULGARIA, 2016 T. VEKOV 1 AND G. KOLEV2
Vekov T1, Kolev G2
1PRMA Consulting, Fleet, UK, 2Bristol-Myers Squibb, Uxbridge, UK
OBJECTIVES: The aim of the research is to analyze and assess the parallel export of medicines with annual sales of >3 million BGN for treatment of oncological diseases from Bulgaria in the year 2016. Risk assessment for the shortage of life-saving medicinal products. METHODS: A documentary method and analysis was used to compare the quantity and value of oncological medicinal products sold to distributors in Bulgaria in 2016 and paid by the National Health Insurance Fund (NHIF). The study included products with annual sales of >3 million BGN. RESULTS: The economic analysis carried out estimated the value of the parallel export of medicinal products for treatment of cancer from Bulgaria in 2016 at 43.2 million BGN. Products of 5 pharmaceutical manufacturers account for 87.2% of the value of the parallel export: Roche (25.8%) - bevacizumab, trastu-
zumab, rituximab, erlotinib, pertuzumab, vemurafenib; BMS (14.3%) - dasatinib; genentech (9.2%) – enzalutamide. The most expensive parallel exported products were Roche products, followed by BMS products. The average unit price of the parallel exported products was €2,699.11 (20%) per patient, respectively. Given that real-world median OS was lower than the trial OS in the case of gemicitinib/cisplatin (M+), proportional cost reduc-
tion yielded v184.5 (6.1%) lower drug costs per patient. CONCLUSIONS: Money-
back guarantees for such drugs are necessary. However, the design of such guarantees substantially affects the outcomes.
expenditure explain the access restrictions imposed in various markets. METHODS: Therapeutic area, geography, and market access decision. RESULTS: Reimbursement agencies often do not explain the reasons for restrictions, suggesting a lack of transparency in decision-making. Across 65 cancer drug/indication combinations covering 892 reimbursement decisions by individual agencies, countries with a similar GDP such as Australia, Canada, and Germany showed variable rates of full restriction (0–31% of licensed indications). Poland and Portugal, with lower GDP, restricted 69% and 60%, respectively; however, Spain, with a similarly low GDP, applied less restrictive measures to the same drug. Further, the reimbursement agencies in Italy, the UK, and the US, with <9% mean health expenditure as a proportion of GDP, restricted access in a high percentage of indications while Germany, France, and the Netherlands, with ≥10% mean health expenditure, imposed far fewer restrictions. CONCLUSIONS: Access to cancer therapies varies between countries with similar GDP; healthcare expenditure as a proportion of GDP was moderately predictive of all reimbursement restrictions. The findings suggest unrestricted limitations and inequitable access to cancer treatment among countries with similar living standards, and potential inefficiencies in the organization of healthcare.

PCN305 ACCESS DRIVER: A KEY ACCESS OF NON-SMALL CELL LUNG CANCER (NSCLC) TARGTED THERAPY PRESCRIPTION IN RUSSIA
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1Adelphi Real World, Adelphi Real World, Bollington, Cheshire, UK
OBJECTIVES: Literature on restrictions on access to innovative oncology treat- ments in Russia is limited. This research aims to assess the restrictions placed on targeted NSCLC therapies and the reasons on prescription. METHODS: Data were drawn from the Adelphi Disease Specific Programme (DSP) in NSCLC conducted in Q1 2017. Medical oncologists, actively managing patients with NSCLC, completed a workload questionnaire, survey and patient record forms (PRFs) for up to five patients. In addition to clinical considerations, participating oncologists were asked their perceptions of the level of administrative controls, time since launch, familiarity or otherwise factors that impacted on prescribing. RESULTS: 53 physicians provided perceptions of access restrictions and completed 329 PRFs. Within the epithelial growth factor receptor (EGFR) class, gefitinib was considered available according to approved indication without further restriction by 59% of physicians, decreasing to 54% for erlotinib and 11% for afatinib 37% considered gefitinib available, but with additional restrictions, increasing to 39% for erlotinib and 48% for afatinib. Levels of prescribing followed perceived access with 31 of 329 patients currently receiving gefitinib, 9 erlotinib and 2 afatinib. Ease of reimbursed access was considered an important criterion of product choice (mean score of 5.8, on scale of 1-7 with 7 being very important); >50% physicians included this in their top 5 considerations in first-line treatment selection with just under half reporting the same in later-line settings. CONCLUSIONS: A correlation between prescribing levels and perceived access was observed within the EGFR class in Russia, this finding is consistent with the reported importance of reimbursed access in product selection. Reasons for perceived differences in access were not explored, the extent to which these are driven by administrative controls, time since launch, familiarity of other factors should be explored to understand factors affecting patients’ access to innovative oncology products.

PCN306 THE IMPACT OF THE STUDY DESIGN SUBMITTED FOR THE EARLY BENEFIT ASSESSMENT ON THE PRICING FOR ONCLOGIC DRUGS
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OBJECTIVES: Aim of this study was to analyze if the design of the clinical studies influences the price negotiations according to the German AMNOG law between the pharmaceutical companies and the National Association of Statutory Health Insurance Funds. The analysis was conducted for all oncologic drugs that underwent the early benefit assessment since its introduction in 2011 and had negotiating prices up to September 2016. METHODS: It was differentiated between additive (new therapy in addition to baseline therapy) and substitutive study designs (baseline therapy is replaced through new therapy) with an added or no added benefit. The study designs were analyzed with the dosages of the pharmaceutical companies submitted to the Federal Joint Committee. Subgroup specific costs were calculated as annual therapy costs with the German price databank (Lauertaxe) and compared to the costs of the comparative drug to quantity price premiums (multiplicative and additive premiums). Further price influencing factors were analyzed in unvari- ate and multivariate regression analysis and the budget impact for the statutory health insurance was considered. RESULTS: Substitutive study designs with an added benefit a premium was negotiated on the annual therapeutic costs of the comparative drug. The median and the mean of the premium of substitutive therapy was significantly higher compared to additive therapy. The cost-utility ratio was different to best supportive care. The multiplicative premium for the substitutive design was 15,07 % versus 2,29 % for the additive design. EU-Prices and the population size had a significant effect on the reimbursement price. CONCLUSIONS: The mean reimbursement premium for substitutive therapy was significantly higher compared to additive therapy on clinical eligibility. Since the number of cases was small for some categories (e.g. additive design and no additional benefit), further analyses should be performed, when more oncologic drugs passed the AMNOG.

PCN307 THE DIFFERENCE BETWEEN REGULATORY AND MARKET ACCESS DECISIONS ON TREATMENT AVAILABILITY FOR NEW DRUGS IN SIX COMMON CANCERS ACROSS AUSTRALIA, CANADA, AND EUROPE
McQuade J1, Malcolm B2, Sheahan K2, Katsos IA1, Song X1, van Loo M1
1Fenna Consulting, Fleet, UK, 2Brutal Myers Squibb, Uxbridge, UK, 3Brutal Myers Squibb, Princeton, NJ, USA
OBJECTIVES: Patient access to cancer therapies can be limited due to restrictions set by National and Regional health technology assessment (HTA) and/or pricing and reim- bursement (P&R) decision makers. This research explores variation from regulatory to P&R decisions impacting clinically eligible patients’ ability to receive appropriate pharmacotherapies. METHODS: HTA and P&R assessments from Australia, Belgium, Canada, Denmark, France, Germany, Italy, the Netherlands, Poland, Portugal, Spain, Sweden, and the UK were obtained for oncology drugs approved in six cancers (breast, kidney, lung, multiple myeloma, melanoma, and prostate) by the European Medicines Agency (EMA) between 2006–2016. From published HTA documents, indications were classified accord- ing to the level of restriction between the regulatory label population, and those eligible for reimbursed access. The number of impacted patients was estimated from published epidemiology and budget impact data; potential survival gains from the pharmacotherapy were applied to estimate the impact of (disability) life years lost. RESULTS: Of the 65 drug/indication combinations identified, in 50% no market access restrictions were imposed beyond the regulatory label; 22% of HTA decisions were not yet published, and 13% resulted in restriction to all clinically eligible patients across all countries; Poland, Scotland and Australia had the highest restriction levels; 43% of HTA assessments were restricted access in a large percentage of indications to licensed indication. Further 15% of HTA assessment were restricted access to a sub-set of licensed indications; 28% were fully restricted to licensed indications. In these HTA assessments were not implemented across various markets; but when cited focused on price /budget impact and challenges around efficacy. CONCLUSIONS: Discrepancies between regulatory and reimbursement decisions in Australia, Canada and Europe can impact health outcomes of cancer patients who are clinically eligible for treat- ment. There is variability in the factors that drive HTA/P&R decision making at the national level, and often the reasons for discrepancies between regulatory and HTA decisions are not transparent.

PCN308 SYSTEMATIC LITERATURE REVIEW ON MULTI-INDICATION PRICING MODELS IN ONCOLOGICAL DRUGS
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OBJECTIVES: Drugs approved for multiple indications already represent more than 50% of the major oncological drugs in 2014 and are estimated to become 75% by 2020. A different clinical efficacy could be observed by indication and by patient subpopu- lation. However, the current pricing systems assign a unique price independent of the indication, therefore price and clinical value do not necessarily align. The objective is to investigate the public information about pricing model agreements, and pros/cons for payors and laboratories. METHODS: A systematic literature review, both in academic and gray sources without country restriction, identifies announced models of indication-specific pricing (ISP), their pros/cons for payors and laborator- ies and barriers and facilitators in Spain. RESULTS: We found three ways of reflecting indication-specific value in prices: (1) a blended price depending on the value and the number of patients in each indication; (2) a price depending on the indication, through different count or different prices; (3) different brands for the same molecule. These have been used in Italy, Switzerland, Australia and the UK. Italy is the country with the highest number of ISP examples, which could be leveraged for its implementation. There is a large market awareness monitor that the drug is used in the indication it is paid for. CONCLUSIONS: Indication-specific pricing is a novel tool in many countries, though Italy already implemented it quite widely. More drugs have multiple indications, so aligning price and value will become more compelling in the near future. We show that their implementation is feasible and no major hurdle impedes it in Spain.

PCN309 MANAGED ENTRY AGREEMENTS (MEA): ANALYSIS OF THE CURRENT SITUATION IN MIDDLE EAST AND NORTH AFRICA
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OBJECTIVES: Managed Entry Agreements (MEA) are increasingly implemented in European countries and other developed markets. Aim of this study is to understand the types of market access initiatives implemented to ease budgetary hurdles and enable access to patients in Middle East and North Africa. METHODS: Data collected from primary and secondary market research (Sep–Nov/16) from local pharma industry experts in regulatory and market access, clinical pharmacists and physicians involved in formulary enlistment decisions and market access initiatives implemented by pharmaceutical companies. The project scope was lim- ited to identify initiatives implemented for innovative and mostly biologic drugs in oncology, pathology and dermatology areas. RESULTS: Identified 63 cases in 9 countries and categorized them under two main buckets: 1) enable access initiatives that target registration, pricing and reimbursement barriers, and 2) access demand initiatives that aim to drive uptake of drugs upon launch and address issues around awareness, affordability and adherence. 46 of the 63 cases are under create demand with an emphasis on awareness and accessibility across all countries due to limited diagnosis and treatment capability. Initiatives targeting price and affordability are identified in cancer care initiatives, enabling limited government funding or public healthcare coverage. UAE, Egypt, Saudi Arabia and Algeria, respectively are the most active countries in terms of market access initiatives in the region. CONCLUSIONS: Even though access is the main barrier

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A467
for innovative products, still very limited number of Managed Entry Agreements (MEAs) has long been identified, but is not well characterized in epidemiological research. PCN314

BRCA1/2-MUTATED BREAST CANCER IN SELECT EU MARKETS: INCIDENCE, TREATABLE POPULATIONS, AND POTENTIAL MARKET SIZE FOR PARP INHIBITORS

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OBJECTIVES: The germline BRCA1/2-mutation-positive population in breast cancer has long been identified, but is not well characterized in epidemiological research. PARP inhibitors are a class of drugs in development for germline BRCA1/2-mutation-positive breast cancer. This study sought to provide germline BRCA1/2-mutation-positive breast cancer epidemiology to facilitate the generation of a market forecast for PARP inhibitors across 15 European countries. METHODS: Using peer-reviewed sources to determine the period, age, gender, and population characteristics, incidence data was collected for breast cancer BRCA1/2 mutation-positive breast cancer cases by molecular subtype. We then applied this proportion to the Decision Resources Group (DRG) breast cancer incidence data to estimate the proportion of breast cancer patients treated with PARP inhibitors. We then used interviews with breast cancer experts and secondary market research to model patient progression between lines of metastatic treatment. We used database pricing sources to estimate the cost of a BRCA1/2-mutation-positive breast cancer patient from the time of diagnosis and onward. We estimate that 4% of newly diagnosed breast cancer cases are BRCA-mutation-positive, with the greatest prevalence of this mutation (14%) occurring among triple-negative (HR-/HER2-) patients in the 15 European countries under study. The triple-negative subtypes account for 50% of first-line metastatic patients with BRCA mutations. Our findings indicate that over 3,900 BRCA1/2-mutated breast cancer patients will be diagnosed and eligible for treatment across the 15 markets under study in 2017. If PARP inhibitors effectively penetrate adjuvant and metastatic treatment settings, sales of these agents could exceed US$ 400 million across the 15 countries considered in 2027. CONCLUSIONS: Triple-negative patients account for the majority of diagnosed stage I-III (44%) and metastatic (56%) BRCA1/2-mutation-positive breast cancer patients. The lower number of BRCA1/2-mutated breast cancers can be found in the remaining three subtypes, however the total size of this population holds the potential to support healthy market sales.

PCN315

IMPACT OF TIME TO REIMBURSEMENT OF DRUG TREATMENTS ON NON-PALLIATIVE, NON-Small CELL LUNG ON PATIENT OUTCOMES IN EUROPE AND LATIN AMERICA

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OBJECTIVES: This study investigated the impact of time to reimbursement of drug treatments for non-small-cell lung cancer (NSCLC) and quality-adjusted life-years (QALYs) in patients in Europe and Latin America (LatAm). METHODS: The time delay for marketing authorization and reimburse- ment of new treatments was calculated by comparing the time between US FDA approval for a market basket of NSCLC products (nivolumab, pembrolizumab, erlotinib, and afatinib) and the dates of marketing authorization and reimbursement by public payers in five European (EUS) (United Kingdom, France, Germany, Spain, Italy) and four LatAm (Mexico, Colombia, Argentina, Brazil) countries. A cost-utility model consisting of three health states (progression-free survival (PFS), progressive disease, death) was used to estimate LYS and QALYs for each product and existing standard care (SoC). Transition probabilities were estimated from median PFS and overall survival (OS) data from products’ respective FDA labels. NSCLC incidence rates and health state utilities were sourced from health technology assessment reports. Population-level LYS and QALYs were calculated by multiplying country-level NSCLC incidence by the estimated per-patient LYS and QALYs lost due to lack of reimbursement of each product in each geography. RESULTS: The median time to access in the EUS for the NSCLC market basket was 276 days; no product was reimbursed in LatAm according to available sources. Products associated with the largest amount of LYS and QALYs lost was nivolumab (1,806 and 901, respectively), due to lack of reimbursement in the UK and LatAm. Despite LatAm having formal NSCLC patients than the EUS (~25% vs. ~40%), fewer population-level LYS and QALYs lost were greater (EUS: 2,425 vs. 985; QALYs: 1,791 vs. 813). CONCLUSIONS: Slower access to innovative medicines has a significant impact on population-level patient outcomes across the EU and LatAm, highlighting the need to accelerate access to novel therapies in NSCLC.

PCN316

MAKING MARKETS TIERED PRICING: A QUANTITATIVE ASSESSMENT OF LOCAL AFFORDABILITY AND EXISTING PRICE TO PATIENT

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OBJECTIVES: To investigate the role of tiered pricing on patient access while considering the factors affecting pharmaceutical pricing in major emerging markets including but not limited to budget constraints, pharmaceutical distribution mark-ups, capacity of local to pay for medicines, patient affordability, role of NGOs, lack of generics, wide spread availability of fake medicines, divergence of published list.
price and net effective selling price. METHODS: A demand model was constructed to evaluate the effect of the affordability of new and existing innovative treatments (TIs) on patient access to medicines and their impact on the LMI markets by leveraging detailed income distributions across the markets to inform how far down the wealth pyramid recent launch products may be able to reach. A mix of industry stakeholders responded to the model and provided immediate reactions on the implications of the pricing principles of tiered pricing which are based on sound equity principles (Pricing using HDI- and GNI-based indexes). The model outputs determined that a significant proportion of patients may experience access barriers in many LMI markets and that even if payer driven markets negotiated pricing can fall out of equitable bands resulting in UMI markets paying less than LMI markets. CONCLUSIONS: Existing approaches for tiered pricing neglect to incorporate local funding and income distribution dynamism.

**Research Design:** This study aimed to evaluate the impact of tiered pricing on the affordability of new and existing innovative treatments (TIs) on patient access to medicines and their impact on the LMI markets by leveraging detailed income distributions across the markets to inform how far down the wealth pyramid recent launch products may be able to reach. A mix of industry stakeholders responded to the model and provided immediate reactions on the implications of the pricing principles of tiered pricing which are based on sound equity principles (Pricing using HDI- and GNI-based indexes). The model outputs determined that a significant proportion of patients may experience access barriers in many LMI markets and that even if payer driven markets negotiated pricing can fall out of equitable bands resulting in UMI markets paying less than LMI markets. CONCLUSIONS: Existing approaches for tiered pricing neglect to incorporate local funding and income distribution dynamism.

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**PCN317**

**ACUTE LYMPHOCYTIC LEUKAEMIA’S BURDEN OF DISEASE IN PORTUGAL**

**MethOds:** In this paper, the authors review the published literature on acute lymphocytic leukemia (ALL) and its burden of disease in Portugal. They analyze the available data on incidence, prevalence, quality of life, costs, resources consumption, and long-term prognosis. They also discuss the impact of the disease on the patients, their families, and the healthcare system.

**Results:** The incidence of ALL in Portugal is estimated at 1,039 DALY, with 89% due to YLL and the remaining due to YLD. The economic burden of ALL in Portugal is estimated to be approximately €32 million (2019), assuming a confidential patient access scheme for ipilimumab would not decrease the BI below £20 million, access to this combination would be delayed for a year. 18 of 20 ICERs were found, with 15 being above willingness-to-pay threshold.

**Conclusions:** The burden of ALL in Portugal is significant, with a high disease burden and high costs. The authors recommend further research to better understand the economic and health impact of ALL in Portugal.

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**PCN320**

**RELEVANCE OF REAL WORLD DATA IN GERMAN AMNOG SUBMISSIONS IN ONCOLOGY**

**MethOds:** The authors conducted a systematic review of Real World Evidence (RWE) in AMNOG submissions potentially could address various data needs during the process and also thereafter as epidemiology might be limited in oncology. Areas of RWE use are evidence generation for epidemiology, e.g. incidence and prevalence estimation, resource utilisation, and identification of effectiveness in daily life settings later on. The authors assessed how RWE is currently integrated in AMNOG submissions in oncology.

**Results:** The authors found that RWE is commonly used in AMNOG submissions in oncology comprising an integral part of the epidemiology section of the available evidence package. Regional data today in that data source is that applied predominantly. A rising trend towards RWE in the AMNOG process to fill data gaps which are not provided by routine data sources. A rising trend towards RWE in the AMNOG process to fill data gaps which are not provided by routine data sources. RWE is used in AMNOG submissions in oncology for epidemiology, e.g. incidence and prevalence estimation, resource utilisation, and identification of effectiveness in daily life settings later on. The authors assessed how RWE is currently integrated in AMNOG submissions in oncology.

**Conclusions:** RWE is commonly used in AMNOG submissions in oncology forming an integral part of the epidemiology section of the available evidence package. Regional data today in that data source is that applied predominantly. A rising trend towards RWE in the AMNOG process to fill data gaps which are not provided by routine data sources. RWE is used in AMNOG submissions in oncology for epidemiology, e.g. incidence and prevalence estimation, resource utilisation, and identification of effectiveness in daily life settings later on. The authors assessed how RWE is currently integrated in AMNOG submissions in oncology.

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**PCN318**

**A REVIEW OF REAL-WORLD EVIDENCE TO ASSESS THE BURDEN OF ILLNESS OF MANTLE CELL LYMPHOMA**

**MethOds:** This review aimed to evaluate the burden of disease for mantle cell lymphoma (MCL) using real-world evidence (RWE). The authors searched for relevant studies using EMBASE, Medline, NHSDE, and ECONLit from January 2007 to January 2017. Findings were then analyzed and stratified by indication and the applied RWE evidence on incidence or prevalence was used.

**Results:** The incidence of MCL in the UK was estimated to be 1,039 DALY, with 89% due to YLL and the remaining due to YLD. The economic burden of MCL in the UK is estimated to be approximately €32 million (2019), assuming a confidential patient access scheme for ipilimumab would not decrease the BI below £20 million, access to this combination would be delayed for a year. 18 of 20 ICERs were found, with 15 being above willingness-to-pay threshold.

**Conclusions:** The burden of MCL in the UK is significant, with a high disease burden and high costs. The authors recommend further research to better understand the economic and health impact of MCL in the UK.

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**PCN319**

**ASSESSING THE IMPACT OF NICHE BLOOD DISEASES ON PATIENT OUTCOMES**

**MethOds:** The authors conducted a systematic review of Real World Evidence (RWE) in AMNOG submissions potentially could address various data needs during the process and also thereafter as epidemiology might be limited in oncology. Areas of RWE use are evidence generation for epidemiology, e.g. incidence and prevalence estimation, resource utilisation, and identification of effectiveness in daily life settings later on. The authors assessed how RWE is currently integrated in AMNOG submissions in oncology.

**Results:** The authors found that RWE is commonly used in AMNOG submissions in oncology forming an integral part of the epidemiology section of the available evidence package. Regional data today in that data source is that applied predominantly. A rising trend towards RWE in the AMNOG process to fill data gaps which are not provided by routine data sources. RWE is used in AMNOG submissions in oncology for epidemiology, e.g. incidence and prevalence estimation, resource utilisation, and identification of effectiveness in daily life settings later on. The authors assessed how RWE is currently integrated in AMNOG submissions in oncology.

**Conclusions:** RWE is commonly used in AMNOG submissions in oncology forming an integral part of the epidemiology section of the available evidence package. Regional data today in that data source is that applied predominantly. A rising trend towards RWE in the AMNOG process to fill data gaps which are not provided by routine data sources. RWE is used in AMNOG submissions in oncology for epidemiology, e.g. incidence and prevalence estimation, resource utilisation, and identification of effectiveness in daily life settings later on. The authors assessed how RWE is currently integrated in AMNOG submissions in oncology.
The marketing authorisations in CLL were granted by the EMA in September and October 2015 from submission to publication; the ibrutinib appraisal was conducted from October 2015 to January 2017 from submission.

In 2014, two new therapies for CLL were launched: IR and ibrutinib. 82.5% of these recommendations included price discounts. Of note, four of these had previously been initially rejected but approved upon final consultation. Three draft appraisals currently reject a PD-1 inhibitor, citing cost effectiveness, immature data or lack of long-term survival benefit. One appraisal in the first-line treatment of NHL did recommend one PD-1 inhibitor for inclusion on the Cancer Drugs Fund (CDF), following a provision of clinical evidence that the drug fared a price rejec-

IR and ibrutinib in terms of consistency of decision making. METHODS: Timings, submissions and meeting papers were sourced from the NICE website. Further information was gathered by attending the Appraisal Committee Meetings. RESULTS: The marketing authorisations in CLL were granted by the EMA in September and October 2014 for IR and ibrutinib, respectively. The IR NICE appraisal was conducted from February 2015 to October 2015 from submission to publication; the ibrutinib appraisal was conducted from October 2015 to January 2017 from submission to publication. The appraisals differed widely in duration (253 vs. 455 days for IR vs ibrutinib, respectively), the assumptions made and accepted by the respective Appraisal Committees, and the reviewers.

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VA L U E I N H E A LT H

unspecified. Submission of PRO data increased over the years, in 2016 50 – 90% submissions per country included PRO data. Demonstrating improvement in QoL led to
higher benefit ratings by G-BA and HAS and supported clinical benefit assigned by
SMC and NICE. QoL was considered in the recommendation of 89 HTAs (35% of HTA
submissions including PRO). In a number of cases, strong PRO data led to a positive
recommendation despite lack of overall survival data. Conclusions: HTA agencies
value the submission of PRO data, however submission is not yet standard practice.
Although lack of PRO data does not negatively impact decision-making, PRO data
inclusion can have a positive influence on recommendations.
PCN328
Key Drivers In Health Technology Assessment By Analysing The
Level Of Improvement In Actual Benefit In Solid Tumor Oncology
Drugs
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Paris, France

Objectives: The price level of drugs in France is based on their medical evaluation by the Transparency Committee. The aim of this study was to understand the
rationale behind the evaluation of drugs in solid tumor oncology by determining
the key drivers of the Improvement in Actual Benefit (IAB) levels. Methods: We
performed a retrospective analysis between March 2014 and October 2016 of the
new products and the new indications in solid oncology. We searched quantitative
and qualitative relevant criteria pertaining to the drug evaluation from the opinion
of the Transparency Committee and we extracted the data for each product in an
Excel® spreadsheet. Results: In total, 28 drugs in 37 indications were evaluated
including 1 important IAB (IAB II) (3%), 5 moderate IAB (IAB III) (13%), 14 minor IAB
(IAB IV) (38%), 12 no clinical IAB (IAB V) (32%) and 5 (14%) insufficient Actual Benefit
(insufficient AB). One quantitative criterion and 9 qualitative criteria were included:
effectiveness, tolerance, methodological quality of the studies and type of comparator. The factors related to obtaining a good assessment (II and III) were the following:
a statistically significant Overall Survival (OS) (100% of cases), an overall survival
increase superior to 3 months (71% of cases) and a relevant active comparator (i.e:
gold standard) (33% of cases). Conversely, the criteria that negatively impact the IAB
(IV, V and insufficient AB) are: a statistically significant Progression Free Survival
(PFS) alone without significant difference in OS (100% of cases), a decrease in tolerance as compared to the comparator (95%), a weak methodology (92%), a poor
transposability (46%), an already covered medical need (insufficient AB in 100% of
cases). Moreover, there was a linear relationship between the effect size and the
IAB level (R² = 0.4628). Conclusions: The drivers influencing the IAB levels are:
tolerance, quality of demonstration and data transposability.
PCN329
The Role Of Companion Diagnostics In HTAS Of Drugs In France,
Germany And The UK
Jones C, Lazos O, Gijsen M
PRMA Consulting, Fleet, UK

Objectives: The number of medicines paired with in vitro diagnostics continues
to grow. The role of the diagnostic test in HTAs continues to evolve. Our aim was to
examine if payers have used data on subpopulations defined by diagnostics to limit
access to innovative oncology medicines and investigate the extent to which the
diagnostic is considered during HTAs of the medicine. Methods: Products were
selected based on the FDA’s list of oncology products with CDx. Indications authorized by the European Commission (MA population) for each product were compared
with the reimbursed population in France, Germany, and the UK. Commentary on
the diagnostic was extracted from documents relating to the HTA of the medicine. Results: Twenty-four medicines were included in the analysis. Thirty-eight
indications across twelve tumor types were represented. Thirteen genes/gene
products or chromosomal changes were used as the basis for the CDx test. Not all
indications for each medicine required biomarker status. NICE has restricted the
MA population based on the CDx test twice: trastuzumab for gastric cancer and
draft guidance for nivolumab in NSCLC. Other NICE technology appraisals discussed
the possibility of different clinical benefit in different molecular subpopulations,
among other commentary on testing. The G-BA used CDx tests to define subgroups
in assessments of nivolumab, pembrolizumab, and osimertinib; it found additional
benefit for afatinib in a subgroup with the Del19 mutation in the EGFR gene, but none
for L858R or other EGFR mutations. There were few examples of the TC considering
test status, although it recommended limiting BRCA testing for olaparib to INCa
laboratories. Additional examples will be presented. Conclusions: Payers take
varying approaches to CDx within HTAs. There have been few examples of payers
restricting access to a narrower group than the MA population. However, this practice
may increase in future, reducing treatment options for patients and their physicians.
PCN330
The Unique Characterisitcs Of Adoptive Immunotherapies For
Health Economic Evaluations
Green W
York Health Economics Consortium, York, UK

Objectives: Adoptive immunotherapies are an emerging group of health technologies that can be used to target specific diseases, particularly cancers. To produce
the technology, immune cells are removed from a patient and modified and multiplied in vitro before being reintroduced to the patient with the aim of eliciting
a disease-specific immune response. These adoptive therapies are distinct from
other immunotherapies that are currently available, such as therapeutic cancer
vaccines, as each therapy is unique to the individual patient. The use of these adoptive immunotherapies is expected to increase over the coming years. Therefore it is
important to understand their unique characteristics and how these may impact
on future health technology assessments (HTA). Methods: A pragmatic search of

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the literature was undertaken to identify published resources relating to the unique
characteristics of adoptive immunotherapies and the challenges that these technologies may pose for health economic evaluations. Results: The key challenge
identified is the high manufacture cost as the therapy is tailored to each patient and,
therefore, mass production is not possible. Therefore, to be reimbursed within the
UK these therapies would have to produce large QALY gains under the current NICE
threshold. These therapies do have the potential to generate significant benefits if
they prove to be curative. However, this leads to a second challenge as they are often
evaluated in small-scale, single-arm clinical trials. Therefore, to estimate long-term
benefits, extrapolation would be required leading to potential uncertainty, which
will impact on decisions relating to HTAs. If large QALY gains cannot be established
with confidence then it may be necessary to explore alternative payment methods
(e.g. lifetime leasing). Conclusions: Adoptive immunotherapies have the potential to generate significant benefits to patients but the high costs of production
and uncertainty over long-term outcomes may prove challenging for future HTAs.
PCN331
Assessment Of Health Technology Appraisals To Identify Key
Drivers For Reimbursement Of Oncology Drugs With Only Phase 2
Clinical Data
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Northbrook, IL, USA, 3QuintilesIMS Consulting Services, Hoofddorp, The Netherlands,
4QuintilesIMS Consulting Services, Berkshire, UK, 5Astellas Pharma, B.V., Leiden, The Netherlands
1Astellas

Objectives: Drugs can obtain marketing authorisation with only Phase 2 data if the
data is considered promising, a Phase 3 trial is not considered feasible or there is a
high unmet need. Here we identify and review challenges faced by manufacturers
of oncology drugs approved with only Phase 2 data in Health Technology Appraisals
(HTAs). Methods: Oncology drugs approved on basis of Phase 2 data since 2010
were identified on the European Medicines Agency (EMA) website and were ranked
based on inclusion of overall survival data, a control arm, were deemed a targeted
therapy, had orphan disease status or conditional marketing authorisation. HTAs from
Germany, France, UK, Australia, Canada, Sweden, Italy and Spain for the top-ranked
products were then identified using QuintilesIMS proprietary HTA Accelerator and
reviewed to identify payer’s rationale for reimbursement decisions. Results: Twentyfive oncology drugs were licenced with Phase 2 data alone since 2010. The nine topranked products had 51 relevant HTA reports. 47% of the reports recommended
unrestricted access, 16% had restrictions, 16% were rejections and 22% provided
no reimbursement recommendation. The most frequent positive payer comments
related to clinical benefit, good safety/tolerability and innovation. The most frequent
negative payer comments related to safety risk, lack of comparator, lack of subgroup
data, and limited comparative benefit. Lack of Phase 3 data was not directly cited,
but uncertainty and insufficient powering were identified as a payer concern. Many
trials were single arm and payers struggled to use these results to assess clinical
benefit. In three cases, resubmissions with additional Phase 3 data led to improved
reimbursement outcomes. Conclusions: The review found that using Phase 2 alone
is not an absolute barrier to reimbursement, but the uncertainty stemming from a
less comprehensive evidence base may influence payers’ decisions. Payer comments
related mostly to good efficacy and safety data, and robust comparative effectiveness.
PCN332
ADC, NOT AS EASY AS 123 - The Unprecedented Example Of
Trastuzumab-Emtansine In The Nice Appraisal Process
Wang GD, Macaulay R
PAREXEL International, London, UK

Objectives: On June 15, 2017, NICE announced the third Final Appraisal
Determination (FAD) for the antibody-drug conjugate (ADC), trastuzumab-emtansine.
This level of reconsideration is unprecedented and can be attributed to the simultaneous reforms of the Cancer Drugs Fund (CDF). This paper highlights the process by
which trastuzumab-emtansine was assessed by NICE. Methods: Publically available CDF, EMA, NICE, and SMC data on trastuzumab-emtansine were screened up to
June 27, 2017. Results: Trastuzumab-emtansine received marketing authorisation
in Europe on November 15, 2013 for treating advanced/metastatic pre-treated breast
cancer. It was approved for inclusion into the CDF with free-pricing in February 2014,
costing £90,381 (€ 102,118) per patient. The first NICE FAD (August 2014), was not to
recommend. The second FAD (November 2015), was again not to recommend. In
September 2015, trastuzumab-emtansine was announced as to be axed from the CDF,
as part of a cost-containment drive, but in November 2015 after significant discounting, this decision was reversed. Post NAO audit, trastuzumab-emtansine qualified for
the CDF rapid reconsideration process in December 2016. As part of this, in its third
FAD (June 2017), trastuzumab-emtansine was recommended for routine use on the
NHS but with a patient access scheme. In Scotland (where the CDF does not apply),
trastuzumab-emtansine was accepted by the SMC in April 2017 after an initial nonrecommendation in October 2014. Conclusions: Trastuzumab-emtansine received
European market authorisation for over three years prior to it being approved by
NICE or the SMC for public reimbursement. Nevertheless, in England, it was available
for over two years as part of the CDF, including almost 18 months at list price. Once
the CDF was closed, the manufacturer reached an agreement for reimbursement
with NICE, suggesting that the existence of the CDF provided an alternative market
access route that disincentivised the relevance of seeking a NICE recommendation.
PCN333
Guideline Adherence In Docetaxel Treatment Of Castration
Resistant Prostate Cancer (CRPC) Patients In A Real-World
Population: The Castration Resistant Prostate Cancer Registry
(CAPRI) In The Netherlands
Westgeest H1, Kuppen M1, Van den Eertwegh A2, Gerritsen W3, Uyl-de Groot C1
1Erasmus University Rotterdam, Rotterdam, The Netherlands, 2VU University Medical Centre,
Amsterdam, The Netherlands, 3Radboud University Medical Center, Nijmegen, The Netherlands


OBJECTIVES: Doxcetaxel has been a treatment option for CSPC since 2004. With new treatments on the horizon, it is important to assess the efficacy and safety of this drug in a real-world population, according to guideline adherence based on simplified criteria for doxcetaxel treatment.

METHODS: CAPRI is an observational, retrospective study in 20 hospitals. All CRPC patients recruited between 2010 and 2015 were included. Patients were followed until March 2015. We retrospecively identified patients with an indication for doxcetaxel based on 3 criteria: 1) metastatic CRPC, 2) WHO Eastern Cooperative Oncology Group performance status (0-3), and 3) treatment for hormone-refractory disease, symptoms with visceral metastases or rapid progression, defined as less than 1 year from start of androgen deprivation therapy to CRPC diagnosis. RESULTS: 1,524 patients were included in the analysis with a median follow-up period of 23 months. During this period, 6% of all patients were treated with doxcetaxel. 1,083 patients (71%) met the criteria for doxcetaxel treatment. However, only 646 of these patients (60%) were actually treated with doxcetaxel. An additional 53 patients did not meet the doxcetaxel criteria but were treated with doxcetaxel (6%). Patients who met the criteria but were not treated with doxcetaxel, 77% were treated with anti-androgens (285 patients), abiraterone acetate (83 patients) or enzalutamide (12 patients). Patients treated with doxcetaxel were younger, had less comorbidity and had a more progressive course of disease compared to patients not treated with doxcetaxel. CONCLUSIONS: Despite having an indication for doxcetaxel treatment, 40% of patients has not been treated with this life-prolonging drug. Age, comorbidity and less aggressive disease characteristics may be reasons for this observation, as well as alternative life prolonging treatment options, patient preferences or unknown confounders.

PCN334
REAL-WORLD UTILIZATION OF BLINATUMOMAB IN ACUTE LYMPHOBLASTIC LEUKEMIA IN THE US

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OBJECTIVES: Blinatumomab is the first bispecific CD19 directed CD3 T-cell engager immunotherapy to demonstrate overall survival benefit in patients with Philadelphia chromosome negative (Ph-) relapsed/refractory acute lymphoblastic leukemia (ALL). In December 2014 the FDA granted an accelerated approval to blinatumomab in patients with Ph+-relapsed/refractory B-precursor ALL based on findings from a phase II trial in 185 adults followed by the supplemental BLA approval to include data from 221 children. All patients in the study had failed previous treatment with the CD19 first directing bis-specific-T-cell engagers (Bites) in the immune-oncology arsenal. As it will likely compete with CD19 targeted CAR-T therapeutics, its uptake since approval may predict CAR-T potential in a similar clinical setting. METHODS: Patients diagnosed with ALL with systemic therapy (ST) between 12/2014 and 12/2016 were identified from the Symphon Health claims database. Market share and time to treatment discontinuation (TTD) were examined. TTD was defined as time from ST initiation to switch or last administration date plus 90 days if no other ST was administered. TTD was described with Kaplan-Meier curves. RESULTS: Of the 18,162 ALL patients on ST since blinatumomab approval, 218 (1.2%) were treated with blinatumomab, 123 (5.6%) in 1L, 58 (2.8%) in 2L and 37 (1.6%) in 3L. TTD was 16 months (12-20 months) in 1L, 7 months (4-10 months) in 2L and 3 months (0-7 months) in 3L. CONCLUSIONS: This is the first real-world evidence from a large claims database of blinatumomab and it demonstrates the uniqueness of the patient population for which it is currently indicated. CAR-T cell therapeutic modeling should be informed by this research.

PCN335
REAL-WORLD MULTIPLE MYELOMA TREATMENT PATTERN IN LEBANON: EVIDENCE FROM PATIENT CHART AUDIT

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OBJECTIVES: Understanding symptomatic multiple myeloma (MM) patient management, treatment patterns and outcomes in real-world practice in Lebanon. METHODS: Data were collected through a cross-sectional phase (X) and retrospective (R) patient chart review (Aug/16-Oct/16) by 20 onco-hematologists managing >10 symptomatic MM patients during the last three months and responsible for treatment initiation. The X-phase collected treatment for MM patients seen during a 4 week time-frame, physicians’ perception on MM drugs accessibility and guidelines use. The R-phase recorded disease characteristics, including treatment response and duration. Analytical Methods: 2 physicians in public hospital, 2 physicians in Cancer Center and 14 physicians in private hospitals participated in recruiting MM patients in both study phases. All of them, perceive full access to MM therapies and they were mainly using NCCN/ ESMO guidelines. A total of 237 patients were enrolled, 68% were currently undergoing treatment, of which 93% were on 1L treatment. Across all lines, thalidomide-based regimen was mainly used (72% in 1L, 60% in second-line [2L], 100% from third-line onwards [3L+]), while bortezomib-based regimen and lenalidomide-based regimen were used only in 1L (9% and 1% respectively). 95% of patients having completed a 1L were SCT eligible. In the R-phase, a total of 200 patients were included. Physicians-assessed death of response patients across all lines. Patients achieving partial response with this life-prolonging drug. Age, comorbidity and less aggressive disease characteristics may be reasons for this observation, as well as alternative life prolonging treatment options, patient preferences or unknown confounders. PCN336
REAL-WORLD MULTIPLE MYELOMA TREATMENT PATTERN IN MOROCCO: EVIDENCE FROM PATIENT CHART AUDIT

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OBJECTIVES: Understanding symptomatic multiple myeloma (MM) patient management, treatment patterns and outcomes in real-world practice in Morocco. METHODS: Data were collected through a cross-sectional phase (X) and retrospective (R) patient chart review (Aug/16-Oct/16) by oncologists, hematologists and internists managing >10 symptomatic MM patients during the last three months and responsible for treatment initiation. The X-phase collected treatment for MM patients seen during a 4 week time-frame, physicians’ perception on MM drugs accessibility and guidelines use. The R-phase recorded disease characteristics, including treatment response and duration. Analytical Methods: 2 physicians in public hospital, 2 physicians in Cancer Center and 14 physicians in private hospitals participated in recruiting MM patients in both study phases. All of them, perceive full access to MM therapies and they were mainly using NCCN/ ESMO guidelines. A total of 237 patients were enrolled, 68% were currently undergoing treatment, of which 93% were on 1L treatment. Across all lines, thalidomide-based regimen was mainly used (72% in 1L, 60% in second-line [2L], 100% from third-line onwards [3L+]), while bortezomib-based regimen and lenalidomide-based regimen were used only in 1L (9% and 1% respectively). 95% of patients having completed a 1L were SCT eligible. In the R-phase, a total of 200 patients were included. Physicians-assessed death of response patients across all lines. Patients achieving partial response with this life-prolonging drug. Age, comorbidity and less aggressive disease characteristics may be reasons for this observation, as well as alternative life prolonging treatment options, patient preferences or unknown confounders.

PCN337
THE IMPLEMENTATION OF ROBOTIC-ASSISTED SURGERY FOR ENDOMETRIAL CANCER TO THE UNITED STATES: A COST-EFFECTIVENESS STUDY

A472
VALUE IN HEALTH 20 (2017) A399–A811

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OBJECTIVES: The implementation of robotic-assisted surgery for endometrial cancer(EC) treatment in the United States in terms of 30-day morbidity and costs over time. Also, to compare the clinical and economic outcomes that followed the change in surgical treatment. METHODS: The total 30-day surgical outcomes without increasing costs: Is technology finally allowing the diffusion of minimally invasive surgery at a national level? RESULTS: Of the 18,162 ALL patients on ST since blinatumomab approval, 218 (1.2%) were treated with blinatumomab, 123 (5.6%) in 1L, 58 (2.8%) in 2L and 37 (1.6%) in 3L. TTD was 16 months (12-20 months) in 1L, 7 months (4-10 months) in 2L and 3 months (0-7 months) in 3L. CONCLUSIONS: This is the first real-world evidence from a large claims database of blinatumomab and it demonstrates the uniqueness of the patient population for which it is currently indicated. CAR-T cell therapeutic modeling should be informed by this research.

PCN338
TRUCS AND CAR-TS - THE EMERGENCE OF 10 CELL THERAPIES

Wang GD, Macaulay R
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OBJECTIVES: A number of promising T-cell receptor fusion constructs (TRuC) and chimeric antigen receptor T-cell (CAR-T) therapies are currently in development, showing transformational patient benefits in oncology from single/short treatments. These potential very high costs in line with their clinical benefits and upfront costs mean that acceptable pricing and reimbursement (P&R) agreements pose a significant challenge for manufacturers and payers. This study aims to investigate any relevant F&R analogues and existing pricing policies which could support their acceptance in the US. With this approach, we conducted technology assessments (TAs) for cell therapies and other high cost therapies were screened from a targeted literature search. RESULTS: CAR-T therapies could be considered cost-effective at $750,000 ($583,000, $1662,954) per treatment according to Palmer
et al. using a mock NICE HST assessment. The prices of drugs are increasing, decreasing the value of the NICE HST assessment.

Methods: The study assessed the impact of using ORAL SURVIVAL and PROGRESSION-FREE SURVIVAL in OUTCOMES-BASED PHARMACOECONOMIC ANALYSES.

Results: Outcomes-based assessments can be used to prioritize treatments that demonstrate clinical benefits. However, uncertainties in patient outcomes and drug costs must be considered.

Conclusions: Outcomes-based assessments can be useful in identifying cost-effective treatments, but further research is needed to refine these methods.

PCN339 IMPACT OF USING ORAL SURVIVAL OR PROGRESSION-FREE SURVIVAL IN OUTCOMES-BASED PHARMACOECONOMIC ANALYSES

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Objectives: To evaluate the impact of using oral survival or progression-free survival in outcomes-based pharmacoeconomic analyses.

Methods: A systematic review of published studies was conducted to assess the impact of using oral survival or progression-free survival in outcomes-based pharmacoeconomic analyses.

Results: The use of oral survival or progression-free survival in outcomes-based pharmacoeconomic analyses can lead to different treatment prioritization, especially in scenarios with limited resources.

Conclusions: The choice of outcomes measure in outcomes-based pharmacoeconomic analyses can significantly impact treatment prioritization.
MEDICATIONS AND MEDICAL DEVICES – Clinical Outcomes Studies

DFB1
INCIDENCE AND COSTS OF HYPOGLYCEMIA IN DIABETES PATIENTS INITIATED ON BASAL INSULIN: A POPULATION-BASED STUDY
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OBJECTIVES: For diabetes mellitus (DM) patients who received anti-diabetes therapy, hypoglycemia is a common and serious adverse event which is associated with higher incidence of cardiovascular events and mortality. The aim of this study is to estimate the incidence of hypoglycemia event of DM patients using basal insulin and its related medical utilization.

METHODS: Data came from the Longitudinal Cohort of Diabetes Patient in Taiwan from 2006 to 2013. A total of 1,060,845 DM patients were included in the cohort. After excluding patients who never use basal insulin (n=1,012,980) and used only 1 time basal insulin during follow-up period (n=14,374), a total of 33,491 patients were included in the analysis. The duration of basal insulin treatment was defined as the first prescription date of basal insulin and followed to the date of latest prescription within a 1-year period. If the duration of the prescriptions over part or whole 30 days, it was identified as a different treatment episode. Hypoglycemia event was defined by the diagnosis. RESULTS: During 2006-2013, there were 1,571 hypoglycemia events and 91.4% went to emergency visit. Total follow-up duration was 40,113.28 person-years and the incidence rate per 100 person-year was 3.91 and the mortality was 0.51%. The incidence rate of hypoglycemia was 7.32 and 3.29 per 100 person-year for type 1 and type II DM, respectively. Furthermore, the combination of basal insulin and other insulin therapy had the highest incidence rate compared to basal insulin plus oral anti-diabetes agent and basal insulin monotherapy group. The mortality of hypoglycemia event were 0.44% and 0.54% for type 1 and type II DM, respectively.

CONCLUSIONS: More aggressive anti-diabetes therapy may increase the risk of occurring hypoglycemia. More attention should by paid to prevent hypoglycemia events.

DFB2
GLYCEMIC CONTROL OF ADULT TYPE 2 DIABETES MELLITUS PATIENTS IN THE NETHERLANDS: A CROSS-SECTIONAL REAL WORLD DATABASE STUDY
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OBJECTIVES: The objective of this study was to determine proportions of T2DM patients in the Netherlands reaching individualized glycemic targets (53, 58 or 64 mmol/mol), treatment by treatment regimen. METHODS: In this retrospective cross-sectional database study, treatment and patient characteristics of adult T2DM patients were obtained from the records within the PRAMO Database Network at September 30th, 2015. Treatment was categorized by lifestyle management, metformin monotherapy, other “classic” oral anti-diabetic drugs (OADs), “modern” OADs (DPP-4 inhibitors, GLP-1 receptor activators), insulin, and insulin-sensitizing therapy. Patients with Hba1c levels assessed >6 months after treatment initiation were included. Individualized Hba1c targets were applied, for elderly with unknown T2DM duration and treatment other than metformin monotherapy, the target was 66 mmol/mol. Per treatment category proportions at target, above target but ≤64 mmol/mol, and >64 mmol/mol were determined. RESULTS: 53,045 patients met the inclusion criteria, 31% of whom were managed with lifestyle modification. Overall, 74% achieved their Hba1c target. Goal attainment was 75% for those with a target of 53 mmol/mol, 75% for those with a target of 58 mmol/mol and 85% for those with a target of 64 mmol/mol. Goal attainment decreased with increasing treatment intensity: 86% with lifestyle modification, 70-77% with OAD (all categories), 54% with basal insulin or GLP-1RA, and 46-62% for multiple daily insulin regimens. Patients in patients with Hba1c target of 53 or 58 mmol/mol and who had not achieved these target levels, 7% had an Hba1c >64 mmol/mol (ranging from 3% in the lifestyle modification group to 31% in the basal bolus treatment group). CONCLUSIONS: Although most patients achieved glycemic control after individualization of glycemic targets in Dutch guidelines, a quarter of adult T2DM patients do not reach their targets, with fewer patients achieving targets as treatment intensifies and the disease progresses.

DFB3
A MODEL-BASED META-ANALYSIS FOR THE EFFECT OF METFORMIN ON HBA1C LEVELS IN PATIENTS WITH TYPE 2 DIABETES MELLITUS
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OBJECTIVES: Describe the time course of glycated hemoglobin (Hba1c%) response to metformin therapy in type 2 diabetes mellitus (T2DM) patients using model-based meta-analysis.

METHODS: A systematic literature review was performed identifying studies reporting longitudinal aggregate Hba1c% data in T2DM patients treated with metformin. Studies were included if data were complete from the start date of therapy to January 2016. A non-linear mixed effects model was developed to pool the evidence of the studies and describe mean change from baseline Hba1c% as a function of time and selected study level covariates (e.g. demographics, T2DM duration, extended/intermediate release formulation). The model combined a first-order exponential model for initial response with a linear model for progression. Standard model diagnostic procedures, including residual and predictive checks, were applied to ensure model convergence and fit.

RESULTS: A total of 56 full-text studies were reviewed, 14 of which were included in the evidence synthesis (16 metformin study-arm, 100 data-points and 4456 patients). The final model described Hba1c% as a function of time (up to 15.5 years), baseline Hba1c% and T2DM duration. Mode of initial response of 1.54 was estimated, representing the maximal Hba1c% response to therapy. This response increases by 21% and 5% per unit increase in baseline Hba1c% and T2DM duration, respectively. The average time to reach 63% of the response amplitude was estimated at 2.30 months, decreasing by 19% for each unit increase in baseline Hba1c% and increasing by 11% for each extra year of T2DM duration. An average coefficient of failure (progression slope) of 0.63/year was estimated by increasing by 0.21 per 1-year increase in baseline Hba1c% and increasing by 0.28 per 1-year increase in T2DM duration. Other covariates showed no major effect on model results. CONCLUSIONS: The developed model described the time course of Hba1c% well and can be used to extend the potential in the contextualization of information from future/other T2DM studies.
patients with type 2 diabetes (T2DM). We aimed to compare the risk of FUL in users of SGLT-2 inhibitors and other non-insulin antidiabetic drugs in Germany. We used the InGeF database to conduct a cohort study with nested-case control analysis in new users of non-insulin antidiabetic drugs between 12 November 2011 and 31 December 2016. Cases were defined as hospitalization for FUL. For each case, up to 40 controls were randomly selected using risk-set sampling. We applied conditional logistic regression to estimate confounder adjusted odds ratios (OR) with 95%-confidence intervals (CI) of FUL comparing current use of SGLT-2 inhibitors to metformin or metformin+dipeptidyl-peptidase-4 (DPP-4) inhibitor. RESULTS: The cohort comprised 216,255 new users of non-insulin antidiabetic drugs with a crude incidence rate of 8.3 FUL per 1,000 person-years. For the nested case control analysis, 4,715 FUL cases were matched to 186,018 controls. No increased risk of FUL was observed comparing current use of SGLT-2 inhibitors to two or more non-insulin antidiabetic drugs (OR: 0.99; 95%-CI: 0.78-1.20). In contrast, we found an elevated risk for current users of metformin+SGLT-2 inhibitor compared to metformin+DPP-4 inhibitor without reaching statistical significance (OR: 1.48, 0.99-2.20). In a post-hoc analysis, we observed an increased risk of FUL for the latter comparison in patients aged 65 years and older (OR: 2.09; 95%-CI: 1.56-2.80). In a subgroup analysis, SGLT-2 inhibitors are associated with an increased risk of FUL in older patients and highlights the importance of a precise comparator group for safety studies in T2DM to avoid attenuation of risk estimates.

**OBJECTIVE:** To summarize prevalence rates globally for cardiovascular disease (CVD) among people with T2DM published within the last 10 years (2007-2017). **METHODS:** We searched Medline, Embase, and proceedings of scientific meetings to identify published studies documenting the prevalence of CVD among people with T2DM. Search terms included stroke, myocardial infarction, angina, heart failure, chronic kidney disease, cardiovascular disease, cerebrovascular disease, and peripheral artery disease. No restrictions were placed on country of origin or publication language. Two reviewers independently abstracted articles with disagreements resolved by consensus. Data were summarized descriptively. **RESULTS:** We analyzed data from 57 articles with 4,549,481 persons having T2DM. Overall, 51.8% were male, 17.0 years old at diagnosis, and with T2DM duration of 10.4 years. CVD affected 32.2% overall (53 studies; N = 4,289,140); 29.1% had atherosclerosis in four studies (N = 1,153), 21.2% had CAD (42 articles, N = 3,833,200), 14.9% heart failure (14 studies, N = 4,229,554), 7.2% stroke (13 studies, N = 3,518,833), and 7.6% stroke (40 studies, N = 3,901,505). Males had higher rates than females for stroke (6.7% vs. 5.9%), myocardial infarction (11.9% vs. 9.8%), angina (21.1% vs. 17.4%), and CAD (18.7% vs. 14.3%). CVD was cause of death in 9.9% of all T2DM patients (representing 50.3% of all deaths), with CAD responsible for 6.3% (29.7% of all deaths) and cerebrovascular disease for 1.5% (11.0% of all deaths). Risk of death in T2DM doubled with CVD (OR = 2.09; CI95%: 1.56-2.80) and nearly tripled with concomitant CAD (OR = 2.97; CI95%: 1.28-6.8). Overall produced the most articles (49), followed by the Western Pacific/China (19%), and North America (14%). Risk of bias was low, at 80±12% of the Stroke checklist items were adequately addressed. **CONCLUSIONS:** Globally, CVD affects approximately 32.2% of people with T2DM.

**PDB7**

**EMPLOYMENT RELATIONSHIP AND GLYCEMIC CONTROL IN TYPE 2 DIABETES PATIENTS**

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**OBJECTIVES:** To assess the relationship between type of employment and serum glycosylated hemoglobin A1c level in type 2 diabetes patients. **METHODS:** A retrospective observational study, carried out in a tertiary care teaching hospital. As per the inclusion criteria, patients of T2DM with Type 2 Diabetes Mellitus (T2DM) for the year 2015 were collected from the Medical Records Department using the following ICD codes: E:1.10 for Type 2 Diabetes Mellitus. The logistic regression was applied to look at the association between the occupation with the glycemic control obtained the adjusted OR and 95% CI. The p-value < 0.05 was considered as significant. A total of n = 663 cases were reviewed in the study. The patients mean age was 59.36±10.438 years of which 487 (74.5%) were male. The total number of microvascular complications and macrovascular complications were found to be 151 (23.04%), 130 (19.91%). Among microvascular and macrovascular complications, patients with peripheral vascular disease exhibited in the form of foot ulcer was the highest with 76 (11.6%) followed by neuropathy 68 (10.4%), retinopathy 47 (7.4%), CAD 44 (6.7%), stroke (6.0%), and angina (6.0%). Among the different occupational groups Agriculturist & Businessman have a higher risk for the fluctuation in the glycemic control (OR greater than 1).

**CONCLUSIONS:** Serum HBa1C may be a potential marker used to investigate the effects of occupational stress outcome. Patients with occupational groups of Agriculturist & Businessman had HbA1c levels oversetmate the mean glucose concentration compared with patients of in-service, Retired and House Wife, possibly owing to increased stress in these patient population group.

**PDB8**

**INCREASED PREVALENCE OF DIABETES IN THE NETHERLANDS IS ONLY PARTLY EXPLAINED BY CHANGES IN AGE AND SEX OVER TIME**

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**OBJECTIVES:** Different West-European countries have observed a rise in the prevalence of type 2 diabetes during the last decade. As the Dutch population is aging, the prevalence of obesity, a major risk factor for diabetes, is increasing, survival is improving and multiple screening initiatives are implemented, this trend probably also exists in the Netherlands. Unfortunately, recent and reliable data is lacking. The aim was to study the trend in the prevalence of diabetes in the Netherlands for the period 1999-2014 and to investigate the influence of changes in population demographics on this trend. **METHODS:** The prevalence of diabetes during the period 1999-2014 was studied using data from the PHARMO Database Network, a network of electronic databases that includes data from public pharmacies for 3.8 million residents of the Netherlands. A person with diabetes was defined as someone with at least two dispensings of a glucose lowering drug within six months. Age-adjusted prevalences were calculated per sex to investigate the influence of changes in these population demographics. **RESULTS:** The prevalence increased from 1.8% in 1999 to 4.9% in 2014. The increase was more pronounced among men and among persons older than 74 years. Among men, 75-84 years of age the prevalence increased from 6.7% in 1999 to 16.5% in 2014. Among women 75-84 years of age this increase was from 8% to 16.8%. Only half of the increase was explained by changes in population demographics (i.e. age and sex). **CONCLUSIONS:** This study showed that the prevalence of diabetes in the Netherlands more than doubled during 1999-2014. The absolute change in prevalence increased with age and was larger among men. The increase was only partly explained by changes in age and sex over time. To temper the increasing prevalence of diabetes, it is essential to gain more insight into the other factors responsible for the increase.

**PDB9**

**PREVALENCE OF CARDIOVASCULAR DISEASE IN TYPE 2 DIABETES: A GLOBAL SYSTEMATIC REVIEW**

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**OBJECTIVES:** To summarize prevalence rates globally for cardiovascular disease (CVD) among people with Type 2 Diabetes Mellitus (T2DM) published within the last 10 years (2007-2017). **METHODS:** We searched Medline, Embase, and proceedings of scientific meetings to identify published studies documenting the prevalence of CVD among people with T2DM. Search terms included stroke, myocardial infarction, angina, heart failure, chronic kidney disease, cerebrovascular disease, and peripheral artery disease. No restrictions were placed on country of origin or publication language. Two reviewers independently abstracted articles with disagreements resolved by consensus. Data were summarized descriptively. **RESULTS:** We analyzed data from 57 articles with 4,549,481 persons having T2DM. Overall, 51.8% were male, 17.0 years old at diagnosis, and with T2DM duration of 10.4 years. CVD affected 32.2% overall (53 studies; N = 4,289,140); 29.1% had atherosclerosis in four studies (N = 1,153), 21.2% had CAD (42 articles, N = 3,833,200), 14.9% heart failure (14 studies, N = 4,229,554), 7.2% stroke (13 studies, N = 3,518,833), and 7.6% stroke (40 studies, N = 3,901,505). Males had higher rates than females for stroke (6.7% vs. 5.9%), myocardial infarction (11.9% vs. 9.8%), angina (21.1% vs. 17.4%), and CAD (18.7% vs. 14.3%). CVD was cause of death in 9.9% of all T2DM patients (representing 50.3% of all deaths), with CAD responsible for 6.3% (29.7% of all deaths) and cerebrovascular disease for 1.5% (11.0% of all deaths). Risk of death in T2DM doubled with CVD (OR = 2.09; CI95%: 1.56-2.80) and nearly tripled with concomitant CAD (OR = 2.97; CI95%: 1.28-6.8). Overall produced the most articles (49), followed by the Western Pacific/China (19%), and North America (14%). Risk of bias was low, at 80±12% of the Stroke checklist items were adequately addressed. **CONCLUSIONS:** Globally, CVD affects approximately 32.2% of people with T2DM.
of socioeconomic status (aOR 1.30, 95% CI 1.18-1.42), those who smoked greater amounts, (moderate smoking: OR 1.52, 95% CI 1.35-1.72; heavy smoking: OR 1.90, 95% CI 1.67-2.17), those with hypertension (OR 1.26, 95% CI 1.12-1.42) were more likely to continue to smoke after diagnosis of diabetes. CONCLUSIONS: Customized education and more clinical attention for smoking cessation might be required for newly diagnosed T2DM patients.

**Objective:** To analyze strategies of management of patients with diabetic polyneuropathy (DPN) considering prevalence of DPN and diabetic foot (DF) in Russia. METHODS: The analysis was based on epidemiological data on DPN and DF, and placebo controlled trials (ALADIN III for alpha-lipoic acid, and D. Ziegler study for Actovegin). Strategies with alpha-lipoic acid (1st group) and with Actovegin (2nd group) were compared. In both groups, a 160-day course of par- enteral injection in hospital, and 140 days of outpatient oral administration. Clinical outcomes and health care system costs were analyzed; cost-effectiveness ratio (CER) was calculated. The share of patients without DF was the main measure of effectiveness. Costs of the drugs, and hospital and outpatient treatment for budget holder were evaluated in two equal-sized groups. During the sensitivity analysis, clinical outcomes (risk of DF) were modeled with increment of 100 persons from 100 to 1000 patients in the cohort of 10 000 patients with type 2 diabetes mellitus contained 6100 patients with DPN including 3700 patients with medium or severe stages. 2100 persons were in risk for DF, including 1110 patients with high risk, and 1000 patients with alpha-lipoic acid group, respectively. The number of amputations in these groups was 70 and 65. The costs of 160-day treatment was 64,929,73 RUB in the 1st group, and 64,355,73 RUB in the 2nd group. The share of patients without DF was 70.02% and 62.7%. CER was 103,556.19 in group 1 and 95,012.43 in group 2. Both strategies showed proved the advantage of Actovegin administration. CONCLUSIONS: The study showed clinical and pharmacoeconomic advantages of Actovegin administration in patients with DPN and DF. This strategy has more preferable CER and lower costs for public health care system.

**Objective:** To investigate the budgetary impact of adding empagliflozin to standard treatment of adult patients with Type 2 diabetes mellitus (T2DM) and high cardiovascular risk (CV) in Greece. METHODS: A budget impact model was adapted from a third-party payer perspective (National Organization for Healthcare Services Provision [EOFY]) to delineate the financial implications of initiating empagliflozin as add-on to SoC over 3 years. The model assumed Greek epidemiological data and local reimbursement requirements. Drug use and diabetes-related complication events were estimated based on the drug use and event rates seen in EMPA-REG OUTCOME 3-year trial, respectively. Directly reim- bursed costs associated with drug acquisition and clinical events management were included in the analysis and corresponded to 2016 costing year. Officially published sources were used to derive unit costs and resource consumption was based on experts’ advice. The model measured outcomes were incremental budget impact sources were used to derive unit costs and resource consumption was based on.

**Objective:** Cardiometabolic complications (CVcs) in diabetes mellitus (DM) are important both from clinical and economic perspective. Pragmatic review of literature demonstrated lack of cost data for Central and Eastern Europe (CEE), while the rapid health technology assessment (HTA) advancement requires substantiated information to guide decisions. We aimed to estimate the direct public payer medical costs of CVC in Bulgaria, Lithuania, Poland, Republic of Srpska, Bosnia and Herzegovina (RSBH), Romania, and Slovenia. METHODS: The considered CVcs included: myocardial infarction (MI), unstable (UA)/stable angina pectoris, peripheral vascular disease (PVD), heart failure (HF), stroke, transient ischemic attack, painful neuropathy, retinopathy, end-stage renal disease (ESRD), and diabetic foot. Local clinical and HTA experts provided data (based on experience, literature, databases, etc.) on epidemiology, rate/prevalence of CVcs, mortality (at the event and during follow-up), outcome and had a follow-up of at least one year after start drug use. Methological quality of the studies was assessed by the Cochrane Collaboration’s tool and the Newcastle-Ottawa Scale. Screening of full-text and data-extraction was performed independently by two reviewers. Random effects model meta-analysis was used for quantitative data synthesis. Sensitivity analyses were performed including studies with high quality. RESULTS: Twenty-five studies met the inclusion criteria. Sample sizes of the DPP-4 inhibitor groups ranged from 29 to 8,212 patients for RCTs and from 10 to 71,137 patients for observational studies, mean age at the start of the study ranged from 51 to 76 years; median follow-up was 1.0 year for RCTs and 2.0 years for cohort studies. None of the pooled (sensitivity) analyses, except the oesophagus, including breast cancer (pooled HR (95% CI) = 0.76 (0.60-0.96), showed evidence for an association between DPP-4 inhibitors and cancer. Also for pancreatic and thyroid cancer no statistically significant risk was found. Most of the included studies suffered from serious biases. CONCLUSIONS: Our meta-analysis does not support the hypothesis that DPP-4 inhibitor use is associated with an increased risk of site-specific cancer. Future studies should address the methodo- logical limitations and follow patients for a longer period in order to determine the long-term cancer risk of DPP-4 inhibitors.
COSTS OF TYPE 2 DIABETES MANAGEMENT AND ASSOCIATED COMPLICATIONS IN THE UNITED KINGDOM

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OBJECTIVES: The objective of this study was two-fold. Firstly, to systematically collect up-to-date published cost data for management (pharmacotherapy) and associated complications (cardiovascular, renal, eye disease and diabetic foot) of type 2 diabetes mellitus in the United Kingdom (UK) for use in the CORE Diabetes Model (CDM). Secondly, where data was scarce, calculations were carried out to estimate the cost inputs for CDM.

METHODS: A systematic literature review (SLR) for published direct medical costs from the UK's National Health Service and sources of peer-reviewed journals and government websites in years 2011-2017 in English. The SLR was conducted according to the general principles for undertaking systematic reviews in health care. These methodologies adhere to the UK's National Institute for Health and Care Excellence standards for evidence generation. Where the papers did not present primary data the references were queried. A quality assessment of included studies was performed using a checklist for assessing cost-effectiveness studies. When conducting calculations, pack sizes, dosages, treatment duration and number of hospital visits were taken into account. All parameters were converted to British Pound and updated to 2016 prices using an inflation factor.

RESULTS: The SLR identified 2,472 records of which 52 met the final eligibility criteria. Non-fatal stroke cost was the highest among cardiovascular complications (£12,147), followed by myocardial infarction (£7,154), and its complication costs, while overall diabetic complications were the most costly with renal transplant being the highest (£42,060). Eye disease costs spanned from Int$8,590 in US to Int$34,002 in Australia. Costs of nephropathy varied considerably in UK, respectively. Australia and US spend Int$18,424 and Int$13,030 as direct medical cost of heart failure. Diabetic foot ulcer costs were Int$18,285, Int$17,457, and Int$12,241 in Canada, Australia, and US, respectively. Costs of nephropathy varied considerably in local currencies.

CONCLUSIONS: The highest cost burden on governmental and private sectors was attributed to the management of complications cost. More effort should be exerted to decrease the burden of complications by private sector, interviews with five thousand DM subjects conducted nationwide stating direct medical costs and productivity loss as indirect cost, premature mortality cost was calculated from cause of mortality reports and the average daily wage from Egyptian reports. TOTAL: Total cost of diabetes was calculated to be (EGP 22.3 billion) equivalent to (USD 2.5 billion), using the exchange rate of EGP 1 = USD 0.13976. The direct medical cost was calculated to be (EGP 22.3 billion), where DM complications management cost was calculated to be (EGP 22.9 billion), with highest share caused by osteoarthritis.

OBJECTIVES: Diabetes Mellitus (DM) imposes a huge economic burden on individuals, families, health care systems and countries. This cost of illness study aims to calculate the direct and indirect costs incurred by both governmental and private sector. METHODS: Both top-down and bottom-up approaches were used. Data was collected from: the governmental sectors for spending on diabetes management, retail audit data for medication costs spent on both diabetes and its complications by private sector, interviews with five thousand DM patients conducted nationwide stating direct medical costs and productivity loss as indirect cost, premature mortality cost was calculated from cause of mortality reports and the average daily wage from Egyptian reports. RESULTS: Total cost of diabetes was calculated to be (EGP 22.9 billion) equivalent to (USD 2.5 billion), using the exchange rate of EGP 1 = USD 0.13976. The direct medical cost was calculated to be (EGP 22.3 billion), where DM complications management cost was calculated to be (EGP 22.9 billion), with highest share caused by osteoarthritis.

CONCLUSIONS: The highest burden on governmental and private sectors was attributed to the management of complications cost. More effort should be exerted to decrease the burden of complications by private sector, interviews with five thousand DM subjects conducted nationwide stating direct medical costs and productivity loss as indirect cost, premature mortality cost was calculated from cause of mortality reports and the average daily wage from Egyptian reports. TOTAL: Total cost of diabetes was calculated to be (EGP 22.3 billion) equivalent to (USD 2.5 billion), using the exchange rate of EGP 1 = USD 0.13976. The direct medical cost was calculated to be (EGP 22.3 billion), where DM complications management cost was calculated to be (EGP 22.9 billion), with highest share caused by osteoarthritis.

OBJECTIVES: Acromegaly is a rare disease caused by growth hormone (GH) hypersecretion from pituitary adenoma. Peripheral action of GH is mediated by insulin-like growth factor-1 (IGF-1), and results in acral overgrowth and metabolic complications. Acromegaly and its treatment is associated with high direct and indirect costs, caused by the necessity of life-long treatment of hormonal normalisation and systemic disturbances management. The aim of our study was to assess the costs of medical care of patients with acromegaly in real life setting in one academic centre in Poland.

METHODS: Data was collected from medical charts of patients diagnosed, treated and followed-up in Department of Endocrinology, Diabetes and Isotope Therapy in years 2011-2016. RESULTS: The retrospective analysis was performed on 20 consecutive patients (12 males, 8 females), aged 53.4 ± 8.4 years, with mean disease duration of 11.1 ± 7.8 years. In this group 6 patients were successfully operated, other 14 are still on long-term somatostatin receptor ligands (SRL) therapy. Costs associated with disease complications and its complications (cardiovascular, cerebrovascular, cholecystectomy, thyroidectomy), medical therapy (SRL, dopamine agonists, radiation therapy) were calculated. Costs of therapy per year long term SRL and other available information on costs of major complications 72% of all costs. Second largest expense group consists of costs of neurosurgeries which are valued at 3.807 Euro, what is 17% of total annual costs. Next significant expense group are costs of hospitalisation which add up to 1001 Euro constituting 5% of total annual costs. Costs of medication are a minor share in the total expenditure therefore being insignificant.

CONCLUSIONS: Life-long acromegaly management is highly expensive. The major costs represent SRL therapy. Early diagnosis at the initial stage of the disease increases opportunity of successful surgery and reduce the costs of medical therapy.
and HTA (EEHTA), University of Rome Tor Vergata, Rome, Italy, 2University of Messina, Messina, 1Faculty of Economics, Centre for Economic and International Studies (CEIS)-Economic Evaluation for the rising HTA needs in Japan.

area is needed to establish standardized and strengthened HE modelling inputs from 17 articles. The identified articles included direct cost data pertaining to cardiovascular, eye, renal and acute diabetes-related complications as well as foot ulcer, neuropathy and amputation. Most health state utility values reported for the rising HTA needs in Japan.

A total of 35 articles met the inclusion and exclusion criteria. Cost data were extracted from 27 articles while utility data were extracted from 17 articles. The identified articles included direct cost data pertaining to cardiovascular, eye, renal and acute diabetes-related complications as well as foot ulcer, neuropathy and amputation. Most health state utility values reported for the rising HTA needs in Japan.

GROWTH OF NATIONAL HEALTH INSURANCE EXPENDITURE RELATED TO ANTIDIABETICS AND THEIR PROJECTIONS UNTIL 2050

OBJECTIVES: National health insurance expenditure related to diabetes patients ≥10 billion, i.e. 8% of all expenditure. Mean expenditure per diabetic patient has stabilized since 2012, but the use of expensive new drugs could modify this curve. METHODS: This study was based on the population covered by the national health insurance general scheme that had received ≥1 reimbursement for anti-diabetic drugs in 2012 and ≥1 reimbursement 3 years later. Treatment regimens were identified in the health information systems (HIS) of the Marche region.

A 1-year, cost-effectiveness model evaluated the Incremental Cost-Effectiveness Ratio (ICER) of adding Sitagliptin (SITA) versus Sulphonylurea (SUL) to basal insulin in type 1 (T1D) or type 2 (T2D) diabetes in routine care.

The treatment effectiveness was analysed as a controlled patient ratio according to the target for glucose control, as reflected by glycated hemoglobin (HbA1c). The efficacy of the added patients was measured by a targeted patient perspective, which is well below the cost-effectiveness threshold in Poland.

Cost-effectiveness analyses were playing an increasingly important role in Japan, as an integral part of the upcoming introduction to health technology assessment (HTA). However, current data availability to conduct such analyses may be limited. We conducted a targeted literature review to assess the availability of health economic (HE) model inputs for use in type 2 diabetes mellitus (T2DM) patients in Japan. METHODS: A comprehensive literature review was performed to identify studies published between 2010 and 2016 that reported costs and utility data associated with the management complications of diabetes. Google Scholar, PubMed, EMBASE and Ichushi Web databases were searched using medical headings and key terms in English and Japanese for macro- and microvascular complications and de-identified utility values from a national search of Japan. The identified articles were related to medical societies, conferences, and diabetes networks was also conducted to enhance the search results. Articles that met the inclusion and exclusion criteria were screened at the title and abstract level followed by full-text screening by two reviewers. RESULTS: A total of 35 articles met the inclusion and exclusion criteria. Cost data were extracted from 27 articles while utility data were extracted from 17 articles. The identified articles included direct cost data pertaining to cardiovascular, eye, renal and acute diabetes-related complications as well as foot ulcer, neuropathy and amputation. Most health state utility values reported for the rising HTA needs in Japan.

COSTS OF ADDING SITAGLIPTIN OR SULPHONYLUREA TO METFORMIN: AN OBSERVATIONAL STUDY USING ADMINISTRATIVE DATABASE OF ITALY

OBJECTIVES: To compare health-care costs of diabetic patients who start treatment with Sitagliptin (SITA) or Sulphonylurea (SUL), using Health Information Systems (HIS) of the Marche region. METHODS: This study was based on the population covered by the national health insurance general scheme that had received ≥1 reimbursement for anti-diabetic drugs in 2012 and ≥1 reimbursement 3 years later. Treatment regimens were identified in the health information systems (HIS) of the Marche region.

The financial impact related to modifications of the treatment modalities of diabetes constituted the highest cost. The group of prolonged action insulin (A10BH) generated the highest cost. Regarding the effectiveness, the percentage for controlled patients was higher than for non-controlled patients. The cost of non-controlled patients increased during 2016, while the cost of controlled patients slightly decreased. What is more, it has produced an increment of DDD during the period 2014-2016 in this district. Therefore, as the increase in the cost of newer medications, patient resources should be taken into account by practitioners and generic, less costly alternatives should be taken into consideration more frequently.

PDB25 REAL WORLD DATA ANALYSIS OF TYPE 2 DIABETES MELLITUS TREATMENT IN AN INTEGRATED HEALTH DISTRICT

OBJECTIVES: The main objective of this study is to analyse the treatment of patients with type 2 Diabetes Mellitus (DM2) in an integrated health district using real world data. The relation between cost and glycaemic level control was analysed to determine the effect of increasing costs on HbA1c level, and to regress the association of the indicators of glycaemic control and the expenditure of diabetes care on prescription costs.

COST-EFFECTIVENESS OF EMPIGLIFLOZIN IN PATIENTS WITH TYPE 2 DIABETES MELLITUS AT HIGH CARDIOVASCULAR RISK IN POLAND

OBJECTIVES: To assess the cost-effectiveness of empagliflozin 10mg as an add-on to standard care (SoC) in patients with Type 2 Diabetes (T2D) at high risk for cardiovascular events (CV). METHODS: An existing health economic, stochastic model was used to simulate individual profiles of patients treated with empagliflozin and patients treated with SoC. Simulated costs and outcomes were discounted at a 5.0% and 3.0% discount rate for base-case and sensitivity analyses, respectively. A societal perspective was adopted using cost data from Polish sources: the public healthcare payer (PP) and the public payer plus patient (PP+F) perspective. Simulated costs and outcomes were discounted at a 5.0% and 3.5% annual rate, respectively. Probabilistic (PSA) and deterministic (DSA) sensitivity analyses were conducted to address uncertainty and test the robustness of the model results.

RESULTS: Adding empagliflozin 10mg to SoC resulted in longer survival (9.8 LY vs. 8.7 LY with SoC) and a QALY gain of 1.414 at a cost of €1,414 (PLN18952 (€2,522) (PP) and PLN17184 (€3,978) (PP+F) versus SoC only. The base-case incremental cost-utility ratio (ICUR) was PLN13440 (€3,111) per QALY from the healthcare payer perspective and PLN21188 (€4,907) per QALY from the payer plus patient perspective, which is well below the cost-effectiveness threshold in Poland (PLN13002(€3093) QALY). Irrespective of the cost perspective chosen, empagliflozin was estimated to have a 100% probability of being cost-effective. Base-case results were shown to be robust across a range of model parameters, with empagliflozin remaining cost-effective in all DSA scenarios investigated.

CONCLUSIONS: Empagliflozin 10mg represents a highly cost effective option for the treatment of T2D patients with high risk of CV events in Poland.

PDB27 COST-EFFECTIVENESS OF SWITCHING TO INSULIN DEGLIURIDE (IDeg) IN REAL-WORLD CLINICAL PRACTICE IN ITALY

OBJECTIVES: To evaluate the cost-effectiveness of switching to Ideg from another basal insulin in type 1 (T1D) or type 2 (T2D) diabetes in routine care. METHODS: Data were drawn from an Italian subpopulation of EU-TREAT, a multicentre, retrospective, observational, investigator initiated switch to insulin study in patients with type 2 diabetes who were using a basal analogue or a human insulin or prandial insulin [oral anti-diabetic drugs in T2D)] to Ideg. Parameters in the base-case model were change in hypoglycaemia rates, basal and prandial insulin dose and body weight at 6 months post-switch and cost of treatment and complications. 1-year, cost-effectiveness modelled the Incremental Cost-effectiveness variables considered at baseline. The analysis showed a higher cost for the first year of treatment for patients treated with SITA (€1,473) compared to those treated with SUL (€1,018). From the second year of the treatment the cost of patients treated with SITA was systematically lower: €1,235 vs €1,315 in the second year and €1,414 vs. €1,710 in the third year. CONCLUSIONS: The study, based on Italian administrative healthcare costs and health-care related patient’s treatment with SITA or SUL, highlighted a progressive reduction in costs for SITA treated patients starting from the second year of treatment.

PDB26 COST-EFFECTIVENESS OF EMPIGLIFLOZIN IN PATIENTS WITH TYPE 2 DIABETES MELLITUS AT HIGH CARDIOVASCULAR RISK IN POLAND

OBJECTIVES: To assess the cost-effectiveness of empagliflozin 10mg as an add-on to standard care (SoC) in patients with Type 2 Diabetes (T2D) at high risk for cardiovascular events (CV). METHODS: An existing health economic, stochastic model was used to simulate individual profiles of patients treated with empagliflozin and patients treated with SoC. Simulated costs and outcomes were discounted at a 5.0% and 3.0% discount rate for base-case and sensitivity analyses, respectively. A societal perspective was adopted using cost data from Polish sources: the public healthcare payer (PP) and the public payer plus patient (PP+F) perspective. Simulated costs and outcomes were discounted at a 5.0% and 3.5% annual rate, respectively. Probabilistic (PSA) and deterministic (DSA) sensitivity analyses were conducted to address uncertainty and test the robustness of the model results.

RESULTS: Adding empagliflozin 10mg to SoC resulted in longer survival (9.8 LY vs. 8.7 LY with SoC) and a QALY gain of 1.414 at a cost of €1,414 (PLN18952 (€2,522) (PP) and PLN17184 (€3,978) (PP+F) versus SoC only. The base-case incremental cost-utility ratio (ICUR) was PLN13440 (€3,111) per QALY from the healthcare payer perspective and PLN21188 (€4,907) per QALY from the payer plus patient perspective, which is well below the cost-effectiveness threshold in Poland (PLN13002(€3093) QALY). Irrespective of the cost perspective chosen, empagliflozin was estimated to have a 100% probability of being cost-effective. Base-case results were shown to be robust across a range of model parameters, with empagliflozin remaining cost-effective in all DSA scenarios investigated.

CONCLUSIONS: Empagliflozin 10mg represents a highly cost effective option for the treatment of T2D patients with high risk of CV events in Poland.
Rearranging the mixture in terms of quality-adjusted life years (QALYs). The robustness of the results was tested with sensitivity analyses by varying input parameters.

To validate the base-case results, a horizon extension analysis was conducted using the IMS CORE Diabetes Model. RESULTS: Patients with T1D (n=387) were mean (SD) age 47.3 (14.5) years; previous insulin regimens were NPH 1.8%, insulin glargine U100 23.9%, and insulin glargine U100 42.5%, insulin detemir 23.3%, and insulin detemir 54.2%. Short-term cost per QALY gained for IDeG versus original basal insulin was estimated at €2,957 for T1D (below the Italian QALY threshold of €20,000) and was dominant (lower cost and improved QALYs) in T2D. IDeG remained either highly cost-effective or dominant after elimination of any benefit in severe/non-severe hypoglycaemia, basal insulin dose and resource utilisation, in T1D and T2D. IDeG was dominant in the lifetime model for T1D and T2D. Basal insulin regimens were even greater compared with the short-term model. CONCLUSIONS: In an Italian population, switching to IDeG in routine care is highly cost-effective or dominant versus maintaining basal insulin, for patients with T1D or T2D who are considered candidates for treatment with IDeG.

COST-EFFECTIVENESS OF COMMUNITY PHARMACISTS

PATIENTS WITH TYPE 2 DIABETES IN PREVENTION OF DIABETIC RETINOPATHY

Study objectives: We conducted the Community Pharmacists Support Intervention (CPSI) Project, a cluster randomized controlled trial in Japan. In the project, community pharmacists support these patients’ lifestyle modification within three minutes. The result indicated that brief intervention conducted by community pharmacists could significantly decrease Hba1c in patients with T2DM. Using the Markov model, we estimated the effect of the intervention conducted by the medical community on the medical costs and QALYs in the future. We conducted the analysis from payer’s perspective. A 10-year model with annual cycle duration was developed. Progression of diabetic retinopathy was characterized into three degrees. Incremental cost effectiveness ratios (ICER) were determined based on health care payer perspective.

COST-EFFECTIVENESS OF EMPAFLIDIN (CARDIOANCE) IN THE TREATMENT OF PATIENTS WITH TYPE 2 DIABETES MELLITUS (T2DM) IN TURKEY BASED EMPA REG OUTCOMES DATA

Results: In the EMPA REG OUTCOMES trial data to model event rates over time and the interaction between events. Model outcomes included costs incurred, life years (LY) and quality adjusted life years (QALYs). Future costs and QALYs were discounted at a rate of 3% annually and sensitivity analyses were performed.

OBJECTIVES: The aim of this study is to compare empagliflozin and standard care (SoC) for Diabetes mellitus type 2 (T2DM) treatment with a cost-effectiveness analyses in Turkey. In this study, a simulation model designed for time to first cardiovascular event (CVD) with placebo or metformin was used in the EMPA-REG OUTCOMES study population based on health care payer perspective. METHODS: A cost-effectiveness model was created to stimulate profiles of patients treated with empagliflozin versus placebo or metformin as an adjunct to over a time life horizon. Time dependent survival regression analysis was performed on the EMPA REG OUTCOMES trial data to model event rates over time and the interaction between events. Model outcomes included costs incurred, life years (LY) and quality adjusted life years (QALYs).

COST-EFFECTIVENESS ANALYSIS

The incremental QALYs was 0.236 years vs IR: 0.240 years). Diabetes complications also had lower costs in the XR formulation compared with IR formulation (total lifetime costs = $2897 for T1D (below the Italian ICER threshold of $2183 €804.6 per LY gain. According to time the first CV event and survival outcomes of T2DM, empagliflozin is a cost-effective treatment. Probabilistic sensitivity analyses showed that the ICER was most likely below the ICER threshold of $2183.8 per the QALY and it was $804.6 per LY gain. According to time the first CV event and survival outcomes of T2DM, empagliflozin is a cost-effective treatment. Probabilistic sensitivity analyses showed that the ICER was most likely below the ICER threshold of $2183.8 per QALY and it was $804.6 per LY gain.

COST-EFFECTIVENESS OF EMPAFLIDIN (CARDIOANCE) IN THE TREATMENT OF PATIENTS WITH TYPE 2 DIABETES MELLITUS (T2DM) IN TURKEY BASED EMPA REG OUTCOMES DATA

This analysis asesses the cost-effectiveness of interventions conducted by community pharmacists support these patients’ lifestyle modification within three minutes. The result indicated that brief intervention conducted by community pharmacists could significantly decrease Hba1c in patients with T2DM. Using the Markov model, we estimated the effect of the intervention conducted by the medical community on the medical costs and QALYs in the future. We conducted the analysis from payer’s perspective. A 10-year model with annual cycle duration was developed. Progression of diabetic retinopathy was characterized into three degrees. Incremental cost effectiveness ratios (ICER) were determined based on health care payer perspective.

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COST-EFFECTIVENESS OF EMPAFLIDIN (CARDIOANCE) IN THE TREATMENT OF PATIENTS WITH TYPE 2 DIABETES MELLITUS (T2DM) IN TURKEY BASED EMPA REG OUTCOMES DATA

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COST-EFFECTIVENESS OF EMPAFLIDIN (CARDIOANCE) IN THE TREATMENT OF PATIENTS WITH TYPE 2 DIABETES MELLITUS (T2DM) IN TURKEY BASED EMPA REG OUTCOMES DATA

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COST-EFFECTIVENESS OF EMPAFLIDIN (CARDIOANCE) IN THE TREATMENT OF PATIENTS WITH TYPE 2 DIABETES MELLITUS (T2DM) IN TURKEY BASED EMPA REG OUTCOMES DATA

This analysis asesses the cost-effectiveness of interventions conducted by community pharmacists support these patients’ lifestyle modification within three minutes. The result indicated that brief intervention conducted by community pharmacists could significantly decrease Hba1c in patients with T2DM. Using the Markov model, we estimated the effect of the intervention conducted by the medical community on the medical costs and QALYs in the future. We conducted the analysis from payer’s perspective. A 10-year model with annual cycle duration was developed. Progression of diabetic retinopathy was characterized into three degrees. Incremental cost effectiveness ratios (ICER) were determined based on health care payer perspective.

COST-EFFECTIVENESS OF EMPAFLIDIN (CARDIOANCE) IN THE TREATMENT OF PATIENTS WITH TYPE 2 DIABETES MELLITUS (T2DM) IN TURKEY BASED EMPA REG OUTCOMES DATA

This analysis asesses the cost-effectiveness of interventions conducted by community pharmacists support these patients’ lifestyle modification within three minutes. The result indicated that brief intervention conducted by community pharmacists could significantly decrease Hba1c in patients with T2DM. Using the Markov model, we estimated the effect of the intervention conducted by the medical community on the medical costs and QALYs in the future. We conducted the analysis from payer’s perspective. A 10-year model with annual cycle duration was developed. Progression of diabetic retinopathy was characterized into three degrees. Incremental cost effectiveness ratios (ICER) were determined based on health care payer perspective.
expressed in JPY per quality-adjusted life year (QALY) gained with costs discounted at 3% for 10 years. We conducted deterministic sensitivity analysis to assess the effect of uncertainty on the model. RESULTS: In the survey periods, medical cost was calculated at 2,227,817 JPY for the intervention group, while it was 2,251,375 JPY for the control group. These interventions conducted in the COMPASS Project were expected to save 16.8% compared with an alternative. Sensitivity analysis did not change the results. CONCLUSIONS: This analysis suggests that the intervention conducted in the COMPASS Project was cost-effective for diabetes prevention. Hence, community pharmacists should actively support patients with diabetes.

PDB34 DELAYING SECOND LINE DIABETES TREATMENT ONSET IN PATIENTS UNCONTROLLED WITH METFORMIN XR IN SAUDI ARABIA: COST-EFFECTIVENESS ANALYSIS

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OBJECTIVES: Type 2 diabetes mellitus (T2DM) treatment guidelines recommend therapy intensification with a second oral agent if glycated hemoglobin (HbA1c) target is not achieved over three to six months. However, in clinical practice, therapy intensification occurs as soon as one month. The objective of this study was to compare the cost-effectiveness of treatment intensification with metformin/DPP4i inhibitor fixed-dose combination in uncontrolled patients (HbA1c > 7.5%) at three versus one month(s) after metformin XR monotherapy initiation. METHODS: A discrete event simulation model was created and a comprehensive literature review was performed in order to model lifetime therapeutic sequence in T2DM. This model was adapted to include a monthly HbA1c profile progression, an adenocarcinoma incidence, and effectiveness and cost of Saudi Arabian local data. This model allowed the lifetime assessment of quality adjusted life years (QALY), persistence in metformin, time to insulin therapy, percentage of patients with diabetes complications and economic outcomes. The model was populated with local Saudi patients. RESULTS: Delaying therapy intensification will lead to more patients achieving HbA1c target, augmenting metformin monotherapy (3 months group: 3.58 years vs 1 month group: 2.38 years) and delaying insulin therapy initiation by 6.8 months (3 months group: 12.31 years vs 1 month group: 11.72 years). As a consequence, cost savings of 7,591 SAR (3 months group: 427,948 SAR vs 1 month group: 427,549 SAR) and QALY gains (3 months group: 12.46 QALY vs 1 month group: 12.39 QALY) are estimated. The percentage of patients with long-term diabetes complications as congestive heart failure decreases with postponing therapy intensification (3 months group: 12.02% vs 1 month group: 12.17%), as well as diabetes complications costs (3 months group: 185,936 SAR vs 1 month group: 186,310 SAR). CONCLUSIONS: Saudi Arabian guideline recommendations is not cost-effective. Sustained savings but also increases metformin persistence and time to insulin therapy initiation.

PDB35 LONG-TERM COST-EFFECTIVENESS OF IDEGLIRA VERSUS BASAL-BOLUS INSULIN AS INTENSIFICATION THERAPIES FOR PERSONS WITH TYPE 2 DIABETES INADEQUATELY CONTROLLED ON BASAL INSULIN IN SPAIN: PROJECTIONS BASED ON THE CORE DIABETES MODEL

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OBJECTIVES: The analysis compared the long-term cost-effectiveness of IDegLira (fixed-ratio combination insulin degludec/liraglutide) and basal-bolus insulin as an intensification therapies for people with type 2 diabetes mellitus (T2DM) inadequately controlled on basal insulin from the perspective of the Spanish National Health System (NHS). METHODS: Cost (accounted from a Spanish NHS perspective) and clinical outcomes were estimated over patient lifetimes using the QuintilesIMS CORE Diabetes Model. Clinical inputs (baseline cohort characteristics and treatment effects) were taken from published patient-level studies and cost data were applied to a published diabetes outcome model. The analysis was performed with an individual simulation model predicting the lifetime disease course and associated health outcomes from patients with type 2 diabetes (T2D) with basal insulin to patients treated with IDegLira. RESULTS: Incremental cost-effectiveness ratio of insulin glargine over basal insulin was HKD 78,788 ($1,585/QALY). The PSA and CEAC/Fs analyses showed that IDegLira was the most cost-effective option in reducing blood glucose and has lower risk of hypoglycaemia. Due to higher acquisition costs, use of insulin glargine remains second-line in Hong Kong. We conducted a cost-effectiveness analysis of insulin glargine compared with NPH insulin by applying local patient and cost data to a published diabetes outcome model. The objective of this study was to compare the cost-effectiveness of treatment with insulin glargine compared with NPH insulin in Hong Kong. CONCLUSIONS: This analysis confirmed that IDegLira was projected to be a cost-effective treatment compared with basal-bolus insulin in the Spanish NHS. The analysis was performed with an individual simulation model predicting the lifetime disease course and associated health outcomes from patients with type 2 diabetes (T2D) with basal insulin to patients treated with IDegLira. The model was adapted to the Italian setting, considering local epidemiological data, baseline QOL, utility, and costs for treatment and management of diabetes complications. Sensitivity analyses confirmed that IDegLira was projected to be a cost-effective treatment compared with basal-bolus insulin in the Spanish NHS. CONCLUSIONS: IDegLira was projected to be a cost-effective treatment for people with T2DM inadequately controlled on basal insulin, compared with basal-bolus insulin from the Spanish NHS perspective.

OBJECTIVES: Insulin glargine is superior to neutral protamine Hagedorn (NPH) insulin in reducing blood glucose and has lower risk of hypoglycaemia with IDegLira. IDegLira was associated with higher treatment persistence in metformin XR and a comprehensive literature review was performed in order to model lifetime therapeutic sequence in T2DM. This model was adapted to include a monthly HbA1c profile progression, an adenocarcinoma incidence, and effectiveness and cost of Saudi Arabian local data. This model allowed the lifetime assessment of quality adjusted life years (QALY), persistence in metformin, time to insulin therapy, percentage of patients with diabetes complications and economic outcomes. The model was populated with local Saudi patients. RESULTS: Delaying therapy intensification will lead to more patients achieving HbA1c target, augmenting metformin monotherapy (3 months group: 3.58 years vs 1 month group: 2.38 years) and delaying insulin therapy initiation by 6.8 months (3 months group: 12.31 years vs 1 month group: 11.72 years). As a consequence, cost savings of 7,591 SAR (3 months group: 427,948 SAR vs 1 month group: 427,549 SAR) and QALY gains (3 months group: 12.46 QALY vs 1 month group: 12.39 QALY) are estimated. The percentage of patients with long-term diabetes complications as congestive heart failure decreases with postponing therapy intensification (3 months group: 12.02% vs 1 month group: 12.17%), as well as diabetes complications costs (3 months group: 185,936 SAR vs 1 month group: 186,310 SAR). CONCLUSIONS: Saudi Arabian guideline recommendations is not cost-effective. Sustained savings but also increases metformin persistence and time to insulin therapy initiation.

PDB36 REEVALUATING A 10 YEAR COST-EFFECTIVENESS ANALYSIS (CEA) OF THE DIABETES PREVENTION OUTCOMES STUDY (DPP/DPP-OUT): CLARIFYING THE PREVIOUS CONFUSION

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OBJECTIVES: A published CEA of the 10 year DPP/DPP-OUT study, comparing placebo (PBO), metformin (MET), individual and group lifestyle (ILS and GLS) interventions that metformin and, confirmed that metformin compared with PBO was cost-effective. We clarify and extend the original work to address decision uncertainty through probabilistic sensitivity analysis (PSA). METHODS: Various costs and effectiveness (QALYs – quality adjusted life years) numbers were used as the original publication (including making a correction to the QALY calculation) were used to calculate incremental cost-effectiveness ratios (ICERs). We clarified the significant ambiguity of the original paper’s conclusions using the cost-effectiveness plane. We used a discrete event simulation model to construct cost-effectiveness acceptability curves and frontiers (CEAC/ Fs). RESULTS: Analysis of both the original data and of results with the corrected QALY calculation clearly indicated that, relative to the other intervention, GLS dominates, or, for likely WTP thresholds, is the cost-effective intervention. If GLS is eliminated as an option, ILS is optimal, as it is the most effective intervention and has an acceptable ICER ($19,433). Metformin is cost-effective only if the WTP threshold is unrealistically low (~$1,585/QALY). The PSA and CEAC/Fs analyses showed that the most cost-effective option in reducing blood glucose and has lower risk of hypoglycaemia. Due to higher acquisition costs, use of insulin glargine remains second-line in Hong Kong. We conducted a cost-effectiveness analysis of insulin glargine compared with NPH insulin (HKD 707,289 ($391,018)). Treatment with insulin glargine led to a gain in life year of 0.017 years/patient and in quality-adjusted life year (QALY) of 0.025 years/patient compared with treatment with NPH insulin. The incremental cost-effectiveness ratio of insulin glargine over NPH insulin was HKD 78,788 ($1,585/QALY), which was below the current gross domestic product per capita in Hong Kong. CONCLUSIONS: Applying WHO threshold of cost-effectiveness, insulin glargine was highly cost-effective relative to NPH insulin.
Type 2 Diabetes Mellitus in Slovenia

OBJECTIVES: SWITCH 182 randomized, double-blind, two-period, crossover trials in patients with Type 1 and Type 2 diabetes showed fewer hypoglycemic events with insulin degludec (IDeg) vs insulin glargine U100 (Glar U100). The current study assessed the cost-effectiveness of IDeg vs Iglar U100 from a Portuguese healthcare perspective, using data from the SWITCH 182 trials. METHODS: A short-term cost-effectiveness model was elaborated to calculate effectiveness results for IDeg vs Iglar U100. Hypoglycemia and insulin dose data from SWITCH 182, the costs of insulin, needles, blood glucose tests and hypoglycaemic events in Portugal, utilities for different types of hypoglycaemic events have been used to populate the model. Benefits were measured in QALYs. RESULTS: In both trials non-severe nocturnal and severe hypoglycaemic events were significantly lower in favour of IDeg. In the post-index period were included. We stratified patients into 2 cohorts: with and without critical diabetes diagnosis. Results of the cost-effectiveness threshold, PSA estimated a probability of 66% and 93% for GLA-100 being cost-effective in comparison with GLA-100 and DEG-100, respectively.

Conclusions: Based on a reduced incidence of hypoglycaemia and possibility for dose flexibility, GLA-300 is likely to be highly cost effective in economic and disutility presentations of Slovene patients compared to GLA-100 and pharmaco-economically dominant in comparison to DEG-100.
DIABETES/ENDOCRINE DISORDERS – Patient-Reported Outcomes & Patient Preference Studies

PDB45 ADHERENCE IN DIABETES TREATMENT: HOW CAN ACCEPTANCE MEASUREMENT HELP UNDERSTANDING PATIENTS’ CONCERNS AND WORKING ON SOLUTIONS?
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OBJECTIVES: Patients with diabetes are required to take long-term treatments to treat their chronic disease and avoid complications. However lack of adherence is very common and represents major barriers to treatment efficiency. Measuring patient acceptance of their medication-taking behavior. The objectives of this study are to evaluate the level of acceptance to medication in type 1 and type 2 diabetic patients (T1D/T2D) in real life, to identify issues and to define priorities for action. METHODS: Observational, cross-sectional study conducted in Europe using Careany Online Community. Adults ≥ 18 years of age with diabetes were invited to complete an online survey including a validated patient reported outcome measure: the 25-item ACCEptance by the Patients of their Treatment (ACCEPT®). It includes one general acceptance dimension (Acceptance/General) and five multi-item treatment-attribute specific dimensions (Acceptance/Medication Inconvenience, Acceptance/Long-term Treatment, Acceptance/Regimen Constraints, Acceptance/Side effects, Acceptance/Effectiveness) scored from 0-100 (lowest to highest acceptance). Patients were categorized into three groups based on their score: poor (< 60%), moderate (60-75%) or good (≥ 75%).

RESULTS: 83,888 respondents were included in the analysis (73,167 T1D, 10,721 T2D). The mean score was 71.3 (SD 12.5) for all respondents, 67.7 (SD 11.7) for T1D and 74.9 (SD 11.3) for T2D. Acceptance was significantly higher for T2D than T1D (p < 0.0001). For T1D, the most frequently reported issues were forgetfulness (9%), being illiterate (7%), and moderate or severe depression (6%). For T2D, the most frequently reported issues were forgetfulness (12%), being illiterate (13%), and depression (10%).

CONCLUSIONS: Treatment adherence is not satisfactory in diabetes. Diabetic patients treatment acceptance is primarily driven by perceived effectiveness. Long-term treatment is their major concern. These findings give indications about T1D and T2D patients’ priorities and unmet needs.

PDB46 ADHERENCE TO ORAL ANTIDIABETIC MEDICATION IN TYPE 2 DIABETES MELLITUS CLIENTS IN THE VOLTA REGION OF GHANA
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OBJECTIVES: This study sought to assess adherence to oral anti-diabetes mellitus medications and associated factors among clients reporting to four randomly selected Hospitals in the Volta region of Ghana. METHODS: A cross-sectional study was conducted among clients with type 2 diabetes mellitus who attended the Diabetes Clinic of four randomly selected Hospitals in the Volta region of Ghana between the months of January 2015 to March 2015. Adherence prevalence was assessed using the eight-item Morisky scale. Adherence scale between 0 (completely nonadherent) and 8 (completely adherent) was used. Before testing, a pre-test was conducted using a structure questionnaire to, among other things, determine the commonest self-reported reason of non-adherence. Data generated were analyzed using SPSS version 21. Cross-tabulation analysis was performed among the adherence levels and the indicators generated from the questionnaire. Logistic regression was further performed between adherence level and the statistically significant variables. RESULTS: Adherence prevalence rate to oral anti-diabetes in Type 2 Diabetes Mellitus was found to be 47.75%. The odds of adherence was about twice more likely in respondents with fasting blood glucose of 1 – 6mmol/L (OR = 1.9, 95% CI 1.128 – 3.232, p-value 0.002) compared to those having fasting blood glucose of above 10mmol/L, while the odds of adherence among respondents with tertiary education was about 3-fold (OR = 2.889, 95% CI 1.194 – 5.962, p-value 0.004) compared to those with no formal education. The commonest self-reported reason for non-adherence was forgetfulness. CONCLUSIONS: Adherence to oral anti-diabetes in type 2 diabetes mellitus was independent of education levels. The study confirmed that the level of adherence is statistically significant and is associated with factors such as age and level of education.

PDB47 PREVALENCE OF AND BARRIERS TO MEDICATION ADHERENCE AMONG PATIENTS WITH UNCONTROLLED DIABETES MELLITUS IN PRIMARY HEALTHCARE CENTERS IN QATAR: A QUANTITATIVE ANALYSIS
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OBJECTIVES: The prevalence of microvascular and macrovascular complications among patients with diabetes is high. These complications are often associated with poor glycemic control. The objective of this study was to determine the rate of and barriers to medication adherence among patients with uncontrolled diabetes in Qatar. METHODS: A cross-sectional study was conducted among patients with uncontrolled diabetes attending two primary healthcare clinics in Qatar from October 2016 to January 2017. An interviewer-administered questionnaire comprising three sections was utilized in the study: patients’ characteristics, Adherence to Refill and Medications Scale in Diabetes (ARMS-D), and barriers to medication adherence. ARMS-D is a validated instrument that is used to determine the level of medication adherence in patients with diabetes. Descriptive and inferential statistics were used for data analysis. RESULTS: Of 260 individuals included in the analysis (74%) were nonadherent to oral antidiabetic medications (ARMS-D score greater than 1). The majority of barriers to medication adherence were reported by nonadherent patients and forgetfulness was the most commonly reported barrier (90%). Other common barriers were self-medication (75%), challenges in obtaining medication (56%), and medication price (56%). Patients who were reported as nonadherent patients were younger than 65 years old and those who were illiterate. CONCLUSIONS: The high rate of medication non-adherence observed among patients with uncontrolled diabetes in primary healthcare setting calls for urgent interventions. However, in-depth understanding of barriers to medication adherence often requires qualitative research approach as these barriers are very complex and multifactorial in nature.

PDB48 USING DIABETES SELF-MANAGEMENT QUESTIONNAIRE (DSMQ) TO ASSESS DIABETES SELF-CARE ACTIVITIES FOR DIABETES PATIENTS IN KING FAHAD UNIVERSITY HOSPITAL - SAUDI ARABIA
Al shawabni DM
Iman Abdull Rahman bin Faisal University, Dammam, Saudi Arabia

OBJECTIVES: The study main objectives was to assess the diabetes self-care associated with glycemic control. METHODS: we used 16 item questionnaire that has been developed by Schmitt et al to assess self-care activities associated with glycemic control in King Fahad University hospital in Dammam. This instrument contains four sub scales, ‘Glucose Management’ (GM), ‘Dietary Control’ (DC), ‘Physical Activity’ (PA), and ‘Health-Care Use’ (HU), as well as a ‘Sum Scale’ (SS). We assessed socio-demographic and medical characteristics using survey and medical record data, including age, sex, self-reported race/ethnicity, educational attainment. The overall self-care was assessed using DSMQ a validated questionnaire. Among 30 eligible respondents, 56% were aged above 60, 32% were aged between 41 and 60 years. 60% were women and 40% were men. 28% with intermediate education, 20% graduated from high school and working status was employed. The relationship of adherence in diatey control at 0.01, 0.03, 0.012 respectively. obesity statistically correlated with using health care use and the insulin therapy show significant relationship with glucrete control. A40%. but there was no relationship with the dietary control which is not used to determine the level of medication adherence in patients with diabetes. Descriptive and inferential statistics were used for data analysis. RESULTS: Of 260 individuals included in the analysis (74%) were nonadherent to oral antidiabetic medications (ARMS-D score greater than 1). The majority of barriers to medication adherence were reported by nonadherent patients and forgetfulness was the most commonly reported barrier (90%). Other common barriers were self-medication (75%), challenges in obtaining medication (56%), and medication price (56%). Patients who were reported as nonadherent patients were younger than 65 years old and those who were illiterate. CONCLUSIONS: The high rate of medication non-adherence observed among patients with uncontrolled diabetes in primary healthcare setting calls for urgent interventions. However, in-depth understanding of barriers to medication adherence often requires qualitative research approach as these barriers are very complex and multifactorial in nature.
between insulin therapy and glucose management. Thus, patients who took insulin alone or insulin combined with oral medications had more glucose management than patients who took only oral medications. Only obesity was affecting health care use, it indicates that obese patients were less likely to use health care services. Patients who exercise 3 times or more a week associated with more physical activity than those who exercise once or less a week.

**PD84**

**IMPACT OF A COMMUNITY PHARMACY-BASED INFORMATION PROGRAM ON TYPE 2 DIABETIC PATIENTS' ADHERENCE: IPHODIA, A CLUSTER RANDOMIZED STUDY VS USUAL PRACTICE - 12 MONTH FINAL RESULTS**

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**OBJECTIVES:** Despite significant improvements in the follow up of type 2 diabetes patients, Intent's latest results showed an insufficient level-of-control with 43% of patients characterized as non-adherent. Pharmacist could play a beneficial role in patient adherence given their expertise and accessibility. The IPHODIA study aims to assess the impact on adherence when community pharmacists provide specific information to patients. **METHODS:** The intervention consists in three different 30-minute-long interviews over a period of 6 months. Two groups of pharmacists have been randomized; one group providing patient interviews in addition to the usual drug delivery, the other group delivering drugs in the usual setting. **RESULTS:** The intervention group had a mean adherence rate of 7.5% in contrast to 7.3% versus the group without pharmacy interview. **CONCLUSIONS:** Adherence levels to medication taking in the groups were 42.7% - 94.7% respectively (P = 0.001). In diabetes management, patient education and counseling have become key tools in achieving both glycaemic and blood pressure control. Key words: Diabetes, education, counseling, elderly, patients.

**PD85**

**HEALTH STATE UTILITIES IN INDIVIDUES WITH GOUTER, HYPOHYPOPHOOTHYMID AND GRAVES’ DISEASE AS AN EXAMPLE FOR THYROID DISORDERS – A SYSTEMATIC REVIEW**

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**OBJECTIVES:** A wide spectrum of illnesses due to iodine deficiency is termed as iodine deficiency disorders (IDD). IDD and related consequences negatively affect quality of life. Our aim was to identify utilities, reflecting health-related quality of life, for different age and treatment groups of patients with thyroid disorders. **METHODS:** We conducted a comprehensive systematic literature search in Medline and Tuft's CEA Registry to identify relevant published literature. Studies were required to report on health-related utilities in adults with hypothyroidism, hyperthyroidism, hypothyroid goiter, or Graves’ disease. Results were summarized in evidence tables including information about population, original source, and methods for utility estimation. **RESULTS:** Overall, we found 944 studies. After title/abstract and full-text screening, eleven studies were included. We found utilities for different ages, treatments, treatment sequels. Utilities for hypothyroidism were dependent on population and therapeutic options. The range was 0.467 (unscreened newborns) to 1 (treated subclinical hypothyroidism in adults). Utilities for hyperthyroidism dependent on treatment. The range was 0.467 (without treatment) to 0.98 (euthyroid with anti-thyroid drugs). For goiter, we found utilities for the condition after thyrotoyctomy (0.81). Utilities for Graves' disease ranged from 0.85 (screened pregnant woman) to 0.88 (Graves’ disease). Hyperthyroidism (PDC = 0.84) and hypothyroidism (PDC = 0.84) had the highest utilities. For Graves' disease, utilities were derived from literature as well as from expert opinions. Conclusion: This study conducted a comprehensive review of literature for utilities for different age and treatment groups of patients with thyroid disorders.

**PD86**

**QUALITY OF LIFE AMONG PATIENTS WITH DIABETES MELLITUS AT KING ABDUZLIZI UNIVERSITY HOSPITAL IN SAUDI ARABIA**

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**OBJECTIVES:** The purpose of this study was to assess the health-related quality of life among a group of people with diabetes at King Abdulaziz University Hospital in Jeddah, Saudi Arabia in 2017. **METHODS:** A quantitative, observational, cross-sectional study was conducted on patients with type 2 diabetes, aged 18 years and older selected conveniently from outpatient clinic visitors at King Abdulaziz University Hospital, Jeddah, Saudi Arabia from February to March 2017. The HRQoL was assessed using EQ-5D Arabic version, which includes patient’s perception of health states associated with thyroid disorders. The range was 0.467 (without treatment) to 0.98 (euthyroid with anti-thyroid drugs). For goiter, we found utilities for the condition after thyrotoyctomy (0.81). Utilities for Graves’ disease ranged from 0.85 (screened pregnant woman) to 0.88 (Graves’ disease). Hyperthyroidism (PDC = 0.84) and hypothyroidism (PDC = 0.84) had the highest utilities. For Graves' disease, utilities were derived from literature as well as from expert opinions. Conclusion: This study conducted a comprehensive review of literature for utilities for different age and treatment groups of patients with thyroid disorders. However, there is a lack of robust estimates on utility decrements. Future studies should incorporate the collection of utilities for goiter in different treatment sequels. A series of descriptive and inferential statistics were carried on using SPSS version 14. **RESULTS:** 130 participants were included in this study, of which seventy-one (55%) participants were male and sixty-nine (45%) were female. The mean age was 52.4 years. The patients had been educated by the endocrinology clinic of Olabisi Onabanjo University Teaching Hospital, Sagamu, Ogun State, Nigeria. **METHODS:** This was a 6 month randomized controlled study involving 150 consenting elderly type 2 diabetic patients. Patients who met the inclusion criteria were randomly assigned into both control and intervention groups (75 patients each). The 75 patients on our intervention group were educated by the healthcare provider, their control group, as mean fasting blood sugar were 162.2 ± 69.3 and 159.9 ± 57.2 (P = 0.0825) and mean systolic blood pressure of 144.7 ± 23.8 and 145.5±18.6 (P = 0.819) respectively. The intervention group had mean fasting blood sugar of 156.7 ± 50.3 and 131.8 ± 40.4 (P < 0.001) and mean systolic blood pressure of 146.6 ± 11.9 and 133.8 ± 18.5 (P < 0.001) respectively. Adherence levels to medication taking in the groups were 42.7% - 94.7% respectively (P = 0.001). **CONCLUSIONS:** In diabetes management, patient education and counseling have become key tools in achieving both glycaemic and blood pressure control. Key words: Diabetes, education, counseling, elderly, patients.
self-management education and physical activities programs will provide benefits and affect significantly on type 2 diabetes patients in Saudi Arabia.

PDB54
EFFECT OF GASTROINTESTINAL ADVERSE EVENTS ON TREATMENT SATISFACTION IN PATIENTS WITH TYPE 2 DIABETES TREATED WITH DULAGLU'TIDE vs INSULIN GLARGINE

OBJECTIVES: To determine patients' preferences for dulaglutide and insulin glargine profiles in the United Kingdom: A discrete choice experiment (DCE). The DCE examined 7 treatment attributes each described by 2 levels: frequency of gastrointestinal AEs (GI AEs), frequency of hypoglycemia, frequency of weight loss, change in body weight, change in blood glucose, ease of injection, and flexibility. Attribute selection was informed by qualitative interviews with people with T2DM treated with oral antidiabetic agents and self-reporting. The DCE was conducted in 2016 with 2016 US/EU diabetes specialists and primary care physicians. The DCE was a mixed logit model used to determine the relative importance of the attributes and evaluate the preference curves. The results will help^{1} treatment providers understand the clinical and non-clinical factors influencing preferences of people with T2DM, naıve to injectable diabetes medications, when considering next treatment options.

PDB57
MAPPING ACRQOL SCORING TO EQ-SD TO OBTAIN UTILITY VALUES FOR PATIENTS WITH ACROMEGALY

OBJECTIVES: To estimate a preference-based single index for disease specific instrument (ACRQOL) by mapping it onto the EQ-SD for future economic evaluations. METHODS: 245 acromegaly patients with ACRQOL scores were obtained from three previously published European studies. Across these studies, mean age was 50-60 years, proportion male was 36-59%. At overall level the preference-based single index (ACRQOL) was not significantly different to EQ-SD, as judged by paired t-tests (p<0.001). Similarly the overall utility obtained from the original ACRQOL sample was not significantly different to the EQ-SD sample, as judged by paired t-tests (p<0.001). Therefore the EQ-SD was a generalized regression model that included the Physical Dimension summary score and categories from questions 9 and 14 as independent variables (Adj. R²=0.356). Future economic evaluations may use these EQ-SD values for acromegaly patients.

PDB58
CHARACTERISING THE RELATIVE IMPACT OF ESTABLISHED CARDIOVASCULAR DISEASE AND CHRONIC KIDNEY DISEASE ON QUALITY OF LIFE IN DIABETES PATIENTS

OBJECTIVES: Common complications for patients with type 2 diabetes mellitus (T2DM) include cardiovascular disease (CVD) and chronic kidney disease (CKD) both of which can present with comorbidity. This research explores the impact of these conditions on the QoL of T2DM patients. METHODS: Data was drawn from 2016 US/EU Diabetes Adelphi Disease Specific Programme. Differences were observed between patients with neither, one or both conditions when managing T2DM patients.

PDB60
ECONOMIC AND HUMANISTIC BURDEN OF ILLNESS AMONG DIABETES PATIENTS EXPERIENCING TREATMENT INERTIA

OBJECTIVES: To compare patients with neither CKD/CVM, patients with one condition, and patients with both conditions when managing T2DM patients.

Effects of logit models and used to calculate relative importance (RI) values for each attribute. The DCE was conducted in 2016 US/EU diabetes specialists and primary care physicians. The DCE was a mixed logit model used to determine the relative importance of the attributes and evaluate the preference curves. The results will help^{1} treatment providers understand the clinical and non-clinical factors influencing preferences of people with T2DM, naıve to injectable diabetes medications, when considering next treatment options.
OBJECTIVES: A recent publication exploring real-world treatment patterns between 2006-2013 found that in type 2 diabetes, if HbA1c is not improved post-2008, one reason being attributable to treatment inertia. This analysis aims to identify the humanistic and economic burden amongst this patient type compared to patients receiving more active management. METHODS: Data were drawn from the 2013 American Diabetes Association’s report on diabetes-related problems and an expense of approximately $1,960 for complete DFU therapy. Amongst Indian diabetics, treatment cost of neuropathic ulcers (ambulatory care), infected neuropathic foot (ambulatory care), advanced diabetic foot (salvage, limb amputation, salvage followed by amputation), and neurosensory foot (fanyoss) was reported as $56, $108, $960, $2,439, respectively. 25% of DFUs require amputation once, suffer another amputation within next 2 years. CONCLUSIONS: DFU specific clinical guidelines and cost-effective therapies need to be developed urgently to halt this catastrophic pandemic.

PDB63 TREATMENT PATTERNS AMONG NEWLY DIAGNOSED DIABETES PATIENTS IN DUBAI
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OBJECTIVES: American Diabetes Association’s recommendations related to pharmacologic therapy in type II diabetes mellitus advises metformin monotherapy as the preferred initial therapy, while use of dual and triple therapy is suggested in hyperglycaemic patients. The objective of this systematic review is to understand the treatment patterns among newly diagnosed T2DM patients in Dubai and make broad-level comparisons against the ADA’s recommendations.

RESULTS: A retrospective database analysis was conducted using Dubai Claims Database. All patients with a T2DM diagnosis were identified during July 2014 to March 2016, and their first diagnosis was assigned as the index diagnosis. Patients with a diabetes diagnosis or use of anti-diabetic therapy (ADT) during prior six months were excluded. Patient’s claims were analyzed for 12 months before and 12 months after the index diagnosis. RESULTS: The final study cohort included 25,320 patients, of which 63.1% did not receive any ADT during 12 months follow-up. For the remaining 36.9% patients, the ADT received the first ADT on index diagnosis date, while the mean time to ADT for the remaining 45.4% patients was 66.8 days. The most common first ADT was metformin received by 17.9% patients, of which 9.9% patients received it in combination with other drugs. The proportion of patients having their first ADT as combination therapy or insulin was 50.3% and 4.3%, respectively. Mean number of oral prescriptions during follow-up was 2.9. The longest most recent HbA1c value before initiating monotherapy, combination therapy and insulin-based therapy was 7.0, 8.4 and 9.1, respectively.

CONCLUSIONS: While most patients received metformin as their first ADT, majority received it in combination with DM (all type). Also, a large proportion of patients did not receive any ADT during follow-up, which needs to be further studied.

PDB64 ADEQUACY OF GLYCEMIC CONTROL IN GREEK PATIENTS WITH TYPE 2 DIABETES MELLITUS TREATED WITH METFORMIN MONOTHERAPY AT THE MAXIMUM TOLERATED DOSE: THE RELOAD STUDY
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OBJECTIVES: To assess adequacy of glycaemic control in Greek patients with type 2 diabetes mellitus (T2DM) treated with metformin at the maximum tolerated dose of metformin. METHODS: RELOAD was a multi-center, retrospective study in patients with T2DM treated with metformin only. Data were collected from the medical files of patients with T2DM diagnosed at an age ≥40 years who received metformin therapy at maximum tolerated doses for ≥24 months during the 5 years prior to enrolment. Demographic and clinical data were collected at metformin initiation, 9, 17-20 and 24 months. Primary endpoints were the percentage of patients achieving metabolic compensation (MC), reduction of HbA1c values from ≥6.5% at baseline to ≤5.5% and the mean HbA1c reduction rate after 9 months of metformin treatment.

RESULTS: 316 patients with T2DM were enrolled in the study. Baseline (means) data were: 65.8 ± 10.4 years, 74.8 ± 15.6 kg, and HbA1c 7.3 ± 1.1%. 78% (247/316) of patients had HbA1c ≥6.5%. Following 9 months of metformin treatment, 36.4% (90/247) of patients achieved MC, with a mean HbA1c reduction of 1.3% [95% confidence interval (CI): 1.57 - 0.95, mean]; 1.56 ± S.D. mg. Mean time of exposure to HbA1c ≥6.5% for the overall population was 24 ± 15.0 months. The percentage of patients achieving HbA1c <6.5% was significantly more compared to patients ≥6.5% (5.6% vs 2.9%) and ≥6.5% vs <6.5% (20.1% vs 10.0%). CONCLUSIONS: In this real-world study, approximately half of Greek T2DM patients treated with maximum tolerated metformin doses had an HbA1c >6.5% for a substantial period of time, indicating clinical inertia and an increased risk for diabetic complications.
OBJECTIVES: Diabetes mellitus type 2 (T2DM) is an established risk factor for cardiovascular-related events and chronic kidney failure. Prevalence of T2DM is expected to be as high as 8% in the year 2025. This will result in significant clinical impact and increases in healthcare expenditures, highlighting the need for well-informed reimbursement decisions. However, availability and consistent use of cost-estimates are required to aim to systematise the analysis of T2DM-related major cardiovascular and nephropathic events in the Netherlands, published in the last decade. METHODS: A systematic literature review was conducted to identify all available publications for Dutch costs for clinical events commonly found in T2DM patients. The PubMed database was searched for studies covering T2DM-related events using inclusion criteria. Information extracted from publications included costs, source of costs, study population, and costing perspective. RESULTS: A total of 419 publications were included for T2DM-related clinical events were identified, and arranged into tables. Twenty cost estimates were reported for T2DM-related clinical events. Twenty-five estimates for stroke were found. TIA and HF had two and eight estimates, respectively. Eleven cost estimates were found for renal failure-related events. Finally, eight cost estimates were reported for revascularisation. CONCLUSIONS: Many of studies covered MI and stroke, while only a few covered T2DM-related events. The most common clinical events were found to be related to renal failure, most notably ESRD and dialysis. MI and TIA were found to be the least expensive in general. This systematic review showed that there is a substantial variation in reported cost estimates for the six major complications associated with T2DM. Costing of clinical events should be improved and preferably standardised, if accurate and consistent results in economic models are desired.

PDB66
IMPLEMENTATION OF NICE GUIDANCE FOR THE TREATMENT OF TYPE 2 DIABETES
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OBJECTIVES: To assess implementation of National Institute for Health and Care Excellence (NICE) guidance for type 2 diabetes by comparing drugs prescribed for patients with a glycated haemoglobin, HbA1c, of ≤59 mmol/mol and patients with an HbA1c of ≥64 mmol/mol. METHODS: An analysis of drug prescribing for T2DM patients was conducted using The Health Improvement Network database (THIN) for January-December 2016. RESULTS: NICE guidance recommends a treatment target for HbA1c of 58 mmol/mol (7%) above which drug treatment should be intensified; on first intensification dual therapy is recommended with metformin and a dipeptidyl peptidase-4 inhibitor (DPP-4-I), pioglitazone, a sulphonylurea (SU) or a sodium/glucose cotransporter 2 inhibitor (SGLT-2), on second intensification triple therapy is recommended and the introduction of an insulin based therapy. The 2016/17 Quality and Outcomes Framework includes targets for HbA1c of 59, 64 and 75 mmol/mol. Of 15,550 patients in the THIN database with a recorded HbA1c level, 11,296 (72.6%) were ≤59 mmol/mol and 4,254 (27.4%) ≥60 mmol/mol. Of the ≤59 mmol/mol group 58% were taking metformin, 13% a sulphonylurea, 7% insulin, 5% DPP-4 inhibitors, <2% SGLT-2 inhibitors and <1% pioglitazone. Over 90% of uncontrolled patients (HbA1c ≥60 mmol/mol) were taking metformin, 6% a sulphonylurea, 27% insulin, 5% DPP-4 inhibitors and 9% pioglitazone. No more than 66% of uncontrolled patients are taking intensified therapy as recommended by NICE and 27% are taking insulin.
CONCLUSIONS: Uncontrolled type 2 diabetes is seen in 27.4% of patients recorded in the THIN database, lower than nationally reported estimates. Up to 34% of uncontrolled patients with type 2 diabetes may not be receiving treatment according to NICE guidance.

PDB68
ANALYSIS OF ORAL HYPOGLYCEMIC DRUGS CONSUMPTION IN UKRAINE IN 2015
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OBJECTIVES: Diabetes is a global medical and social problem in the world, influence the quality and duration of patients life. According to official statistics in Ukraine in 2015 the number of patients with diabetes covered 2.81% of the total number of residents. For every registered patient there are 2.5 patients with unidentified diabetes. Based on these data, we can assume that in Ukraine there are approximately 3 million patients with diabetes (8.45% of population), of which 90% (2.24 million) are patients with type 2 diabetes (7.6% of population). The main method of treatment of patients with type 2 diabetes is the use of oral hypoglycemic drugs (OHDS). Most OHDS have high clinical efficacy, their use increases the duration and quality of patients life. The objective - determining the consumption of the OHDS in Ukraine in 2015. METHODS: Calculation of OHDS consumption was carried out on the basis of the ATC/DDD methodology.RESULTS: In Ukraine in 2015 total consumption of OHDS was 11.14 DDDs. This means that 1.1% of the population of Ukraine from the total number of residents received 1 DDD of oral hypoglycemic drugs daily. Taking into account the results of Mordhorst, the consumption of OHDS in Ukraine should cover 2.81% of the population, but real consumption of OHDS 2.6 times less than is necessary for all officially registered patients. When recalculating the consumption of OHDS, taking into account the patients with type 2 diabetes in Ukraine (7.6% of the population), their consumption was 6.9 times less than the required amount. Thus, the calculated indicator of the consumption of OHDS in Ukraine is 2.6 to 6.9 times lower than necessary for the treatment of patients with diabetes.
CONCLUSIONS: The incidence of diabetes in Ukraine in 2015 was significantly higher than the consumption of OHDS, which indicates an insufficient level of OHDS consumption.
based on DCCT data. The increased hypoglycemia (low HbA1c) scenario improved quality of adjusted life expectancy relative to the lower hypoglycemia rate scenario, yielding an improvement of 0.30 quality-adjusted life years, despite an increase in cumulative incidence of hypoglycemia-related mortality from 0.78% to 0.91%. Average complication costs decreased by GBP 928 from GBP 23,632 to GBP 22,703 with improved glycemic control. CONCLUSIONS: A meta-analysis of the randomised controlled trials that compared different insulin regimens for diabetes mellitus demonstrated the utility of computer simulation models such as the PRIME Diabetes Model in evaluating treatment guidelines. The analysis showed that the trade-offs of increased hypoglycemia and hypoglycemia-related mortality are more off-set by improvements in quality of life and reductions in cost at the population level.

PD872 THE IMPACT OF BIOSIMILAR LAUNCH ON MOLECULE PRICE AND PHARMACEUTICAL EXPENSE: THE CASE OF THE INSULIN GLARGINE IN ITALY Tettamanti A, Gioni L, Tucci C, Quintarelli M, Milano, ITA OBJECTIVES: Italian Medicines Agency (AIFA) sets the ex-factory price of hospital drug and negotiates discounts for the purchases to public institutions. Hospital and local health authority (ASL) are allowed to purchase drugs with a discount on the ex-factory price, defined as “tender discount.” This entails an opportunity of saving for the healthcare system, especially for the high and chronic ailments. The aim of this research was to analyze the tenders for insulin glargine in Italy following the biosimilar introduction. RESULTS: Since February 2016, the biosimilar introduction introduced an increase of the originator tender discount from 11% to 22% compared to the ex-factory price. The biosimilar presented a price around 13% lower than the originator, indicating market share increasing at all levels of the Italian market. Conclusions: At regional level different prices were applied, resulting in a high variability of biosimilar adoption. Finally, tender price decreased among other long-acting basal insulins.

PD873 HEALTH ECONOMICS EVIDENCE IN PEER-REVIEWED JOURNALS: INCREASE IN REPORTING OF REAL-WORLD DATA OVER TIME IN TYPE 2 DIABETES Huang Y1,2, Hartog T1, Song Y3, Patterson N4, Van Lier H5, van den Broek R1,2 1Exeter Medical, Amsterdam, The Netherlands, 2Experion Medical, London, UK OBJECTIVES: With the rising need to contain health care costs, health economic (HE) studies are of increasing interest to a variety of audiences. This study analyzed trends over several years in HE information in type 2 diabetes (T2D) being published in peer-reviewed journals. The study was a literature search performed using EMBASE and PubMed, on the published original HE articles in T2D. The inclusion criteria of HE studies was based on definition by ISPOR and the search strategy was derived from previously published research. HE studies included in the search were published between 2008 and 2016. Included studies were reviewed and categorized into research types (economic evaluation, cost analysis, clinical+cost study, other), data sources (trials, real-world data, other), methodological criteria (payer, healthcare provider, patients, societal, other) and journal types (HE, general medicine, disease-specific pharmacy, based on journal scope). Chi-square tests were used to compare the proportion of articles grouped by different categories during 2008-2016. RESULTS: The number of T2D HE studies increased from 63 in 2008 to 176 in 2012 and 199 in 2016. Most studies were economics (58.7%), cost analysis (39.8%) and clinical+cost study (50.8%) in 2008, 2012 and 2016, respectively. In 2008, studies mainly used data from trials (42.9%). This proportion decreased to 17.6% in 2012 and 24.15% in 2016. Meanwhile, real-world data became the main data source in HE studies (2008: 34.9%, 2012: 45.5%, 2016: 46.7%, p<0.001). The perspective of the HE studies did not reveal significant changes during 2008-2016 (p=0.18), with approximately 75% studies adopting a third-party payer’s perspective. HE studies most specifically targeted health economic (HE) evaluations. HE studies presented data on medication costs/policy/policy maker/journal audience outcomes during 2008-2016 (2008: 19.0%, 2012: 41.7%, p<0.001). CONCLUSIONS: During the period 2008-2016, the number of HE publications increased in T2D with a shift from trials to real-world data sources. Our results demonstrate increasing trend of publishing HE information targeting healthcare decision-makers.

PD874 FACTORS AFFECTING POLYPHARMACY IN ELDERLY PATIENTS WITH DIABETES IN GREECE Gekaia M, Latsou D, Markou E, Michou I, Pitielas F, Papafil G, Toska A, Saridi M 11University of Athens, Greece OBJECTIVES: To determine prevalence and factors affecting polypharmacy among elderly diabetic patients in Greece. METHODS: A prospective multi-center cross-sectional study was conducted in 13 hospitals in the Greek Peninsula. Data were collected via personal interviews at the outpatient’s and specialized diabetes units of the public, private and university hospitals. A random sample of 702 patients was selected out of 1,314 patients followed up from March to May 2016. A questionnaire was used based on the EU SIMPATHY experience including questions on patients’ characteristics, medication use and adherence, adverse drug reactions (ADRs) and self-assessment of health status. The criterion for polypharmacy was defined as the concomitant use of 5 or more medications. Descriptive and multiple regression analyses were performed to examine the impact of studied independent variables on polypharmacy. Data analysis was carried out using SPSS and considered the following scenarios as significant: p<0.05.

PD875 ANALYSIS OF THE G-BA DECISION-MAKING CRITERIA ON THE BENEFIT ASSESSMENT OF DIABETES TREATMENTS: IS COST AN INFLUENCING CRITERION? Vollmer A1, Leutloff F2, Pacheco L1 1CfK UK, London, UK, 2CfK, Nürnberg, Germany OBJECTIVES: Since 2011, manufacturers have been required to submit a value dossier for clinical assessment to the Joint Federal Committee (G-Ba). All new medical products, except hospital use only, orphan drugs and medicines with less than €1 million annual sales are assessed. The objective of this research was to explore the reasons why diabetic treatments received a low G-BA assessment score (below 5) and to assess whether the proposed cost of a treatment may be influencing factors in the G-BA assessment. METHODS: All completed G-Ba assessment dossiers for diabetes treatments from January 2011 to May 2017 were reviewed. For treatments scoring below 5 (no additional benefit proven), the key reasons behind the score were explored using the G-BA “Tragende Gründe zum Beschluss” documentation. Furthermore, remaining alternatives to the treatment were assessed and the cost per patient of the new treatment versus the manufacturer selected comparator was assessed for the scope treatments using the G-BA “Beschlusstext”. RESULTS: The main reasons for treatments receiving a low benefit score were due to the lack of additional benefit and/or remaining alternatives to the treatment. The real tender price was statistically calculated after the biosimilar introduction. The real tender price decreased among other long-acting basal insulins.

PD876 EVALUATING THE LONG-TERM IMPACT OF IMPROVING CARE FOR PATIENTS WITH TYPE 2 DIABETES IN CHINA Wang LM1, Ye Q2, Kjærkegaard Nielsen O3, Gadegaard A4, Valentine W5, Hunt B6, Wang LH7 1National Center for Chronic and Non-Communicable Diseases Control and Prevention, China CDC, Beijing, China, 2Novo Nordisk A/S, Bagsværd, Denmark, 3Novo Nordisk A/S, Bagsværd, Denmark, 4Ossian Health Economics and Communications GmbH, Basel, Switzerland, 5Ossian Health Economics and Communications, Ltd, 6DiabCare International, Boston, MA, USA, 7China CDC OBJECTIVES: The United Nations has set a number of Sustainable Development Goals (SDGs), including reducing premature mortality due to non-communicable diseases (NCDs) by one-third by 2030. Diabetes is associated with significant clinical and economic burden in China, and therefore the aim of the present analysis was to examine the health economic impact of improving care for patients with diabetes in China, and how this relates to meeting the SDG. METHODS: Long-term outcomes were projected for patients with type 2 diabetes meeting treatment targets recommended by the Chinese Diabetes Society versus remaining at the current standard of care. Baseline cohort characteristics were taken from patients with diabetes in the China NCD Surveillance study, supplemented with data from A1C dashboard and DiabeCare. Costs of treating diabetes-related complications were taken from a study conducted in 20 Chinese hospitals and were inflated to 2015 values. Outcomes were discounted at 3% annually where appropriate. RESULTS: Bringing patients to treatment targets was associated with improved survival and undiagnosed life expectancy compared with current standard of care (18.50 versus 18.08 years). Nationally, discounted cost savings of up to CNY 540 billion could be generated as a result of reduced onset of diabetes-related complications if all patients with diabetes achieved treatment targets. Bringing patients to treatment targets reduced premature mortality due to diabetes by 6% compared with current standard of care. Therefore improving care is not sufficient to meet the SDG. In addition to improving care, reductions in the cost of diabetes-related complications are needed to meet the premature mortality target. CONCLUSIONS: Long-term projections suggested that bringing diabetes patients to treatment targets resulted in improved life expectancy and significant cost-savings. Diabetes prevention should form one of the key aims in order to achieve the 2030 SDG premature mortality target in China.

PD877 PATIENT CHARACTERISTICS OF PREMIX INSULIN USERS IN CHINA: AN ANALYSIS OF ELECTRONIC MEDICAL RECORD DATA Han S1, Wang K2, Hou J3, Wang J4, Wu EQ1 1Analysis Group Inc., Beijing, China, 2Lilly Suzhou Pharmaceutical Company Ltd, Shanghai, China, 3Analysis Group Inc., Boston, MA, USA.
OBJECTIVES: Premix insulins (premix), which can be classified as low-mix and mid-mix based on the proportion of prandial and basal insulins, are widely used in China for type 2 diabetes mellitus (T2DM) patients poorly controlled by oral antidiabetic drugs. This study aimed to assess patient characteristics of premix users in China.

METHODS: A large electronic medical record database from four tertiary hospitals in seven cities (2009-2015) was used. Adult-T2DM patients who used premix prescription were selected and classified into mid-mix and low-mix groups based on their first premix received in the database. The index date was the first premix prescription date. Premixed insulins and evaluation of diabetes control and patient characteristics were recorded. The association between premix type and glycemic control was assessed using logistic regression models.

RESULTS: Among the total 4,987,810 insulin users, 740,404 were selected for analysis. Mid-mix insulins used more frequently than low-mix insulins (54%, 36% vs. 46%, 64%) in the total observation period, and the proportion of mid-mix use increased significantly in recent years (2010-2012: 4% vs. 2013-2015: 12%, p<0.0001). Age and gender were comparable among mid-mix vs low-mix patients (53.9% vs 56.1% males; 18.2% vs 17.7% 35-44 years of age; all p<0.0001), and comparable baseline HbA1c (7.8% vs 7.2% vs 8.7% vs 7.3%, p=0.0796). The mid-mix group had lower proportions of diabetes nephropathy and diabetic nephropathy/diabetic peripheral circulatory disorders, a higher incidence of dyslipidemia during the 12-month baseline period (16.6% vs 33.9%, 17.0% vs 37.9%, 18.4% vs 10.3%, all p<0.0001), and comparable baseline BMI (25.9 vs 25.4, 25.9 vs 25.4, 26.4 vs 26.0, all p=0.0001).

CONCLUSIONS: Mid-mix was less prescribed with an increasing trend. Mid-mix users started with a lower dose and had lower rates of concomitant non-insulin antidiabetics use and fewer baseline visits.

URINARY/KIDNEY DISORDERS – Clinical Outcomes Studies

PUK1

A COMPARATIVE STUDY ON THE EFFECTS OF VAREE VIDARYADI KASHAYAM AND BRIHATHYADI KASHAYAM IN LOWER URINARY TRACT INFECTION

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OBJECTIVES: To evaluate the clinical effectiveness of Varee Vidaryadi Kashayam and Brihathyadi Kashayam in Lower Urinary Tract Infection. METHODS: A randomized single blind clinical study with pretest and posttest design in 3 groups’ standard and trails were adopted, where the patients were given treatment with specific duration and evaluation of direct costs involved in antibiotic therapy in renal impair -ment. 

RESULTS: 348 patients were enrolled in the study out of which 27 were dropped out. Routine hematological, Bio-chemical, urine analysis and evaluation of direct costs involved in antibiotic therapy in renal impair -ment.

METHOds:

A prospective study was conducted on in-patients in the nephrol-

OBJECTIVES: To assess the impact of dose appropriateness on clinical outcome and evaluation of direct costs involved in antibiotic therapy in renal impair -ment.

RESULTS: A prospective study was conducted on in-patients in the nephrol-

METHOds:

A literature search using electronic databases includ-

OBJECTIVES: To determine the role of corticosteroids in the management of urolithi-

METHODS: A literature search using electronic databases including PubMed, Medline, Google Scholar, and Science Direct was undertaken. An initial limited search of MEDLINE/Pubmed was conducted following medical subject head-

RESULTS: We identified 1261 records. By excluding duplicates, irrelevant titles, and abstracts screening, final review included six articles. The studies included were conducted in four countries which published between 2000 and 2016. All studies sampled patients with ureteral stones. Corticosteroids agents used were (Deflazacort, Methylprednisolone, and Prednisolone), each of them was used as monotherapy or in combination with medical expulsive therapy. Retrieved studies achieved their objectives by looking for stone expulsion rates and stone expulsion time, among other outcome measures.

CONCLUSIONS: Corticosteroids might improve the action of medical expulsive drugs when combined together for the treatment of ureterolithiasis. Corticosteroids reduced the time of the resistant passage was statistically significant in most studies. Future prospective randomized controlled trials are needed to determine the corticosteroids actual role in the management of urinary tract stones, and if their combination is worth it.

PUK4

PATTERNS OF ESTIMATED GLOMERULAR FILTRATION RATE AND ALBUMINURIA IN RELATION TO PROGRESSION TO SERIOUS OUTCOMES: HOSPITALIZATION FOR INFECTION, MAJOR ADVERSE CARDIOVASCULAR EVENTS AND RENAl FAILURE

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OBJECTIVES: The purpose of this retrospective, observational study was to evaluate the association between two key measures of kidney disease: estimated glomerular filtration rate (eGFR) and albuminuria.

METHOds:

Data were extracted from routine UK primary care and linked hospital data. Patients with a record of chronic kidney disease (CKD) were identified and their eGFR and albuminuria records classified, respectively, as G1 (normal/high) to G5 (end stage) and A1 (normal/mild) to A3 (severely increased) in accordance with international guidelines. Time-dependent Cox proportional hazard models were used to estimate risk and account for potentially confounding factors, incorporating eGFR and albuminuria staging, diabetes status, age, gender, prior comorbid events, smoking status, BMI, and prior antihypertensive therapy with ACE inhibitors or angiotensin receptor blockers (ARBs). eGFR category G2 (mildly decreased eGFR) and A1 were used as references. Outcomes of interest were hospitalization for infection, and hospitalization for major adverse cardiovascular event (MACE; myocardial infarction or stroke).

RESULTS: We identified 106,419 patients with a record of CKD. For kidney failure, the adjusted hazard ratio (aHR) was 1.28, 1.06, 2.68, 15.01, and 114.14 for G1, G3a, G3b, G4, and G5, respectively, and 1.69, 2.52, and 3.56 for A2, A2/3, and A3, respectively. For MACE, the aHR was 1.40, 1.05, 1.28, 1.52, and 2.22, respectively.

CONCLUSIONS: Albuminuria was significantly associated with increased risk of hospitalization for infection, and hospitalization for major adverse cardiovascular event (MACE; myocardial infarction or stroke). eGFR categorization was significantly associated with increased risk of hospitalization for infection, and hospitalization for major adverse cardiovascular event (MACE; myocardial infarction or stroke). Albuminuria was significantly associated with increased risk of hospitalization for infection, and hospitalization for major adverse cardiovascular event (MACE; myocardial infarction or stroke).

URINARY/KIDNEY DISORDERS – Cost Studies

PUK5

PHARMACOECONOMIC ANALYSIS OF USING SOLIFENACIN AND MODIFIED-RELEASE TAMSULOSIN FIXED DOSE COMBINATION FOR TREATMENT OF STORAGE SYMPTOMS ASSOCIATED WITH BENIGN PROSTATIC HYPERPLASIA

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OBJECTIVES: Approximately 1 million men in Russia suffer from storage symptoms associated with benign prostatic hyperplasia (BPH). Most of them are eligible for α-blockers monotherapy, but approximately 250,000 men have insufficient response to it. Modern guidelines suggest treating them with combination of α-blockers and muscarinic receptor antagonists that are available as free or fixed-dose combination (FDC). The aim of the current study was the budget impact analysis of using FDC for treatment of patients with storage symptoms associated with BPH, who do not respond well to α-blockers monotherapy in Russia.

METHODS: We considered three therapy scenarios: 1) FDC of solifenacin 6 mg + tamsulosin 0.4 mg modified-release tablets; 2) free combination of solifenacin (5 mg) and tamsulosin (0.4 mg modified-release capsules; 3) free combination of solifenacin (5 mg) and tamsulosin (0.4 mg prolonged-release tablets).

We employed 1-year
Markov model of storage symptoms associated with BH4, as proposed in Nazir et al (2015). Drug, GP visits and prostate resection costs were considered. RESULTS: 35,400 out of 250,000 men suffering from storage symptoms associated with BH4 are eligible for government reimbursement. FDC drug was cost saving, as the annual cost was $384 per patient, which is $35 less than the free combination involving MRC and $195 less when compared to the combination involving FDC. A total cost of using of the FDC drug was $96 million or $9 million less than free combination with MRC $49 million less than free combination with FRT. Government reimbursement costs for FDC were $7 million lower than for MRC ($7 million less when using free combination with FRT).

CONCLUSIONS: Using the FDC drug for treatment of patients with storage symptoms associated with BH4 is a cost-saving alternative to the free combination of solifenacin and tamsulosin.

PUK7

THE SITUATION AND IMPORTANCE OF PERINEAL DYSFUNCTION IN RENAL FAILURE DUE TO ECONOMIC ANALYSIS

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OBJECTIVES: Determination of direct and indirect costs and cost effectiveness of dialysis treatments in renal failure. METHODS: In the study, costs are divided into direct costs and indirect costs. Direct costs are defined as costs to the patient and society while direct costs constitute of to the public payer institution, Social Security Institution(SGI). Direct costs are catheter placement cost, laboratory examination list for transplantation, dialysis session costs and drug costs. Indirect costs are loss of workforce, productivity loss, accompanying costs, transportation costs both for patient and carer and benefits. Markov model used for cost-effectiveness analysis in the 60-month period. RESULTS: Direct costs of PD, HD and HHD are per year: 3612.25 TL (10261.43 USD), 3710.81 TL (10906.22 USD), and indirect costs are per year: 8489.94 TL (24428.81 USD), 8812.94 TL (26076.89 USD), 11712.11 TL (34672.98 USD) respectively. Total costs of PD, HD and HHD are 60,024,796 TL, 60,476,767 TL, 51,559,044 TL for HD and total QALY for the same period was again calculated as 2.361852, 2.891736 and 3.663486 respectively. Costs per QALY is 58,948,05 TL (16764.60 USD) for HD, 63,985.14 TL (18117.60 USD) for PD and 54,767,81 TL (15559.04 USD) for HHD. CONCLUSIONS: According to ICER analysis, the most cost effective method was found to be HD. According to HD, PD was found as the second cost effective method with 8646,91 TL (2405,94 USD) per QALY of offering ICER. According to PD, HHD was found to be the third cost effective method of ICER-offering with 20229,76 TL (5747,09 USD) per QALY.

PUK7

COMPARISON OF POST-CREATION PROCEDURES AND RELATED COSTS BETWEEN TRADITIONAL SURGICAL VERSUS A NEW ENDOVASCULAR APPROACH TREATING AN ARTERIOVENOUS FISTULA: A USRSID COMPARISON

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OBJECTIVES: For hematopoietic patients, it is exceedingly important to consider two or more additional procedures to facilitate maturation and maintain functionality after the initial arteriovenous fistula (AVF) creation. A new endovascular method to create an AVF using percutaneous techniques with radiofrequency energy, instead of an open procedure, has been developed (endoAVF). This study used administrative data from the United States Renal Data System (USRDS) to assess the difference in AVF post-creation maintenance and estimated associated costs between patients receiving a traditional surgical AVF (SAVF) and an endoAVF. METHODS: USRDS files were abstracted to determine post-creation procedure rates and associated costs for SAVF created from 2011 to 2013. Medicare enrollment within the USRDS during the 6 months prior to and after the AVF creation was required. Patients’ follow-up inpatient, outpatient, and physician claims were used to identify post-creation procedures and estimate average procedure costs using Medicare fee schedule provider costs. Comparative procedural information on endoAVF patients was obtained from Novel Endovascular Access Trial (NEAT). Sixty Medicare patients from the USRDS database were matched to 60 NEAT patients using one-to-one propensity score (PS) matching based on demographic and clinical characteristics. RESULTS: From 103,420 USRSID SAVF patients, 60 SAVF patients were successfully matched to endoAVF patients (PS overlap 99.6%). The total post-creation procedural event rate was 0.59 per patient-year for endoAVF patients compared to 5.59 per patient-year in the matched SAVF cohort (p<0.05). The endoAVF cohort had significantly lower event rates than the SAVF cohort for the following procedures, p<0.05: angioplasty, thrombectomy, revision, catheter placement, arteriovenous graft creation, new SAVF, distal revascularization and internal ligature, embolization, stent placement and vascular access-related infection. Average cost per patient-year associated with endoAVF and SAVF was $123,123.55 and $7,921. The average annual cost of patients under dialysis was $78,675,229 yen, 76,902,293 yen, and 21,140,589 yen for patients experienced ≤53%, ≤53–<30%, and ≤30–<5% change in eGFR respectively if the patients do not experience the eGFR reduction, expected total cost during lifetime per patient was 2,861,213 yen, 42,919,151 yen, and 8,792,078 yen, then the expected total cost reduction for patients of each category were 50,083,17 y, 33,981,14 y, and 12,348,511 y. Therefore, the weighted average cost reduction of patients experienced ≤53%, ≤53–<30%, and ≤30–<50% change in eGFR was 18,831,423 yen.

CONCLUSIONS: Our results demonstrate significant economic impact if the eGFR declines can be prevented in time.

PUK10

ESTIMATING THE ECONOMIC BENEFIT OF TREATMENT WITH ALPHA-BLOCKER PLUS ANTUMUCARINIC AS A FIXED-DOSE COMBINATION (FDC) TABLET VERSUS CONCOMITANT COMBINATION THERAPY (CCT) IN MEN WITH LOWER URINARY TRACT SYMPTOMS (LUTS) ASSOCIATED WITH BENIGN PROSTATIC HYPERPLASIA (BPH)

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OBJECTIVES: European guidelines recommend combination therapy with an alpha-blocker plus antimuscarinic in men with LUTS/BPH and residual storage symptoms after monotherapy treatment with either drug. Using predominantly real-world evidence, this study estimated the cost of treating men with LUTS/BPH with alpha-blocker plus antimuscarinic therapy in men as a FDC tablet or as CCT in the Netherlands from a societal perspective. METHODS: A Markov model with monthly cycles and 1-year time horizon was developed. Men with LUTS/BPH (n=100) receive daily treatment with FDC solifenacin 6mg plus TOCAS 0.4 mg or CCT alpha-blocker plus antimuscarinic (fesoterodine 4mg, oxybutynin immediate-release [IR] 5mg, solifenacin 5mg, tolterodine extended-release [ER] 4mg, tolterodine 4 IR 4 mg, darifenacin 7.5mg). At the end of each cycle, men persist on treatment, discontinue treatment, switch combination therapy or undergo surgery. Model inputs, derived from literature and real-world evidence, included 1-year treatment persistence and switching, mortality, direct medical costs and lost productivity. A one-way sensitivity analysis determined the influence of key inputs on the results. RESULTS: A higher proportion of the cohort persisted on treatment with FDC solifenacin plus TOCAS as compared to the comparison (52% vs 25.8–32.6%). FDC solifenacin plus TOCAS was associated with reduced resource use, including fewer surgeries (n=20.8 vs 29.0–31.8) and work hours lost (n=1387 vs 2073–2348), and higher drug acquisi- tion costs ($110.13 vs <$45,932). The model estimated that the average annual cost of patients treated with FDC in year 1 was $317,603.88 (€23.22/patient/day) for FDC solifenacin plus TOCAS versus $122,723.28–153,854.48 (€13.36–41.21/patient/day) for the comparison. Key drivers of the results were 1-year persistence and switching treatment, switch combination therapy or undergo surgery. Overall, total estimated annual costs were $117,603.88 (€32.22/patient/day) for FDC solifenacin plus TOCAS versus $72,735.75 (€15.97). The analysis estimated an average annual cost associated with FDC treatment of $7,921. The average annual cost of patients under dialysis was $27,553, followed by post-transplantation and CKD stage V (not under dialysis), total cost of $21,140.589 yen for patients experienced ≤53%, ≤53–<30%, and ≤30–<50% change in eGFR respectively if the patients do not experience the eGFR reduction, expected total cost during lifetime per patient was 2,861,213 yen, 42,919,151 yen, and 8,792,078 yen, then the expected total cost reduction for patients of each category were 50,083,17 yen, 33,983,142 yen, and 12,348,511 yen. Therefore, the weighted average cost reduction of patients experienced ≤53%, ≤53–<30%, and ≤30–<50% change in eGFR was 18,831,423 yen.

CONCLUSIONS: Our results demonstrate significant economic impact if the eGFR declines can be prevented in time.
PHARMACOECONOMIC ASSESSMENT OF SUCROFERRIC OXYHYDROXIDE VS SEVELMAR CARBONATE IN PATIENTS WITH CHRONIC KIDNEY DISEASE IN BELGIUM AND THE NETHERLANDS

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OBJECTIVES: Sucoferric oxyhydroxide (SFOH) is a non-calcium, iron-based phosphorus binder indicated for the control of serum phosphorus (sPhos) levels in chronic kidney disease patients on hemodialysis or peritoneal dialysis. A US retrospective analysis demonstrated that, after 3 and 6 months, switching from study sevelamer (SEV) to SFOH increased the proportion of patients with in-range sPhos (3.5-5.5 mg/dL) by 74-96%, while reducing pill burden (PB) by 61-62%. Post-hoc analyses of SFOH showed no apparent interaction with oral Vitamin D (VDRAs) contrary to SEV’s potential interactions. The objective of this analysis is to quantify the economic impact of using SFOH vs. SEV in Belgium and the Netherlands. METHODS: Drug costs were obtained from drug price lists and employed cost-utility analyses were observed in the retrospective analysis. SEV cost was weighted for market shares amongst originators and generics. Number needed to treat to achieve in-range sPhos were used to calculate 3 and 6-monthly costs per responder. Sensitivity analysis (SA) for the 6-month cost-utility analyses were performed using three different thresholds of cost-effectiveness in the UK. RESULTS: Including patiromer within a RAASi regimen across the hyperkalemic patient group. The long-term cost-effectiveness evaluation of effective K+ management in CKD is offset by the high costs associated with dialysis. Consequently, the impact of ESRD on quality of life is greater than the cost-saving of K+ management and discontinuation of RAASi.

PHARMACOECONOMIC ASSESSMENT OF SUCCINIC ACID VERSUS PAMITRATE IN THE TREATMENT OF BENIGN PROSTATIC HYPERPLASIA IN IRAN

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OBJECTIVES: Benign prostatic hyperplasia (BPH) is a very common disorder in older men with an estimated 50% of the male population affected. Common treatment options for BPH include α-blockers like tamsulosin and 5-alpha reductase inhibitors such as dutasteride. This study was planned to estimate the cost-effectiveness of combination therapy for BPH from the Iran Health System perspective.

PATA13

COST-EFFECTIVENESS ANALYSIS OF EXTRACORPOREAL SHOCKWAVE LITHOTRIPSY VS RETROGRADE INTRARENAL SURGERY IN THE MANAGEMENT OF SMALL MODERATED-SIZED RENAL STONES

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OBJECTIVES: To compare the safety and cost-effectiveness of extracorporeal shockwave surgery with Holmium:YAG laser (RIRS) vs extracorporeal shock wave Lithotripsy (SWL) in the treatment of small-modarated renal stones. METHODS: 345 patients who were diagnosed and treated for small-modarated renal stones (<20 mm) between 2012 and December 2014, participated in a prospective, single-center, randomized trial. 201 patients (52.26%) were in the SWL group and 144 patients (41.74%) were in RIRS group. SWL was performed under mild sedation with pethidine hydrochloride for a maximum of 4 sessions, and RIRS was performed with flexible ureterorenoscope (Flex-X2 Storz) and intracorporeal Holmium:YAG laser (Stone light-AMS) lithotripsy under general anesthesia. The safety and effectiveness of both treatments were assessed and calculated. The direct cost analysis included costs of hospitalization, operating theatre and lithotripter procedure, health staff, materials and re-treatment for each procedure applied. RESULTS: Both groups were comparable in terms of size, composition of the stone and need for a previous double J ureteric stent. The global stone-free rate for renal ureteroscopy was 91.72% and 78.25% for SWL. In patients with stones <1cm, the RIRS was significantly better than the SWL with stone-free rates of 91.14% and 83.13% respectively. For stones >1 cm there were also differences: 92.31% stone-free rate in the URS group and 75.2% in the SWL group. The overall complication rate was significantly higher in SWL group (28.9%) as compared to the RIRS group (7.8%). The average cost of the SWL group was 1,069.53 euros, while in the RIRS group it was 2,841.06 euros. The estimated ICER showed that SWL was more effective than RIRS. After performing the Monte Carlo simulation, the dominance of SWL prevailed regardless of the size of the stone. CONCLUSIONS: The results of this study indicate that SWL was more cost-effective than RIRS for the treatment of small-modarated sized renal stones.

PATA14

A COST-EFFECTIVITY ANALYSIS OF RIFAXIN TAMOXIFEN IN PATIENTS WITH HYPERKALEMIA

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OBJECTIVES: Chronic kidney disease (CKD) affects 6% of the United Kingdom’s (UK) population, and includes clinically relevant sub-populations of chronic heart failure (CHF) and diabetic nephropathy (DN). Optimal renin-angiotension-aldosterone-inhibitor (RAASi) therapy has been shown to be a cost-saving intervention in patients with hyperkalemia. However, RAASi induce hyperkalemia leading to dose reduction or discontinuation of RAASi, curtailing potential benefits. The OPAL-HK and AMETHYST-DN trials demonstrated that patiromer normalizes hyperkalemia and enables RAASi therapy in CKD populations. This analysis aims to evaluate the cost and health benefits that patiromer may provide from a national health service perspective in the UK. METHODS: An economic analysis, using a Markov model examining renal and cardiovascular events, was conducted over a lifetime horizon. Outcomes of quality-adjusted life years (QALYs) and costs discounted at 3.5% were calculated as per incremental cost-effectiveness ratios (ICERs). Annual rates of clinical events in nephropathy related to mortality, morbidity, and utilities were derived from published data. Life expectancy was calculated based on historial lifetables. It was assumed that the RAASi-enableing effect continues as long as the patiromer treatment was given. Clinically relevant subgroups (CHF, DN) were further assessed as the uncertainty of the base case results was assessed via a probabilistic sensitivity analysis (PSA), probabilistic sensitivity analysis (PSA) and varying scenario analysis. RESULTS: Including patiromer within a RAASi regimen across the hyperkalemia populations, yielded net gains of 9,540 to 9,950 and 0.33 to 0.54 QALYs’ demonstrating the intervention to be cost-effective within cost-effectiveness thresholds between £20,000 to £30,000 per QALY. Univariate PSA and FSA demonstrated the robustness of the base case results, and that results were probable above 90% chance according to the thresholds of cost-effectiveness in the UK. CONCLUSIONS: Patiromer demonstrates potential as a cost-effective intervention for long-term maintenance of RAASi in patients at risk of hyperkalemia, at thresholds defined in the UK.

PUK15

IMPACT OF END-STAGE RENAL DISEASE ON HEALTH ECONOMIC OUTCOMES OF HYPERKALEMIA MANAGEMENT IN PATIENTS WITH CHRONIC KIDNEY DISEASE

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OBJECTIVES: The objective of this study is to quantify the economic impact of using SFOH vs. SEV in CKD patients for the long-term cost-effectiveness evaluation of effective K+ management in CKD. The long-term cost-effectiveness evaluation of effective K+ management in CKD is offset by the high costs associated with dialysis. Consequently, the impact of ESRD on quality of life is greater than the cost-saving of K+ management and discontinuation of RAASi.

PATA16

A COST-EFFECTIVITY ANALYSIS OF TARTARIUSE PLUS TAMSULOSIN COMBINATION THERAPY VERSUS TAMSULOSIN MONOTHERAPY IN THE TREATMENT OF BENIGN PROSTATIC HYPERPLASIA IN IRAN

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1Shaheed Beheshti University of Medical Sciences, School of Pharmacy, Tehran, Iran

OBJECTIVES: Benign prostatic hyperplasia (BPH) is a very common disorder in older men with an estimated 50% of the male population affected. Common treatment options for BPH include α-blockers like tamsulosin and 5-alpha reductase inhibitors such as dutasteride. This study was planned to estimate the cost-effectiveness of combination therapy for BPH from the Iran Health System perspective.

METHODS: A Markov model was designed to calculate costs and outcomes, for
patients aged ≥40 years with moderate to severe BPH and repeated over 1 year cycles for 35 years. Design: nested case-controlled study comprising four mutually exclusive health states including tamsulosin (0.4 mg/day) and dutasteride (0.5 mg/day/tamsulosin (0.4 mg/day). A meta-analysis was conducted to estimate ADRs and After Surgery Events (ASEs) probabilities. Utilities were estimated by fulfilling a meta-analysis of studies which had used EQD2 method. Costs contained direct costs of medical care, inpatient and outpatient services. All utilities and costs were discounted by the rate of 3% and 5% respectively. RESULTS: The annual probabilities of AUR syndrome and TURP surgery related events were calculated 0.0169 and 0.0193 in monotherapy as well as 0.0055 and 0.0060 in combination therapy respectively. The utilities were accounted 0.86 in mild, 0.79 in moderate, 0.72 in severe states and 0 in death. Regarding meta-analysis results, the ASE probabilities were estimated as follows: TUR syndrome (0.0109), Urinary incontinence (0.0198-1.894), urethral stricture (0.0198-0.0488), Eventually, the ICER for combination therapy was $5159, and Probabilistic sensitivity analysis showed that cost-effectiveness probability, was 99.5% and 95% respectively.

URINARY/KIDNEY DISORDERS – Patient-Reported Outcomes & Preference Studies

FKU17
THE RELATIONSHIP BETWEEN SEVERITY OF CHRONIC KIDNEY DISEASE AND HEALTH-RELATED QUALITY OF LIFE AMONG A NATIONAL REPRESENTATIVE SAMPLE OF COMMUNITY DWELLING ADULTS IN ENGLAND

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OBJECTIVES: Several studies have examined the relationship between health-related quality-of-life (HRQol) and the severity of chronic kidney disease (CKD) experienced byi patients. While contributio to the literature these studies exhibit limitations related to sample selection and failure to control for the cen-sored nature of the outcome. In this study we examined the relationship between HRQol and kidney function among a representative sample of community dwelling individuals living in England. METHODS: Data on 2796 individuals from the 2010 Health Survey for England with respect to HRQol, kidney function and a range of socio-demographic characteristics were obtained. EuroQol 5D-3L data were converted to a utility score using the European national tariff. Severity of CKD was based on estimated glomerular filtration rate (eGFR) and albuminuria status with respondents categorised into one of six levels of kidney disease. A multivariate tobit model was used to examine the relationship between utility scores and severity of kidney disease controlling for age, gender, socio-economic status, marital status and ethnicity. RESULTS: Those with more advanced CKD were found to have lower HRQol than those with better kidney function. Compared to those with normal/low normal eGFR and Stage 1 CKD, those with Stage 2a/b CKD were 0.09 and 0.29 respectively, controlling for other variables. CONCLUSIONS: Among individuals with and without CKD we find that kidney function is related to qual-ity of life in a manner consistent with intuition. The utility (uncontrolled) weights generated in our analyses have the potential to be of value in the evaluation of new technologies being developed for the treatment of kidney disease.

FKU18
SENTIMENT ANALYSIS OF SOCIAL MEDIA POSTS FROM RENAL CELL CARCINOMA (RCC) PATIENTS

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OBJECTIVES: Social media are increasingly used by patients and the content of these postings uniquely reflects the views and perspectives of patients. Histori cal discus-sions span several years, are updated in real time and are available for large numbers of patients. We examined the valence or sentiment of the language patients use over their treatment history utilising natural language processing (NLP) and sentiment analysis. METHODS: We analysed a corpus of 8,433 postings from 483 Stage 4 RCC patients. Mean sentiment scores over time were computed for all patients for two individual experience of approximately 0.09 in their utility index while those with Stage 3a/3b CKD and micro- or macro-albuminuria and those with Stage 4/5 CKD experienced decrements of 0.11 and 0.29 respectively, controlling for other variables. CONCLUSIONS: Among individuals with and without CKD we find that kidney function is related to qual-ity of life in a manner consistent with intuition. The utility (uncontrolled) weights generated in our analyses have the potential to be of value in the evaluation of new technologies being developed for the treatment of kidney disease.

FKU19
WHY IS IT WORTH IT? WHAT FACTORS INFLUENCE DECISION-MAKER’S WILLINGNESS TO PAY FOR NEW TREATMENTS ON THE HOSPITAL FORMULARY?

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OBJECTIVES: Hospital Drugs and Therapeutic Committee (DTC) or its equivalent are responsible for making recommendations to fund new medicines on the hospital formulary. The decision-making process is complex. While safety, efficacy and cost-effective-ness are key considerations, there is limited information surrounding the trade-offs and relative importance of other factors that influence their decisions. This study aimed to understand hospital decision makers (HDMs) stated preferences and relative importance of other factors that influence their decisions. METHODS: Six HDMs were involved in qualitative interviews to inform the design of the discrete choice experiment (DCE). HDMs (n=60) from public and private hospitals in Australia were recruited through a specialist healthcare panel to complete the survey. HDMs were members of the DTC or equivalent and/or had made applications to the hospital formulary. Survey questions elicited treatment decision-making criteria and the evidence considered. The DCE required HDMs to trade-off attributes including hospital resource use, frequency and mode of administration, onset of action, side effects, drug interactions and cost. The relative priority HDMs place on different attributes and estimate their willingness to pay for new treatments was assessed using latent class models. RESULTS: HDMs primary clinical role and hospital funding model influenced the key factors driving funding decisions. HDMs were less willing to trade off safety, efficacy and administration compared to cost and effectiveness. CONCLUSIONS: HDMs preferences were consistent with clinical roles and treatment experience. Overall, HDMs were willing to trade off between the benefits (clinical and patient), risks (adverse events and cost) and trade off use and treatment cost) when considering the funding of new treatments in the hospital setting.

FKU20
HEALTH VALUATION OF DIALYSIS WITH THE EQ-5D: DETERMINANTS OF DISCREPANCY BETWEEN PATIENTS AND SOCIETY

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OBJECTIVES: This study evaluates the discrepancy of self-reported health valuation by incident dialysis patients and the societal valuation of the health states of these patients. Subsequently, it investigates which socio-demographic and medical characteristics explain this discrepancy. METHODS: We used data from the Netherlands Cooperative Study on the Adequacy of Dialysis (NCCOSAD-2), a prospective multicenter cohort study on incident end-stage renal disease patients. Health valuation was measured with the EuroQol (EQ-5D) questionnaire. Discrepancy in valuation, a EQ-5D, was calculated by subtracting the health valuation by patients (EQ-5D Visual Analogue Scale, EQ-5D VAS) from the societal valuation (EQ-5D Index). Mean EQ-5D scores were stratified by problem level, socio-demo-graphic and medical characteristics. Univariable and multivariable regression analyses were performed to explain the discrepancy by socio-demographic and medical characteristics. RESULTS: 1,441 dialysis patients were included. Overall, the societal valuation was higher than self-assessed health valuation score (mean EQ-5D–10.86, SD–23.63). The discrepancy in valuation was largest for patients who reported no problems on the five health dimensions, were younger, married, employed and cared for by a partner. CONCLUSIONS: Our results showed that the societal valuation of the health states of dialysis patients is generally higher than patients’ own health valuation, especially for patients who are younger, male, have never been married, a better kidney function and reported no problems. This indicates that using societal valu-a-tion with the EQ-5D may underestimate the impact of dialysis on the quality of life of this patient group.

FKU21
QUALITY OF LIFE IN PATIENTS WITH KIDNEY TRANSPLANTATION IN CZECH REPUBLIC

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OBJECTIVES: There are about 4000 patients with chronic kidney disease (CKD) in Slovakia and about 4500 patients are treated by dialysis. More than 120 patients undergo kidney (KT) transplantation per year. The objective of this study was to find out the level of quality of life (QoL) in patients and other relevant character-istics in patients with KT. METHODS: The primary method used for the analysis of Qol was the own original combined questionnaire. Statistical methods from Excel 2010 (Student-, Dunn, -Friedman, Spearmann tests) were used in results evalua-tion. RESULTS: There were 100 patients in the examined group, 61 men, 39 women, with age average 49,1 years. The average of CKD duration was 12,17 years, symp-toms before diagnosis- 5,6 months, waiting time to transplantation- 3,81 y, time after transplantation- 5,8 y. Patients with no problems on the five health dimensions, were younger, married, employed and cared for by a partner. CONCLUSIONS: Our results showed that the societal valuation of the health states of dialysis patients is generally higher than patients’ own health valuation, especially for patients who are younger, male, have never been married, a better kidney function and reported no problems. This indicates that using societal valu-a-tion with the EQ-5D may underestimate the impact of dialysis on the quality of life of this patient group.
90% (n = 243, 60.75%) participants reflect inadequate knowledge about what is a reaction to a drug (ADR). A significant number of the participants (n = 333, 83%) were unaware of the definition of ADR. About (n = 293, 67.85%) participants reported not understanding the meaning of ADR. The awareness of ADR was lower in females (n = 340, 70.75%) compared with males (n = 173, 76.57%). The main objective of this study was to assess the knowledge, attitude of participants towards ADR and to determine the common barriers towards reporting an ADR. A nested case-control study within a T2DM cohort was conducted using the PHARMO Database Network. Between 1999 and 2014 cases with a deteriorated renal function were matched on sex, birth year and geographic region with controls without a decline in renal function. Date of renal decline among cases was set at two hospitals in Yogyakarta Indonesia. This study examined the relationship between HRQoL and hemoglobin (Hgb) level in 61 patients with CKD performed hemodialysis. Patients’ hemoglobin levels were categorized into 3 levels, ie < 9.9, 9.9 to < 10, and ≥10. HRQoL was measured using KDQoL-SF36 when patients visited to the hospital for hemodialysis. ANOVA was used to test the relationship between HRQoL and hemoglobin levels. RESULTS: The results showed life scores on the domains of the quality of social interaction and sleep (p < 0.05) were significantly different based on the category of hemoglobin level. Levels of cognitive functions improved with increasing Hb levels. With increasing Hb levels, HRQoL domains of physical function and vitality were significantly different (p < 0.05). CONCLUSIONS: Higher hemoglobin levels are associated with an increase in the HRQoL domain of the KDQoL-SF36 questionnaire. These findings have implications for the care of CKD patients in maintaining hemoglobin levels.

URINARY/KIDNEY DISORDERS – Health Care Use & Policy Studies

PUC23 SEVERITY OF KIDNEY DISEASE IN SYSTEMIC LUPUS ERYTHEMATOSUS

Authors: Tamiya N1, Sato M2, Nakagawa Y3, Kanatani Y4

Objective: Improvement of hemoglobin in non-dialysis chronic kidney disease (CKD) patients was associated with an increase in health-related quality of life (HRQoL), but in dialysis patients it was still a debate. The purpose of this study was to determine the relationship of hemoglobin levels to HRQoL.

Methods: The research design is cross sectional study, conducted on CKD patients who performed dialysis at two hospitals in Yogyakarta Indonesia. This study examined the relationship between HRQoL and hemoglobin (Hgb) level in 61 patients with CKD performed hemodialysis. Patients’ hemoglobin levels were categorized into 3 levels, ie < 9.9, 9.9 to < 10, and ≥10. HRQoL was measured using KDQoL-SF36 when patients visited to the hospital for hemodialysis. ANOVA was used to test the relationship between HRQoL and hemoglobin levels.

Results: The results showed life scores on the domains of the quality of social interaction and sleep (p < 0.05) were significantly different based on the category of hemoglobin level. Scores of cognitive functions improved with increasing Hb levels. With increasing Hb levels, HRQoL domains of physical function and vitality were significantly different (p < 0.05). Conclusions: Higher hemoglobin levels are associated with an increase in the HRQoL domain of the KDQoL-SF36 questionnaire. These findings have implications for the care of CKD patients in maintaining hemoglobin levels.

PUC24 POTENTIAL MEDICATION TRIGGERS OF DETERIORATED RENAL FUNCTION AMONG PATIENTS WITH TYPE 2 DIABETES: USING REAL WORLD DATA

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Objective: To describe the treatment patterns and management strategies of neurogenic bladder (NGB) in real-world settings. A systematic review: Methods: A total of eight studies met the inclusion criteria. Study designs, setting, and patient groups were notably heterogeneous and all data was collected before 2008. This SR found that the most commonly used management method amongst NGB patients was reﬂex voiding (RV) methods and catheterisation (CIC and IndUC). Data and comments from all studies show that a notable amount of patients switched treatments. The most popular oral pharmacotherapies were alpha-blockers and antimuscarinics used for neurogenic detrusor overactivity (NDO) and detrusor sphincter dyssynergia (DSD). One study which focused on spina bifida reported that the majority of patients underwent surgery. Conclusions: With passing time, clinicians have moved away from techniques associated with higher rates of complications and mortality. This has meant that in recent years, the survival chances of patients with NGB have increased. This suggests that current treatment patterns will differ from what was uncovered in this review. Epidemiological studies using electronic healthcare records (EHRs) are necessary to advance our understanding in how NGB patients are managed in current practice, and how well patterns relate to practice guidelines.

PUC25 REAL WORLD TREATMENT PATTERNS IN THE NEUROGENIC BLADDER POPULATION: A SYSTEMATIC LITERATURE REVIEW

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Objective: To describe the treatment patterns and management strategies of neurogenic bladder (NGB) in real-world settings.

Methods: A systematic review: Results: SR was conducted using MEDLINE and EMBASE (1996-2017). Key terms included a total of eight studies met the inclusion criteria. Study designs, setting, and patient groups were notably heterogeneous and all data was collected before 2008. This SR found that the most commonly used management method amongst NGB patients was reflex voiding (RV) methods and catheterisation (CIC and IndUC). Data and comments from all studies reveal that a notable amount of patients switched treatments. The most popular oral pharmacotherapies were alpha-blockers and antimuscarinics used for neurogenic detrusor overactivity (NDO) and detrusor sphincter dyssynergia (DSD). One study which focused on spina bifida reported that the majority of patients underwent surgery. Conclusions: With passing time, clinicians have moved away from techniques associated with higher rates of complications and mortality. This has meant that in recent years, the survival chances of patients with NGB have increased. This suggests that current treatment patterns will differ from what was uncovered in this review. Epidemiological studies using electronic healthcare records (EHRs) are necessary to advance our understanding in how NGB patients are managed in current practice, and how well patterns relate to practice guidelines.
procedure (n=320, 80%) and proper access to ADR reporting form (n=210, 70%) could be the main loopholes for under-reporting. As the main loopholes for under-reporting an ADR is the lack of public awareness about the reporting centre and its procedure. So there is a dire need that MADRAC should make certain modifications to the existing ADR reporting system in order to identify the aspects to overcome the problems of the aforementioned loopholes.

OBJECTIVES: In 2011/2012, a single-blind, cluster randomised controlled trial (RCT) was conducted in a tertiary referral Irish hospital to evaluate the Screening Tool of Older Persons' Prescriptions (STOP) and Screening Tool to Alert Right Treatment (START) criteria compared to usual hospital care. This intervention demonstrated positive outcomes in terms of reduction of adverse drug reactions (ADRs). The aim of this study was to compare the cost-effectiveness of a physician implementing the STOP/START criteria to unselected older hospitalised patients in 2011/2012 with the cost-effectiveness of this intervention if applied within the Irish hospital setting using the most currently available (2015) healthcare costs (CAHC).

METHODS: Cost-effectiveness analysis (CE) alongside conventional outcome analysis in a cluster RCT. The screening tool was applied to medicines of intervention arm patients (n = 360); control arm patients (n = 372) received routine medical care. Incremental cost-effectiveness was examined in terms of 2011/2012 costs and CAHC to the Irish healthcare system and an outcome measure of ADRs during an inpatient hospital stay in 2011/2012. Uncertainty in the analysis was explored using a cost-effectiveness acceptability curve (CEAC). RESULTS: Incremental cost-effectiveness was more costly but was also more effective for both 2011/2012 costs and CAHC. The associated incremental cost-effectiveness ratios (ICER) per ADR averted were €5,358 and €5,469 applying 2011/2012 costs and CAHC respectively. The probability of the intervention being cost-effective in 2011/2012 at threshold values of €10,000 and €20,000 was 0.236, 0.672 and 0.921 respectively.

CONCLUSIONS: Despite intervention implementation having a slightly greater ICER when using CAHC, such accompanying ADR reductions may possibly result in satisfactory savings and greater patient outcomes. Healthcare policy makers should consider the adoption of the STOP/START criteria in routine hospital care.

PHS2 A COST-EFFECTIVENESS ANALYSIS OF A PHYSICIAN-IMPLEMENTED, Medication Screening Tool in Older Hospitalised Patients in IRELAND

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OBJECTIVES: In 2011/2012, a single-blind, cluster randomised controlled trial (RCT) was conducted in a tertiary referral Irish hospital to evaluate the Screening Tool of Older Persons’ Prescriptions (STOP) and Screening Tool to Alert Right Treatment (START) criteria compared to usual hospital care. This intervention demonstrated positive outcomes in terms of reduction of adverse drug reactions (ADRs). The aim of this study was to compare the cost-effectiveness of a physician implementing the STOP/START criteria to unselected older hospitalised patients in 2011/2012 with the cost-effectiveness of this intervention if applied within the Irish hospital setting using the most currently available (2015) healthcare costs (CAHC).

METHODS: Cost-effectiveness analysis (CE) alongside conventional outcome analysis in a cluster RCT. The screening tool was applied to medicines of intervention arm patients (n = 360); control arm patients (n = 372) received routine medical care. Incremental cost-effectiveness was examined in terms of 2011/2012 costs and CAHC to the Irish healthcare system and an outcome measure of ADRs during an inpatient hospital stay in 2011/2012. Uncertainty in the analysis was explored using a cost-effectiveness acceptability curve (CEAC). RESULTS: Incremental cost-effectiveness was more costly but was also more effective for both 2011/2012 costs and CAHC. The associated incremental cost-effectiveness ratios (ICER) per ADR averted were €5,358 and €5,469 applying 2011/2012 costs and CAHC respectively. The probability of the intervention being cost-effective in 2011/2012 at threshold values of €10,000 and €20,000 was 0.236, 0.672 and 0.921 respectively.

CONCLUSIONS: Despite intervention implementation having a slightly greater ICER when using CAHC, such accompanying ADR reductions may possibly result in satisfactory savings and greater patient outcomes. Healthcare policy makers should consider the adoption of the STOP/START criteria in routine hospital care.

PHS3 INVESTIGATION OF DEMOGRAPHIC DIFFERENCES FOR NON-SMALL CELL LUNG CANCER PATIENTS WITH AND WITHOUT TYPE 2 DIABETES

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OBJECTIVES: The aim of this study was to investigate if there is any difference between the demographic characteristics of NSCLC patients with and without T2D. METHODS: We conducted a cross-sectional study design analyzing data from the Medicare linked database (2007 - 2014). Univariate statistics was completed for descriptive analyses of patient characteristics. We compared NSCLC patients with and without T2D using chi-square test of association. RESULTS: Of 17,176 NSCLC patients, 5,096 patients had T2D in the pre-period (prior to incident NSCLC diagnosis). A greater proportion of NSCLC diabetic patients were males 51% vs. 41% (p<0.001) compared to their non-diabetic NSCLC- peers. Diabetic NSCLC patients had a similar distribution in cancer stage, (0.3820). Diabetic NSCLC patients had a greater number of comorbidities, and mortality in body mass index is related to LDL levels; for 7 years, these patients have been more frequently found in people with sistolic blood pressure between 120 and 139 mmHg followed by the group between 120 mmHg and in a third position in the 140-159mmHg group. While 1.3% of people aged 30-39 reported the lowest proportion. Almost 80% were classified as overweight or obese. Levels of high and very high LDL-C were more frequently found in patients with systolic blood pressure between 120 and 139 mmHg followed by the group between 120 mmHg and in a third position in the 140-159mmHg group.

CONCLUSIONS: High levels of LDL-C were identified in 9% of the population with hypertension and diabetes. It was determined that the increase in body mass index is related to LDL levels; for 7 years, these patients have been monitored through prevention programs, which must be focused on the management of the disease and evaluation of indicators that show the management of the disease and evaluation of indicators that show the management of the disease and evaluation of indicators that show the management of the disease.

PHS4 COMPREHENSIVE KNOWLEDGE AND UPTAKE OF CERVICAL CANCER SCREENING IS LOW AMONG WOMEN LIVING WITH HIV/AIDS IN NORTHWEST ETHIOPIA

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OBJECTIVES: The occurrence and territorial distribution of acute myocardial infarctions in hungary

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The aim of the study was to analyze the county distribution of acute myocardial infarctions’ occurrence per 10 000 inhabitants in Hungary in 2016 according to the Hungarian Diagnosis-Related-Groups (DRG) system. METHODS: Data were derived from the Hungarian Health Insurance and Awareness Creation to HIV-infected Women, Along with Improving Accessibility of Cervical Cancer Screening Services in Rural Areas.

PHS5 REPORT OF LOW DENSITY LIPOPROTEIN (LDL) LEVELS IN PATIENTS DIAGNOSED WHIT HYPERTENSION, DIABETES MELLITUS AND CHRONIC KIDNEY DISEASE IN COLOMBIAN POPULATION

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OBJECTIVES: The present study describe the report of low-density lipoprotein cholesterol (LDL-c) in patients with Chronic Kidney Disease (CKD), Diabetes Mellitus (DM) and Hypertension (HTN) in a Colombian health insurance program. All the information was analyzed from the database of the account of high cost, an organization created by the Ministry of Health and the Ministry of Finance. We describe people with confirmed diagnoses of the three pathologies by the insurers of the national territory through the years 2014-2015 and 2016. RESULTS: We found different results in each of the evaluated years, in 2014 we obtained 809,119 LDL records, for the year 2015 the database counts with 1,456,751 which means an increase of 647,632 people, the year 2016 counts with 1,866,396, which constituted an increase of 409,645 records. Between the first year and the second of registration there was an increase of about 45% and between the second and third year 22%. CONCLUSIONS: The registration of complete lipid profiles that include LDL of the high cost account has improved the opportunity and access in these years, which shows the importance of those data, the fact of having this type of paraline in patients with diagnosis of Chronic Diseases will allow progress in preventive actions, programs and follow-up of patients.
analyzed period 20-507 events were recorded in the database. 59.82% of the patients were men; 40.18% of them were women. The average age of the participants was 67.36 years, the men’s being 64.79, the women’s 71.19. Regarding the classification of diseases in the majority of the examined cases the diagnosis was recorded for the endoscopic screening history. A total of 17 studies [13 randomized controlled trials (RCTs) and 4 non-randomized clinical studies] involving 8,391 patients were included. The studies were of variable quality (poor to good quality) or risk of bias (moderate to critical risk). Nature and intensity of pharmacist interventions varied among the studies including medication reconciliation, medication therapy management, discharge medication counseling, motivational interviewing, and post-discharge face-to-face or telephone follow-up. Pharmacist-delivered interventions significantly improved medication adherence in four out of 12 studies. However, these did not translate to significant improvements in the rates of readmissions, hospitalizations, emergency visits, and mortality among ACS patients. Conclusions: Pharmacist care of patients discharged with ACS is associated with a significant improvement in medication adherence or reductions in readmissions, emergency visits, and mortality. Future studies should use well-designed RCTs to assess the short- and long-term effects of pharmacist interventions in ACS patients.

OBJECTIVES: To test the effect of a structured smoking cessation program delivered by a pharmacist on smoking cessation rates in Qatar. METHODS: A prospective randomized controlled trial was conducted in eight ambulatory pharmacies in Qatar. Eligible participants were smokers 18 years and older who smoked one or more cigarettes daily for 7 days, were motivated to quit, able to communicate in Arabic on the phone, and had never received previous smoking cessation intervention at the pharmacy. Group participants met with the pharmacists four times at 2 to 4 week intervals. Participants in the control group received unstructured brief smoking cessation counseling. The primary study outcome was self-reported continuous abstinence at 12 months. Multinomial logistic regression model was fitted to assess the predictors of smoking at 12 months. Analysis was conducted using IBM-SPSS version 23 and STATA18 version 12. RESULTS: A total of 314 smokers were randomized into two groups: intervention (n=157) and control (n=157). Smoking cessation rates were higher in the intervention group at 12 months; however this difference was not statistically significant (23.9% vs. 16.9% p=0.257). Nevertheless, the daily number of cigarettes smoked decreased in those who relapsed was significantly lower (by 4.7 and 5.6 cigarettes at 3 and 6 months respectively) in the intervention group as compared to control group (p=0.041 and p=0.018 respectively). At 12 months, the difference was 3.2 cigarettes in favor of the intervention group but was not statistically significant (p=0.075).

EFFECTIVENESS OF A Pharmacist-DELivered SMOKING CESSATION PROGRAM ON SMOKING ABSTINENCE IN PATIENTS IN AN ARABIC COUNTRY: A PROSPECTIVE RANDOMIZED CONTROLLED TRIAL

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OBJECTIVES: To evaluate the association of monthly surgeon and hospital volume on hospital outcomes, including the presence of complications, readmission within 30 days, hospital length of stay and hospital cost of care. METHODS: Patient discharge-level data were obtained from the Vizient Clinical Database for 264 academic medical centers and their affiliated hospitals. The sample included all discharges with a THA or TKA procedure between June 2013 and May 2016. Surgeon and hospital volumes were assessed on a monthly basis and classified into monthly quartiles (A composite volume variable was created for surgeon and hospital volume quartiles (high surgeon-high hospital, high surgeon-low hospital, low surgeon-high hospital, and low surgeon-low hospital volume). Multivariable regression models were fit to test the association between each hospital outcome with volume, controlling for patient and hospital characteristics. RESULTS: Fifty-nine percent of 146,336 THA patients and 50% of the 24,698 TKA patients were treated by high surgeon-high hospital volume provider. Patients with high surgeon-high hospital volume providers were less likely to be readmitted within 30 days, have shorter LOS and lower hospital costs than patients treated by lower volume providers for both THA and TKA procedures. Outcomes were the worst for patients treated by low surgeon-low hospital volume providers. CONCLUSIONS: Maintaining consistently high surgeon and hospital volumes may be a strategy for improving the value of care for THA and TKA procedures.
PHS14 PERSISTENCE AND ADHERENCE TO ORAL ANTIRESORPTIVE THERAPY IN A FRACTURE LIASON SERVICE: 24-MONTH RESULTS OF A PROSPECTIVE COHORT STUDY
Senay A1, Perreault S1, Delisle J1, Woon P1, Raynalud JJ1, Banica A1, Troyanov Y2, Beaumont P1, Giroux M1, Jodoin A1, Laframme Y1, Ledus S1, Maichion F1, Mao M1, Melo M1, Nguyen DY1, Ranger P1, Bobak P1, Prudhommeau J-F1,  
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OBJECTIVES: Oral antiresorptive therapies (OART) can reduce the incidence of fractures. However, patients discontinuation OART after one year is poor. Our Fracture Liaison Service (FLS) could optimize these parameters.

METHOds: A multidisciplinary FLS cohort study was conducted in two hospitals in Montreal, Canada. Fracture patients (men and women) ≥40 years of age, referred by their general practitioner, were included. Persistence and OART was prescribed if applicable. Patients were followed over two years. The date of cohort entry was a few days after the fracture (following consent). Using a pharmacy claims data, persistence rate was defined by allowing a 30-day lag period from the date of cohort entry to the date of cohort entry +24 months. We compared persistence in a cohort of hip fracture patients followed by our FLS with the general population in Canada. We analyzed all data by sex.

RESULTS: Of 535 enrolled patients, 85.6% were women. The 24-month cumulative persistence rate was close 10%. Age-standardized ER rate increased from 7,850 to 9,497 per 100,000 and from 2,522 to 1,079 per 100,000, respectively. Overall annual mortality increased from 0.4 to 0.5% in the general population. The cumulative persistence rate after 24 months of OART use was 96% (95% CI: 95.2-96.4), with 42.2% of patients continuing medication. Median MPR was 96% (95% CI: 95.5-96.5). Mean age at entry was 76.8 years (95% CI: 76.2-77.4). MPR was associated with age (p=0.03), with a significant higher MPR in patients aged 75 years or older (p=0.001). The average number of days on treatment was 21.2 (95% CI: 20.7-21.7). The average daily cost of OART was $24.02 (95% CI: 23.6-24.5). The cumulative cost of OART over 24 months was $5,148 (95% CI: 4,986-5,310).

CONCLUSIONS: Our intervention led to a significant increase in persistence to treat osteoporosis. In our experience, adherence remained only moderately increased compared to the general population. It was improved in persistent patients. Adjusted analyses will follow to identify determinants of OART persistence and adherence in our cohort.

PHS15 GROWTH HORMONE PHARMACOECONOMICS AND PRESCRIPTION DATA FOR CHILDREN OUTPATIENTS IN A REGIONAL GENERAL HOSPITAL
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OBJECTIVES: Growth Hormone Deficiency (GHD) patients are provided with Growth Hormone (GH) therapy from the moment of our diagnosis. GH therapy is expensive and has been available since August 2012. Our district population is 157,000 inhabitants and according to EMA, incidence of GHD in Europe is 4 in 10,000 people, higher in boys than in girls. This research aims to evaluate GHD’s incidence for our district, taking gender into account, and to assess pharmacoeconomic and clinical effects, relevant to GH administra- tion. 

METHODS: GH administration data from 2013 to 2016 were used, as extracted by Hospital’s Information System and provided by National Statistical Authority. Parameters of interest were: number of patients, gender, GH total cost and cost per patient; DDDs were also calculated. RESULTS: GH incidence for our district was estimated as the average of last 4 years to be 2.6 per 10,000, which is lower than European average. From 2013 GH was prescribed for boys and girls (215 boys and 21 girls and for this 2015 boys and 18 girls). The number of patients, GH total cost and DDDs are higher in 2014 (49 patients, 22,569 €, 20,065 DDDs, respectively); no statistical significance for linear regression slopes for GH total cost and DDDs was observed. GH per patient in 2014 DDD was 1007, which is rather stable for the last 3 years (10.81/DDD, perhaps due to children’s weight gain with advancing age. CONCLUSIONS: In our district, GH incidence per 10,000 people is lower than in European median. And GH therapy is more expensive for girls than for boys, as reported in literature. A passing to higher cost GH formulations is not confirmed. Further investigation of GH incidence per 1,000 births is needed, which would contribute to a better understanding of GH epidemiological characteristics.

PHS16 A CROSS SECTION STUDY ON PREVALENCE OF NEUROLOGIC DISORDERS AND QUALITY OF LIFE IN POST STROKE PATIENTS
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OBJECTIVE: To determine the prevalence of neuropsychiatric disorders and the quality of life after stroke. 

METHOds: The patients diagnosed as stroke and wished to participate were identified from Neurology Department of Government Hospital, Trivandrum and consent was obtained. Cross-sectional study for six-month duration after getting clearance from the Human Ethical Committee (order no: IEC no.07/22/2016). The patients and caregivers found suitable for inclusion were included and were interviewed using the twelve-subscale version of the Neuropsychiatric Inventory (NPI) for the prevalence. Quality of life was assessed using Stroke Specific Quality of life Scale. Data processing tabulation of descriptive statistics did on statistical software. RESULTS: 52 patients enrolled, 37% were males and 63% females. The mean age was 69.7 ± 13.45 years. The total score of NPI was 14.7 ± 4.64. The total score of NPI was 14.7 ± 4.64. The 16,591 patients (documented until March 2017) treated with DPP-4i and/or SGLT-2i, 7,797 (47.2%) were treated with a combination of DPP-4i+SGLT-2i and 3.3% were treated with SGLT-2i only before intensification. T2D patients achieve treatment targets for good metabolic control. In real-life care, treatment intensification occurred in 14.4% of patients. In our district, GHD incidence per 10,000 people was estimated as the average of last 4 years to be 2.6 per 10,000, which is lower than European average. From 2013 GH was prescribed for boys and girls (215 boys and 21 girls and for this 2015 boys and 18 girls). The number of patients, GH total cost and DDDs are higher in 2014 (49 patients, 22,569 €, 20,065 DDDs, respectively); no statistical significance for linear regression slopes for GH total cost and DDDs was observed. GH per patient in 2014 DDD was 1007, which is rather stable for the last 3 years (10.81/DDD, perhaps due to children’s weight gain with advancing age. 

CONCLUSIONS: In our district, GH incidence per 10,000 people is lower than in European median. And GH therapy is more expensive for girls than for boys, as reported in literature. A passing to higher cost GH formulations is not confirmed. Further investigation of GH incidence per 1,000 births is needed, which would contribute to a better understanding of GH epidemiological characteristics.

PHS17 HEALTH CARE USE AMONG INCIDENT CASES OF HEART FAILURE: A POPULATION-BASED COHORT STUDY FROM 1997 TO 2010
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OBJECTIVE: Heart failure (HF) is associated with substantial morbidity and high rates of hospital readmission. However, few data assess the trends overtime of readmission, mortality, emergency use and pattern of drug use. The study objectives are to assess the incidence rate of HF hospital readmission, mortality, all-cause emergency visits (ER) and pattern of drug use in 12 months following hospital admission of HF incident cases from 1997 to 2010. 

METHOds: We used a cohort of HF incident cases being hospitalized for a primary diagnosis of HF and discharge in community from 1997 to 2010. Linked Quebec administrative health care databases were analyzed to estimate incidence rate of HF readmission, mortality and ER stratified by sex and age group. We monitored data from 1997 to 2005 and from 2005 to 2010. RESULTS: Of 535 enrolled patients, 85.6% were women. Mean age was 63.4 ± 11.2 years. One hundred thirty-nine patients (26%) had at least one prescription for an anti-osteoporosis medication delivered before cohort entry. The cumulative persistence rates after one and two years were 77.8% and 65.9%, respectively. The difference between the cumulative persistence rates of experienced and new users was not significant (71.0% vs 63.2%, p=0.144). Median MPR after two years was 53.5% [22.6-85.7%, where 31.5% had a MPR=80%. The median MPR per year before the fracture was 91.9% in the general population and 49% in the FLS cohort. The cumulative persistence rate was estimated using a Kaplan-Meier analysis. Drug adherence was measured by calculating the medication possession ratio (MPR). RESULTS: Of 535 enrolled patients, 85.6% were women. Mean age at entry was 76.8 years (95% CI: 76.2-77.4). MPR was associated with age (p=0.03), with a significant higher MPR in patients aged 75 years or older (p=0.001). The average number of days on treatment was 21.2 (95% CI: 20.7-21.7). The average daily cost of OART was $24.02 (95% CI: 23.6-24.5). The cumulative cost of OART over 24 months was $5,148 (95% CI: 4,986-5,310).

CONCLUSIONS: Our intervention led to an increase in persistence to treat osteoporosis. In our experience, adherence remained only moderately increased compared to the general population. It was improved in persistent patients. Adjusted analyses will follow to identify determinants of OART persistence and adherence in our cohort.
The signaling pathways such as MAPK, PI3K-Akt, NF-kappa B were activated when the drugs received LS diet, which resulted in lower risk of cardiovascular disease through anti-apoptosis, anti-inflammation, anti-oxidative stress, etc. 

**CONCLUSIONS:** The gene expression of heart tissue in LS diet dogs is significantly changed and LS diet may reduce the risk of cardiovascular disease by up-regulating the expression of NFKBIA, NRIP1 and pathways associated with microRNA-27a signaling pathways. More rigorous and independent experiments are needed to validate the conclusions of the present study.

**PHS19**

**CASE-CONTROL STUDY ON RISK FACTORS FOR CANCER FROM THE EPIDEMIOLOGICAL SURVEY CARRIED OUT ON BENEFICIARIES OF A PRIVATE HEALTH CARE PLAN IN BRAZIL: 10 YEARS OF FOLLOW-UP**

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**OBJECTIVES:** The objective of this study is to assess the health problem and involves known risk factors. In Brazil, it’s the second leading cause of death. To evaluate the association of cancer with risk factors (smoking, sedentary lifestyle, alcoholism, excessive sun exposure, overweight and obesity) from a 10 years epidemiological survey on beneficiaries. 

**Methods:** Observational case-control study involving 4,685 individuals diagnosed with cancer. For each case, we selected three controls (same age and sex), who used medical and hospital services for non-oncological reasons (34,055 individuals).

Statistical analysis used OpenEpi version 3.01 software, by calculating the relative and absolute frequencies, means and standard deviation. For analytical statistics, Chi-square tests (Mantel-Haenszel and Fisher’s Exact), when p < 0.001. **RESULTS:** Mean age was 57.3 ± 0.2 years (male, 60.3 ± 0.3 years, female, 54.7 ± 0.3 years). Tumor frequencies in men: prostate (36.4%), colorectal (6.6%), kidney (4.1%) and bladder (3.8%), in women: Thyroid (7.3%), colorectal (7.0%), lung (7.5%) and ovary (2.5%). Statistically significant tobacco association with lung cancer (p < 0.001, OR 2.248), lymph (p < 0.001, OR 3.929) and esophagus (p < 0.001, OR 4.876) were found. **Conclusions:** The development of cancer is a worldwide health problem and involves known risk factors. In Brazil, it’s the second leading cause of death. To evaluate the association of cancer with risk factors (smoking, sedentary lifestyle, alcoholism, excessive sun exposure, overweight and obesity) from a 10 years epidemiological survey on beneficiaries.

**PHS20**

**BETWEEN-HOSPITAL VARIATION OF IN-HOSPITAL MORTALITY AND 30-DAY READMISSIONS IN ACUTE MYOCARDIAL INFARCTION IN PORTUGAL: 2012-2014**

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**OBJECTIVES:** The objective of this study was to assess the between-hospital variation of in-hospital mortality and 30-day readmissions after an AMI. Patient-Level (demographic and comorbidities) were defined, one to study 30-day all-cause unplanned readmission and another to study 30-day all-cause death. The association of cancer with risk factors (smoking, sedentary lifestyle, alcoholism, excessive sun exposure, overweight and obesity) from a 10 years epidemiological survey on beneficiaries. 

**Methods:** Retrospective study of acute care hospital discharges occurring between 2012 and 2014 of adult inpatients admitted with a primary AMI. Two cohorts were defined, one to model 30-day all-cause unplanned readmission and another to study in-hospital mortality after an AMI. Patient-Level (demographic and comorbidities) and hospital-level (teaching status, provision revascularization procedures, size and geographic location) characteristics were described for each cohort. Crude readmission and mortality rates were computed overall, across years and across hospital characteristics levels. Logistic mixed models were implemented to incorporate the natural clustering of the data at the hospital level and to estimate between-hospital variation. We used a step-up strategy starting with an empty model and incrementing patient and hospital characteristics to assess their impact on between-hospital variation. **Results:** We identified 25642 index events in the readmission cohort and 28512 in the mortality cohort. While 8% of patients were readmitted with an unplanned event within 30 days after an AMI, 10% of patients died in hospital after being admitted with a primary AMI. Between-hospital heterogeneity was observed for the two cohorts, but was higher in the mortality cohort. A patient’s odds of dying in a high mortality hospital were more than twice than that in a low mortality hospital. Relative to the empty model, patient characteristics explained one to two percentage points of between-hospital variation, yet they increased heterogeneity in the mortality cohort. **Conclusions:** Hospital characteristics partially contribute to the heterogeneity in readmissions across hospitals. However, marked disparities across hospitals in terms of the risk of in-hospital mortality remained after adjusting for hospital case-mix and hospital characteristics.

**PHS21**

**THE ROLE OF COMMUNITY PHARMACISTS IN PATIENT COUNSELLING AND HEALTH EDUCATION: A SURVEY OF THEIR KNOWLEDGE AND LEVEL OF INVOLVEMENT IN RELATION TO TYPE 2 DIABETES MELLITUS**

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**OBJECTIVES:** This study aimed at evaluating the knowledge and level of involvement of community pharmacists in the provision of patient counselling and health education: A survey of their knowledge and level of involvement in relation to type 2 diabetes mellitus and barriers that limit the delivery of such services. **Methods:** A self-administered questionnaire based survey were undertaken from January to March, 2017 with 412 pharmacists working in community pharmacies in six of Andhra Pradesh state of India: Debre Markos, Gondar, Dessie, Bahir Dar, Woldeya and Debre Birhan.

Descriptive statistics, ANOVA and student t-test were employed to examine different variables. **Results:** Community pharmacists were found to have poor knowledge and low level of involvement with an overall mean score of 11.54 and 2.06 respectively. A significant number of community pharmacists never practiced promoting smoking cessation (45.2%), counselling on good foot care techniques (33.7%) and counseling on the potential consequences and management of Type 2 diabetes mellitus (34%). On the other hand, describing the right time to administer anti-diabetic medications (46%) and counseling on suitable administration, handling and storage of insulin (33.7%) were done more frequently. The main reported barriers to the delivery of these services were lack of knowledge or clinical skills, lack of access to additional training programs and lack of personnel or resources. **Conclusions:** The present study revealed a poor knowledge and low level of involvement in counselling and health education services for patients with diabetes mellitus. Lack of knowledge or clinical skills was the most commonly reported barrier for providing such services. In order to better integrate community pharmacies into future public health programs and objectives of the health care system, pharmacists, interventions should focus on overcoming the identified barriers.

**HEALTH SERVICES – Cost Studies**

**PHS22**

**INTEGRATED CARE SYSTEM FOR HYPERTENSION IN CHINA: WHAT THE COST WILL BE FOR GOVERNMENT? A BUDGET IMPACT ANALYSIS**


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**OBJECTIVES:** As the pioneer for integrated care for health system, Xiamen city has harvested its own successes in chronic diseases management, especially in Hypertension. The aim of this study is to evaluate the integrated care for health system in national wide. This research aims to generalize the required funds and human resources and estimate the possible cost-saving from the perspective of government. 

**Methods:** A micro-costing study is conducted to collect data on resources. Administrative databases were extracted. Surveys, interviews and workshops were performed and all publically available reports were identified. Three scenarios were analyzed to depict the budget impact of integrated care for health system in national wide. This research aims to generalize the required funds and human resources and estimate the possible cost-saving from the perspective of government.

**PHS23**

**COMPARISON OF COSTS BETWEEN HOSPITAL AND HOME INFUSIONS IN PATIENTS TREATED WITH LARONIDASE**

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**OBJECTIVES:** Laronidase, the current standard of care for attenuated MPS I patients, is an enzyme replacement therapy infused every week in a hospital or home setting. Home infusions only occur if the patient tolerates the infusion and could still be considered off-label in certain countries. There is little research assessing the differences in associated cost of infusions between the two settings. **Methods:** Patients with at least one encounter with laronidase from 2007-2015 were identified in the Truvien dataset, a repository of insurance claims data in the United States. Infusions were regarded as separate events and were divided into home or hospital groups. Associated costs occurring on the day of the infusion were considered and codes with <5 encounters during the study period were discarded, as were 5 service dates with codes for both infusion settings deemed errors in coding. The unweighted average cost per infusion was calculated by dividing the total cost per code by the number of unweighted encounters. **Results:** The adjusted analysis demonstrates a statistically significant difference in cost of $361.40 per patient per infusion between home and hospital settings. **Conclusions:** The present study revealed a poor knowledge and low level of involvement in counselling and health education services for patients with diabetes mellitus. Lack of knowledge or clinical skills was the most commonly reported barrier for providing such services. In order to better integrate community pharmacies into future public health policies, interventions should focus on overcoming the identified barriers.

**PHS24**

**COMPARING THE HEALTHCARE COST UTILIZATION OF PAEDIATRIC PATIENTS WITH THROMPHILIA A WITH AND WITHOUT INHIBITORS TREATED AT INSTITUTO DE SEGURIDAD SOCIAL DEL ESTADO DE MEXICO Y MUNICIPIOS**

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**OBJECTIVES:** The present study revealed a poor knowledge and low level of involvement in counselling and health education services for patients with diabetes mellitus. Lack of knowledge or clinical skills was the most commonly reported barrier for providing such services. In order to better integrate community pharmacies into future public health policies, interventions should focus on overcoming the identified barriers.
OBJECTIVES: Compare the healthcare resource utilization of treating paediatric haemophilia A patients versus paediatric patients with inhibitors treated at ISSEMyM. METHODS: Retrospective, observational analysis was performed by abstracting data from medical records of patients with haemophilia. Data were collected by medical professionals from ISSEMyM and included patient demographic, medical history, and healthcare resource utilization. The healthcare resources were classified in five major groups: Hospitalizations (urgency room, Hospitalization days, FVIII or rFVIIa), On-demand bleeds (total bleeds, FVIII or rFVIIa), Specialties and patients evaluations (Haematology consultation, Orthopaedic consultation and Rehabilitation session), Prophylaxis treatment (FVIII or rFVIIa) and Other healthcare resources (Laboratory & Diagnosis tests and minor surgeries). Data analysis was descriptive. RESULTS: Data from 19 patients with Haemophilia A and 3 patients with inhibitors were collected. Haemophilia A (7 patients required 80 hours of emergency room, 52 hospitalization days and 70,750 IU of FVIII [MX$3,145,591]), On-demand bleeds (53 bleeds consume 91,250 IU of FVIII [MX$3,106,791]), Specialists consultation (Patients require 213 consultations [MX$27,010,749]), Prophylaxis treatment (13 patients consume 2,686,225 IU of FVIII [MX$37,231,078.50]) and Other healthcare resources (11 patients required 48 Laboratory & Diagnosis test and 3 patients had 6 minor surgeries [MX$38,266,501]). CONCLUSIONS: Patients with haemophilia compared to paediatric patients with haemophilia A. This difference is explained because inhibitor patients experienced more Hospitalizations, On-demand bleeds, Specialties consultations and the cost of the rFVIIa.

PHS25 COMPARISON OF HEALTHCARE UTILIZATION AND COST IMPACT OF MANAGING TYPE 2 DIABETES ACROSS THE SYSTEM OF CARE IN MEDICARE BENEFICIARIES

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Sep. 21, 2017, USA

OBJECTIVES: Care for people with diagnosed diabetes accounts for more than a fifth of health care expenditure in the United States, and the American Diabetes Association estimated that the economic cost of diabetes increased by $71 billion (41%) to $245 billion during 2007–2012. While, hospital inpatient care drives the majority of health care spend, limited insight exist into how type 2 diabetes (T2D) patients utilize health care services across care sites. A better understanding of the actual cost of T2D patient care is essential to optimize care site initiatives. This study aimed to compare utilization and costs for different cohorts of T2D patients across care settings. METHODS: This study was a cross-sectional analysis using Medicare claims data from 1993 to 2011. T2D beneficiaries (Patients had 138 consultations [MX$41,690,699]), Prophylaxis treatment (2 patients consume 1,401.5 mg of FVIII [MX$16,435,390.5]) and Other healthcare resources (16 Laboratory & Diagnosis test required and 2 patients had 4 minor surgeries [MX$86,266,501]). CONCLUSIONS: Patients with T2D tend to utilize more care site services compared to non-T2D patients. Prophylaxis treatment was the most preferable care site initiative. This study aimed to compare utilization and costs for different cohorts of T2D patients across care settings. RESULTS: This study was a cross-sectional analysis using Medicare claims data from 1993 to 2011. T2D beneficiaries (Patients had 138 consultations [MX$41,690,699]), Prophylaxis treatment (2 patients consume 1,401.5 mg of FVIII [MX$16,435,390.5]) and Other healthcare resources (16 Laboratory & Diagnosis test required and 2 patients had 4 minor surgeries [MX$86,266,501]). CONCLUSIONS: Patients with T2D tend to utilize more care site services compared to non-T2D patients. Prophylaxis treatment was the most preferable care site initiative. This study aimed to compare utilization and costs for different cohorts of T2D patients across care settings.
The commonest cause of death among DM patients was neoplasms (2261, 32.7%), followed by disease of respiratory system (1755, 24.9%) and diseases of circulatory system (1113, 16.1%).

On average, the direct medical costs in the year of death were 2.075 times higher than those in the year before death ($US$23,256.1 vs $US$11,205.2, p < 0.001). Female patients had slightly higher costs in the year of mortality ($US$25,361.3 vs $US$23,178.2) and the year before mortality ($US$21,613.3 vs $US$11,147.3) than male patients. The increase in Charlson index was associated with greater costs in the mortality year. Patients with any diabetic complications had greater costs in the year of mortality (19.3% vs 14.3%) compared to patients who did not have complications (15.1% vs 11.5%) and CT/MRI examinations (8.0%). The number of patients with migraine was 150.4 per 10,000 populations. We found the highest patient number in primary care/general practitioners (50,626 patients), pharmacists (84,426 patients) and outpatient care (72,027 patients).

**CONCLUSIONS:** Migraine represent a significant burden for the health insurance system. Reimbursement of primary care/general practitioners, out-patient care and pharmacies are the most cost drivers for migraine in Hungary.

**PHS33**

**ECONOMIC BURDEN OF HOSPITALIZED DIARRHEAL DISEASE IN BANGLADESH**

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**OBJECTIVES:** Diarrheal diseases are a major threat to human health and still represent a leading cause of mortality and morbidity worldwide. Although the burden of the diarrheal diseases is much lower in developed countries, it is a significant public health problem in low and middle-income countries like Bangladesh. The aim of the study was to conduct a retrospective cross-sectional patient treatment costing study to measure the cost burden and coping mechanisms associated with diarrheal illness.

**METHODS:** This study was conducted in selected district hospitals in Bangladesh. Data were obtained from the hospital databases of the hospitals. We performed a cross-sectional patient treatment costing study to measure the cost burden and coping mechanisms associated with diarrheal illness. The cost of each item was estimated based on national and international literature. The following cost items were included into the study: inpatient care, medications, laboratory investigations and outpatient care for diarrheal patients.

**RESULTS:** The average total societal cost of illness per episode was BDT 5,274.02 (US $67.18) whereas average inpatient and outpatient costs were BDT 6,913.19 (US $85.26) and BDT 1,679.10 (US $21.72) respectively. Overall, average out of pocket expenditure was 11.75% of monthly household income, however, in poorest quintile, it was exceed 17% of the total household income. The richest (5th) quintile only expend 4.21% of their household income. Considering 10% threshold level, approximately 32% households suffered from catastrophic expenditure while the poorest quintile suffered mostly (49%), even the highest threshold level (at 25%) the poorest 27% of households suffered from catastrophic expenditure due to diarrheal diseases.

**CONCLUSIONS:** Diarrheal diseases continue to be an overwhelming problem in Bangladesh. The economic impact of any public health interventions (either preventive or promotive) that can reduce the prevalence of diarrheal diseases can be estimated from the knowledge generated from this current study.

**PHS34**

**ECONOMIC BURDEN OF HOUSEHOLD FOR TREATING SEVERE PNEUMONIA AMONG UNDER FIVE CHILDREN IN BANGLADESH**

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**OBJECTIVES:** Pneumonia is one of the most common causes of morbidity and mortality in children under 5 years in Bangladesh. The objective of the study was to measure the household economic burden which sought hospital care for treatment of severe pneumonia with/without severe malnutrition in children under 5 years in Bangladesh. The study was performed from the societal perspective which means all types of costs were identified, measured and valued no matter who incurred them. The study adopted quantitative techniques to collect the household and hospital level costs. The data were collected from a national representative population. The data were collected from children aged 1 month to 5 years. The data were collected from the period of April 2016 to March 2017. The sample size was 1,444 households and 1,592 children. The gross sample size was 3,033 households and 3,184 children.

**METHODOLOGY:** An incidence based cost-of-illness study was conducted from the perspective of household. Ingredient approach was used to identify cost categories, quantifying and valuing. A cross sectional sample was conducted among eligible patients (2-59 months children) as defined by the study design. Data were collected from their caregivers on duration of illness with detailed cost items i.e direct medical and non-medical costs using structured questionnaire. Indirect costs of caregivers were also measured by using human capital approach.

**RESULTS:** A total of 597 children with severe pneumonia were enrolled from November 2015 to March 2017. Mean age of the children was 12.23 ± 10.41 months, among them, (n=386) 65% were male. The total cost of household for treating one episode of severe pneumonia was estimated to 111.82 whereas direct medical, direct non-medical and indirect cost were 34% (US$ 37.57), 9% (US$ 9.61) and 58% (US$ 64.72) respectively. Among the medical cost, medicine cost was the major cost driver and constituted for 43% (US$16.21) followed by hospital bed cost 15% (US$ 5.44). Households spent about 22% of their average monthly income (US$ 508.18) for treating one episode of severe pneumonia, however, poorest household spent higher proportion (35%) of their average monthly income (US$ 712.13) for treating one episode of severe pneumonia. Household spent about 22% of their average monthly income (US$ 508.18) for treating one episode of severe pneumonia.
the patients’ serum monoclonal protein in Finland. METHODS: Real World Data of adult ITP patients treated with multipletomy from Aurora Biobank during 2009-2013 was collected. The time of disease diagnosis was based on the date of the first splenectomy. Patients were divided into non-Active (n-AD) and Active disease (AD) stage based on the median serum monoclonal protein (IgG or IgA) following second year of diagnosis. Patients were diagnosed as non-Active if IgG or IgA level was ≥15*10^9/L and Active if IgG or IgA level was > 20 g/L. This threshold value was based on a Finnish expert opinion.

RESULTS: Of the 103 patients diagnosed with MM in the Hospital District of Southwest Finland, 33 had received ≥2 prior lines of treatment. 13 patients (39.4%) were categorised as n-AD. The total average follow-up (years) and patient years, respectively, were 7.9 and 33.2 in AD and 10.38 in AD. Patients in n-AD had on average 56% less hospital treatment periods, 63% less hospital days, 18% less outpatient visits, 23% less medical procedures, 74% lower radiation therapy and 44% less laboratory test compared to patients in AD. The total average health care costs (without medications) per patient were €15,922 and €18,389, and per patient year €20,078 and €35,432 in AD- and n-AD, respectively.

CONCLUSIONS: The results indicate increased health care resource utilisation and higher related health care costs for patients with multiple myeloma with ≥2 prior lines of treatment, who are in an active disease state.

PHS36
THE EPIDEMIOLOGY OF ADULT IMMUNE (IDIOPATHIC) THROMBOCYTOPENIC PURPURA (ITP) IN FINLAND: RESOURCE UTILISATION, RELATED COSTS AND HOSPITAL MEDICATION ASSOCIATED WITH THE TREATMENT OF NON-SPLENECTOMISED ADULT ITP BASED ON REAL WORLD DATA FROM AURIA BIOBANK

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OBJECTIVES: To study the epidemiology of ITP and resource utilisation, related costs, hospital medication association with treatment of non-splenectomised adult ITP patients in Finland. METHODS: Real World Data of adult patients diagnosed with ITP from Aurora Biobank during 2004-2013 was collected. Medication data including hospital prescriptions (IV & PO) was available from 2010 forward. Patients were distributed to Control (CG) and no-Control (n-CG) -groups according to the data including hospital prescriptions (IV & PO) was available from 2010 forward. Patients were distributed to Control (CG) and no-Control (n-CG) -groups according to the time of disease diagnosis based on the date of the first splenectomy. Hospital Resource Group (HRG) tariff prices (2016/17) were used to calculate the number of patients with gout as a primary diagnosis who were managed in secondary care services. In this study, we characterized secondary healthcare resource utilization and associated costs of Finnish IBD patients in a real-life clinical setting. METHODS: All adult CD and UC patients with secondary care visits at the Hospital District of Southwest Finland between the years of 2013-2014, were included in the study.

The prevalence of inflammatory bowel disease (IBD) has increased significantly in all Western countries during the past 25 years. Ulcerative colitis (UC) and Crohn’s disease (CD) are the most common IBDs, affecting 46,000 Finnish individuals representing 0.8% of the total population. The appropriate management of IBD is key for preventing relapses and complications, and minimizing costs of care. In the following years, we will present the results of our study in a further burden on healthcare resources.

CONCLUSIONS: Gout has a significant burden on healthcare in England. Targeting gout as a metabolic disorder, by treating hyperuricaemia as a risk factor for CVD, may lead to improved management of gout and reduced burden on secondary care services.

PHS39
SECONDARY CARE RESOURCE UTILIZATION AND COST OF CARE AMONG FINNISH INFLAMMATORY BOWEL DISEASE PATIENTS

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OBJECTIVES: To study the prevalence of inflammatory bowel disease (IBD) in a further burden on healthcare resources.

PHS37
RESOURCE USE, HEALTH CARE COSTS AND BURDEN OF DISEASE IN PATIENTS WITH POLYCYTHEMIA VERA IN FINLAND: EVALUATION BASED ON LEUKOCYTE COUNTS USING FINNISH REAL WORLD DATA FROM AURIA BIOBANK

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OBJECTIVES: This study evaluated the burden of disease, health care resource use and associated costs in patients with polycythemia vera (PV) with elevated leukocyte counts in Finland. METHODS: Real World Data of adult patients diagnosed with PV from Aurora Biobank during 2004-2013 was collected. Patients were defined as in Control if their platelet levels were elevated platelet levels are associated with higher health care costs mainly due to elevated platelet levels are associated with higher health care costs mainly due to incurable. The main co-morbidities being hypertension (49%), atrial fibrillation (22%) and diabetes (21%). Eighty-nine percent of patients with gout in 2011 were prescribed at least one medication for CVD.

In the UK, the NHS spend on injuries and trauma is significantly higher in areas with a higher average number of hospital days. Together, pharmacological treatment is more common in patients with a platelet count ≤50 x 10^9/L.

CONCLUSIONS: Polycthemia vera is a rare disease characterized by an increased number of red blood cells (RBC) in the bloodstream. The prevalence of IBD is key for preventing relapses and complications, and minimizing costs of care. In the following years, we will present the results of our study in a further burden on healthcare resources.

PHS40
THE UK’S BINGE DRINKING CULTURE: LOSING MORE THAN JUST OUR DIGNITY?

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OBJECTIVES: The public health importance of alcohol-related injuries has been previously reported. In the UK, 7.0% of all hospital admissions were alcohol-related in 2015/16, of which 5.3% were due to unintentional and intentional injuries. This analysis investigated the relationship between binge drinking and total spend by NHS Clinical Commissioning Groups (CCGs) on injuries and primary care prescribing. To determine the relationship between binge drinking and spend on injuries, linear regression analyses were conducted using Microsoft Excel 2013®. RESULTS: There were 208 CCGs with data available. The analysis indicated a statistically significant, positive correlation between the estimated proportion of binge drinkers and the NHS spend on admissions relating to fractures where a fall occurred and primary care prescribing for trauma and injuries. With continued funding pressures on CCGs, understanding and reducing avoidable expenditures is becoming increasingly important.

METHODS: The following CCG data was extracted from the 2016 focus pack online tool: estimated percentage binge drinkers aged 16 and over, spend per person aged 19 – 64 on injuries (data for head, wrist, hand, shoulder, upper arm, knee and lower leg injuries were combined to give a composite spend), admissions relating to fractures where a fall occurred and primary care prescribing. To determine the relationship between binge drinking and spend on injuries, linear regression analyses were conducted using Microsoft Excel 2013®.

RESULTS: There were 208 CCGs with data available. The analysis indicated a statistically significant, positive correlation between the estimated proportion of binge drinkers and the NHS spend on admissions relating to fractures where a fall occurred (R2 = 0.26, p < 0.001) and spend on primary care prescribing for trauma and injuries per 1,000 population (R2 = 0.11, p < 0.001). A weaker but statistically significant correlation was also observed between binge drinking and spend on injuries occurring to the head, wrist, hand, shoulder, upper arm, knee and lower leg (R2 = 0.069, p < 0.001).

CONCLUSIONS: In the UK, the NHS spend on injuries and trauma is significantly higher in areas...
with a greater proportion of binge drinkers. Given the growing need to improve efficiencies and reduce costs within the NHS, further investigation is needed to understand how the UK can tackle the UK’s binge-drinking culture.

**PHS41**

**THE COST OF TREATING DIABETIC KETOACIDOSIS IN THE UK: A NATIONAL SURVEY OF HOSPITAL RESOURCE USE**

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**OBJECTIVES:** Diabetic ketoacidosis (DKA) is a commonly encountered metabolic emergency. In 2014 a national survey was conducted looking at the management of DKA in adult patients across the UK. The survey reported the clinical management of individual patients as well as institutional factors that impact in helping to deliver that care. However, costs of treating DKA were not reported. We estimate these costs here.

**METHODS:** We used a combination of bottom-up and top-down modeling to calculate total costs associated with treating DKA in a representative population sample. The data were derived from the source data from the national UK survey of 283 individual patients collected via questionnaires sent to hospitals across the country. Because the initial survey collection tool was not designed with a budget economic mindset in mind, several assumptions were made when analyzing the data. We used multiple imputation methods to account for missing data.

**RESULTS:** The mean and median time in hospital was 5.6 and 2.7 days, respectively. Based on the individual patient data and using the Joint British Diabetes Societies Inpatient Care guidance, the cost analysis suggests that for this cohort, the average cost for an episode of DKA was £2064 per patient (95% CI: £1800, 2563). An episode of hypoglycaemia following DKA was the only statistically significant predictor of cost (P < 0.05) of DOACs. Despite relatively high costs, the last 3 years. Cardiac Complications were second items for cost with increasing rates 2.5, respiratory complications ranking 3rd with a 1.5 rate at last 3 years. Hospitalization rates increased with 5.7% for the last 3 years.

**CONCLUSIONS:** The economic impact of DKA in adults was relatively high. However, we were unable to account for prolonged hospital stays due to co-morbidities or indirect costs such as travel costs associated with emergency visits. Over the last 3 years, costs of treating DKA complications may be one of the major economic challenges facing Egyptian health sector. The objective of this study is to evaluate Economic evaluation for establishing stroke unit followed by early supported discharge outcome was determined as survival with minor disability.

**METHOD:** Integration between A systematic literature review & descriptive analysis of Data from patients aged (18-60 years) for the last 3 years including direct and indirect medical costs for conventional treatment including (cost of treatment, complications including physical therapy, hospitalization, outpatients costs, rehabilitation). The total (n) of patients enrolled in the national database = 3212. One way sensitivity analysis was conducted. Level of statistical significance was defined at (p < 0.05).

**RESULTS:** Mean direct medical cost for (H+) neurological complications including Cerebral Edema, O2 therapy, Blood transfusions, increasing rates 2.5,

**CONCLUSIONS:** The characteristics of Egyptian stroke patients are generally similar to Finnish patients with hemorrhagic and endovascular therapy (EVT) and hematoma drainage (EVD) received 0.193). Total readmission rate (18.06% in 2013, 18.48% in 2015, p < 0.05).

**RESULTS:** 0.86). Time intervals between first hospitalisation and readmission weren't significantly different (p = 0.088), whether not enough to compensate (difference between costs and incomes for 2013 and 2015 were -855 €

**CONCLUSIONS:** Patients receiving on-demand therapy have higher health-care costs than patients treated prophylactically. Selecting between prophylaxis and on-demand therapy should be done under careful consideration.

**PHS45**

**CHARACTERIZATION OF HEALTH CARE UTILIZATION AND COST OF HEMOPHILIA A AND B IN REAL-LIFE: A 6-YEAR FOLLOW-UP STUDY IN FINLAND**

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**OBJECTIVE:** To characterize the health care utilization and costs in Finnish patients with hemophilia A (HA) and hemophilia B (HB). This study is important to determine the trends of the last four years (2012-2016). Annual healthcare costs were calculated based on resource utilization and Finnish report of standard unit costs. **RESULTS:** A total of 131 HA patients and 39 HB patients were included. Of HA patients, 66% (n=74) received prophylactic therapy (HAP), and 25% (n=31) received on-demand therapy (HAO). Over 90% of HAP and HAO patients had outpatient visits during follow-up. The mean outpatient visits/year/patient was 2.4 for HAP and 1.9 for HAO. Overall, 43% of HAP patients and 7% of HAO patients had early deaths during follow-up; the mean length of stay was 11.9 days for HAP, and 15.3 days for HAO. The total annual healthcare cost was 8,530 € for HAP and 12,584 € for HAO. HB patients, 31% (n=12) received prophylactic therapy (HBAP), and 25% (n=6) received on-demand therapy (HB). Over 90% of HBP and HBO had outpatient visits during follow-up. The mean outpatient visits/year/patient was 1.8 for HBP and 2.1 for HBO. Overall, 25% of HBP patients, and 50% of HBO patients had early deaths during follow-up; the mean length of stay was 3.0 days for HBO, and 11.3 days for HBO. The total annual healthcare costs were 1,358 € for HBP and 9,517 € for HBO. Except for the results regarding annual healthcare cost between HBP and HBO (<0.001), statistical significance was not reached.

**CONCLUSIONS:** Patient characteristics, HA prophylaxis and on-demand therapy should be done under careful consideration.

**PHS46**

**HEART FAILURE MANAGEMENT: IMPACT OF A NEW HEALTHCARE ORGANIZATION ON READMISSIONS AND COSTS**

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**OBJECTIVE:** Heart failure (HF) is a major public health issue due to its prevalence in the western world: two to three percent of the European population have HF. To improve patient care, the Montpellier university hospital (CHU) implemented in 2014 a new organization of HF management called “optimised pathway”. The aim of our study was to compare costs and readmissions rates between 2013 and 2015, and to assess the new pathway impact.

**METHODS:** A retrospective observational and comparative before-after study was conducted. The clinical endpoint was the readmission rate a year after first hospitalisation for HF. CHU databases were used to identify patients, and the patients’ characteristics were measured over a one year time horizon.

**RESULTS:** No significant differences were found between 2013 and 2015 regarding the year one readmission rate (18.06% in 2013, 18.48% in 2015, p = 0.86). Time intervals between first hospitalisation and readmission weren't significantly different (p = 0.088). A significant difference was found in terms of total length of stay (p = 0.193). Total patient care cost more in 2015 (4868 € vs. 7223 €, p < 0.01), but incomes were also higher (8717 € vs 6368 €, p = 0.08), whether not enough to compensate (difference between costs and incomes for 2013 and 2015 were -855 € and -1598 € respectively.

**CONCLUSIONS:** Cost savings were observed in terms of total length of stay (p = 0.193). Total patient care cost more in 2015 (4868 € vs. 7223 €, p < 0.01), but incomes were also higher (8717 € vs 6368 €, p = 0.08), whether not enough to compensate (difference between costs and incomes for 2013 and 2015 were -855 € and -1598 € respectively.
OBJECTIVES: To assess the cost-effectiveness of including screening for severe combined immunodeficiency (SCID) in the NHS newborn bloodspot screening programme.

METHODS: A decision tree model with life-table estimates of outcomes was built. Model structure and parameterisation were informed by systematic review and expert opinion. A public health perspective was taken. Unit costs were based on 2017 currency.

RESULTS: The model estimated the annual costs of screening for non-SCID T-cell lymphopenia (TCL) who would have presented as healthy at birth. The incremental cost-effectiveness ratio (ICER) was £20,000 per quality-adjusted life-year (QALY), key uncertainties relate to the impact of false positives and the identification of children with non-SCID TCL.

CONCLUSIONS: SCID screening is cost-effective at £20,000 per QALY, key uncertainties impact the base-case scenario, screening of 1000 individuals resulted in 7 more quality-adjusted life-years (QALYs) and 2 fewer stroke cases. ICER was 70 001 PLN per stroke prevented. CONCLUSIONS: It has been shown that active screening for undiagnosed AF is more effective than standard care and that screening with the use of repeated ECG in 67-year-old individuals was based on a lifelong decision analytic Markov model. Results: 1056 articles were found and 23 that fulfilled our inclusion criteria were taken into consideration and 16–311, mean age 43, 48% males. The incidence of newly detected, clinically silent, AF was 1.5% (95% CI 1.1–1.9%). In the base-case scenario, screening of 1000 individuals resulted in 7 more quality-adjusted life-years (QALYs) and 2 fewer stroke cases. ICER was £70 001 PLN per stroke prevented.

CONCLUSIONS: It has been shown that active screening for undiagnosed AF is more effective than standard care and that screening with the use of repeated ECG in 67-year-old individuals may be cost-effective in Poland.

OBJECTIVES: To evaluate the economic impact of offering opportunistic AF screening using lead mobile ECG device as part of primary care workflow to the NICE guideline recommendation and to evaluate the cost-effectiveness of repeated ECG in the UK.

METHODS: A cost utility analysis (CUA) was undertaken in Excel, Model was built on Microsoft Excel suite and it combined advance Excel Functions Data with Visual Basic Macros with assumptions based on a feasibility study and a new patient pathway on which community pharmacist perform opportunistic AF checks using the lead mobile ECG device. Apart from Cost-Effectiveness, Return of investment and QALYS of the new pathway was also calculated. Finally, the model was tested using through a cost assessment scenario utilizing input data from various well-established sources: Background research into the NHS and NICE guideline content, current clinical practice, published information and available data. Testing the model, including the assumptions and outcomes. RESULTS: Our results suggested that the opportunistic AF checks can be cost-effective for the NHS presenting a ROI of 60% and the model presents quick and accurate results without sacrificing customisation options, empowering users with the flexibility to adapt the model to their own various clinical settings.
referral to hospital eye services (RDR). The CUA was facilitated by a time varying Markov model and DR risk factors (HBa1c, blood pressure, duration of diabetes etc.) enabled estimates of relative costs and quality adjusted life years (QALY) gained associated with an increase in biennial screening for people with T1DM and T2DM. **RESULTS:** Data from 2,286 and 36,202 people with T1DM and T2DM respectively were used. Sensitivity analyses considering screening at age of 45 for T1DM and HBa1c of 6.5, 8.0 and 9.5 at the time of screening were estimated to lose one QALY for a cost saving to national health services (NHS) of £11,612, £48,449 and £15,818 respectively. For people with T2DM at the same HBa1c level suggested NHS saving of £91,320, £60,482 and £32,510 for each QALY lost. The incremental cost effectiveness ratio for biennial screening for people with T1DM was £30,995 for £73,475 for people with T2DM. **CONCLUSIONS:** Our findings, primarily driven by the risk of progression to FBD between people with T1DM and T2DM, suggest that biennial screening intervals in people with T2DM makes best use of NHS resources. For people with T1DM however annual screening remains justified and should not be increased to biennial.

**PHS53**

**COST-EFFECTIVITY ANALYSIS OF ANTIHYPERTENSIVE EXTENSIVE DOSAGE ADJUSTMENTS BY A PHARMACIST IN A COMMUNITY SETTING**

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**OBJECTIVES:** Hypertension is a chronic disease for which only 68% of treated patients were controlled in Canada in 2013. Pharmacists in the province of Quebec recently received legislative authority to adjust the dosage of antihypertensive drugs if there is an agreement with the prescriber on the therapeutic target. This research aims to estimate the cost-effectiveness of this new model of care in Quebec. **METHODS:** A Markov model was developed to extrapolate the impact of this pharmacy practice on strokes, myocardial infarctions and mortality. The model used yearly cycles over a lifetime horizon. Tramig Risk Equations were used to derive the impact of blood pressure control on strokes and myocardial infarctions. The clinical efficacy of the intervention was derived from the RxAction clinical trial which was conducted where pharmacists performed antihypertensive dosage adjustments. Efficacy was expressed as the proportion of patients with controlled blood pressure. The payer perspective was adopted and only direct costs were included. The main outcome was expressed as the number of quality-adjusted life years (QALYs) gained. **RESULTS:** A centralized care model is expected to decrease total costs by $108.36 per person. The total cost per person with hypertension in the intervention model is $2,674, while that in the decentralized model is $2,783 per person. The incremental cost-effectiveness ratio (ICER) is $108.36 per QALY gained. **CONCLUSIONS:** This research investigates the disease burden of fractures in osteoporosis patients. In the past 6 months, 60% of patients with osteoporosis were included (N = 1,707). Participants with/without prior fractures after age of 50 years old were compared with respect to health status (assessed in osteoporosis [MCS] and physical component summary [PCS] scores from the Short Form-36v2), WPAI (assessed via the WPAI-GH instrument) and self-reported healthcare resource utilization. In the past 6 months, 41% of patients with osteoporosis had ≥2 bone fractures (N = 172) and those with 1 bone fracture (N = 242) to assess the association between estimated burden and incremental fractures. Comparisons were made using one-way ANOVAs with a significance level of 0.05. **RESULTS:** Total 41% with WPAI-GH instrument and 42% with osteoporosis indicated significant difference of health status (0.01%), age (0.039), gender (0.05), with higher age and lower income with patients with osteoporosis. **CONCLUSIONS:** To evaluate the prevalence of primary progressive multiple sclerosis (PPMS) in Italy and to describe the healthcare utilization resources and related costs for National Health Service (NHS). **METHODS:** A cross-sectional analysis of real-world data of all patients with PPMS who received biannual care in 2017 in Italy. **RESULTS:** A total of 1,107 patients were included, 6.9% had primary progressive multiple sclerosis. The cost of healthcare utilization resources and related costs were estimated using a Markov model. **CONCLUSIONS:** To develop a cost-effective model of care that can be applied in real-world settings. **REFERENCES:** 1. De S. et al. 2018. 2. DeS. et al. 2019. 3. DeS. et al. 2020. 4. DeS. et al. 2021. **OBJECTIVE:** To evaluate the prevalence of primary progressive multiple sclerosis (PPMS) in Italy and to describe the healthcare utilization resources and related costs for National Health Service (NHS). **METHODS:** A cross-sectional analysis of real-world data of all patients with PPMS who received biannual care in 2017 in Italy. **RESULTS:** A total of 1,107 patients were included, 6.9% had primary progressive multiple sclerosis. The cost of healthcare utilization resources and related costs were estimated using a Markov model. **CONCLUSIONS:** To develop a cost-effective model of care that can be applied in real-world settings. **REFERENCES:** 1. De S. et al. 2018. 2. DeS. et al. 2019. 3. DeS. et al. 2020. 4. DeS. et al. 2021.
OBJECTIVES: Recent therapeutic developments in HCC are positioned to change the treatment landscape and provide new therapeutic options. The aim of our study was to review results for nivolumab in this setting indicating efficacy and manageable safety. Given the symptom burden associated with HCC, understanding the comparative safety and related cost is vital when evaluating treatments. In the absence of a head-to-head comparison, we aimed to compare treatment outcomes with nivolumab and regorafenib for 3-grade TRAEs across trials and grades.

METHODS: Frequency, grade, and attribution of TRAEs were extracted from patient-level data collected in the sorafenib–experienced cohort of CheckMate 066, a Phase 1/2 non-competing study. MAIC was performed to adjust baseline characteristics between the nivolumab (n=145) and the regorafenib RESOURCE trial (n=374). Subsequently, odds ratios (OR) comparing nivolumab with regorafenib for grade 3-4 TRAEs and any TRAEs were calculated. TRAE costs were estimated from a societal perspective, discounted at 3.5% per annum. Cost of grade 3-4 AEs were assumed to require inpatient hospitalization. RESULTS: Based on the MAIC, 10 grade 3-4 TRAEs were attributed to nivolumab compared to 243 with regorafenib. Grade 3-4 TRAEs and any grade TRAEs leading to discontinuation were significantly less frequent in nivolumab vs regorafenib (OR 0.23, 95% CI 0.14-0.39) and OR 0.25 (0.08-0.63), respectively. No significant between-treatment differences were observed for specific grade 3-4 TRAEs though point estimates tended to favor nivolumab. The per-patient costs of managing grade 3-4 TRAEs were 10.2 times higher for regorafenib compared to nivolumab ($3,946 vs $385). CONCLUSIONS: Nivolumab was associated with reduced odds of grade 3-4 TRAEs and discontinuations higher for regorafenib compared to nivolumab ($3,946 vs $385).

PHS59
APPROPRIATE DIAGNOSIS AND TREATMENT AS KEY ELEMENTS TO IMPROVE PHS59
Nivolumab was associated with reduced odds of grade 3-4 TRAEs and discontinuations higher for regorafenib compared to nivolumab ($3,946 vs $385).

PHS60
ASSessment of Hypertension Patients’ Adherence in Bulgaria - Pilot Study
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OBJECTIVES: Patients’ adherence to antihypertensive drug regimen is a complex but important factor in achieving blood pressure control and reducing complications. Approximately one half of patients with hypertension adhere to prescribed medications, and fewer than one in three patients have controlled blood pressure. The aim of the study is to assess the level of antihypertensive medication adherence in two of the biggest cities in Bulgaria. METHODS: A pilot survey was conducted in a sample of individuals aged 22 to 91 (n=441) from the cities of Plovdiv and Varna, Bulgaria. The survey was conducted with hypertensive patients that received their medication at the Department of Hypertension of the Faculty of Pharmacy, Medical University in Varna. RESULTS: The literature review provided an overview of the absence of information on OCTD. From 30 patients (80.0% male, 36.7% aged 7-15 years, 63.3% aged 15-48 years), 83.0% declared that obsessions and/or compulsions were the most important factors determining their social impairment. Adult patients refractory to lifestyle changes in pregnancy often undergo pharmacological plus drugs. The mean clinical scores of patients indicated a severe condition for both tics and OCB/OD. The mean time elapsed from symptoms onset to diagnosis of OCTD was 5.6 years, reaching up to 11 years in one case. Before reaching the correct diagnosis, the patients were visited several times by different specialists, 93.3% underwent diagnostic examinations and 86.7% took 2/3 different drugs: neuroleptics (40.0%), anti-depressants (36.5%), benzodiazepines/triazide/tiorpamate (26.7%), anxiolytics (6.7%), 30.0% antihypertensive and related compounds. Ten patients were hospitalized and 8 underwent psychotherapy. CONCLUSIONS: OCTD has been described recently as an early-onset and highly disabling endophenotype of Tic Disorder and Obsessive Compulsive Disorder. OCTD has a relevant but little known clinical, social and economic burden for patients and their families. Albeit preliminary, these results show that attention is mandatory for establishing correct diagnosis and treatment guidelines to improve health and rationally spend resources for OCTD.

HEALTH SERVICES – Patient-Reported Outcomes & Patient Preference Studies

PHS62
EXAmination of Adherence of High-Risk Pregnant Women with Gestational Diabetes Mellitus Care Especially with Respect to Diet AND Physical Activity
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OBJECTIVES: Gestational diabetes mellitus is one of the most commonly occurring diseases in pregnancy. It is important to know which women with gestational diabetes mellitus care as topic of our research. METHODS: The type of our research was cross-sectional, quantitative nature. Our selected target group included mothers who were previously diagnosed with GDM during their pregnancy and who had 1-7 years old children (n=76). The sampling method was non-randomized, targeted selection. Our research, was carried out between June 2016 and January 2017 in Szombathely, Hungary. Question group of our own-edited questionnaire: socio-demographic data, lifestyle, care follow-up. We used mean, prevalence and Chi2 test to statistical evaluation. Evaluation of the questionnaire was done by MS Excel software. RESULTS: Gestational diabetes have been formed in 7.1% of 1st pregnancy in 71% of cases. In 81% of the cases GDM was also present during their later pregnancies, 13% of cases, type 2 diabetes mellitus developed as well after their GDM pregnancy. Since their GDM pregnancy, 13.1% did not check their glucose levels. Examining the frequency of the metabolic syndrome, the daily 30-minute physical activity had preventive effect against the development of disease (p < 0.05). We could not find a strong correlation between regular attendance of care and adherence to diet (p > 0.05), between lifestyle change (increasing fruit and vegetables) and adherence to diet (p > 0.05). CONCLUSIONS: We would pay more attention to follow up women treated with GDM who has already given birth because with a proper diet and physical activity we can easily reduce or delay the development of type 2 diabetes mellitus and metabolic syndrome.

PHS63
DOES THE STUDY POPULATION AND THE USE OF PROXY RESPONDENT HAVE AN EFFECT ON THE LATENT QUALITY OF LIFE CONSTRUCTS MEASURED BY THE C-HU&D? AND THE PEDSQL 4.0? AN EXPLORATORY FACTOR ANALYSIS
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OBJECTIVES: An important psychometric property of instruments designed to measure healthcare-related quality of life in children is its ability to assess the latent HRQOL constructs for different subgroups within the instruments’ target population. This study examined the latent structures of two generic-paediatric health-related quality of life (Pediatric Quality of Life Inventory [PedsQL]) and the preference-based Child Health Utility 9D (CHU&D) when used in subgroups that differed according to age and type of respondent (self vs proxy-report). METHODS: Representative cross-sectional data were obtained from two independent studies of Australian Children (SLAC) [14-15yrs n=3,247] and 10-11yrs (n=3,376) and a separate 2013 independent study (community-colt, 15-17yrs (n=755). CHU&D is self-reported across all cohorts, whereas PedsQL is proxy-reported by parents in the SLAC cohorts and self-reported in the community-cohort. Latent HRQOL constructs measured by the instruments were adherience among hypertextsive subjects. Patients with factors associated with poor adherence should be more closely monitored to optimize their drug taking behavior.
identified using exploratory factor analysis (EFA). The optimal number of factors for the EFA was determined using parallel analysis based on simulated psychometric correlation matrices. RESULTS: A five-factor structure was deemed optimal. In all three cohorts, the PedsQL dimensions loaded onto four distinct factors as the developer originally specified: (1) physical functioning (8 items), emotional functioning (5 items), social functioning (5 items), and school functioning (5 items). The ASCOT and EQ-5D-5L factors were comparable. The ASCOT and EQ-5D-5L factors were comparable. The ASCOT and EQ-5D-5L factors were comparable.

PHS64 COMPARISON OF ELDERLY CARE RECIPIENTS' SOCIAL CARE-RELATED QUALITY OF LIFE (SCRQoL) WITH HEALTH RELATED QUALITY OF LIFE (HRQoL) IN JAPAN
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OBJECTIVES: In developed countries, the demand for social care is increasing due to the progression in rapid aging. Our research team developed a Japanese version of the ASCOT SCT4, which can measure social care-related quality of life (SCRQoL). We compared scores of the ASCOT with those of the EQ-5D-5L to determine the characteristics of both instruments when applied to elderly care recipients. METHODS: We re-analyzed data that were collected from a municipality near the Tokyo metropolitan area. Questionnaires were distributed to 2370 care receivers at home, and 1141 responses (48.1%) were collected. We analyzed data from 1102 individuals aged 65 years old and older (Category 2 insured persons). Summary statistics for the EQ-5D-5L were calculated according to the required level of care, which classified elderly care receivers into 7 severity categories. Multivariate analysis was used to examine the effect of each factor influencing the EQ-5D-5L scores independently in order to determine which factors influenced the scores. RESULTS: EQ-5D-5L indices were 0.666 (support required 1, N = 78), 0.567 (support required 2, N = 190), 0.578 (care level 1, N = 241), 0.501 (care level 2, N = 2112), 0.422 (care level 3, N = 306), 0.352 (care level 4, N = 78) and 0.286 (care level 5, N = 48). The corresponding ASCOT scores by care level were 0.746 (N = 112), 0.676 (N = 178), 0.672 (N = 217), 0.655 (N = 202), 0.680 (N = 101), 0.626 (N = 70), and 0.619 (N = 38), respectively. Both instrument scores decreased with increasing severity of care level, but the decrease in ASCOT scores was less marked than that for the EQ-5D-5L. The multivariate analysis revealed that age was not associated with either of the scores, while care level, economic conditions, and frequency of eating meals with family members and others were significant factors that influenced both scores. CONCLUSIONS: Several factors were identified as influencing ASCOT and EQ-5D-5L scores, but the degree to which each factor influenced the scores varied.

PHS65 PARENTAL SATISFACTION WITH MEDICATION THERAPY AND PARENTING STRESS AMONG PARENTS WITH ASTHmatic CHILDREN
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OBJECTIVES: The last twenty years have seen increased interest in patient satisfaction with medications as patient centredness, the drive to measure and improve the health status of the patients, and the main goals of the Expert Panel Report 3 for asthma management was meeting satisfaction requirements of asthmatic patients and their families. This study’s objective was to determine the association between parental satisfaction and parenting stress (β = -0.1142, p<0.0001) and visiting a pediatrician (β = -1.21925, p=0.0115), holding other variables such as children’s age and gender as constant. The only positive association was found between parental satisfaction and parenting stress (β = 0.14850, p≤0.0374), after controlling for these variables.

PHS66 A399 – ENHANCING SATISFACTION WITH PROSTATE CANCER TREATMENT DECISION – THE MOBILE HEALTH PROGRAM PROSTANA: A MULTICENTER RANDOMIZED CONTROLLED TRIAL
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OBJECTIVES: Cross specialty primary care of patients with prostate cancer is challenging. In the German context decisions on treatment options, an individual mix of comorbidities, personal preferences and considerable psychological burden following a cancer diagnosis. Several decision aids exist, but these have primarily been targeted to physicians and their effects have not been validated in the context of patients. We hypothesized that deciding patients would increasingly turn to internet-based research before and after consultations. To improve shared treatment decision making and patient’s health literacy a comprehensive German online-progam (Prostana) has been developed based on the European guidelines. The program’s key element is a patient centric dialogue software which tailors information to the needs of the patient in a highly patient friendly language. The objective and primary endpoint of the EasyPRO3 study is to evaluate patients’ satisfaction with the treatment decision. METHODS: Prospective multicenter and cluster-randomized controlled trial with cross-over design. To avoid spillover effects, study centers are randomized into either control- or intervention group. In the intervention group patients are offered Prostana, in the control group patients are given a standardized evidence based leaflet. Patients with a first time diagnosis are included in the study. Based on the primary endpoint the sample size has been calculated to 464 patients. The evaluation will follow Intention-to-Treat principle and analyze, using the Satisfaction with Decision Scale (SWD).

PHS67 OLDER ADULTS’ VIEWS ON INCORPORATING LIFE EXPECTANCY IN SCREENING CHOICES – RESULTS FROM A NATIONAL SURVEY USING A DISCRETE-CHOICE EXPERIMENT
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OBJECTIVES: Physicians have been encouraged to consider life expectancy when recommending cancer screening. However, the degree to which the public understand the implications of incorporating life expectancy into screening decisions is largely unknown. This study examined their preferences for different considerations that might go into screening cessation. METHODS: We conducted a national online survey of older adults (age ≥65) using a take-it-or-leave-it discrete-choice experiment. Participants were given 9 choice tasks in which they were presented with the profile of a hypothetical person. Each profile varied in age, life expectancy, quality of life and the person’s recommendation. Participants were asked whether they would accept screening if they were in the hypothetical person’s place. A logistic regression was run to identify characteristics of persons that never accepted screening. A conditional logit model using effects coding was used to determine participants’ preferences for the different aspects of the screening profiles. Estimates were converted into odds ratios (OR).

PHS68 THE POST-TRAUMATIC STRESS DISORDER AND MEDICATION ADHERENCE ENCOUNTERED AT PATIENTS WITH RHEUMATOID ARTHRITIS
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OBJECTIVES: The aim of the study is to evaluate the association between post-traumatic stress disorder and adherence to treatment of Romanian patients with rheumatoid arthritis, without psychiatric comorbidities. METHODS: We examined the association between post-traumatic stress disorder and adherence in a study of 75 patients with rheumatoid arthritis. Post-traumatic stress disorder was assessed using Psychiatric Diagnostic Screening Questionnaire (PDSQ) and medication adherence was assessed with Compliance Questionnaire for Rheumatology with 19 items (CQR-19). Age, gender, pain-indicators, physical and social scores were included in the study. In order to verify the health status of the patients, Linear regression models were analyzed for evaluating the investigated connection between the two quantitative variables. RESULTS: All of our patients were diagnosed with rheumatoid arthritis and are currently under treatment with disease modifying antirheumatic drugs (methotrexate, leflunomide, sulfasalazine), nonsteroidal anti-inflammatory drugs and 11 of them, with biologic agents. Their mean (SD) age was 56 ± 15.5 years. Sex, patient education and the association between adherence and the level of education. CONCLUSIONS: There are no cures available for rheumatoid arthritis, nevertheless the psychological effects are very important for the adherence and the good management of this disease. Our study emphasizes the need of a good mental health in order for the patients to adhere correctly to the treatment.
PHS71

IMPACT OF A PHARMACIST-LED INTERVENTION ON THE KNOWLEDGE OF APPROPRIATE USE OF PEAK FLOW METER AND ASTHMA ACTION PLAN AMONG PHARMACY STUDENTS: A SIMULATED PATIENT APPROACH
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OBJECTIVES: As the pharmacist-wannabes, the undergraduate pharmacy students must have adequate knowledge and training to counsel the asthma patients on the correct way of using the peak flow meter (PFM) and asthma action plan (AAP). This study was conducted to determine if an educational intervention designed for the final year pharmacy students could improve the students’ counselling abilities to facilitate the correct use of PFM and AAP among asthma patients. METHODS: This study recruited a total of 46 undergraduate final year pharmacy students from MAHSA University, Malaysia. Five simulated patients enacted a standardized scenario using inhalers and tablets to control asthma. The knowledge of appropriate use of PFM and AAP was assessed using a self-designed questionnaire where student scores may vary from 0-8 and 0-10 for PFM and AAP, respectively. After the initial assessment, a training session using a didactic approach to self-directed learning was conducted. RESULTS: The majority of the respondents were female (n=37, 80.4%) and Chinese (n=27, 57.8%). The results of paired samples t-test showed that there was a significant improvement in the mean knowledge scores (ASDF) of PFM (pre-intervention score = 4.24 ± 1.63, post-intervention score = 6.84 ± 1.26, t = 9.474 (45), p < 0.001), and AAP (pre-intervention score = 4.52 ± 1.44, post-intervention score = 6.43 ± 1.29, t = 7.765 (45), p < 0.001). CONCLUSIONS: The substantial improvement in the knowledge score of enrolled students was validated from the results of the intervention regarding correct use of PFM and AAP in order to maximize the future treatment outcomes in Malaysian asthma patients.

PHS72

DEVELOPMENT OF A TOOL TO QUANTIFY AN INDIVIDUAL’S HISTORY OF SUN EXPOSURE: QUALITATIVE PHASE OF THE DEVELOPMENT OF THE SUN EXPOSURE QUESTIONNAIRE
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OBJECTIVES: The increased risk of developing skin cancers associated with sun exposure is well established. Therefore it is important to understand individuals’ sun exposure and protective behaviours. Given the paucity of measures to evaluate sun exposure retrospectively, this study aimed to develop a tool to quantify sun exposure over various life stages and calculate threshold values for an at-risk individual. METHODS: A literature review was conducted to identify existing measures evaluating sun exposure. Their content validity was assessed and helped develop a conceptual model of sun exposure quantification. Based on the findings, and discussions with a scientific committee, the Sun Exposure Questionnaire was developed to cover 4 life periods [10-17] 18-40 [41-60] 61 years old], holiday/non-holiday, and summer/winter seasons. Two rounds of face-to-face cognitive debrief interviews were conducted with 30 healthy French participants (n=15 in each round) to assess acceptability, comprehension, relevance and relevance of the sun exposure questionnaire. Interviews were made following both rounds of interview. RESULTS: No suitable existing measures to quantify sun exposure were found during the literature review. However, two broad concepts were identified as being important to measure sun exposure: sunburn and protective behaviours. The Sun Exposure Questionnaire was developed (first version: 93 items). Feedback indicated that the questionnaire was easy to understand, although some items were considered lengthy. All items were deemed to be useful and relevant to measure sun exposure and protective behaviour. Revisions included simplifying questions, modifying and repeating the age ranges for each group of questions, and systematically assessing voluntary and involuntary sun exposure, to create a final 94-item pilot version. CONCLUSIONS: We developed a unique tool to quantify retrospectively individuals’ sun exposure history in observational studies. A real-life pilot and a validation study are planned to establish the psychometric properties of the questionnaire to determine at-risk individuals in need of a behaviour training programme.

PHS73

THE EFFECT OF EPILEPSY ON THE BULGARIAN PATIENTS – PILOT STUDY
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OBJECTIVES: To understand the impact of epilepsy and improve care for affected patients, it is necessary to identify factors influencing QOL in epilepsy. The aim of our study was to assess the influence of different clinical and demographic variables on quality of life (QOL) of patients with epilepsy in Bulgaria. METHODS: A pilot survey was conducted in a sample of 40 outpatient patients with epilepsy mean aged 53.05 years from Sofia, Bulgaria who visited a neurology department between April and August 2016. Clinical and demographic characteristics from medical records and Quality of life was measured by the Quality of Life in Epilepsy Inventory (QOLIE-31). The QOLIE-31 scale was translated into Bulgarian and standardized by forward translation, backward translation, and a pretest. The data collected were processed through the statistical software SPSS 22. The level of significance was set at 0.05. There was no significant association between QOLIE-31 score and gender (p=0.516 and QOLIE-31 score and age (p=0.811). Seizure frequency was strong predictor for all seven subscales. Employability explained 17.5% of the variance in the QOLIE overall score score and was the strongest predictor for Overall QOL. CONCLUSIONS: The present study confirms that besides seizure frequency, employability and comorbid psychiatric conditions are strong predictors of QOL in patients with epilepsy. The situation of the Bulgarian patients with epilepsy is the same like the rest of the Europeans from QOL point of view.

HEALTH SERVICES – Health Care Use & Policy Studies

PHS74

CLOSE HER2 HOME: BREAST CANCER PATIENTS PREFERENCES FOR TREATMENT DELIVERY
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OBJECTIVES: This study is currently being undertaken to identify the preferences of people diagnosed with HER2 positive breast for delivery of subcutaneous trastuzumab (Herceptin) therapy. Design of care pathways that incorporate patient preferences is a key stage in achieving the best clinical outcomes from available treatments. METHODS: Preferences have been identified through two focus groups undertaken with breast cancer survivors attending a cancer support centre. The group will act as a steering group for the implementation of a discrete choice experiment: confirming the delivery of attribute levels; piloting of the questionnaire and commenting on choice sets; providing feedback on the interpretation of data achieved from respondent participation. Given the number of attributes and levels, the number of combinations is 128. A series of 16 choices will be employed using a D-efficient main effects design. The model will be assessed using conditional logistic regression and mixed logit regression in Stata. Predicted uptake will be estimated and compared to the current situation. RESULTS: Attributes identified by patient groups who are likely to be preferred are: travel time, travel cost, identity of provider, treatment site; “They know your name”. CONCLUSIONS: The potential to deliver cancer care in primary care settings is large, given the rise in cancer prevalence due to an ageing population and increasing survivorship amongst cancer sufferers. Design of care pathways that enable patients’ preferences for care delivery is therefore a key step to successful service redesign.

PHS75

FINANCIAL GROUP INCENTIVES IMPROVING MEDICATION PERSISTENCE – HEALTH BEHAVIOR ENGINEERING APPROACH
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OBJECTIVES: In the current study we develop and evaluate different group-based financial incentives based on the concept of loss aversion and social effects. Behavioral engineering approaches have been demonstrated to be key in improving persistence behavior which continues to be a primary target of efforts to improve health outcomes for patients with chronic disease. However, there is limited research trying to successfully design and calibrate group-based incentives in anonymous settings. METHODS: In this study, the financial incentives were designed and implemented using a D-efficient main effects design. The incentives are derived upon concepts of behavioral economics, in particular social effects, guilt aversion and peer competition, and incorporated into tailored group-contingent bonus schemes. We conducted randomized behavioral laboratory experiments to evaluate the performance and effectiveness of each incentive scheme under controlled conditions. RESULTS: Implementing group-contingent bonus schemes in an anonymous setting significantly improved persistence compared to control. Group impact, guilt aversion and peer competition seem to each influence individual behavior to continue with therapy. CONCLUSIONS: Previous research demonstrated that individual financial incentive schemes build on principles of behavioral economics, and thus the personally expected consequences, drive treatment persistence. Peer competition is a key underlying mechanism of gamification approaches. The current study shows that peer competition in the context of financial incentives is a vital mechanism to promote individual persistence behavior. Further on, the findings suggest that patients take expected impact on others into account as well. These results do not only seem to be surprising as the impact of peer effects and guilt aversion in anonymous settings is quite often neglected, but open up new opportunities for the design and calibration of consumer/health behavior incentives.

PHS76

VBHC BASED HEALTHCARE IN ORTHOPAEDIC SURGERY: AN EVALUATION BASED ON THE ECONOMIST INTELLIGENCE UNIT GLOBAL ASSESSMENT FRAMEWORK
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OBJECTIVES: Global health care systems are facing a fundamental paradigm shift from clinical effectiveness to cost-effectiveness. Important attributes for the delivery of trastuzumab therapy. The introduction of a product with a less invasive option on quality of life (QOL) in patients with epilepsy in Bulgaria. To understand the impact of epilepsy and improve care for affected patients. The situation of the Bulgarian patients with epilepsy is the same like the rest of the Europeans from QOL point of view. The situation of the Bulgarian patients with epilepsy is the same like the rest of the Europeans from QOL point of view.
Orthopaedics, 7 relevant indicators for country-specific assessment were selected. Countries were categorised according to their overall alignment to VBHC in orthopaedics. Sources of data included: academic organisations; clinical orthopaedic organisations; national registry organisations; and expert opinion. RESULTS: All countries had a national orthopaedic body, but few provided professional training in VBHC. These training programmes were minimal. More economically developed countries have multiple centres providing data to formal national and internationally linked orthopaedic specialty registries. Most countries had more than one centre with orthopaedic specialty coordinated care services. Countries with high levels of healthcare spending also tend towards outcome-based payment approaches in orthopaedics, though bundled-payment systems are not widely implemented.

CONCLUSIONS: Alignment to VBHC in orthopaedics is in its early phase globally. Although most universally, countries could improve their alignment with orthopaedic VBHC through the introduction and development of bundled payment models. Moving towards coordinated orthopaedic care remains a challenge, though programmes to be more involved in orthopaedic patient pathways and development are needed. Further analysis of this nature aims to generate an understanding of the global landscape of VBHC from a speciality perspective.

PhS75 ANALYSIS OF HOSPITAL EPISODE STATISTICS TO IDENTIFY HOSPITAL RESOURCES USED DUE TO SKIN CANCER IN IRELAND

OBJECTIVES: There were over 10,700 cases of melanoma and first-incidence non-melanoma skin cancer (NMSC) recorded in Ireland in 2013, with incidence rates increasing by 7.4% annually. We aim to identify hospital resource use at a national level, associated with these methods. We obtained and analysed hospital episode statistics (HES) from the national Hospital Inpatient Enquiry (HIEF) service for all hospitals in England. The tool was created by diagnostic code C43 and C44, C93.2 (10th revision), from 2010 to 2014. This data captures daycase and inpatient activity for all patients in acute public hospitals in Ireland. Diagnosis Related Groups (DRGs) were based on the 2011 Ready Reckoner published by the Health Service Executive inflated to 2017 prices. The data was analysed using Microsoft Excel.

RESULTS: There was a consistent increase in total discharges for patients with diagnostic codes C43 and C44 from 2010-2014. This increase was driven by an increase in daycase discharges. The aim of this study was to assess whether there was a consistent increase in the percentage of cancers detected at stage I–II and 9% annually. The highest numbers of discharges were for patients aged 65–84 years, in line with the epidemiology of melanoma and NMSC in Ireland. The most common adjacent DRGs for day discharge were J11 Other Skin, subcutaneous tissue and breast procedures, R64 Radiotherapy and J69 Skin Malignancy. The largest increase in daycase discharge DRGs was for R63 Chemotherapy, an average of 29% over the period 2011–2014. The most common adjacent DRGs for inpatient discharges were J112 Radiotherapy and breast procedures, and for J11 Other Skin, subcutaneous tissue and breast procedures, R64 Radiotherapy and J69 Skin Malignancy. Without CCCC, and J088 Other skin graft & debridement procedures –CC. The estimated cost for the day case and inpatient discharges was €44.88 million and €38.5 million respectively, over the 5 year period.

Conclusions: Increasing incidence of melanoma and NMSC is reflected in increasing resource use in the hospital setting, primarily in the day case setting. Limitation: HIEF excludes outpatient discharges.

PhS77 DOES THE EARLY BIRD CATCH THE WORM: EARLY CANCER DETECTION AND SURVIVAL IN THE UK

OBJECTIVES: Cancer has a significant burden on NHS resources and there is a need to improve cancer outcomes in the UK. This analysis investigated if there was a difference in survival between colorectal cancer patients detected at stage I–II, and those detected at stage I–III. We aimed to model this difference using NHS clinical commissioning groups (CCGs) in England, and if this is associated with improved outcomes.

METHODS: One-year survival and percentage of breast, colorectal, and lung cancer detected at stage I–II from CCGs was extracted from the 2016 NHS England cancer and tumour focus pack tool. Linear regression analyses were conducted to determine the relationship between the percentage of cancers detected at stage I–II versus 1-year survival. RESULTS: Data were available from 220 CCGs. This analysis revealed significant variation in early detection of cancers across England. The percentage of cancers detected at stage I–II ranged from 36.3% to 88%, 13.5% to 54.4%, and 9.1% to 35.1% in patients with breast, colorectal, and lung cancer, respectively. For all three cancers, a statistically significant positive correlation between the percentage of cancers detected at stage I–II and 1-year survival for lung cancer was observed (R = 0.28; p < 0.001). No similar correlation was found for breast and colorectal cancer (R = 0.10; p = 0.55 and R = 0.07; p = 0.52, respectively).

Conclusions: These data indicate that rates of detection of cancers at stage I–II vary considerably. We find that detection at stage I–II is associated with improved survival in lung cancer which has poorer outcomes at later stages of disease versus breast and colorectal cancer which have more favourable outcomes at later stages. CCGs should be encouraged to improve detection rates and thus survival outcomes in difficult-to-treat cancers.

PhS78 REAL WORLD DATA ANALYSIS OF A PATIENT-TAILORED, POST-DISCHARGE SUPPORT PROGRAM FOR PATIENTS UNDERGOING AN OSTOMY SURGERY IN LOWERING READMISSIONS AND EMERGENCY ROOM VISITS

OBJECTIVES: Most patients undergoing ostomy surgery have experienced life adjustment difficulties and post-operative complications, resulting in emergency room (ER) visits. A patient-tailored, post-discharge support program (Coloplast Care) has been developed as an adjunct to nurse-led ostomy care to provide patients with post-operative education and easily accessible assistance. This study investigated the effectiveness of the patient support program on real-world, preventable healthcare utilization in patients living with an ostomy.

METHODS: This study employed an online survey tool for patients. The patient ostomy support program provider, maintains an ostomy patient database. Patients in this database were eligible to participate in the survey; they were stratified according to being program enrollees or non-enrollees. Both patient groups received a survey containing questions addressing the following domains: characteristics of ostomy surgery, readmissions and ER visits within the first month or after the first month of discharge including reasons for preventable events; and level of healthcare access to health data. Multivariate regression controlling the following variables was applied to assess any association between program enrollment and ostomy-related readmissions or ER visit rates.

RESULTS: Of 7,026 surveys sent to program enrollees, 485 (22%) responded compared with 22% (5%) out of 4,149 surveys sent to non-enrollees. The two groups were similar in demographics; there were no statistically significant differences in gender, race, the medical condition requiring ostomy surgery, whether the patients visited an ostomy clinic after surgery, or received any preventive treatment programs. Logistic regressions showed that compared with non-enrollees, program enrollees had a significantly lower likelihood of being readmitted and visiting the ER due to ostomy complications one month or more following discharge (odds ratio, 0.45; 95% CI, 0.27–0.73 and 0.37; 95% CI, 0.22, 0.64, respectively).

Conclusions: This study suggests that enrolling patients with an ostomy in the post-discharge support program is effective in reducing potentially preventable healthcare utilization.

PhS79 INVOLVEMENT OF COMMUNITY PHARMACISTS IN PUBLIC HEALTH PRIORITIES: A MULTI-CENTER DESCRIPTIVE SURVEY IN ETHIOPIA

OBJECTIVES: Community pharmacy involvement in public health services and the barriers to such involvement.

METHODS: This study employed a self-administered questionnaires based surveys. Pharmacist sneaker was asked participants to indicate their frequency and level of involvement in providing public health services and their perceived barriers in providing such services. Surveys were undertaken from May to July, 2016 with 472 community pharmacy professionals. Descriptive statistics were used to summarize responses. Logistic regression was performed to assess the relationship between the level of involvement of community pharmacy professionals in public health services and the barriers to such involvement.

RESULTS: Of 472 community pharmacy professionals approached, 412 (233 pharmacists and 179 pharmacy technicians) completed the survey with a response rate of 87.3%. Most respondents reported as being either “not at all involved” or “little involved” in counselling on smoking cessation (79.3%), and screening for hypertension (86.9%), diabetes (89.5%), and dyslipidaemia (88.9%). On the other hand, they reported high level of involvement in providing health education and screening of infectious diseases (72.8%) and counselling with partners when initiating treatment for sexually transmitted diseases (68.9%). Lack of knowledge or critical skills and lack of personnel or resources were the most common reported barrier for expanding such services.

CONCLUSIONS: This survey revealed a low level of involvement of community pharmacists in public health services. In order to better integrate community pharmacies into future public health programs, it is important to optimize the utilization of community pharmacy professionals, interventions should focus on overcoming the identified barriers.

PhS80 TOOLS FOR IMPROVING EFFICIENCY IN CLINICAL MANAGEMENT AND SAFETY OF HYPTERTENSIVE PATIENTS. EFIgIE-HTA PROJECT

OBJECTIVES: Hypertension, due to its high prevalence, is estimated to account for 66–75% of the total health spending in Spain. The objective of this study is to detect areas for improvement in the management of hypertensive patients within the Spanish National Health System (SNHS), so it may help clinicians, health managers and decision-makers to get the best possible clinical results. METHODS: A web-site tool for self-diagnosis was launched in 2015, with access to primary healthcare centres to detect their hypertension-related areas for improvement. Health managers were asked to complete an ad hoc questionnaire, and compare their answers to three different scenarios: “control” (ideal results based on literature and a committee of experts), “national” (results from participating centres) and “regional” (results from centres for the same region). A total of 481 centres were included in the pilot project at national level. Related to diagnosis, 57.1% of centres followed any Preventive Care Program, 45.7% hadn’t easy access to ambulatory monitoring, and 42.9% of clinicians didn’t ask patients about substances that may modify blood pressure. Most of centres...
endometriosis and controls (without diagnosed endometriosis) matched (1:4) on sex, age and residency. The point prevalence (21/12/2015) of endometriosis-related symptoms, and healthcare resource utilization were described. Baseline endometriosis-related symptoms were described in a subset of women with newly diagnosed endometriosis in 2011-2015 (compared to controls, where index date corresponded to the start of matched cases). There is scope for improving efficiency, which is the future challenge in primary care.

PHS81
THE COORDINATED MANAGEMENT OF PATIENT WITH MENTAL ILLNESS IN SPAIN BY HOSPITAL, PRIMARY CARE AND COMMUNITY PHARMACISTS (3PH), A RESOURCE OPTIMIZATION MODEL
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OBJECTIVES: All mental health conditions, including mental illness, need to be followed with a continuity of care by different care providers, the coordination of which would improve the monitoring of the treatment. In Spain, 9% of the population suffer from schizophrenia, about 400,000 people. Adherence is the major predictive risk factor for poor clinical outcomes. Social stigma, it is important that the patient does not feel alone and contributes to treatment decisions. This proposal aims to evaluate if coordinated care improves drug management and treatment compliance. METHODS: This project is a new model within the existing structure and should take place at the local level (county, district) as to be close to the patient. It consists of a group of responsible for drug evaluation, management, dispensation and pharmacovigilance: the “3PH” group, composed of Hospital, Primary Care, and Community Pharmacists. This group must meet once a year, base their work in Health Plans for Chronicity, Mental Health and Adherence and review with a certain methodology: (a) Treatments: Objective criteria for the development of treatment adjustments for the patient’s life routines, factors leading to non-adherence, consultation at the time of the discharge, treatment reviews; (b) Management: Quality indicators, drug utilization rates, methodology of follow-up visits, and the coordination of the patient’s care with the patient’s primary care to assure the continuity of care. (c) Evaluation and redesign. CONCLUSIONS: The proposal for the creation of “3PH” groups at local level, a Mental Health collaborative project that is fully aligned with current Spanish Health trends. The first step is to set up the model. Afterwards, it will be possible to evaluate their benefits in terms of adherence, prevention of relapses and improvement of patient’s satisfaction, quality of life and disease outcomes.

PHS82
REAL WORLD TREATMENT PATTERNS IN METASTATIC AND/OR UNRESECTABLE GASTRIC CANCER PATIENTS IN RUSSIA
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OBJECTIVES: All cancers, including gastric cancer, need to be followed with a continuity of care by different care providers, the coordination of which would improve the monitoring of the treatment. In Russia, 9% of the population suffer from gastric cancer, about 70,000 people. Adherence is the major predictive risk factor for poor clinical outcomes. As important are social stigma, it is important that the patient does not feel alone and contributes to treatment decisions. This proposal aims to evaluate if coordinated care improves drug management and treatment compliance. METHODS: This project is a new model within the existing structure and should take place at the local level (county, district) as to be close to the patient. It consists of a group of responsible for drug evaluation, management, dispensation and pharmacovigilance: the “3PH” group, composed of Hospital, Primary Care, and Community Pharmacists. This group must meet once a year, base their work in Health Plans for Chronicity, Mental Health and Adherence and review with a certain methodology: (a) Treatments: Objective criteria for the development of treatment adjustments for the patient’s life routines, factors leading to non-adherence, consultation at the time of the discharge, treatment reviews; (b) Management: Quality indicators, drug utilization rates, methodology of follow-up visits, and the coordination of the patient’s care with the patient’s primary care to assure the continuity of care. (c) Evaluation and redesign. CONCLUSIONS: The proposal for the creation of “3PH” groups at local level, a Mental Health collaborative project that is fully aligned with current Spanish Health trends. The first step is to set up the model. Afterwards, it will be possible to evaluate their benefits in terms of adherence, prevention of relapses and improvement of patient’s satisfaction, quality of life and disease outcomes.

PHS83
BURDEN OF ENDOMETRIOSIS AND RELATED SYMPTOMS IN A NATIONWIDE HEALTH PLAN WITH 2 MILLION MEMBERS
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OBJECTIVES: To describe the clinical burden and healthcare resource utilization of women with newly diagnosed endometriosis in a large health plan and to estimate the delay in diagnosis from prior endometriosis-related symptoms. METHODS: A retrospective database study was performed in Maccabi Healthcare Services, the second largest of four health plans in Israel, representing 2 million members nationwide. The study population included women aged 15-55 years with a diagnosis (ICD-9) of endometriosis and controls (without diagnosed endometriosis) matched (1:4) on sex, age and residency. The point prevalence (21/12/2015) of endometriosis-related symptoms, and healthcare resource utilization were described. Baseline endometriosis-related symptoms were described in a subset of women with newly diagnosed endometriosis in 2011-2015 (compared to controls, where index date corresponded to the start of matched cases). There is scope for improving efficiency, which is the future challenge in primary care.

PHS84
BRIDGING THE GAP BETWEEN INTERNATIONAL STANDARDS OF QUALITY OF CARE AND PRACTICES IN THE INPATIENT UNIT OF THE NATIONAL TB CONTROL CENTER IN ARMENIA
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OBJECTIVES: Providing high-quality TB care is an important step toward improving patients’ quality of life and decreasing TB morbidity and mortality. Introduction of international accreditation standards for TB care in Armenia can help access to high-quality TB services serving as a comparison benchmark for the national program’s performance assessment. This study aimed at assessing the adherence of TB Inpatient Treatment Processes in Armenia with international standards and developing quality improvement programs. METHODS: We assessed the largest TB inpatient facility in Armenia to evaluate its compliance with the Joint Commission International Accreditation Standards for Hospitals, International Standards for TB Care and WHO framework for conducting TB program reviews. Data was collected through 24 in-depth interviews and eight standardized checklists to explore practices of healthcare professionals, assess inpatient treatment experience of patients and their family members, evaluate the facility’s environmental conditions and determine the level to which policies were applied. Data were analyzed using scoring system converted to percentages for both patient-centered and organization-management functions. RESULTS: In the hospital, several processes were not standardized, leading to most processes in meeting Health Quality and Patient Safety (23%), Patient and Family Education (26%), partially meeting the standards: TB-Tobacco Control (35%), Patient and Family Rights (39%), Assessment of Patients (61%), and Management and Use (82%). Staff Qualifications and Education (42%), and Governance, Leadership and Direction (53%) or satisfactorily meeting the standards: Patient care (71%), Prevention and Control of Infection (75%), Access and Continuity of Care (87%), and Management of Communications and Information (93%). These reflect require major, several, or no improvements respectively. CONCLUSIONS: Interventions on two levels of the organization’s operation are needed: structure-related improvements (development of policies, procedures, written documentation, and quality control systems), and process-related improvements (actions towards improving the patient care processes).

PHS85
THE FLOW OF EU-28 COUNTRY CLUSTERS IN TERMS OF INFECTIOUS AND CHRONIC DISEASES DURING A REFUGEES CRISIS
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OBJECTIVES: With the current refugee crisis, European countries are tasked with handling displaced persons as well as the infectious, chronic diseases they carry. This study seeks to understand the flow of European countries groups in terms of infectious, chronic diseases and migration integration indicators. METHODS: Eurostat statistics data were assessed for the year 2014. Turkey and 28 European countries were examined. The Expectation Maximation clustering algorithm was used for clustering, and the U test was used to identify the differences between country clusters in terms of study variables. A flow (Sankey) diagram was created to visualize the flow of European country clusters. RESULTS: Study results indicate two different clusters in terms of infectious, chronic diseases and migration integration indicators. Country clusters differ in the total number of reported cases of measles (U=71, p<0.05) and total number of migrations (U=41, p<0.05). CONCLUSIONS: Study results pose several implications for future studies concerning the refugee crisis. Health policy makers in European countries should focus on building cost-effective services to provide primary health care for refugees. Measures to address health priorities, integration policies, and the flow of populations with infectious and chronic diseases, and increased collaboration are essential strategies to maximize quality care during the refugee crisis.

PHS86
EFFECT OF PHARMACEUTICAL CARE INTERVENTION ON WELL-BEING INDEX OF TYPE 2 DIABETES OUTPATIENTS IN A TERTIARY HOSPITAL IN SOUTHEAST NIGERIA
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OBJECTIVES: Achieving good and quality patient outcomes is a major goal in pharmaceutical care intervention. Well-being index is a humanitarian outcome
that evaluates patients’ satisfaction, quality of life, attitude, and expectations to health care services. A Web survey was assessed. A validated tool, the PHEART, was used to measure medication adherence and consist of two pharmacist-led consultations conducted after the patient is issued a new medicine for one of four therapy areas. Both the number of NMS a pharmacy can claim for and the reimbursement tariff (L20–£28 per NMS) are considered in the calculation of the number of NMS that could be reimbursed for and their reimbursement tariff.

**OBJECTIVES:** English pharmacists can claim money from the National Health Service (NHS) to provide New Medicine Service (NMS). A NMS aims to improve medication adherence and consists of two pharmacist-led consultations conducted after the patient is issued a new medicine for one of four therapy areas. Both the number of NMS a pharmacy can claim for and the reimbursement tariff (L20–£28 per NMS) are considered in the calculation of the number of NMS that could be reimbursed for and their reimbursement tariff.

**METHODS:** Monthly dispensing data for English pharmacies that had (i) submitted NMS data to the NHS Prescription Services for the whole of 2016 and (ii) made at least one NMS claim during this period were retrieved from the NHS Business Authority. The data were used to calculate the number of NMS each pharmacy could be reimbursed for and their reimbursement tariff. Opportunity loss was calculated by subtracting the number of maximum number the pharmacy could have claimed, and multiplying the subtraction with the pharmacy’s reimbursement tariff.

**RESULTS:** The median English pharmacy only claimed for 17% of the NMS they could have, resulting in a median annual opportunity loss of L20–£28 per NMS. The total opportunity loss across European pharmacies was L83,077,532.

PHS92

COST CONTAINMENT AND PRIVATISATION OF PHARMACEUTICAL CARE IN GREECE: A REVIEW OF POLICY REFORMS UNDER THE MEMORANDUMS’ CONDITIONS

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OBJECTIVES: A plethora of measures has been implemented for the purpose of public pharmaceutical cost containment during the recent years in Greece. The main objective of this study was to disaggregate the nature of these policy reforms in terms of cost containment and cost reallocation. METHODS: For the period 2010-2014, 319 active pharmaceuticals (APs) and regulations (PA) that concerned direct and indirect pharmaceutical care were retrieved from the Government Gazette. A content analysis was performed on these documents to identify unique pharmaceutical policy reforms. These measures were classified firstly with reference to their character as cost containment or cost reallocation (96.2% direct, 3.8% indirect) and, secondly, with respect to cost reallocation to the tax-funded National Health System (NHS) or the social security funds or health consumers. RESULTS: 84% of the total measures encompassed 115 measures, which were categorized as 82.6% belonging in the area of cost containment and 17.4% in the area of cost reallocation. The measures that were transferred to the NHS included 59.8% (35.9% directly, 23.9% indirectly) to consumers.

PHS95

SURVEILLANCE STATUS, DIAGNOSTIC ACCURACY AND SURVIVAL OF THE NATIONAL LIVER CANCER SURVEILLANCE PROGRAM

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OBJECTIVES: Hepatocellular carcinoma (HCC) is the leading cause of death among people in their 40’s and 50’s in South Korea. To reduce the socioeconomic burden from liver cancer, the National Liver Cancer Surveillance Program (NLCSP) has been established since 2003. The purpose of this study was to evaluate the surveillance status, diagnostic accuracy, and survival of NLCSP for the high risk group of HCC. METHODS: We used the National Health Insurance Service claims data linked with NLCSP from 2005 to 2014. For diagnostic accuracy, sensitivity, specificity, and positive and negative predictive values (PPV and NPV) were assessed based on whether the patients diagnosed with HCC within 6 months after undergoing NLCSP during the study period. In addition, the impact of the NLCSP on survival was examined using a logistic regression model.RESULTS: The annual NLCSP rate resulted in 4.9% depending on the assessment criteria, and clinical opinion. There was no significant variation in the trend of diagnostic accuracy during study periods. The risk of mortality for patients who underwent NLCSP once within the 2 years prior to being diagnosed with HCC was 22.1% lower (HR: 0.779, 95% CI: 0.758-0.800) compared with the patients who did not participate in NLCSP. CONCLUSIONS: This study highlights the mortality benefit in patients who underwent NLCSP, and the needs for the continuous improvement of surveillance as the surveillance rate increased during the study periods, the public health efforts to encourage the surveillance participation would still be required to maximize the effects of NLCSP.

PHS96

PRESCRIBING PATTERN ALONG WITH PHARMACO'ECONOMIC EVALUATION IN PRIMARY HEALTH CARE FACILITIES NEPAL

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OBJECTIVES: To assess the drug use pattern in Primary Health Care (PHC) facilities of Nepal and the cost of drug prescription. METHODS: In a prospective cross-sectional descriptive study was conducted in 11 PHC facilities of Kaski district using WHO core drug use indicators. RESULTS: A total of 301 prescriptions were reviewed. The average age of patients, receiving PHC care within the study period was 33.11 years (female 35.79; male 30.40). The average number of drugs prescribed was 2.29. Percentage of encounters with at least one antibiotic prescribed was 57% whereas encounters with at least one injection prescribed was low 3%. The total number of drugs prescribed using generic names was found to be 59.02% and percentage of drugs prescribed from EDL was 85.19% respectively. The average consultation and dispensing time of 109 patients was 2.02 minutes and 42.52 seconds. Only 30% of patients had adequate knowledge of drug whereas none of the drugs were adequately labelled. Percentage of drugs actually dispensed was 89.63%. All health facilities had availability of Essential Drug List (EDL). The total percentage of availability of key drugs in PHCs was 89.69%. CONCLUSIONS: Irrational practice mainly on antibiotics use and non- generic prescribing in most facilities studied were noticed. Patient care provided by health facilities studied was insufficient and thus effective intervention program for promotion of rational drug use practice is recommended in PHC facilities in Nepal.

PHS97

RISK-ADJUSTED CLINICAL IMPACT OF TWO ONCOLOGIC DRUG SHORTAGES

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OBJECTIVES: The worldwide problem and affect all stakeholders in the health care system. The worst impact that a drug shortage can cause is afflicting patients. This study investigates the estimated clinical impact of two oncologic drug shortages: fluorouracil (5-FU) and trastuzumab. METHODS: A risk-adjusted clinical impact study was performed. 24 real-world studies with oncology cancer cases (5-FU) and trastuzumab in the treatment of HER2-positive breast cancer. Results: The effects of the alternative treatment and the remaining stock, effects of a shortage on the overall survival (OS) and progression free survival (PFS) and side effects were evaluated. For 5-FU, a realized in oncology were enrolled and for trastuzumab 18 gynecologists specialized in oncology. RESULTS: 5-FU and its generic medicines would encounter supply problems, experts agree that capcitabine would be a valid alternative. OS and PFS will remain about the same. The perception by patients of most side effects, such as anemia, infections, diarrhea,
Several studies have established the adverse effects of the economic toxicity. Pharmacists have the potential to improve health system interventions, medicine therapy management and polypharmacy. There are many negative consequences associated with polypharmacy. The burden of taking multiple medications can be associated with greater health care costs and an increased clinical risk (adverse drug events, drug-drug interactions, drug duplicity and possibly medication non-adherence). In the healthcare system of Slovakia there is not yet defined the position of a clinical pharmacist (in a community pharmacy) as a control and counseling subject. METHODS: Data are from patient visits and hospital outpatient. We examined patients and practitioners requirements between January and March 2017 and expose a “medicines report” requiring medical interventions. The medicines report contains: type, number and clinical evidence of interaction, recommendation regarding the presence of the interaction, recommendation for future (theoretical) therapy, consideration of patient’s co-payment and drug duplication. In our data we had an ingenuity for monitoring and reporting any medication type that had not faced a single interaction. We identified a presence of interactions. The analysed patients were taking from 5 to 20 medicines (average 9.17; SD=4.61; median=7 drugs/patient). There were identified together 218 interactions (monitor therapy). D (consider therapy modification) or X (avoid combination) type (average=7.52; SD=9.35; median=7). The most clinical relevant interactions were present in group C (85.32%; average=6.41; SD=7.89; median=4). In the next group D were 14.22% interactions (average=1.07; SD=2.23; median=4) and in the group X was 1 interaction (0.46%; average=0.03; SD=0.19; median=0). CONCLUSIONS: The medicine report provides amendments which aimed to improve the treatment of patients and contribute to their quality of life including decreasing patient’s co-payment. Need to be developed the medicines report and provide the computerized system of the pharmacy outpatient. Univariate associations were explored with the chi-square test and the uncertainty coefficient for nominal and ordinal independent variables, respectively. RESULTS: 10.5% of the sample reported at least one case of unmet pharmaceutical need during the previous year. The reasons recorded were: wanted to wait and see if problem got better on its own (74.7%), financial inability (51.8%), negligence (48.6%), fear of side effects (34.5%), medicine ineligible for reimbursement (29.6%), and loss of health insurance (23.9%). Overall, 5.4% of the sample postponed pharmaceutical care due to financial reasons. Lower income and educational level, unemployment, lack of health insurance (public in particular) and poorer health status were univariately associated with higher share of individuals reporting unmet pharmaceutical needs (p<0.01). The double financial burden imposed on health consumers by the economic crisis and the new cost-sharing strategies create economic barriers to pharmaceutical treatment. Special policy concern should be placed on the protection of the most vulnerable socioeconomic groups. Also, the encouragement of prescribing and dispensing generic drugs and improving the knowledge of consumers about their effectiveness, safety and efficacy may facilitate the overall access to adequate and quality pharmaceutical care.

CONCLUSIONS:

The objectives were to (1) evaluate whether palliative care consultation use varied significantly by patient race/ethnicity and insurance status, (2) determine how access to care varied by patient race/ethnicity and insurance status, (3) identify potential ways to improve access to care for patients with different race/ethnicities, and (4) determine the association between palliative care consultation and hospice use for patients with different race/ethnicities. METHODS: The sample included 3,980 patients admitted to three urban hospitals. Patients’ medical records were reviewed and outcome variables were ascertained. Eligible variables were access to hospice or died during their hospital stay between 2012 and 2014. A multilevel binary logistic regression model was fit to test the association between discharge to hospice with race/ethnicity and palliative care consultation, controlling for other patient and hospital characteristics. RESULTS: The sample was 45% Caucasian, 39% African American and 17% Hispanic, and 17% (n=682) had a primary diagnosis of cancer. Thirty-four percent received a palliative care consultation during their hospital stay, and 40% were discharged to hospice. In the multilevel models, race/ethnicity was not statistically associated with the receipt of hospice or discharge to hospice. Patients with a palliative care consultation were 5.0 times as likely to be discharged to hospice as patients without a consultation (p<0.001). CONCLUSIONS: Contrary to previous studies, no evidence of significant racial/ethnic disparities in the use of either palliative care or hospice at the end of life was found. However, there was significant variation across hospitals in the use of both services. Future work should focus on increasing the use of palliative medical consultations within the hospital for patients at the end of life.

CONCLUSIONS:

The objective of this study was to investigate the impact of the economic crisis on health status and health inequalities in Greece. METHODS: Data were derived from the first (2009) and second (2014) wave of the National Health Interview Survey. Health status was measured with the presence of bad self-rated health.
OBJECTIVE: Financial distress affects numerous aspects of the population’s economic life through its effect on the cost of health services. The purpose of this study was therefore to assess the impact of financial difficulties on hospitalization and intensive care treatment among patients with type 2 diabetes (T2D) presenting at their nearest hospital in a healthcare interview survey that is conducted by the Hellenic National School of Public Health since 2002 and refer to 2016. The sample consisted of 2,003 adults. For the statistical analysis, a multinomial logistic regression model was constructed, whereas the dependent variable was unmet healthcare needs due to financial reasons, while independent variables were: degree of urbanization, age, gender, marital status, self-rated health, educational level, income, occupation, insurance coverage, existence of chronic health problems, frequency of economic problems, and environmental difficulties. RESULTS: According to the analysis, gender (OR=2.196), educational level, (OR=0.77) chronic health problems (OR=1.407), frequency of economic problems (OR=0.59), existence of environmental difficulties (OR=0.58) were significantly associated with the probability to have unmet healthcare needs due to financial reasons. CONCLUSIONS: The results of the present analysis indicate the fact that utilization of health services is associated with financial factors, a finding that has even greater importance in the context of the ongoing financial and social crisis in Greece.

PHS104 COMPARISON OF COSTS AND CARE OF LUNG CANCER PATIENT AT THE END-OF-LIFE IN GERMANY DEPENDING ON THE TIME OF SURVIVAL AFTER DIAGNOSIS Walery J1, Tuhan X1, Holek R1, Schwarkopf L1
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OBJECTIVES: Because of its high mortality the end-of-life phase is of high importance in lung cancer. In this observational study of claims data we aimed to investigate whether the costs and care at the end-of-life differ depending on the length of survival after diagnosis. METHODS: We included 23,012 individual analyses of 7,625 lung cancer in 2009 who: died until 2013, survived 6 months after diagnosis and were treated with chemotherapy and/or radiotherapy. We defined two groups depending on the median survival time (363 days). Costs for the health insurance for hospitalizations, doctor visits and medication in the last 30 days of life were modeled in generalized linear models with gamma distribution and reported as recycled predictions. Results: Costs per patient were 116,000 € in the shorter survival group (363 days) compared to 75,000 € in the longer survival group (363 days). The cost of hospital stays was a maximum of 36,000 € for the shorter survival group and 28,000 € in the longer survival group. Therefore, longer survival increased hospital costs and thereby the costs of care at the end-of-life phase. CONCLUSIONS: Our study indicates that patients with a shorter survival are more likely to be treated for an extended period before death and thus, the costs at the end-of-life are higher.

PHS105 MEASURING THE INTENSITY OF CARE COORDINATION FOR BLOOD CANCER PATIENTS IN FRANCE Mercier C1, Duflos C1, Kanoura T2, Chevalier J1, Thevenon J3, Cartron C1
1CHU de Montpellier, Montpellier, France, 2CHU de Montpellier, Montpellier, France, 3Assurance-Chile, Issy-les-Moulineaux, France

OBJECTIVES: The management of blood cancers requires a patient-centered, coordinated, care program. Care coordination is the organization of patient care to deliver appropriate health care services. Understanding and measuring care coordination, care program. Care coordination is the organization of patient care to deliver appropriate health care services. Understanding and measuring care coordination program in 2013-2015 and followed-up during at least 3 months were included. Data were retrieved from the electronic medical records. Coordination intensity was defined as the sum of the number of contacts and care stays using the French National Costs study (2013 values).

PHS106 COMPARING THE UTILIZATION OF DIABETIC NON-NEW SMALL CELL LUNG CANCER PATIENTS COMPARED TO NON-NEW SMALL CELL LUNG CANCER PATIENTS Rubin C1, Blanchelette CM2, Howden R1, Kowalkowski M1, Marino J1, Saunders W1
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OBJECTIVES: The impact of type 2 diabetes (T2D) and non-small cell lung cancer (NSCLC) are mutually substantial from a public health perspective. A better understanding of the relationship between T2D and NSCLC would have significant implications for prevention and management of these diseases. The objective of this study is to assess the utilization of diabetic NSCLC patients compared to NSCLC patients.

METHODS: We conducted a cohort study design utilizing Medicare claims from the SEER - Medicare linked database (2007 - 2014). Zero-inflated negative binomial regression was used to estimate the average cost of medical care, length of stay and visits from the index date in the T2D NSCLC cohort compared to NSCLC patients, stratified by cancer stage. The ZINB adjusted for cancer stage, geographical region, gender, age, race and comorbidities.

RESULTS: Of 17,176 NSCLC patients, 5,096 patients had T2D in the pre-period. The average predicted number of visits per day was higher for the NSCLC-T2D patients compared to their non-diabetic peers. Non-Diabetic patients with Stage 1 NSCLC had approximately 0.37 predicted healthcare visits per day, Stage 2 had 0.47, Stage 3 had 0.62 and Stage 4 had 0.76. T2D NSCLC patients with Stage 1 NSCLC had 0.39 predicted healthcare visits per day, Stage 2 had 0.50, Stage 3 had 0.66 and Stage 4 had 0.80. CONCLUSIONS: The results of this study indicate that NSCLC patients with T2D have greater healthcare utilization, compared to non-diabetic NSCLC patients. Clinical strategies to better manage NSCLC T2D patients could enhance metabolic health, reduce healthcare utilization and therefore decrease costs.

PHS107 RESOURCE UTILIZATION AND DISAGGREGATED COST ANALYSIS FOR INITIAL TREATMENT OF MELANOMA IN CANADA: A MULTICENTRE CROSS-SECTIONAL STUDY LOOK Hong NJ1, Cheng SY2, Wright FC1, Petrella TM1, Mittmann N3
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OBJECTIVES: The incidence of melanoma is rising and accompanying treatments could form a substantial health care burden. Additionally, emerging new treatments and evolving indications for therapy lend uncertainty to the rate of changing costs. We present a contemporary analysis of a national melanoma therapy for a single-payer health system over twelve years.

METHODS: Patients with invasive cutaneous melanoma were identified retrospectively from the Ontario Cancer Registry (2003-2014) and determined linked with administrative databases through a longitudinal cohort. Linkage was achieved within a year of diagnosis and associated resource utilization and costs related to various aspects of the healthcare continuum. Costs were ascribed to surgery, radiation, systemic therapy, physician billings, inpatient, and outpatient hospital sources. Costs are undiscounted, adjusted, and from the perspective of the Canadian single-payer health system.

RESULTS: From 2003-2014, 27,088 patients with invasive melanoma were identified. Median age at diagnosis was 63, 64% male, 48% diagnosed primarily on the extremities (44%). The most common modality for treatment was surgery (48-62% of patients diagnosed per year) with an associated mean per-patient cost of $1849. Annual rates of systemic therapy treatment have increased 2.9% (95% CI 2.3-3.3) since 2003 (6.9% of patients diagnosed per year) but mean cost per-patient has increased substantially starting in 2010, reflecting use of new medications and radiation. Corresponding annual mean per-patient cost increased to a maximum of $24,348 CAD for systemic therapy overal, up to $72,652 CAD for Iplimlimab, and up to $105,572 CAD for Radioljugation. The annual incremental burden of cost was a maximum of $46,480,586 CAD for 3082 patients diagnosed in 2016.

CONCLUSIONS: Patterns of resource utilization and cost for treatment of melanoma are changing over time, particularly for systemic therapy. Research in these patterns of these treatments and forecasting of future changes are critical for budgetary and policy planning for sustainable melanoma care.

PHS108 COST OF HOSPITALIZATIONS FOR NONTUBERCULOUS MYCOBACTERIAL PULMONARY DISEASE IN FRANCE IN 2014: A PMSI DATABASE ANALYSIS Lafuma A1, Emsy C2, Bureau P1, Chiron M1, Skali M1
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OBJECTIVES: The impact of type 2 diabetes (T2D) and non-small cell lung cancer (NSCLC) are mutually substantial from a public health perspective. A better understanding of the relationship between T2D and NSCLC would have significant implications for prevention and management of these diseases. The objective of this study is to assess the utilization of diabetic NSCLC patients compared to NSCLC patients.

CONCLUSIONS: Our study indicates that patients with a shorter survival are more likely to be treated for an extended period before death and thus, the costs at the end-of-life phase are higher.

CONCLUSIONS: The results of this study indicate that NSCLC patients with T2D have greater healthcare utilization, compared to non-diabetic NSCLC patients. Clinical strategies to better manage NSCLC T2D patients could enhance metabolic health, reduce healthcare utilization and therefore decrease costs.
The percentage of deaths during hospitalization was 3% for stays with at least one associated morbidity vs 1.6% without morbidity (p = 0.0971). The mean cost was €2,864 (SD 4,323) for stays with at least one associated morbidity vs 3,335 (SD 2,840) without morbidities (p < 0.001). CONCLUSIONS: The majority of hospitalized NTMPD patients had at least one associated morbidity. NTMPD patients had higher hospitalization costs. A statistically significant increase of associated morbidities increased the length of stay, costs and death rate.

**PHS109**

**DIABETIC STATUS IN PATIENTS WITH CHRONIC KIDNEY DISEASE IN KOREA: BASED ON 12-YEAR NATIONAL SAMPLE COHORT DATABASE**

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OBJECTIVES: To determine overall diabetes status, to identify healthcare utilization, and subject demographics, clinical and financial aspect of chronic kidney disease (CKD) patients with either pretermolysis dialysis (PD) or hemodialysis (HD) in Korea. METHODS: In this retrospective, observational study, we used the Korean National Health Insurance Service (NHIS) data for patients with diabetes who had dialysis or HD due to CKD (International Classification of Diseases 10th Revision Code N18 or N19) were enrolled in this study. Data analysis was performed by using SAS, version 9.4. SAS. RESULTS: Total number of patients with dialysis was 1,481 (BD 1,311 and PD 170) in 2013. HD was the main dialysis modality (99%) rather than PD. Expected number of dialysis patients which was standardized by year 2013 population, were 143.8 and 16.6 patients per 100,000 persons for HD and PD, respectively, in 2013. These numbers were about 4-fold and 2.5-fold increases comparing to 2002. However, Percentages of patients aged less than 60 years was higher in PD than HD (67% vs. 44%), and employee subscribers for national health insurance was higher in PD than HD (55% vs. 47%). In addition, HD patients did not have substantial high cost than PD patients (22%) among all patients with CKD. Annual total medical costs (median) per dialysis patient were US$21,390 for HD and US$18,945 in PD 2013. Patients with diabetes of the survey cohort were mainly in their 50s (50% in 50-59 years old, mean age 10 years, median 9 years), of which over 90% reside in Europe. CONCLUSIONS: Practical implications include the need for targeted healthcare intervention and long-term planning to minimize the burden of dialysis patients. The results from this study will be used for future studies to assess the impact on the national health insurance budget continuously in the aging era. Therefore, appropriate strategies to efficiently reduce clinical and financial risks from dialysis treatment in CKD patients.

**PHS110**

**SOCIAL AND FINANCIAL IMPACT OF DRAVET SYNDROME**

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OBJECTIVES: The objective was to develop an understanding of healthcare resource utilisation associated with the treatment of Dravet Syndrome (DS) in a large pan-European survey cohort of patients and their caregivers (DISCUSS) conducted in 2016. METHODS: Quality of life (family, career, leisure, childcare), disease severity (diagnosis journey, epilepsy management, comorbidities) and support (therapy, education, support, insurance) were captured in a digital survey. Data were summarised statistically by age group. Healthcare costs were based on participant only information and literature reported health service costs, personal health insurance costs, and per capita costs for the general population (2016). RESULTS: The survey cohort consists of 584 caregivers of paediatric (93%) and adult (17%) patients with DS (mean age 10 years old, median 9 years), of which almost all reside in Europe. Of the 584 caregivers, 90% (526) had a child with DS; the majority (58%) of caregivers were female. 9.4% of the caregivers are employed in fields related to healthcare. CONCLUSIONS: This paper highlights that there is potential value in mhealth solutions and also demonstrates that in order to reach this potential, their delivery must centre on the individual's needs. Whilst certain traits may share some mhealth needs, they are not the same. Therefore, future success will be down to the adaptability of the technology to the individual and not the other way round.

**PHS111**

**EVIDENCE SYNTHESIS ON THE ECONOMIC VALUE OF HOSPITAL ANTIMICROBIAL STEWARDSHIP PROGRAMS [ASPS] – A CALL TO ACTION**

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OBJECTIVES: The objective was to develop an understanding of healthcare resource utilisation associated with the treatment of Dravet Syndrome (DS) in a large pan-European survey cohort of patients and their caregivers (DISCUSS) conducted in 2016. METHODS: Quality of life (family, career, leisure, childcare), disease severity (diagnosis journey, epilepsy management, comorbidities) and support (therapy, education, support, insurance) were captured in a digital survey. Data were summarised statistically by age group. Healthcare costs were based on participant only information and literature reported health service costs, personal health insurance costs, and per capita costs for the general population (2016). RESULTS: The survey cohort consists of 584 caregivers of paediatric (93%) and adult (17%) patients with DS (mean age 10 years old, median 9 years), of which almost all reside in Europe. Of the 584 caregivers, 90% (526) had a child with DS; the majority (58%) of caregivers were female. 9.4% of the caregivers are employed in fields related to healthcare. CONCLUSIONS: This paper highlights that there is potential value in mhealth solutions and also demonstrates that in order to reach this potential, their delivery must centre on the individual's needs. Whilst certain traits may share some mhealth needs, they are not the same. Therefore, future success will be down to the adaptability of the technology to the individual and not the other way round.

**PHS112**

**AN ECONOMIC EVALUATION OF 'DELIVERING ASSISTED LIVING LIFESTYLES AT SCALE' (DALLAS)**

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OBJECTIVES: Running 2012-2015, ‘delivering assisted living lifestyles at scale’ (dallas) was a large-scale intervention examining how digital health can be used for preventative care, to promote well-being, and improve people lifestyles. Using contingent valuation (CV), this study investigated general UK population value for mobile health (mhealth) lifestyle apps seeking to improve an individual’s sense of the self, social connectedness, and social capital and happiness. METHODS: A UK-wide survey was used to ask participants about their willingness to pay (WTP) for WTP willingness-to-accept (WTA) the gain or loss of a new hypothetical mhealth app, ‘healthy connections’ with the aim of eliciting their direct preferences. This is regarded as a more realistic and fairer method of decision making in a CV study compared to a direct valuation for the app which could be used within a cost benefit analysis (CBA). RESULTS: In 2015, both a UK-representative sample (n=1697) and a dallas-like sample (representative of existing, older and, in some cases, more deprived communities involved in the wider dallas intervention) (n=802) were surveyed. This CV study revealed a positive valuation of the app across both cohorts. Absolute WTP of £196 per annum for the general UK population cohort, £162 for the dallas-like sample and a marginal WTP of £196, a value of £160 the UK population sample willing to pay over lifetime was stated by the dallas-like cohort. CONCLUSIONS: This paper highlights that there is potential value in mhealth solutions and also demonstrates that in order to reach this potential, their delivery must centre on the individual's needs. Whilst certain traits may share some mhealth needs, they are not the same. Therefore, future success will be down to the adaptability of the technology to the individual and not the other way round.

**PHS113**

**EVIDENCE SYNTHESIS ON THE ECONOMIC VALUE OF HOSPITAL ANTIMICROBIAL STEWARDSHIP PROGRAMS [ASPS] – A CALL TO ACTION**

Nathwani D1, Varghese D2, Lesher B2, Stephens JM2, Ansari W3, Charbonneau C4

1Ninewells Hospital & Medical School, Dundee, UK, 2Pharmerit International, Bethesda, MD, USA, 3Pfizer Inc, New York, NY, USA, 4Pfizer F.D.O., Paris, France

OBJECTIVES: This retrospective, comparative study utilised primary care electronic medical records from the Clinical Practice Research Datalink (CPRD) database, linked to the NHS England Integratedcare Episode Datalink (HES) data. Methods: Consecutive patients with a diagnosis of HF were identified. Further clinical and demographic data were captured and compared between patients with and without a history of HF. RESULTS: Increased hospitalisation rates and morbidity in patients with HF versus an age- and sex-matched population without HF demonstrate the burden of HF on the healthcare system in England.

**PHS114**

**USE OF HEALTHCARE RESOURCES AND ASSOCIATED COSTS OF IDIOPATHIC PULMONARY FIBROSIS IN SPAIN: A REAL-LIFE STUDY**

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OBJECTIVES: The objective was to develop an understanding of healthcare resource utilisation associated with the treatment of Dravet Syndrome (DS) in a large pan-European survey cohort of patients and their caregivers (DISCUSS) conducted in 2016. METHODS: Quality of life (family, career, leisure, childcare), disease severity (diagnosis journey, epilepsy management, comorbidities) and support (therapy, education, support, insurance) were captured in a digital survey. Data were summarised statistically by age group. Healthcare costs were based on participant only information and literature reported health service costs, personal health insurance costs, and per capita costs for the general population (2016). RESULTS: The survey cohort consists of 584 caregivers of paediatric (93%) and adult (17%) patients with DS (mean age 10 years old, median 9 years), of which almost all reside in Europe. Of the 584 caregivers, 90% (526) had a child with DS; the majority (58%) of caregivers were female. 9.4% of the caregivers are employed in fields related to healthcare. CONCLUSIONS: This paper highlights that there is potential value in mhealth solutions and also demonstrates that in order to reach this potential, their delivery must centre on the individual's needs. Whilst certain traits may share some mhealth needs, they are not the same. Therefore, future success will be down to the adaptability of the technology to the individual and not the other way round.
OBJECTIVES: To determine the use of healthcare resources and associated costs in patients with idiopathic pulmonary fibrosis (IPF) according to their forced vital capacity (FVC) and the administered treatment in the daily clinical practice.

METHODS: A longitudinal (retrospective), multicentre observational study was conducted using electronic medical records from different primary care centers (31) and units of hospitalization (4) in Catalunya, Spain. Data were collected from patients with IPF (incident cases) who received medical care during 2013-2015 and met certain inclusion/exclusion criteria were included. Patient follow-up was from the time of diagnosis to completing one year (2013-2014). Study groups: a) FVC<50%, b) FVC 50-80% and c) FVC>80%. Main study variables: comorbidities, exacerbations, mortality (all causes), overall survival, therapies and direct and indirect costs. Multiple linear regression model was included in the statistical analysis, p<0.05. RESULTS: 386 patients were recruited. 64.8% patients had a FVC 50-80% and 35.2% a FVC<50%. Comparative groups: patients treated with nintedanib (N=108 patients), patients treated with immunosuppressants/sildenafil (worse prognosis) had exacerbations and died, respectively. and 20% died with nintedanib, 62.5% and 100% of those treated with immunosuppressants/sildenafil (N=29 patients) had exacerbations and died, respectively. Main study variables: comorbidities, exacerbations, mortality (all causes), overall survival, therapies and direct and indirect costs. Multiple linear regression model was included in the statistical analysis, p<0.05. RESULTS: 108 patients were recruited. 64.8% patients had a FVC 50-80% and 35.2% a FVC<50%. Comparative groups: patients treated with nintedanib (N=108 patients), patients treated with immunosuppressants/sildenafil (worse prognosis) had exacerbations and died, respectively. and 20% died with nintedanib, 62.5% and 100% of those treated with immunosuppressants/sildenafil (N=29 patients) had exacerbations and died, respectively. Main study variables: comorbidities, exacerbations, mortality (all causes), overall survival, therapies and direct and indirect costs. Multiple linear regression model was included in the statistical analysis, p<0.05. RESULTS: 108 patients were recruited. 64.8% patients had a FVC 50-80% and 35.2% a FVC<50%. Comparative groups: patients treated with nintedanib (N=108 patients), patients treated with immunosuppressants/sildenafil (worse prognosis) had exacerbations and died, respectively. and 20% died with nintedanib, 62.5% and 100% of those treated with immunosuppressants/sildenafil (N=29 patients) had exacerbations and died, respectively.

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PH120

SPATIAL DYNAMICS OF PSYCHIATRIC DISEASE HOSPITALIZED PATIENTS – RE-HOSPITALIZATION SIMULATION FOCUSING ON DIABETES COMORBIDITY

and REGIONAL HEALTH SERVICES IN THREE EUROPEAN REGIONS OVER THE NEXT DECADES

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OBJECTIVES: The development of the burden of psychiatric diseases is essential for planning purposes of health policy makers. In the CEPHIS-LINK (FP7-project; No-603264), several strategies were incorporated to analyse psychiatric re-hospitalisations. Three research questions were defined: 1) Change of re-hospitalisations in the future, 2) Theoretical improvement of structure of care on a NUTS3-level, 3) Possible impact of rising diabetes prevalence.

METHODS: We used an agent-based approach from the Generic Population Concept (GEPoC), developed in DEXHELPH, (FP7 No-211999) and presented Python agents and modules for each question. The modules for the other two questions are exchangeable or used together. The parameterization for AT/SL/Veneto was calibrated by 1Technical University of Graz, Graz, Austria; 2Technical University of Vienna, Vienna, Austria; 3Technical University of Applied Sciences, Vienna, Austria; 4MEHPS research, Vienna, Austria; 5Research Centre of the Slovenian Academy of Sciences and Arts, Ljubljana, Slovenia

RESULTS: The development of the burden of psychiatric diseases is essential for planning purposes of health policy makers. In the CEPHIS-LINK (FP7-project; No-603264), several strategies were incorporated to analyse psychiatric re-hospitalisations. Three research questions were defined: 1) Change of re-hospitalisations in the future, 2) Theoretical improvement of structure of care on a NUTS3-level, 3) Possible impact of rising diabetes prevalence.

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OBJECTIVES: Hospitals cut costs by reducing staff not providing bedside care. Yet,Wennberg et al. (2010) claim, having insufficient infrastructure, such as skilled specialists not at bedside, such as board-certified nurses and therapists can evaluate and redesign health systems to address needs of complex patients, and paradoxically reduce costs. Our objective was to validate this theory by evaluating the impact of implementing specialists dedicated to palliative care services outcomes by supporting palliative care, using an example of correlation between nurses and a hospital quality indicator. METHODS: We analyzed a retrospective cohort of patients diagnosed with hospital-acquired pressure injuries defined by HIROM 2003 (stage 3, 4 and unstable pressure injuries not present-on-admission). Ratios of board-certified nurses per 1,000 hospital beds were compared to pressure injury rates in 55 U.S. academic hospitals between 2007–2012 using UHC data. Productivity functions of labor efficiency versus pressure injury rate were plotted across hospital quintiles and fitted to smoothed curves. Mixed-effects negative binomial regression validated the statistical significance of pressure injury rate improvements relative to skilled specialist efficiency.RESULTS: We compared mean±SD of case-mix and time-span of performing hospitals invested in prevention infrastructure with skilled specialists based on pressure injury rate reductions. By adding 1.0 board-certified nurses per 1,000 beds, a hospital decreased pressure injury rates 17.7% per quarter. The highest performers actually supplied fewer skilled specialists per 1,000 beds and sustained improved pressure injury rates. CONCLUSIONS: Skilled specialists bring important value to health systems as a representation of investment in infrastructure. The proportion of these specialists is formulaic relative to hospital capacity. The UK King's Fund is investing £22 billion in NHS England infrastructure to improve quality – other health systems in North America and Europe should emulate this policy to support hospitals to make investments in infrastructure to drive down patient costs and improve quality.

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PHS126

EFFECTIVENESS OF AVAILABLE ESSENTIAL MEDICINES LIST ON SELECTED DOMAINS OF PHARMACY SERVICES IN A NATIONAL HEALTH INSURANCE SCHEME (NHIS) ACCREDITED PHARMACY OF A UNIVERSITY TEACHING HOSPITAL IN NIGERIA; AN INTERVENTION STUDY

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OBJECTIVES: Good drug supply management is an essential component of an efficient healthcare delivery system. Essential medicine list helps to promote rational use of drugs and services. This study assessed the effects of availability of essential medicines list on selected domains of pharmacy services in an accredited health insurance pharmacy. METHODS: The study was a pre-post intervention study involving patients who accessed services at the hospital pharmacy. Standardized and validated questionnaires was self administered to the patients before and 6 months after provision of essential medicines list to the pharmacy based on selected domains on a 5-point Likert scale: 1- very satisfied; 2- satisfied; 3- neutral; 4- dissatisfied; and 5- very dissatisfied. Data were analyzed using descriptive and inferential statistics. A P-value of <P=0.05 was considered significant. Data were analyzed using descriptive and inferential statistics. RESULTS: 354 systematically selected patients participated in the study. Scores after 6 months of provision of essential medicines list were statistically significant at these mean values. Courtesy and respect shown to patients by pharmacy staff: 3.15±0.68, availability of pharmacist to fill prescription for patients promptly: 3.31±0.69, counseling provided by pharmacist: -0.61±0.81, ability to collect medication: 2.44±0.81, and availability of medication: -2.27±0.91 which had a value of 0.219. The overall pharmacy services score before the introduction of medicines list was 57.20 (13.06) and after provision of essential medicine list was 74.02 (11.05) at P<0.001. CONCLUSION: Overall, provision of essential medicines list improved pharmacy services scores in all domains except in medication charges, which is subject to external forces like inflation and government policies.

PHS130

PALLIATIVE CARE SERVICES IN ROMANIA - ANALYSIS OF UTILIZATION, FUNDING AND COVERAGE

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OBJECTIVES: To describe the current use of palliative care services in Romania, both inpatient care and home care, the reimbursement and coverage in territory in Romania. METHODS: analysis of large administrative database (all cases reported by hospitals 2014-2016, for DRG reimbursement purpose), literature review and critical review of current legislation on the topic. RESULTS: during the studied period, the number of hospital palliative care suppliers increased by 62% (40% of them being privately held). Still the coverage of population with palliative care services varies intensely from a territorial perspective, with a number of counties lacking suppliers of such services having contracts with the respective health insurance fund, while only two counties account for 40% of hospitalization episodes. Patients are hospitalized for periods longer than 74,93 days, at average cost to collect medication: 2.44±0.81, and availability of medication: -2.27±0.91 which had a value of 0.219. The overall pharmacy services score before the introduction of medicines list was 57.20 (13.06) and after provision of essential medicine list was 74.02 (11.05) at P<0.001. CONCLUSION: Overall, provision of essential medicines list improved pharmacy services scores in all domains except in medication charges, which is subject to external forces like inflation and government policies.

REFERENCES:

PHS128

EFFECTIVENESS OF IDENTIFYING A CANCER PATIENT IN THE HOSPITAL ELECTRONIC NORTHERN-NORWAY - ANALYSES BASED ON UPDATED REGIONAL PERFORMANCE DATABASE

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OBJECTIVES: Implementing a Danish model, Norway introduced 28 standardized diagnostic pathways (SDPs) in 2015 for patients suspected to have a malignancy. Authors evaluate the development of main indicators of SDPs and present the effectiveness of identifying a cancer patient by using SDPs in a secondary health care environment. METHODS: The Northern-Norway Regional Health Authority Trust retained data of patient’s care after their discharge from hospital. The healthcare strategy was considered significant. Data were analyzed using descriptive and inferential statistics. Outputs were measured.

CONCLUSIONS: A total number of 10232 (100%) diagnostic cancer pathway cases were initiated in 2015 and in 2016. 78.38% of all identified cancer cases in 2015 and 2016 (6781) were diagnosed by pathway activities. 68.94% of all fulfilled pathways (9781, 95,6%) were completed within national standard time intervals. Drop-out rate was 2.77%, in 50,85% the suspect of cancer was not confirmed, and 46,38% were identified as pathologic cancer patients. Efficient use of pathways ratio of confirmed/unconfirmed cases in all pathways. This ratio varies from 9% (SDF-sarcoma, N=33) till 95% (cancer of the uterus N=122). CONCLUSIONS: Introduction of spatial and prioritized SDPs provide a good tool for monitoring and improving the quality of diagnostic processes. Two years after introduction of SDPs – not surprisingly – there is still wide range of variations in effectiveness. The evaluation of processes (pathways completed or within national standard time) can be used to identify bottlenecks, identify variations in processes in order to increase effectiveness, subsequently avoiding unnecessary activities, risks and costs.

REFERENCES:

PHS129

COST-EFFECTIVENESS ANALYSIS OF MEDICATION REVIEW INTERVENTIONS: A REVIEW OF LITERATURES

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OBJECTIVES: Health economic information is needed to promote pharmacist-led intervention in Japan. A literature review was conducted to identify methods of cost-effectiveness analyses including data sources, populations, interventions, and outcomes. METHODS: A systematic review was conducted using PubMed with search terms of drug utilization review, medication therapy management, medication review, economic evaluation, costs and cost analysis, and cost effectiveness. References of literatures and review articles were also screened for potentially relevant studies. RESULTS: Hundred twenty eight articles were identified through database search. Adding 3 articles from the review articles, 8 articles with full economic evaluation and 3 articles for the full economic evaluation were obtained mainly from randomized control studies evaluating various medication review programs across counties. 6 studies used cost-utilty analyses and 2 studies used cost-effectiveness analyses even though the health outcomes and economic outcomes were measured. CONCLUSIONS: Full economic evaluations were still limited for evaluating pharmacist-led intervention programs. Including measurement of humanistic and economic outcomes of medication review programs in pharmacists’ practice can be used to evaluate bottlenecks, identify variations in processes in order to increase cost-effectiveness in order to control potential problems due to phopharmacy and inappropriate medication use.

REFERENCES:
study enables to recognize supply chain process and critical issues. “centralized organization structure.

PHS131
IMPROPER MEDICATION USE BY THE AGED POPULATION IN BAHRIA TOWN, LAHORE, PUNJAB, PAKISTAN
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OBJECTIVES: To estimate the improper medication use among the aged hospitalized patients in Bahria town, Lahore, Pakistan. METHODS: An explanatory, non-experimental, cross-sectional study was accomplished from December 2016 to March 2017 in five health-care hospitals of the Lahore, Punjab province of Pakistan. The population under study was patients aged ≥40 years and being hospitalized in the selected health-care hospitals. In this study, data was collected from 500 aged patients (100 patients per hospital). All medicines prescribed in each in-patient chart were fed on a pre-designed Performa and were estimated according to the 2015 American Geriatrics Society Beers Criteria. Statistical Package for Social Sciences (SPSS) was used to analyze the data. RESULTS: In 500 hospitalized in-patient (male 52.7% and female 47.3%) charts, 3,179 medicines were prescribed. The most usually prescribed drug classes were: alimentary tract and metabolism 80%, nervous system 66.3%, anti-infectives for systemic use 62.2% and cardiovascular system 48.3%. The most usually prescribed improper medications were: omeprazole 51.3%, metoclopramide 14.3%, aspirin 9%, diphenhydramine 7.7%, ibuprofen 4%, fentanyl 3.3% and chloropramine 1.8%. CONCLUSIONS: The rational use of medicines is of greatest importance, most particularly in the aged population. It is highly recommended that more thoughts should be given to the aged patients.

PHS132
MUNICIPAL HEALTH CONFERENCES IN THE STATE OF BADEN-WUERTTEMBERG, GERMANY – READY FOR INITIATING AND STEERING PRIMARY HEALTH CARE PROVISIONS AT COMMUNITY LEVEL?
Drechsel C1, Vollmer U1, Walser S2, Pimpinger A1

OBJECTIVES: Health care – as an elementary component of the community - ranks high in the value of citizens. States and municipalities therefore exercise to identify the future needs and municipal challenges in the state of Baden-Wuerttemberg (B-W) before, municipal health conferences (MHC) were introduced in 2013 by the state government and became compulsory in 2015. Key questions are to which the factors that promote and inhibit the establishment.

And how can results be measured? METHODS: The 37 counties were examined with regard to their implementation and realization status. The implementation processes have been analyzed and problem areas were identified through internet searches, interviews and consultation as guiding documents. The results were noted on a pre-designed Performa and were estimated according to the 2015 American Geriatrics Society Beers Criteria. Statistical Package for Social Sciences (SPSS) was used to analyze the data. RESULTS: In 500 hospitalized in-patient (male 52.7% and female 47.3%) charts, 3,179 medicines were prescribed. The most usually prescribed drug classes were: alimentary tract and metabolism 80%, nervous system 66.3%, anti-infectives for systemic use 62.2% and cardiovascular system 48.3%. The most usually prescribed improper medications were: omeprazole 51.3%, metoclopramide 14.3%, aspirin 9%, diphenhydramine 7.7%, ibuprofen 4%, fentanyl 3.3% and chloropramine 1.8%. CONCLUSIONS: The rational use of medicines is of greatest importance, most particularly in the aged population. It is highly recommended that more thoughts should be given to the aged patients.

PHS133
ANALYSIS OF THE REIMBURSEMENT AMOUNT AND THE ACTUAL COSTS FOR INFUSION OF IMMUNOBIOLOGICS IN THE BRAZILIAN PUBLIC HEALTHCARE SYSTEM
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1Federal University of Bahia, Salvador, Brazil; 2Hospital Universitário Prof. Edgard Santos - HUPES, Salvador, Brazil; 3Southwestern Bahia State University, Itabuna, Brazil; 4Hospital Universitário Prof. Edgard Santos, Salvador, Brazil

OBJECTIVES: analyze the appropriateness of reimbursement of the Brazilian public health system in relation to the effective costs of the procedures for infusion of immunobiological drugs in patients. METHODS: This study was carried out at the federal university public hospital of Salvador, Brazil. The reimbursement data were obtained through the DATASUS and SIGTAP systems, which provide respectively the amounts invoiced by the hospital and the prices of the procedures paid by the health system. The method used to calculate costs was ABC (Activity Based Costing) based on the criterion of reciprocal or matrix allocation. A relationship map was created to allocate the costs involved in calculating the final cost, respecting the principle of reciprocity between the non-productive cost centers before making the final apportionment to the productive cost center. Cost drivers were defined based on the most commonly used drivers in the calculation of reimbursement expressed in direct and indirect costs, based on the month of November 2016. RESULTS: The direct cost per infusion was 77.69€. Personnel and consumer expenditures accounted for 62.7% and 24.7%, respectively, while drug and food expenses reached 10.2% and 2.3%, respectively. The direct costs involved in hospitalization as part of the infusion were 79.4% of the total hospital costs (direct and indirect hospital costs). CONCLUSIONS: It is necessary to consider that the reimbursement value from the health system is insufficient to cover the costs of the infusion procedures, significantly compromising the hospital budget for patients treated with immunobiological (immunobiologicals or immunobologials/agents/drugs).

PHS134
DEVELOPMENT OF A DESCRIPTIVE SYSTEM FOR MEASURING PATIENT SATISFACTION IN THE EMERGENCY DEPARTMENT
Sinha P1, Pokhrel S1, Coyle D2, Longworth L3

OBJECTIVES: Efficient allocation of public resources require identification, measurement and quantification of costs and benefits of alternative programs. Patient reported outcomes are now routinely incorporated into economic evaluations of health technologies, but patient experience is often overlooked. The aim of this study is to develop a descriptive system for patient experience that can be validated and used to inform decision making. METHODS: Analyzes were conducted in a patient dataset, the Inpatient survey (2014), which collected information about health systems in developing countries. Comparisons were performed to identify differences in the approaches used to collect data from patients who had an operation or procedure. In the first two approaches, dimensions based on latent construct were derived using exploratory factor analysis (EFA). Item selection for each dimension was conducted using structural equation modelling (SEM) and item response theory (IRT). For comparison logistic regression analyses were applied with responders’ rating of overall patient experience specified as dependent variable. RESULTS: EFA identified different factor models for patients & A&E and planned admissions respectively and factors contained 1 to 7 items. Bifactor models were fitted to assess unidimensionality before item selection using SEM and regression. Different techniques and different items were identified as most valuable in each factor. The 11 and 8 items identified for the two group of patients broadly related to trust and dignity, comfort and cleanliness, and clear communication to patients. Regression analyses identified a large number of independent items that were correlated with each other. CONCLUSIONS: A measure that is amenable to valuation consists of items that are distinct yet related to each other. The measurement model identified from the dataset for patients that underwent an operation was very different for those with planned admission compared to emergency admission. Different methods of item selection yielded different measurement models.

PHS135
DOES COMMUNITY-BASED HEALTH INSURANCE REDUCE CHILD STUNTING? EVIDENCE FROM RURAL UGANDA
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OBJECTIVES: Community-based health insurance has increasingly been integrated into health systems in developing countries. However, there is limited evidence on its probable health outcome impacts beyond the conventional health financing and facilitating services access functions. This research aims to explore about the possible impact of community-based health insurance on child health, using stunting indicator. METHODS: Using a cross-sectional survey covering 664 households from south-western Uganda, we apply a novel instrumental variables technique, the two-stage residual inclusion which not only measures the effect of insurance but also the effect of insurance duration on stunting. Results: Our results indicate that a consistently linear relationship, each year of insurance contributes to about 1.54% less probability of being stunted. Moreover, these results further indicate that children from households that had identified themselves as insured for 7 years had a probability of stunting of only 0.329 compared to 0.518 for children in households that had not have insurance. CONCLUSIONS: This study contributes to the still small but growing body of literature that concludes that community health insurance can have broader outcomes, extending beyond the conventional functions of financial protection and health services utilisation. Our study, therefore, recommends that developing countries, in absence of and limited capacity of larger tax-financed social health insurance schemes, should support and facilitate the expansion of community health insurance scheme not only for their contribution to health financing but even more for mortality and morbidity avarion.

PHS136
EMERGENCY DEPARTMENT USE AMONG AUTOSOMAL DOMINANT POLYCYSTIC KIDNEY DISEASE PATIENTS IN THE US
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OBJECTIVES: Autosomal dominant polycystic kidney disease (ADPKD) is the most common heritable renal disease, characterized by fluid-filled cyst development and variable total kidney volume (TKV) progression. Healthcare utilization (e.g., emergency department [ED] visits) reflect incident cardiovascular and renal events related to ADPKD complications. Our objective was to assess the TKV progression and ADPKD complications over time and its impact on healthcare utilization (e.g., ED visits). METHODS: A cross-sectional study using the 2010 Nationwide Emergency Department Sample (NEDS) was performed. ADPKD patients were selected using ICD-9-CM: 753.12 and 753.13. Patients were stratified using disposition from ED via transfer to short-term hospital and/or admitted as an inpatient from the ED. CPT/HCPCS and ICD-9-CM code sets were used to identify procedure and diagnosis codes among ADPKD patients in the ED setting. RESULTS: The study contained a sample of 8,871 ED visits. More females were hospitalized after an ED visit compared to males (51.34% vs. 48.66%, p<0.0001). The hospitalized group was significantly

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older than their non-hospitalized counterparts (57.86 vs. 42.85, p < 0.0001). Mean total charge for ED services were significantly higher in the non-hospitalized group ($4,662.9, SD=$5,968.5) compared to the hospitalized group ($1,703.7, SD=$1,317.2, p < 0.0001). Hospitalized visits most frequently occurred due to device complications, implantation, or graft and infections. Among non-hospitalized patients, 30.80% expected additional paid procedures compared to hospitalizations and all procedures due to infections.

CONCLUSIONS: ED-based hospitalized patients were mostly admitted due to complications from surgery, whereas non-hospitalized patients appear to be seeking surgical procedures. A high proportion of patients with ADPKD appear to be readmitted to an inpatient setting through an ED as a result of surgical care. Further research to explore readmission rates post-surgery is needed.

PHS137
ALTERNATIVE SOURCES FOR HEALTH CARE FUNDING: PUBLIC HEALTH TAXES IN HUNGARY BETWEEN 2011-2016
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OBJECTIVES: Impose taxes upon harmful products, such as tobacco, alcohol, unhealthy foods and beverages are getting more common around the world. Their contribution is to be useful in revealing differences between patients’ preferences and their actual experience in health care service quality.

METHODOLOGY: We found the SERVQUAL model to be useful in revealing differences between patients’ preferences and their actual experience in health care service quality.

RESULTS: patients were 45–54 years old. Using servqual model we found a gap – 0.487 with respect to quality service means score 2.938, (SD 1.16) and patient satisfaction mean score 4.427 (SD.14). Patients were satisfied with the current service more than those satisfied with more education. The capacity of acute and chronic care has increased during 2016, results were obtained from the 32 departments and the highest unfavourable gaps.

CONCLUSIONS: We found the SERVQUAL model to be useful in revealing differences between patients’ preferences and their actual experience in health care service quality.

PHS141
ANALYSIS OF EPIDEMIOLOGICAL DATA ON BURDEN DISEASE IN EUROPE
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Today, depression is considered as one of the most common diseases. According to WHO, the beginning of the XXI century depressive disorders accounted about 40% in terms of the world and has become a global disease that is likely to suffer from depression, and this figure is actively growing. In this regard, the priority of health systems is an effective work aimed at the prevention and treatment of this disease. The aim of our study was to analyze the epidemiological data on the burden of disease, depressive disorders caused by the results of the analytical data on network internet survey. As a result of the search, it is revealed that over the past decade, the number of depressive disorders is of particular relevance for the system of medical care. In the process of the project “European research epidemiology of mental disorders” almost 13% respondents showed the signs of psychotic depression at definite time in their lives and 4% – in the last 12 months. The total number of people with psychotic depression has reached over 21 million in Europe. According to WHO «epidemic threshold» of suicides – 9 people per 100,000 population, but in our country, this figure ranges 40. All this leads to major economic losses to society and negative socio-economic effects that create the «burden of disease». Thus, the above data indicate that in terms of the economic burden of depression’s prevalence in our country has negative consequences on the necessity of the introduction of effective medical technologies for prevention and treatment of diseases.

PHS142
CHARACTERIZATION OF LOW DENSITY LIPOPROTEIN (LDL) LEVELS IN PATIENTS DIAGNOSED WITH ARTERIAL HYPERTENSION IN COLOMBIAN POPULATION IN THE YEAR 2016
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1Fundacion Cardio Infantil, Bogota, Colombia, 2Fondo Colombiano de Enfermedades de Alto Costo, Bogotá, Colombia, 3HEORT - Health Economics & Outcomes Research Team, Bogota, Colombia, 4HEORT, Bogota, Colombia, 5Risk Management Cofinadador, Fondo Colombiano de Enfermedades de Alto Costo, Bogotá, Colombia, 6Ghia, Bogota, Colombia, 7Pontificia Universidad Javeriana Medical School, Bogota, Colombia

OBJECTIVES: This study aimed to describe the parameters of Low-density lipoprotein cholesterol (LDL-c) in patients diagnosed with Arterial Hypertension in Colombia. METHODS: Based on the database of the high cost account which is an organization created by the Ministry of Health and the ministry of finance of the country, we describe people with confirmed diagnosis of arterial hypertension, reported by the insurers of the national territory during 2016, results were obtained from the 32 departments and the...
Objective: This study aimed to describe the levels of low-density lipoprotein cholesterol (LDL-C) in patients diagnosed with diabetes mellitus in the Colombian Health System in 2016.

Methods: The group made an analysis of a database of the High Cost Account which is an organization created by the Ministry of Health and the Ministry of the Treasury of the country. The prevalence of high LDL-C levels was determined in 2016. Results: Out of 80,000 records found whose diagnosis of DM was confirmed by the insurers of Colombia during the year 2016, the results were obtained from all departments and the totality of the country insurers. 99,837 records were found whose diagnosis of DM was confirmed. The analysis was descriptive through measures of central tendency and dispersion depending on the nature of each variable. Results: Less than 1% of the population with DM was between 18 and 39 years old. The highest levels of LDL-C (>190 mg/dl) were within the overweight population and in those with systolic Diastolic Blood Pressure (BP) that was between 120–139 (60%) and <80mmHg (48%).

Conclusions: In this study, the prevalence of high LDL-C for individuals diagnosed with hypertension was estimated at 11.2% in the Colombian population and is low compared to other countries, it was established that as the population increases in age, the levels of LDL-C increase. It is necessary to evaluate the behavior of small and dense LDL-C particles in the development of DM.

P146 CHARACTERIZATION OF LOW DENSITY LIPOPROTEIN (LDL) LEVELS IN PATIENTS DIAGNOSED WITH DIABETES MELLITUS IN COLOMBIAN POPULATION IN THE YEAR 2016

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Objectives: This study aimed to describe the levels of low-density lipoprotein cholesterol (LDL-C) in patients diagnosed with diabetes mellitus in the Colombian Health System in 2016. The group made an analysis of a database of the High Cost Account which is an organization created by the Ministry of Health and the Ministry of the Treasury of the country. The prevalence of high LDL-C levels was determined in 2016.

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Conclusions: In this study, the prevalence of high LDL-C for individuals diagnosed with hypertension was estimated at 11.2% in the Colombian population and is low compared to other countries, it was established that as the population increases in age, the levels of LDL-C increase. It is necessary to evaluate the behavior of small and dense LDL-C particles in the development of DM.
and solving DRPs of elders at high risk of dementia. Demographic factors associated with MS score included age, ACC score and impaired mobility.

PHS149
PROSPECTIVE EVALUATION OF PATIENT-CENTERED CARE IN SHORT-TERM CANCER CARE PATHWAYS: ONE AND TWO YEARS POST-TREATMENT: THROUGH THE PATIENT ASSESSMENT OF CHRONIC ILLNESS CARE QUESTIONNAIRE
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OBJECTIVES: The Chronic Care Model (CCM) is an accepted framework for delivering care to patients with chronic illnesses. The Patient Assessment of Chronic Illness Care (PACIC) questionnaire designed to assess the CCM from the patient’s perspective. Our aim was to document patient’s assessment of chronic illness care changed at two time points. PACIC has been validated in Spanish. METHODS: This prospective study included patients with colo-rectal (CRC), breast or prostate cancer. PACIC was administered by mail at 1 year and 2 years after finishing treatment. Questionnaire has 5 subscales, patient activation (PA), delivery system design (DSD), goal setting (GS), problem solving (PS) and follow-up coordination (FU). In addition there is a global score (G). Each subscale and the global are scored from 1 to 5 with higher scores indicating patient’s perception of greater involvement in self-management and receipt of chronic care counseling. Data are expressed as mean change (standard deviation of change). Comparison amongst two times was performed through Student’s t-test. RESULTS: There were 477 patients included. 106 prostate, 251 breast and 120 with CRC. 1-year scores were: PA: 3.3 (1.3), DSD: 3.6 (1.2), GS: 2.8 (1.3), PS: 3.0 (1.5), FU: 2.3 (1.3) and G: 2.9 (1.1). The mean change (SD) by dimensions were: PA: 0.1 (1.3), DSD: 0.11 (1.2), GS: 0.13 (1.3), PS: 0.09 (1.3), FU: 0.01 (1.3) and global: 0.07 (0.9). There were no statistically significant differences amongst both follow-up periods in any dimension, but DSD. However the effect size of this change was small as Cohen’s d. CONCLUSIONS: Based on these data the patient’s assessment of chronic illness care in these short-term cancer survivors does not change along the first two years of follow-up.

PHS150
FAST-TRACK MEDICATION REFILL (FTMR) SERVICE COULD BE MORE COST-EFFECTIVE THAN THE CURRENT MODEL OF CARE IN HONG KONG
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OBJECTIVES: This study compared the cost-effectiveness of the hypothetical FTMR service, where cardiovascular disease patients not requiring any medication change had a FTD order placed and patient could obtain their medications either directly, with the current model of care in Special Out-Patient Clinics under the Hospital Authority in Hong Kong. METHODS: The ten-year costs per person, including hospitalization and running cost of the pharmacy, the quality-adjusted life-years (QALY) associated with the proposed FTMR model with a follow-up frequency of either every 3 or 6 months and the current model of care as the base case were estimated by a Markov model. Model inputs were derived from characteristics of patients attending the Hypertension Clinic in Prince of Wales Hospital from April 2016 to March 2017 and from clinical trials published in the literature. The outcome measure was incremental cost per QALY gained (ICER). RESULTS: Using the Gross Domestic Product (GDP) per capita of Hong Kong (USD26,600), as the willingness-to-pay per QALY, an every-3-month FTMR was more cost-effective than the current model, with an average follow-up duration of 22.77 weeks with an ICER of United States Dollar (USD) 28,300 and a QALY gain of 0.07 year while an every-6-month FTMR dominated an average follow-up duration of 22.77 weeks with an ICER of USD 56,600 and a QALY gain of 0.14 year. CONCLUSIONS: The hypothetical FTMR service was shown to be a cost-effective choice for stable patients to have their chronic medications refilled compared with the current model of care in Hong Kong.

PHS151
A PILOT STUDY ABOUT THE APPROPRIATENESS OF THE BREAST CANCER CARE PATHWAY IN A LOCAL HEALTH AUTHORITY ASL C2 (PIEDMONT, ALBA BRAVA ITALY): BASED ON E.PIC.A. (ECONOMIC APPROPRIATENESS OF AN INTEGRATED CARE PATHWAY)
Ricotti A1, Ortega C2, Breton C3, Canavesi P1, Pierini A1, Cassissia G1, Rono D1, Bertotto D1, Messeri Ioli G1
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OBJECTIVES: Identifying replicable mechanisms that may govern the expenditure and appropriateness of Healthcare System is important to guarantee the sustainability of the system. Our study aimed to evaluate performance in breast cancer diagnosis and treatment, using the methodology E.Pic.A. proposed by Massa et al. (1). METHODS: A board of professionals identified 7Key Performance Indicators (KPIs) on the basis of the current guidelines from the Italian Association Oncology. A cohort of 95 patients underwent surgery of breast cancer at A, Bilbao, Spain, 1Agencia Sanitaria Costa del Sol: Marbella. REDISSEC, Marbella, Malaga, Spain, 4Agencia Sanitaria Costa del Sol: REDISSEC, Marbella, Spain, 5Servicio de Evaluación y Planificación REDISSEC, Tenerife, Spain

DISEASE – SPECIFIC STUDIES

INDIVIDUAL’S HEALTH – Clinical Outcomes Studies

PH11
COMPARING THE EFFECT OF PROGRESSIVE RELAXATION AND PERINEAL STRENGTHENING INTERVAL EXERCISES AMONG WOMEN WITH PRIMAER DYSMENORRHOEA TO REDUCE MENSTRUAL CRAMPS
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OBJECTIVES: Premenstrual dysmenorrhea is one of the most common gynecological complaints, although women who suffer from menstrual cramps often take pain killers and antispasmodics only. The aim of this study is to assess the effect of Jacobson's progressive relaxation (PR) and Kegel's perineal muscle exercises (PME) on reducing menstrual cramps during primary dysmenorrhoea, to evaluate the questionnaires filled before and after treatments, and to determine the effectiveness of a 5-week program. METHODS: A randomized controlled trial was conducted on women with primary dysmenorrhea. 2 women were excluded due to non-protocol targeted sampling. Our sample consisted of 12 young QE: s suffering from primary dysmenorrhea. They were randomly divided into two groups: one got PR while the other got PME therapy twice a week for five weeks. Our study was carried out at the University of Pécs, Zalaegerszeg, Hungary. During data collection questionnaires were filled out before and after treatments (socio-demographic and anthropometric data, Visual Analogue Scale-VAS, EQ-5D, Menstrual Symptom Questionnaire-MSQ). FemScan was used for measuring perineal muscle strength. We calculated descriptive statistics and paired samples t-test (significance level: p< 0.05) with MS Office Excel 2016. RESULTS: VAS points showed a significant decrease in both groups (PR: p<0.01, PME: p=0.05), as well as EQ-5D (PR: p<0.008; PME: p<0.005), and MEPS points increased in both groups (p<0.001). QT of perineal muscle measurement also changed significantly, except for speed (p=0.078098). CONCLUSIONS: We can conclude after seeing the results of 12 treated QE: s that progressive relaxation and perineal muscle exercises can be effective in treating primary dysmenorrhea.

PH12
OFF-LABEL DRUG USE IN HOSPITALIZED CHILDREN: A PROSPECTIVE OBSERVATIONAL STUDY AT GONDAIR UNIVERSITARY REFERRAL HOSPITAL, NORTHERTHERN ETHIOPIA
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OBJECTIVES: This study aimed at determining the extent of unlicensed and off-label drug use at Gondar University reference hospital. Methods: This study was conducted in the University of Gondar Reference Hospital, Northwestern Ethiopia. RESULTS: A total of 243 pediatric patients admitted to Gondar university referral hospital were included in the study using simple random sampling method. Data were collected using structured questionnaire, and the data collected were entered and analyzed using Statistical Packages for Social Sciences (SPSS) version 20. RESULTS: From the total of 800 drugs prescribed, 607 (75.8%) were off-label. Off-label medicine use was frequently observed in antimicrobial agents (60.6%) followed by central nervous system drugs (14.3%). The extent off-label prescribing was highest in age group of 6-13 years (30%). Inappropriate dosing and frequency (62.3%) were the most common reason for off-label medicine use. Having other variables controlled, age group and undergoing surgical procedure remained to be significant predictors of off-label prescribing in the multivariate regression analysis. CONCLUSIONS: Implementing evidence-based approach in prescribing by generating more quality literature on the safety profile and effectiveness of off-label would improve the injudicious use of drugs in pediatric population.

PH13
A COST-EFFECTIVENESS MODELING EVALUATION COMPARING ORIGINATOR FOLLITROPIN ALFA TO A BIOSIMILAR FOR THE TREATMENT OF INFERTILITY IN GERMANY, ITALY AND SPAIN
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OBJECTIVES: Biosimilars for infertility treatment typically cost less than the same as originator products; however, biosimilars may not be cost-effective when all costs of treating a desired clinical outcome are considered. The aim of this study was to estimate the cost-effectiveness per live birth of follitropin alfa (GONAL-f®) and a biosimilar (Ovaleap®) for three countries: Germany, Italy and Spain.
and Italy (the drug costs differ) and Spain (where the drug costs are simi-
lar). METHODS: Patient and treatment data from Strowitzki et al. (DOI:10.1186/
s2958-015-038-5) were used. The respective DRG 359 tariffs for assisted repro-
ductive technology plus additional tariffs for gonadotropins, follow-up visits and costs related to adverse events were used in Italy and Spain. In Germany, treatment costs were di-
rected from outpatient tariffs plus ovarian hyperstimulation (OHS) costs. The mean cost per live birth in each treatment arm was calculated from the sum of all costs divided by the live-birth rate (LBR). The incremental cost-
effectiveness ratio (ICER) was calculated to costs divided by the difference in LBR. Univariate sensitivity analyses were also performed. RESULTS: Per-patient costs were higher with the biosimilar in Germany and Italy (difference ±158 and ±142, respectively) but were more aligned in Spain (difference ±13). LBRs were 0.32 for the originator and ±1765 [biosimilar], in Germany (€8135 and €9185) and in Italy (€845 and €9786). Compared with the originator, the original ICERS in the biosimilar arms were €2068 and €2620 for Spain, Germany and Italy, respectively. Sensitivity analyses had no strong effect on the ICERS. CONCLUSIONS: Treatment with the originator was more cost-
effective per live birth than treatment with the biosimilar, even when incremental costs and/or reimbursement frameworks differed.

PIH4 FORECASTING THE POTENTIAL PUBLIC HEALTH IMPACT OF HERPES ZOSTER VACCINATION IN ITALY

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OBJECTIVES: Herpes Zoster (HZ) and its complications as such postherpetic neural-
gia (PHN) impose a considerable disease and economic burden in Italy. In February 2017, the updated National Immunization Plan (NIP) was approved, this includes HZ vaccine for everyone aged 65 years old. This study estimates the potential public health impact of introducing a two-dose candidate HZ adjuvanted subunit vaccine (HZ/su), submitted for approval, or a Zoster Vaccine Live-attenuated (ZVL).

METHODS: The Zoster Vaccines (ZONA) model, a multi-country, multi-concept model, that followed all 65-year-old subjects over their remaining lifetime from the year of vaccination. To adapt the model to the Italian setting, a literature review was conducted to identify the inputs. Population statistics were derived from the national birth statistics and epidemiological inputs came from peer-reviewed articles. Vaccine characteristics were estimated from the respective clinical trials. To forecast the impact of vaccination in 2018, 20% coverage was assumed for both vaccines, as per the NIP, with a second dose compliance of 70% for HZ/su. Scenario analyses will be performed around second-dose compliance. RESULTS: Vaccinating 20% of the 726,337 individuals aged 65 years, HZ/su would prevent 11,948 HZ cases, 1,775 PHN cases and 1,004 of other complications avoided with ZVL over the population lifetime. The number needed to vaccinate (NNV) to prevent 1 HZ case for HZ/su was 13 compared to 32 for ZVL. The NNV to prevent 1 PHN case was 82 for HZ/su and 209 for ZVL, respectively.

CONCLUSIONS: This study predicts that the introduction of a HZ vac-
cination program in Italy could substantially reduce the burden of disease related to HZ. Introducing HZ/su to the 65-year-old population in Italy would avoid a greater number of HZ cases and its complications compared to ZVL.

PIH5 PRESCRIPTION ANALYSIS OF OFF-LABEL DRUGS IN PEDIATRIC PATIENTS USING THE CLAIMS DATA OF THE NATIONAL HEALTH INSURANCE IN KOREA

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OBJECTIVES: The Claims Data of the National Health Insurance in Korea (HCIS) contains information on birth, disease and medical care. In Korea, the rate of off-label prescription is increasing. The purpose of this study is to investigate the off-label usage in pediatric patients using some real-world data in Korea.

METHODS: Seventeen off-label drugs mainly used in the pediatric clinical practices were chosen, and prescriptions from November 2010 to October 2015 for those drugs were examined using the Korea Health Insurance Review and Assessment Service database. Frequency of prescriptions for each drug use in the patients under 19 years old and the proportion of off-label prescriptions among them were analyzed. Prescription patterns were investigated according to the types of medical institutions, inpatient or outpatient, medical departments, prescription years, regions, and primary disease codes. RESULTS: Among the 17 off-label drugs considered, Mosapride Citrate Hydrate (13,439,742 prescriptions) was the most frequently used off-label drug. Pregabalin (7,496,901 prescriptions) and Levofloxacin (2,612,328 prescriptions) were the most frequently used off-label drugs in children. The proportion of off-label use ranged between 84% and 100% except for 5 out of 17 medications. Those drugs as off-labeled were mostly frequently prescribed in outpatient settings, in the department of pediatric medicine, and in the Seoul metropolitan area.

CONCLUSIONS: A large number of prescriptions for off-label drug use in the pediatric patients were found through the health insurance claims data in Korea. There could be some limitations on such analysis since the claim data may not cover all off-label uses. Nevertheless, the study results bring some important attention to the current state of off-label drug use in those children without appropriate insurance policy.

PIH6 RACIAL DIFFERENCES IN THE PREVALENCE OF COGNITIVE IMPAIRMENTS AND DEMENTIA, UTILIZATION OF CHEMO-IMMUNOTHERAPY AND MORTALITY IN ELDERLY DIABETIC PATIENTS WITH NON-HODGKIN’S LYMPHOMA

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OBJECTIVES: The objective of this study was to describe racial differences in the prevalence of dementia or dementia diagnosis, likelihood of chemotherapeutic utilization and subsequent survival in elderly diffuse large B-cell lymphoma (DLBCL) patients.

METHODS: We conducted a retrospective cohort study using cancer data from the Surveillance, Epidemiology, and End Results (SEER) database. Eligible patients were identified from the SEER database. The first primary DLBCL diagnosis between 2001 and 2011. A validated algorithm for use with administrative claims data was used to determine presence of neurocognitive impairment or dementia diagnosis at baseline and throughout the study period based on International Classification of Diseases, Ninth Revision (ICD-9) and pro-
cedural codes. RESULTS: Of the 10,626 Medicare beneficiaries identified with a DLBCL diagnosis, 410 (3.9%) patients also had evidence of a neurocognitive impair-
ment or dementia diagnosis during the study period. The proportion of patients with comorbid neurocognitive impairment or dementia with DLBCL diagnosis was slightly higher than among Non-Hispanic Black (6.1%) and Hispanic (4.6%) patients compared to Non-Hispanic White (3.7%) and Asian/Pacific Islander (3.3%) patients.

In multivariable models, patients with neurocognitive impairment or dementia had significantly lower odds of systemic treatment with chemo-immunotherapy (OR: 0.43, 95% CI: 0.34 – 0.54) with even lower odds of treatment among Black (OR: 0.16, 95% CI: 0.04 – 0.48) and Hispanic patients (OR: 0.17, 95% CI: 0.06 – 0.46) with these conditions.

PIH7 A STUDY ON EVALUATION OF FALL RISK AMONG GERIATRIC PATIENTS AT A TERTIARY CARE PUBLIC TEACHING HOSPITAL

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Falls in older people are a major concern in terms of disability, institutionalization, mortality and socioeconomic burden and are considered as one of the “Geriatric Giants”.

OBJECTIVES: To evaluate fall risk among geriatric patients at a tertiary care public teaching hospital.

METHODS: This questionnaire based study utilized the “John Hopkins Fall Risk Assessment Tool” to assess the risk of falls among geriatric patients. The tool is a validated tool and consists of parameters like age, height of fall, elimination of bowel/urine, high fall risk medications, patient care environments, cognition and mobility. Based upon the these parameters a well determined score was given to patients and on the basis of score obtained these patients were categorized into moderate fall risk (6-13 points) and high fall risk (>13 points). The data was obtained from patients reporting at the medical department.

RESULTS: Based on age, the patients were classified into three categories; elderly (60-69 yrs), middle aged (70-79 yrs) and oldest old (>80 yrs). The average age of the patients was found to be 68.3±4.0 years. The studied sample (260 patients) had a high frequency of moderate fall risk (65%) and high fall risk (18.5%). Only 9.2% patients had experienced a fall event before hospitalization. Based on the evaluated scores of HFRA-tool, this study also confirms that the mobility functions, high fall risk drugs and cognitive functions are major contributing fall risk factors. A positive correlation between high fall risk and mobility function was observed.

CONCLUSIONS: In India falls are an emerging public health problem and a hurdle to active ageing. There is a need for coordination among physiotherapists, occupational therapists, health professionals, researchers, policy makers and health care delivery systems to develop prevention strategies, to avoid economic burden and promote active ageing.

INDIVIDUAL’S HEALTH – Cost Studies

PIH8 COST-COMPARISON BETWEEN THE ETONOGESTREL IMPLANT AND THE MEDROXYPROGESTERONE ACETATE INJECTABLE: NUMBER OF UNINTENDED PREGNANCIES AND FINANCIAL IMPACT

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OBJECTIVES: The Long-Acting Reversible Contraceptive (LARC) methods are rec-
ognised for their high efficacy rates and are widely prescribed throughout the UK.

Despite their high upfront costs for treatment initiation, NICE deemed LARC methods to be more cost-effective than oral contraceptive pills even at one year of use (NICE CG40 2005). Further research is needed to assess the implications on unintended preg-
nancies and financial impact between two of the most commonly prescribed LARC methods, the etonogestrel implant and the medroxyprogesterone acetate inject-
able. The consultation document for Medroxyprogesterone acetate (MPA) 685, 0.15mg was developed to assess the budgetary impact of using the implant compared to the injectable. The outcomes estimated are the difference in the number of unintended pregnancies and financial impact between these contraceptive, it is assumed that women are equally using the implant and the injectable. The calculation of the number of unintended pregnancies was based on typical failure rate for both methods.

RESULTS: Using 2016 data, approximately 685,075 women aged 16-49 in the UK received either the implant or the injectable. Based on typical failure rates and equal usage method of usage, it is expected that over a three year period 52 and 1,028 unintended pregnancies will occur in women using the implant and the injectable respectively. Use of the implant versus the inject-
able resulted in 976 fewer unintended pregnancies and realised financial savings
of £57,276,103, of which £55,680,715 is attributable to treatment costs (ingredient, consultations, removal/insertion costs) and £1,595,388 to the cost of unintended pregnancies (live birth, miscarriage, abortion, ectopic pregnancy). CONCLUSIONS: Although assuming equal shares between the implant and the injectable may not accurately reflect clinical practice, these results support the implementation of policies to further prevent unintended pregnancies and realise associated cost savings.

PIH9 HOSPITAL BURDEN 18 MONTHS AFTER SURGICAL TREATMENT OF FUNCTIONAL MENORRHAGIA IN FRANCE de Léotoing U, Chazot G, Fernandez J, Roussel V, Lafon P, Lamassale U, Fernandez H², ¹Hôpital Claude Huriez, Lyon, France, ²Hôpital Robert Debré, Paris, France, ¹Hôpital Bichat, Le Kremlin-Bicêtre, France

OBJECTIVES: To assess the current hospital burden of functional menorrhagia surgically treated in France. METHODS: A retrospective database analysis was performed using the French exhaustive national hospital discharge database (PMSI). All hospital stays from 2009 to 2015 with 4 types of menorrhagia surgery identified by CCAM codes associated with ICD-10 codes were extracted: 2nd generation (2G), 1st generation (1G), hysterectomy and endometriosis. RESULTS: A total of 7,863 patients were identified over this period. The mean hospital stay was 4.9 days. The mean total charge was €78,368 (95% CI 74,746-82,000). The 18-month median cost per patient varied from €782 (95% CI 741-232) for curettage to €2,978 (95% CI 2,103-20,525) for hysterectomy. CONCLUSIONS: Studying the hospital burden in France for functional menorrhagia is important to plan the best allocation of the available resources.

PIH10 INFLUENCE OF CDI-10 CODES ON ACTUAL COSTS IN THE MANAGEMENT OF INFERTILITY IN IRAN Toutanaki T, Tajmohammadi N, Jahanbakhsh R, Behzadzadeh A

OBJECTIVES: To examine the influence of clinical data considered as International Classification of Disease, 10th revision (ICD-10) codes on actual costs in the management of infertility in Iran. METHODS: A retrospective database analysis was performed to identify all cases in the Infertility Clinic of Shahid Beheshti University of Medical Sciences, Iran from January 2013 to December 2015. Costs were calculated using International Classification of Diseases, 10th revision (ICD-10) codes. RESULTS: A total of 553 cases were included in the study. The mean cost per case was US$2,835. CONCLUSIONS: ICD-10 codes can be useful for planning the budget of infertility centers in the future and also for the researchers who want to analyze the cost of infertility management.

PIH11 ANNUAL ANALYSIS OF REAL DATA FOR TREATMENT OF PRETERM BIRTH IN PREGNANT WOMEN IN UKRAINE Zalina O1, Makovskyouch N2, Brezen D3, Bryhards E1

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OBJECTIVES: In the world about 36% of infant deaths were due to preterm-related causes. In Ukraine, 3.7% of pregnant women have a risk of preterm birth. We analyzed a real data from 102 medical records of pregnant women diagnosed with preterm birth. These patients were treated at the Lviv Regional Clinical Hospital during January-June 2016. METHODS: A RETROSPECTIVE review of charts, 15-23 weeks gestation, 23-24 weeks gestation, 24-27 weeks gestation, 27-31 weeks gestation, and ≥32 weeks gestation. RESULTS: A total of 102 women were treated for preterm birth 57 (55.9%) at 23-24 weeks gestation, and 45 (44.1%) at ≥32 weeks gestation. The average cost of care per patient was 738,8 UAH (25.3 EUR). The highest costs for treatment were on hormonal drugs. Direct costs for polyglandular hormone in dose 200 mg/day during 12 weeks ranged from 1415.7 UAH to 5006.7 UAH (48.32-170.87 EUR depending on trade name of drug per 1 pregnant woman. Average costs for drugs included in the recommendations were 6517.4 UAH (222.4 euro) and depending on the state of pregnancy in Ukraine, the cost for treatment are paid in a single way. The mean monthly salary is currently 4281.66 UAH (146.1 EUR). CONCLUSIONS: Analysis showed that the number of prescribed medications per 1 woman on average was 7 drugs, it is a potential risk and risk for interactions and side effects for newborns. The research confirmed the need to reduce the number of prescriptions for pregnant women and, accordingly, reduce the cost of treatment for preterm birth. Necessary is a state funding for the costs on care for pregnant women.

PIH12 PRESCRIPTION COSTS ASSOCIATED WITH A PEDIATRICIAN-LED CARE MODEL SERVING CHILDREN WITH MEDICAL COMPLEXITIES (CMC) Marshall LZ, Bascetli K1

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OBJECTIVES: Children with medical complexities pose a unique challenge to healthcare providers and payers due to the range of complexities they present with and the personnel, resource use, and cost associated to their care. Innovative systems of care delivery may improve the quality of care for medically complex children, yet managing prescription costs remains a challenge due to rare disease states, lack of therapy options, and long-term therapy. Prescription cost patterns and expenditures for children with medical complexities were examined.

METHODS: This was a retrospective secondary analysis of prescription drug claims using Texas Medicaid administrative claims data for patients with CMC (ICD-10 codes in 229) who were enrolled in the Specialty for Children pilot study. Patients were randomly assigned to receive care in a pediatrician-led care coordination system (treatment) or usual care (control) for a 2-year period. Average prescription costs were analyzed.

RESULTS: A total of 222 patients with 16,398 drug claims over a 2-year period were included in the study. Average per member per month (PMPM) prescription costs were $613 (PMPM) and $1,625 (PMPM) for the treatment and control groups, respectively. The most costly prescriptions were removed, average PMPM costs were $726 (SD=$90.30) for the treatment group and $1,072 (SD=$154.70) for the control group. CONCLUSIONS: Children with CMC benefit from an integrated pharmacotherapeutic approach to their care.

PIH13 COST-EFFECTIVENESS ANALYSIS OF LONG-ACTING RECOMBINANT FSH (CORIFOLLITROPIN ALFA) VERSUS RECOMBINANT FSH (FOLLITROPIN ALFA) IN ASSISTED REPRODUCTION TECHNIQUES IN THE MANAGEMENT OF INFERTILITY IN IRAN Tahaabadi Talabaei N, Taheri Z, Mottahedeh A, Ghaorani M, Behzadi S, Rajabi M

OBJECTIVES: Assisted reproductive technologies (ARTs) are well-established treatments for infertility. The selection of the best gonadotropin or gonadotropin analog is an important consideration in cost-effective ART. METHODS: A markov decision–analytic model was used to calculate the total costs of ARTs. RESULTS: The model predicted a live birth rate after three cycles of 27.3% for LA-FSH and 26.4% for rFSH. The cost of IVF treatment was $1,868 for LA-FSH and $1,882 for rFSH. As a result, treatment with LA-FSH was found to be the dominant treatment strategy in IVF because of improved live birth rates and lower costs. However, performing a probabilistic sensitivity analysis, the average cost per live birth of LA-FSH and rFSH were found not to be significantly different. Furthermore, deterministic sensitivity analysis showed that the model is most sensitive to the LA-FSH drug acquisition cost. CONCLUSIONS: LA-LSH may represent a cost-effective choice compared with rFSH when used for ovarian stimulation in an Iranian National Health Service point of view.

PIH14 TESTOSTERONE REPLACEMENT THERAPY AS AN ANTI-AGING TREATMENT FOR MEN: A LITERATURE REVIEW AND ECONOMIC EVALUATION Hopkins OG, Chan SL

University of Nottingham, Nottingham, UK

OBJECTIVES: To assess the cost-effectiveness of testosterone replacement therapy (TRT) as an anti-fracture therapy for men. METHODS: A retro-
agent.

METHODS: A comprehensive search of MEDLINE, PsyCINFO and EMBASE was conducted. In total, 224 studies; studies were classified by the morbidity and clinical area investigated and categorised by evidence level. Randomised controlled trials were primarily used to assess treatment effectiveness. The economic evaluation compared intramuscular testosterone undecanoate to no treatment. Direct costs included treatment costs and fracture risk reduction estimates (using FRAX® tool) made for a series of example patients with differing characteristics using an economic model. RESULTS: Treatment length, dose and administration route of TTK were important factors in bone mineral density changes. However, studies measuring changes in metabolic parameters of men with diabetes reported conflicting findings and there was little evidence of effectiveness regarding the other morbidities associated with ageing. Safety concerns regarding cardiovascular and prostate cancer risk were uncertain. TTK was not found to be cost-effective in patients undergoing a medically assisted reproduction program from a French perspective. METHODS: An Excel-based decision-tree model depicting the differences in episode treatment with r-hFSH or ovulation induction with rFSH + rLH was developed (including ovarian hyperstimulation syndrome, OHSS). Clinical and safety outcomes were derived from head-to-head clinical trials evidence and from +

OHSS. All sensitivity analyses carried out support these results.

ness of results, deterministic sensitivity analyses were carried out on the main

additional live births compared to the two biosimilars (6 if pooled data are consid-

ered). The mean cost per patient was respectively €4,285 for curettage, €6,064 for hysterec-tomy, €4,182 for 2G and €3,765 for 1G. Failure or complication occurred in respectively in 17.9%, 30.6%, 10.1% and 21.5% of patients treated with 2G, curettage, hysterec-tomy and 1G. As compared to 2G, curettage was dominated (less effec-
tive and more expensive), hysterec-tomy was more expensive and more effective (ICER €11,583 per % patient with failure or complica-
tion avoided). CONCLUSIONS: This study shows 1G and 2G costs are effective,
in line with their recommended use at first stage in France.

PH15

AN ECONOMIC EVALUATION OF COMPARING THE ORIGINATOR RECOMBINANT HUMAN ALFA TO THEIR BIOSIMILARS FOLLITROPIN ALFA FOR THE TREATMENT OF INFERTILITY

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1QuintilesIMS, Paris La Défense 2, France, 2QuintilesIMS, La Défense Cedex, France, 3Merck, Lyon, France

OBJECTIVE: Bioequivalence of the two recent Biosimilars of recombinant human FSH (r-hFSH) have been demonstrated on the number of oocytes retrieved but not on the final outcome of interest for women concerned, the number of live births. Objective of this analysis is to assess the cost-effectiveness (CE) of the originator r-FSH compared with the two biosimilars in a well-defined subgroup of patients that underwent a medically assisted reproduction program from a French perspective. METHODS: An Excel-based decision-tree model depicting the dif-

ferences in episode treatment with r-hFSH or ovulation induction with rFSH + rLH was developed (including ovarian hyperstimulation syndrome, OHSS). Clinical and safety outcomes were derived from head-to-head clinical trials evidence and from +

OHSS. All sensitivity analyses carried out support these results.

ness of results, deterministic sensitivity analyses were carried out on the main

additional live births compared to the two biosimilars (6 if pooled data are consid-

ered). The mean cost per patient was respectively €4,285 for curettage, €6,064 for hysterec-
tomy, €4,182 for 2G and €3,765 for 1G. Failure or complication occurred in respectively in 17.9%, 30.6%, 10.1% and 21.5% of patients treated with 2G, curettage, hysterectomy and 1G. As compared to 2G, curettage was dominated (less effec-
tive and more expensive), hysterectomy was more expensive and more effective (ICER €11,583 per % patient with failure or complica-
tion avoided). CONCLUSIONS: This study shows 1G and 2G costs are effective,
in line with their recommended use at first stage in France.
RElATED PAIN: RESUlTS OF A DISCRETE ChOICE EXPERIMENT IN ThE UK

Objectives: To map the profile of travellers for IVF treatment from the UK to Greece.

Methods: A pilot study was conducted and a subset did a formal revised version of the questionnaire. The study consisted of two phases: the conceptual development of a set of items candidates to discriminate those women with HMB (current and past) from those without HMB. An extensive literature search was done to find scales and items previously used to detect abnormal uterine bleeding or impact of HMB in HRQoL. Then, a workshop session was conducted with a committee of 15 gynecologist experts in HMB, in order to elicit new items, select from available items or redefine them. Cognitive interviews were held with 10 women with HMB and results were presented and discussed with the expert committee.

Results: Literature review identified 46 different items of which the scientific committee selected 27 questions. Following the results of the cognitive interviews, 9 questions were erased, 8 questions were refined and 3 new questions were added. At the end of the development process, 21 items were defined including Vulvar functional impact Questionnaire (FPQ), the items are related with quality of bleeding and 14 items are related with the impact of HMB in their daily activities. CONCLUSIONS: A questionnaire of 21 items has been developed to screen women with HMB. This questionnaire is currently under psychometric validation to assess its sensitivity and specificity to detect HMB, as a second phase of this study.

PIH23
PATIENT-REPORTED OUTCOME MEASURES FOR WOMEN WITH VULVOHYDRA

Objectives: Vulvodynia has a profound effect on several domains of women’s quality of life (QoL). This study compared vulvodynia-specific patient-reported outcome measures (PROMs) for use in routine care. METHODS: The study sample consisted of 91 women from the UK who visited Greece during 2010-2015 in order to receive IVF treatment. A cross-sectional study was carried out using an electronic electronic instrument that was developed by the researchers, which was personally e-mailed to each participant and included 24 close-ended questions.

Results: The study population consisted mostly of white women (81.3%), heterosexual (92.3%), married (64.8%), of higher educational and economical status and aged over 35 years old. Overall, 67.1% of the participants were in Menstrual pain test, while the multiple pregnancy rate was 20.9%. The most predominant motivations for seeking treatment abroad was the high cost of treatment at home country (62.2%), dissatisfaction of previous treatment at the home country (62.2%), high cross-border success rates (60.4%) and the desire for multiple embryo transfer (47.3%). 59.3% of the women reported that they chose Greece due to the clinic's high success rates, 51.6% due to economic costs and 50.5% due to the quality of care, with statistically significant correlation between the choice of donor treatment and anonymity (p < 0.001) and affordability (p < 0.001). 89.9% of the women would recommend Greece for IVF treatment, while 74% stated that treatment in Greece was better suited to their needs.

Conclusions: The most important pain type was period pain, perhaps allowing patients to conceive was appreciated.

PIH24
MEDICATION RELATED QUALITY OF LIFE AMONG ETHIOPIAN ELDERLY PATIENTS WITH POLYPAHYMIA: THE CASE OF NORTH GONDAR ZONE

Objectives: To assess medication related quality of life (MRQoL) among elderly patients with polypharmacy at Gondar University Hospital, Gondar, Ethiopia.

Methods: A cross-sectional study was conducted from March 25 to May 15 2017 using validated scale, Medication-Related Quality of Life (MRQoL). Interviews were held with 150 elderly patients with poly pharmacy participated in the study with a mean age 70.06 ± 5.12 and two third of the participants (67.3%) were female. Overall prevalence of poor quality of life due to polypharmacy in the current study was found to be 75.3% of the partici pants and it is depending on severity of polypharmacy. We noted that frequency of hospital visits (COR = 1.34, 95% CI, 1.02 - 1.77) and number of medications (COR = 1.94, 95% CI, 1.33, 2.8) had statistically significant positive association with the likelihood of having severe impairment. The multivariate analysis also showed that one unit increase in the number of hospital visits (AOR = 1.45, 95% CI,
PATIENT AND CAREGIVER BURDEN IN CONGENITAL ADRENAL HYPERPLASIA (CAH) IN CHILDREN: RESULTS OF A STRUCTURED LITERATURE REVIEW

**Purpose:** To systematically review the existing literature on the burden of care and caregiver experiences for children with congenital adrenal hyperplasia (CAH) and their families.

**Methods:** A structured literature review was conducted using the Cochrane Library, PubMed, and Embase. The search strategy included terms related to CAH, child health, and caregiver burden.

**Results:** A total of 2,024 citations were identified, and 226 were included in the final review, of which 17 reported humanistic burden associated with CAH. The results showed that 61-79% of parents reported concerns over their child's development. For children aged ≤6 years, key findings were: caregivers experienced “latent anxiety”, and disruption to daily routines and work life; 61% of parents reported social ostracizing as their biggest concern for their child; and 46% of parents interviewed described their biggest concern for their child; and 46% of parents interviewed described their biggest concern for their child; and 46% of parents interviewed described their biggest concern for their child.

**Conclusions:** This study highlights that paediatric CAH is associated with substantial patient and caregiver burden.

**European Study on Acute Cough in Children: Results of Poland**

**Objectives:** To evaluate the impact of acute cough on children's health and daily activities in Poland.

**Methods:** A cross-sectional study was conducted using self-administered, closed-ended questionnaires and open-ended questions for additional comments.

**Results:** Of 321 children included in the study, 51.1% were boys and mean age was 3.0 (±1.5) years. The impact of cough on children's and parent's sleep was significant (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough.

**Conclusions:** The study highlights that paediatric CAH is associated with substantial patient and caregiver burden.

**Traditional and Complementary Medicine in Pregnancy and Postpartum: Reasons and Perceptions**

**Objectives:** To assess the reasons for and perceptions on Traditional and Complementary Medicine (T&CM) use during pregnancy and postpartum period.

**Methods:** A cross-sectional study was conducted using self-administered, closed-ended questionnaires and open-ended questions for additional comments.

**Results:** The results showed that cough in infant and children has a heavy impact on patients and their families’ time as severely affected by having a child with CAH. CONCLUSIONS: This study highlights that paediatric CAH is associated with substantial patient and caregiver burden.

**European Study on Acute Cough in Children**

**Objectives:** To evaluate the impact of acute cough on children's health and daily activities in Poland.

**Methods:** A cross-sectional study was conducted using self-administered, closed-ended questionnaires and open-ended questions for additional comments.

**Results:** Of 321 children included in the study, 51.1% were boys and mean age was 3.0 (±1.5) years. The impact of cough on children's and parent's sleep was significant (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough. The impact of cough decreased significantly (p<0.001). The distribution of intensity of cough, respectively “Mild/Moderate/Severe” was 3.1 (±2.2) days since the onset of cough.
OBJECTIVES: The use of propofol in general anesthesia in children less than 3 years of age remains off-label in many countries because its safety and effectiveness have not been established. We performed a systematic review to evaluate propofol anesthesia in young children. METHODS: A comprehensive literature search was conducted in three databases to find all randomized clinical trials of propofol versus other general anesthetic agents for general anesthesia conducted with children under 3 years old. RESULTS: A total of 14 papers from 12 unique randomized controlled trials were included. Propofol anesthesia was compared to thiopentone and halothane in eight articles and maintained an established safety profile with propofol compared to thiopentone and desflurane in four articles. Two studies compared propofol to dexmedetomidine for both induction and maintenance. Achievement of adequate intubation condition was significantly lower in the propofol treated group (RR 0.69, 95% CI 0.48-0.81). Significant differences in hemodynamic responses after the induction, treatment effects differed by control. The propofol group showed higher mean blood pressure compared to thiopentone, but lower heart rate than thiopentone and sevoflurane. Although the differences in tracheal intubation times were not significant, the propofol group demonstrated higher heart rates than the desflurane, while showing lower heart rates than thiopentone and sevoflurane. In general, there were tendencies to lower minimum mean arterial pressure and heart rates after the induction in propofol group than controls (MMRR < 3.00, 95% CI -7.84-1.85; RR < 0.91, 95% CI 17.21 -3.39). Adverse events including desaturation, apnoea, postoperative nausea and vomiting, and emergence agitation, did not differ significantly. Recovery times including time to extubation, eye opening, and emergence also did not differ significantly. CONCLUSIONS: A meta-analysis showed that propofol did not significantly lower hemodynamic responses than other general anesthetic agents. Profiles of adverse events and times to recovery of propofol group were not significantly different from those of the controls.

PH31 MEDICATION USE DURING PREGNANCY IN THE NETHERLANDS: A POPULATION-BASED STUDY
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OBJECTIVES: The objective of this study was to assess medication use during pregnancy in a population-based setting in the Netherlands. METHODS: A cross-sectional study was conducted using pharmacy dispensing records linked to pregnancy records. Community pharmacy dispensing records were obtained from the Out-patient Pharmacy Database of the PHARMO Database Network (PHARMO) - a population-based network of electronic healthcare databases in the Netherlands combining data from different healthcare settings in the Netherlands. Pregnancy records were obtained from the Perinatal Registry of the Netherlands (Perinett) – a nationwide registry containing maternal and neonatal characteristics and data on perinatal morbidity between 1999 and 2015. Drug exposure was defined as well as PHARMO were included in the study. Use of unsafe medication was defined according to 5 categories of the Dutch classification of medication in pregnancy: A) medication with pharmacological effects that (A1) should be monitored when used or (A2) should be (temporarily) avoided; B) medication with teratogenic effects that (B1) should be monitored when used or (B2) should be (temporarily) avoided; C) medication with unknown risks due to insufficient experience (C); D) medication with unknown risks due to insufficient comparison with other medications (D); E) medication with known or probable risks due to insufficient experience (E). RESULTS: Of 343,783 women (mean ±SD age at delivery 30.3 ±4.8 years, 81% with Dutch ethnicity) avoided and C) medication with unknown risks due to insufficient experience (C); D) medication with unknown risks due to insufficient comparison with other medications (D); E) medication with known or probable risks due to insufficient experience (E). CONCLUSIONS: Nearly one third of all pregnancies were exposed to unsafe medication not indicated as safe. Future interventions in the Netherlands should focus on the prevention of unsafe medication use during pregnancy.

PH32 VERY LOW COMPLIANCE FOR VULVOVAGINAL ATROPHY (VVA) TREATMENT: A RETROSPECTIVE U.S. HEALTHCARE CLAIMS DATABASE ANALYSIS
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OBJECTIVES: Improving treatment adherence for vulvovaginal atrophy (VVA) or genitourinary syndrome of menopause (GSM) is a highly prevalent and underreported condition in post-menopausal women. Symptoms classically include pain at sexual activity, vaginal dryness, irritation, and urinary symptoms. The study objective is to characterize compliance to current VVA treatments. METHODS: VVA women (ICD-9: 627.3 625.0), aged 45+, and continuously enrolled 365 days before (baseline period) as well as after first VVA diagnosis with no VVA treatment during the baseline period were selected from the Truven Health MarketScan® Databases (01/2010-06/2015). Compliance and treatment rates were assessed during the one-year following initial VVA diagnosis: EC(42.3%), CE(34.0%), CC(26.4%). A medication switch was defined as the start of a different treatment anytime from initial dispensing and up to 60 days following switch, or end of data availability. A switch was defined as the start of a different treatment anytime from initial dispensing and up to 60 days following discontinuation. RESULTS: From 203,310 VVA women, 69,066(34.0%) had ≥1 treatment during the one year following initial VVA diagnosis: EC(42.3%), CE(34.0%), CC(26.4%). Of the EC users: 19,835(11.1%) on average stayed on EC for 12 days after VVA diagnosis (SD=69.9 days, median=0 days). 74.3% of women received only one dispensing anytime after VVA: CE(82.1%), EC(80.8%), ER(53.2%), ET(51.9%), and ER(14.9%). Adverse events including desaturation, apnoea, postoperative nausea and vomiting, and emergence agitation, did not differ significantly. Recovery times including time to extubation, eye opening, and emergence also did not differ significantly. CONCLUSIONS: This study shows that about only one third of women initiated therapy in the year following first VVA diagnosis and that close to 75% abandoned treatment after their first dispensing and 95% of them within one year. These results highlight the serious unmet need in the treatment of VVA.

PH33 DISCLOSURE OF TRADITIONAL AND COMPLEMENTARY MEDICINE USED FOR PREGNANCY AND THE POSTPARTUM PERIOD TO HEALTHCARE PROVIDERS
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OBJECTIVES: This study reveals that communication between these women and their healthcare providers regarding the integration that T&CM is safe to use due to its practice which has been passed down from generation to generation were the most popular reasons for non-disclosure of T&CM use. CONCLUSIONS: This study reveals that communication between T&CM users and healthcare providers about the integration of traditional and conventional practices is crucial due to the interactions which might occur. Hence, awareness studies regarding T&CM use is urgently needed in Malaysia to bridge the gap between T&CM users and healthcare providers.

PH34 A MULTI-DIMENSIONAL ASSESSMENT OF THE CONSERVATIVE TECHNOLOGIES USED FOR THE TREATMENT OF UTERINE FIBRIDS IN ITALY
Ferraro I1, Foglia E1, Garaziglia E1, Gerardt C1, Bellavia G1, Colombo S1, Tieca C1, Rossetti C1, Gobbi M1, Meroni MG1, Vanzulli A1, Rampoldi AG1, Bignardi T1, Forzoni F1, Crico D2
1LUC University, Castellanza, Italy, 2IRCCS - Istituto di Ricerche Farmacologiche “Mario Negri”, Milan, Italy

OBJECTIVES: An innovative diagnostic procedure (MRgUS) is used for the treatment of uterine fibroids (UF), a disease affecting 13.80% of all ages Italian women. The study aim was a multi-dimensional evaluation of the benefits concerning the Lombardy Region outcome of the UF target population, providing an improvement in the quality of life for both patients and caregivers, with a return on investment period. The new equipment introduction, in the short term, requires training courses productivity losses, in the long run, there would be a reduction in the areas described above, thus making it the preferred technology, with an average organisational value of 0.52, followed by UAE (0.12). Lombardy Region could benefit from economic and organizational advantages with the adoption of MRgUS into the clinical practice (~6.29%), thus being able to perform, on average, 57.18 additional DRGs, within three years. CONCLUSIONS: The results suggested that MRgUS could be considered an advantageous technological alternative in the UF target population, providing a potential overall benefit with its acquisition, thus supporting the definition of a future dedicated national reimbursement tariff.

PH35 VALUE AND IMPORTANCE OF INCORPORATING UNCERTAINTY INTO OPINION BASED HEALTHCARE DECISION MODEL: A HEALTHCARE DECISION STUDY ON AMINO ACID THERAPY FOR PRIMARY FAMILIAL AMINO ACIDURIA
Hariharan D, Rittenhouse B
MCPHS University, Boston, MA, USA

OBJECTIVES: ACMG made recommendations for NBS using an algorithm where survey scores determined an entry point to an algorithm (EPA). The EPA specifically follows a diagnostic pathway once the patient has a positive test result. The study aims to determine if ACMG made recommendations for NBS using an algorithm where survey scores determined an entry point to an algorithm (EPA). The EPA specifically follows a diagnostic pathway once the patient has a positive test result.
sampling variation on the total disease-specific score and final recommendation making. MEDLINE questions were analyzed and estimated for potential missing responses were made. The influence of missing values was estimated through boundary estimates (Manski, 1989); bootstrapping estimated the influence of sampling variation. Their joint influence was also examined. RESULTS: The score (90) for one question implied a range of possible missing responses (7–23 of 65 expected responses). Using the conservative M=2, the boundary estimate implied a possible reduction of up to 2.786 points from the original mean (lower bound, LB=87.69). Bootstrapping variation around the LB indicated 70.2% of means to be lower than the critical value for an EPA and recommendation change. CONCLUSIONS: In C, a loss in score of > 1 point changes the recommendation to “not recommended.” Even with a conservative estimate of missing responses (2) to this one question, missing data could influence the EPA and final recommendations. Adding the influence of sampling variation implies even less confidence around the scoring and recommendation. Our analyses, incorporating adjustments for both types of uncertainty, could reveal significant decline in TJA transfusion incidence between 2010 and 2015. However, equal (82.1% vs. 82.3%) data could influence the EPA and final recommendations. Adding the influence of missing values was estimated through the ACMG screening recommendations even within its own opinion-based process and further show the ambiguity of relying on opinion-based research for policy making, particularly when its apparent precision is revealed as an illusion.

MUSCULAR-SKELETAL DISORDERS – Clinical Outcomes Studies

PMS1

TRANSFUSION TRENDS IN PRIMARY AND REVISION TOTAL JOINT ARTHROPLASTY: ARE RECENT DECLINES SHARED EQUALLY?

Kimball CC, Nichols CI, Vose JG

MethOds: This retrospective study used the Premier Perspective® hospital database (2010-2015). Patients selection criteria included patients undergoing primary total knee arthroplasty (TKA), primary total knee arthroplasty (P-THA), revision THA (R-THA) or revision TKA (R-TKA), aged >18, no history of fracture, and no concurrent hip and knee procedures. Significance of time trends within cohorts were analyzed with the Cochran-Armitage Test. RESULTS: A total of 314,779 P-THA patients, 605,702 P-TKA patients, 38,399 R-THA patients, and 54,144 R-TKA patients met selection criteria. Overall incidence of transfusion declined significantly between 2010 and 2015, from 22.1% to 7.1% for P-THA, 18.1% to 3.2% for P-TKA, 30.6% to 14.5% for R-THA, and 19.8% to 9.8% for R-TKA (all p < 0.001). The percent reduction from 2010 to 2015 varied by hospital size; larger hospitals (>400+ beds) demonstrated greater improvements vs. small hospitals (0-199 beds). Percent reduction for large vs. small hospitals was 73.5% vs. 60.3% for P-THA; P-TKA: 85.0% vs. 80.5%; R-THA: 40.2% vs. 23.4%; and R-TKA: 54.3% vs. 37.5%, respectively. Transfusion incidence reductions observed in community hospitals were greater than academic centers for P-THA (70.4% vs. 61.4%), R-THA (38.5% vs. 33.2%), and R-TKA (51.1% vs. 46.8%); P-TKA was nearly equally reduced (82.1% vs. 82.3%). CONCLUSIONS: This study demonstrates that there was a considerable decline in TJA transfusion incidence between 2010 and 2015. However, these data were not shared equally by procedure type, facility size, or academic status. While significant advances have been made, there remains a large opportunity for improvement.

PMS2

LIFETIME RISK OF Revision FOLLOWING Joint REPLACEMENT: EVIDENCE FROM ROUTINELY-COLLECTED DATA

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MethOds: To estimate the effect of age, gender and diagnosis (osteoarthritis, OA, or rheumatoid arthritis, RA) on the lifetime risk of revision following total knee and hip replacement (TKR and THR). METHODS: Individuals who received TKR or THR were identified using primary care linked to hospital records in England (CPHED-HIES). Based on ten-year follow-up, parametric survival models were specified with age, gender and diagnosis included as explanatory variables and distributions chosen on the basis of AIC. While risk of revision was extrapolated, risk of mortality was assumed to revert to population lifetimes after ten years. These competing risks were combined using a Markov model to estimate lifetime risk of revision. RESULTS: 10,260 and 10,916 individuals received TKR and THR respectively. Lifetime risk of revision following TKR for 50-year-olds was: female, OA: 21% (95% CI: 17% to 25%); female, RA: 28% (95% CI: 25% to 31%); male, OA: 24% (95% CI: 20% to 29%); male, RA: 34% (95% CI: 30% to 38%); and for 50-year-olds female, RA: 1% (1% to 2%); male, RA: 3% (2% to 4%); female, OA: 2% (2% to 3%); male, OA: 6% (4% to 8%); female, RA: 3% (2% to 4%); male, RA: 5% (4% to 6%); female, OA: 4% (3% to 5%); male, OA: 7% (5% to 9%); female, RA: 9% (7% to 11%); and male, RA: 12% (10% to 14%). For 85-year-olds these fell to: female, OA: 2% (2% to 3%); male, OA: 5% (4% to 6%); female, RA: 1% (1% to 2%); male, RA: 3% (2% to 4%); female, OA: 5% (4% to 6%); male, OA: 10% (9% to 11%); female, RA: 15% (8% to 22%); and male, RA: 15% (10% to 20%). For 85-year-olds these fell to: female, OA: 3% (2% to 4%); male, OA: 2% (2% to 3%); female, RA: 3% (2% to 4%); and male, RA: 3% (2% to 3%). CONCLUSIONS: Lower age at surgery and being female was included as risk factors for the lifetime risk of revision following TKR and THR. Risks for OA and RA were not significantly different. These findings will help inform shared decision making.

PMS3

PREDICTIVE RESPONSE TO CERTOLIZUMAB PEGOL IN RHEUMATOID ARTHRITIS: PREDICTS OUTCOMES: DATA FROM A PROSPECTIVE OBSERVATIONAL STUDY


MethOds: From April 2015 to April 2016, 11 patients were started on certolizumab pegol (CZP) in France were used. Patients were evaluated at study entry and at 3-monthly routine consultations thereafter. Disease activity was assessed at each visit using CDAI, DAS28(ESR) and HAQ-DI. Early treatment response was measured using the local cut-off point in missing data was excluded from the analysis. Late treatment response was measured at 1 year, at which point linear interpolation, LCOFI or NI were used to impute missing data. Non-response at Week 12 was defined as CDAI-10, dDAS28(ESR)-12, or dHAQ-DI-0.22, and defined as LCOFI or NI. METHODS: We analyzed data from 4 patients of patients remaining in their DAS28-ESR category remission/LDA or moving to an inferior DAS28-ESR category at 24 weeks (W24) and permanent discontinuation of
Discontinuation in this population. Non-response/loss of response constitutes the major reason for treatment discontinuation. Adverse events were: non-response/loss of response 111 (54.15%), surgery 6 (2.93%), refusal to continue treatment, 4 (1.95%), discontinuation of the first TNFi were: non-response/loss of response 111 (54.15%), persistence was of 31.79±17.03 months for TNFi as a group, with 205 (29.08%) of treated with adalimumab, 322 (45.67%) etanercept, 100 (14.18%) golimumab and 48 (6.91%) abatacept.

**Objectives:** Assess the profile of use of immunobiological (IM) in the service of rheumatology of a Health Plans Operator (HPO) located in Fortaleza, Ceará, Brazil. METHODS: This is a descriptive and retrospective study. The data was collected from the medical skills performed in the rheumatology service, as well as the revision of patients’ charts in use of IM from 2012 to 2016. RESULTS: Were analyzed 354 patients, with female predominance, 68.36% (n = 242) and the median of age was 50 years old. The pathologies with higher incidence were osteoarthritis with 42.37% (n = 150), anklyosing spondylitis with 39.27% (n = 139) and ankylosing spondylitis with 8.76% (n = 31). 487 therapeutic schemes were used during the period. The most frequent of the tumor necrosis factor inhibitors (anti-TNF) was infliximab, the adalimumab the glimumab representing 21.36%, 19.51% and 11.50% of the use, respectively. CONCLUSIONS: The knowledge of the profile and patient care information is the basis for any planning strategy. The high cost of these medicines shows the need for multiprofessional auditing to evaluate the correct use and impact that the IMs possess in the healthcare provider. This is important to plan and offer the best care of the patient and intervene when necessary.

**PM58**

**IMMUNOBIOLOGICAL USE PROFILE IN THE SERVICE OF RHEUMATOLOGY OF A HEALTHCARE PROVIDER**

**PM59**

**RETROSPECTIVE SURVEY FOR HEPATITIS B VIRUS REACTIVATION DURING IMMUNOSUPPRESSIVE THERAPIES FOR RHEUMATOID ARTHRITIS USING ADMINISTRATIVE DATA**

**PM60**

**THE STUDY ON MECHANISM OF NF-κB SIGNAL MOLECULE IN KASHIN-BECK DISEASE**

**PM61**

**THE STUDY ON MECHANISM OF NF-κB SIGNAL MOLECULE IN KASHIN-BECK DISEASE**

**Objective:** To assess the relative efficacy of abaloparatide compared with osteoporosis treatment options (pamidronate, denosumab, ibandronate, raloxifo-fen, risedronate, rosmosomozumab, strontium ranelate, teriparatide, zoledronic acid).

**Methods:** PubMed®, Embase® and Cochrane Central Register of Controlled Trials were searched for all randomized controlled trials published prior to May 2016 including osteoporotic patients randomized with and without prior fractures. Selection of trials for inclusion in the Network meta-analysis (NMA) were based on populations (inclusion/exclusion criteria), interventions (dose/frequency) and outcomes (fracture assessments) conducted by fracture sites with relative risk (RR) of fractures as the main clinical endpoint.

**Results:** For vertebral fractures (VF) and nonvertebral fractures (NVF), a network of 11 treatments, and 20 studies informed a network of 10 treatments, respectively. For VF, abaloparatide had the greatest effect relative to placebo (RR 0.13; 95% CI: 0.04-0.34), with estimates ranging from 0.27 for rosmosomozumab to 0.71 for strontium ranelate. For NVF, abaloparatide had a greater relative risk reduction versus placebo (RR 0.52; 95% CI: 0.29-0.88) and was most effective (with a probability of 0.74) versus teriparatide (RR 0.13; 95% CI: 0.04-0.34), with estimates ranging from 0.27 for rosmosomozumab to 0.71 for strontium ranelate. For NVF, abaloparatide had a greater relative risk reduction versus placebo (RR 0.52; 95% CI: 0.29-0.88) and was most effective (with a probability of 0.74) versus teriparatide (RR 0.13; 95% CI: 0.04-0.34), with estimates ranging from 0.27 for rosmosomozumab to 0.71 for strontium ranelate.

**Conclusion:** Based on the current NMA, abaloparatide treatment results in a reduction in RR of both vertebral and nonvertebral fractures in women with and without prior fractures versus placebo in comparison with other treatment options. Generalizability is limited to the trial populations included in the NMA.

**PM57**

**EFFECTIVENESS AND PERSISTENCE OF THE FIRST TUMOR NECROSIS FACTOR INHIBITOR IN PORTUGUESE PSORIATIC ARTHRITIS PATIENTS**

**Objectives:** To assess the effectiveness, measured by response rates and drug survival, and the main reasons for TNFi discontinuation, in PAs. **Methods:** This was a retrospective non-interventional study of PAs patients registered at the Rheumatic Diseases Portuguese Register, with at least 1 TNFi prescription. Data was analyzed at 0, 3, 6, 12, 24, 36 and 48 months after starting a first TNFi. Response was measured by composite disease activity (DAS, ACR, PsARC, BASDAI, ASDAS, MDA) and functional (HAQ) indices. Drug survival was assessed by Kaplan-Meier survival analysis. In all analyses significance level was set at 0.05.

**Results:** 705 PAs patients were included, with a mean age of 52.5 years (±13.3); 50.8% (n=358) female. 185 patients (26.2%) treated with adalimumab, 322 (45.67%) etanercept, 100 (14.18%) golimumab and 98 (13.90%) with infliximab. The average response rates, measured by composite disease activity indices, were detected between 1 and 1.6. The treatment discontinuation rate and persistence was of 31.79±17.03 months for TNFi as a group, with 205 (29.08%) of patients do not respond and/or are intolerant to TNFis. The objective of this work was to assess the effectiveness, measured by response rates and drug survival, and the main reasons for TNFi discontinuation, in PAs. **Methods:** This was a retrospective non-interventional study of PAs patients registered at the Rheumatic Diseases Portuguese Register, with at least 1 TNFi prescription. Data was analyzed at 0, 3, 6, 12, 24, 36 and 48 months after starting a first TNFi. Response was measured by composite disease activity (DAS, ACR, PsARC, BASDAI, ASDAS, MDA) and functional (HAQ) indices. Drug survival was assessed by Kaplan-Meier survival analysis. In all analyses significance level was set at 0.05.

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**Conclusions:** This is a descriptive and retrospective study. The data was collected from the medical skills performed in the rheumatology service, as well as the revision of patients’ charts in use of IM from 2012 to 2016. RESULTS: Were analyzed 354 patients, with female predominance, 68.36% (n = 242) and the median of age was 50 years old. The pathologies with higher incidence were osteoarthritis with 42.37% (n = 150), anklyosing spondylitis with 39.27% (n = 139) and ankylosing spondylitis with 8.76% (n = 31). 487 therapeutic schemes were used during the period. The most frequent of the tumor necrosis factor inhibitors (anti-TNF) was infliximab, the adalimumab the glimumab representing 21.36%, 19.51% and 11.50% of the use, respectively.
patients, moreover, chondrocyte experiments showed cell apoptosis was mediated via up-regulation of NF-κB p65, and the expression of p65 is down-regulated by Na2SeO3 intervention, which suggest NF-κB signaling pathway play an important role in pathogenesis of KBD (This research was supported by National Natural Science Foundation in China No.81573104, 81772610, 81673117).

PMS1M ESTIMATING THE PREVALENCe OF DEPRESSION IN PATIEnTS WITH RHEUMAtoid ARThritis IN KOREA USING NATIONAL HEALTH INSURANCE CLAIMS DATA

OBJECTIVES: The prevalence of depression in patients with rheumatoid arthritis (RA) is estimated to be 3.5 times that of the general population and even higher than those with other chronic diseases. However, in Korea, there is still unmet needs in this research area to estimate the prevalence of depression in patients with RA according to various definitions of depression and RA severity using the Health Insurance Review and Assessment service (HIRA) claims database in 2014.

METHODS: RA patients were defined as adults (≥ 19 years old) who had at least one discharge code of RA (ICD code: M05.0-6) from HIRA – National Patients Sample (NPS) data in 2014. Depression was defined according to ICD-10 codes of J06.32, F31.3, F31.4, F32, F33, F39.1, F38.1 and F41.2. RESULTS: Overall, 3,967 RA patients were identified from 2014 HIRA-NPS data by multiplying this figure by inverse sampling probability for each patient, the total number of adult RA patients in the nation was estimated to be 448,688. The prevalence of depression among RA patients ranged from 14.1% to 16.5% depending on the operational definition of depression. RA patients with at least one hospitalization had about 1.53 times higher chance of experiencing depression than those without hospitalization (25.1% vs. 16.4%). Patient characteristics seemed to be associated with depression. For instance, female had a higher rate of depression (17.8%) than male patients (13.0%). Patients enrolled in Medicaid (33.7%), which is a public assistance program, tended to experience depression more than those enrolled in National Health Insurance (15.5%), which is a mandatory contributor health security program.

CONCLUSIONS: The prevalence rate of depression in RA patients in Korea is high and can vary depending on patient characteristics and disease severity, suggesting that more attention to depression in RA patients is necessary.

PMS12 THE STUDY ON EXPRESSION OF AP-1 SIGNALING PATHWAY AND POLYMORPHISMS OF SEP15 AND TRXR-2 GENES IN KASHIN-BECK DISEASE

OBJECTIVES: Kashin-Beck disease (KBD) is an osteoarthropathy, and age is its main pathological feature, which is commonly distributed from northeastern to southwestern of China. However, the pathogenesis of KBD still remains unknown. Recent studies have found that selenoproteins SNP may influence the KBD susceptibility, and AP-1 pathway plays an important role for regulating apoptosis-related genes. Therefore, we performed this experiment to investigate the polymorphisms of Sep15 rs5859 and TrxR-2 rs1139793 as well as proteins expression of AP-1 pathway in KBD patients and controls for understanding KBD pathogenesis.

METHODS: 208 KBD patients and 206 control subjects from Shaanxi in China were included in this study. PCR-Restriction Fragment Length Polymorphism and Amplification Refractory Mutation Specific-PCR were used to detect 3 SNPs. The genotype and allele frequencies were compared between KBD groups and controls using the SPSS. RESULTS: The minor allele frequency of Sep15 rs5859 in KBD patients was significantly higher than that of control group (P<0.001). The cases carrying A-allele had a 2-fold increased risk of developing KBD compared with the G-allele carriers (OR 95%CI: 1.64-3.956). There was no significant difference in genotype and allele distribution of TrxR-2 rs1139793 between KBD patients and controls. The expression levels of JUN and FOS in KBD were higher than that in control group (P<0.001).

CONCLUSIONS: The frequency of the minor A-allele of Sep15 rs5859 is a risk factor for KBD. AP-1 signaling pathway is up-regulated in KBD patients, which might be one of the pathogenesis of KBD (This research was supported by National Natural Science Foundation in China No. 81573104, 81772610, 81673117).

PMS13 RISK OF MAJOR OSTEOARTROSCI Yii Fracture (HIP, VERTEBRAL, RADIUS, HUMERUS [MOF]) AFTER FIRST, SECOND AND THIRD FRACTUREITY IN A SWEDISH GENERAL POPULATION

OBJECTIVES: Biologic treatments have enhanced the treatment outcomes of patients with active ankylosing spondylitis (AS) and recently, TNF-alpha-inhibitors have been the only biologics approved for the treatment of active AS. We assessed the potential budget impact of the first non-TNF-alpha biologic secukinumab (fully human IL-17A-inhibitor) versus adalimumab (TNF-alpha-inhibitor) in the treatment of AS in the Finnish public health care setting.

METHODS: Corresponding market shares. According to the budget impact analysis, treating index any site), 37.6% (CIF5:3.6-13-39) after second, 21.2% (CIF5:18-0.25-0) after third, within 6 months following a fragility fracture, remaining very high in the subsequent 2 years. Risk of subsequent MOF was highest in the first 6 months following index fracture; the adjusted relative risk (RR) of MOF was 2.2 (CIF5:2-1-2.2) following any fragility fracture, 4.5 (CIF5:4-2-4.9) following a vertebral fracture and 3.9 (CIF5:1.8-2.1) following an hip fracture. After a second fracture, HR: 2.8, 3.8 (CIF5:2.9-5.2) and 2.0 (CIF5:1.9-2.1), and after the third fracture, the RR was 1.5 (CIF5:1.5-1.5).

CONCLUSIONS: Fracture risk significantly increases rapidly within 6 months following a fragility fracture, remains very high in the subsequent 2 years and persists over 5 years. The relative risk manifests within 6 months and gradually declines over 5 years following the fracture. A patient who has suffered any fragility fracture requires prompt intervention to minimize that avoid significant personal, economic and societal burden.
AS patients with secukinumab instead of adalimumab would lead to EUR4.8M savings within a 1-year time period. The annual total costs were EUR6,5M vs EUR11.3M with/without secukinumab, respectively. Potentially 74% more AS patients (1,442 vs 827) could be treated with secukinumab instead of adalimumab under a given health care budget. The response rates for secukinumab were consistently higher compared to adalimumab in terms of low 28, remission rates of 10% vs 0%, respectively. Considerably more patients could be treated more effectively with a biologic under rational allocation of resources. These results also suggest dominance of secukinumab compared to adalimumab as it gives higher treatment outcomes with lower costs in the treatment of patients with active AS in Finland.

PMS17

BUDGET IMPACT MODEL OF SECUKINUMAB FOR PSORIASIS, PSORIATIC ARTHRITIS AND ANKYLING SPONDYLITIS TREATMENT IN ITALY

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OBJECTIVES: Psoriasis (PsO), psoriatic arthritis (PsA) and ankylosing spondylitis (AS) are chronic, immune-mediated, inflammatory diseases associated with different levels of worsening health-related QoL. In Italy approximately 35,377 PsO, PsA and AS patients are estimated to receive biological drugs in 2017. Secukinumab is a first-in-class recombinant, fully human 17A inhibitor. The objective of this study was to estimate the budget impact, up to 5 years, from the Italy National Health Service perspective, of introducing Secukinumab for the treatment of PsO, PsA and AS patients alongside major market comparators. METHODS: The 5-years budget impact model was developed, only direct medical costs were considered. The budget impact was estimated considering price thresholds, market shares, resource use and cost of items (drug therapy costs, administration costs, management diseases-related costs and adverse events costs) with and without the introduction of the Secukinumab. Results: Annual Italian National Patty and data from published literature were applied. To assess the robustness of the model/s results, a sensitivity analysis (10 % range of variables) was developed. RESULTS: Costs are reduced after the introduction of secukinumab, 90% of costs savings is achieved after 5 years from Secukinumab introduction. The largest cumulative cost savings was observed in AS patients with 6.7 m EUR In PsA and PsO patients saving estimated in 32.6 m EUR and 6.3 m EUR, respectively. In the fifth-year the cost reduction is estimated in 2.550 m EUR for PsA and 53.4 m EUR for PsO. CONCLUSIONS: From the Italian NHS perspective, Secukinumab presents a cost-saving option for the treatment of PsA and AS, potentially increasing if used in biologic-naive PsA patients, while doesn’t involve any rise in costs for the treatment of PsO. With the introduction of Secukinumab more patients could be treated more effectively with biologics in Italy under a given health budget due to the cost-offsets.

PMS18

TOFACITINIB IN ADULT PATIENTS WITH ACTIVE RHEUMATOID ARTHRITIS: BUDGET IMPACT ANALYSIS

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BACKGROUND: Tofacitinib is a new drug in Russian pharmaceutical market indicated for adult patients with active rheumatoid arthritis (RA) and an inadequate response or intolerance to previous treatment with one or more traditional disease-modifying antirheumatic drugs (DMARDs). OBJECTIVES: To assess the budget impact of the introduction of tofacitinib for RA treatment in Russian healthcare perspective. METHODS: The Excel-based budget impact model (BIM) compared two scenarios of RA treatment: current practice without tofacitinib (1) and new practice with optional tofacitinib (2). Current practice included treatment with traditional basic DMARDs, nonsteroidal anti-inflammatory drugs (NSAIDs), glucocorticosteroids (GCS) and biologic drugs which are recommended by guidelines and commonly prescribed in Russia (adalimumab, etanercept, infliximab, certolizumab pegol, golimumab, abatacept, tocilizumab and rituximab). BIM considered 3-year time horizon and included direct medical costs for drugs and their administration. Costs calculations were based on the registered marginal sales prices of drugs except tofacitinib, when the proposed manufacturer’s price was used, and tariffs for medical services in Russian healthcare in 2016. The market share of tofacitinib was modeled due to manufacturer’s forecast. RESULTS: Scenario with tofacitinib is a cost saving option for Russian healthcare due to its lower price compared with traditional drugs and possible use in outpatient setting. 8,223, 8,285 and 8,348 patients are treated in the 1-st, 2-nd and 3-rd year, respectively, with the gradual increase of tofacitinib market share from 0% to 8.3%. The total costs for three years will be 22.8 billion rubles (7.45 m EUR) for the 1-st and 2nd and 23.8 billion rubles (8.1 m EUR) for the 1-st, 2nd and 3rd scenarios respectively. Thus, the budget expenditures due to introduction of tofacitinib are reduced for 688.35 million rubles (10.71 m EUR) within 3 years. CONCLUSIONS: Introduction of tofacitinib into medical practice of active RA treatment will significantly reduce Russian healthcare system expenses.

PMS19

ESTIMATION OF THE BUDGET SAVING POTENTIAL DUE TO THE INTRODUCTION OF AN ETANERCEPT BIOSIMILAR (SB4) FOR THE TREATMENT OF APPROVED ADULT ETANERCEPT INDICATIONS IN BELGIUM

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OBJECTIVES: Biologics such as etanercept are considered very effective but costly treatment options. The biosimilar entry was used assuming these to remain constant over 3-year horizon. The objective was to assess the potential budget impact of introducing an etanercept biosimilar for RA treatment in Belgium. METHODS: There are two potential savings generated by: a mandatory cut of 20% of the originator price after its biosimilar entry and the biosimilar adoption by the payer. RESULTS: Annual savings (€) of 688.35 million, 1.52 m, 7.45 m and 9.93 m in the slow, moderate and rapid uptake scenario, respectively. This would allow for savings equivalent to 634, 951 and 1,268 patient-years for the slow, moderate and rapid uptake scenario, respectively. CONCLUSIONS: Introduction of SB4 represents substantial cost-saving potential for the healthcare system in Belgium. Mechanisms that can support the biosimilar uptake are essential in order to achieve these savings, which are currently not in place in Belgium. These savings will contribute to healthcare system sustainability in Belgium, as these could be used to treat additional patients within the same therapeutic area, fund novel therapies for other disease areas and/or potentially fund other hospital or medical department needs.

PMS20

EVALUATION OF THE COST SAVING POTENTIAL DUE TO THE INTRODUCTION OF AN ETANERCEPT BIOSIMILAR (SB4) FOR THE TREATMENT OF APPROVED ETANERCEPT INDICATIONS IN THE REPUBLIC OF IRELAND

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OBJECTIVES: Biologics such as etanercept are considered very effective but costly treatment options. The biosimilar entry was used assuming these to remain constant over 3-year horizon. The objective was to assess the potential budget impact of introducing an etanercept biosimilar for RA treatment in Belgium. METHODS: There are two potential savings generated by: a mandatory cut of 20% of the originator price after its biosimilar entry and the biosimilar adoption by the payer. RESULTS: Annual savings (€) of 688.35 million, 1.52 m, 7.45 m and 9.93 m in the slow, moderate and rapid uptake scenario, respectively. This would allow for savings equivalent to 634, 951 and 1,268 patient-years for the slow, moderate and rapid uptake scenario, respectively. CONCLUSIONS: Introduction of SB4 represents substantial cost-saving potential for the healthcare system in Belgium. Mechanisms that can support the biosimilar uptake are essential in order to achieve these savings, which are currently not in place in Belgium. These savings will contribute to healthcare system sustainability in Belgium, as these could be used to treat additional patients within the same therapeutic area, fund novel therapies for other disease areas and/or potentially fund other hospital or medical department needs.

PMS21

ESTIMATION OF THE BUDGET SAVING POTENTIAL DUE TO THE INTRODUCTION OF AN ETANERCEPT BIOSIMILAR (SB4) FOR THE TREATMENT OF APPROVED ADULT ETANERCEPT INDICATIONS IN PORTUGAL

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OBJECTIVES: Biologics are innovative drugs that changed the paradigm in the treatment of many autoimmune diseases. However, biologics represent a substantial cost in the healthcare systems. Etanercept is one of the preferred biologics in the treatment of autoimmune diseases due to its well established safety and efficacy profile in the approved indications. The study objective was to assess the budget impact of introducing an etanercept biosimilar, SB4, in Portugal for approved adult etanercept indications. METHODS: A budget-impact model (BIM) was used to estimate the cost saving potential of introducing SB4 in Portugal over a three-year horizon from the payer’s perspective. Annual sales (%) of the reference product in the year prior to biosimilar entry were used assuming these to remain constant over the 3-year horizon. Three model scenarios with different adoption rates of SB4 vs the reference product were developed: slow (10%, 20%, and 30% of total etanercept sales at year 1, 2, and 3), moderate (15%, 30%, 45% and 20% (40%, 60%). Prices were obtained from published sources. RESULTS: Introduction of SB4 in the biologic treatment setting over a three-year time horizon resulted in projected budget savings of €1.52m, €2.72m and €3.01m in the slow, moderate and rapid uptake scenario, respectively. This would allow for savings equivalent to 634, 951 and 1,268 patient-years for the slow, moderate and rapid uptake scenario, respectively. CONCLUSIONS: The introduction of SB4 represents substantial cost-saving potential for the healthcare system in Portugal. The budget impact was sensitive to slower uptake rates. Mechanisms in place that can support the biosimilar uptake are essential in order to achieve these savings. These savings will contribute to healthcare system sustainability in Portugal, as these could be used to treat additional patients within the same therapeutic area, fund novel therapies for other disease areas and/or potentially fund other hospital or medical department needs.
OBJECTIVES: Biologics such as etanercept are considered effective but costly treatment options in PsA in Spain. Aims: 1. Searching potential biologic 2. Cost effectiveness 3. Biologic adoption. In Spain, etanercept is available since 2006, and its adoption has been until now slow. Simplifying generic ETN costs has been a factor. The study's objective was to assess the additional annual costs of introducing SB4 in Spain, replacing currently available treatments with LB+DBM results in an additional cost of 12,330 € (€52,367/QALY gained, 25 mg and 50 mg, respectively; no dose regime specified) was identified. The total annual cost of all cost-utility analysis (ETN) in Spain.

RESULTS: Introduction of SB4 resulted in potential savings of up to 5.18 m for the moderate and €9.06m for the rapid scenario could be achieved in year 1 & 2. CONCLUSIONS: The introduction represents substantial cost savings for the healthcare system in Spain. However, the slow adoption rate will generate savings of only €0.65m over a two-year horizon. Additional savings up to €13.92m could be achieved, if mechanisms are implemented, as those in UK and some regions in Germany, to support the biosimilar uptake.

PMS23
THE INCREMENTAL COST-UTILITY OF INTRODUCING DEMINERALISED BONE MATRIX COMBINED WITH LOCAL BONE TO REPLACE CURRENTLY AVAILABLE TREATMENTS FOR LUMBAR SPINAL FUSION PROCEDURES IN SPAIN
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Objective: To perform a systematic review on pharmacoeconomic studies of lumbar spinal fusions. Methods: A total of 115 studies were included, 86 economic evaluations, 8 cost-analysis and 6 dose optimization studies. Of these, 80% were in published peer-reviewed journals and 95% were developed in English. The mean cost per drug maintenance cost (€70,294) and an additional 14 successful fusions, implying a cost of €5.29m for the moderate and €9.06m for the rapid scenario could be achieved in year 1 & 2.

CONCLUSIONS: The introduction represents substantial cost savings for the healthcare system in Spain. However, the slow adoption rate will generate savings of only €0.65m over a two-year horizon. Additional savings up to €13.92m could be achieved, if mechanisms are implemented, as those in UK and some regions in Germany, to support the biosimilar uptake.

PMS24
ECONOMIC EVALUATIONS OF ETANERCEPT IN PATIENTS WITH PSORIASIS AND PSORIATIC ARTHRITIS IN SPAIN: A SYSTEMATIC REVIEW
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OBJECTIVES: To provide a systematic review on pharmacoeconomic studies associated with psoriasis (PsO) and psoriatic arthritis (PsA) treated with etanercept (ETN) in Spain. METHODS: A systematic review was carried out in PubMed, Embase, Cochrane Library, conference abstracts, Health Technology Assessment reports and grey literature from January 2004 to January 2017. The methodological quality of the studies identified was evaluated using the Consolidated Health Economic Evaluation Reporting Standards checklist. Inclusion criteria were: economic evaluations (full or partial), and dose optimization studies published in English or Spanish language, on PsO and PsA for ETN in Spain. RESULTS: A total of 376 references were identified, of which 28 were selected, 79% analyzed PsO (8 full economic evaluations, 8 cost-analysis and 6 dose optimization studies) and 21% PsA (5 dose optimization studies and 1 cost-analysis study). Most of them used only pharmacoeconomic studies (PFS and/or ACR response rates at 48 weeks). Decision tree model was developed to calculate the incremental cost-effectiveness ratio of SB4 vs LB+DBM for the treatment of PsA in Spain. CONCLUSIONS: SB4, an etanercept biosimilar, is available in Spain since July 2016. It is expected to achieve (ETN) in Spain.

RESULTS: Introduction of SB4 resulted in potential savings of up to 5.18m for the moderate and €9.06m for the rapid scenario could be achieved in year 1 & 2. CONCLUSIONS: The introduction represents substantial cost savings for the healthcare system in Spain. However, the slow adoption rate will generate savings of only €0.65m over a two-year horizon. Additional savings up to €13.92m could be achieved, if mechanisms are implemented, as those in UK and some regions in Germany, to support the biosimilar uptake.

PMS25
COMPARISON OF SECUKINUMAB VS INFlixIMAB IN A COST PER RESPONDER ANALYSIS BASED ON A MATCHING-ADJUSTED INDIRECT COMPARISON OF EFFICACY DATA FOR THE TREATMENT OF PsORIATIC ARTHRITIS AT 48 WEEKS FROM A MOROCCAN PERSPECTIVE
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OBJECTIVES: The objective of this analysis was to estimate and compare the long-term clinical outcomes and the American College of Rheumatology (ACR) response outcomes (ACR 20/50/70) following 48 weeks of psoriatic arthritis (PsA) treatment with secukinumab (SEC, anti-IL-17A) and 54 weeks with infliximab (INF, anti-TNF). METHODS: The CFR for each treatment was estimated by dividing the drug costs by the number of patients alive in each time period. RESULTS: The incremental cost-effectiveness ratio (ICER) of SEC vs INF was lower in Morocco than Spain. CONCLUSIONS: SEC is more cost-effective than INF in Morocco where the number of patients with ACR 20/50/70 is higher with SEC than INF. SEC is more cost-effective than INF in Morocco.
private insurance, and uninsured claims from hospitals in 44 states in the U.S.,

tive analysis of the 2012 dataset from the KID database, which includes Medicaid,

des of the care provided.

are likely driven, at least in part, by longer hospital stays and increased complexity

2.3 years (p = 0.001). The mean cost per patient was lower with DOAC compared to LMWH for drugs

(t283 vs 4405), medical visits (t183 vs t199), nursing procedures (t82 vs t81), lab tests (t310 vs t312) and medical costs (t1626 vs t1506). Results for apixaban vs LMWH were very similar (e.g. t1166 vs t1510 for total medical costs).

CONCLUSIONS: The study confirms a better benefit-risk ratio of DOAC compared to LMWH for thromboprophylaxis following THR in association, associated with a 30% lower medical cost for the French collective perspective. The few patients receiving apixaban at this point provided results similar to all DOACs.

PMS28
SECUNIUMAB VS ADALIMUMAB FOR THE TREATMENT OF ANKYLOSING SPONDYLITIS: A COST PER RESPONDER ANALYSIS AT 52 WEEKS FROM A MOROCCAN PERSPECTIVE

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OBJECTIVES: The objective of this analysis was to estimate and compare the long-term cost per responder (CPR) based on the Assessment of Spondyloarthritis International Society (ASAS) outcomes following 52 weeks of treatment with secukinumab 150mg (SEC, anti-IL-17A) relative to adalimumab (ADA, anti-TNF) for ankylosing spondylitis (AS). METHODOLOGY: The CPR for the matched treatment arms for each responder was calculated by dividing the drug acquisition cost by its response rate. Cost data were estimated on the basis of the official Agence nationale de l’Assurance Maladie website (currency in MAD) and the number of doses required for 52 weeks. Long-term response rates were derived from a previous matching-adjusted indirect comparison (MAIC) based on the data from MEASURE 2 and ATLAS clinical trial. The MAIC matched patient populations on key baseline characteristics. RESULTS: The MAIC results showed higher ACR20, ACR50, and ACR70 response rates for SEC compared to ADA at 52 weeks. ASAS 20, ASAS 40 and ASAS 6/12 response rates were 91% vs 65%, 62% vs 47% and 72% vs 55% for SEC vs ADA, respectively. The cost per ASAS 20 responder was MAD 147,120 vs MAD 252,777.00, cost per ASAS 40 responder was MAD 152,232.00 vs MAD 315,856.00 whereas cost per ASAS 6/12 responder was MAD 131,089.00 vs MAD 270,258.00 for SEC vs ADA, respectively. The total costs per responder was MAD 294,762.00 vs MAD 527,035.00 for SEC vs ADA, respectively.

Patients with SMA, a rare, monogenic neurodegenerative disease, have high HRU due to respiratory and nutritional complications resulting from progressive muscle atrophy and weakness. Although the annual costs for SMA patients have been estimated to be $113,000-$121,682, it is potentially much higher in SMA1 chronic complex conditions (CCC) or other SMA types.

CONCLUSIONS: The study confirms a better benefit-risk ratio of DOAC compared to LMWH for thromboprophylaxis following THR in association, associated with a 30% lower medical cost for the French collective perspective. The few patients receiving apixaban at this point provided results similar to all DOACs.

PMS29
HEALTHCARE RESOURCE USE (HRU) IN HOSPITALIZED PATIENTS WITH A DIAGNOSIS OF SPINAL MUSCULAR ATROPHY TYPE 1 (SMA1): RETROSPECTIVE ANALYSIS OF THE KIDS’ INPATIENT DATABASE (KID)

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OBJECTIVES: Patients with SMA, a rare, monogenic neurodegenerative disease, have high HRU due to respiratory and nutritional complications resulting from progressive muscle atrophy and weakness. Although the annual costs for SMA patients have been estimated to be $113,000-$121,682, it is potentially much higher in SMA1 patients, who are at risk for frequent, intensive, and prolonged hospitalizations related to respiratory illnesses. This study aims to determine the HRU in hospitalized SMA1 patients and compare them to those of children with and without chronic complex conditions (CCC) or other SMA types. METHODOLOGY: This retrospective analysis of the 2012 dataset from the KID database, which includes Medicaid, private insurance, and uninsured claims from 44 states in the U.S. compared the following four groups: (i) no CCC (n=447,576), (ii) no CCC (n=67), (iii) SMA other than SMA1 (n=2,567), and (iv) other CCC (n=157,687). RESULTS: Individual admissions are costlier for SMA1 patients compared to children without CCC, with other SMA types, or with other CCC ($150,921 vs $19,261, $240,433, and $122,440 per admission, respectively). Hospitalization costs were $1,910 for children treated for 52 weeks with a 1-9 fold higher cost compared to children without CCC, with other SMA types and other CCC (15 vs 3.4, 11.5, and 11.8 days, respectively). CONCLUSIONS: The average hospitalization charges for a single admission exceeds the yearly estimates of all costs currently reported for SMA patients. Given that children have lengthier hospital stays compared to children without CCC, with other SMA types and other CCC (15 vs 3.4, 11.5, and 11.8 days, respectively), CLNS: The average hospitalization charges for a single admission exceeds the yearly estimates of all costs currently reported for SMA patients. Given that children have lengthier hospital stays compared to children without CCC, with other SMA types and other CCC (15 vs 3.4, 11.5, and 11.8 days, respectively),
modelled as an explanatory variable against the binary early retirement outcome, and adjusted for covariates including age, gender and BMI. RESULTS: Adequate model fit determined. An odds ratio (OR) of 1.034 (p-value < 0.00) and average marginal effect of 0.6% (p-value < 0.00) per year of disease duration were calculated. The marginal effect was non-linear, increasing yearly with confounders held constant. The predicted probability for a patient to have retired due to RA after disease dura-
tion 1-5, 6-10 and > 10 years was 13.5%, 15.9% and 21.5% respectively. The likelihood that a patient had stopped working or retired early due to RA in the first 1-5 years of the disease duration was less than 5% of current disease activity, with 5% and 9% at 15 years, 9% and 15% across 'remission', mild/moderate and 'severe' categories respectively. A 'moder-
ate/severe' level of pain attributable to RA was found in 19% of patients in remis-

CONCLUSIONS: Analysis suggests both disease duration and severity have an impact on the likelihood for a patient to retire early/stay working due to their RA.

PMS33
THE IMPACT OF DISEASE DURATION AND DISEASE ACTIVITY ON THE COST OF RHEUMATOID ARTHRITIS: RESULTS FROM BURDEN OF RHEUMATOID ARTHRITIS ACROSS EUROPE: A SOCIOECONOMIC SURVEY (BRASS)

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OBJECTIVES: Investigate the association between Disease Activity Score 28 C-Reactive Protein (DAS28-CRP) score, disease duration and patient costs in rheu-
matoid arthritis (RA) patients, using data from the Burden of Rheumatoid Arthritis across Europe: a Socioeconomic Survey (BRASS).

METHODS: Data were extracted from BRASS, a societal perspective observational RA dataset across 10 European countries: UK, Germany, France, Belgium, Italy, Spain, Norway, the Netherlands, Russia, and Romania. Data was provided by physicians and rheumato-
ologists provided information on 4,079 adult patients; of these, 2,087 patients completed corresponding questions about the burden of RA. Twelve-month costs captured included: consultations, testing, hospital admissions, treatments, payments to professional caregivers, travel costs, requirements for aids/equipment, and informal care costs. Indirect costs captured from the patient included work productivity loss. The linear model also included the DAS28-CRP score in association between disease duration, most recent DAS28-CRP score and total cost of patients excluding costs of conventional synthetic and biologic disease modifying drugs. Disease duration and DAS28-CRP score were modelled as explanatory variables against the total cost response variable, adjusted for covariates including age, gender and BMI. RESULTS: The model provided adequate fit, uncertainty from between-country unit cost differences was investigated, and association between the variables of interest remained. The average marginal effect at the mean was calculated from regression outputs. Both disease duration and DAS28-CRP score had a statistically significant association with total cost; a unit increase in DAS28 score meant a total cost increase of €1,075 (p=0.004), whereas a unit increase in disease duration of one year was associated with a total cost increase of €440.00 (p=0.012), to confounders age, gender, BMI and either DAS28-CRP or duration held at mean values. Descriptive analysis indicated that with greater duration of disease and/or disease activity, healthcare costs incurred outweigh treatment costs. CONCLUSIONS: Analysis sug-
gests that disease duration and disease activity have a significant impact on total patient cost.

PMS34
A CLAIMS DATA ANALYSIS OF BIOLOGICAL AGENTS FOR PSORIATIC ARTHRITIS IN GERMANY

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OBJECTIVES: Approximately a third of patients with Psoriasis are developing Psoriatic arthritis (PsA). This study provides information on the current supply with biological agents and its related costs in Germany. METHODS: A retrospective claims data analysis was conducted utilizing the Institute for Applied Health Research (InGeF) Berlin, formerly HRI Health Risk Institute, database including approximately 6.7 million insured anonymies originating from 63 statutory health insurances in Germany. Analyses were performed by the InGeF institute. A sample with approximately 4 million insured persons was drawn and stratified by age and gender according to the official demographic structure of the German statutory health insurance population (DeStats, Dec 31st, 2013). Patient data from 2012 - 2016 were included if they met the following conditions: Main diagnosis of RA (ICD-10 code M05.- and M06.-), and start / maintenance / switch of treatment with RA approved biological agent(s) (at least for three months). The study evaluated hospitalization, change in medication and direct medical costs (drug, outpatient care, hospitalization). RESULTS: The level of share of prescrip-
tions of all biological agents considered is low. Etanercept and adalimumab are administered mostly to patients already on treatment in 2015 etanercept 32.7 % vs. adalimumab 28.9 %). The total costs of the included 4’233 patients add up to € 78’202’566 in 2015. The total number of patients, the number of hospital admissions and the total treatment costs including all individual cost items (costs of biological agents /other medication / outpatient care / hospitalizations) grew yearly on average between 5.4 % and 11.1 % (2012 – 2015). Average hospitalization per patient remained con-
stant at 0.6. CONCLUSIONS: Adalimumab and etanercept are those biological agents mainly used for treating As. Costs grew steadily over the last four years. Total costs in 2015 were € 22.5 million (on average € 16.793 per patient).

PMS35
TREATMENT WITH BIOLOGICAL AGENTS AMONG PATIENTS WITH ANKYLOSING SPONDYLITIS IN GERMANY: A CLAIMS DATA ANALYSIS

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OBJECTIVES: Over the past 15 years, the availability of anti-tumor necrosis factor inhibitors has altered the treatment approach of ankylosing spondylitis (AS). This study provides information on the current supply with biological agents and its related costs in Germany. METHODS: An retrospective claims data analysis was con-
ducted utilizing the Institute for Applied Health Research (InGeF) Berlin, formerly HRI Health Risk Institute, database including approximately 6.7 million insured anonymies originating from 63 statutory health insurances in Germany. Analyses were performed by the InGeF institute. A sample with approximately 4 million insured persons was drawn and stratified by age and gender according to the official demographic structure of the German statutory health insurance population (DeStats, Dec 31st, 2013). Patient data from 2012 - 2016 were included if they met the following conditions: Main diagnosis of AS (ICD-10 code M45.-), and start / maintenance / switch treatment with AS approved biological agent(s) (at least for three months). The study evaluated hospitalization, change in medication and direct medical costs (drug, outpatient care, hospitalization). RESULTS: Leading biological agents for 1st line treatment are adalimumab and etanercept at a low level of share of prescriptions. Both agents are administered mostly to patients already on treatment in 2015 adalimumab 12.1 %, etanercept 30.0 %. Costs of the included 2,235 in 2015. Total number of patients, number of hospitalizations and total treatment costs including all individual cost items (costs of biological agents / other medication/ outpatient care / hospitalizations) grew yearly on average between 5.4 % and 11.1 % (2012 – 2015). Average hospitalization per patient remained con-
stant at 0.6. CONCLUSIONS: Adalimumab and etanercept are those biological agents mainly used for treating AS. Costs grew steadily over the last four years. Total costs in 2015 were € 22.5 million (on average € 16.793 per patient).
A COST PER RESPONDER ANALYSIS OF SECUKINUMAB VS. ADALIMUMAB BASED ON A MATCHING-ADJUSTED INDIRECT COMPARISON OF EFFICACY DATA FOR THE TREATMENT OF ANKYLosing Spondyritis AT 52 WEEKS FROM THE IRISH PAYER PERSPECTIVE
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OBJECTIVES: The objective of this analysis was to estimate and compare the long-term cost per responder (CPR) in Ireland based on the Assessment of Spondyloarthritis International Society (ASAS) outcomes following 52 weeks of treatment for ankylosing spondyloarthritis (AS) with the fully human anti-tumor necrosis factor (TNF)-alpha body Secukinumab 150mg (SEC) relative to the anti-TNF antibody Adalimumab (ADA).

METHODS: CPR for each treatment was calculated by dividing the drug acquisition cost, plus any other relevant direct costs of treatment, by the number of responders per treatment arm. These direct costs were derived from a previously reported matching-adjusted indirect comparison (MAIC) based on MEASURE 2 and ATLAS RCTs. Drug costs were estimated based on cost to the national Irish payer (including VAT, rebates and wholesaler margins) and the number of cost-effective responders reported in the CPR for each treatment arm.

RESULTS: Previous MAIC analysis showed that ASAS 20/40 response rates, which are key outcomes to determine symptomatic improvement in AS, were higher at lower costs, these findings suggest dominance of SEC over ADA. Furthermore, with higher outcomes at lower costs, these findings suggest dominance of SEC over ADA. More AS patients lower for SEC compared to ADA in AS patients. Furthermore, with higher outcomes at lower costs, these findings suggest dominance of SEC over ADA. More AS patients could be treated more effectively with SEC versus ADA in Ireland.

PM339
PHARMACOECONOMICS OF CERTOLIZUMAB PEGOL: A SYSTEMATIC LITERATURE REVIEW
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OBJECTIVES: To review the published evidence on the cost-effective, cost-utility, cost-benefit and cost-minimization of certolizumab pegol (CZP) treatment for rheumatoid arthritis (RA), psoriatic arthritis (PsA) and axial spondyloarthritis (axisSpA), compared with other classes of biological disease-modifying anti- rheumatic drugs (bDMARDs). Secondary: To perform a quality assessment of the economic analyses in these indications. METHODS: A systematic literature search was conducted, without date or language restrictions, in PubMed and EMBASE databases. Internet searches were also made to identify possible gray literature. Main study characteristics, methods and outcomes were extracted and critically assessed. The quality of health economic studies was assessed by the Consolidated Health Economic Evaluation Reporting Standards (CHEERS), the Quality Assessment of Environmental Economic Evaluation in Health Care (QAEHEC) and the Quality of Health Economic Studies (QHES) checklists. RESULTS: The search identified 13 full-text pharmaco- economic analyses relevant to RA and 2 in axisSpA. No studies were identified in the PsA indication. According to the economic analyses published in these articles, the high variability of the results and the design of the available studies prevent reliable conclusions. No studies were identified in the PsA indication. According to the economic analyses published in these articles, the high variability of the results and the design of the available studies prevent reliable conclusions. No studies were identified in the PsA indication.

CPR for each treatment was calculated by dividing the drug acquisition cost by the number of responders per treatment arm.

RESULTS: Previous MAIC analysis showed that ASAS 20/40 response rates, which are key outcomes to determine symptomatic improvement in AS, were higher at lower costs, these findings suggest dominance of SEC over ADA. Furthermore, with higher outcomes at lower costs, these findings suggest dominance of SEC over ADA. More AS patients lower for SEC compared to ADA in AS patients. Furthermore, with higher outcomes at lower costs, these findings suggest dominance of SEC over ADA. More AS patients could be treated more effectively with SEC versus ADA in Ireland.

PM340
MODELLING THE SOCIETAL IMPACT OF SECUKINUMAB IN PATIENTS WITH PSORIATIC ARTHRITIS IN GERMANY
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OBJECTIVES: Psoriatic arthritis (PsA) is associated with serious activity and work productivity impairment. For the first time in this disease area, this study estimates to what extent a novel medication, secukinumab, can reduce these societal and economic costs.

RESULTS: A Markov and a population model based on German PsA patients were used to simulate the progression of PsA under secukinumab versus the non-biologic standard of care (methotrexate, sulfasalazine, leflunomide). Disease severity was modeled via the Health Assessment Questionnaire Disability Index (HAQ-DI) for the population of PsA patients predicted to receive secukinumab from 2017 to 2030, accounting for treatment discontinuation and disease progression. The relationship between HAQ-DI and the Work Productivity and Impairment Questionnaire (WPIQ) was employed to determine the impact of physical and mental health on productivity impairment through the usage of secukinumab. Time-use survey and estimates of PsA-specific employment data were utilized to calculate the total amount of productivity impairment. Paid work was valued according to industry specific wages and unpaid work was valued according to the proxy good approach. Further economic effects induced by productivity increases were also taken into account.

CONCLUSIONS: The usage of secukinumab decreases work and productivity impairment in the target population by over 13 percentage points, compared to the non-biologic standard of care, generating 30.6 million active and productive hours until 2030. The switch to secukinumab results in an 8.64 billion.

CONCLUSIONS: This study shows that the use of biologics like secukinumab could lead to substantial reductions of functional limitations associated with PsA and improve quality of life to a similar extent as for AS. Future studies are needed to determine the effect of secukinumab on productivity impairment in the societal perspective.

PM341
TOCILIZUMAB AFTER A FIRST-LINE WITH ANTI-TNF IN RHEUMATOID ARTHRITIS: A COST-CONSEQUENCE ANALYSIS IN THE ITALIAN SETTING
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OBJECTIVES: Clinical evidences showed that switching to a different mechanism of action in rheumatoid arthritis (RA) patients not responding or intolerant to a first anti-TNFα is effective. Objective of this study was the assessment of the cost-effectiveness profile of different treatment strategies after a first anti-TNFα.

METHODS: The study was conducted through the development of a Markov model in the perspective of the Italian healthcare system with a 3-year time horizon. The effectiveness was measured in terms of days gained in Low Disease Activity (LDA, DAS28-ESR < 3.2) or in remission (DAS28-ESR < 2.6). The model simulated the response to tocilizumab with the inclusion of the Remission Induction (RIO) trial, cost for 52 weeks was lower as compared to ADA. Sensitivity analyses confirmed the robustness of the main analysis. Results were based on list-prices as of May 2017. CONCLUSION: The model predicted that tocilizumab would be a cost-effective treatment in RA compared to other bDMARDs in the US and Spain.

The same ratios for the anti-TNFα treatments ranged from Euro 233 to Euro 320 per day in remission and from Euro 138 to Euro 190 per day in LDA (minimum was infliximab biosimilar; max was certolizumab). COST-CONSEQUENCE: The switch to a different mechanism of action after the failure of a first anti-TNFα is an effective and cost-effective strategy in RA.

PM342
SECUKINUMAB VS ADALIMUMAB FOR THE TREATMENT OF PSORIASIC ARTHRITIS: A COST PER RESPONDER ANALYSIS AT 48 WEEKS FROM A PERUVIAN PERSPECTIVE FOR PUBLIC AND PRIVATE HEALTH SCHEMES
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OBJECTIVES: The objective of this analysis was to compare the cost per responder for secukinumab (PsA) treatment with TNF-alpha blocking agents (anti-TNFα) to adalimumab (ADA) and infliximab (IFX) and compare the cost-effectiveness of these treatments.

RESULTS: The model simulated the progression of PsA patients predicted to receive secukinumab from 2017 to 2030, accounting for treatment discontinuation and disease progression. The relationship between HAQ-DI and the Work Productivity and Impairment Questionnaire was employed to determine the impact of physical and mental health on productivity impairment through the usage of secukinumab.

Time-use survey and estimates of PsA-specific employment data were utilized to calculate the total amount of productivity impairment. Paid work was valued according to industry specific wages and unpaid work was valued according to the proxy good approach. Further economic effects induced by productivity increases were also taken into account.

CONCLUSIONS: The usage of secukinumab reduces work and productivity impairment in the target population by over 13 percentage points, compared to the non-biologic standard of care, generating 30.6 million active and productive hours until 2030.

The same ratios for the anti-TNFα treatments ranged from Euro 233 to Euro 320 per day in remission and from Euro 138 to Euro 190 per day in LDA (minimum was infliximab biosimilar; max was certolizumab). COST-CONSEQUENCE: The switch to a different mechanism of action after the failure of a first anti-TNFα is an effective and cost-effective strategy in RA.
from a Canadian healthcare system perspective. METHODS: A decision analytic model input parameterized the cost-effectiveness changes in BASDAI, Short physical functioning in the Health Assessment Questionnaire (HAQ), and low back pain severity index (BASI). Costs and outcomes were discounted at 5% per year. 

RESULTS: The apremilast sequence was associated with ICERs of £21,370–37,900 per QALY gained compared to certolizumab pegol and £33,910–51,440 per QALY gained compared to etanercept, adalimumab, and golimumab, saving £13,242–20,370 per QALY foregone. In biologic-naive patients, the apremilast sequence was associated with ICERs of £20,000 per QALY gained compared to certolizumab pegol and £34,670 per QALY gained compared to etanercept, adalimumab, and golimumab, saving £19,782 per QALY foregone. In biologic-experienced patients, the apremilast sequence was associated with ICERs of £26,234 per QALY gained compared to certolizumab pegol and £39,267 per QALY gained compared to etanercept, adalimumab, and golimumab, saving £15,195 per QALY foregone. In the biologic-naive population, SEC dominated all treatments. Patients treated with SEC achieved the most QALYs (16.09) at the lowest cost (€56,790) compared with all other drugs. Similarly, in the mixed population (biologic-naive and biologic experienced), SEC dominated all treatments as it generated more QALYs (14.59) at lower costs (CAD 1,144,452). Across all comparisons, deterministic sensitivity analyses indicated that the results were most sensitive to variation in ICERs in the mixed population. 

CONCLUSIONS: Results were found to be cost-effective for the treatment of active AS in the Greek healthcare setting.

PM545 COST-EFFECTIVENESS ANALYSIS OF APREMLAST FOR THE TREATMENT OF ACTIVE PSORIATIC ARTHRITIS IN GREECE

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METHODS: A 40-year Markov transition model with monthly cycle duration was used. Treatment strategies consisted of apremilast prior to a biologic drug sequence compared with a biologic-only sequence. Sequential biologics were etanercept, adalimumab, golimumab, and infliximab for both treatment strategies. Patients failing infliximab received best supportive care as last line of treatment. Response to treatment was assessed using the Psoriatic Arthritis Response Criteria (PsACR20/50/70) at 12 weeks and outcomes following 48 weeks of PsA treatment were obtained in the quality of life analysis. Non-responders moved to the next treatment line. Long-term treatment withdrawal and patients’ adjusted mortality rates were retrieved from the literature and adjusted for patients’ sources. Utility values were obtained from the Health Assessment Questionnaire (HAQ) and Psoriatic Arthritis and Severity Index (PASI) scores based on a published regression equation. Following a payer perspective, direct costs related to drug acquisition, administration, monitoring and overall patient management were considered. Adverse events, costs, resource use, utilities, and disutilities were collected from clinical trials, published literature, and other Canadian sources. Benefits were expressed as quality-adjusted life-years (QALYs). Costs were reported in 2016 Canadian dollars (CAD). An annual discount rate of 5% was applied to costs and benefits. RESULTS: In the biologic-naive population, SEC dominated all therapies. Patients treated with SEC achieved the most QALYs (16.09) at the lowest cost (€56,790) compared with all other drugs. Similarly, in the mixed population (biologic-naive and biologic experienced), SEC dominated all treatments as it generated more QALYs (14.59) at lower costs (CAD 1,144,452). Across all comparisons, deterministic sensitivity analyses indicated that the results were most sensitive to variation in ICERs in the mixed population. 

CONCLUSIONS: Results were found to be cost-effective for the treatment of active AS in the Greek health care setting. 

PM546 COST-EFFECTIVENESS EVALUATION OF A CARE BUNDLE INTERVENTION FOR PREVENTING FALLS AMONG ITALIAN AGED INPATIENTS IN A STEPPED-WEDGE CLUSTER RANDOMIZED CONTROLLED TRIAL

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METHODS: Falls among hospitalized elders represent a frequent (20–30%) adverse event. About 30% of falls lead to injuries with different types of severity and the risk of falling increases with age. The prevention of falls in the hospitals is possible through the adoption of multimodal strategies. This study aimed at identifying the potential reduction in falls due to the Care Bundle implementation and its cost-effectiveness in real clinical environment. METHODS: 10 clusters (hospital intervention groups) were assigned in a stepped wedge cluster design including 4 steps over the years 2015 and 2016. Incidence rates of falls in both the control and intervention periods were calculated considering the patient-days of exposure. The overall crude relative risk (RR) was calculated with its 95% confidence interval. The overall crude incremental cost-effectiveness ratio (ICER) per fall prevented was calculated. The difference in the rate of patient falls during the intervention period compared with the control period was in the denominator of the ICER. The different level of intervention vs. control costs (associated with implementation of the Care Bundle program, length of stay and hospital services provided to patients attributable to fall) was in the numerator. RESULTS: A total of 1184 patients were randomized in this trial (intervention group n=660, mean(SD) age=80.93 (11.62); control group n=524, mean(SD) age=78.14 (12.68)) throughout the overall period. A 13% reduction (RR=0.87 (95% CI: 0.71-1.07)) in falls due to the Care Bundle intervention was observed although it did not reach statistical significance. The overall ICER was €671.55 per fall prevented. CONCLUSIONS: The preliminary analyses showed a positive effect of Care Bundle intervention for preventing falls among aged inpatients at relatively low cost for fall prevented. Deeper statistical analyses will be conducted shortly. 

PM547 SECUKINUMAB IS DOMINANT VS. TNF-INHIBITORS IN THE TREATMENT OF ACTIVE ANKYLosing Spondylitis: Results from a Turkish Cost-Effectiveness Evaluation

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METHODS: A de novo combined decision tree/Markov state-transition model was developed to evaluate two populations: 1) biologic-naive patients with an inadequate response to CC; 2) biologic-experienced patients with an inadequate response to prior biologic treatment. Comparators were licensed anti-TNF therapies and CC in the two populations, respectively. Model input parameters captured treatment response rates, short-term treatment effects on disease activity, functional improvement, and time to disease progression. Utility values were derived from sekukinumab trial data via regression methods. List prices were used for all drugs; where available, other costs were sourced from NHS reference costs. Outcomes included total discounted costs and quality-adjusted life years (QALYs), and the incremental cost-effectiveness ratio (ICER). The analysis perspective was the UK NHS in 2017. RESULTS: In the biologic-naive population, secukinumab dominated adalimumab and infliximab and was associated with an ICER of £23,242. Specifically, apremilast sequence was associated with ICERs of £20,000 per QALY gained compared to certolizumab pegol and etanercept. Secukinumab was less costly and associated with a minor decrease in QALYs versus golimumab, saving £19,782 per QALY foregone. In biologic-experienced patients with an inadequate response to prior biologic treatment, etanercept was associated with higher ICERs compared to CC. Utility values were estimated from a mixed population of biologic-naive and experienced patients, over a lifetime horizon (60 years). The response to treatments was evaluated at week 12 by Bath AS Response Criteria (PsARC) at the end of the trial periods, obtained from a meta-analysis of published literature, and other Canadian sources. Benefits were expressed as quality-adjusted life-years (QALYs). Costs were reported in 2016 Canadian dollars (CAD). An annual discount rate of 5% was applied to costs and benefits. RESULTS: In the biologic-naive population, SEC dominated all treatments. Patients treated with SEC achieved the most QALYs (16.09) at the lowest cost (CAD 1,144,452). Across all comparisons, deterministic sensitivity analyses indicated that the results were most sensitive to variation in ICERs in the mixed population. 

CONCLUSIONS: Results were found to be cost-effective for the treatment of active AS in the Greek healthcare setting. 

PM548 COST-EFFECTIVENESS OF SECUKINUMAB FOR THE TREATMENT OF ACTIVE ANKYLosing Spondylitis in the UK

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METHODS: RESULTS: To determine the cost-effectiveness of secukinumab, a fully human IL-17A antagonist, for adult patients with the active ankylosing spondylitis (AS) who failed to respond adequately to previous treatment with a biologic or non-biologic disease-modifying anti-rheumatic drug (DMARD) or conventional treatment. 

CONCLUSIONS: Given its
the course of treatment with its response rate. Drug costs were estimated based on the average price and the number of doses for 48 weeks. The long-term response rates were estimated using a matching-adjusted indirect comparison (MAIC) technique based on the data from FUTURE 2 and ADEPT clinical trials of secukinumab and adalimumab, respectively. Sensitivity analysis was conducted by varying baseline characteristics used in the MAIC analysis. The MAIC analysis showed that ACR (20/50/70) response rates were higher for secukinumab 150mg and 300mg compared to adalimumab at 48 weeks. ACR 20 response rates were 74% and 56%, ACR 50 response rates were 57%, 61% and 44%, whereas ACR 70 response rates were 32%, 43% and 30% for secukinumab 150mg, secukinumab 300mg, and adalimumab respectively. For PsA patients on secukinumab 150mg, secukinumab 300mg and adalimumab respectively, the costs per ACR 20 responder were ARS 39,615, ARS 3,584, and ARS 230,540 respectively; the costs per ACR 50 responder were ARS 549,906, ARS 1,023,150, and ARS 1,069,267; and the costs per ACR 70 responder were ARS 970,942, ARS 1,464,840, and ARS 1,568,259. The sensitivity analysis indicated the robustness of the main analysis.

The long-term CPR for ACR 50 and 70 response rates were consistently lower for secukinumab versus adalimumab. Furthermore, with better outcomes at lower costs, these findings suggest dominance of secukinumab over adalimumab. More PsA patients could be treated more effectively with secukinumab versus adalimumab in Argentina.

PM549
COST-EFFECTIVENESS ANALYSIS OF SURGICAL APPROACHES TOTAL HIP ARTHROPLASTY
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OBJECTIVES: In the issue of hip joint endoprostheses, surgeons can choose different approaches. Two surgical approaches were selected for a comparison – the conventional and the minimally invasive approach. Both approaches are discussed novelty in current alloplasty. The aim of the study is to figure out cost effectiveness using cost-effectiveness analysis, comparison of operational approaches and estimating the cost-effectiveness of a more cost-effective option.

PM550
COST-EFFECTIVENESS ANALYSIS OF CONTINUOUS VERSUS INTERMITTENT CELECOXIB USE FOR HIP AND KNEE OSTEARTHRITIS
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OBJECTIVES: Intermittent celecoxib use reduces drug cost and limits risk of adverse events, but mitigates drug efficacy. The objective of this study was to estimate the cost-effectiveness of continuous versus intermittent celecoxib use among patients with progressive and symptomatic osteoarthritis. METHODS: Number of flares per patient were derived using graph digitization of a pragmatic clinical trial that assessed the efficacy of continuous versus intermittent celecoxib. Monte-Carlo simulation with bootstrapping was used to incorporate baseline variability. The model was run for one year. The simulation estimated the proportion of patients for each cumulative number of flares, assumed to be distributed uniformly over the study period. Cost-effectiveness was compared across all methods. RESULTS: The long-term CPR of intermittent celecoxib use compared to conventional celecoxib use showed a lower cost-utility ratio with the TOPSIS method is 7.99*10^-6 for the conventional approach, and 11.29*10^-6 for the minimally invasive approach. These results were also confirmed by varying baseline characteristics used in the MAIC analysis. The incremental cost-effectiveness ratio (ICER) of zoledronate was lowest for patients aged 65 years ($1,812/QALY) compared to other age groups. In one-way sensitivity analysis, the cost of osteoporosis treatment for postmenopausal women aged 50+ years who were participants of the Vietnam Osteoporosis Study. (V).

PM552
BISPHOSPHONATES FOR OSTEOPOROSIS TREATMENT: A COST-EFFECTIVENESS ANALYSIS IN VIETNAMESE WOMAN
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OBJECTIVES: Osteoporosis affects approximately 30% of postmenopausal women in Vietnam. Bisphosphonates (eg alendronate and zoledronate) are considered first-line treatment. Vietnam is classified as a lower middle-income country, and the drug price is not clear. This study attempts to analyze the cost-effectiveness of bisphosphonates in the treatment of patients who are diagnosed with osteoporosis.

PM553
COST-MINIMIZATION ANALYSES OF BIOLOGICAL THERAPIES IN THE TREATMENT OF RHEUMATOID ARTHRITIS FROM THE VIETNAMESE HEALTHCARE SYSTEM PERSPECTIVE
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OBJECTIVES: Different biologic disease modifying Anti-Rheumatic Drugs (bDMARDs) are indicated for moderate-to-severe Rheumatoid Arthritis (RA) patients, who fail on conventional DMARDs (cDMARDs). This study aims to compare the annual treatment costs of the bDMARDs dosing according to the clinical treatment guideline of three bDMARDs public healthcare system perspective: adalimumab (ADA), etanercept (ETN), and infliximab (IFX). Annual treatment costs were calculated for a patient of 80 kg. Direct medical costs were considered in the analyses from the public local hospitals. Probabilistic sensitivity analysis (PSA) was carried out to determine the impact of different parameters simultaneously on the results. RESULTS: IFX currently saving the lowest annual treatment cost among bDMARDs at EGP 30,812/patient/year, 56%, and 58% lower than ADA, and ETN respectively. The PSA shows that IFX is 100% more likely to achieve the lowest annual treatment costs, and be the cost saving option for moderate-to-severe RA Egyptian patients. CONCLUSIONS: It is more appropriate to analyze each research question due to the fragmented healthcare system in Vietnam.
Egypt. IxIF represents an important treatment option for RA patients in Egypt, as it has the lowest treatment cost among available bDMARDs but there's no evidence on the similar effectiveness of bDMARDs among Egyptian patients.

PMSS 5.8
EFFECTIVENESS OF SECUKINUMAB FOR THE TREATMENT OF ACTIVE PSORIATIC ARTHRITIS IN THE UK
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OBJECTIVES: To determine the cost-effectiveness of secukinumab, a fully human interleukin-17A inhibitor, for adult patients in the UK with active psoriatic arthritis (PsA) who have not responded adequately to previous treatment with conventional systemic disease-modifying anti-rheumatic drugs (csDMARDs). METHODS: A model was developed from the UK perspective, structured as a three-month decision tree leading into a lifetime Markov model. Separate analyses based on number of prior csDMARDs (1 and ≥2) were conducted, with secukinumab 150 mg compared to relevant comparators for each subpopulation (Standard of Care [SoC] and tumour necrosis factor inhibitors, respectively). Response at three months and other clinical parameters were derived from the FUTURE 2 trial (1-prior csDMARDs) and a network meta-analysis (≥2-prior csDMARDs). Utility values were based on FUTURE 2 trial data. List prices were used for all drugs; where available, other costs were sourced from NHS reference costs. Outcomes included total discounted costs and incremental quality-adjusted life years (QALYs), and incremental cost-effectiveness ratios (ICERs). RESULTS: In the 1-prior csDMARD subpopulation, the ICER for secukinumab versus SoC was £28,735 per QALY gained. In the ≥2-prior csDMARD subpopulation, the ICER for secukinumab versus etanercept and infliximab was £5,380 per QALY gained versus adalimumab. The ICER for infliximab versus secukinumab was £1,287.49 per QALY gained (i.e. infliximab not cost-effective). The ICER of secukinumab being the most cost-effective intervention at a £30,000 per QALY gained threshold was estimated to be 48.1% and 70.8% in the 1- and ≥2-prior csDMARDs subpopulations, respectively. Several scenario analyses demonstrated results to be robust. CONCLUSIONS: Secukinumab represents a cost-effective use of NHS resources for patients with PsA who have responded inadequately to either 1- or ≥2-prior csDMARDs and in some cases dominates comparators. The availability of a confidential patient access scheme discount for secukinumab in the UK further strengthens the case for cost-effectiveness in these subpopulations.

PMSS 5.9
COST-UTILITY ANALYSIS OF PHYSICIANS’ GUIDELINE ADHERENCE FOR OSTEOPOROSIS IN GERMANY
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OBJECTIVES: Osteoporosis is characterized by the occurrence of fractures due to reduced bone stability. Annual direct costs of osteoporosis are estimated at €5.4 billion in Germany. Without changes in policy, fractures – the main cost driver – are expected to increase by 2050. While a high evidence base on screening and preventive treatments exist, only 52% of general practitioners stated to have knowledge of the guideline, which is expected to result in low levels of guideline adherence and implementation. Therefore, the objective of this study is to investigate the economic impact of a 20% increase (from currently assumed ~50% to a target 70%) of guideline adoption rate by German primary care physicians. METHODS: A health economic model was developed to investigate the cost impact and cost-effectiveness of extended guideline implementation. Screening was modeled using a decision tree, subsequent treatment was modeled in a Markov approach, with one-year cycles simulated over lifetime. The modeled cohort comprised 381,583 women eligible for screening at age 70. The perspective of the statutory health insurance was applied, accordingly, prices from official formularies and fee schedules were used. Sensitivity analyses were performed to test the robustness of results. RESULTS: Increasing implementation of the guideline by 20% resulted in an additional screening of 76,317 women and treatment of 19,079 women at high fracture risk. 1,668 fractures were decreased by 4.3% in 2015 in Germany. Total infliximab expenditure including biosimilars accounted for €231.77mn in Statutory Health Insurance (SHI) system costs. Potential savings of Remicade® substitution by biosimilars was estimated at €46.51mn per year for Germany. We aim to implement a method to examine the cost-effectiveness of biosimilars for patients with ankylosing spondylitis (AS). We analyzed the cost-effectiveness of biosimilar infliximab in comparison to Inflectra® for the German SHI system. METHODS: We simulate 10,000 hypothetical AS patients by setting up an individual patient sampling lifetime model. Initial characteristics are derived from clinical studies. Direct and indirect costs are incorporated to reflect a societal perspective. After each 6-month cycle, discontinuation of treatment due to adverse events or loss of efficacy is evaluated. As outcome measure, improvement of functional status (SASHA) is recorded, converted to quality of life, and compared to previous treatment with conventional systemic disease-modifying anti-rheumatic drugs (csDMARDs). Methods: A model was developed from the UK perspective, structured as a three-month decision tree leading into a lifetime Markov model. Separate analyses based on number of prior csDMARDs (1 and ≥2) were conducted, with secukinumab 150 mg compared to relevant comparators for each subpopulation (Standard of Care [SoC] and tumour necrosis factor inhibitors, respectively). Response at three months and other clinical parameters were derived from the FUTURE 2 trial (1-prior csDMARDs) and a network meta-analysis (≥2-prior csDMARDs). Utility values were based on FUTURE 2 trial data. List prices were used for all drugs; where available, other costs were sourced from NHS reference costs. Outcomes included total discounted costs and incremental quality-adjusted life years (QALYs), and incremental cost-effectiveness ratios (ICERs). Results: In the 1-prior csDMARD subpopulation, the ICER for secukinumab versus SoC was €28,735 per QALY gained. In the ≥2-prior csDMARD subpopulation, the ICER for secukinumab versus etanercept and infliximab was €5,380 per QALY gained versus adalimumab. The ICER for infliximab versus secukinumab was €1,287.49 per QALY gained (i.e. infliximab not cost-effective). The ICER of secukinumab being the most cost-effective intervention at a €30,000 per QALY gained threshold was estimated to be 48.1% and 70.8% in the 1- and ≥2-prior csDMARDs subpopulations, respectively. Several scenario analyses demonstrated results to be robust. Conclusions: Secukinumab represents a cost-effective use of NHS resources for patients with PsA who have responded inadequately to either 1- or ≥2-prior csDMARDs and in some cases dominates comparators. The availability of a confidential patient access scheme discount for secukinumab in the UK further strengthens the case for cost-effectiveness in these subpopulations.

PMSS 5.10
PATIENT BURDEN OF RHEUMATOID ARTHRITIS: RESULTS OF A GLOBAL SYSTEMATIC LITERATURE REVIEW ON DISABILITY, WORK DISRUPTION, AND FULL-PERSONAL-CAPABILITY IN THE REAL WORLD
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OBJECTIVES: The objective of this review is to synthesize available evidence on the burden of disease in patients with rheumatoid arthritis (RA) with respect to disability, work disruption, and functional capacity. METHODS: Observational studies published between January 2010 and 2015 were screened and identified through the MEDLINE and Cochrane databases. Literature were assessed for eligibility by two independent reviewers based on pre-specified criteria. RESULTS: In total, 21 studies met eligibility criteria. A total of 1,097 patients with RA and varying degrees of disease activity, functional disability, and treatment history, inclusive of both biologic and non-biologic therapies. Substantial levels of absenteeism, presenteeism (ie, work- functional capacity in the real world. The aim of this study was to describe the treatment patterns among adult patients affected by RA in Italy. We also evaluated the percentage of patients who are naive to csDMARDs. METHODS: We conducted a retrospective, observational study on administrative databases from 6 Italian LHWs with data available from 01/01/2009 to 31/12/2014, data were re-proportioned to Italy’s sample of about 60 million beneficiar- es. We used the previous 4-y history to forecast the treatment patterns in the following 4-y. Naive patients were defined as those who had no prior antirheumatic drug. We included patients with RA who had at least one prescription of b or cs DMARDS or corticosteroid in 2014. RESULTS: The estimated number of patients diagnosed and treated for RA in 2014 in Italy was 146,251, of whom, 33%, were treated with csDMARDs, 29% with corticosteroids + 1 csDMARD, 27% with corticosteroids, 7% with bDMARDS and 6% received corticosteroids + 2csDMARDs. Naive patients treated with csDMARD were 24,092. In the previous 4-y history to forecast the treatment pat- terns in the following 4-y, the majority of patients were treated with the same drug classes, and a high percentage of patients interrupted treatment: csDMARD (61%, 53%, 51%, 46%), corticosteroids + csDMARD (27%, 17%, 15%, 14%, 15%), no therapy (23%, 16%, 18%, 23%), corticosteroids (4%, 8%, 10%, 8%), 2 csDMARDs (4%, 6%, 5%, 4%), corticosteroid + 2 csDMARD (2%, 2%, 3%, 3%), bDMARDS (0%, 0%, 1%, 1%), for the 4-y in the analysis, respectively. Conclusions: The treatment of RA in Italy explored through this study showed a significant proportion of variety of corticosteroids- csDMARDs, bDMARDs and csDMARDs used over time. Despite the guidelines and updated EULAR recommendations, study results show misalignment with recommendations.

PMSS 5.11
THERAPEUTIC STRATEGIES UTILIZATION AND RESOURCES CONSUMPTION IN PATIENTS TREATED FOR PSORIATIC ARTHRITIS IN ITALY
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OBJECTIVES: To determine the cost-effectiveness of biological therapy (biologics) in patients with psoriatic arthritis (PsA) who have demonstrated results to be robust. Conclusions: Secukinumab represents a cost-effective use of NHS resources for patients with PsA who have responded inadequately to previous treatment with conventional systemic disease-modifying anti-rheumatic drugs (csDMARDs).
OBJECTIVES: To analyze the therapeutic strategies and to estimate the health care resource consumption in patients with PsA.

METHOIDS: An observational retrospective cohort analysis of administrative databases of 4 Italian Local Health Units was performed. Patients ≥ 18 years with a hospitalization discharge diagnosis of PsA (ICD-9-CM 696.0) or exemption code (045.696) for PsA from 01/01/2010 to 31/12/2014 were selected. The following study endpoints were assessed: the number of patients who were treated with csDMARD, bDMARD, both, and combinations; the number of patients who were treated with csDMARD alone; the number of patients with levels of C-reactive protein (CRP) higher than 1 mg/dL, 33.7% between 0.5-1, and 24.8% below 0.5 mg/dL. These percentages in patients treated with csDMARD, bDMARD, and combinations were 43.9%, 39.3%, and 43.3%, respectively. The mean predicted EQ-5D-3L utilities were within 0.1 of their true observed values. Reduced performance at baseline with PsA, 40.7% male, mean age of 52.1 years, were enrolled in the study. About 74.4% of patients were treated with 1 systemic drug, and of these 52.5% received MTX, 11.5% bDMARD. Patients treated with 2 systemic drugs were 20.9% of those in combination 50.8% and after switching were 49.2%. Of the patients treated with csDMARD, 41.6% had levels of C-reactive protein (CRP) higher than 1 mg/dL, 33.7% between 0.5-1, and 24.8% below 0.5 mg/dL. These percentages in patients treated with csDMARD, bDMARD, and combinations were 43.9%, 39.3%, and 43.3%, respectively.

CONCLUSIONS: Our findings confirm that, in an Italian real-world setting, costs are usually higher for patients treated with biologics; the concentration of CRP, we found that inflammation levels due to pathology were above the normal limits in a high proportion of patients receiving both csDMARD and bDMARD. Further research needs to assess disease progression and disease remission.

MUSCULAR-SKELETAL DISORDERS – Patient-Reported Outcomes & Patient Preference Studies

PMS61

ADHERENCE ISSUES IN RHEUMATOID ARTHRITIS TREATMENT: HOW CAN ACCEPTANCE MEASUREMENT HELP UNDERSTANDING PATIENTS’ CONCERNS AND IMPROVE ORGANIZATIONAL FOLLOW-UP?

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OBJECTIVES: Patients with Rheumatoid Arthritis (RA) are required to take long-term treatments to manage their chronic disease. However lack of adherence is very common and represents major barriers to treatment efficiency. Measuring patient acceptance of their medication help understand and predict patients’ medication-taking behavior. The objectives of this study are to evaluate the level of acceptance to medication in RA patients in real life, to identify issues and to define priorities for action.

METHODS: Observational, cross-sectional study conducted in Europe. An online questionnaire was administered to RA patients who had been taking MTX or another DMARD for two years and a half. Accepted quality of life (QoL) measures were collected. We also added a construct to evaluate the level of adherence to medication based on the adherence model developed by the Institute of Medicine. We also collected data on the patients’ demographics, their disease characteristics, their work status, and their medication use. The study was approved by the Ethics Committee of Abacus.

RESULTS: 1,653 patients responded to the questionnaire. The mean age was 61 years (SD 13.1); 73% were female. The mean duration of the disease was 13 years (SD 9.7). The mean DAS28 was 5.6 (SD 1.6). One-third of the patients had a job. Only 61% of patients reported good adherence to medication, with 40% scoring ≥75% adherence. The mean VAS pain was 7 (SD 2.8). Moderate to high levels of acceptance were found (68.3% scored above 70). The QoL measures were statistically correlated with the level of acceptance to medication. The main concerns that were identified were the perceived duration of the treatment, the perceived effects of the treatment, the cost of the treatment, the interference with daily life, and the pain induced by the treatment. The most important issues were related to financial burden and daily life. The level of acceptance to medication was correlated with the patient’s level of knowledge about their disease (r = 0.36, p < 0.001).

CONCLUSIONS: Acceptance to medication in RA patients is highly correlated with adherence to treatment. It includes one general acceptance dimension (Acceptance/General) and five new measures, related to the importance the patient attaches to specific treatment-related issues. The results of this study demonstrate how acceptance to medication needs to be assessed in RA patients, and suggest which areas require improvement in order to improve adherence to treatment.
evaluated using the HAQ-DI. RESULTS: 884 pts were analyzed. Patient’s characteris-
tics: 57% of the pts were > 65 years old, 78% female. Median RA duration was 17.9 ± 10.1 years. TCZ was initiated as Mono in 36.4% of pts and in Combo in 63.6%. At inclusion, respectively in Mono/Combo, mean VAS fatigue was 67 ± 22 mm/61 ± 25 mm, mean pain VAS was 65 ± 23 mm/53 ± 24 mm. Respectively after 6 and 12 months treatment (Mono/ Combo) mean fatigue was 64 ± 23 mm/52 ± 23 mm and 61 ± 27 mm/58 ± 28 mm, mean pain VAS was 55 ± 24 mm/36 ± 25 mm and 57 ± 28 mm/33 ± 24 mm. Percentage of patients with low pain (VAS ≤ 40 mm) increased from 15% ± 22% at inclusion to 58% ± 57% after 6 months and 70% ± 60% after 12 months. Conclusions: Patients with low fatigue (VAS ≤ 40 mm) increased from 11% ± 19% at inclusion to 41% ± 46% after 6 month and 51% ± 54% after 12 months. Conclusions: Under treatment, an important decrease in pain and fatigue are reported by patients, without major difference observed between TCZ treatment strategy of monotherapy or in combination. Atypical patient profile will be also investigated in this pooled database.

IMPACT OF GOLIMUMAB, AN ANTI-TNFα MONOCLONAL ANTIBODY, ON HEALTH RELATED QUALITY OF LIFE (HRQoL) AND WORK PRODUCTIVITY IN PATIENTS WITH ACTIVE PSORATIC ARTHRITIS: 24-WEEK RESULTS OF THE PMS6 STUDY

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OBJECTIVES: To evaluate health-related quality of life (HRQoL) including general health status, daily activity, and work productivity of intravenous (IV) golimumab in subjects with active psoriatic arthritis (PsA). METHODS: In this randomized, double-blind, Phase 3 trial, adults with active PsA naïve to anti-TNF therapy received golimumab, an anti-TNFα, mg weekly or placebo (n = 268). Current health status was measured by EuroQol-5D-5L (EQ-5D-5L) index including 5 domains: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression; impact of PsA on daily productivity was measured by visual analogue scale (VAS); and impact of PsA on health status, daily activity, and work productivity of intravenous (IV) golimumab was measured by Work Limitations Questionnaire (WLDQ). Productivity loss score in subjects who work or volunteer (converted from 25-item version). Changes from baseline were analyzed. Unadjusted p-values of least square mean difference between treatment groups were controlled for baseline score and baseline methotrexate usage. RESULTS: Mean EQ-5D-5L index improvements were greater with golimumab vs. placebo at Weeks 8 (0.14 vs. 0.04), 14 (0.15 vs. 0.04), and 24 (0.16 vs. 0.04). At Weeks 14 and 24, LSMD were 0.12 (p < 0.05), and 0.12 (p = 0.001), respectively. Mean reductions in impact of PsA on VAS productivity were greater with golimumab vs. placebo at Weeks 8 (−2.91 vs. −0.71), 14 (−3.54 vs. −0.76), and 24 (−3.33 vs. −0.89). At Weeks 14 and 24, LSMD were −2.17 (p < 0.001) and −2.32 (p < 0.001), respectively. Conclusions: Reducions in impact of PsA on productivity were statistically significant with golimumab compared with placebo (n = 268) or placebo (n = 108) at Weeks 8 (−2.92 vs. −0.78), −3.54 vs. −0.80), and 24 (−1.75 vs. −0.98). At Weeks 14 and 24, LSMD were −2.25 (p < 0.001) and −2.85 (p < 0.001), respectively. Conclusions: In active PsA, IV golimumab dem-
strated improvement from baseline in all HRQoL and work productivity scores at Week 14 vs. placebo and similar improvements were observed at Week 24.

DEVELOPMENT OF THE OIQoL-A: A HEALTH-RELATED QUALITY OF LIFE MEASURE FOR ADULTS WITH OSTEOGENESIS IMPERFECTA

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Objectives: To develop a condition-specific HRQoL paediatric measure, was adapted for adults with OI (OIQoL-A) based on a literature review, clinical expert interviews, and input from the OIQoL developer. The draft OIQoL-A was assessed for content validity in a hybrid concept elicitation (CE) and cognitive interview (CI) study. The CE portion followed a semi-structured interview guide focusing on OI symptoms and impacts, and was analysed thematically. The CI portion, analysed using a structured codebook, evaluated instrument relevance and ease of completion. The qualitative analysis was conducted using MAXQDA software. Concept saturation was reached after 25 interviews, therefore subsequent interviews were CI only. RESULTS: Thirty UK and US/CAN OI adults representing a variety of OI types and severities participated: 15 in hybrid CE/CI interviews (60% female; aged 19-67), 15 across 2 CI waves (40% female, aged 23-70). Hybrid interview findings resulted in a significantly revised OIQoL-A. A reflecting differences between adult and paediatric OI populations. For example, OI adults rarely avoid or miss activities entirely, but may have challenges in performing daily activities. Also, OI adults fracture less frequently but may experience daily chronic pain. Finally, certain concepts (depression, sexual functioning) were not included in the paediatric measure but are relevant to OI adults. Subsequent rounds of CI and CE interviews were conducted as needed to remove or modify items. Conclusions: OI-specific HRQoL has different challenges in adult vs. paediatric population with children with OI that are important to include when measuring the OIQoL-A for this population. The OIQoL-A is a content valid measure for adults with OI, its psychometric properties will be validated in future studies.

SURGICAL TREATMENT OUTCOME OF LUMBAR DISC HERNIATION (LDH) IN DIFFERENT AGES

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OBJECTIVES: Outcome of surgical treatment of LDH may deteriorate with advancing age due to etiologic complications and ability to recover. The objective was to assess whether surgical treatment outcome in patients with LDH differs depend-
ing on age. METHODS: Patients who underwent LDH surgery between 2000–2012 were included in the Swedish national spine surgery registry SwepSpinE. The patient reported outcome measures (EQ-5D-5L) in EQ-5D-5L were used. Results: The adjusted absolute improvement in EQ-5D declined with age—age < 40 years, weight – 84.8 kg and height – 166.5 cm. 19 patients had KA in grade II, 99 – grade IV. 17 patients were in strong correlation. Foreknowledge of disease (1-the worst, 5-the best) was 3.3, satisfaction with medical care – 4.2 and nursing care – 4.4. Willingness to pay for full health without KA was 88.5 € monthly by average monthly income 385 €. Conclusions: KA has a significant negative impact on patients’ QoL and WA. The dominant factor of QoL and WA is knee pain. Treatment has positive impact on QoL but no impact on WA. There are significant differences in QoL and WA in patients with KA and without KA.
OBJECTIVES: To assess the burden of disease in peripheral and axial Spondyloarthritis in Mexico. Methods: Data were gathered from the Adelphi Real World 2015 DSP1. Rheumatologists (n=22) and dermatologists (n=10) completed 240 patient record forms (PRF) on consulting SPAM patients. Patients (n=225) voluntarily completed questionnaire (PSC), assessments of quality of life (SF-36, EQ-5D), and work productivity & activity impairment (WPAI). Results: Health Services: PRF data showed that the mean number of specialist consults in the last year was 8.1 per patient, and 4% (n=9) had a hospital admission to treat SPAM-related complications. Further, 4.9% (n=11) reported having received an injection/infusion while in hospital, while 29.8% (n=67) of patients reported an injection/infusion in an outpatient setting. Patient Out-of-Pocket Costs: PSC data (n=19) showed that 61.2% of patients were employed. Additionally, 221 patients reported a 25.3% activity impairment due to SpA. Humanistic: Respondents (n=221) showed that 56.5% of patients were employed. Additionally, 93 patients reported a mean of 2.2 unscheduled days off in the last 3 months due to SpA. WPAI (n=106) outcomes revealed a 52.6% overall work impairment, and 209 patients reported a 54.4% activity impairment due to SpA. Humanistic: Respondents (n=221) had an EQ-5D mean of 0.66, and the SF-36 (n=176) physical and mental component summary scores were 39.6 and 47.4. SF-36 bodily pain, social functioning, and emotional domain mean scores were 52.5, 56.1, and 54.6 respectively. Additionally, 72% reported SpA has been or currently is a major problem in their life, and 84% (n=191) of respondents reported about possible negative effects on their family. This analysis shows that SpA represents a considerable burden to patients and society overall in Mexico. It further highlights the need for effective therapies to control peripheral and axial Spondyloarthritis.

PM574 ASSESSING THE BURDEN OF DISEASE IN PERIPHERAL AND AXIAL SPONDYLOARTHITIS IN BRAZIL

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OBJECTIVES: To assess the burden of disease in peripheral Spondyloarthritis (SpA) – Psoriatic Arthritis (PsA) – and non-radiographic axial SpA (nr-axSpA) and Ankylosing Spondylitis (AS), in Mexico. Methods: Data were gathered from the Adelphi Real World 2015 DSP1. Rheumatologists (n=24) and dermatologists (n=10) completed 240 patient record forms (PRF) on consulting SpA patients. Patients (n=225) voluntarily completed questionnaires (PSC), assessments of quality of life (SF-36, EQ-5D), and work productivity & activity impairment (WPAI). Results: Health Services: PRF data showed that the mean number of specialist consults in the last year was 5.1 per patient, and 1.8% had ever had a hospital admission to treat SpA-related complications. Further, 4.1% (n=14) reported having received an injection/infusion while in hospital, while 20.6% (n=70) of patients reported an injection/infusion in an outpatient setting. Out-of-Pocket Costs: PSC data revealed that patients spent an average of $318.93 (BRL) (n=148) on treatment in the last 3 months, representing 10.3% (n=143) of their quarterly household income. Societal: PSC data and telephone interviews revealed that 0.42% of their quarterly household income. On initiation, 26% of patients reported a 25.3% activity impairment due to SpA. Humanistic: Respondents (n=221) had an EQ-5D mean of 0.77, and the SF-36 (n=103) physical and mental component summary scores were 43.9 and 47.7 respectively. SF-36 bodily pain, social functioning, and emotional domain mean scores were 60.4, 74.5, and 56.0 respectively. Additionally, 22.6% of patients reported that SpA has been or currently is a major problem in their life, and 56.0% were concerned about medication side-effects. Conclusions: This analysis shows that SpA represents a considerable burden to patients and society overall in Brazil. It further highlights the need for effective therapies to control peripheral and axial Spondyloarthritis.

PM575 IMPAIRMENT OF WORK ABILITY IN PATIENTS WITH RHEUMATOID ARTHRITIS

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OBJECTIVES: Rheumatoid arthritis (RA) is a chronic progressive autoimmune disease that often leads to decline in functional status and reduced employability. In this study, factors associated with reduced employment among RA patients were examined. Methods: The Adelphi Real World 2015 DSP2, a cross-sectional survey of rheumatologists and their patients in EU5 (France, Germany, Italy, Spain, UK), and the US. Eligible patients were working at the time of the interview who retired or were unemployed due to RA-related reasons. Multivariate logistic regression analyses were performed to examine factors associated with being retired/unemployed due to RA (reported by physicians); included were age, disease duration, region, clinical status, and treatment. Results: Of 2,247 eligible patients, 122 (5%) were retired/unemployed due to RA; the remaining 2,125 were employed/students/homemakers or unemployed for non-RA-related reasons. Among eligible patients, mean (SD) age and time since diagnosis were 46.5 (11.0) years and 4.9 (5.1) years, respectively. 75% were female, and 13.6% had a body mass index ≤30 kg/m2 (obese). In multivariate analyses, increased age (odds ratio [OR]=1.06), obesity (OR=2.74), moderate/severe disease (OR=2.07), and concomitant anxiety/depression (OR=1.63) were significantly associated with an increased risk of RA-related retirement/unemployment, while being Caucasian (OR=0.52) was significantly associated with a lower risk (all P<0.036). No regional differences (US vs EU) were identified. Among the sub-set of biologic-experienced patients (n=1,429), time since diagnosis of first biologic was significantly longer among those who were retired/unemployed due to RA than those who were not (8.4 vs 3.6 years, P=0.005). Of 606 patients who completed a self-report form and answered the unemployment-related question, 63 (10%) had changed jobs due to RA. Conclusions: Age, obesity, ethnicity, disease severity, and anxiety/depression were associated with risk of RA-related retirement and unemployment. Further study is warranted to determine impact of early biologic initiation on employability among RA patients.

PM576 MANAGEMENT OF CHRONIC GOUT – A DELPHI (CONSENSUS) CONSULTATION OF UK-BASED CLINICAL EXPERTS

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OBJECTIVES: Gout is a chronic, progressive disease, characterized by hyperuricemia and uric acid crystal deposition in joints and soft tissues. Several treatment aspects pertinent to the management of gout in the UK last consensus. This research aimed to

MUSCULAR-SKELETAL DISORDERS – Health Care Use & Policy Studies

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MUSCULAR-SKELETAL DISORDERS – Health Care Use & Policy Studies
derive consensus among UK clinical experts on treatment paradigms and disease pro-
gression with technology platforms. A new unicorn was conceived. Thirty clinicians with a specialist interest/expertise in managing gout were identified in England, all of whom were invited to participate in a two-round, web-based consultation using Delphi methodology. Consensus was defined as ≥80% of experts in agreement. Statements not achieving consensus during Round 1 were reworded for Round 2. Multiple choice and written responses were analysed using descriptive statistics and ATLAS.ti 7 qualitative software, respectively. RESULTS: Ten clinical experts participated in the consultation. Twenty of the 27 statements (74%) achieved consensus. Experts agreed that hyperuricemia is associated with comorbidities, notably cardiovascular disease and metabolic syndrome. Despite guidelines recommending uricosurics, experts stated that existing second-line urico-
suric treatments are not routinely available in the UK and are typically only used in secondary care. Experts agreed that there is a need in the UK for new treatments targeting the underlying cause of gout – insufficient uric acid excretion. Consensus was reached on the use of allopurinol (5, 41.67%) as a surrogate marker, however, it was stated that improvements in clinical outcomes require reductions in sUA levels. Clinicians agreed that pharmacological intervention to achieve sUA targets (<6.0 mg/dL) reduces the all-cause mortality risk; however, there was no consensus on the precise level of mor-
tality benefit that urate-lowering treatment provides.

PMS77
CLINICAL AND PATIENT REPORTED OUTCOMES IN PSORIATIC ARTHRITIS: A NARRATIVE REVIEW OF THE LITERATURE
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1Outcomes 10, Universitat Jaume I, Castellon, Spain, 2Outcomes’10, Castellon de la Plana, Spain
OBJECTIVES: To explore how Rheumatoid Arthritis (RA) patients value the use of serum uric acid (sUA) as a surrogate marker in chronic gout, confirming that use of sUA as a surrogate marker is justified.

RESULTS: Of 83,050 patients treated with bDMARDs, 64,994 (78.3%) were female, median (SD) age was 55.2 (12.9) years, median (SD) number of biologics per patient was 1.2 (0.6). Patients received 105,485 total bDMARD lines of therapy: 31,084 (29.5%) adalimumab, 53,382 (50.4%) etanercept, 10,362 (9.8%) abatacept, and 10,362 (9.8%) certolizumab. Of 83,050 patients treated with bDMARDs, 64,994 (78.3%) were female, median (SD) age was 55.2 (12.9) years, median (SD) number of biologics per patient was 1.2 (0.6). Patients received 105,485 total bDMARD lines of therapy: 31,084 (29.5%) adalimumab, 53,382 (50.4%) etanercept, 10,362 (9.8%) abatacept, and 10,362 (9.8%) certolizumab. Of 83,050 patients treated with bDMARDs, 64,994 (78.3%) were female, median (SD) age was 55.2 (12.9) years, median (SD) number of biologics per patient was 1.2 (0.6). Patients received 105,485 total bDMARD lines of therapy: 31,084 (29.5%) adalimumab, 53,382 (50.4%) etanercept, 10,362 (9.8%) abatacept, and 10,362 (9.8%) certolizumab.
annual days of supply was 86.7±30.7 days. CONCLUSIONS: The prevalence of opioid prescribing in KOA increased between 2010 and 2015. Doses prescribed have also increased modestly. As the prevalence of KOA increases, further research into the risks and benefits of opioids in KOA is required.

PMS85 CONSIDERATION OF PERSISTENCE AND ADHERENCE IN BIOLOGIC NAÏVE PATIENTS WITH PSORIATIC ARTHRITIS INITIATING APREMI-LAST OR BIOLOGICS IN A U.S. ADMINISTRATIVE CLAIMS DATABASE

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OBJECTIVE: To compare treatment persistence and adherence over one year in bio-

logic naive psoriatic arthritis (PsA) patients initiating apremilast or biologics using a U.S. administrative claims database. METHODS: This retrospective study selected adult PsA patients initiating apremilast or biologics within the January 2013- June 2016 timeframe. Symphysis Health MarketScan databases included patients. Patients were required to be appre-

milast/biologic naive on the index agent in the 12-month pre-index period and have continuous enrollment in the 12-month pre- and post-index periods (index date = initiation of apremilast or biologic). Biologic users were matched 2:1 to apremilast users. Treatment persistence at 12 months was defined as continuous treatment without (1) a >60-day gap in therapy or (2) a switch to a different PsA treatment and measured during the 12-month post-index period. Patients were adherent if their medication possession ratio (MPR) was ≥80% while persistent on the index agent. RESULTS: A total of 381 patients initiating apremilast were matched to 761 patients initiating biologics. Baseline characteristics were similar in both groups (mean age 51 years, 60% female, mean Charlson score 0.6). Treatment persistence at 12 months for apremilast users was similar to biologic users (43% vs 48%; p=0.082). Average time to non-persistence was 124 days for apremilast users compared to 132 days for biologics users (p=0.190). Among non-persistent users, apremilast users and biologic users had similar MPR rates (79% vs 77%, respectively) in the 12-month post-index period. Average persistence-based MPR was 0.870 for apremilast users compared to 0.854 for biologic users (p=0.056), and the adherence rates were 77% and 76%, respectively (p=0.683). CONCLUSIONS: At 12 months, persistence and adherence as well as drivers of non-persistence were similar for biologic patients initiating apremilast or biologics for the treatment of PsA in the U.S.

PMS87 NUMBER OF VISITS BASED ON THE MOST COMMONLY FUNDED DISEASES IN HOME SPECIAL CARE IN HUNGARY, 2011

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OBJECTIVE: The objective of our study was to analyze the number of visits of the most common diseases in home special care based on the financed cares by the National Health Insurance Fund Administration in Hungary. METHODS: Our data were obtained from the National Statistical Office. The data comprises the number of visits per 100.000 inhabitants for the years 2005-2011. RESULTS: The most frequent caring diseases were: 1) Inflammatory Rheumatic Diseases 62.728 (4.8%); 2) Fracture of femur (S72) 58.239 (4.6%); 3) Coxarthrosis (M16) 52.729 (4.1%); 4) Gonarthrosis (M17) 51.239 (3.9%); 5) Fracture of pelvis (S72) 41.239 (3.3%); 6) Hemiplegia (V25.8) 38.239 (3.0%); 7) Deformity of foot (Z94) 37.239 (2.9%); 8) Hernia of the inguinal canal (K22.9) 37.239 (2.9%); 9) Spina bifida (Q12) 34.239 (2.7%); 10) Fracture of upper limb (S71) 33.239 (2.6%). The most common caring diseases were: 1) Gonarthrosis 634.1. 2) Fracture of femur (S72) 62.728 (5.1%); 3) Coxarthrosis (M16) 78.129 (6.4%); 4) Fracture of femur (S72) 63.239 (5.2%); 5) Coxa vara (M17.0) 62.728 (4.6%); 6) Acute uncomplicated fracture of hand (S71.0) 62.728 (4.6%); 7) Fracture of lower leg (S72.0) 62.728 (4.6%); 8) Venous ulcer (L07.1) 62.728 (4.6%); 9) Fracture of radius or ulna (S71.0) 62.728 (4.6%); 10) Fracture of humerus (S72.0) 62.728 (4.6%). The most common caring agents were: 1) Physiotherapy 62.728 (4.6%); 2) Occupational therapy 62.728 (4.6%); 3) Other medical treatments 62.728 (4.6%); 4) Dietetic care 62.728 (4.6%); 5) Respiratory therapy 62.728 (4.6%); 6) Speech therapy 62.728 (4.6%); 7) Handling and movement 62.728 (4.6%); 8) Other therapies 62.728 (4.6%); 9) Psychological care 62.728 (4.6%); 10) Other therapies 62.728 (4.6%). CONCLUSIONS: Our data demonstrate different drug retention rates not only between AS and PsA patients but also among biologic agents prescribed in Korea.
therapeutic services is highly emphasized. Analysis and recognition of the findings play an essential role in future planning and development of home special care.

PMS88 EXAMINATION OF EFFECTIVENESS OF GROUP PHYSIOTHERAPY USING DASH QUESTIONNAIRE AND DISTAL RADIAL FRACTURE

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OBJECTIVES: After-care of the injury of the distal radius’s medical treatment is indispensable to the success of rehabilitation. The role of physiotherapy is essential, however there are few studies which carefully observe this type of fracture and group physiotherapy which follow treatment results. The aim of this study was to represent the effectiveness of group physiotherapy after distal radial fracture.

METHODS: We used the Quick DASH questionnaire and measured the active range of motion. RESULTS: In our examination there were 11 women and 11 men with a mean age 65,47 yrs. Comparing the results measured before and after the back school program, from the front view, the median (p < 0.05), the lumbar spine (p < 0.001) significantly changed, the thoracic spine (p < 0.04), extension: p < 0.02, abstraction: p < 0.002). These changes are highly emphasized for future planning and development of home special care.

PMS89 PATIENT COUNTS BASED ON THE MOST COMMONLY FUNDED DISEASES IN HOME SPECIAL CARE IN HUNGARY, 2013

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1University of Nécs, Nécs, Hungary, 2University of Novi Sad, Novi Sad, Serbia, 3Babes-Bolyai University, Cluj-Napoca, Romania, 4Ratgeber Academia, Pécs, Hungary

OBJECTIVES: The objective of our study was to analyze the patient counts of the most common diseases in home special care based on the financed cases by the National Health Insurance Fund Administration in Hungary. METHODS: Our data included to the National Health Insurance Fund Administration. The examined period was the year of 2013. RESULTS: The total number of cases per year in home special care amounted to 133.542 of which 103.551 (77,6%) were funded by National Health Insurance Fund Administration. Number of cases to special nursing within home special care amounted to 68.914 cases (51,7%), number of cases to therapy service by specialty accounted for 64.428 (48,3%) cases, in which physiotherapy amounted to 57.509 (43,1%), physiotherapy accounted for 6.555 (4,9%), and speech therapy amounted to 364 (0,3%) cases. Number of cases were the following in the most common funded diseases: 1) Ulcer of lower limb (L97) 16.760 (16,2%); 2) Decubitus ulcer (L89.9.587 (9,3%); 3) Coxarthrosis (M16) 6.346 (8,4%); 4) Fracture of femur (S72) 5.174 (5,0%); 5) Gastroenteritis (M17) 5.069 (4,9%) cases. Ratio of number of cases per 100.000 inhabitants in the most common funded diseases were as follows: 1) Ulcer of lower limb 169,4; 2) Decubitus ulcer 96,9; 3) Coxarthrosis 64,1; 4) Fracture of femur 52,3; 5) Gastroenteritis 51,2. CONCLUSIONS: The occurrence of case number to the most frequent diseases confirms the need of special therapies and special therapeutic services in home special care. The role of physiotherapy among special therapeutic services is highly emphasized. Analysis and recognition of the findings play an essential role in future planning and development of home special care.

PMS90 EXAMINATION OF THE EFFECTIVENESS OF CORE TRAINING BETWEEN JUNIOR WOMEN BASKETBALL PLAYERS TO PREVENT SPORTS INJURIES

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OBJECTIVES: The objective of our analysis was to survey the efficiency of core training among junior women basketball players to prevent injuries, paying special attention to the improvement of static and dynamic balance and coordination, the mobilizing and stabilizing function of the trunk muscles and its ability to keep balance, and the range of motion and proprioception of its joints; and moreover, the strengthening of the trunk muscles.

RESULTS: In our study we analyzed the number of cases of the most common gymnastic group among junior women special care based on the financed cases by the National Health Insurance Fund Administration in Hungary. METHODS: Our data included to the Central Statistical Office come from the database of the National Health Insurance Fund Administration. The examined period was the year of 2013. RESULTS: The total number of cases per year in home special care amounted to 133.542 of which 103.551 (77,6%) were funded by National Health Insurance Fund Administration. Number of cases to special nursing within home special care amounted to 68.914 cases (51,7%), number of cases to therapy service by specialty accounted for 64.428 (48,3%) cases, in which physiotherapy amounted to 57.509 (43,1%), physiotherapy accounted for 6.555 (4,9%), and speech therapy amounted to 364 (0,3%) cases. Number of cases were the following in the most common funded diseases: 1) Ulcer of lower limb (L97) 16.760 (16,2%); 2) Decubitus ulcer (L89.9.587 (9,3%); 3) Coxarthrosis (M16) 6.346 (8,4%); 4) Fracture of femur (S72) 5.174 (5,0%); 5) Gastroenteritis (M17) 5.069 (4,9%) cases. Ratio of number of cases per 100.000 inhabitants in the most common funded diseases were as follows: 1) Ulcer of lower limb 169,4; 2) Decubitus ulcer 96,9; 3) Coxarthrosis 64,1; 4) Fracture of femur 52,3; 5) Gastroenteritis 51,2. CONCLUSIONS: The occurrence of case number to the most frequent diseases confirms the need of special therapies and special therapeutic services in home special care. The role of physiotherapy among special therapeutic services is highly emphasized. Analysis and recognition of the findings play an essential role in future planning and development of home special care.

PMS91 COMPARISON OF THE QUALITY OF LIFE IN ELDERLY POPULATION ACCORDING TO THE OCCURRENCE OF FEMORAL NECK FRACTURE

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OBJECTIVES: The aim of this study was to compare two groups within the elderly population: those members who had suffered femoral neck fracture (target group), and the other members who had not suffered any lower limb fracture (control group). METHODS: The basic aim of the study was to confirm the role of physiotherapy to reach the desired functions, because during the 10 -ocassion - treatment we could manage to get significant improvement in the movement of the wrist joint. It is confirmed by the Quick DASH score decrease. Furthermore we can state that the Quick DASH questionnaire can be used easily among people to measure the movement-injury of the upper limb.

It is also confirmed by the Quick DASH score decrease. Furthermore we can state that the Quick DASH questionnaire can be used easily among people to measure the movement-injury of the upper limb.

PMS92 EVALUATION AND DEVELOPMENT OF HABITUAL POSTURE AND POSTURE DEEMED CORRECT WITH BACK SCHOOL PROGRAM AMONG PRIMARY SCHOOL CHILDREN

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OBJECTIVES: The posture of 60-80% of primary school children is incorrect. Inadequate posture and use of spine in childhood can be the basis of adult degenerative spinal diseases. A back school program can influence the posture of children in a positive direction. Our purpose was to assess habitual posture and posture deemed correct of primary school children. METHODS: 26 primary school first-graders were chosen for our prospective research with non-random sample selection (average age: 6,8 (6.2-7.0). The posture was examined by photogrammetry test, and it was compared with VSSO and Hawkins (2010). We used Wilcoxon test to compare values before and after the back school program, from the front view, the median (p = 0.008), the shoulder symmetry (p = 0.16), the pelvis symmetry (p = 0.001) significantly changed, from the lateral view, the median (p = 0.001), the thoracic spine (p = 0.001), the lumbar spine (p = 0.001) significantly improved. After back school program, from the front view, the median (p = 0.001), the shoulder symmetry (p = 0.001), the pelvis symmetry (p = 0.001) significantly changed, from the lateral view, the median (p = 0.001), the thoracic spine (p = 0.001), the lumbar spine (p = 0.001) significantly improved. The total score of habitual posture (p = 0.001)
The examination of location and frequency of pain in weight training

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Objectives: The aim of our research was to compare the symptoms of the musculoskeletal system of the medical- and sport masseurs. Methods: Altogether 58 medical- and sport masseurs completed the survey in our research. The examination has been carried out for 4 months, in Hungary 46.5% of the masseurs participated. We had an issue with their musculoskeletal system in the past 12 months. Results: Our first presumption has proven true, that among medical- and sport masseurs, hand and wrist or elbow pain is the most common problem. Most of the participants indicated pain on the right hand, while 31.0% on the left. Our third hypothesis has been verified partly, because there were significantly more waist symptoms in medical masseurs compared to sport masseurs (p < 0.001), however there were no significant difference in wrist pain between the two groups (p = 0.96). We also observed the difference in the musculoskeletal system symptoms between male and female gender. This assumption did not show any essential difference (p = 0.8521). Our last assumption has been refuted, because our results showed that among masseurs we distinguished suffers from pain in musculoskeletal system in 18.7% (95% confidence interval) of the specialized literature, this rate is about 60-85% in the society. Conclusions: The musculoskeletal system symptoms could be easily prevented, if people would train and discuss about the increase of pain in their hands or wrists in the last one year. The other research was about to estimate the frequency of pain on each regions of the hand. The assumption in this case seemed also right, most of the symptoms were caused by the "thenar" area, where 39.66% of the participants indicated pain on the right hand, while 31.0% on the left. Our third hypothesis has been verified partly, because there were significantly more waist symptoms in medical masseurs compared to sport masseurs (p = 0.001), however there were no significant difference in wrist pain between the two groups (p = 0.96).

The examination of location and frequency of pain in weight training

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Objectives: The aim of our research was to test the location and frequency of pain among people doing weight training. Methods: The type of our research had was quantitative, cross-sectional. The sample size was 129 person (N = 129). The selection method was objective expert sampling. Data was collected with the application of standard questionnaires (Norwich-test and Roland Morris). The analysis of the data was a traditional descriptive and mathematical (Chi-square test, Mann-Whitney U-test, linear regression) statistical methods, analysis was made with SPSS 20.0 and Microsoft Office Excel programs. The significance level had been specified in 5%. Results: The most painful areas among people doing weight training are the shoulders (47.3%) and the low back (38.8%). Medical consultation with the existing complaints most commonly happens in cases of low back pain (10.9%). Those patients who consulted with their doctor have a significantly higher pain intensity and activities restriction index (average RMI = 1.38, p < 0.001) as those who did not see their physicians (average RMI = 1.38, p < 0.001). As the age progressed the Roland Morris index score had increased significantly (p < 0.001), with a medium-strength, positive correlation between age and Roland Morris index score (r = 0.36, p = 0.018). The upcoming knee pain is significantly high in cases of women (p = 0.025), 28.4% of men, 47.9% of women indicated knee problems. Conclusions: Based on our results it can be stated that weight training causes shoulder pain in the cases, however the medical consultations most commonly happen due to back pain. The known dangers of training made for health maintenance requires the application of prevention methods, and the development of the general knowledge about the correct implementation of the exercises and the overall training theory.
health expenditure (CHE) was defined as any amount spent for health which accounts for more than 20% of the household income. 116 patients constituted the survey. Patients’ household average and per capita monthly income was estimated at 1093 and 543, respectively. The extrapolation of the 6-month out-of-pocket expenditure to annual expenditure revealed that patients spend 695.6 per year for their condition. Subject of CHE were estimated to be 11.6% of patients. Synthes, Inc., West Chester, PA, USA, Johnson & Johnson, New Brunswick, NJ, USA.

OBJECTIVES: Non-union is a complication of fracture repair that significantly impacts patient wellbeing and healthcare costs. This study was designed to determine whether fracture reduction and delay of non-union follow fracture repair. METHODS: A retrospective database analysis was conducted. Trauer Consultants, Inc., a consulting firm, collected patient’s electronic medical records and paid claims for patients with a femoral (FEM) fracture and/or a tibial (T/F) fracture from 2010 to third quarter 2015. The first fracture was used as index date. To be included in the analysis, patients had to have a minimum age of 18 years, meet the criteria for the reduction of non-union, and have at least 2 years of complete medical history. Patients with amputation at time of index were excluded as they were no more at risk of non-union. Patients were categorized based on whether or not they developed non-union in the 5-730 days following the index date. RESULTS: Of 13,365 patients, 806 patients were excluded due to a lack of information related to economic analysis. Across the submissions made to various HTA agencies, no reported reasons for not recommending a treatment was due to concerns over the economic perspective. Across the submissions made to various HTA agencies, no information related to economic analysis was available for majority of submissions (22 submissions). In total, where an economic analysis was undertaken cost-minimization analysis (CMA) was the most commonly reported economic analysis (11 submissions). One submission reported both CMA and cost-utility analysis (CUA). Submissions made to NICE witnessed the highest rejection rate (50%), followed by SMG (40%). For tocilizumab, maximum number of submissions (8 submissions) were searched for uncomfortable procedures with a shorter recovery time than other sedative agents. Propofol provided adequate sedation for uncomfortable procedures with a shorter recovery time than other sedative agents. While with some concerns about reducing hemodynamic responses, propofol had a similar or better safety profile compared with other sedative agents. The overall evidence suggests that propofol could be considered for pediatric procedure sedation.

OBJECTIVES: We aimed to assess the safety and efficacy of propofol as an agent of procedural sedation in pediatric patients. METHODS: We searched the MEDLINE via Ovid, EMBASE, and Cochrane Central Register of Controlled Trials in June, 2016. Eligible studies were randomized controlled trials comparing propofol with other sedative agents for procedural sedation in pediatric patients. We used standard Cochrane methodological procedures, including assessment of risk of bias. Random effects model was used. The relative risk (RR) and risk difference (RD) with 95% confidence interval (CI) were calculated for dichotomous outcomes. The weighted and standardized mean difference for continuous (MD and SMD) with 95% CI were found to be non-medical goods and services for their condition. CHE were estimated to be 11.6% of patients.

OBJECTIVES: Evaluation of safety and efficacy of propofol for procedural sedation in pediatric population: A meta-analysis. Kim S1, 2, Kim Y1, Cho V1, Hong H1, Lee J1, Kim H1, Hahn S1. 1Seoul National University College of Medicine, Seoul, Korea, Republic of (South). 2Seoul National University Hospital, Seoul, Korea, Republic of (South).

OBJECTIVES: We aimed to assess the safety and efficacy of propofol as an agent of procedural sedation in pediatric patients. METHODS: We searched the MEDLINE via Ovid, EMBASE, and Cochrane Central Register of Controlled Trials in June, 2016. Eligible studies were randomized controlled trials comparing propofol with other sedative agents for procedural sedation in pediatric patients. We used standard Cochrane methodological procedures, including assessment of risk of bias. Random effects model was used. The relative risk (RR) and risk difference (RD) with 95% confidence interval (CI) were calculated for dichotomous outcomes. The weighted and standardized mean difference for continuous (MD and SMD) with 95% CI were found to be non-medical goods and services for their condition. CHE were estimated to be 11.6% of patients.
OBJECTIVES: Guselkumab is an anti-interleukin-23 monoclonal antibody shown to be superior over adalimumab and placebo in Voyages 1 & 2, two large phase III trials of patients with moderate-to-severe psoriasis. The Navigate trial showed superiority versus ustekinumab in patients with an inadequate response to ustekinumab. No direct comparison is available between guselkumab and ustekinumab in ustekinumab failures. As such, the aim of this study was to perform a comparison of guselkumab and ustekinumab, using pooled patient-level trial data from Voyages 1 & 2 and Navigate, adjusting for cross-trial population differences using the patient-level counterfactual approach. PROSPECTIVE POPULATION SIMULATION (PPS) model was used to simulate the evolution of a patient population affected by psoriasis, including baseline characteristics and outcome data on PASI 75, 90 and 100 responses at weeks 16, 28 and 40, from the guselkumab-arms of Voyages 1 & 2. Clinical data, derived from Phase II RESPONSE trial, were reviewed to include data on PASI 75, 90 and 100 responses. RESULTS: Patients on guselkumab (n = 525) had generally similar baseline characteristics compared to patients on ustekinumab (n = 718). The probability of reaching a PASI 90 response was significantly higher for guselkumab at weeks 16 (OR = 2.70 [2.17, 3.33]), 28 (OR = 2.27 [1.92, 2.64]) and 40 (OR = 3.38 [1.85, 6.03]) with a p < 0.001, after adjusting for baseline characteristics. Similar results were obtained for the probability of reaching PASI 75 and 100 responses across all timepoints. CONCLUSIONS: An adjusted comparison using patient level data from Phase III studies suggests guselkumab is significantly more effective versus ustekinumab for treating psoriasis. Such comparisons can provide useful insights to clinicians and reimbursement decision makers on the relative efficacy of both treatments.

PSY7 SWITCHING MONITORING INFILMAB THERAPY TO BIOSIMILAR-INFILMAB DOES NOT LEAD TO SIGNIFICANT CHANGES IN HEALTH-RELATED QUALITY OF LIFE CLINICAL OUTCOMES IN INFLAMMATORY BOWEL DISEASE PATIENTS

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OBJECTIVES: The objective of this study was to evaluate the clinical efficacy and effectiveness of biosimilar-infliximab during the maintenance therapy of inflammatory bowel disease (IBD) patients. The hypotheses tested were: 1) there are no differences in clinical outcomes between biosimilar and originator infliximab, 2) patients treated with biosimilar infliximab experience fewer serious adverse events, 3) patients treated with biosimilar infliximab have a better compliance, and 4) switching to biosimilar infliximab therapy has a cost-saving effect.

Methods: A retrospective study was conducted in the Inflammatory Bowel Disease Questionnaire (IBDQ)). Primary endpoints were collected at four infliximab administration visits: before the last originator infusion, before the first biosimilar infusion, before the third biosimilar infusion, and one year after the switch. Secondary endpoints were collected during one year following switching. Clinical outcomes included the primary endpoints: the proportion of patients reaching clinical remission with a clinical response at week 24 (CR), minimally important difference in the Inflammatory Bowel Disease Questionnaire (IBDQ)), and the proportion of patients with an adequate response at week 52 (AER, p < 0.05), after the switch. Regression analysis was performed to determine the factors associated with the primary and secondary endpoints.

Results: A total of 181 patients were included in the study, with a mean age of 53.2 years and 60% females. The primary endpoint was reached in 83% of patients, with a higher rate of patients achieving remission in the biosimilar arm compared to the originator arm (84% vs 79%, p = 0.04). The secondary endpoint was also achieved in a higher rate of patients in the biosimilar arm compared to the originator arm (85% vs 79%, p = 0.03). The proportion of patients with an adequate response at week 52 was also higher in the biosimilar arm compared to the originator arm (84% vs 79%, p = 0.01).

Conclusions: The results of this study suggest that switching to biosimilar infliximab as maintenance therapy for IBD patients is safe and effective. The use of biosimilar infliximab may lead to improved clinical outcomes and reduced healthcare costs.

PSY8 BLEEDING-RELATED EVENTS (BRE) IN PATIENTS WITH IMMUNE THROMBOCYTOPENIA (ITP) RECEIVING B萊XOMAB (EPOR) OR ROMPOLISTOM (ROMI): REAL WORLD EVIDENCE FROM 26 US INSTITUTIONS

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OBJECTIVES: To examine burden of BREs in ITP patients treated with EPAG or ROMI. METHODS: We investigated BREs, a complication of ITP that leads to significant morbidity and mortality, using a syndicated electronic medical records network that contains records for inpatient and outpatient services and procedures, diagnoses, adverse events (AEs), prescriptions and labs for 27 million patients from 26 US hospital institutions. Adult patients diagnosed with primary ITP and treated with EPAG or ROMI with primary and secondary treatment were included. BREs were identified based on bleeding codes [B] and/or use of rescue therapy [R] (transfusions of RBCs, FFP, PCC, or ITP). Patients using both therapies were included. AEs were identified based on ICD-9/C-10 code and/or rescue therapy [rescue therapy]. Patients were followed until discharges, death, or end of study. The crude incidence of BREs was compared between the two therapies and across severity levels (low, medium, high).

Results: A total of 472 patients were included in the study, with a mean age of 69.2 years and 60% females. The crude incidence of BREs was significantly higher in the ROMI-treated group compared to the EPAG-treated group (10.8% vs 5.2%, p = 0.001). The incidence of BREs was also higher in the ROMI-treated group compared to the EPAG-treated group across all severity levels (low, medium, high). The crude incidence of BREs was significantly higher in the ROMI-treated group compared to the EPAG-treated group (10.8% vs 5.2%, p = 0.001).

Conclusions: The results of this study suggest that switching to biosimilar infliximab as maintenance therapy for IBD patients is safe and effective. The use of biosimilar infliximab may lead to improved clinical outcomes and reduced healthcare costs.
OBJECTIVES: Success rates of allogeneic hematopoietic stem cell transplantation are largely influenced by patient and disease-related factors. The selection of patients not responding to first-line steroid therapy, there is no approved second-line treatment available and long-term outcome remains poor. Since 2004, mesenchymal stromal cells (MSC) are studied as treatment for steroid-refractory aGVHD. The number of phase II clinical trials. Several parametric distributions were used to estimate long-term survival rates after MSC treatment. Sub-group analyses were conducted. RESULTS: The DM consists of nine health stages: (1) treatment-naive, (2) tapering dose, (3) lost to follow-up, (4) relapse, (5) response failure or intolerance, (6) response, (7) chronic aGVHD, (8) relapse and adverse events of hematologic disease, and (9) death. Data of 209 patients (median age: 50.5 years; range = 0.4 – 80.9 years) was utilized. The most common indications for both the treatment and survival analysis were gout and RA. The median follow-up time was 2.5 years. Further results include: transition rates from aGVHD stages II-IV to aGVHD stages 0, I, II, III, and IV, subgroup analysis (females/male, several age groups), as well as extrapolated survival estimates from different parametric functions. CONCLUSIONS: We created a DM that can eventually aid clinical decision-making and serve as a template for future model-based cost-effectiveness studies.

PSY10

KNOWLEDGE, ATTITUDES AND PERCEPTIONS OF KETAMINE USE BY MEDICAL PRACTITIONERS IN SOUTH AFRICA

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OBJECTIVES: A proposed mechanism for the pathophysiology of catatonia is N-methyl-D-aspartate (NMDA) hyperactivity. It can be argued that ketamine (which acts as an NMDA antagonist) can mitigate the effects of glutamate in catatonia and can potentially be used as treatment for catatonia. The primary aim of the study was to examine medical practitioners at three public sector hospitals in the Nelson Mandela Metropole in terms of their knowledge, attitudes and perceptions of medical practitioners on the use of ketamine, including its use in catatonia. METHODS: A structured questionnaire on ketamine was conducted during 2015. Twenty-three medical practitioners were surveyed at public sector hospitals in the Nelson Mandela Metropole participated. Respondents included anaesthesiologists (43.5%), psychiatrists (34.8%) and medical officers (21.7%). RESULTS: Respondents, who have prescribed ketamine (82.6%), used it primarily for sedation, anaesthesia and ketamine. Ketamine in catatonia was mainly used for anaesthesia and sedation, and in adults for anaesthesia. The most important indication by anaesthesiologists and psychiatrists was anaesthesia (40.0% and 87.5%, respectively) and sedation by medical officers (60.0%). The majority of anaesthesiologists and medical practitioners questioned the use of ketamine in catatonia, whereas psychiatrists knew of preliminary studies but indicated they would not use it until proven safe. Regarding ketamine’s mechanism of action, anaesthesiologists responded that ketamine acts on the NMDA receptor; most psychiatrists responded similarly and stated that ketamine has anxiolytic effects. For patients on HU decreases to 52.3%; interferons are administered more frequently (21.5%). Medications which are not administered at 1st line are initiated in some patients immunomodulators - cyclosporine (10.7%), ruxolitinib 6.7% and anagrelide 2.5%). In 3rd line treatment, 44.7% are prescribed HU. Other medications are administered more frequently than previous lines (interferons 24.8%, immunomodulators 10.3%, ruxolitinib 9% and anagrelide 5.8%). Proportion of PV patients who are HU resistant/intolerant is estimated to be 16.7%. Of these patients, 49.3% are administered HU due to the lack of alternative treatment options currently available. Use of interferons, anagrelide and other medications following HU represent 30%, 10% and 5.6%, respectively in this group of patients. CONCLUSIONS: Uncontrolled PV may cause complications such as thromboembolic events, acute myeloid leukemia, haemorrhagic complications or even death. Almost half of PV patients who are treated with HU, continue to receive HU regardless of response, resistance or intolerance. New treatment options with improved effectiveness in HU resistant/intolerant patients are needed.

PSY17

DO CHARACTERISTICS OF PATIENTS INFLUENCING THE CHOICE OF PAIN TREATMENT BY GPS DIFFER IN OSTEOARTHRITIS AND CANCER? – AN ITALIAN REAL WORLD EVIDENCE STUDY

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OBJECTIVES: To understand whether patients’ features underneath the choice of pain treatments by Italian GPs differ between osteoarthritis and cancer. METHODS: Retrospective analysis on Real World Data from IMS Health Italian Longitudinal Patient Database. For both osteoarthritis and cancer, three cohorts of patients have been identified based on anti-inflammatory and antirheumatic (M01) and analgesic (N02) drugs prescriptions recorded during 2016: a) patients receiving a treatment with M01 drugs and not having N02 prescriptions, b) patients receiving a treatment with N02 and not having M01 prescriptions, c) patients treated with both M01 and N02 drugs. Descriptive statistics, Chi-square and t-tests were used to compare demographic and clinical characteristics of the patients in the three cohorts for osteoarthritis and cancer. RESULTS: Patients receiving a treatment with M01 drugs were 32,238 (70%) and 2,496 (5%) for osteoarthritis and cancer, respectively. Patients receiving a treatment with N02 were 8,569 (19%) and 8,427 (18%) for osteoarthritis and cancer, respectively. Patients treated with both M01 and N02 drugs were 5,026 (11%) and 1,107 (14%) for osteoarthritis and cancer, respectively. CONCLUSIONS: Different specialities had different views on the use of ketamine, including its use in catatonia.
diethylpropion (0.21%). These results were similar to the findings of a 2013 South African study, which identified the frequency of D-norpseudoephedrine use had increased. Orlistat was on average the most expensive per prescription ($485.75). Most patients (76.73%) received only short-term therapy (one or two prescriptions for an anti-obesity product during the year). A small percentage (0.24%) received longer term therapy, with at least three prescriptions dispensed before the end of the 12 months. CONCLUSIONS: Phenetermine was the most commonly dispensed active ingredient, followed by D-norpseudoephedrine which was recently rescheduled in South Africa. Studies on patient outcomes and the cost-effectiveness of these products should be conducted.

PSY17 COMPLEMENTARY AND ALTERNATIVE MEDICINE IN THE MANAGEMENT OF PAIN: A SOUTH AFRICAN COMMUNITY SURVEY

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OBJECTIVES: Complementary and Alternative Medicine (CAM) has become an acceptable and popular treatment in the management of pain. The primary aim was to describe the prevalence and effectiveness of CAM therapies in the management of pain. METHODS: A questionnaire survey was conducted under community members in South Africa using convenience sampling. A total of 193 responses were received. RESULTS: The average age of respondents was 31.6 (SD=13.1) years (53.4% females). Pain was classified according to body regions. Pain intensity was, on average, moderate. The majority of respondents suffered pain in the head (79.2%), back (58.0%) and migraine (22.4%) and back (44.6%); Thirty-four respondents (17.6%) were migraine sufferers. A third (37.3%) of respondents indicated that other family members also use CAM. The CAM classifications indicated for treating pain were cross-cultural (e.g., yoga), external (e.g., chiropractors, massage therapists), and internal (e.g., body healing therapies (e.g., prayer, therapy, sleep and meditation). The CAM modality reported to be most effective in treating pain was cross-cultural therapies with 6% out of a maximum score of 8. The most popular external therapies were body healing therapies (reported by 33.6% of respondents). Nearly half of the therapies were used in conjunction with conventional analgesics, with 53.0% indicating that they obtain their treatment for pain from pharmaceuticals. CONCLUSIONS: CAM was used either on its own or in combination with conventional medication for the treatment of pain. Therapies seemed to be effective. The choice of CAM therapy was highly individualised.

PSY18 OCCURRENCE OR REMISSION OF ANTIDiABETIC TREATMENT SIX YEARS AFTER BARIATRIC SURGERY: A NATIONWIDE MATCHED COHORT STUDY

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OBJECTIVES: Few large long-term prospective cohorts have assessed the evolution of antidiabetic treatment after bariatric surgery (BS). Our aim was to study, under real life conditions and at a national level, remission and occurrence of antidiabetic treatment over 6 post-operative years after BS, compared to a matched control group, using the French national health insurance data. METHODOLOGY: Eligibility criteria were: 605 obese patients was provided for records for 3037 patients, of whom 1946 experienced flares and 73 were affected only on their hands. 1026 patients who experienced flares completed the patient questionnaire. RESULTS: The majority of patients had flared in the last 12 months (AD: 88%, hand: 89%), all AD patients experienced an average of 3.2 flares in the last 12 months (1.1 mild, 1.5 moderate, 0.6 severe), hand patients experienced an average of 2.2 flares (1.5 mild, 0.7 moderate, 0.07 severe). A greater number of flares in the last 12 months (AD: 5.4, hand: 5.2) and reported flares lasting on average 12.0 days (AD), 12.7 days (hand). Regardless of EASI score, more patients with active AD experience flares compared to those with inactive AD (P<0.001). Flare frequency was highest in the first year (3.7 flares), with 6 out of a maximum score of 4.0. The most popular external therapies were body healing therapies (reported by 33.6% of respondents). Nearly half of the therapies were used in conjunction with conventional analgesics, with 43.0% indicating that they obtain their treatment for pain from pharmaceuticals. The CAM modality reported to be most effective in treating pain was cross-cultural therapies with 6% out of a maximum score of 8. The most popular external therapies were body healing therapies (reported by 33.6% of respondents). Nearly half of the therapies were used in conjunction with conventional analgesics, with 53.0% indicating that they obtain their treatment for pain from pharmaceuticals. Therapies seemed to be effective. The choice of CAM therapy was highly individualised.

PSY19 INCIDENCE AND PREVALENCE OF PAINFUL DIABETIC NEUROPATHY AND POSTHERPETIC NEURALGIA IN MAJOR 5 EUROPEAN COUNTRIES, THE UNITED STATES AND JAPAN

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OBJECTIVES: The objective of this review was to collate evidence on the incidence and prevalence of painful diabetic neuropathy (PDN) and postherpetic neuralgia (PHN) in 5 major European countries (United Kingdom (UK), Germany, France, Italy and Spain), the United States (US) and Japan. METHODS: A narrative review was conducted through searching Embase®, MEDLINE® and Cochrane databases, from inception to present. The prevalence data was summarised according to geographies. RESULTS: Of 4,424 citations reviewed, 26 studies conducted the incidence and/or prevalence of PDN and/or PHN. The included studies were diverse in their study designs: population based studies, surveys, cross-sectional/longitudinal, prospective/retrospective and single/multicentre. The incidence of PDN was 3.1/10,000 population (UK) and prevalence varied from 8.2% to 25.7% (US), among all diabetic patients. The prevalence of PDN varied with type of diabetes: type-1 8.2% (US) to 22.7% (UK) or type-2 9.0% (France) to 35.0% (UK), prediabetes 11.8% (France) vs 10.9% (US) and insulin treated 18.6% (US) vs 17.0% (UK). PHN incidence and prevalence varied from 1.5% to 3.5% in the general population but increased to 12.0% (UK) to 16.0% (US) depending on age and medical comorbidities. CONCLUSIONS: Although a reasonable body of research was identified for both PDN and PHN, heterogeneity in study designs and diagnostic criteria limits the ability to generalise and compare incidence and prevalence across geographic regions and between regions. Larger sample sizes are needed to expand our insight on the incidence and prevalence of PDN and PHN.

PSY20 THE ASSOCIATED FACTORS OF NEUROPATHIC PAIN AMONG CHRONIC LOW BACK PAIN PATIENTS IN SOUTH KOREA: FINDINGS FROM THE NLBP OR HSUPP STUDY


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TREATMENT OF MODERATE-TO-SEVERE TRAUMA PAIN IN SWEDEN

TTNT in months (with 95% CI) in 1st line are: 8.5 (7.9, 9.2), 12.3 (11.1, 13.3), in 7th with LDM vs standard of care (SoC; morphine IV, fentanyl nasal spray and ketamine)

Swedish healthcare system perspective to evaluate the resource use associated with treatment for trauma patients with moderate-to-severe pain in the pre-hospital setting. Introducing LDM at a 1% annual uptake rate resulted in a net decrease of >15 minutes in average treatment time for the total patient population in Year 1 due to reduced time for first pain relief, treatment setup, administration and monitoring. Estimated cost savings ranged from SEK 5M in Year 1 to SEK 24M in Year 5, with increased drug acquisition costs (ranging from SEK 1M in Year 1 to SEK 2M in later lines) and LDM cost savings in trauma treatment costs, equipment costs and management of AEs (SEK 4M, 1M and 0.02M in Year 1 and SEK 22M, 7M and 0.08M in Year 5, respectively).

CONCLUSIONS: Using LDM instead of SoC for treatment of moderate-to-severe pain in the pre-hospital setting is associated with shorter treatment times and health-care savings, driven by reductions in staffing costs, and may improve both patient care and flow through the hospital.

BUDGET IMPACT ANALYSIS OF BIOSIMILAR RITUXIMAB (CT-P10) FOR THE TREATMENT OF DIFFUSE LARGE B-CELL AND FOLLICULAR LYMPHOMA IN THE 28 EU MEMBER STATES

impact patients’ quality of life. Though typically treated by somatostatin analogs (SSAs), up to 60% of patients may experience uncontrolled symptoms despite therapy. Telotristat etil (TE) is a novel tryptophan hydroxylase inhibitor granted EMA orphan designation that has been shown in phase 3 studies to effectively reduce bowel movement frequency in CS. We developed a model to evaluate the budget impact of introducing TE in combination with SSAs (TE+SSAs) in patients with uncontrolled CS in Sweden. METHODS: Results from the phase 3 TELESTAR trial (NCT01677910) informed TE efficacy in the model, based on the 12-week treatment response, after which health states were captured by a Markov model using 4-week cycles. The model also allowed for TE discontinuation based upon treatment response data from the TELESTAR open-label extension period. Systematic and targeted literature reviews informed CS and carcinoid heart disease (CHD) prevalence, incidence and mortality. These data were used to estimate the number of patients in Sweden eligible for treatment. Real-world CS and CHD-related costs (healthcare resource use, drug acquisition, SSA dosage) were obtained from claims with the Pathyvore database. Market share of SSA (BeneFIB®) was assumed to increase annually, from 2% to 10% uptake by Year 5. RESULTS: The net 5-year budget impact of TE+SSAs was 11,898€, which translated to a cost of less than 4.88€ per patient per month in each year of the analysis. CONCLUSIONS: As a much-needed treatment for Crohn’s disease, particularly debilitating in condition, the 5-year budget impact of the addition of TE to existing standard of care was projected to be 11,898€ according to our model, suggesting that TE may be an affordable treatment option for patients with this rare disease.

PSY25 INTRAABDOMINAL IRRITANT TREATMENTS FOR IRON DEFICIENCY ANEMIA IN INFLAMMATORY BOWEL DISEASE: A BUDGET IMPACT ANALYSIS OF IRON ISOMALTOSIDE 1000 IN THE UK

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OBJECTIVES: Iron deficiency (ID) is the leading cause of anemia in patients with inflammatory bowel disease (IBD). Intravenous iron should be considered the first-line iron-correction treatment in patients with clinically active IBD, hemoglobin <10g/dl, previous oral iron intolerance, or requiring erythropoiesis-stimulating agents. The study objective was to evaluate resource use and costs associated with using intravenous iron sucrose (IVI; IRM) relative to other intra-abdominal irritants (IAs) in patients with iron deficiency anemia (IDA) associated with IBD. METHODS: A budget impact model was developed to evaluate the cost of IIM relative to ferric carboxymaltose (Ferinject; FCM), low molecular weight iron dextran (Comifier, LMWID) and iron sucrose (Venoven, IS). Iron deficits were modeled using dosing tables and the need for retreatments was modeled using a pooled retrospective analysis of randomized trial data. The analysis was conducted over 5 years in patients with a body weight of 75 kg (SD 17.4 kg) and hemoglobin levels of 10.8 g/dl (SD 1.4 g/dl) based on observational data from patients with IBD. Costs were modeled using healthcare resource groups. RESULTS: Using IIM required 1.29 infusions (per patient per month) resulting in a mean cost of $352, and 1.42 infusions, respectively. Patients using IIM required multiple infusions in 28.7% of cases, compared with 64.3%, 28.7% and 100% with FCM, LMWID and IS, respectively. Total costs were estimated to be GBP 2,593 per patient with IIM or LMWID, and GBP 3,389 per patient with FCM and IIM on the basis of the heparin dose in patient with IDA. CONCLUSIONS: Using IIM in place of FCM or LMWID in patients with IDA resulted in lower number of infusions, therefore a shorter treatment rate, cost relative to FCM and IS.

PSY27 AN EVALUATION OF THE BUDGET IMPACT OF THE NEW 20% SUBCUTANEOUS IMMUNOGLOBULIN (IGG20Gly) FOR THE MANAGEMENT OF PRIMARY IMMUNODEFICIENCY DISEASES IN SWITZERLAND

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OBJECTIVES: Patients with primary immunodeficiency diseases (PID) are frequently treated with immunoglobulin (Ig) replacement therapy, either intravenously (IVIG) or subcutaneously (SCIG), to prevent infections. The objective of this analysis was to evaluate the budget impact of the introduction of CIVATR® IMMUNE GLOBULIN SUBCUTANEOUS (Human) 20% solution (IGG20Gly; Shire) for the treatment of children and adults with PID in Switzerland. METHODS: A budget impact model assessing Ig for patients with PID was developed in Microsoft Excel from the perspective of a Swiss health insurance provider. The model focused on the administration cost of Ig, with all types of Ig, in all treatment settings, and did not include infections or adverse events based on the assumption that all Ig formulations have similar efficacy. Literature-based sources were used to estimate the prevalence of PID, proportion of patients treated with Ig, and treatment site of care. Market research and assumptions were used to estimate Ig treatment patterns and changes in treatment patterns over time. Unit costs were based on a retrospective analysis of SCIG in Switzerland in 2018, including SCIG, self-administration, and treatment site as well as the Specialitätenliste. All costs were reported in 2016 Swiss Francs (CHF). Future costs were not discounted. RESULTS: Costs of Ig treatment for PID in Switzerland over 3 years were estimated to be CHF 46,000 per patient per month, with drug costs comprising 9.28m, and ancillary costs comprising CHF 1.87m (healthcare professional time and other administration costs, e.g., pumps and needle sets). The analysis found that using Ig20Gly in place of other SCIG formulations would be cost neutral, while using Ig20Gly in place of IVIG would result in a cost saving. IG20Gly would be cost neutral relative to existing SCIG products and would result in cost savings relative to IVIG in patients with PID in Switzerland, even with modest uptake.

PSY28 EVALUATION FOR THE TREATMENT OF HEMOPHILIA B: A BUDGET IMPACT ANALYSIS IN THE ITALIAN SETTING

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OBJECTIVES: Enhanced PK profile of Idelvion, compared to existing Factor IX therapies, allows to prolong the intermediate period in the prophylactic setting, maintaining higher trough level and reducing dosage to stop a hemorrhagic episode. This improvement could lead to a better efficiency of the hemophilia B treatment. Purpose of this analysis was to estimate the impact of this new drug on the Italian NHS. METHODS: The model estimated the budget impact, from the NHS perspective of resource use, direct medical costs and drug acquisition costs. Treatment options were: albubbleponagonoc-o-a (Idelvion®), efbrenonagonoc-o-a (Alprolix®) and epoetin alfa beta (Epo). RESULTS: The incremental cost at the 5-year horizon was €1,893 per patient with hemophilia B. The budget impact analysis of Idelvion from a regional perspective estimated savings cumulated in 3 years. At Regional level, there was a wide difference between Lombardy (1.3 million) and Trentino Alto-Adige (>50.000), according to epidemiology. CONCLUSIONS: The positive impact on the expenditure related to Idelvion introduction is due to the lower drug consumption in prophylaxis and reduced bleeding rate compared to the other alternatives. Main limitations of this analysis were related to the conservative assumptions that all severe patients receive prophylaxis and that positive clinical and economic effects of hemorrhagic complications reduction (with consequent lower need of physiotherapy/prosthetic substitution) were not considered in consideration of the introduction of Idelvion as therapeutic option for hemophilia B is expected to improve patient’s quality of life due to less frequent infusions and to decrease pharmaceutical costs.

PSY29 BUDGET IMPACT ANALYSIS COMPARING BLINATUMOMAB IN THE TREATMENT OF ADULTS WITH PHILADELPHIA CHROMOSOME-NEGATIVE RELOPED OR REFRACTORY B-CELL PRECURSOR ACUTE LYMPHOBLASTIC LEUKEMIA (ALL) WITH FLAG-IDA AND CYVAD

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OBJECTIVES: Blinatumomab, FLAG-IDA and CYVAD are used in the treatment of adults with Philadelphia chromosome-negative relapsed or refractory B-cell precursor acute lymphoblastic leukemia (ALL). The main objective is to do a budget impact analysis of the introduction of Blinatumomab into the public healthcare system. The aim of this study is to evaluate the budget impact of Idelvion on the National Health Service (NHS). We assessed the clinical and economic effects of hemorrhagic complications reduction (with consequent lower need of physiotherapy/prosthetic substitution) were not considered in consideration of the introduction of Idelvion as therapeutic option for hemophilia B.

PSY30 ECONOMIC EVALUATION OF SUBCUTANEOUS METHOTREXATE FOR LONG-TERM TREATMENT OF MODERATE-TO-SEVERE PSORIASIS IN THE UNITED KINGDOM

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OBJECTIVES: Psoriasis is a chronic disease that requires long-term treatment, resulting in substantial costs to the National Health Service (NHS). We assessed the economic impact of including subcutaneous methotrexate (SC-MTX) in treatment pathways for moderate-to-severe psoriasis in adults. METHODS: A five-year sequential model was developed to investigate the budget impact of discontinuing conventional systemic therapy for moderate-to-severe psoriasis. Five sequences of conventional systemic therapies were compared, considering the use of methotrexate as first-line therapy, with or without addition of methotrexate. RESULTS: The cost savings cumulated in 3 years. At Regional level, there was a wide difference between Lombardy (1.3 million) and Trentino Alto-Adige (>50.000), according to epidemiology. CONCLUSIONS: The integration of Blinatumomab to the Mexican healthcare system, as a new therapeutic alternative would generate an average increment of 0.14981% for the first 5 years, generating an average cost of $5,204,192. With a use of resources of $120,764 for Blinatumomab and $83,985 for FLAG-IDA, the reduction in infusions was accompanied by substantial reductions in cost relative to FCM and IS.

RESULTS: Mean costs per patient were calculated for prophylaxis and bleeding treatment by age groups. Applying these costs to the patient pool, according to age and drugs utilization, the impact of Idelvion on the NHS budget corresponded to 7.5 million of savings cumulated in 3 years. At Regional level, there was a wide difference between Lombardy (1.3 million) and Trentino Alto-Adige (>50.000), according to epidemiology. CONCLUSIONS: The positive impact on the expenditure related to Idelvion introduction is due to the lower drug consumption in prophylaxis and reduced bleeding rate compared to the other alternatives. Main limitations of this analysis were related to the conservative assumptions that all severe patients receive prophylaxis and that positive clinical and economic effects of hemorrhagic complications reduction (with consequent lower need of physiotherapy/prosthetic substitution) were not considered in consideration of the introduction of Idelvion as therapeutic option for hemophilia B.

A549 VALUE IN HEALTH 20 (2017) A399–A811
or third line treatment in addition to O-MTX and CSA generated cost savings of 
€300–€311 million (£9,395–£9,728 per patient) over 5 years. Including SC-MTX also 
was a cost-saving alternative when compared to FFP in treatment and prophylaxis of 
bleeding in patients treated with oral anticoagulants with inhibitors undergoing surgery.

### PSY34

**ECONOMIC EVALUATION OF DEMEDETOMIDINE VERSUS PROPOFOL FOR MIDAZOLAM SEDATION IN PATIENTS UNDERGOING KEYHOLE SURGERY IN SPAIN**

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1Health Value, Madrid, Spain, 2Hospital La Laguna, Tenerife, Spain, 3Hospital Puerta de Hierro, Madrid, Spain, 4Orion Pharma, Madrid, Spain, 5Orion Corporation Orion Pharma, Espoo, Finland

**OBJECTIVES:** To compare the effectiveness of the use of demehtomidine in comparison with standard care sedation (propofol or midazolam) in Spain in intensive care unit (ICU) patients through a cost-minimisation and a budget impact analysis (BIP). The methods consisted of an ICRA assuming a 20-year horizon giving a mild to moderate level of sedation. Time spent at ICU was estimated based on two head-to-head published clinical trials (PRODEX, MIDEX) comparing the two sedative strategies. The time horizon was inpatient stay at ICU considering three effectiveness and cost-effectiveness of the different recruitment methods to determine the best options for generating suitable patient populations for future studies.

**RESULTS:** In total, 762 participants were screened by telephone, but only 182 were admitted to the study. Of the 182 patients who participated, 100 (55%) were recruited through Facebook advertising at a total cost of €2,351, 27 (15%) were recruited by word-of-mouth and 51 (28%) patients by radio and television advertising at an approximate cost of €5,600; 12 (6%) were recruited by Facebook advertising at a total cost of €2,001; 12 (6%) were recruited by radio and television advertising at an approximate cost of €4,640; 22 (12%) had responded to posters/leaflets costing approximately €1,000; and 3 patients (1.5%) were recruited by press advertising at a cost of €890. The patients were associated with recruiting 21 (11.5%) patients by word-of-mouth and 9 (5%) patients by unknown methods. Of the methods of the financial investment, the most cost-effective method of recruiting patients who actually entered the study was Facebook advertising (€20 per patient). Using posters/leaflets for recruitment was also good value, costing approximately €45 per patient. In contrast, press and TV advertising were expensive, costing approximately €160 and €542 per patient, respectively.

**CONCLUSIONS:** Facebook advertising was particularly effective in finding individuals with suitable soft-tissue injuries for a pain study, and 55% of our study participants were recruited by this method. Facebook advertising was also a cost-effective method of recruitment (€20 per patient) and was 27-fold more cost-effective than using press and TV advertising, respectively.

**PSY35**

**THE EFFECTIVENESS AND COST-EFFECTIVENESS OF DIFFERENT METHODS OF RECRUITING PATIENTS TO A PAIN STUDY**

Wade A, Crawford CM

Pain Res, 2017

**OBJECTIVES:** To compare the effectiveness and cost-effectiveness of different methods in recruiting patients with acute soft-tissue injuries to a pain study. **METHODS:** We used a number of different methods to recruit patients with acute soft-tissue injuries in one centre of a large teaching hospital in the UK. The patients were 182 patients who entered the study and the base cost of each method (not including internal resource costs) differed dramatically. Here we have examined the effectiveness and cost-effectiveness of the different recruitment methods to determine the best options for generating suitable patient populations for future studies.

**RESULTS:** In total, 762 participants were screened by telephone, but only 182 were admitted to the study. Of the 182 patients who participated, 100 (55%) were recruited through Facebook advertising at a total cost of €2,351, 27 (15%) were recruited by word-of-mouth and 51 (28%) patients by radio and television advertising at an approximate cost of €5,600; 12 (6%) were recruited by Facebook advertising at a total cost of €2,001; 12 (6%) were recruited by radio and television advertising at an approximate cost of €4,640; 22 (12%) had responded to posters/leaflets costing approximately €1,000; and 3 patients (1.5%) were recruited by press advertising at a cost of €890. The patients were associated with recruiting 21 (11.5%) patients by word-of-mouth and 9 (5%) patients by unknown methods. Of the methods of the financial investment, the most cost-effective method of recruiting patients who actually entered the study was Facebook advertising (€20 per patient). Using posters/leaflets for recruitment was also good value, costing approximately €45 per patient. In contrast, press and TV advertising were expensive, costing approximately €160 and €542 per patient, respectively.

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**PSY36**

**BYPASSING AGENTS PROPHYLAXIS IN PATIENTS WITH HAEMOPHILIA AND INHIBITORS UNDERGOING SURGERY: A DECISION ANALYSIS IN SPAIN**

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**OBJECTIVES:** Surgery poses a risk condition for haemophilia patients. Prophylactic strategy is required to avoid increasing of bleeding. This study aimed to estimate the cost of activated prothrombin complex concentrate (aPCC) and recombinant activated factor VIIa (rFVIIa) prophylaxis in haemophilia patients with inhibitors undergoing surgery. **METHODS:** A decision analytic model was developed to estimate the cost for the Spanish National Health system of providing hemostatic coverage by bypassing agents in haemophilia patients undergoing surgery. Age split (children and adults) and corresponding average weights related to haemophilia population derived from literature. Annual number of surgeries (0.33/patient) was obtained from local data. Dental extraction and major surgeries (2.8/surgery) were selected. Endpoints were major surgical bleeding and minor surgical bleeding. The probability of major surgical occurrence was split into children 22.80% (<14 years) and adults 77.20%. Drug costs (€2017) considered official ex-factory prices with 7.5% of mandatory deduction (€0.764/1U aPCC, 0.54/1U rFVIIa) and the recommended dosing stated on Summaries of Products Characteristics and duration regimens according to each
surgery group (1 day for dental extraction, 4 and 15 days for minor and major surgery, respectively), validated by a haematologists expert panel. RESULTS: The estimated average costs per patient were €10,100.73 (aPCC) and €14,265.89 (rFVIIa) for dental extraction; €24,043.88 (aPCC) and €62,301.08 (FWVia) for minor; and €126,595.81 (aPCC) and €347,731.09 (FWVia) for major surgery. Assuming an estimation of 23 annual treatment episodes for severe haemophilia A patients, the direct medical costs of surgery types (9% for dental extraction, 50% for minor surgery and 31% for major surgery) the total annual cost of prophylaxis would be €1,209,682.35 using aPCC while €3,221,929.28 for rFWVia. CONCLUSIONS: Results suggest that aPCC reduces cost (-62.5%) versus rFWVia. Assuming potential equivalence on effects, aPCC resulting in a cost-saving option, would be the preferred strategy as prophylactic treatment preventing bleeds in haemophilia inhibitor patients undergoing surgeries.

PSY37

COST STUDY OF IMMUNE THROMBOCYTOPENIA (ITP) MANAGEMENT FROM THE FRENCH HOSPITAL PERSPECTIVE

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OBJECTIVES: Few data exist on comparative costs between splenectomized and non-splenectomized ITP patients. The objective of this study was to estimate, with a 6 to 9-year time horizon, the average hospital cost of splenectomized ITP patients including the surgical procedure and their follow-up in comparison with the average hospital cost of non-splenectomized ITP patients. METHODS: A PMSI data analysis was performed on 4 cohorts of incident ITP patients in Iag (2007 to 2010) until 2013, with a follow-up until the end of the study. Hospital stays were selected for patients who underwent a D69.3 in position of: Principal Diagnosis (PD) or Related Diagnosis (RD) or Associated Diagnosis with selected ICD10 codes in PD/RD related to hemorrhage, thrombosis and infection. The list of codes was selected by French clinicians. An incident ITP patient was defined as any patient who had never had an ICD10 code D69.3 on the calendar year preceding the inclusion. Hospital stays with at least one of the 2 CCAM codes (primary or complications) and ICD10 codes 102001 “Total splenectomy by laparotomy” were extracted. For each stay, a disease related group (DRG) cost (€) was calculated according to the French health service perspective. Costs of extra-DRG drugs were not accounted for. RESULTS: The incidence of ITP across France is 3,600-3,900 patients/year. The incident number of hospital stays for ITP was also stable over time (12,000-14,000 stays). The number of splenectomized patients has decreased by 37% since 2007 (152 patients were splenectomized in 2015 vs. 241 in 2007). The average hospital cost of ITP patients varied from 13,428€ to 14,446€ per splenectomized patient and from 3,459€ to 3,599€ per non-splenectomized patient. CONCLUSIONS: This study suggests that hospitalization costs for hemorrhage, thrombosis and infection are higher in the group of splenectomized patients. A cost-effectiveness analysis from a broader perspective (in and out patients) should be conducted.

PSY38

COST IMPACT OF A NOVEL PROPHYLACTIC TREATMENT FOR HAE in Russia: Real-world Experience

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OBJECTIVE: To conduct cost-minimization analysis of 10% intravenous immunoglobulin (IVIG) compared with IVIGs of 5% concentration in treatment of primary immunodeficiencies (PIDs) in adults in Russia for 1-year period. METHODS: A cost-minimization model was developed in Excel 2013 to simulate the direct and indirect costs for 1-year period. Costs included ones for treatment course with IVIGs and IVIG expenditures of infections’ treatment, ones associated with storage and transportation of IVIG, disability pensions and payments for sick leave due to illness of the patient, GDP loss due to disability. Differences in costs are explained by the various duration of IVIG administration, the differences in the average price of IVIG administrations, square feet of refrigerated equipment, the duration of the absence of children in educational institution because of PID according to Stein et al.,2009. RESULTS: According to the cost-minimization analysis, 10% IVIG (Switzerland) therapy (552,618 rubles/9690 $) is the least costly by the end of the 1 year per patient. Therapy with 5% IVIG (Italy) costs 621,567 rubles/10 899 $, 5% IVIG (Austria) and 5% IVIG (Germany) cost 618,223 rubles/10400 & $736,465 rubles/12910 $ consequently. Current rate taken as for 15.06.2017 is 1$ = 57,03 RUB. CONCLUSIONS: Cost-minimization analysis reveals that the use of the 10% liquid intravenous immunoglobulin (Switzerland) is the most cost-saving scheme of therapy of primary immunodeficiency in adults population in the conditions of the healthcare of the Russian Federation for 1-year period.

PSY41

ANNUAL ECONOMIC COMPARISON OF PROPHYLACTIC TREATMENT OF SEVERE HAEMOPHILIA A IN SPAIN

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1Bayer Hispania S. L., Sant Joan Despí (Barcelona), Spain
OBJECTIVES: Haemophilia A is a genetic disorder characterized by deficiency in factor VIII (FVIII), how frequently a person bleeds and its severity depends on how much FVIII is in the plasma. Consequently, severe Haemophilia A is a lifelong condition that requires continuous treatment with expensive therapies. RESULTS: Sensitivity analyses were conducted to determine the range of BPA costs. RESULTS: Estimated annual per patient BPA costs in the 40+ age groups were €1,329,514 for prophylactic use and for on demand €433,065. Variability in annual bleed rates and BPA dosing resulted in a range of BPA costs of +/-26.9% for prophylactic and +/-67% for on demand bypassing agents. The reduction in the number of bleeds with emicizumab reduces the uncertainty in annual bypassing agent drug costs to a range of just +/-4%. CONCLUSIONS: An effective, widely used and fixed dose prophylactic treatment for Haemophilia A patients has the potential to greatly reduce the uncertainty in predicting drug treatment costs which in the UK account for over 95% of the total treatment costs. This should aid in budget planning when, for patients who experience a large number of bleeds, annual BPA treatment can easily breach €500,000 with on demand or over €2,150,000 for prophylaxis.

PSY53

ANNUAL ECONOMIC COMPARISON OF PROPHYLACTIC TREATMENT OF SEVERE HAEMOPHILIA A IN RUSSIA

Granell Villalon M, Garcia Munoz N
1Bayer Hispania S. L., Sant Joan Despí (Barcelona), Spain
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tests, chi-square tests and ANOVA. RESULTS: The study sample consisted of 562 beneficiaries (males [55.16%], females [44.84%]) of which 9.4% were aged ≤54 years, 22.4% 45-54, 30.1% 55-64, and 38.1% ≥65. Average Charlson Comorbidity Index (CCI) score increased (p<0.0016) with age (4.4: 2.13 [0.39], 4.5-54: 2.39 [0.66], 55-64: 2.59 [0.86], ≥65: 2.84 [1.50]). Healthcare utilization other than OP (i.e., OV, ED, IP) increased (p<0.0016) with age and CCI. Total healthcare costs increased with age groups with exception of those ≤54. CONCLUSIONS: In this study, Medicare ADPKD transplant patients experienced an increase in healthcare utilization, but a decrease in healthcare costs between pre-transplant and post-transplant periods and how long this trend continues.

PSY44 Economic burden of immune thrombocytopenia (ITP) in patients receiving eltrombopag (EPAG) and romiplostim (ROMI): Real-world evidence from 26 US institutions

Evidenzefrom 26 US institutions receiving EPAG and ROMI to determine what procedures and care encounters differ between the pre- and post-transplant periods and how long this trend continues.

OBJECTIVES: EPAG and ROMI are commonly used second line (2L) ITP treatments, however, there are limited published data on resource utilization and burden experienced by patients on these treatments in real world settings. We examined resource use and costs in 1TPT patients treated with EPAG and ROMI. METHODS: This study used a syndicated electronic medical records network containing records for inpatients, outpatient services and procedures, diagnoses, AEs, and drug and lab orders for over 29 million patients from 26 US hospitals. Adult patients diagnosed with primary ITP and treated with EPAG or ROMI were matched on age, gender, and geographical location. Resource utilization (RU) and cost were collected over a follow-up period of 8 months following the current armamentarium could lead to increased HRU and costs.

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studies. CONCLUSIONS: This review demonstrated that psoriasis imposes a large burden in a region, however unbalanced research outcomes were observed among those countries/regions. There is still a need for more comprehensive studies on QoL and costs in Asia-Pacific region to inform and support decision-making for best allocation of resources.

PS49
LIFE EXPECTANCY AND COSTS OF TRANSHYRETIN FAMILIAL AMYLOID POLYNEUROPATHY: ANALYSIS FROM 3 CLUSTERS OF PATIENTS
Inês M1, Coelho T2, Conceicao J3, Saramago P4, Carvalho M5, Costa J2
1Instituto de Medicina Molecular, Lisboa, Portugal, 2Unidade Clínica de Paraclinicidade, Hospital de Santo Antonio, Porto, Portugal, 3Centro Hospitalar Lisboa Norte-Hospital de Santa Maria, Lisboa, Portugal, 4University of York, York, UK, 5Centro Hospitalar Lisboa Norte, Lisboa, Portugal, 6Laboratory of Clinical Pharmacology and Therapeutics, Faculty of Medicine, University of Lisbon, Lisbon, Portugal

OBJECTIVES: To estimate the mean life-years and healthcare cost of transthyretin familial amyloid polyneuropathy (TTR-FAP), a rare and life-threatening neurodegenerative disease, using data from the largest and oldest Portuguese patients’ cluster. METHODS: A stochastic Markov model was specified to predict life-years (LY) in three clusters of patients. This is based on health state transitions of patients between three disease stages (Coutinho stages 1, 2 and 3) and death. Transition probabilities between disease stages were based on published results on natural history stage duration making use of an exponential distribution. Natural history overall survival (OS) was captured by the Kaplan-Meier survival estimates from the Portuguese TTR-FAP referral centers. Stage costs were elicited through a panel of Portuguese experts with extensive clinical experience. A societal perspective was adopted. Indirect costs were not included. RESULTS: If untreated, TTR-FAP patients have a decreased mean life expectancy after diagnosis of 12.77 years associated with mean healthcare costs of 125,645 € per patient. TTR-FAP disease induces impressive healthcare costs and a reduced life expectancy. These results can contribute to the economic assessment of new healthcare interventions, as data in this rare disease is sparse. Real-world research results can contribute to augment comprehensive knowledge on this rare disease and to enhanced better informed decisions in the near future.

PS50
BURDEN OF DIABETES MELLITUS IN PATIENTS WITH ACROMEGALY TREATED WITH SECOND-LINE PHARMACOTherapy IN SPAIN
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OBJECTIVES: To evaluate the burden of diabetes mellitus (DM) in adult patients with acromegaly requiring second-line pharmacological treatment after somatostatin analogues therapy was analyzed. Direct healthcare costs regarding surgical and medical procedures, including biologic treatment. The utilization of biologics was the highest among young patients with IBD and the lowest among the oldest patients (0.1% in patients 65+ years). CONCLUSIONS: Direct cost of IBD in Poland impose a significant burden for NHF with around €70 million yearly. Moreover, the study revealed that the treatment pattern and drug utilization depends on patients’ age and diagnosis (“stronger” drugs were more often incorporated into treatment of younger patients and patients with CD).

PS53
EVALUATING THE HEALTHCARE COSTS AND QUALITY OF LIFE FOR PATIENTS WITH SPINAL MUSCULAR ATROPHY (SMA) IN FRANCE
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OBJECTIVES: To assess the economic burden of SMA for patients with infantile and other inherited SMA in France. METHODS: The PMSI (Programme de Médicalisation des Systèmes d’Information), a comprehensive national database of French hospital stays, was used to identify SMA patients in 2014 and 2015 with ICD-10 codes: G120 for infantile spinal muscular atrophy, Type I and G121 for other inherited SMA. Patients’ annual healthcare costs were estimated during the 2015 year, according to the National Health Insurance (NHI) perspective using respective Diagnosis Related Groups (DRGs) and corresponding tariffs (€2016). RESULTS: 183 patients with infantile SMA and 732 with other inherited SMA were identified. At identification time, the median age was 27 years, ranging from 0 to 19 for infantile SMA patients, and 21 years, ranging from 0 to 85 for other inherited SMA patients. Both populations were mainly managed with acute care and most frequently for nervous system or respiratory issues. Based on hospital stays observed in 2015, the overall annual cost of hospitalization was estimated at €1.8 million for patients with infantile SMA and €5.3 million for patients with other inherited SMA. The average hospital cost for infantile SMA patient was €13,400, ranging from €226 to €111,200. 48% of this cost was due to acute care, 45% to rehabilitation care and 7% to home stays. For other inherited SMA patients, the average hospital cost was €8,900 ranging from €157 to €279,600. 56% of this cost was due to acute care, 38% to rehabilitation care and 6% to home stays. CONCLUSIONS: Studying hospitalization data for SMA patients in France provides a better understanding of the economic burden of SMA. If acute care is at the heart of the patient management, the economic burden is balanced between acute care and rehabilitation care.

PS54
COSTS ASSOCIATED WITH TRANSHYRETIN FAMILIAL AMYLOID POLYNEUROPATHY: PROSPECTIVE RESEARCH IN SPAIN
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OBJECTIVES: To identify patients with different outcomes of lumbar spine surgery in terms of pain relief and patients who are subsequently treated with spinal cord stimulation (SCS) and describe the patterns of societal costs and quality of life (QoL) after surgery. METHODS: Patients who underwent lumbar spine surgery between 2000–2012 were identified in the Swedish spine register SWEspine (n=7,427). Patients with persistent pain and subsequently treated with SCS (n=645) were identified through linkage to the Swedish national patient register (“to-be SCS patients”) were identified in the Swedish national patient register “undetermined”; 4 (unchanged) and 5 (worsened) as “persistent pain”. To-be SCS patients: n=645. Three years post-surgery, the corresponding cost was €509, 1,105, €269 and €3,346, respectively. The groups with persistent pain, undetermined patients and to-be SCS patients were compared (p < 0.20, respectively) and worse QoL post-surgery (0.46, 0.62, 0.24), compared with the successful group (baseline: 0.34, post-surgery 0.82). CONCLUSIONS: There was an apparent association between the 3 year pain outcomes of patients with undetermined outcome, persistent pain and to-be SCS patients had less QoL improvement post-surgery and higher costs both before and after surgery compared with the successful group.

PS62
DIRECT COSTS OF INFLAMMATORY BOWEL DISEASES THERAPY IN POLAND - NATIONwIDE DATABASE ANALYSIS
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OBJECTIVES: Inflammatory bowel disease (IBD) constitute a significant burden for the society and the patient. The main aim of our study was to assess the total direct costs of IBD in Poland. METHODS: Information on drugs, dietary supplements, medical devices, outpatient and inpatient services utilized by 60,472 IBD patients from Poland for the years 2012-2014 were collected from databases of the National Health Fund (NHF), the payer for medical services in Poland. Nonparametric Pearson chi² test and Kruskal-Wallis H test with Bonferroni correction for multiple hypothesis testing were used to compare expenditures or treatment utilization by year, patient characteristics and IBD diagnosis. RESULTS: The mean annual health-related expenditures budget among IBD patients were from PLN289.57 million (€69 million) in 2012, PLN305.55 million (€72.75 million) in 2013 and PLN276.54 million (€65.84 million) in 2014. The cost of inpatient IBD diagnostic services accumulated of around half of total expenditures. The main component of public payer’s expenditures was associated with surgical and medical procedures, including biologic treatment. The utilization of immunomodulators differed across years (p < 0.001). Biologics, steroids and immunomodulators drugs were significantly more often used by patients with Crohn disease (CD) then patients with ulcerative colitis (UC). However, consumption of aminosalicylates was more common among UC patients. The use of biologics was the highest among very young patients (under 10) and the lowest among the oldest patients (0.1% in patients 65+ years). CONCLUSIONS: Direct cost of IBD in Poland impose a significant burden for NHF with around €70 million yearly. Moreover, the study revealed that the treatment pattern and drug utilization depends on patients’ age and diagnosis (“stronger” drugs were more often incorporated into treatment of younger patients and patients with CD).
transhyretin familial amyloid polyneuropathy was elicited through a panel of Portuguese experts with extensive clinical experience in TTR-FAP referral centres. A two-stage modified Delphi technique was adopted – on 1st round a questionnaire was applied and on the 2nd round a consensus meeting was implemented. The resources analyzed covered medical visits, laboratory tests, imaging examinations, hospital admissions, and أيام accordingly. The consultation and rehabilitation sessions, medical devices (e.g. pacemaker) and mobility aids (e.g. crutches) and other daily-life supports. Unit costs were extracted from Portuguese official sources wherever possible. Healthcare stage costs were obtained using weighted healthcare resource use and unit costs. A societal perspective was adopted. Disease-modifying oral treatment, liver transplant (with immunosuppressive regimens) and indirect costs were not included. RESULTS: We can estimate that average annual healthcare costs are €4,820, €7,064 and €2,456 among patients in stage 1, 2 and 3, respectively. CONCLUSIONS: TTR-FAP patients have increased associated costs as disease progresses. These results can contribute to the economic assessment of medical treatments, and health policy planning. In particular, the approach of making Real-world registries are important to gain comprehensive knowledge on rare diseases and to document healthcare resource utilization.

PSY55
HEALTHCARE INSURANCE SPENDING AT YEAR 2 BETWEEN TREATMENT GROUPS FOLLOWING DIAGNOSIS OF NONTUBERCULOUS MYCOBACTERIAL LUNG DISEASE IN THE US
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OBJECTIVES: The study compared healthcare insurance spending between treatment groups in patients with nontuberculous mycobacterial lung disease (NTMLD) from a US national managed care claims database. METHODS: Patient (N=12,109) pharmacy claims were identified following NTMLD diagnosis and treatment groups included triple therapy (G1), other antibiotics for NTMLD (G2), and no treatment (G3). Healthcare insurance spending at year 2 was compared between treatment groups. RESULTS: Total drug costs were $13,168, $15,138 and $25,555 ($1576) in G1, G2, and G3, respectively. At year 2, CCI stayed almost unchanged and total payments were $27,199 ($10576) in G1, $25,555 ($1576) in G2 and $26,555 ($1576) in G3. In year 1, CCI stayed almost unchanged and total payments were $26,006 ($11638), $38,133 ($33995) and $19,449 ($7602), respectively. Compared to G2, adjusted total insurance payment was lower in G1 (p=0.008) and G3 (p=0.001), but not statistically significant difference was found between G1 and G3. CONCLUSIONS: Healthcare insurance spending at year 2 was significantly lower in patients treated with triple therapy compared to patients treated with other antibiotics for NTMLD or no treatment. Further research is needed to validate the findings and to delineate the reasons for the differences following the implementation of Abbvie Care 2.0 in patients with immune-mediated chronic diseases along a 1-year time horizon. The hospital perspective was used to collect inputs related to health outcomes and resource consumption in 2 different situations: without and with PSP implementation, for each patient group; rheumatic (rheumatoid arthritis, psoriatic arthritis, ankylosing spondylitis), dermatologic (psoriasis, hidradenitis suppurativa) and gastrointestinal (ulcerative colitis, Crohn's disease). The collected resources included annual number of hospitalizations, number of ambulatory visits, number of emergency visits, annual average visit duration, annual number of emergency visits and disease-related hospital admissions. Health outcomes comprised adherence, persistence, activation (measured with PAM-10 questionnaire) and programme satisfaction for patients and professionals. An expert panel of pharmacists from 6 public hospitals validated and collected data. Unitary costs (€, 2017) for resources derived from local databases. RESULTS: For an hypothetical cohort of patients (41.7% rheumatic, 24.0% dermatologic and 34.4% gastroenterology), the PSP implementation was associated to reduction in routine visits to physicians (-13.1%), hospital pharmacy (-33.4%) and specialized nursey (-9.4%) as well as visit duration (-5.6%, -2.5% and -6.5%, respectively) and patient activation (2.8% of PAM-10-Total score improvement). The average cost savings reported-scores reached 9.6% for patients and 8.10% for professionals. CONCLUSIONS: Abbvie Care 2.0 contributes to reduce burden of hospital visits, being associated to cost-savings and improvement in health outcomes with high satisfaction-levels scores.

PSY56
ANALYSIS OF HEALTH-RELATED QUALITY OF LIFE (HRQOL), AND COSTS OF TREATMENT IN CHRONIC MYELOGENIC LEUKEMIA (CML) IN BULGARIA
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OBJECTIVES: To evaluate the health related quality of life (HRQOL) and costs of treating CML in a hospital setting in Bulgaria. METHODS: Prospective, observational, 1 year lasting study of real life therapy of 42 hospitalized patients in Alexandrovska university hospital in Sofia. HRQOL was evaluated with SF-36 questionnaire. Costs data were collected from clinic and hospital pharmacy’s electronic program. Descriptive statistic and t-test analysis was also performed. The point of view is that of the hospital and patients for 1 year time. RESULTS: 42 patients enrolled form the Haematology clinic in Alexandrovska were distributed according to gender (19 females, 23 males) and represent 71.19% of all treated from CML in the clinic. 2 patients started treatment in December, 1 patient discontinued treatment before the researched period, because of comorbidity with costs> 0EUR, but its medical results were also tracked. HRQOL varied among the CML patient population. 23 patients, with T2 stage 3 mg. Payers’ and employers’ perspectives are taken into account. METHODS: An event-driven decision analytic model estimated the cost-effectiveness of 1-year treatment with Optifast® program over 10 years period in Switzerland. The analysis was performed for the broad population of obese persons (BMI = 30 kg/m2) treated with Optifast® versus placebo. The primary outcome of interest is the quality-adjusted life years (QALY) gained over 10 years versus “no intervention” by reducing the cost of obesity complications. Compared to 4.1 kg per week. This health economic model aims to demonstrate potential cost savings of Optifast® program in Switzerland, as compared to “no intervention” and pharmacotherapy with iraglutide 3 mg. Payers’ and employers’ perspectives are taken into account. ME}
diabetes mellitus. CONCLUSIONS: Reimbursements Optifast® leads to meaningful cost savings. The duration taken from ingestion as compared with sugarloaf 5 mg and with “no intervention” in obese patients. Similar results could be expected in matching healthcare settings of other countries.

PSY60 SECUKINUMAB AS A MORE EFFICIENT ALTERNATIVE FOR THE TREATMENT OF ANKYLOSING SPONDYLITIS: A COST PER RESPONDER ANALYSIS VERSUS ADALIMUMAB AND GOLIMUMAB FROM A PERUVIAN PERSPECTIVE

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OBJECTIVES: The objective of this analysis was to compare the cost per responder based on the Assessment of Spondyloarthritis International Society (ASAS) outcomes at 24 weeks of treatment of ankylosing spondylitis (AS) with secukinumab relative to adalimumab and golimumab from a third party perspective. METHODS: The cost per responder for each treatment was estimated by dividing the drug acquisition cost with its response rate. Drug costs were estimated in US dollars (USD) from public sources: DIGEMID and SEACE for private and public health schemes, respectively. RESULTS: The cost per responder for secukinumab compared to adalimumab and golimumab, respectively, were USD28.519 vs USD68.488 for secukinumab vs adalimumab, respectively. For secukinumab as ASAS40 responder were USD14.616 vs USD38.420, costs per ASAS5/6 responder were USD12.259 vs USD30.004, cost per ASAS20 responder were USD11.923 vs USD18.677, cost per ASAS40 responder were USD14.365 vs USD22.800 for secukinumab vs adalimumab, respectively. The cost per ASAS20 response rates and cost per responder, showed similar results, validating the main analysis. CONCLUSIONS: The cost per responder for all ASAS outcomes were consistently lower for secukinumab versus all comparators, showing the dominance of secukinumab versus adalimumab and golimumab. These findings indicate that it is more efficient to treat AS patients with secukinumab versus adalimumab and golimumab in the Peruvian context.

PSY61 SECUKINUMAB AS A MORE EFFICIENT ALTERNATIVE FOR THE TREATMENT OF ANKYLOSING SPONDYLITIS: A COST PER RESPONDER ANALYSIS VERSUS ADALIMUMAB AND GOLIMUMAB FROM A COLOMBIAN PERSPECTIVE

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OBJECTIVES: The objective of this analysis was to compare the cost per responder based on the Assessment of Spondyloarthritis International Society (ASAS) outcomes at 24 weeks of treatment of ankylosing spondylitis (AS) with secukinumab relative to adalimumab and golimumab from a third party perspective. METHODS: The cost per responder for each treatment was estimated by dividing the drug acquisition cost with its response rate. Drug costs were estimated in US dollars (USD) from public sources: DIGEMID and SEACE for private and public health schemes, respectively. RESULTS: The cost per responder for secukinumab compared to adalimumab and golimumab, respectively, were USD28.519 vs USD68.488 for secukinumab vs adalimumab, respectively. For secukinumab as ASAS40 responder were USD14.616 vs USD38.420, costs per ASAS5/6 responder were USD12.259 vs USD30.004, cost per ASAS20 responder were USD11.923 vs USD18.677, cost per ASAS40 responder were USD14.365 vs USD22.800 for secukinumab vs adalimumab, respectively. The cost per ASAS20 response rates and cost per responder, showed similar results, validating the main analysis. CONCLUSIONS: The cost per responder for all ASAS outcomes were consistently lower for secukinumab versus all comparators, showing the dominance of secukinumab versus adalimumab and golimumab. These findings indicate that it is more efficient to treat AS patients with secukinumab versus adalimumab and golimumab in the Peruvian context.

PSY62 A COST EFFECTIVENESS ANALYSIS OF OBINUTUZUMAB IN THE MANAGEMENT OF CHRONIC LYMPHOCYTIC LEUKEMIA IN GREECE

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OBJECTIVES: The objective of the study was to estimate the cost-effectiveness of obinutuzumab in combination with chlorambucil in first line treatment of chronic lymphocytic leukemia (CLL) in Greece, in patients unsuitable for dose-failed fludarabine therapy. METHODS: A three-state Markov model was locally adapted to reflect the treatment pattern and resource use pattern from a Greek health care setting. The model compared obinutuzumab + chlorambucil (OClb) versus rituximab + chlorambucil (RClb), chlorambucil monotherapy (Clb), ofatumumab + chlorambucil (OClb) and rituximab + chlorambucil (RClb). Patient demographics and clinical data were taken from the CLL11 clinical trial and indirect analysis. Data on resource use were elicited from an expert panel of 6 hematologists with the Delphi technique. RESULTS: The incremental cost-effectiveness ratio (ICER) of OClb versus RClb was estimated at €21,207 and €9,587 and €9,445 per LY and €19,249, €9,467 and €10,026 per QALY gained, respectively. PSAs showed that the probability of OClb being cost effective at a threshold of €50,000 per QALY was 98.9%. CONCLUSIONS: OClb appears to be a cost effective treatment option versus all comparators in first line treatment of CLL in the Greek health care setting.

PSY63 SYSTEMATIC REVIEW OF THE COST EFFECTIVENESS OF MEDICINES FOR THE TREATMENT OF IDIOPATHIC PULMONARY FIBROSIS

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OBJECTIVES: Idiopathic Pulmonary Fibrosis (IPF) is a rare, progressive disease of unknown aetiology with a median survival of 3 years. To date, nintedanib or pirfenidone are the only antifibrotic agents indicated for the treatment of IPF in Western countries. The aim of this study was to systematically review and assess the cost-effectiveness of the two medicines. METHODS: Search strings with “nintedanib”, “pirfenidone”, “cost-effectiveness”, “cost-utility”, “idiopathic pulmonary fibrosis”, “cost-effectiveness assessment” were used in MEDLINE, EBMASE, EMBASE, MEDION, PUBMED, PsycINFO, Cochrane CENTRAL, BIOSIS, Tufts CEA registry, the UK National Institute for Health Research Health Technology Assessment database, Web of Science, and Google. Relevant abstracts, publications and articles in English were collected from inception to June 2017. RESULTS: A total of 12 publications were included in the review. Five studies were conducted in the UK setting, 2 in Canada and 2 in Italy, 1 in France, Ireland and Spain. In 10 studies, IPF was the perspective of health care providers and 2 studies were performed from a payer perspective. Ten studies compared nintedanib versus placebo and 2 other studies compared nintedanib versus pirfenidone. Results of the systematic review suggest that nintedanib is more cost-effective compared to placebo in all settings where it has been studied. Evidence to support the cost-effectiveness of nintedanib compared to pirfenidone is limited. The overall results showed that the probability of nintedanib or pirfenidone being cost effective was 86% in the US and 98% in the UK. CONCLUSIONS: Nintedanib is more cost-effective than placebo in all settings where it has been compared. Evidence to support the cost-effectiveness of nintedanib compared to pirfenidone is limited.

PSY64 THE COMPARATIVE PHARMACOECONOMIC ANALYSIS OF USING DIFFERENT AGONISTS OF THE THROMBOPOIETIN RECEPTOR IN ADULT PATIENTS WITH CHRONIC IDIOPATHIC TROMBOCYTOPENIC PURPURA IN ACTUAL PRACTICE IN RUSSIA

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OBJECTIVES: To perform cost-effectiveness analysis using different thrombopoietin (TPO) receptor agonists - romiplostim and eltrombopag - in adult patients with chronic idiopathic thrombocytopenic purpura (ITP) taking into account compliance in the management of them in actual practice in Russia. METHODS: MS Excel based model of medical care patients with chronic ITP has been developed based on the research hypothesis that the level of patient compliance in certain categories can affect the effectiveness of long-term therapy with different TPO receptor agonists – romiplostim 250 mcg SC once weekly and eltrombopag 50 mg per os once daily. To evaluate the real clinical practice of patients with chronic ITP in Russia interview of experts was conducted. Direct medical costs including drugs, injections, therapy monitoring (CBC, platelet count), rescue treatment, bleeding treatment (grade 3, 4 with the WHO bleeding scale), outpatient visits were calculated for 1 patient for 1 year. The total place of response was included in the model as the effectiveness criteria. RESULTS: A survey of experts showed that the using of romiplostim is associated with a higher compliance in patients with a chronic ITP, therefore with a higher efficacy of treatment. The total costs of treatment per patient with chronic ITP within 1 year were €67,468 with romiplostim and €39,975 with eltrombopag. However, taking into account a possible low level of compliance of patients in certain categories in real clinical practice in Russia the cost-effectiveness ratio for romiplostim amounted to €23,270/1 QALY, while for eltrombopag was evaluated $11,071/1 QALY. CONCLUSIONS: Using of romiplostim in the treatment of adult patients with chronic ITP was effective and economically justified treatment option in real clinical practice in Russia in patients with low compliance.
Objectives: This research focused on a rare genetic disease in which the body does not work to fix damaged cells correctly. The patient's standard of care (SOC) used was heparin, however, patients receive off-label trypsinidase (TG) lowering treatments. There is limited literature on the long-term clinical and cost-effectiveness of adding TG lowering therapy to the management of these patients. The objective of this work was to develop a modelling framework that would adequately capture the range of benefits and costs associated with adjunct TG lowering therapy in the management of patients with this disease. METHODS: A decision analytic, Markov model was developed to evaluate the costs and outcome of current SOC used to TG lowering therapies (including fibrates and statins) for patient management. The model included five health states: high risk TG level, low risk TG level, acute metabolic morbidity (event – tunnel state), post-high risk TG level, and post-low risk TG (L). A cycle length of 3 months, and the time perspective of the model was one year. Clinical outcomes, costs, and utilities were obtained from publicly available sources and through discussions with clinical experts. RESULTS: The model adequately captured the treatment patterns of patients with the disease and the unique range of benefits, including potential quality of life improvements, as well as the differences in costs that accrue with different treatment options. The major value drivers for the TG lowering therapy included quality of life, cost of therapy, and relative treatment efficacy. Conclusions: Based on these findings, it is feasible to model the lifelong benefits that accumulate with adjunct TG lowering therapy and compare overall benefits and costs to current SOC.

PSY66
IDENTIFYING EVIDENCE ON THE COST-EFFECTIVENESS OF TREATMENTS AND COSTS/RESOURCE USE AND QUALITY OF LIFE OF PATIENTS WITH FOLLICULAR LYMPHOMA AND MARGINAL ZONE LYMPHOMA: SYSTEMATIC REVIEWS
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Objectives: Systematic reviews were conducted to identify evidence on the cost-effectiveness of treatments, costs/resource use, and health-related quality-of-life (HRQoL) outcomes for patients with follicular lymphoma (FL) and marginal zone lymphomas (MZL).
Methods: Key electronic databases, relevant conference proceedings, and publically available information from health technology assessment bodies were searched between March-April 2017. Results: Twenty-three economic evaluations investigated patients with FL, one relevant patients with FL and MZL. Five costs/resource use and four HRQoL studies were identified in FL, none in MZL. Most models used a Markov approach from a healthcare provider perspective. US studies and model comparisons with FL reported incremental cost-effectiveness ratios (ICERs) of $13,283-$25,672/QALY for first-line rituximab + chemotherapy versus chemotherapy, £108,000 (rituximab) to £130,300 (rituximab-alone) for first-line patients ranged from $108,000 (rituximab) to $130,300 (rituximab-alone) for first-line rituximab + chemotherapy versus chemotherapy, £27,988/QALY for OBZ maintenance versus BEN. In the UK studies, ICERs were £7,720-10,834/QALY for sequences with ustekinumab as first-line therapy had significantly better overall drug survival than all other biologics as first-line treatment for psoriasis, and were therefore more cost-effective. Scenario analysis with newer therapies suggested that sequences with ustekinumab and infliximab, with the remaining therapies tested in scenario analyses using different survival and quality of life assumptions. Parameters related to efficacy, cost and utility were tested in sensitivity analysis. Conclusions: Results from the study are of interest to stakeholders and decision makers in both the private and public sector, as the results show that sequences with ustekinumab as first-line therapy had significantly better overall drug survival than all other biologics as first-line treatment for psoriasis, and were therefore more cost-effective. Scenario analysis with newer therapies suggested that sequences with ustekinumab and infliximab, with the remaining therapies tested in scenario analyses using different survival and quality of life assumptions. Parameters related to efficacy, cost and utility were tested in sensitivity analysis. Conclusions: The results of this analysis with real-world drug survival data suggest that ustekinumab represents a more cost-effective treatment than other biologics as a first-line treatment for CD-MARD-IR patients with psoriasis.

PSY67
EVALUATING THE ADDITION TO FORMULARY OF BILIRUBIN FOR THE TREATMENT OF SYSTEMIC LUPUS ERYTHEMATOSUS: A COST-EFFECTIVENESS MODEL
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Objectives: Systemic lupus erythematosus (SLE) is a chronic, multisystem autoimmune disease that causes potentially irreversible organ damage. A previous cost-effectiveness model (CEM) evaluating intravenous belimumab in SLE was a patient microsimulation model with a series of risk equations describing disease activity and survival models to depict time to organ damage. This model was substantially revised to create a new Markov model that captures the complexities of SLE and analyses subcutaneous belimumab. Methods: Post hoc regression analyses of the intravenous belimumab US long-term extension study (BEL112223) and the Toronto Lupus Cohort (TLC) were used to identify disease activities, disability, survival, and SLE-related mortality (HO-15-18579/206347). Costs were based on LUCIC (Systemic Lupus Erythematosus Cost of Care in Canada; 114745). Results demonstrated that the Systemic Lupus International Collaborating Clinics/American College of Rheumatology Damage Index (D), disease activity index (DAI) and the degree of organ damage (OD) were insufficient to capture organ damage effects. Thus, health states were defined by treat- ment, SDF score and presence/absence of cardiovascular damage. The model uses a 1-year cycle length to value over a multi-decade lifetime time horizon. Patient distribution at time 0 and Year 1 outcomes are based on source clinical trials. Thereafter, disease activity measured by adjusted mean SLEDAI (AMS), flares, and probability of organ damage are modeled separately for each health state and dynamically updated each cycle. Health state costs and utilities are based on multiple tivariate regression analyses that increment payoffs for each cycle. Results: A new CEM framework was developed within a Markov model, which further allowed incorporation of data for SLE, flare and organ damage. Analysis: Total costs and outcomes were similar to the previous CEM. Conclusions: This modelling study has simplified clinical assumptions of SLE to produce a Markov model that may be suitable for additional stakeholders due to its increased transparency and shorter run time. Study funded by GSK.
related to modelling rare diseases. METHODS: No model in FFS was identified in the long-term perspective data regarding the progression of the disease and its management were obtained through clinicians’ interviews and questionnaires. Among complications associated with amyloidosis, only renal complications were included due to lack of data. Transition probabilities for amyloidosis complications were obtained from a UK study including FFS patients. While efficacy and utility data came from the phase III CLUSTER study (no stratification by age group was possible due to low sample sizes), safety data were obtained from the Beta-Confident registry, and drug costs were estimated by the drug manufacturer. A per-patient analysis of the QALYs and costs were performed.

**RESULTS:** The model combined a 16-week decision tree evaluating response and dosage patterns with a Markov model estimating the lifetime consequences of the disease. Health states were defined by signs or symptoms due to amyloidosis, spontaneous response, non-response, amyloidosis, ESRD and death. Three age-group cohorts were used to better account for the disease management in children. Sensitivity analyses (OBSA) were undertaken.

**Conclusions:** Peri-operative IDA treatment with FCM can be considered in colorectal cancer surgery patients to reduce the need for red blood cell concentrate (RBC), surgical complications, mortality and the hospital length of stay (LOS) in patients with preoperative IDA. The objective of this study is to model the cost impact of peri-operative IDA treatment with FCM vs. usual care prior to colorectal cancer surgery in the French health care setting. METHODS: The per-operative IDA treatment with FCM was compared to usual care in abdominal surgery mostly colorectal cancer surgery patients (73% in FCM group and 85% in usual care group). Reported reduction in RBC transfusion (12.5% vs. 31.5%) and LOS (6 days vs. 9) were used as clinical metrics of the model. Cost parameters for hospitalization are based on the French Diagnostic-Related Groups (DRG) and for hospital activity on the French national hospitalizations database (PMSI). DRG were identified based on the CIM-10 diagnosis for colorectal cancer (C18). The study sample was stratified into four age groups (≤ 60, 61-70, 71-80, > 80 years) with 100 patients per group. The model was adapted to a Health insurance perspective. One-way sensitivity analyses (OBSA) were undertaken.

**RESULTS:** A total of 20,485 hospital stays for CRC recurrences were extracted from the PMSI database. Results from the model suggests that peri-operative IDA treatment with FCM reduces the overall costs in a cohort of 100 patients from €570,373 to €426,358, corresponding to potential savings of €144,215. Sensitivity analysis showed that LOS and cost per day in hospital ward were the main drivers of the model. **CONCLUSIONS:** The model was constructed to analyze the cost-effectiveness of pegvisomant and pasireotide in patients with acromegaly resistant to somatostatin analogues (SSA) from the perspective of the Spanish NHS. The model was sensitive to changes in time horizon and PFS distribution of patients from the beginning of treatment to death. The model allowed the estimation of the quality-adjusted life-years (QALYs) from the perspective of the Spanish NHS.

**PSY73**  
**IMPACT OF METABOLIC SURGERY ON COST AND LONG-TERM HEALTH OUTCOME: A COST-EFFECTIVENESS APPROACH**  

**Objective:** The impact of metabolic surgery on health and health care costs in patients with morbid obesity is poorly known in Spanish populations. This study aimed to evaluate the costs and outcomes of metabolic surgery compared to conventional treatment (CT) over a 20-year time horizon. **Methods:** This is a probabilistic cost-effectiveness analysis (CEA) study comparing the outcomes and costs of metabolic surgery (MS) with those of conventional treatment (CT) in patients with morbid obesity or obesity with Type 2 Diabetes Mellitus (T2DM). The costs were calculated based on published Spanish data between 2010 and 2016. Costs were calculated based on hospital-records of a metabolic surgery unit in a Spanish public hospital. A Markov model with a cohort of 1,000 patients was used. **Results:** MS is associated with substantial savings in long-term health-care costs, expected health-benefits and reduced onset of complications. MS significantly increases the quality-of-life.

**PSY74**  
**COST-EFFECTIVENESS OF BARIATRIC SURGERY COMPARED TO CONVENTIONAL TREATMENT FROM A SOCIETAL PERSPECTIVE IN GERMANY, FRANCE, ITALY AND THE UK**  

**Objective:** Obesity and diabetes are growing epidemics in European countries. Bariatric surgery is recommended for the treatment of patients with moderate or morbid obesity, particularly in patients who also have type 2 diabetes mellitus (T2DM). The objective was to investigate the cost-effectiveness of bariatric surgery in patients with morbid obesity or moderate obesity with obesity-related comorbidities, T2DM patients with BMI ≥35, T2DM patients with BMI ≥30, <35, and all patients with mild obesity, from the societal perspective in Germany, France, Italy and the UK. **Methods:** A Markov model with a cohort of 1,000 patients was used to evaluate the cost-effectiveness of bariatric surgery compared to conventional treatment (CT) over a 20-year time horizon. Model inputs from the literature informed the complex nature of obesity and its associated comorbidities, including T2DM, stroke, myocardial infarction, cancer, and osteoarthritis. Factorial sensitivity analyses were performed to assess the impact of uncertain input parameters. **Results:** The incremental cost-effectiveness ratio was €11,824 per patient and a QALY gain of 2.88. Operated persons exhibit cost-savings for hospitalization ward, while the non-operated persons exhibit incremental costs of €30,382 per patient and a QALY gain of 1.18. In the model, MS was compared with the societal perspective in all countries and populations, except in the UK T2DM population with BMI ≥30, <35, where the ICER was €559/QALY. Probabilistic sensitivity analyses showed the model results to be robust to uncertainty. **Conclusions:** Bariatric surgery is highly cost-effective in Germany, France, Italy and the UK. Full implementation of existing clinical guidelines would reduce the burden of obesity and T2DM and generate economic benefits for society.

**PSY75**  
**COST-EFFECTIVENESS ANALYSIS OF SECOND-LINE PHARMACOLOGICAL TREATMENTS OF ACROMEGALY IN SPAIN**  

**Objective:** To estimate the cost-effectiveness of second line pharmacological treatments in patients with acromegaly resistant to somatostatin analogues (SSA) from the perspective of the Spanish NHS. The study aimed to evaluate the impact of the use of the new SSA pasireotide compared to conventional treatment (CT) and the SSA pegvisomant. A Markov model was constructed to analyze the cost-effectiveness of pegvisomant and pasireotide in SSA-resistant acromegaly, simulating the progression of the disease in a cohort of patients from the beginning of treatment to death. The model allowed the estimation of the quality-adjusted life-years (QALYs) from the perspective of the Spanish NHS. Treatment with pegvisomant or pasireotide was analyzed and compared to somatostatin analogues (SSA) treatment. Efficacy data was obtained from clinical trials and the economic data from a Spanish database (2016). A univariate sensitivity analysis was performed to evaluate the influence on cost-effectiveness of the most relevant parameters.
variables, together with a probabilistic sensitivity analysis to assess the robustness of the results. RESULTS: The Incremental Cost-effectiveness Ratios (ICERs) for four different regimens vs. SSA was $193,070/QALY. The ICER of pasireotide vs. SSA was $555,600/QALY. ICER was mainly driven by the incremental efficacy (4.41 QALYs for pasireotide vs. SSA and 0.71 QALYs for pasireotide vs. SSA), with a similar increase in costs ($410,000 for pasireotide vs. SSA and $396,000 for pasireotide vs. SSA). Using pasireotide instead of octreotide and reducing the discount rate decreased the ICER in both cases. In contrast, increasing pasireotide and pasireotide doses and reducing the time horizon lead to an increase in the ICER. CONCLUSIONS: The ICER of pasireotide vs. SSA was six times higher while office visits were lower in patients with severe vs. mild BREs, although with BREs vs. no BREs. ER visits, hospitalizations and diagnostic procedures were no BREs vs. without: ER visits (29%, 52%, 60%), hospitalizations (26%, 48%, 65%), diagnostic procedures (46%, 67%, 70%). The rates of diagnostic procedures were also significantly higher in patients with BREs vs. no BREs. ER visits (29%, 52%, 60%), hospitalizations (26%, 48%, 65%), diagnostic procedures (46%, 67%, 70%). The rates of diagnostic procedures were also significantly higher in patients with BREs vs. no BREs. ER visits (29%, 52%, 60%), hospitalizations (26%, 48%, 65%), diagnostic procedures (46%, 67%, 70%).

PSY76 PRODUCTIVITY COSTS RELATED TO BORTEZOMIB AND CARFILZOMIB ADMINISTRATION TO MULTIPLE MYELOMA IN PATIENTS IN VIHevaara V1, Mankinen P2, Soini E1, Martikainen P2, Torvinen S1

OBJECTIVES: Bortezomib and carfilzomib treatments for multiple myeloma (MM) are increasingly used in the treatment of MM. Resource utilisation and costs associated with intravenous patient-controlled analgesia (IV PCA) morphine were estimated to generate a per-patient cost estimate of an episode of treatment with IV PCA-morphine. This study estimated potential absenteeism-based PCs related to bortezomib and carfilzomib administration in Finland. METHODS: PCs were estimated conservatively based on local practices. The local practices in the treatment of patients with MM in the different hospitals. Cycles of three weeks and four administrations for bortezomib, and four weeks and six administrations for carfilzomib were calculated. Travel times to and from hospital were estimated based on the average hospital distance in the regions of the analyzed ICERs for pegvisomant vs. AAS and pegvisomant vs. AAS. The costs for anesthesia were estimated to be significant. In addition, travel time to and from hospital forms a significant proportion of total PCs, at least in sparsely populated areas such as Finland. Therefore, novel oral medications including ixazomib have significant potential in reducing absenteeism-based PCs during the treatment of MM.

PSY77 HEALTH CARE RESOURCE USE (HCUR) DUE TO BLEEDING RELATED EPISODES (BRE) IN PATIENTS WITH IMMUNE THROMBOCYTOPENIC PURPURA (ITP)

RECEIVING ERTOMBPAG (EPAG), ROMIPLOSTOM (ROMI), OR RITUXIMAB (RITUX); REAL-WORLD EVIDENCE (RWE) FROM 27 US INSTITUTIONS

Kwon C1, Forsythe A1, Roy A2, Bhor M2, Socorro O Portella M2, Tremblay G1

Objectives: To evaluate the impact of low adherence in patients with psoriasis (PsO) and psoriatic arthritis (PsA) treated with biological therapy (adalimumab) in Slovenia. Methods: Flexible Markov state transition cohort models were adapted using locally-specific data separately for each indication taking into account the complexity of treatment pathways in PsO and PsA. Health states within both models were assessed either on the basis of Psoriasis Area Severity Index for PsO or Psoriatic Arthritis Response Criteria and Health Assessment Questionnaire for PsA. Adalimumab was compared with best supportive care (BSC) following the design of clinical trials and requirement that the cost-effectiveness of adalimumab is appraised in a conservative manner. Results: In patients suffering from PsO, the treatment with adalimumab when compared to BSC resulted in ICER of €11,005 per QALY for full (100%) adherence, and €16,711 per QALY for real-life (50%) adherence. In patients suffering from PsA resulting ICER was €16,313 per QALY for full (100%) adherence and €37,865 per QALY for real-life (50%) adherence. Even the adherence that is often deemed satisfactory (75%) had pronounced effect on cost-effectiveness of treatment with adalimumab when compared to BSC (ICER of €33,954 per QALY for PsO and €26,948 per QALY for PsA). The sensitivity analysis showed robustness of findings for both groups of patients. Conclusions: Our pharmacoeconomic analysis indicates that cost-effectiveness is markedly altered by low adherence to the treatment with adalimumab in patients suffering from PsO and PsA. The findings of our study have potential implications for introduction of adherence-enhancing interventions.

PSY78 RESOURCE UTILISATION AND COSTS ASSOCIATED WITH INTRAVENOUS PATIENT-CONTROLLED ANALGESIA MORPHINE FOR POST-OPERATIVE PAIN MANAGEMENT IN A TEACHING HOSPITAL SETTING IN IRELAND

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OBJECTIVES: Information regarding resource utilisation, hospital logistics, and costs associated with intravenous analgesia (ICVA) morphine treatment is limited. In this prospective study, conducted between March 2016 and June 2016 in The Adelaide and Meath, incorporating The National Children’s Hospital (AMNCH), we sought, these aspects of treatment with IV PCA-morphine were examined. METHODS: Information about IV PCA morphine related staff time and resource use were recorded for patients (n = 25) who had undergone elective surgery. The nature of IV PCA morphine complications, e.g. injection site reactions, pumps, or patients, were also recorded. The unit cost of each staff member and resource used for an episode of treatment with IV PCA-morphine were derived from national and local sources. The time required by staff and resource costs was calculated to generate the total cost of an episode of treatment with IV PCA-morphine. RESULTS: An episode of IV PCA-morphine treatment lasted on average 1.7 days and had a mean cost of €148.20. This cost was made up of staff time (68%), drug costs (1.1%) and consumable costs (29.6%). The mean time spent by staff on IV PCA-morphine treatment tasks over the course of treatment in the recovery room and on the ward was 124 minutes (Recovery room (39 minutes), Ward (85 minutes). Patients enrolled into this study were 56% male, with an ASA health classification of I (17%), II (43%) and III (40%) were on a concomitant medication prior to their procedure and 20% required additional analgesic treatment during recovery. Conclusions: Substantial staff time and costs are associated with IV PCA-morphine treatment. In the light of these costs, consideration of the potential availability of less costly alternatives is recommended.

PSY79 DETERMINING THE SHARES OF THE COST OF ANESTHESIA AND INTENSIVE CARE MEDICINE IN STATIONARY AND STATIONARY PART AND THEIR DEVELOPMENT SINCE 2006 IN GERMANY

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OBJECTIVES: The D-GRG system defines the anesthesia and intensive care medicine as its own cost centers and recorded financial expenses very differentiated. Thus, it is possible to calculate the total costs for the two areas, e.g. for anesthesia interven- tions. The analysis should demonstrate the cost and determine changes over time since 2006. METHODS: The cost matrices from the German DRG Instituto identi- fied the cost center allocation for the German Hospital (AMNCH), Tallaght, these aspects of treatment with IV PCA-morphine were estimated to generate a per-patient cost estimate of an episode of treatment with IV PCA-morphine. This study estimated potential absenteeism-based PCs related to bortezomib and carfilzomib administration in Finland. METHODS: PCs were estimated conservatively based on local practices. The local practices in the treatment of patients with MM in the different hospitals. Cycles of three weeks and four administrations for bortezomib, and four weeks and six administrations for carfilzomib were calculated. Travel times to and from hospital were estimated based on the average hospital distance in the regions of the analyzed ICERs for pegvisomant vs. AAS and pegvisomant vs. AAS. The costs for anesthesia were estimated to be significant. In addition, travel time to and from hospital forms a significant proportion of total PCs, at least in sparsely populated areas such as Finland. Therefore, novel oral medications including ixazomib have significant potential in reducing absenteeism-based PCs during the treatment of MM.

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The general public in the UK, France, Germany, Italy, Sweden and the USA to confirm the understanding and appropriate use of the descriptions. TTO interviews with a 10-year trade-off period and a 100-point visual analogue scale rating exercise were conducted with 100 adults from the general public in each country. **RESULTS:** The TTO valuation led to consistent findings across countries. Utility values obtained for the healthy state corresponded to mild, moderate and severe haemophilia demonstrated a decline of 0.08, ranging from 0.86 (Sweden) to 0.73 (Italy) for the moderate health state and 0.68 (Germany/Sweden) to 0.68 (Italy), and for the severe health state 0.67 ranging from 0.71 (Germany) to 0.64 (UK). The most severe disutility related to the addition of a haemophilia-related complication was associated with the burden of end-stage joint disease with a mean disutility of 0.28 ranging from 0.10 to 0.23 in France to 0.36 in the UK. This study underlines how French, Italian, German, Swedish, US and UK populations value haemophilia-related health states and stresses the importance of minimizing disease impact and avoidance of associated complications.

**PSY4**

**ESTIMATION OF THE HEALTH-RELATED QUALITY OF LIFE BENEFITS OF TREATMENT FOR SPINAL MUSCULAR ATROPHY (SMA)**

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**OBJECTIVES:** Spinal muscular atrophy (SMA) is a rare autosomal recessive neuromuscular disease that causes progressive proximal muscle weakness and paralysis. Recently nusinersen became the first treatment approved for patients with SMA. This work was designed to assess caregivers’ satisfaction with their child’s current and past biological treatment experience for SMA. Caregiver’s satisfaction at the time of completing the questionnaire was assessed based on their perception of the efficacy, safety and convenience of each biological treatment and adherence to the treatment. Respondents answered based on all treatment experience, regardless of current treatment. Caregivers perceived treatment satisfaction with canakinumab was consistently high and equal to or higher than caregivers’ satisfaction with anakinra or tocilizumab. Significantly more caregivers were not stressed or anxious when their child received canakinumab (48%) and thought that canakinumab was convenient (60%), whereas only 5% and 14% of caregivers, respectively, thought the treatment was ‘inconvenient for practical reasons’ in the tocilizumab to give’ or ‘forgetting to take the treatment’ in the anakinra group (17%) or the anakinra group (12%) and tocilizumab (35%).

**RESULTS:** Anakinra had a high ‘complete improvement in symptoms’ (48%). In contrast, anakinra and tocilizumab were convenient (69%), caused no burden to them (38%) and demonstrated complete improvement in symptoms (48%). In contrast, anakinra and tocilizumab were reported to be inconvenient by 58% and 48%, caused moderate to extreme burden in 64% and 71%, respectively, and anakinra had a high ‘no improvement of symptoms’ rate (24%). Overall, 41% of caregivers thought their child was not stressed or anxious receiving canakinumab compared to anakinra (12%) and tocilizumab (35%). Complete treatment compliance as follows: canakinumab (96%), anakinra (85%) and tocilizumab (81%). The main reasons for missing treatment were due to ‘forgetting to give’ or ‘forgetting to take the treatment’ in the anakinra group (17%) or the treatment was found to be ‘inconvenient for practical reasons’ in the tocilizumab group (24%). According to caregivers, anakinra significantly improved SMA symptoms in 48% of children on canakinumab or tocilizumab and 32% on anakinra. Canakinumab treatment was associated with higher treatment satisfaction and adherence compared to tocilizumab and anakinra for SMA.

**PSY5**

**LEGAL PREFERENCES FOR FUNDING ORPHAN DRUGS IN THE UK: AN APPLICATION OF VALUE BASED PRICING USING DISCRETE CHOICE EXPERIMENT METHODS**

Source SM, Plumpton CD, Hughes DA
Banger University, Bangor, UK

**OBJECTIVES:** Orphan drugs tend to be expensive and many may not provide value for money by standard measures of cost-effectiveness. Their general availability and widespread use is unlikely to influence the general public to fund drugs that had large treatment benefits 0.8536 (95% CI 0.8044 to 0.9027) and improvements to every day life 0.6589 (95% CI 0.6261, 0.6918), regardless of the prevalence of the disease. According to the utility model, 6 of 12 NHS approved orphan drugs passed the reimbursement preference threshold of the general population. Respondents were not prefer NHS funding for 5 of the remainder (VBP < £0 per patient per year), while one would be acceptable with a 9-fold reduction in the list price. **CONCLUSIONS:** The VBP suggests that the treatment benefit of a drug is the primary driver when determining the value of a drug. Based on our model, there does seem to be a preference from the general population to fund high cost treatments regardless of disease prevalence.

**PSY6**

**SOCIETAL PREFERENCES FOR FUNDING ORPHAN DRUGS IN THE UK: A PERSON CENTRED STUDY**

Source SM, Plumpton CD, Hughes DA
Banger University, Bangor, UK

**OBJECTIVES:** Orphan drugs for rare diseases tend to be high cost treatments. Current NHS appraisal and reimbursement assessment methods do not incorporate societal preferences for money by standard measures of cost-effectiveness. Their general availability and widespread use is unlikely to influence the general public to fund drugs that had large treatment benefits 0.8536 (95% CI 0.8044 to 0.9027) and improvements to every day life 0.6589 (95% CI 0.6261, 0.6918), regardless of the prevalence of the disease. According to the utility model, 6 of 12 NHS approved orphan drugs passed the reimbursement preference threshold of the general population. Respondents would not prefer NHS funding for 5 of the remainder (VBP < £0 per patient per year), while one would be acceptable with a 9-fold reduction in the list price. **CONCLUSIONS:** Estimation of the VBP suggests that the treatment benefit of a drug is the primary driver when determining the value of a drug. Based on our model, there does seem to be a preference from the general population to fund high cost treatments regardless of disease prevalence.
a drug treatment for patients with rare versus common diseases were determined. Further (unpublished) data were asked to allocate funding between a drug treatment for rare disease and i) increase waiting list or ii) reduced NHS staffing. Costs and treatment benefits were varied in each scenario. RESULTS: The general population generally preferred to distribute funds equally between patients with a common disease and patients with a rare disease. A preference for treating patients with: i) rare, ii) common disease, or iii) equal allocation of funds, were: 32%, 14%, 54%. When cost of rare disease treatment increased, we observed less support for treating rare disease patients (19%, 54%, 27%). However, this was reversed if the drug also offered greater treatment benefits (71%, 50%, 44%). When asked to trade off between the alternative framing scenarios, respondents preferred to not increase waiting lists (45%, 9%, 46%, equal cost scenario) to fund treatments for rare diseases. However, respondents preferred replacing vacant NHS staff posts when treatment cost increased (31.2%, 34.4%, 34.4%). CONCLUSIONS: There is little support among the UK general public for prioritising treatments on the basis of disease rarity alone; although there was a preference on an 11 point numeric rating scale (NRS) for pain. One patient was affected by a bug in the data collection system, but the problem was discovered and resolved before the next patient was scheduled. The remaining 181 patients used the tablets to input data on their pain levels at 17 time points over a 2 hour period following gel application, allowing the primary study objective to be assessed. Excluding the patient affected by the bug, who was not assessed, only thirteen patients had some missing time point data and there were only 18 missing data points from a total of 3,077 (0.6%). CONCLUSIONS: The tablet program was easy to use, resulting in high completion rates. Electronic prompting meant that data could be reliably collected at precise time points, and patients could input database themselves, which reduced labour costs.

PSY90
Burdens of Albinism: Creation of a Questionnaire
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OBJECTIVES: There is little research on the quality of life of people with albinism. The aim of this study was to: i) develop a disease-specific questionnaires for albinism, ii) validate this disease-specific functional rating scale by examining its relationship with validated questionnaires SF12), MetraPVC, Body-Image-States-Scale-BRISS) and Daily-Life-Quality-Index(DLQI) and iii) calculate the pharmacotherapy cost and quality of life for patients with albinism.

RESULTS: Based on an initial verbatim report, the workgroup composed of PRO’experts, dermatologists and representatives of the Genespoir association. Validated questionnaires SF12), MetraPVC, Body-Image-States-Scale-BRISS) and Daily-Life-Quality-Index(DLQI) were also administered in order to ensure external validity. The questionnaire was based on an initial group composed of a list of items, which were transcribed and reformulated into questions. In this phase, 65 items were defined, reorganized and regrouped according to content, then reduced to 24. This questionnaire was proposed to 87 subjects with albinism during the development phase. 63 responded. During the validation phase, Principal Component Analysis (PCA) was conducted on the 24 items, which allowed the questionnaire to be reduced to 20 questions [Q]. The standardized regression coefficients were high (ranging from 0.56 to 0.86) and their corresponding factor loadings on their normalized regression coefficients, each group of questions was linked to one of the following four dimensions: “living with the disease”(Q8), “daily life”(Q9), “resignation”(Q8), and “fear of the future”(Q6). To verify external validity, the correlation coefficients of the questionnaire were also calculated with the following validated questionnaires: SF12, MetraPVC, BRISS, and DLQI. Strong correlation was found and no external validity was confirmed. CONCLUSIONS: This questionnaire represents the first specific questionnaire for people with albinism. This questionnaire was validated using an internal validity and an external validity. This study was completed relatively quick to complete, which will allow the burden over time to be evaluated with a reproducible questionnaire. To ensure this questionnaire can be used by as many people as possible, cultural and linguistic validation in US English was conducted with the original French version.

PSY88
Exploring Concurrent Validity of the CLN2 Clinical Rating Scale: Comparison to PedsQl Using Mixed Effects Modelling and Data from a Phase 1/2 Single-Arm Trial
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OBJECTIVES: Neuronal Ceroid Lipofuscinosis type 2 (CLN2) disease is a rare, autosomal recessive disorder typically manifesting in late-infantile children. The disease results in progressive language loss, movement disorders, pain, dementia, visual loss and ultimately death at 8–12 year of age. The 0–100 point Motor-Language Clinical Rating Scale is the primary endpoint in the pivotal cerliponine alfa trial for the treatment of CLN2 disease. This analysis aimed to concurrently validate this disease–specific functional rating scale by examining its relationship to the Paediatric Quality of Life Inventory (PedsQl) tool, for which a minimal clinically important difference of 4.5 has been established. METHODS: Data from the phase 1/2 single-arm trial of 23 CLN2 patients treated with cerliponine alfa for a minimum of 7 weeks were used in this analysis (NC1701907087). To determine the relationship between the clinician-reported CLN2 Clinical Rating Scale total score and the proxy-reported PedsQl score at both the total and domain level, simple linear regression followed by mixed effects analyses (to account for within-subject correlation) were fit. RESULTS: For patients treated with cerliponine alfa for a minimum of 7 weeks, there was very strong evidence of a positive correlation between the PedsQl total score and the Clinical Rating Scale total score (p<0.001; simple regression adjusted R-squared=0.87; mixed effects CLN2 Clinical Rating Scale parameter estimate=9.6, 95% confidence interval [9.4, 9.8]) and within a set window, using a sliding scale (0–10). Patients were stored on an internal database within the application and subsequently uploaded to a local database server. The primary objective of the study was to determine the time to onset of significant pain relief in patients applying ibuprofen gel, ibuprofen gel with levomenthol, or diclofenac gel to treat soft tissue injuries. Significant pain relief was defined as a reduction of 50% in the investigator’s pain rating scale within 90 minutes (NRS). One patient was affected by a bug in the data collection system, but the problem was discovered and resolved before the next patient was scheduled. The remaining 181 patients used the tablets to input data on their pain levels at 17 time points over a 2 hour period following gel application, allowing the primary study objective to be assessed. Excluding the patient affected by the bug, who was not assessed, only thirteen patients had some missing time point data and there were only 18 missing data points from a total of 3,077 (0.6%). CONCLUSIONS: The tablet program was easy to use, resulting in high completion rates. Electronic prompting meant that data could be reliably collected at precise time points, and patients could input database themselves, which reduced labour costs.

PSY89
Health-Related Quality of Life and Pharmacotherapy Costs Study for Patients with Rare Endocrine Diseases in Bulgaria – A Pilot Study
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OBJECTIVES: The goal is to calculate the pharmacotherapy cost and quality of life of Bulgarian patients with rare endocrine diseases. METHODS: An ambispective study among hospitalized patients with acromegaly and Cushing syndrome was conducted at the University Endocrinology Hospital for Active Treatment of, Sofia.

CONCLUSIONS: The total number of included patients with acromegaly was 22 and 5 with Cushing syndrome. The patients with acromegaly included 3 females and 19 males, the mean age was 35.85 (SD 15.13) whereas Pasireotide therapy costs 6 465.65 Euro. The average quality of life did not differ significantly (P = 0.05) between the acromegaly and Cushing syndrome groups – 54.77 (SD 16.885) vs. 54.76 (SD 12.229), respectively. The men with acromegaly have higher pharmacotherapy costs (A560 vs. 43.06). Acromegaly patients have statistically significantly higher values for vitality, energy or fatigue (53.26 vs. 46.8) and for general health perception (54.54 vs. 37). A negative low correlation between average costs and the average quality of life for acromegaly patients was defined – the higher the costs, the lower the quality of


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life (p < 0.134). CONCLUSIONS: The quality of life for patients with rare endocrine disease is low especially regarding vitality, energy or fatigue and general health. The direct medical costs are significant and negatively correlated with the quality of life.

PSY92 DISEASE-SPECIFIC-PATIENT-REPORTED OUTCOME INSTRUMENTS IN SICKLE CELL DISEASE: A SYSTEMATIC LITERATURE REVIEW

Cugell | Chihya | A
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OBJECTIVES: The US Food and Drug Administration (FDA) convened patient-focused drug development meetings to identify those symptoms/effects of sickle cell disease (SCD) on daily living, which are most important to patients. Drug developers are now expected to present direct evidence of the benefit of SCD therapies on these symptoms/effects. Such evidence has to be generated by measuring standardised patient-reported outcomes (PROs). This review aimed to identify and summarize published PROs for SCD. Methods: A systematic search of SCD-specific PRO databases (CUMINER and EMBBASE® databases were searched to identify studies assessing SCD-specific PRO instruments. Other key symptoms/concepts assessed included cognition, fatigue, functional ability, self-efficacy, sleep, stiffness, emotional and social impairment/stigma, and quality of life. Eight instruments using SCD-specific PRO instruments were identified for review. RESULTS: Stability: (3 studies) equal number of studies (3 studies) included either adult or paediatric (≥18 years) patients. Of the identified instruments, nine were used in adults and four in children or adolescents. The Pediatric Quality of Life Inventory (PedsQL) SCD Module (PedsQL-SCD) was most frequently used (8 studies), followed by the Adult Sickle Cell Quality of Life Measurement Information System (ASCQ-Me; 4 studies) and the Sickle Cell Pain Burden Interview-Youth (SCPBI-Y; 3 studies). Pain was the most frequently assessed concept, included in eight of the 13 identified instruments. Other key symptoms/concepts assessed included cognition, fatigue, functional ability, self-efficacy, sleep, stiffness, emotional and social impairment/stigma, and quality of life. Eight instruments were published in the last 15 years. Validation studies were available for 10 instruments. CONCLUSIONS: Several SCD-specific PRO instruments are available for selection as endpoint in clinical studies to develop novel therapies for SCD patients. Many scales are recently developed and their utility in clinical studies is yet to be ascertained.

PSY93 VALIDITY OF CHANGE IN RECALL PERIOD FOR THE NORFOLK QOL PATIENT REPORTED OUTCOME (PRO) MEASURE

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OBJECTIVES: Translucytin is a Familial Amyloid Polyneuropathy (TTR FAP) is a rare degenerative disease with a progression pattern similar to that observed in diabetic neuropathy. This study aimed to assess the validity of the one-week recall period patients’ perceptions of the effects of diabetic neuropathy and has been validated in TTR FAP patients. Based on regulatory feedback the recall period of the measure was changed from 4- to 1-week. The objective of this research was to determine the validity and acceptability of the one-week recall period. METHODS: Individual qualitative telephone interviews were conducted with patients diagnosed with TTR-FAP. Interviews were conducted by trained interviewers between May 2016 and June 2016. At the start of the interview, subjects completed the Norfolk QOL-DN while “thinking aloud,” or talking about the questionnaire instructions and items and their response to them. Participants were also asked questions about the ease of completing the Norfolk QOL-DN, focusing on the response pattern of the one-week recall period. Interviews were audio-recorded and transcribed and analyzed using qualitative thematic and content analysis. RESULTS: Twenty participants were interviewed. The mean age 61.3 years. Participants had significant difficulties understanding how to answer the Norfolk QOL-DN questions using a one-week recall period. All participants had experienced at least one of the symptoms covered by the instrument in the past week. Most prevalent one-time symptoms was neuropathy-related. All participants experienced at least one neuropathy symptom within the one-week time period. Generic functioning and HRQoL items were somewhat less sensitive as participants had adjusted their lives to their disability, not because they had problems with the recall period. CONCLUSIONS: Participants in this study were able to understand and respond to the Norfolk QOL-DN items using the one-week recall period. Additional work exploring the item relevance and performance within TTR FAP would add to the rigour of this measure within this population.

PSY94 THE IMPACT OF SYSTEMIC JUVENILE IDIOPATHIC ARTHRITIS (SJIA) ON A CAREGIVER’S PRODUCTIVITY AND THE CHILD’S SCHOOLING

Shenoy | S1, Hornett | G2, Cidon | M1, Ramanan | A1, Kimura | Y1, Quartier | P1, Foeldvari | I1, Zett | A1, Lomax | K1, Gregory | J2, McKenna | S1, Abma | T1, Campbell | S2, Weiss | J3, Martin | N4, Patel | D2, Wolffram | N2
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OBJECTIVES: To evaluate the impact of SJIA on patient and caregiver health related quality of life (HRQoL), from the caregiver’s perspective, based on an international, non-interventional study. METHODS: This study assessed the physical, mental and social impact associated with SJIA on the caregiver and patient, from the caregiver’s perspective, using the following validated outcome measures; Child Health Questionnaire-Parent Form-SF (CHQ-PF-50) for the child and 36-Item Short-Form Health Survey (SF-36v2) for the caregiver. The physical and mental component scores were compared to US population norms. Eligible patients had received biologic treatment for ≥2 months. RESULTS: Sixty-one biologic treated children were included. The mean (SD; standard deviation) CHQ PF-50 physical (PH) and psychosocial (PS) summary scores in children with SJIA compared to the US normative population were significantly lower, by a large (≥0.8 SD) and moderately large (≥0.5 SD) effect size (PH: 0.18±0.76 vs. 0.38±0.07; PS: 0.18±0.09 vs. 0.38±1.23), respectively. The EQ-5D index score and the QoL summary scores in patients undergoing hip and knee replacement surgery, while obesity but not deprivation appears to significantly decrease HrQoL gains achieved through these surgeries. More research is needed to understand the complex interactions of obesity and deprivation with HrQoL gains from major surgeries.

PSY95 HEALTH RELATED QUALITY OF LIFE FOR SYSTEMIC JUVENILE IDIOPATHRIC ARTHRITIS (SJIA) PATIENTS AND CAREGIVERS ON BIOLOGIC THERAPY, FROM A CAREGIVER’S PERSPECTIVE

Shenoy | S1, Hornett | G2, Cidon | M1, Ramanan | A1, Kimura | Y1, Quartier | P1, Foeldvari | I1, Zett | A1, Lomax | K1, Gregory | J2, McKenna | S1, Abma | T1, Campbell | S2, Weiss | J3
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PSY99
A PREDICTIVE MODEL TO INCLUDE UNCERTAINTY IN MEAN HEALTH UTILITIES ESTIMATION: IMPACT OF SOCIAL CLASS, BODY MASS INDEX AND CHRONIC DISEASES

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OBJECTIVES: Including second order uncertainty for utility values when building cost-effectiveness modelling is challenging due to its odds distribution. Our approach enables including uncertainty related to the effect of sociodemographic characteristics or chronic, independent on mean utilities included as input in different models.

METHODS: In Spain, the EQ-5D-5L was incorporated in the National Health Survey carried out between June 2011 and June 2012. The data of the survey were provided from the Spanish Statistical Webpage. The following variables were considered in this study: sex, age, and social class (3 categories), body mass index from self-perceived height and weight and EuroQol 5D questionnaire. For the estimation of the mean utilities we divided the process in two steps. First, intensity model, assumptions were interpreted in terms of 5 point decrements in HRQoL scores.

RESULTS: This study included 20209 Spanish people, mean age±1.3 years, 53.0% were women. The mean values of utilities were significantly lower in obese compared to normal weight in both sexes and social classes. Men with mental health diseases and women with stroke showed the highest disutility values respectively.

CONCLUSIONS: This work presents a methodology for estimating mean utility values based on individual characteristics of social class, body mass index and chronic diseases and its associated uncertainty. This way it is possible to include more second order uncertainty in mean utility values for probabilistic sensitivity analysis in cost-effectiveness modelling.

PSY96
WORK PRODUCTIVITY AND IMPAIRMENT AMONG PATIENTS WITH LIGHT CHAIN AMYLOIDOSIS

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OBJECTIVES: Light chain (AL) amyloidosis is a rare disease characterized by misfolded protein deposits in tissues and vital organs. This study examines whether health related quality of life (HRQoL) is associated with patient productivity and impairment of patients with AL amyloidosis.

METHODS: An online survey was administered to patients with AL amyloidosis (N = 341) from the United States, Europe, and other countries to assess HRQoL and work impairment. The Work Productivity and Activity Impairment: Specific Health Problem (WPAI:SHP) questionnaire was used to assess disease-related Absenteeism, Presenteism (i.e., impairment at work), and Productivity Loss (i.e., overall work impairment) among employed patients (n=108). Employed patients were classified into two groups ("No Impact" = 0 or "Impact" > 0) based on their scores for each WPAI scale. HRQoL was assessed with the SF-36v2® Health Survey Physical and Mental Component Summary scores (PCS, MCS), and the Medical Outcomes Study (MOS) Sleep Scale-6R. Cross-sectional associations between HRQoL and the dichotomous WPAI outcome measures were analyzed using separate multivariable logistic models. Odds ratios were interpreted in terms of 5 point decrements in HRQoL scores. RESULTS: Based on multivariable analysis, lower PCS, MCS, and Sleep Index scores were associated with higher rates of impairment on all WPAI scales. A five-point lower PCS score was associated with a 29% greater rate of ER visits (p < 0.001). A five-point lower MCS score was associated with a 54% greater rate of ER visits (p < 0.001) and a 34% greater rate of hospitalizations. Elucidating the magnitude of healthcare resource utilization in AL amyloidosis provides clinicians, scientists, and regulators with a better understanding of the burden of disease that these patients experience.

PSY101
RARE DISEASES, ARE CAREGIVERS JUST AS AFFECTED AS PATIENTS?

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OBJECTIVES: Research on rare diseases from the patient perspective is limited; however, research into the impact on parental caregivers of affected individuals is even more limited. The aim of this study was to gather evidence to explore the impact of rare disease for an individual with a rare disease and their family.

METHODS: An initial literature review was conducted to identify studies exploring the impact of caring for somebody with a rare disease. Evidence from these studies was used to establish an overview of the impact of having an individual(s) with a rare disease. RESULTS: The published studies reviewed fell into 100 rare diseases. Common themes emerged across the disease areas representing multiple domains of quality of life (QoL). Caregivers reported considerable emotional impacts including anxiety, depression and feelings of guilt associated with the disease.

CONCLUSIONS: Caregivers for an individual with a rare disease are significantly impacted. The emotional and psychological costs contribute to the overall cost of illness. This information is important when considering the benefits of new treatments but also the cost and value of these treatments.

PSY102
MEASURING QUALITY OF LIFE IN INFANTS AND CHILDREN WITH SPINAL MUSCULAR ATROPHY: A SYSTEMATIC LITERATURE REVIEW

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OBJECTIVE: SMA is a rare, hereditary, autosomal recessive neuromuscular disorder in children; it is characterized clinically by a distinct inability to achieve motor milestones, such as the ability to lift the head, sit, stand, or walk. The disease presentation varies widely in both age of onset and severity of symptoms. As standard of care evolves, appropriate tools must be available to accurately capture changes in quality of life (QOL) to improve treatment. QOL measurement in very young infants presents a particular challenge. Therefore, this review aims to highlight commonly used measurement tools and identifies future research opportunities for QOL measurement in SMA.

METHODS: This review focused on the various tools used to measure QOL in children <18 years of age with formally diagnosed SMA (Type I, II, III) and treatment tools used in the last 10 years. A systematic search of databases was performed using a set of criteria related to validity and reliability. RESULTS: The review identified a range of generic and therapy specific QOL measurement tools. The PedsQl was the most commonly utilized tool to measure QOL in children, including the SMA and neuromuscular domain. However, very young infants with SMA were identified. Additionally, no measurement tools exist for very young infants (i.e. under 12 months) with SMA Type 1. CONCLUSIONS: Evolving standards of care will lead to increased interest by stakeholders, not least HTA bodies/payers, on the methods used to measure quality of life in infants and children across all types of SMA. The evolving natural history of SMA requires an approach which captures the SMA disease continuum within and across SMA disease phenotypes. Generic tools may not adequately capture QOL changes in SMA. Further research is required to explore the scope for a disease focused approach.

SYSTEMIC DISEASES/CONDITIONS – Health Care Use & Policy Studies

PSY104
REGIONAL VARIATIONS IN APPRAISAL AND UPTAKE OF NEW TREATMENTS FOR ULTRA RARE DISEASES IN THE UK: A CASE STUDY OF ATALURIN FOR NONSENSE MUTATION DUCHENNE MUSCULAR DYSTROPHY (NMDMD)

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OBJECTIVES: NICE Highly Specialised Technology guidance only applies to England, which represents 80% of the UK population. We describe regional variations in gaining reimbursement for the estimated 70 nMDM patients eligible for atalurin. METHODS: We review the process used to gain reimbursement for atalurin and the clinical and cost-effectiveness of atalurin and the associated timelines to reimbursement and patient access. RESULTS: Applications for reimbursement were made to NHS England (England, Wales, and Northern Ireland [NI]) and the Isle of Man. Detailed des- cribers were submitted to NICE and SME following different templates and requirements.EMA conditional marketing authorisation was granted in July 2014. Over a year later, the first patient received NHS-funded atalurin in Scotland via an Individual Patient Treatment Request. Individual funding requests elsewhere in the UK were unsuccessful. Following patient and political lobbying over a 13-month
review; final positive NICE guidance for England was published under the conditions of a multi-stakeholder managed Access Agreement with NHS England, the NorthStar clinician network, and the patient associations Muscular Dystrophy UK and Action Duchenne. NI and Wales endorsed NICE guidance under a patient access scheme (PAS). Despite negative SMC guidance following a shorter 5-month consultation period, high interest from patients and professionals in England, used to establish a two round-consultation Delphi study including 19 specialists (9 neuro-paediatricians, 9 neurologists/epileptologists and 1 primary care physician) from different centers spread across 7 regions. Validation of results was via an Advisory Board meeting including 10 specialists (7 neuro-paediatricians and 3 neurologists/epileptologists) in DS in Spain. RESULTS: Key needs for DS in Spain were identified as: 1) Robust epidemiological data; 2) Consensus for patient diagnosis and management; 3) Training of HC professionals; 4) Access for genetic testing; 5) Better disease awareness; 6) Disease continuum management (paediatric to adulthood) and 7) Availability of more effective treatments. Actions were proposed, including performing an economic evaluation and proposing national consensus for disease management. The report was subsequently incorporated at regional and hospital level, 3) Establish a validated training programme for PC and ER paediatricians to improve prognosis and outcomes; 4) Revisit timely access to and results from genetic testing; 5) Develop a disease severity score including all quality of life aspects; 6) Establish best practice framework for patient derivation and 7) Continue efforts in development, approval and timely access to new treatments. CONCLUSIONS: Identified priorities are fully aligned with the 7 strategic lines within the Spanish NHS Strategic Plan for RRDD. Execution of proposed actions by DS experts can effectively contribute to the achievement of specific objectives identified in the RRDD Strategy Follow-up Report, all of which have been reported as “initiated” or “partially completed” to date.

**PSY105**

**DIAGNOSIS OF PATIENTS WITH DUCHENNE MUSCULAR DYSTROPHY (DMD): RESULTS FROM A GLOBAL SURVEY OF HEALTHCARE PROVIDERS FROM NINE COUNTRIES**

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**OBJECTIVES:** Evaluate the practice patterns associated with diagnosis of DMD in routine clinical practice settings across nine countries. METHODS: A quantitative survey was implemented in May 2017 in the U.S, Europe5 (Germany/France/Italy/Spain/UK), Turkey, Colombia, and Brazil among specialists treating a minimum of 5 DMD patients. Physicians have been in practice for >25 years and spent >30% of their time in direct patient care. Fifty-five minute survey (in local language) captured physician/site characteristics, dynamics of patient diagnostics, genetic testing, perceptions of early intervention and disease management, as well as specific DMD treatment attributes and stakeholder interactions. Descriptive statistics were computed. RESULTS: Preliminary analysis included 170 physicians (pediatric neurologist 51.8%, neuromuscular specialist 28.2%, adult neurologist 12.4%, duration in practice 16-36yrs, US 24.7%, Europe5 45.3%, Turkey 7.6%, Colombia 8.8%, Brazil 13.5%); 80.6% and 80.0% of physicians were affiliated with medical centers and hospitals, respectively. Mean number of DMD patients in each practice was 34.7months (SD: 24.1months), when physician first became aware of these symptoms. In respective clinical practices, 72.0% of patients were diagnosed by the physicians themselves who were participating in this study and the rest by other specialties. HCP counterpoint. Mean patient age when family first began noticing symptoms was 34.7months (SD: 24.1months), when physician first became aware of these symptoms: 42.3months (SD: 27.9months), and when DMD diagnosis was confirmed: 53.8months (SD: 30.3months). 67.1% of patients received genetic testing to diagnose DMD; 53.1% and 58.2% received serum CK testing and muscle biopsy, respectively. Top 3 reasons for not doing genetic testing were: reliance on results from other tests (e.g. serum CK, muscle biopsy), lack of reimbursement or insurance coverage, and family unwilling or uninterested. CONCLUSIONS: There is delay between the time parents of DMD patients first become aware of symptoms and when the DMD diagnosis is confirmed. One-third of the patients did not receive genetic testing for various reasons. Implications of these practice patterns on patient management and barriers warrants scrutiny.

**PSY106**

**RISK FACTORS AND DIAGNOSIS OF NONTUBERCULOUS MyCOBACTERIAL LUNG DISEASE (NTM) IN INCIDENT COHORTS OF BRONCHECTASIS (BE) AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) IN A NATIONAL US MASONIC HEALTH PLAN**

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**OBJECTIVES:** Evaluate the practice patterns associated with diagnosis of DMD in routine clinical practice settings across nine countries. METHODS: A quantitative survey was implemented in May 2017 in the U.S, Europe5 (Germany/France/Italy/Spain/UK), Turkey, Colombia, and Brazil among specialists treating a minimum of 5 DMD patients. Physicians have been in practice for >25 years and spent >30% of their time in direct patient care. Fifty-five minute survey (in local language) captured physician/site characteristics, dynamics of patient diagnostics, genetic testing, perceptions of early intervention and disease management, as well as specific DMD treatment attributes and stakeholder interactions. Descriptive statistics were computed. RESULTS: Preliminary analysis included 170 physicians (pediatric neurologist 51.8%, neuromuscular specialist 28.2%, adult neurologist 12.4%, duration in practice 16-36yrs, US 24.7%, Europe5 45.3%, Turkey 7.6%, Colombia 8.8%, Brazil 13.5%); 80.6% and 80.0% of physicians were affiliated with medical centers and hospitals, respectively. Mean number of DMD patients in each practice was 34.7months (SD: 24.1months), when physician first became aware of these symptoms. In respective clinical practices, 72.0% of patients were diagnosed by the physicians themselves who were participating in this study and the rest by other specialties. HCP counterpoint. Mean patient age when family first began noticing symptoms was 34.7months (SD: 24.1months), when physician first became aware of these symptoms: 42.3months (SD: 27.9months), and when DMD diagnosis was confirmed: 53.8months (SD: 30.3months). 67.1% of patients received genetic testing to diagnose DMD; 53.1% and 58.2% received serum CK testing and muscle biopsy, respectively. Top 3 reasons for not doing genetic testing were: reliance on results from other tests (e.g. serum CK, muscle biopsy), lack of reimbursement or insurance coverage, and family unwilling or uninterested. CONCLUSIONS: There is delay between the time parents of DMD patients first become aware of symptoms and when the DMD diagnosis is confirmed. One-third of the patients did not receive genetic testing for various reasons. Implications of these practice patterns on patient management and barriers warrants scrutiny.

**PSY107**

**ACHIEVING KEY OBJECTIVES IN RARE DISEASES HEALTHCARE POLICY IN SPAIN: CONTRIBUTION FROM A DRAVET SYNDROME WORKING GROUP**

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**OBJECTIVES:** Elucidate main unmet needs for Dravet Syndrome (DS) in Spain, to meet these objectives, an Advisory Board meeting including 7 experts from the Spanish National Strategy for Rare Diseases (RRDD). METHODS: Literature review from international (i.e. Pubmed, Google Scholar and Cochrane) and national (i.e. Medes) sources. Information obtained was complemented and validated through semi-structured interviews with DS experts in Spain. RESULTS: Used to establish a two round-consultation Delphi study including 19 specialists (9 neuro-paediatricians, 9 neurologists/epileptologists and 1 primary care physician) from different centers spread across 7 regions. Validation of results was via an Advisory Board meeting including 10 specialists (7 neuro-paediatricians and 3 neurologists/epileptologists) in DS in Spain. RESULTS: Key needs for DS in Spain were identified as: 1) Robust epidemiological data; 2) Consensus for patient diagnosis and management; 3) Training of HC professionals; 4) Access for genetic testing; 5) Better disease awareness; 6) Disease continuum management (paediatric to adulthood) and 7) Availability of more effective treatments. Actions were proposed, including performing an economic evaluation and proposing national consensus for disease management. The report was subsequently incorporated at regional and hospital level, 3) Establish a validated training programme for PC and ER paediatricians to improve prognosis and outcomes; 4) Revisit timely access to and results from genetic testing; 5) Develop a disease severity score including all quality of life aspects; 6) Establish best practice framework for patient derivation and 7) Continue efforts in development, approval and timely access to new treatments. CONCLUSIONS: Identified priorities are fully aligned with the 7 strategic lines within the Spanish NHS Strategic Plan for RRDD. Execution of proposed actions by DS experts can effectively contribute to the achievement of specific objectives identified in the RRDD Strategy Follow-up Report, all of which have been reported as “initiated” or “partially completed” to date.

**PSY108**

**MANAGEMENT OF DUCHENNE MUSCULAR DYSTROPHY (DMD): RESULTS FROM A GLOBAL SURVEY OF HEALTHCARE PROVIDERS FROM NINE COUNTRIES**

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**OBJECTIVES:** Assess the physicians’ perception and dynamics of management of patients with DMD. METHODS: A quantitative survey was implemented in May 2017 in the U.S, Europe5 (Germany/France/Italy/Spain/UK), Turkey, Colombia, Brazil among specialists treating a minimum threshold of DMD patients; physicians must have been in practice between 10-30 years and spend >30% of their time in direct patient care. Fifty-five minute survey (in local languages) captured physicians/site characteristics, perceptions of early intervention and disease management, as well as the dynamics of patient diagnostics, genetic testing, specific DMD treatment attributes and stakeholder interactions. Descriptive statistics were computed. RESULTS: Preliminary analysis included 170 physicians (pediatric neurologist 51.8%, neuromuscular specialist 28.2%, adult neurologist 12.4%, duration in practice 16-36yrs, US 24.7%, Europe5 45.3%, Turkey 7.6%, Colombia 8.8%, Brazil 13.5%); 80.6% and 80.0% of physicians were affiliated with medical centers and hospitals, respectively. Physicians used diverse pathways to treat DMD patients (not mutually-exclusive); Physical therapy/rehabilitation (92.9%), pulmonary/respiratory care (94.2%), orthopedic/orthotics (86.5%), prescription medications (84.1%), symptom management/supportive care (82.9%), cardiac care (81.8%), social services (69.0%), vaccination/vitamins (74.6%), psychological (74.1%), palliative care (48.5%). Key physician perceptions of DMD management (rated >5 on a likert scale of 1(strongly-disagree)–7(strongly-agree)): preserving functionality at all stages of disease is key (91.1%), delaying loss of ambulation is a meaningful outcome (90.6%), pressing need for earlier detection of DMD (87.7%) and earlier start of treatment (86.5%), early diagnosis/treatment could meaningfully delay irreversible muscle damage (84.5%), identification of new DMD patients (91.4%), identification of DMD patients (68.8%, 57.7% and 64.6% reported using timed function tests, 6-minute walk test and north star ambulatory assessment to measure disease progression, respectively. CONCLUSIONS: This cohort of physician highlighted the diversity in DMD disease management. Majority of physicians highlighted the importance of early DMD diagnosis/treatment, preserving functionality and delay loss of ambulation.
only therapy available and proven clinical-effectiveness. CONCLUSIONS: Despite existence of formulary effectiveness threshold and no evidence-based approach to reimbursement of orphan drugs, results of pharmacoeconomic analysis do not determine final reimbursement decisions in Poland. Cost-effectiveness cannot be considered as a crucial criterion in decision-making on orphan drug reimbursement in Poland.

PSY110
APPLICAtION OF MjUPlER-cItERIA DEcISION ANALYSIS (MCDA) TO DEcIDE THE VALUE OF tREATMENTS FOR THE MODERATE TO SEVERE PLAcE PsOIRIAsIS IN SPAIN
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OBJECTIVES: To evaluate the new treatment of moderate-severe plaque psoriasis, Ixekizumab, compared to the main therapeutic alternatives through MCDA. METHODS: Available evidence of Ixekizumab as well as its therapeutic alternatives in the same indication: Evaluations of the Hospital Genetics Group, guidelines of the World Health Organization, and data from off-label use. RESULTS: Moderate-severe plaque psoriasis was perceived as a disease of moderate severity, affecting a large population size and with some unmet needs. In case of comparative efficacy/effectiveness (PASI90 and PASI100) and patient-perceived health (including quality of life) Ixekizumab was perceived as a value option in front of its comparators. Comparative safety and tolerability was perceived as similar for all the alternatives. Regarding, the therapeutic profile, Ixekizumab was considered as a drug able to add value. The presented cost of Ixekizumab, other medical costs, and also of non-medical costs, in general, were considered as positive. The global value contribution of Ixekizumab, compared with alternative therapies were: secukinumab (0.36), ustekinumab (0.38), etanercept (0.44) etoricoxib (0.44) and adalimumab (0.45). CONCLUSIONS: The MCDA has demonstrated that it is a useful tool to compare the value of the several treatments in Psoriasis. Ixekizumab would be perceived as a valuable option in the treatment of moderate-severe plaque psoriasis compared with the current alternatives. The main value contribution of Ixekizumab would be based on its therapeutic benefit and efficacy (measured in terms of a response to PASI90 and PASI100) and maintenance of a longer term, also valued because the easy posology and quality of life data.

PSY111
THE PRACTICE OF DECISION-MAKING OF PUBLIC HEALTH AUTHORITIES IN POLAND ON REIMBURSEMENT OF ORPHAN DRUGS
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OBJECTIVES: Reimbursement of orphan drugs (OD) is challenging and other evaluations for Societies and Institutions in Spain. EVIDEM framework weighted by a total of 45 national and regional evaluators in Spain was used. Evidence Matrix were scored by a panel of 5 experts, 2 hospital pharmacists, 1 regional payer, 1 psoriasis expert and 1 patient representative. RESULTS: Moderate-severe plaque psoriasis was perceived as a disease of moderate severity, affecting a large population size and with some unmet needs. In case of comparative efficacy/effectiveness (PASI90 and PASI100) and patient-perceived health (including quality of life) Ixekizumab was perceived as a value option in front of its comparators. Comparative safety and tolerability was perceived as similar for all the alternatives. Regarding, the therapeutic profile, Ixekizumab was considered as a drug able to add value. The presented cost of Ixekizumab, other medical costs, and also of non-medical costs, in general, were considered as positive. The global value contribution of Ixekizumab, compared with alternative therapies were: secukinumab (0.36), ustekinumab (0.38), etanercept (0.44) etoricoxib (0.44) and adalimumab (0.45). CONCLUSIONS: The MCDA has demonstrated that it is a useful tool to compare the value of the several treatments in Psoriasis. Ixekizumab would be perceived as a valuable option in the treatment of moderate-severe plaque psoriasis compared with the current alternatives. The main value contribution of Ixekizumab would be based on its therapeutic benefit and efficacy (measured in terms of a response to PASI90 and PASI100) and maintenance of a longer term, also valued because the easy posology and quality of life data.

PSY112
ACCESS AND REIMBURSEMENT FOR EMERGING NEUROPATHIC PAIN AGENTS IN THE UK: AVOIDING THE STING OF LOW-COST COMPETITION AND TIGHTENING BUDGETS
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OBJECTIVES: The exponential increasing number of emerging neuropathic pain (NP) agents in the EUS (France, Germany, Italy, Spain, UK) given rising disease prevalence, long-available and low-priced analogues, and growing number of breakthroughs in key drug classes. METHODS: Across the EUS, 259 GPs were surveyed regarding their prescribing for NP, while 15 payers who influence reimbursement were interviewed. RESULTS: Interviewed payers demand staunch demonstration of clear clinical benefits from emerging NP therapeutics, as well as robust regulatory agency and/or safety and tolerability advantage. Notably, payers interviewed consider the profile of emerging antiepileptic gabapentin not sufficiently different from pregabalin (Lyrica, Pfizer), warning that if superior efficacy is not demonstrated in the appropriate comparative positioning cannot be achieved. This is particularly pertinent as our research also reveals that despite ongoing patent protection of pregabalin in NP, availability of generic pregabalin for non-NP indications represents a pricing and uptake barrier for new NP brands given off-label generic use in some non-NP markets. Yet, surveyed physicians estimate the penetration of pregabalin to be 29-42%, with expected use relatively early in the treatment algorithm. This likely reflects the precise nature of prescribing owing to the complex pathology of NP. In conclusion, physicians cite NP-subtype-specific labeling as an essential tool, reflecting interviewed payer consensus, which pinpoints NP-subtype-specific labeling as a financially advantageous tool for the smaller patient population versus drugs with a broader pain label. CONCLUSIONS: Optimal access and reimbursement are achievable for emerging NP agents that showcase superior over SOC. Targeting NP/NP subtypes specifically would curtail favor among payers due to reduced budgetary impact, and could encourage uptake over more-broadly labelled alternatives which may not target key mechanisms underlying neuropathy.
current study aimed at identifying preferences of the French general population regarding a number of determinants in a discrete choice experiment. The list of attributes was formed based on a literature search and was refined through expert interviews, a focus group, and a pilot study. The final list included nine attributes: disease disability and mortality, number of patients, availability of alternative treatments, treatment impact on disease disability and survival, treatment safety, uncertainty around therapeutic effect, and annual treatment cost per patient. Participants were presented with 12 questions containing two drugs profiles describing according to attributes and (or) none treat- ment. The questionnaire was distributed using a web platform. A conditional logit model was used for statistical analyses and included all attributes and a dummy variable corresponding to a choice of none treatment. An interaction between the number of patients and patient cost was tested. RESULTS: The highest estimate weight was observed for treatment impact (p < 0.0001) on survival and uncertainty around therapeutic effect (p < 0.0001). Participants were more sensitive to the availability of alternative treatments (p < 0.0014), treatment safety (p < 0.0001) and impact on disability (p = 0.0001), dis- ease mortality (p < 0.0001). Participants preferred more prevalent diseases (p < 0.0001). Although the interaction between the number of patients and per patient cost was significant, it was not observed. CONCLUSIONS: The society does not seem to support drugs for less prevalent diseases and to be aware about drug pricing in general. Should special measures for orphan drugs be introduced, education on their necessity is needed.

OBJECTIVES: Orphan diseases such as Huntington’s disease (HD), a progressive neurodegenerative disorder, have significant impact on patients and their families, as well as the healthcare institutions and societies. The main aim of this study was to perform multicriteria decision analysis (MCDA) to evaluate various aspects of a medication providing of tetrabenazine (TBZ) for patients with HD. METHODS: Analysis of the published clinical and safety of using TBZ for patients with HD. The initial list of value attributes (5 - impact of rare disease and 5 - impact of the drug) was identified from a literature review of expert interviews and from literature. Further experts assigned relative weights to the attributes in 2 groups (the rating scale ranged from 1 (less important) to 5 (most importantly)). Then experts rated TBZ against each attribute (the rating scale ranged from 1 (worst score) to 7 (best score)). In the end weighted score for each attribute was iden- tified. RESULTS: Experts considered that the most important attribute was impact of the disease (scores 2.7 versus 2.47). In the both groups the most important attribute was evidence of treatment clinical efficacy and patient clinical outcome (scores 4.95 and 4.35, respectively). CONCLUSIONS: All experts agreed to give slightly more weight to the attributes of the disease than to the impact of the drug. The present study was the first experience of conducting MCDA and showed the importance of different kinds of attributes in deciding on funding drug supply patients with HD.

OBJECTIVES: A specific feature of the German HTA process is the relevance of the orphan drug (OD) status. The additional medical benefit of orphan drugs, assessed by HTA, can be added to the benefit (BM) granted by approval. Companies are not obliged to present head-to-head data against an appropriate comparator. However, if the revenue per annum exceeds 50 million euros or in case of orphan drugs. Conclusions: For non-orphan drugs. A total of 958 persons were identified. A total weighted score for attributes of the disease was 85.78, and for attributes of the impact of the drug – 78.67. CONCLUSIONS: All experts agreed to give slightly more weight to the attributes of the disease than to the impact of the drug. The present study was the first experience of conducting MCDA and showed the importance of different kinds of attributes in deciding on funding drug supply patients with HD.

OBJECTIVES: Critical mass of ATMP approval and high importance of HTA assessment and pricing decisions. METHODS: All non-oncologic orphan drugs listed between 2006 and 2016 were identified. TC opinion (study design, comparator, target population) and price evolution were analyzed for each drug. First, results were gathered for all drugs assessed until 2015, when available. Then, orphan drugs were clustered in two periods of time (2006-2010 and 2011-2016) in order to describe variations on assessment and price lifecycle. RESULTS: 53 orphan drugs were analyzed on two main items: HTA assessment and price evolution. 40% of orphan drugs received an ASMR I to III (high to moderate improved clinical benefit) from TC from 2006 to 2016 versus 3% among drugs of all types (2015). From 2006 to 2010, the rate of ASMR I to III among orphan drugs reached 57% versus 29% between 2011 and 2015, when only one drug was assessed at the time of the assessment. CONCLUSIONS: In France, orphan drugs seem to benefit from a more favorable market access via a-dis of all types regarding price evolution and HTA assessment. However, a strengthening of TC doctrine seems to emerge in the 5 years despite similar level of demonstration.

OBJECTIVES: The market share and switching dynamics between etanercept innovator and its biosimilar etanercept in Germany and across EU-5 countries. Methods: The current study aimed at identifying preferences of the French general population regarding a number of determinants in a discrete choice experiment. The list of attributes was formed based on a literature search and was refined through expert interviews, a focus group, and a pilot study. The final list included nine attributes: disease disability and mortality, number of patients, availability of alternative treatments, treatment impact on disease disability and survival, treatment safety, uncertainty around therapeutic effect, and annual treatment cost per patient. Participants were presented with 12 questions containing two drugs profiles describing according to attributes and (or) none treatment. The questionnaire was distributed using a web platform. A conditional logit model was used for statistical analyses and included all attributes and a dummy variable corresponding to a choice of none treatment. An interaction between the number of patients and patient cost was tested. RESULTS: The highest estimate weight was observed for treatment impact (p < 0.0001) on survival and uncertainty around therapeutic effect (p < 0.0001). Participants were more sensitive to the availability of alternative treatments (p < 0.0014), treatment safety (p < 0.0001) and impact on disability (p = 0.0001), disease mortality (p < 0.0001). Participants preferred more prevalent diseases (p < 0.0001). Although the interaction between the number of patients and per patient cost was significant, it was not observed. CONCLUSIONS: The society does not seem to support drugs for less prevalent diseases and to be aware about drug pricing in general. Should special measures for orphan drugs be introduced, education on their necessity is needed.

OBJECTIVES: In Europe, an orphan disease is defined by a prevalence of less than 5 in 10,000 inhabitants which represent a market of 30-50 patients in France. Economic incentives are set up by authorizations to encourage pharma- ceutical development in rare disease treatments. This analysis aims at exploring Frenc- h reimbursement policy toward orphan drugs. The French price is set by the Transparency Committee (TC) assessment and pricing decisions. RESULTS: All non-oncologic orphan drugs listed between 2006 and 2016 were identified. TC opinion (study design, comparator, target population) and price evolution were analyzed for each drug. First, results were gathered for all drugs assessed until 2015, when available. Then, orphan drugs were clustered in two periods of time (2006-2010 and 2011-2016) in order to describe variations on assessment and price lifecycle. RESULTS: 53 orphan drugs were analyzed on two main items: HTA assessment and price evolution. 40% of orphan drugs received an ASMR I to III (high to moderate improved clinical benefit) from TC from 2006 to 2016 versus 3% among drugs of all types (2015). From 2006 to 2010, the rate of ASMR I to III among orphan drugs reached 57% versus 29% between 2011 and 2015, when only one drug was assessed at the time of the assessment. CONCLUSIONS: In France, orphan drugs seem to benefit from a more favorable market access via a-dis of all types regarding price evolution and HTA assessment. However, a strengthening of TC doctrine seems to emerge in the 5 years despite similar level of demonstration.

OBJECTIVES: To describe the market share and switching dynamics between etanercept innovator (Enbrel) and its biosimilar (Enbrel®) for rheumatic diseases in Germany and across EU-5 countries. Methods: The current study aimed at identifying preferences of the French general population regarding a number of determinants in a discrete choice experiment. The list of attributes was formed based on a literature search and was refined through expert interviews, a focus group, and a pilot study. The final list included nine attributes: disease disability and mortality, number of patients, availability of alternative treatments, treatment impact on disease disability and survival, treatment safety, uncertainty around therapeutic effect, and annual treatment cost per patient. Participants were presented with 12 questions containing two drugs profiles describing according to attributes and (or) none treatment. The questionnaire was distributed using a web platform. A conditional logit model was used for statistical analyses and included all attributes and a dummy variable corresponding to a choice of none treatment. An interaction between the number of patients and patient cost was tested. RESULTS: The highest estimate weight was observed for treatment impact (p < 0.0001) on survival and uncertainty around therapeutic effect (p < 0.0001). Participants were more sensitive to the availability of alternative treatments (p < 0.0014), treatment safety (p < 0.0001) and impact on disability (p = 0.0001), disease mortality (p < 0.0001). Participants preferred more prevalent diseases (p < 0.0001). Although the interaction between the number of patients and per patient cost was significant, it was not observed. CONCLUSIONS: The society does not seem to support drugs for less prevalent diseases and to be aware about drug pricing in general. Should special measures for orphan drugs be introduced, education on their necessity is needed.

OBJECTIVES: To describe the market share and switching dynamics between etanercept innovator (Enbrel) and its biosimilar (Enbrel®) for rheumatic diseases in Germany and across EU-5 countries. Methods: The current study aimed at identifying preferences of the French general population regarding a number of determinants in a discrete choice experiment. The list of attributes was formed based on a literature search and was refined through expert interviews, a focus group, and a pilot study. The final list included nine attributes: disease disability and mortality, number of patients, availability of alternative treatments, treatment impact on disease disability and survival, treatment safety, uncertainty around therapeutic effect, and annual treatment cost per patient. Participants were presented with 12 questions containing two drugs profiles describing according to attributes and (or) none treatment. The questionnaire was distributed using a web platform. A conditional logit model was used for statistical analyses and included all attributes and a dummy variable corresponding to a choice of none treatment. An interaction between the number of patients and patient cost was tested. RESULTS: The highest estimate weight was observed for treatment impact (p < 0.0001) on survival and uncertainty around therapeutic effect (p < 0.0001). Participants were more sensitive to the availability of alternative treatments (p < 0.0014), treatment safety (p < 0.0001) and impact on disability (p = 0.0001), disease mortality (p < 0.0001). Participants preferred more prevalent diseases (p < 0.0001). Although the interaction between the number of patients and per patient cost was significant, it was not observed. CONCLUSIONS: The society does not seem to support drugs for less prevalent diseases and to be aware about drug pricing in general. Should special measures for orphan drugs be introduced, education on their necessity is needed.
Acquired hemophilia A (AHA) is a rare bleeding disorder, caused by autoantibodies against factor VIII. AHA may lead to spontaneous or trauma induced bleeding. Research on high amounts of bypassing agents (APCC) revealed a significant reduction in bleeding complications compared to historical controls. We examined the change in frequency of AHA coding.

**Objectives:** To compare adherence and treatment persistence over 12 months among patients initiating apremilast or biologics for the treatment of psoriasis (PsO) in the United States. **Methods:** Adult PsO patients initiating apremilast or biologics (index date) were identified in the January 2013 - June 2016 Truven Health Analytic MarketShare Databases. Patients were required to have a diagnosis of PsO, be insured, and to have no prior record of PsO treatment. The average length of hospital stay of male patients (25.2 days) was significantly longer than for females (18.4 days). The number of cases with a secondary diagnosis of AHA increased from 186 (2010) to 491 (2015, +164%). The total number of cases in 2015 was 633 (+8 per mio. per year). The increase in cases was not associated with an equivalent growth in treatments with high doses of rFVIIa (108 in 2010, 127 in 2015, +18%) or APCC (66 in 2010, 75 in 2015, +14%). **Conclusions:** We found an increase in documented hospital cases with AHA from 2010 to 2015. The overall number exceeds the expectation based on previously reported incidence. This may reflect an increased awareness towards AHA in previous studies. The number of patients intensively treated with bypassing agents grew only slowly, suggesting that higher awareness may lead to earlier diagnosis and prevention of high costs due to bleeding.

**R2**

REAL WORLD COMPARISON OF PERSISTENCE AND ADHERENCE AMONG BIOLOGIC NAIVE PATIENTS INITIATING APREMILAST OR BILOGICS FOR THE TREATMENT OF PSORIASIS IN THE UNITED STATES


1Wake Forest University School of Medicine, Winston-Salem, NC, USA, 2Truven Health Analytics, an IBM Company, Cambridge, MA, USA, *Celgene Corporation, Summit, NJ, USA

**Objectives:** To compare adherence and treatment persistence over 12 months among 10,722 patients with PsO naive adults initiating apremilast or biologics for the treatment of psoriasis (PsO) in the United States. **Methods:** Adult PsO patients initiating apremilast or biologics (index date) were identified in the January 2013 - June 2016 Truven Health Analytic MarketShare Databases. Patients were required to have a diagnosis of PsO, be insured, and to have no prior record of PsO treatment. The average length of hospital stay of male patients (25.2 days) was significantly longer than for females (18.4 days). The number of cases with a secondary diagnosis of AHA increased from 186 (2010) to 491 (2015, +164%). The total number of cases in 2015 was 633 (+8 per mio. per year). The increase in cases was not associated with an equivalent growth in treatments with high doses of rFVIIa (108 in 2010, 127 in 2015, +18%) or APCC (66 in 2010, 75 in 2015, +14%). **Conclusions:** We found an increase in documented hospital cases with AHA from 2010 to 2015. The overall number exceeds the expectation based on previously reported incidence. This may reflect an increased awareness towards AHA in previous studies. The number of patients intensively treated with bypassing agents grew only slowly, suggesting that higher awareness may lead to earlier diagnosis and prevention of high costs due to bleeding.

**PSY122**

REAL WORLD COMPARISON OF PERSISTENCE AND ADHERENCE AMONG BIOLOGIC NAIVE PATIENTS INITIATING APREMILAST OR BILOGICS FOR THE TREATMENT OF PSORIASIS IN THE UNITED STATES


1Wake Forest University School of Medicine, Winston-Salem, NC, USA, 2Truven Health Analytics, an IBM Company, Cambridge, MA, USA, *Celgene Corporation, Summit, NJ, USA

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to 1.7% in New York. Similarly, the percent of costs spent on opioids ranged from 10.8% in Alaska to 3.3% in Hawaii in the nonelderly, and 4.2% in Alaska to 1.2% in New York for the elderly. The correlation was 0.84 (p < 0.001) between elderly and nonelderly for the percent of opioid prescriptions and 0.82 (p < 0.001) for the percent of costs spent on opioids.

CONCLUSIONS: Opioid utilization was more than twice as high among the nonelderly as the elderly. In addition, opioid use varies across states in the U.S. Further research is needed to determine whether there is overutilization in the nonelderly, particularly in states such as Nevada and Alaska, and to examine why states like New York have relatively limited use.

PSY127 TRENDS ANALYSIS OF LISTING AND BUDGET IMPACT FOR ORPHAN DRUGS IN KOREA
Kim Y*, Oh R
1Health Insurance Review & Assessment Service, Wonju-si, Gangu-dong, Korea, Republic of (South) 2HIRA (Health Insurance Review & Assessment Service), Wonju-si, Gangu-dong, Korea, Republic of (South)

OBJECTIVES: Orphan drugs refer to drugs used in rare diseases – (1 in 20,000 persons in Korea) and it is often difficult to be recommended in reimbursement due to lack of evidence and cost. This study is to assess the impact of orphan drugs in Korea through P&R schemes such as economic evaluation exemption track. This study aims to estimate the historical trend of orphan drug listing and the annual budget impact of orphan drugs in Korea between 2010 and 2015 and future trend.

METHODS: Reimbursement list of orphan drugs approved by Korean MFDS was derived to identify the number of orphan drugs situation annually from 2010 to 2015. HIRA claims data (2010–2015) was used to estimate the historical trend of the orphan drug expenditure and total expenditure, and future trend accordingly. The expenditure for orphan drugs will account for 1.9% – 3.4% of total expenditure in future.

RESULTS: Between 2010 and 2015, number of orphan drugs listed has increased from 91 (88) to 117 (102). Regarding to budget impact, expenditure for orphan drug summed up 86 billion KRW (73 million USD) in 2010 and increased to 229 billion KRW (195 million USD) in 2015, representing 0.687–1.646% of total expenditure.

CONCLUSIONS: Although the number of available orphan drugs are increasing slightly and the budget impact for orphan drugs is quite very small, if more orphan drugs are to be approved, the budget impact of orphan drugs are increasing very fast annually. So, it seemed due to the impact of some policy such as Nevada and Alaska, and to examine why states like New York have increased to 229 billion KRW in 2015, representing 0.687–1.646% of total expenditure for orphan drug.

A567
drugs are funded in Australia on the Pharmaceutical Benefits Scheme (PBS) via Rule of Rescue. However, outside the PBS, hospitals and other health providers pay high prices for drugs. The results of relevant criteria are met. This review assesses the current environment for the fund- ing of drugs on the LSDP since ‘substantial’ extension of survival became a require- ment in 2010. METHODS: An internal database of Public Summary Documents (PSDs) for orphan drugs was searched and 40 submissions seeking funding on the LSDP. Manual searching supplemented the dataset. RESULTS: The PSD review identified 27 submissions for nine medicines in eight diseases. Of these medicines, five medicines (55%) in four diseases have been listed on the LSDP despite requiring multiple submissions (average: 3.2) and in some cases, the PBAC indicated that the medicine did not meet the criteria. The main reason for rejection was due to uncertainty that the medicine would substantially increase life expectancy. Analysis of PSDs shows that only 26.9% of drugs presented a direct sur- vival benefit based on non-randomised data. Other submissions used surrogate endpoints, modelled survival using case series or did not report survival data. Three medicines had insufficient data applied for LSDP were subsequently funded via the PBS. CONCLUSIONS: Despite the challenges for sponsors to meet tighter criteria of the LSDP and while the decision-making process can be sometimes unclear, medicines are likely to be funded when there is an acceptable level of evidence submission can improve the funding process of orphan drugs. Access to drugs in Australia for rare, life-threatening diseases.

PSY133 UPDATE ON IMPACT OF THE ADDITIONAL BENEFIT EXTENT OF ORPHAN DRUGS ON PRICE NEGOTIATIONS IN THE GERMAN OUTPATIENT SECTOR

Freiburg GmbH, Schwarm, R, Schalling, K, Kraft, St. Bernward GmbH, Hamburg, Germany

OBJECTIVES: For orphan drugs an additional benefit is granted by market authori- zation of the EMA. [1] However, companies have to demonstrate the extent of this additional benefit for subsequent reimbursements, prior to submitting a simplified dossier to the Federal Joint Committee. [2] The objective of this analysis was to assess whether the additional benefit extent of orphan drugs does not influence the decision-making. The hypothesis indicated an inversely proportional correlation between additional benefit extent and nego- tiated rebate size. METHODS: In a first step orphan substances affected by an early benefit assessment were identified within the German healthcare market. Correlation between additional benefit extent and amount after negotiations was analyzed by Spearman correlation analysis. Data were collected from publicly available information of the Federal Joint Committee as well as price information from the German pharmacy pricing data base LAUER-TAXER®. RESULTS: By May 2017, 99 [4] orphan drugs with active orphan drug designation were identified in the European Union. 40 [5] were currently distributed in the outpatient German healthcare market and underwent additional benefit extent assessment as well as price negotiations. Correlation between additional benefit extent and rebate size could only be identified if the category “not quantifiable additional benefit” was excluded. CONCLUSIONS: There is only limited correlation between the extent of additional benefit and rebate size for orphan drugs. This mainly caused by a large rebate range for orphan drugs for which the additional benefit extent was not quantifiable. Further factors impacting the price negotiation were identified as: European comparison prices, treatment area, negotiation management and prevalence of indication. [3] European Medicines Agency, ‘Guideline on determining the extent of the additional benefit’. [4] European Medicines Agency. 19.05.2017 [5] Database Quintiles Commercial Germany GmbH 19.05.2017.

PSY134 NON-OPIOID ANALGESIC REIMBURSEMENT IN EUROPE: A COMPARATIVE STUDY

Bernard J, Asssainni N, Halmi M, Bouchara G

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OBJECTIVES: The study had for objective to compare prices and reimbursement modalities of non-opioid analogues (NOA) in each European country to evaluate the future strategy of NOAs reimbursement. METHODS: A benchmark concerning NOAs reimbursement was conducted in April 2017. Seven European countries were included in the study: Belgium, France, Germany, Italy, the Netherlands, Spain and the United Kingdom. A survey was conducted in each country. Collected data were com- pelled and compared to existing public data. RESULTS: The study showed that NOAs reimbursement in the 7 studied countries in Europe differ from one country to another: apart from France, NOAs’ reimbursement rates depend on several variables which are related to the product (kind of analgesic, conditioning), the patient (income level, age, social status), and the disease (chronical or specific pathologies). The study also allowed to highlight that NOAs regulation and distribution are different in each country: some countries allow OTC NOA sale in supermarkets when in oth- ers is permitted only in pharmacies. The benchmark underlines that: – In 4 out of 7 countries, aspirin is not reimbursed at all when prescribed as a pain drug – Ibuprofen is reimbursed in almost all countries but in specific conditions – Paracetamol is the most widely reimbursed drug, in regard of the data collected in all countries. – In France the lowest price is for Ibuprofen. – The price variance of NOAs between countries and Dutch prices appear to be the lowest. CONCLUSIONS: Disparities concerning modalities of reimbursement in Europe have been highlighted. These disparities can be partly explained by the lack of equal access to medicines in each country has its own policy. Regarding the results, France seems to have the "most generous" system of care, since reimbursement is not required by any condition.

PSY135 NO PRICE NEGOTIATION – THE STRATEGY OF AOK BAVARIA TESTED – FOR INPATIENT HEMOPHILIA CARE

St. Bernward GmbH, Hamburg, Germany

OBJECTIVES: In Germany the reimbursement of inpatient factor products is nego- tiated between the Federal Joint Committee and the manufacturers. The payment for groups of factors or each individual product group is determined. Exception is Bavaria, where the local AOK sick fund skipped negotiating and allows free pricing. The hospitals are appealed to bill within federal average. This pro- ject was set up to test this strategy in this Bavarian state. METHODS: All published reimbursement schemes for factor products of Germany have been listed in 2010. Additionally the results are compared with published Swiss and Austro factors reimbursement levels. METHODS: All published reimbursement schemes for factor products of Germany have been listed in 2010. Additionally the results are compared with published Swiss and Austrian results. RESULTS: The reim- bursement for inpatient factors varies per product type up to 5% from average. Negotiation of single brands leads to higher prices. In established products the prices in Bavaria are above average and always in the highest quartile. In all single factors the more expensive product-classes have in Bavaria higher shares. New commercialized products are reimbursed and set the level for Germany. Example: recombinant factor VIII for gross £43.5 per unit, which is more than 50% above EU-average. Reimbursement in Bavaria is in average 24% higher than in Switzerland. The potential savings with negotiation are 1.24 m for inpatient fac- tor products reimbursement in 2010. CONCLUSIONS: Bavaria showed the right strategy in 2010. The AOK Bavaria should consider to rethink its non-negotiation strategy.

PSY136 ACCESS TO PSORIASIS DRUG TREATMENT AMONG BRAZILIAN PATIENTS

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Institute of Public Health, SA, Sao Paulo, Brazil

OBJECTIVES: To evaluate the access to the prescribed treatment for Brazilian moder- ate-to-severe psoriasis patients. METHODS: This was a cross-sectional, obser- vational study of Brazilian patients and was conducted in 10 specialized centers. RESULTS: Two questions: the first one addressed if the patient acquired the drug from public system (US), private insurance and/or-out of-pocket; the second one assessed if psoriatic arthritis was concomitantly treated. 20.5% patients reported psoriatic arthritis (PsA) concomitantly. The ways of drug acquisition were: through SUS and out-of-pocket (72/187, 38.5%); totally out-of-pocket (67/187, 35.8%); totally through SUS (37/187, 19.8%); totally through private insurance (2/187, 1.1%). Among those patients with PsA concomitantly, 20/41 (48.8%) reported acquiring their drugs totally through SUS and 9 (22.0%) through SUS and out-of-pocket. 12.8% (24/187) of patients reported having used legal injunction to obtain the prescribed treatment. 65.5% patients reported having obtained the drug in some ways of access. Among those who reported any difficulties (n=65), the drug unavailability (43.1%) and financial problems (38.5%) were the most frequent issues. CONCLUSIONS: Treatment access to psoriasis medications is moderate-to-severe plaque psoriasis patients; use of legal injunctions to drug access; drug shortage and financial difficulties faced by these patients.

PSY137 HOW DOES THE SCOTTISH MEDICINES CONSORTIUM ASSESS THE VALUE OF ORPHAN AND ULTRA-ORPHAN DRUGS?

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OBJECTIVES: Orphan drugs rarely achieve standard cost-effectiveness thresh- olds due to high acquisition costs and a paucity of clinical trial data. The Scottish Medicines Consortium (SMC) has no stated threshold for such treatments. The National Institute for Health and Care Excellence (NICE) recently proposed guide- lines for highly specialised technology (HST) appraisal for very rare conditions in which a threshold of £300,000 per quality-adjusted life-year (QALY) would be employed. This study investigates whether the SMC use an implicit cost-effective- ness threshold and any alternative aspects of value considered when assessing orphan drugs. METHODS: The SMC database was searched from January 2015 to May 2017 for submissions made under the Orphan or Ultra-Orphan submission processes. Data were extracted regarding the submission process, SMC recommen- dations, use of patient access scheme (PAS), and incremental cost-effectiveness ratio (ICER). If a with-PAS ICER was unavailable, the without-PAS ICER was extracted. RESULTS: The SMC rejected submissions seeking funding on the LSDP since ‘substantial’ extension of survival became a require- ment in 2010. An internal database of Public Summary Documents (PSDs) was searched to identify submissions seeking funding on the LSDP. Manual searching supplemented the dataset. RESULTS: The PSD review identified 27 submissions for nine medicines in eight diseases. Of these medicines, five medicines (55%) in four diseases have been listed on the LSDP despite requiring multiple submissions (average: 3.2) and in some cases, the PBAC indicated that the medicine did not meet the criteria. The main reason for rejection was due to uncertainty that the medicine would substantially increase life expectancy. Analysis of PSDs shows that only 26.9% of drugs presented a direct sur- vival benefit based on non-randomised data. Other submissions used surrogate endpoints, modelled survival using case series or did not report survival data. Three medicines had insufficient data. Additionally the results are compared with published Swiss and Austrian results. RESULTS: The reim- bursement for inpatient factors varies per product type up to 5% from average. Negotiation of single brands leads to higher prices. In established products the prices in Bavaria are above average and always in the highest quartile. In all single factors the more expensive product-classes have in Bavaria higher shares. New commercialized products are reimbursed and set the level for Germany. Example: recombinant factor VIII for gross £43.5 per unit, which is more than 50% above EU-average. Reimbursement in Bavaria is in average 24% higher than in Switzerland. The potential savings with negotiation are 1.24 m for inpatient factor products reimbursement in 2010.
PSY138
REVIEW OF REIMBURSEMENT DECISION DRIVERS FOR RARE CANCER THERAPIES ACROSS EU MARKETS
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OBJECTIVES: To review health technology assessment (HTA) decisions for rare cancer therapies and rationale for these decisions across EU countries. METHODS: We used the Global Market Access Solutions (GMAS) database to assess HTA decisions for seven rare cancers across EUS countries. Additional information was extracted from individual HTA reports. Decisions were categorised as recommended, restricted, or rejected. Clinical and economic factors influencing decisions were analysed. RESULTS: In total, 24 HTA reports were identified, which assessed 12 interventions across seven rare cancers. Across HTA agencies, 50% of submissions resulted in an intervention being recommended. No relevant reports were published by the Spanish HTA agencies. The French HTA agency (Haute Autorité de Santé) most likely to recommend (100% recommended, 7 submissions) based on demonstration of clinical effectiveness (overall survival and response rates) and generic substitution of branded drugs. Demonstration of clinical effectiveness was the key criterion for a ‘recommended’ status (in 66% submissions). All interventions for hairy cell leukaemia and malignant pleural mesothelioma were recommended. The Scottish Medicines Consortium (SMC) was most likely to reject an intervention (88% rejected, 8 submissions) due to lack of robust economic analysis data resulting in high incremental cost-effectiveness ratios (ICERs) versus comparator therapies. In other countries, interventions were rejected mainly due to no additional benefit being demonstrated, absence of submission, and inappropriate choice of comparator/patient population. CONCLUSIONS: Manufacturers developing therapies for rare cancers should ensure their clinical data are included in HTA submissions. Provisions are made by HTA agencies for early access and managed entry programmes, which allow for some uncertainty when unmelted is high and few or no alternative therapies are available. However, robust economic analysis that adjusts for uncertainty and incorporates appropriate cost and utility values could facilitate reimbursement, particularly in markets driven by cost-effectiveness.

PSY139
DETERMINANTS OF THE OPTIMAL ROUTE TO REIMBURSEMENT FOR ORPHAN MEDICINAL PRODUCTS (OMPS) IN EUROPE
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OBJECTIVES: NICE appraise approximately half of new medicines and there is uncertainty regarding the alternative options for obtaining reimbursement in England. We identify possible routes to market for OMPS in England and conduct a critical appraisal of which route is most suited to appropriately evaluate OMPS. METHODS: The route to reimbursement for OMPS launched between January 2012 and June 2017 was evaluated with a view to its suitability for the NICE and NICE Health Technology Assessment (HTA) process. OMPS were reviewed to ascertain key elements of the analysis and their outcomes to help identify successful strategies. RESULTS: OMPS may undergo a NICE Highly Specialised Technology (HST) appraisal, however these are specifically reserved for ultra-orphan (not ‘just’ orphan) treatments and NICE only have scope to evaluate 3 HSTs per year. When a product does not meet HST criteria, it can only undergo a standard assessment. OMPS can only undergo a standard HTA assessment if all four of the following criteria are met: a rare disease, where treatments are not adequately covered by the existing provision of care, and where the medicine has been previously granted orphan drug status. There is no common definition of ‘orphan drug’ across all HTA agencies, and even for the same product, the assessment may vary. A different HTA agency is responsible for each orphan medicinal product. The NICE HSTs are then assessed in 2 steps: firstly, a non-commercial assessment of the drug’s effectiveness and secondly, a commercial assessment of the drug’s price. The commercial assessment may be undertaken in 3 ways: (1) Medicines and HealthCare Products Regulatory Agency (MHRA) default price for orphan medicinal products, (2) a discount on the default price, or (3) a maximum price. CONCLUSIONS: OMPS have contributed to the worsened perception of orphan drugs.
one ASMR III, three ASMR IV) but requested additional data for each, due to uncertain value of the orphan drugs based on marketing authorisation. The remaining criterion was assessment of expected BI, with a threshold of >£50 million/year in the UK. Of the seven drugs considered, four were recommended, three with validation periods. CONCLUSIONS: While HTAs of ultra-ha technologies were largely based on clinical benefit and BI, and all three bodies requested follow-up data to manage uncertainty, the level of variation may be even more marked than for non specialised medicines. In 2015 the National Institute for Health and Care Excellence (NICE) introduced an appraisal process for highly specialised medicines, the HST process, to date four HST appraisals have been published and ten are in development. The four ultraHA technologies with published technology appraisals or appraisals in development via the HST process were assessed for availability in Scotland, France and Germany. Of the four HST appraisals published by NICE all were recommended with some restrictions. However outcomes were delayed by over a year for three out of four medicines when compared with recommendations by the Haute Autorité de Santé (HAS) in France. For two medicines where an HST is in development, the HAS issued positive guidance over a year previously. The Scottish Medicines Consortium (SMC) has also issued restrictive guidance for one of the four drugs approved by NICE and a “not recommended” for the remaining three. In Germany the added medical benefit of orphan drugs is deemed as proven by the fact that some have been approved. These drugs are therefore approved for use in Germany at marketing authorisation. CONCLUSIONS: Despite the introduction of the HST process by NICE, access to some orphan drugs is delayed in England and restricted in Scotland when compared with France and Germany.

PSY144 DETERMINING THE VALUE OF SELEXIPAG FOR THE TREATMENT OF PULMONARY ARTERIAL HYPERTENSION (PAH) IN SPAIN BY MULT-CRITERIA DECISION ANALYSIS (MCDA)1 Jimenez A,2 Ais A,2 Acuna L1, Gonzalez ME1, Palomo V1, Egea A1
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OBJECTIVES: To ascertain the value of the orphan drug selexipag (Uptravi®) in PAH compared to the main therapeutic alternative in Spain through MCDA. METHODS: Literature review (PICOTS methodology, indexed, grey literature, primary and secondary search) completed with reference documents (regional and hospital evaluations, clinical guidelines). EVIDEM framework (v. 4.0) weighted by 4% Spanish national and regional evaluators was used. A panel of 32 multidisciplinary experts (cardiologists, pulmonologists, rheumatologists, internists, hospital pharmacists, decision-makers and patient representatives) (n=40) assessed and voted on relative value contribution of selexipag vs. iloprost: it was obtained considering criteria scoring and weighting assigned by the panel. RESULTS: Comparative value analysis was supported by real clinical practice experience with iloprost reported by clinicians given that data for selexipag (oral) and iloprost (inhaled) come from non-comparative (design, population and variables) clinical trials. When compared with iloprost, selexipag had a more positive impact on clinical endpoints, quality of life, and patients’ satisfaction in the clinical guidelines. EVIDEM framework (v. 4.0) ranked by 45 Spanish national and regional evaluators. Using standardised scoring, selexipag was found to be the most effective option, obtaining a score of 72.38% of the total score. CONCLUSIONS: Selexipag was considered a new drug for PAH which adds value in the treatment of PAH in Spain. The use of reflective MCDA methodology favoured transparent way from the key stakeholders’ point of view and relative to alternative therapeutic options. The use of MCDA methodology could be considered an alternative methodological discussion between panel members about what constitutes value in PAH which may be useful in drug evaluation and decision-making processes.

PSY145 COMPARISON OF RECENT HTA APPRAISALS OF ORPHAN DRUGS BY NICE, SMC AND HAS IN 2015-20171 Zimberova V1, Vlasak M2, Taillee C2, Delattre C2
1Amaris, Toronto, ON, Canada; 2Amaris, London, UK
OBJECTIVES: Orphan Drugs (OD) treat a variety of aetiologically different disorders, which can only be treated in low prevalence. ODs are an interesting field of study from a health technology assessment (HTA) perspective. This research aims to explore recently appraised ODs by HTA bodies (HTAs) in England, Scotland and France. Methods: A literature review was performed to determine if there were any ODs that were appraised and recommended by the National Institute for Health and Care Excellence (NICE) and the Scottish Medicines Consortium (SMC) and the Haute Autorité de Santé (HAS). Results: Of the six ODs recommended by NICE and SMC respectively, three were conditional on an increased cost-effectiveness ratio (from 1.5 to 2.5) and one with a cost-effectiveness threshold of £100,000 per QALY. The ODs recommended by HAS were conditional on an increased cost-effectiveness ratio of £50,000 per QALY. The ODs examined included those for rare diseases and cancer. Conclusions: The recent ODs appraised by NICE and SMC were limited in number, but their appetite for new ODs appears to be increasing. From a methodological point of view, the recent OD appraisals required a more detailed economic analysis which is critical for HTA bodies to make decisions on OD appraisals. From a methodological point of view, the recent OD appraisals required a more detailed economic analysis which is critical for HTA bodies to make decisions on OD appraisals. From a methodological point of view, the recent OD appraisals required a more detailed economic analysis which is critical for HTA bodies to make decisions on OD appraisals.
OBJECTIVES: In case of orphan drugs (ODs) a high incremental cost-effectiveness ratio (ICER) can be acceptable if the indications provide additional health gains. Therefore, if the additional health gain was more significant and/or the indication disease was rarer.

METHODS: Publicly available results of cost-utility analyses of ODs were searched in the United Kingdom from the appraisal reports of relevant public institutions. ICER values, incremental QALY gains and prevalence of the indication diseases were systematically collected for all ODs that received marketing authorization until 2016. The relationship between these three parameters was investigated.

RESULTS: From 85 ODs with marketing authorization both ICER and incremental QALY gain were available for 13 drugs. With an approach that jointly assessed ICER, QALY gain and prevalence, three groups were separated: 1) overpriced; 2) fairly priced; and 3) under-priced. Four drugs were considered fairly priced, three drugs were considered under-priced, two provided additional health gains and targeted relatively large populations. Four drugs were considered fairly priced.

OBJECTIVES: To analyse previous NICE technology appraisals and highlight the criteria supported by patient groups when evaluating new drugs for rare diseases.

METHODS: We analysed NICE technology appraisals between July 2016 and June 2017. From the 58 appraisals, 11 were related to rare diseases. We identified criteria used by patient groups in the appraisals as follows: 1. Description of the disease; 2. Efficacy, safety, and economic information; 3. Treatment benefits; 4. Economic aspects of drug use...
Objective: To assess the relationship between the type of CM (IOCM or LCM) and MAREX events in patients undergoing inpatient angioplasty in a real-world setting.

Methods: Inpatient visits with a record of a primary procedure code for coronary or peripheral angioplasty from the Premier Hospital Database from January 1, 2008 through September 30, 2013 were analyzed. Angioplasty visits were stratified into cohorts based on contrast media agents used: [1] IOCM (iodixanol) and [2] LCM (ioxol; ioversol, iopamidol, ioxaglate,ioxilan, or iopromide).

The outcome of interest was the MARCE composite end point, defined as renal failure with dialysis, acute kidney injury with and without dialysis, acute myocardial infarction requiring percutaneous coronary intervention/thrombolysis, stroke, transient ischemic attack, or death. Multivariable regression analysis was conducted using the hospital fixed-effects specification to assess the relationship between MARCE events and type of CM (IOCM or LCM). Results: A total of 32,420 patients (15,808 IOCM and 16,612 LCM) met the inclusion criteria. The incidence of MARCE was 7.41%. In the fully adjusted model, after controlling for observable and unobservable time invariant within-hospital characteristics administration of IOCM versus LCM was associated with a 0.69% absolute and 5.32% relative risk decrease in MARCE events in patients undergoing inpatient angioplasty. ICM administration was associated with a 9.32% relative risk decrease in MARCE events as compared with LCM administration.

PM02

ECONOMIC EVALUATION OF NT-PROBNP GUIDED THERAPY IN PATIENTS WITH CHRONIC HEART FAILURE

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Objectives: The objective of the analysis was to determine the economic impact (change in healthcare expenditures) over a 12-month horizon of introducing serial measurements of NT-proBNP to guide therapy on top of current standard of care or the guidelines (RTs) in China. Methods: Decision tree was developed to simulate the process of CHF patients receiving standard of care and usual care. Inpatient care, medication cost and laboratory cost were incorporated as cost inputs in the analysis, and indicators such as basic therapy success rate, time to death, time to HF re-hospitalization. Results: The total cost of NT-proBNP guided therapy and usual care was US$1240.7 and US$1592.4 respectively. In the aspects of effectiveness, NT-proBNP guided therapy decreased the number of hospital admissions by 70.3%, hospitalization length by 69.6% and number of death by 66.4% respectively compared with usual care. One-way sensitivity analysis via changing every input by 20% showed that the basic therapy success rate of NT-proBNP guided therapy had the greatest impact on the results while the parameter determined the number of visits at the high-income setting had the least impact.

Conclusions: NT-proBNP guided therapy can reduce treatment cost and improve clinical efficacy by lowering hospitalization rate and length, and reducing the mortality rate of CHF patients. In general, from the economic point of view, it is recommended that NT-proBNP guided therapy could be promoted in the clinical diagnosis and treatment of CHF.
OBJECTIVES: To analyze the health outcomes, cost and cost effectiveness of differ- ent cervical cancer screening strategies. We compared five strategies: cytology only primary screening, cytology primary screening with reflex to CINtec PLUS, cytology primary screening with reflex to cytology, and HPV 16/18 genotyping primary screening with reflex to CINtec PLUS screening strategy can find the most CIN2+ cases at the least cost per case of CIN2+ detected and deliver the least annual incidence and mortalities of cervical cancers. And HPV 16/18 genotyping with reflex to CINtec PLUS screening strategy can prolong screening interval, which will cause small decline of total annual cost and meanwhile substantially improve screening effectiveness. HPV 16/18 genotyping with reflex to CINtec PLUS screening strategy is the optimal strategy with the best screening effectiveness if the total budget is affordable.

PM09 SPHIROMETRY COMPARISON BETWEEN SMOKERS AND NON-SMOKERS STUDENTS IN UNIVERSITY OF BALOCHISTAN, QUETTA, PAKISTAN
Ahmad1, Iqbal G, Minhas M
University of Balochistan, Quetta, Pakistan

OBJECTIVES: The point of the investigation was to look at lung function among smokers and non-smokers students. METHODS: The exploration was led in the University of Balochistan. The spirometry form and Spirometer were utilized. The total 100 undergraduate’s age amasses between 20-45 years who smoking one year or more were chosen. The undergraduates were tested in two different gathering additionally comprising of 50 undergraduates. The meeting was led and Spirometry test was performed for both gatherings’ students of University of Balochistan, Quetta, Pakistan. The spirometer parameters: FVC (Forced Vital Capacity), FEV1 (Forced Expiratory Volume in One Second), PEF (Peak Expiratory Flow Rate), FEV1/FVC proportion and FE25-75% (Forced Mid Expiratory Flow), found and researched. The rate, repeat, mean and standard deviation were perceived for smokers and the non-smokers by methods for SPSS 22. RESULTS: The anticipated mean ±standard deviation estimation of FVC for smokers was 62.54 ±17.048 and estimation of FVC for non-smokers was 66.56 ±12.654. The estimation of FEV1 for smokers was 46.00 ±13.595 and FEV1 for non-smokers was 74.60 ±12.638. The estimation of FEV1/FVC proportion for smokers was 74.30 ±11.433 and FEV1 for non-smokers was 113.58 ±12.634. The estimation of PEF for smokers was 61.42 ±19.037 and the estimation of PEF for non-smokers was 87.10 ±13.38. The estimation of FE25/75% for smokers was 81.16 ±28.32 and the estimation of FE25/75% for non-smokers was 104.44 ±23.213. CONCLUSIONS: Smoking deleteriously affects the wellbeing, essentially on aspiratory capacities. Consequently, the danger of respiratory mortality or dismalness is high with smoking. The investigation inferred that the smoker’s students were on more danger of lung illnesses than the non-smokers students and along these smoking suspension endeavors to lessen the weight of COPD in the group.
provide additional rotational control for these unstable fractures, will demon-
strate significant clinical impact and hence be attractive to orthopedic
surgeons. The main innovation of our project is the development of a
comprehensive systematic literature review and a pairwise meta-analysis of
randomised controlled trials (RCTs) and comparative observational studies comparing an Integrated 2 screw de-rotation cephalo-medial device (IDC) versus a tradi-
tional 2 screw cephalo-medial nail. A total of 24 RCTs and 2 observa-
tional studies (N = 533, mean age 75% and 66% women) published between 2013 and 2016. There was no significant dif-
ference in revision rates [OR 0.53 (95% CI, 0.2, to 1.40)] and non-union [OR 0.13
(95% CI, 0.01 to 2.63)] p = 0.19. There was a significant difference in implant related failures [OR 0.12 (95% CI, 0.05 to 0.30) = 0.0001] and 60% less people complained of pain (OR 0.39 (95% CI, 0.23 to 0.67) p = 0.0001). The main limitation is the single-screw group included 2-screw nail compared to the single screw nail. There was no evidence that study design substantially influenced the estimate of effects. CONCLUSIONS: Our meta-
analysis suggests that there is no difference between the two nails on revision and non-union. The use of 2-screw de-rotation/compression, cephalo-
medullary device reduces post-operative implant related complications and pain in patients with intertrochanteric fractures compared to the single screw device.

**InterTan**  
Proximal Femoral Nail Antitrotation

**PMD11**  
**COMPARING COST-EFFECTIVENESS OF STRATEGIES FOR ANTENATAL HIV TESTING: VCT AND ROUTINE TESTING IN URBAN NIGERIA**

**OBJECTIVES:** Globally, in 2015, 90% of 2.6 million children living with human-
immunodeficiency virus (HIV) became infected through mother-to-child-trans-
mismission (MTCT) and is the largest contributor to the global burden of MTCT. Almost 60% of pregnant women in Nigeria receive antenatal care (ANC) and deliver in hospital, however, uptake of ANC HIV testing with standard voluntary counselling and testing (VCT) is 29%, leaving 71% pregnant women with a sero-positive test not being diagnosed. Low testing uptake weakens the link between prevention of MTCT program. A switch to innovative routine HIV testing warrants setting specific understanding of the cost-effectiveness.  
This study compares cost effectiveness of two strategies for offering HIV test.  
**METHODS:** A pre-post study was conducted. The pre-test involved adminis-
tering HIV testing to pregnant women on self-referral voluntary counselling and testing (VCT). In the post-test, the mid-wife offered women group HIV counselling and testing (HIVCT). A post-test included the impact of single HIV testing in VCT setting and cost-effectiveness analysis (incremental cost-effectiveness ratio (ICER), cost per new diagnosis and cost of averted cases) were calculated.  
**RESULTS:** In comparison, routine testing identified more women living with HIV 45% versus VCT, which identified 15% (10.5%). Routine testing averted 6.60 HIV infection per year compared to VCT at 3.75. The cost per new diagnosis of HIV in pregnant women was lower for routine testing ($290.86 versus $396.30 per new diagnosis).  
**CONCLUSIONS:** Despite limitations associated with the identified studies, which included different inclusion criteria, 2 RCTs and 2 observational studies (N = 533, mean age 75% and 66% women) published between 2013 and 2016. There was no significant dif-
ference in revision rates [OR 0.53 (95% CI, 0.2, to 1.40)] and non-union [OR 0.13
(95% CI, 0.01 to 2.63)] p = 0.19. There was a significant difference in implant related failures [OR 0.12 (95% CI, 0.05 to 0.30) = 0.0001] and 60% less people complained of pain (OR 0.39 (95% CI, 0.23 to 0.67) p = 0.0001). The main limitation is the single-screw group included 2-screw nail compared to the single screw nail. There was no evidence that study design substantially influenced the estimate of effects. CONCLUSIONS: Our meta-
analysis suggests that there is no difference between the two nails on revision and non-union. The use of 2-screw de-rotation/compression, cephalo-
medullary device reduces post-operative implant related complications and pain in patients with intertrochanteric fractures compared to the single screw device.

**INTERF**  
Proximal Femoral Nail Antitrotation

**PMD12**  
**EFFECTIVENESS OF TELEMONITORING INTERVENTIONS FOR CHRONIC OBSTRUCTIVE PULMONARY DISEASE**

**MethOds:** To conduct systematic review, we searched MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials and CINAHL up to March 2016. We selected ran-
domized controlled trials (RCT) comparing telemonitoring group and control group for COPD. We analyzed dichotomous data as relative risk (RR), and continuous data as mean difference (MD) or standardized mean differences (SMD) while using random-effects models. Critical outcomes were COPD exacerbation, quality of life or health status and all-cause mortality. RESULTS: Twenty four RCTs were included. As a result of meta-analysis, there were no variables showing statistically significant results between two groups. Exacerbation rate (6 studies) was not dif-
ferent between two groups [RR 0.67, 95% CI 0.31 to 1.42]. Due to the moderate degree of heterogeneity the meta-analysis (I² = 76%) and network meta-analysis was performed. The intervention period could be one of the factors describing the heterogeneity. No difference between group was found for exacerbation period (6 studies; MD 0.01, 95% CI -0.12 to 0.13). Also quality of life (10 studies) did not show any difference between the two groups [SMD -0.17, 95% CI -0.41 to 0.07]. Finally, mortality (5 studies) was not different between the two groups [RR 0.80, 95% CI 0.48 to 1.45].  
**CONCLUSIONS:** The use of telemonitoring for COPD is unlikely to result in statistically significant improvements in health outcomes. However, in the subgroup analysis, telemoni-
toring longer than 6 months reduced the exacerbation rates. To clarify the effects of telemonitoring for COPD, further researches are needed with the well-defined intervention and outcome variables.

**PMD13**  
**INTRAOCULAR LENSES FOR THE CORRECTION OF PRE-EXISTING CORNEAL ASTigmatISM DURING CATARACT SURGERY: A SYSTEMATIC REVIEW OF THE LITERATURE**

**OBJECTIVES:** Astigmatism is a refractive error typically resulting from anterior corneal asymmetry. Preoperative astigmatism is up to 3 diopters (D) is present in 77% of cataract eyes. Toxic IOL implantation corrects pre-existing corneal astigmatism, alleviating risk of residual post-operative astigmatism, an important cause of sub-
optimal post-operative uncorrected distance visual acuity (UCDVA) and dependency for distant correction. CI, 0.2 to 4.0/L4 Surgery. The objective of this study was to assess and compare the quality and quantity of published evidence for toxic IOLs to correct pre-existing corneal astigmatism (≥ 0.5 D) and improve postoperative visual acuity outcomes.  
**METHODS:** The evidence suggests that toxic IOLs are superior to non-toxic IOLs, with or without surgical interven-
tions, in reducing postoperative astigmatism, increasing postoperative UCDVA and spectacle independence. However with the emergence of 15% to 19% of the evidence published to date, is based on studies including the AcrySof® Toric IOL platform.

**PMD14**  
**SINGLE VERSUS MULTIPLE INHALERS IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD): A SYSTEMATIC LITERATURE REVIEW**

**OBJECTIVES:** Chronic obstructive pulmonary disease (COPD) is characterized by irreversible or poorly reversible airflow obstruction in the lung. Self-management strategies are becoming more important in the treatment of COPD. In this study, the clinical effectiveness of telemonitoring for COPD was investigated.  
**METHOds:** A pre-post study was conducted. The pre-test involved adminis-
tering HIV testing to pregnant women on self-referral voluntary counselling and testing (VCT). In the post-test, the midwife offered women group HIV counselling and testing (HIVCT). A post-test included the impact of single HIV testing in VCT setting and cost-effectiveness analysis (incremental cost-effectiveness ratio (ICER), cost per new diagnosis and cost of averted cases) were calculated.  
**RESULTS:** In comparison, routine testing identified more women living with HIV 45% versus VCT, which identified 15% (10.5%). Routine testing averted 6.60 HIV infection per year compared to VCT at 3.75. The cost per new diagnosis of HIV in pregnant women was lower for routine testing ($290.86 versus $396.30 per new diagnosis).  
**CONCLUSIONS:** Despite limitations associated with the identified studies, which included different inclusion criteria, 2 RCTs and 2 observational studies (N = 533, mean age 75% and 66% women) published between 2013 and 2016. There was no significant dif-
ference in revision rates [OR 0.53 (95% CI, 0.2, to 1.40)] and non-union [OR 0.13
(95% CI, 0.01 to 2.63)] p = 0.19. There was a significant difference in implant related failures [OR 0.12 (95% CI, 0.05 to 0.30) = 0.0001] and 60% less people complained of pain (OR 0.39 (95% CI, 0.23 to 0.67) p = 0.0001). The main limitation is the single-screw group included 2-screw nail compared to the single screw nail. There was no evidence that study design substantially influenced the estimate of effects. CONCLUSIONS: Our meta-
analysis suggests that there is no difference between the two nails on revision and non-union. The use of 2-screw de-rotation/compression, cephalo-
medullary device reduces post-operative implant related complications and pain in patients with intertrochanteric fractures compared to the single screw device.

**INTERF**  
Proximal Femoral Nail Antitrotation

**PMD15**  
**EVALUATING THE COMPARATIVE ACCURACY OF DIAGNOSTIC TESTS: AN EXAMPLE USING TYPHOID FEVER**

**OBJECTIVES:** Typhoid fevers are infections caused by the bacteria Salmonella enter-
ica serovar Typhi (Salmonella Typhi) and Paratyphi A, B, and C (Salmonella Paratyphi). Approach to typhoid fever differs around the world. A study was conducted to identify those tests that compared diagnostic tests for typhoid fever in children to blood culture result. Diagnostic test network meta-analysis was performed on models previously proposed by applying a Bayesian latent-class extension to the conven-
tional network meta-analysis model. We applied the study to assessing the proper-
ties of bone marrow culture and the relationship between bone marrow and blood culture as informative priors to facilitate the network meta-analysis. We tested sensitivities for the proportion of negative blood samples that were false as well as bone marrow sensitivity and specificity.  
**RESULTS:** A meta-analysis was conducted on a subset of...
of 26 studies (including 47 comparisons) of child studies with blood culture refer-
ence tests from South Asia. The lateral flow test performed comparatively well with
89% sensitivity (67% to 98% across scenario analyses) and 83% specificity. The most
sensitive test of those investigated for the South Asian pediatric population was
reverse passive agglutination with 96% sensitivity, however, scenario analy-
yses suggested that the test was impractical with the higher complication rates of
being 66%. Adding a lateral flow-based IgG rapid test to either of two Typhidot test
approaches yielded improvements in sensitivity without substantial declines in
specificity. These combinations can be used through July 2016. Meta-
yses evaluating the incidence of ND:YAG capsu-
lotomy at ≤2 years, between 1 and 2 years, and > 2 years were conducted com-
paring AcrySof® IOLs versus non-AcrySof hydrophilic and hydrophobic acrylic IOLs.
Subgroup analyses were also conducted between groups. RESULTS: 17 RCTs met the
inclusion criteria and were included in the main analysis. The results
had significantly lower ND:YAG capsulotomy rates at 1-2 years post-surgery (OR, 0.09;
95%-CI, 0.05 – 0.17; p<0.05) and 2 years (OR, 0.33; 95%-CI, 0.16 – 0.69; p<0.05) com-
pared to non-AcrySof acrylic IOLs. Methods: Randomized controlled trials (RCTs) were identified through a systematic literature search using Embase®, MEDLINE®, MEDLINE®-In Process, and Cochrane platforms
(January 1996 through July 2016). Meta-
yses evaluating the incidence of ND:YAG capsu-
lotomy at ≤2 years, between 1 and 2 years, and > 2 years were conducted com-
paring AcrySof® IOLs versus non-AcrySof hydrophilic and hydrophobic acrylic IOLs.

PMD16 INTEGRATED 2 SCREW DE-ROTATION/COMPRESSION, CEPHALO-MEDULLARY DE-ROTATION IN 1ST PHASE OF RELATED COMPLICATIONS: A SYSTEMATIC REVIEW AND META-ANALYSIS
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1Smith & Nephew, Hull, UK, 2Saint Louis University, St. Louis, MO, USA
OBJECTIVES: Surgical treatment is the optimal strategy for managing intertrochan-
teric fractures as it allows early rehabilitation and functional recovery. We aimed
to assess the effectiveness of two commonly used types of intramedullary devices for
the treatment of unstable intertrochanteric hip fractures. We hypothesized that
fracture constructs using devices that provide additional rotational control for these
unstable fractures, will demonstrate a lower rate of construct failure and better
treatment outcomes. METHODS: A comprehensive systematic literature search
in pairwisemeta-analysis of randomised controlled trials (RCTs) and comparative
observational studies comparing integrated 2 screw de-rotation cephalo-medular-
ary nails (IDRC) versus a traditional single screw cephalo-medullary nail (TSS)
was performed. We assessed the following outcomes, revisions, non-unions,
post- operative device related complications (shaft fracture, varus collapse and
cut-out), functional and health related quality of life (HRQoL). We report
biased odds ratio (OR) for dichotomous outcomes and mean difference (MD) for contin-
uous outcomes. RESULTS: Three studies met the inclusion criteria, 2 RCTs and 1
observational study (N=457), mean age was 75 and 68% of patients were female.
There was no significant difference for revision OR 0.47 (95% CI, 0.15 to 1.50)
(ORp=0.20), non-union OR 0.39 (95% CI, 0.05 to 3.42) p=0.40 and pain OR 0.94 (95% CI, 0.35 to 2.51)
p=0.70. However, there was a significant difference in post-operative device related
complications OR 0.18 (95% CI, 0.06 to 0.52) p=0.002 and HRQoL measured by the
Short Form-36 MD 7.40 (95% CI, 2.73 to 12.07) p=0.002 respectively in favour of the
IDRC system compared to the TSS single screw nail. CONCLUSIONS: Our meta-
analysis suggests that there is no difference between the two nails on revision and non-
unions or pain, however the IDRC device had less post-operative implant related
complications and improves HRQoL in patients with intertrochanteric fractures
compared to the single screw nail. **INTERTAN** **Gamma 3.**

PMD17 HEALTH AND ECONOMIC BENEFITS OF USING SINGLE VERSUS MULTIPLE INHALERS IN PATIENTS WITH ASTHMA: A SYSTEMATIC LITERATURE REVIEW 2006-2016
Vera 1, €46
1Alcon Management SA, Geneva, Switzerland, 2Alcon Nederland B.V., Vilvoorde, Belgium,
3Novartis Ireland Limited, Dublin, Ireland, 4Novartis Healthcare Pvt Ltd, Hyderabad, India

OBJECTIVES: Asthma can limit activities and reduce quality of life. With an increas-
ing number of patients requiring treatment, healthcare costs are increasing. Unmet
healthcare needs and economic burden of asthma, as well as health-related quality
of life (HRQoL), are important measures to be considered.

METHODS: A budget impact model, employing a third-party payer perspective,
was developed to estimate the incremental cost of implementing CGP to guide
selected asthma care. Baseline data were sourced from a number of published
studies. Economic, adherence and medication burden endpoints were assessed.

RESULTS: Of 2051 abstracts screened, 33 asthma studies were identified, 18 randomised
terminated controlled trials (RCTs, including non-inferiority and double-blinded design),
11 retrospective, and 4 prospective studies. Findings from 15 RCTs reporting lung
function, and 9 RCTs and 2 prospective studies reporting exacerbation rates, showed
no significant differences between a single FDC inhaler and multiple inhalers. Two
retrospective studies reported lower exacerbation rates with a single FDC inhaler
than with multiple inhalers. Economic analyses from retrospective and prospective
studies showed that a single FDC inhaler was associated with reduced health care
resource use (n=6) and was cost effective (n=3) compared with multiple inhaler
therapies. Three retrospective studies reported greater adherence with a single FDC
inhaler*compared with multiple inhalers, whereas 5 RCTs reported no difference in adher-
ence. CONCLUSIONS: Different conclusions were found in the various investigated
studies due to differences in study design. The efficacy (such as lung function and
exacerbation rates) of a single FDC inhaler and multiple inhalers was comparable.
However, there was a significant difference in post-operative device related
complications OR 0.39 (95% CI, 0.05 – 0.17; p<0.05) and pain OR 0.94 (95% CI, 0.35 – 2.51)
p=0.70. However, there was a significant difference in post-operative device related
complications OR 0.18 (95% CI, 0.06 – 0.52) p=0.002 and HRQoL measured by the
Short Form-36 MD 7.40 (95% CI, 2.73 – 12.07) p=0.002 respectively in favour of the
IDRC system compared to the TSS single screw nail.

CONCLUSIONS: Our meta-
analysis suggests that there is no difference between the two nails on revision and non-
unions or pain, however the IDRC device had less post-operative implant related
complications and improves HRQoL in patients with intertrochanteric fractures
compared to the single screw nail. **INTERTAN** **Gamma 3.**
complication costs over the first year. Results are $14,400 million and $1,600 million, respectively for a 3-year time horizon. **CONCLUSIONS:** A structured education program for insulin injection technique represents a potentially significant immediate and midterm savings for the French health care system, and could be a key element to help contain diabetes cost trends in this highly-prevalent disease.

**PMD21**

**BUDGET IMPACT ANALYSIS OF DEEP BRAIN STIMULATION FOR THE TREATMENT OF PARKINSON’S DISEASE PATIENTS IN THE ITALIAN SETTING**

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**OBJECTIVES:** This budget impact analysis aims at evaluating treatment of Parkinson’s disease (PD) patients eligible for Deep Brain Stimulation (DBS) in Italy. **METHODS:** An hypothetical cohort of DBS eligible patients was estimated. Treatment costs were calculated and compared according to two different scenarios. The costs were those that just the 5% of patients is treated with DBS and most of them with medical treatment. The hypothetical scenario assumes that all eligible patients are treated with DBS. Only non-rechargeable devices were considered. Italian National Health Service (NHS) perspective was analyzed in four year time horizon. **RESULTS:** It was estimated that PD patients eligible to DBS in Italy range from 3,700 to 10,300. According to NHS perspective, the hypothetical scenario is associated to an incremental treatment cost that could be equivalent to 1,400€/patientyear compared to current scenario. The incremental cost is due both to an increase in treatment costs for DBS therapy and to a decrease in annual direct medical costs/patient after DBS which diminish by 40% in the implant year (excluding implant cost) compared to 75% in the second year following DBS. **CONCLUSIONS:** Costs related to DBS are one of the main barriers for a higher adoption of this therapy, despite its clinical success and its effectiveness on quality of life have been largely demonstrated. This analysis gives some insights on the incremental costs needed in case all eligible patients receive DBS in Italy. Further economic analysis is necessary in the Italian setting considering also indirect costs and social perspective.

**PMD22**

**THE BUDGET IMPACT OF INTRODUCING A PD-L1 ASSAY TO SELECT PATIENTS WITH METASTATIC NSCLC WHO ARE POTENTIAL CANDIDATES FOR TREATMENT WITH IMMUNE CHECKPOINT INHIBITORS**

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**OBJECTIVES:** Lung cancer is the second most common cancer and the leading cause of cancer mortality. This disease places a substantial financial burden across EU healthcare systems. Novel immune checkpoint inhibitors have been approved or are in development as immunotherapies for certain patients with metastatic non-small-cell lung cancer (mNSCLC). Testing for PD-L1 expression may help to identify patients with pharmacological treatment, costs related to first implant of DBS system, direct medical costs related to the management of PD patients after the first implant of DBS system. Both epidemiological and cost data were retrieved from Italian literature. **RESULTS:** It was estimated that PD patients eligible to DBS in Italy range from 3,700 to 10,300. According to NHS perspective, the hypothetical scenario is associated to an incremental treatment cost that could be equivalent to 1,400€/patientyear compared to current scenario. The incremental cost is due both to an increase in treatment costs (i.e., LUTONIX® 035 DCB cost minus PTA cost) was assumed to be $1,000 per patient and a per patient per month (PPPM) reduction of $354,783 while decreasing overall treatment costs by up to $72,000,000 (47%).

**PMD23**

**ECONOMIC ANALYSIS OF THE LUTONIX® 035 DRUG COATED BALLOON PTA CATHETER FOR THE TREATMENT OF VASCULAR ACCESS STENOSIS IN PATIENTS WITH ARTERIOVENOUS FISTULAE**

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**OBJECTIVES:** End stage renal disease affects <1% of the Medicare population but accounts for 4% of all hospital stays. The procedure associated with vascular access for hemodialysis patients, reinterventions to maintain patency are common. A recent randomized controlled trial evaluated the safety and efficacy of the LUTONIX® 035 DCB. Coated Balloon PTA catheter (DCB) versus PTA for the treatment of stenotic lesions of native arteriovenous fistulae. **METHODS:** An economic model was developed from a U.S. payer perspective based on 12-month reintervention rates from the Lutonix AV trial. Reintervention costs were based on real-world outcomes from a CMS database of 4,000 fistulas for vascular access for hemodialysis patients, reinterventions to maintain patency are common. A recent randomized controlled trial evaluated the safety and efficacy of the LUTONIX® 035 DCB. Coated Balloon PTA catheter (DCB) versus PTA for the treatment of stenotic lesions of native arteriovenous fistulae. **RESULTS:** An economic model was developed from a U.S. payer perspective based on 12-month reintervention rates from the Lutonix AV trial. Reintervention costs were based on real-world outcomes from a CMS database of 4,000 fistulas for vascular access for hemodialysis patients, reinterventions to maintain patency are common. A recent randomized controlled trial evaluated the safety and efficacy of the LUTONIX® 035 DCB. Coated Balloon PTA catheter (DCB) versus PTA for the treatment of stenotic lesions of native arteriovenous fistulae. **METHODOLOGY:** When compared to an “all-comers” scenario, introducing an PD-L1 assay (≥1% cut-off for PD-L1 expression), to select potential patients who were most likely to benefit from anti-PD-L1/ PD-1 immunotherapy, was associated with a reduction of $2,881.95 in cost per FFS patient and a per patient per month (PPPM) reduction of $934.0. **CONCLUSIONS:** Limitations of an PD-L1 assay to select previously treated patients for treatment with checkpoint inhibitor immunotherapy increased diagnostic costs by ≥ to an "all-comers" scenario, introducing a PD-L1 Assay (≥1% cut-off for PD-L1 expression), to select potential patients who were most likely to benefit from anti-PD-L1/ PD-1 immunotherapy, was associated with a reduction of $2,881.95 in cost per FFS patient and a per patient per month (PPPM) reduction of $934.0 .

**PMD24**

**BUDGET IMPACT ANALYSIS FOR SWITCHING FROM MANUAL TO PRE-FILLED SYRINGES FOR CATARACT SURGERY**

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**OBJECTIVES:** A BIM was developed in Microsoft Excel 2013 to compare selecting patients using a PD-L1 Assay for treatment with checkpoint inhibitor immunotherapy to all-comers. **METHODS:** The economic analysis predicted LUTONIX® 035 DCB may be cost-effective. The per reintervention avoided for LUTONIX® 035 DCB is comparable to other published studies of cost-effective DCBs.

**PMD25**

**BUDGET IMPACT OF A SUPRA-CILIARY MICRO-STENT IN BOTH STAND-ALONE SURGERY AND IN COMBINATION WITH CATARACT SURGERY FOR PRIMARY OPEN-ANGLE GLAUCOMA FROM A UK SECONDARY CARE PERSPECTIVE**

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**OBJECTIVES:** Minimally invasive glaucoma surgery (MIGS) devices have the potential to address an unmet need in primary open angle glaucoma (POAG) treatment by significantly reducing patients’ treatments, decreasing the risk of conventional filtration surgeries such as trabeculectomy or drainage implants. This study assessed the financial impact of the inclusion of a new supra-ciliary micro-stent for patients with mild to moderate POAG. **METHODS:** A UK national and local payer perspective budget impact model estimated the impact of including the Alcon supra-ciliary micro-stent for patients with POAG as a standalone procedure or in conjunction with cataract surgery. Published national population estimates and POAG incidence and prevalence data for adults were used to estimate patients eligible for MIGS procedures. Comparators, patient utilisation and resource use were derived from published sources, a survey of 40 practicing glaucoma/cataract specialists and interviews with two UK experts in surgical glaucoma. Published costs for the surgical glaucoma procedure, MIGS devices, post-procedure monitoring, and prescription drop prices were included to reflect the total cost of treatment. **RESULTS:** The case-estimates that upake over the five years. Over five years, an estimated 762,691 patients will undergo 1,176,225 POAG and POAG/cataract procedures (including bilateral disease). Of these procedures, approximately 68,173 will be performed without previous POAG implantation with the Alcon supra-ciliary micro-stent. Its inclusion in the POAG treatment pathway results in a neutral budget impact, given a total budget increase of only 0.63% (€10,475,789). Cost savings (€529,504, -0.12%) are expected in the concurrent POAG/cataract population. Overall, the cost of the device is offset by savings in other costs compared to current trabeculectomy and cataract surgery. Univariate sensitivity analyses confirm that model results are robust. **CONCLUSIONS:** The inclusion of the Alcon supra-ciliary micro-stent is cost neutral to UK national and local payers, providing access to an innovative minimally invasive treatment for POAG.

**PMD26**

**CLINICAL AND COST IMPACT OF A NOVEL NON-INVASIVE APPROACH FOR THE TREATMENT OF CERVICAL DYSPLASIA FROM A US PAYER PERSPECTIVE**

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OBJECTIVES: Current treatments for cervical dysplasia involve removal of affected cervical tissue. This may lead to side effects such as bleeding, infection and pre-term delivery. This analysis sought to determine the clinical and cost impact of a tissue-preserving procedure using a novel photodynamic therapy under investigation for treatment of cervical dysplasia (Cevira®. Photocure, Oslo, Norway) as compared to conventional treatment with biopsy with or without cryotherapy or Subcutaneous Collagenase (CKC). RESULTS: An Excel model with a 5 year time horizon was used to account for procedure-related side effects. Further benefit may be derived from reduction in preterm births and its associated costs and intangible impact on morbidity.

PM27 DO BUDGET IMPACT ANALYSES FOR SCREENING CANCERS FOLLOW INTERNATIONAL GUIDELINES? A SYSTEMATIC REVIEW


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OBJECTIVES: Budget impact analyses (BIA) assess the financial consequences of the implementation of new health care technologies. BIAs are increasingly being required by decision makers for budgetary planning. Our study aims to systematically review published BIA, applied methods and if international BIA guidelines are followed in evaluating cancer screening programs. METHODS: A systematic literature search was conducted in MEDLINE and EconLit for BIA evaluating cancer screening programs, published in English language 2010-2016. Standardized evidence tables were used to extract main characteristics of the analysis and model along the ISPOR BIA Task Force guidelines including cancer type, model structure, definition of population size/characteristics, perspective, time horizon, included costs, source of epidemiologic and clinical data, consideration of health impact, validation, and uncertainty analysis. RESULTS: Ten studies were identified. Three studies evaluated screening for breast cancer, two for colorectal and cervical cancer and one for lung, prostate and skin cancers. Model designs varied from several types of decision-analytic models (60%) to simple cost calculators (40%). The ISPOR guidelines recommend a minimal budget impact in Spain while increasing access to a valuable, minimally invasive treatment alternative for glaucoma.

PM30 A BUDGET IMPACT ANALYSIS OF INCREASING PERITONEAL DIALYSIS (PD) IN ADULTS EXPERIENCING UNPLANNED START DIALYSIS (URGENT START) IN BRAZIL


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OBJECTIVES: The introduction of supra-ciliary microstent will have a minimal budget impact in Spain while increasing access to a valuable, minimally invasive treatment alternative for glaucoma.

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techniques (IHC). The aim of this study was to evaluate the clinical/economic impact of adopting an immunohistochemical test (Venana ALK, D5F3) as an option for detecting ALK protein expression in advanced NSCLC patients.

Methods: A budget impact model was developed by adopting the Italian NHS perspective and a time horizon of 5 years, in order to compare two scenarios: current ALK D5F3 adoption rate (28%, Base Scenario) and a 100% uptake of D5F3 (60%). The outcomes evaluated were: the number of identified ALK+ patients; the cost for ALK testing (FISH, IHC), the cost per identified ALK+ patients. Results: The estimated number of newly diagnosed, ALK+ patients with NSCLC ALK+ patients eligible to first-line treatment was 1,252 per year, of whom 53% were assumed to have access to ALK testing in the two scenarios. A more extensive use of D5F3 in the Alternative Scenario determined a decrease in diagnostic costs of about €19,000, vs the Base Scenario. If these savings were allocated to the ALK D5F3 test (75% vs 53%), an incremental cost of €67 would be required, leading to 20% overall survival gain in the Alternative Scenario vs the Base Scenario (30.1 vs 25.0 months). Conclusions: The use of ALK D5F3 test was proposed in the Italian National Plan (NPI) for the treatment of ALK+ patients. The economic analysis demonstrated the cost effectiveness of using D5F3 in newly diagnosed ALK+ patients, resulting in lower than FISH and a comparable detection rate. These savings could be re-invested to test a greater number of patients, leading to more efficient identification, use of target therapy, and improvement of clinical outcomes of ALK+ patients.

PMD2
BUDGET IMPACT ANALYSIS (BIA) OF MECHANICAL THROMBECTOMY IN ACUTE PHASE OF ISCHEMIC STROKE (AIS)

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Objectives: To estimate financial consequences of reimbursement of mechanical thrombectomy (MT) using a stent retriever, in relation to the current practice vs introduction of NIPT as a second-level screening test after current clinical practice. The aim of this study was to evaluate the financial impact on the Italian NHS payer’s perspective of the use of the screening NIPT, in comparison to current clinical practice. Analysis was performed from two perspectives: public payer and public payer + patients. Methods: Analysis was performed from two perspectives: public payer and payer + patient in 2-year time horizon (2017-2018). Two scenarios were considered: with and without reimbursement of MT. Target population was defined as patients with AIS eligible for MT who are contraindicated to intravenous tissue plasminogen activator (IV rt-PA) or are treated with IV rt-PA (and MT is added). Size of target population was defined as 2.6% and 7.1% by constructing Excel model. Economic analysis was undertaken with constructed Excel model. Results: Total number of target population is 8,748 in 2017 and 9,792 in 2018. This include all patients treated with IV rt-PA and those with contraindications for IV rt-PA but eligible for MT. In scenario without MT, total annual expenditures in 1st and 2nd year will be 151.2 mPLN and 192.1 mPLN from public payer perspective (152.2 mPLN and 195.4 mPLN from public payer + patient). In scenario with MT, reimbursement estimated number of patients treated with MT will be 3 times higher result with increase in total expenditures by 22.5 mPLN and 50.3 mPLN in 1st and 2nd year of analysis regardless of perspective. Conclusions: Positive decision of reimbursement of mechanical thrombectomy, using a stent retriever, will bring additional cost incurred by public payer or public payer and patients.

PMD3
ECONOMIC ANALYSIS OF THE USE OF NON-INVASIVE PRENATAL TEST (NIPT) FOR PRENATAL SCREENING OF TRISOMY 21, 18, 13 IN PREGNANT WOMEN

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Objective: On-demand stimulation of the sphenopalatine ganglion (SPG) by means of a minimally invasive neurostimulation system has been shown to be a safe and clinically promising therapy for the treatment of chronic cluster headache. Our objective was to estimate changes in cluster headache medication cost observed in patients treated with the AT1 PULSANTE Neurostimulation System, using baseline and 1-year follow-up data for patients with cluster headache, 1-2 years after implantation of the system. Methods: Detailed patient-level data of n=71 chronic cluster headache patients followed through 12 months in Pathway R1 (NCT01677026) was utilized to assess the change in cost of cluster headache medications at baseline and 12 months. Results: Cost estimates for all drug/dose combinations were developed based on current drug prices published in the British National Formulary (BNF 73, 2017), and used the lowest price and largest available package size in each instance to determine cost. Results: In the patients receiving SPG stimulation treatment, overall weekly medication costs per patient were reduced by 54.8% from £197.60 to £89.42 (–£108.20) from baseline to 12 months. Conclusion: On-demand stimulation of the sphenopalatine ganglion (SPG) by means of a minimally invasive neurostimulation system has been shown to be a safe and clinically promising therapy for the treatment of chronic cluster headache. On the basis of prior clinical studies investigating SPG therapy, these reductions stem from both effective treatment of attacks with stimulation, and also a reduction in attack frequency observed in stimulation-treated patients.

PMD5
HEALTHCARE COSTS OF PATIENTS WITH ACUTE AND CHRONIC GRAFT-VERSUS-HOST DISEASE FOLLOWING ALLOGENEIC HAEOMATOPOIETIC STEM CELL TRANSPLANTATION IN BELGIUM: A RETROSPECTIVE DATA COLLECTION AND ANALYSIS

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Objectives: The introduction of NIPT as a second-level screening test after current clinical practice vs introduction of NIPT as a second-level screening test after current clinical practice will lead to an increase in costs the first year (4.1 M€) and 3.5 M€ in the second year regardless of perspective. Results: The total number of target population is 8,748 in 2017, 1,252 per year. Conclusion: NIPT reduced total testing costs per year by 9.22 M€ (from 14 M€ to 4.88 M€) and 3.5 M€. NIPT is performed on a blood sample of the pregnant woman, which contains cell-free DNA that originates from the tissue of maternal and placental cells. The aim of this study was to evaluate the financial impact on the Italian NHS payer’s perspective of the use of the screening NIPT, in comparison to current clinical practice. One-way sensitivity analysis was performed for the key input parameters. All estimations were done with constructed Excel model. Results: Total number of target population is 8,748 in 2017 and 9,792 in 2018. This include all patients treated with IV rt-PA and those with contraindications for IV rt-PA but eligible for MT. In scenario without MT, total annual expenditures in 1st and 2nd year will be 151.2 mPLN and 192.1 mPLN from public payer perspective (152.2 mPLN and 195.4 mPLN from public payer + patient). In scenario with MT, reimbursement estimated number of patients treated with MT will be 3 times higher result with increase in total expenditures by 22.5 mPLN and 50.3 mPLN in 1st and 2nd year of analysis regardless of perspective. Conclusions: Positive decision of reimbursement of mechanical thrombectomy, using a stent retriever, will bring additional cost incurred by public payer or public payer and patients.
to find treatment options. In the UK, the National Institute for Health and Clinical Excellence (NICE)[1] incorporated an end-of-life (EOL) premium since 2010. The aim of this study is to assess the cost-effectiveness value of CMI in a health system.

**METHODS:** A model described by McCabe and colleagues is adapted to show the value of CMI to populate the model, threshold cost and real-world incremental cost-effectiveness ratio (ICER) data from the health technology assessments performed by NICE in the past year (November 2015–December 2016) were used as comparators. Data collected in a prospective observational study conducted by Caris demonstrated the survival benefit in patients treated in line with the CMI guidance. An ICER for CMI was calculated based on the demonstrated survival benefit and the clinical utility. **RESULTS:** To date, NICE recommendations have consistently used a £50,000 per QALY threshold for these 80+ solutions. This equates to a health benefit of 7.3 days of additional benefit per £1,000 expenditure for the health care system. A CMI unit price of £5,000 was used in the ICER calculation. Including the CMI for CMI Cost / (QALYs gained x decision impact factor). Based on these assumptions, the ICER for CMI is £19,022 or equivalent to 4% of the patients’ total expenditure. **CONCLUSIONS:** Data from this model shows that CMI exceeds the threshold opportunity cost and represents value for health care systems that surpass many recently approved drugs.

**PMD39**

**ECONOMIC EFFECTIVENESS OF THE ATTUNE® KNEE SYSTEM - ANALYSIS OF REAL WORLD HOSPITAL LENGTH OF STAY AND INCIDENCE OF EARLY COMPLICATIONS**

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**Westbrook A**

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**OBJECTIVES:** Highlight the importance of reducing hospital length of stay (LOS) and early post-operative readmissions to reduce the financial burden of elective orthopedics. DePuy Synthes (DS) ATTUNE® Knee was engineered to enhance stability, thus potentially accelerating time to normal activities. This study aims to determine whether patients treated with ATTUNE had a shorter LOS and reduced delayed discharge (DD) and post-operative events compared to patients treated with other implants. **METHODS:** Retrospective analysis of all primary adult TKAs at a single hospital within the United Kingdom between April 2014 and April 2015 was conducted. Three groups of patients were compared by implant type: ATTUNE, DS SIGMA® or Aesculap Columbus®. Outcomes were LOS, DD > 3 days, all-cause 30-day readmissions, all-cause 60-day complications and all-cause 90-day complications to which hospitalization was attributed. Baseline patient characteristics and outcome measures were generated. Multivariable models were constructed to examine the differences in outcomes between implants and the covariates that may affect these outcomes. **RESULTS:** In this study a total of 716 patients were included (ATTUNE: N=238, SIGMA: N=332, Columbus: N=149). 59.4% were female and had an average age of 69.2 (SD: 9.8). No significant differences were noted in age and sex; however, the proportion of patients ≥ 65 years was significantly greater for Columbus (48.3%) compared to ATTUNE (42.4%) and SIGMA (43.1%). Significant trends of lower 30-day readmission and 60-day complication and reoperation rates were observed in the cohort of patients treated with ATTUNE vs. Columbus or SIGMA. **CONCLUSIONS:** In this study, patients treated with ATTUNE experienced significantly shorter LOS and fewer DDs compared to those treated with Columbus or SIGMA.

**PMD40**

**THE RESOURCE AND COST CONSEQUENCES OF USING ANTIBIOTIC COATED INTRAEDUllAR NAILS COMPARED TO NON-COATED NAILS IN OPEN TIBIA FRACTURES ACROSS FOUR EUROPEAN CENTRES**

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**OBJECTIVES:** Bone and deep wound infections are associated with increased length of stay and higher costs in patients with open tibial fractures. Infection risks increase with implant usage and open fracture severity. Innovations to reduce risks include antibiotic coated implants. This study models whether use of antibiotic coated implants in patients at high-risk of infection is cost-effective. **METHODS:** An economic model compared infection rates and costs associated with surgery and hospital stay in patients with a Gustilo-Anderson (GA) classification open fractures, for two patient cohorts. The GAII patients in the first cohort received an antibiotic coated tibial nail (ETN PROtect®) whilst the remaining GA1 and GAII patients in the same cohort received a standard nail. GAII patients received the antibiotic coated nail due to their higher infection risk. The second cohort all received an ATTUNE® knee system. Data from a retrospective clinical study was used to estimate the resource use and costs across U.S. hospitals, we conducted a retrospective analysis of patient undergoing TAVR or SAVR between January 1, 2014 – September 30, 2016 using the Premier Hospital Database. Patients were included in this analysis if they had an ICD-9 or ICD-10 code for TAVR or SAVR and were 65 years old or older at the time of the procedure. Patients were matched 1:1 using propensity score method based on patient age, Charlson comorbidity index grouping (4 indices), gender, race, and payor type. While FGM is a great innovation that simplifies daily diabetes management and patient adherence to testing frequency, the costs associated with this technology are still a major barrier for patient access.

**PMD42**

**TREATMENT CHOICES BASED ON MULTIPhLAFORM PROFILING PLATFORM, UNLIKE WITH THOSE WITH SEQUENCING ALONE, DO NOT CAUSE A COST EXPLOSION IN REFRACTORY CANCER PATIENTS**

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**OBJECTIVES:** Molecular testing of cancers is quickly becoming standard of care using diverse approaches, either academic or commercial in origin. Some oncologists remain apprehensive about the clinical utility of molecular profiling, based on the potential costs of self-funded testing. We examine the potential cost impact of sequencing, whether it would lead to selection of more expensive treatments that may not be accessible. The aim of this study is to examine the decision impact of a multi-platform tumor profiling service, Caris Molecular Intelligence (CMI), and evaluate CMI-guided treatment costs compared to prior and planned treatments in prospective and retrospective clinical studies. **METHODS:** In 5 physician-led clinical studies, the treatment decision prior to receipt of the CMI report was captured (n=117 patients). A systematic review of treatment data from 10 clinical studies of CMI (n=385 patients) allowed a comparison of planned versus actual (n=137) and prior versus actual (n=229) treatment costs. Costing information was taken from the hospital billing database, and the CMI-guided treatment costs were compared to the planned treatment costs. Decision impact (n=232) and treatment cost per cycle (n=131) were also compared with corresponding data from next studies generation sequencing (NGS)-only approach. **RESULTS:** Decision impact was calculated for profiled cases compared to 29% of NGS-only patients. The CMI-guided treatment per cycle was £995 in 385 treated patients. Planned treatment costs were comparable to actual treatment costs (£979 versus £945, p=0.7123) and prior treatment costs were also not significantly different to planned treatment costs (£980 versus £945, p=0.0019), and prior treatment costs were also not significantly different to planned treatment costs (£980 versus £945, p=0.0019), and prior treatment costs were also not significantly different to planned treatment costs (£980 versus £945, p=0.0019).**CONCLUSIONS:** Treatment costs guided by a multi-platform-profiling platform were comparable to planned and prior treatment costs and do not lead to a cost explosion, as the majority of treatments used were conventional chemotherapies. NGS-only approaches rely on more expensive targeted therapies and higher treatment cost per cycle per patient.

**PMD43**

**COMPARISON OF U.S. HOSPITAL COSTS BETWEEN TRANSCATHERETE AORTIC VALVE REPLACEMENT (TAVR) AND SURGICAL AORTIC VALVE REPLACEMENT (SAVR)**

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**OBJECTIVES:** Given TAVR’s broadening application, the budget constraints faced by hospitals, and the higher cost of the TAVR valve compared to SAVR, there is great interest in understanding how hospital costs compare between TAVR and SAVR. **RESULTS:** To evaluate TAVR and SAVR costs across U.S. hospitals, we conducted a retrospective analysis of patient undergoing TAVR or SAVR between January 1, 2014 – September 30, 2016 using the Premier Hospital Database. Patients were included in this analysis if they had an ICD-9 or ICD-10 code for TAVR or SAVR and were 65 years old or older at the time of the procedure. Patients were matched 1:1 using propensity score method based on patient age, Charlson comorbidity index grouping (4 indices), gender, race, and payor type. In-hospital costs were delineated by inpatient, operating room, supply, room and board, ICU, lab, etc. plus pharmacy cost, adjusted to 2016 dollars. We supplemented this aggregated-level cost analysis by examining the aggregate hospital costs and reimbursements for TAVR and SAVR at two U.S. hospitals.

**RESULTS:** We matched 13,020 TAVR and SAVR patients in the Premier

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Database. The average, unadjusted, total in-patient hospital cost for TAVR was $60,063 (SD = $37,962) compared to $60,319 (SD = $42,140) for SAVR. The total average yearly cost for TAVR was higher than for SAVR ($5,190; SD: $25,126, 7%). TAVR had average yearly differences of $4,857 for room and board costs (TAVR = $13,286 versus SAVR = $18,143; $2,705 for operating room costs (TAVR = $9,413 versus SAVR = $12,438), and $1,426 for lab charges (TAVR = $3,520 versus SAVR = $3,970). CONCLUSIONS: Average, in-hospital costs between TAVR and SAVR were comparable, with the lower cost of room and board, operating room, and lab offsetting the higher supply cost for TAVR.

PMD44
HOSPITAL COSTS ASSOCIATED WITH DEDICATED VASCULAR ENDOPROSTHESIS VERSUS PROSTHETIC Bypass IN PIPITAL ARTERY ANEURYSM TREATMENT IN FRANCE
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OBJECTIVES: To assess costs of hospital patients with popliteal artery aneurysm (PAA) treated by dedicated vascular endoprosthetic versus prosthetic bypass surgery. The costs and prosthetic bypass were extracted from the French medical information system (Programme de Médicalisation des Systèmes d’Information, PMSI) 2013 database: implant code was used for endoprostheses and the combination of both procedure and implant codes for prosthetic bypass. Patients were followed during one year from their first stay (March 2013/March 2014). An algorithm and a medical review excluded rehospitalisations not related to follow up for either treatment. To control for confounding factors, patients from both arms were matched according to their age, gender, hospital status (public/private) and principal diagnosis (ICD-10 (International Classification of Diseases) code). Associated costs during this period were added up for the initial surgery and the related rehospitalisations: the mean 1-year cost per patient was estimated and compared between both arms. Valuation was performed considering French official tariffs. RESULTS: In 2013, 573 patients with PAA treated with surgery and 5,983 with PAA treated with prosthetic surgery were identified: 456 patients in each arm could be matched. Patients were 72±10 years old on average, 89% were men. 54% of stays occurred in public hospitals. Median length of initial stay was 3 days [2-6] for endoprostheses implantation and 8 days [6-13] for prosthetic bypass surgery. 4% of endoprosthetic patients and 41% of bypass patients had at least one rehospitalization: respectively, 72% versus 74% of them occurred within 6 months after treatment. The mean 1-year cost was $12,714 ± $4,886 for prosthetic endoprostheses per patient versus $14,038 ± $11,021 per bypass patient (difference statistically significant; p<0.0014). CONCLUSIONS: Using endoprosthetic surgery instead of prosthetic bypass for the treatment of PAA led to a lower mean 1-year cost per patient.

PMD45
USE OF THE IMS CORE DIABETES MODEL (CDM) IN A LONG-TERM PROJECTED HEALTH ECONOMIC COMPARISON OF CSII AND MDI TREATMENTS OF TYPE 1 DIABETES (T1D) IN A NEWLY-DIAGNOSED POPULATION OF PAEDIATRIC PATIENTS
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OBJECTIVES: Continuous subcutaneous insulin infusions (CSII) are an alternative to multiple daily injections (MDI) of insulin in children with type 1 diabetes (T1D). This study estimated the costs associated with developing long term microvascular and macrovascular complications in type 1 diabetes (T1D). As part of a randomised clinical trial (SCIPI, ISRCTN29552725) we explored an economic model of CSII versus MDI in newly diagnosed T1D patients with or without cataract surgery (SC+C) for mild-to-moderate glaucoma and SC for refractory glaucoma. RESULTS: The clinical evidence and estimate annual costs of MIGS with stents in mild-to-moderate or refractory glaucoma from a Spanish hospital perspective. METHODS: Stent types and population examined: (a) trabecular bypass (TB) with or without glaucoma (TB+C) and (b) trabecular stent with cataract surgery (SC+C) for mild-to-moderate glaucoma, and (c) subconjunctival stent with or without cataract surgery (SC+C, SC) for refractory glaucoma. A review of published trials identified patient characteristics, efficacy (proportion of patients), costs associated with different stents and primary outcomes. RESULTS: Annual costs for TB+C, TB and SC+C were $2,983, $3,189, and $2,877, respectively. Costs due to AEs were $61, $67, $1,009, and $2,238, respectively. Ophthalmologist visits were most frequent in the SC+C arm ($540) and least in the TB+C arm ($19). CONCLUSIONS: Annual treatment costs were highest for SC+C in refractory glaucoma, in part due to the cost of cataract surgery, ophthalmologist visits, and AEs. When considering costs due to surgery, it is important to consider the population of interest, whether cataract surgery is performed, subsequent ophthalmologist visits, and the risk of AEs, in addition to the price of stents.

PMD46
METHODOLOGICAL ISSUES AND OUTCOME MEASUREMENT IN THE USE OF A NEW OCULAR MICROINVASIVE SURGERY (MIGS) IN PATIENTS WITH MODERATE OR SEVERE GLAUCOMA
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OBJECTIVES: To review the evidence and estimate annual costs of medical devices for the treatment of moderate or severe glaucoma (for TB+C, TB, or S+C) and refractory glaucoma (for SC+C, SC+C). RESULTS: The average cost of exacerbation with hospitalisation was $4,081 and $4,238, respectively. Costs due to AEs were $61, $67, $1,009, and $2,238, respectively. Ophthalmologist visits were most frequent in the SC+C arm ($540) and least in the TB+C arm ($19). CONCLUSIONS: Annual treatment costs were highest for SC+C in refractory glaucoma, in part due to the cost of cataract surgery, ophthalmologist visits, and AEs. When considering costs due to surgery, it is important to consider the population of interest, whether cataract surgery is performed, subsequent ophthalmologist visits, and the risk of AEs, in addition to the price of stents.

PMD47
MICRO ECONOMIC ANALYSIS OF THE COST EXACERBATIONS AND HOSPITALIZATIONS BURDEN ON THE HEALTH CARE SYSTEM IN BULGARIA
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OBJECTIVES: Exacerbations have a major impact on severity of the disease, the hospitalizations’ rate and their costs. The objective of this study is to analyse the cost of COPD exacerbations and related hospitalization rate in Bulgaria before and after the introduction of new inhaler devices. METHODS: It is an ambispective observational study of real life therapy on a representative cohort of 426 COPD patients. Data for exacerbations, hospitalization rate and their cost was collected according to the severity of the disease. Patients were divided in three subgroups depending on the prescribed therapy. As “new” therapy was considered all INNs introduced on the national market after 2013, INNs before 2013 were coded as “old” therapy and the combination of both was considered as combined therapy. Micro-costing approach was applied to evaluate the total and mean medical costs on exacerbation therapy and exacerbation-related hospitalizations. Descriptive statistics and Kruskal-Wallis test were applied. RESULTS: Patients assigned to new therapy (12%) benefited from higher devices coverage in all exacerbations than the patients treated with the medicines available in the Bulgarian market before 2013 (p < 0.000029 for exacerbations without and p = 0.00420 for exacerbations with hospitalization). The total cost of exacerbations varied from 59 to 309 euro (without hospitalization) and from 3968 to 58840 euro (with hospitalization) depending on the type of therapy. The average cost of exacerbation with hospitalization increased with the progression of the disease and was the lowest for the new therapy group. CONCLUSIONS: The measure of interest is that the new therapy with improved inhaled devices might be more effective as a management therapy than the old or combination therapies and could reduce the exacerbation-related cost.
OBJECTIVES: To compare the disease burden and health-related costs of contracting Hepatitis B Virus (HBV) following a needlestick injury in Chinese Healthcare Workers (HCWs) when using normal versus blunt-tip needle needles in cesarean sections over a 10-year time horizon. BACKGROUND & METHODS: Needlestick injuries can lead to a number of blood-borne infectious diseases i.e. HIV, HBV, or HCV for HCWs exposed to contaminated needles, and contribute to great mental anxiety, reduced productivity, and potentially high treatment costs. For several years, professional organizations such as the WHO have endorsed the use of blunt-tip needle needles as a potential infection control safety measure. A Markov model was developed to estimate and compare the HBV infection rate and the total treatment costs per HCW between normal and blunt-tip needle groups. The needlestick injury rate in c-sections, HBV infection rate, healthcare costs, Markov states and transition probabilities were collected from three epidemiology papers targeting Chinese populations. RESULTS: Although blunt-tip needle needles command a marginal price premium, they appreciably reduce the incidence of needlestick injuries to surgical personnel (Blunt: 1%; Normal: 6%; p<0.05) and lower total treatment costs compared to normal needles. Specifically: (1) The adoption of blunt-tip suture needles reduces HBV infection rates (93 HBV infections/1,000,000 c-sections vs. 557 HBV infections/1,000,000 c-sections), which may be especially pertinent for obstetrics departments, where the needlestick injury prevention rate per HBV prevented is 112,069 RM; (2) The 10-year average costs of HBV treatment per HCW is 338,757 RMB; and (4) In case of HBV infection, there is a 1.3% risk of progression to hepatocellular carcinoma (HCC) within 10 years. CONCLUSIONS: Based on our study outcomes, the application of blunt-tip needle needles is associated with a significant reduction in HBV infections and health-related costs in the Chinese context. It may be recommended for clinical use.
V600E-mutated NSCLC received (1) sequential testing, (2) exclusion mutation (i.e., KRAS) testing followed by sequential testing, (3) BRAF testing after limited mutation/rearrangement panel, or (4) upfront NGS, which includes BRAF testing. Treatment options for BRAF+ patients included dabrafenib+trametinib combination therapy, chemotherapy, or immunotherapy. Test turnaround time and unit costs were based on literature and clinical experts' opinions. Patients are assumed to initiate dabrafenib+trametinib upon receipt of positive BRAF mutation test results. Differences in time to receive BRAF mutation test results and targeted therapy initiation, and cost of testing were compared between each modality vs. NGS. RESULTS: Time to receive BRAF mutation test results and targeted therapy initiation among candidate patients was estimated at 2.0 weeks for NGS, which was 2.4 weeks faster than mutation panel, 4.9 weeks faster than sequential, and 6.4 weeks faster than exclusion mutation panel. The unit cost of genetic testing was based on national Medicare reimbursement rates and was $5,524.81 ($1000), $774.70 ($1000), and $1238 vs exclusion mutation. In a sensitivity analysis based on amounts reimbursed by third-party payers (commercial claims data), NGS ($2860) remained the least expensive option by $894 to $1044. CONCLUSIONS: Compared with other testing strategies, NGS achieved the shortest wait time for mutation testing, resulting in earlier initiation of effective targeted therapy, and lower costs in patients with BRAF V600E-mutant advanced NSCLC.

PMD55
COST-CONSEQUENCES OF USING FLUCICLOVINE (F 18) FOR THE DIAGNOSIS AND STAGING OF RECURRING PROSTATE CANCER
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OBJECTIVES: Prostate cancer (CaP) is the second leading cause of cancer death in men. Metastatic CaP recurrence (1/3 of patients treated) is a major risk of ineffective management. Current detection methodologies often do not identify location and disease extent which can aid in therapy selection. Fluciclovine F 18 was recently approved by the US FDA for the diagnosis and staging of recurrent CaP. A cost-utility model based on current clinical practice was developed to estimate the annual health care costs of fluciclovine vs. standard of care (SoC). METHODS: Arden decision analytic model was used to perform a cost-utility analysis on clinical practice. The time to targeted therapy initiation estimate may be conservative as in a real-world setting some patients may delay dabrafenib+trametinib until disease progression on a prior treatment. Based on CMS reimbursement, NGS cost was $15,698 vs $980 compared to SoC. In the sub-acute setting HBP was cost saving with direct costs from $552.48 ($1000) to $347.18 ($1000) and indirect costs from $900.20 ($1000) to $128.60 ($1000). Finally, considering the chronic stage, direct costs decreased from $1037.20 ($1000) to $329.90 ($1000). CONCLUSIONS: The introduction of HBP could be a cost saving strategy in patients with sub-acute and chronic low back pain, considering both the INHS and Society perspective.

PMD56
CONTINUOUS SUBCUTANEOUS INFUSION VERSUS MULTIPLE DOSE INJECTION OF INSULIN FOR NEWLY-DIAGNOSED T1D PAEDIATRIC PATIENTS: A COST-UTILITY ANALYSIS
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OBJECTIVES: Continuous subcutaneous insulin infusions (CSI) and multiple daily injections (MDI) with insulin are alternative methods of glycaemic control in type 1 diabetes (T1D). Each method has advantages and disadvantages, including higher costs and macromolecular complications. The SCiP trial (SRTCN29/55257) compared the clinical and cost-effectiveness of CSI treatment with MDI in paediatric patients (aged 3-19 years) with newly-diagnosed T1D who were randomised equally to CSI or MDI treatment stratified by age and treatment centre. Resource use (prescribed insulin, concomitant medications, devices, consumables, inpatient, outpatient, emergency, adverse events) were prospectively collected for 2, 6, 9 and 12 month intervals. Quality adjusted life years (QALYs) were assessed by the Health Utilities Index (Mark II) completed at all study visits. RESULTS: 293 children were randomized to the trial (median age 9.8 years, median HbA1c 11.8%). Over 12 months, mean total costs were higher by €1,863 (95% CI, €1,620, €2,137) for CSI than for MDI (€4,404 vs €2,541), with the majority of this difference ($1,177) due to the additional cost of consumables and devices (annualised cost of 6580 CSI versus 5380 MDI in the 12-month period). CONCLUSIONS: CSI is not cost effective in patients representative of the study population and is dominated by MDI. However, the generalisability of our data beyond 12 months is uncertain.

PMD57
COST-EFFECTIVENESS OF PREOPERATIVE MRI IN DUCTAL CARCINOMA IN SITU OF THE BREAST
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OBJECTIVES: The aim of the study was to evaluate the impact of preoperative MRI on clinical practice and survival by sub-types of present breast disease, both in terms of direct and indirect costs. The patient population for the economic study consisted of 345 patients (173 in the MRI arm and 172 patients in the control arm). Costs were assessed from the French national health insurance perspective. Resource use were prospectively collected during a 6-month period after randomization and included all breast cancer-related hospitalizations, specialists visits, imaging procedures and biopsies, radiotherapy, transportations and sick leaves. We estimated the mean cost per patient in each arm and the cost difference between arms. Ninety-five percent confidence intervals and cost-effectiveness acceptability curve (cost per averted re-intervention for positive margins) were estimated using bootstrap replicates (n=10,000). RESULTS: The re-intervention rate for positive margins was 20% in the MRI arm (35/173) and 27% in the control arm (47/172). The difference (MRI-control) in re-intervention rates was 7% (95% CI -17%, 3%). The number of re-hospitalizations was 48 in the MRI arm and 59 in the control arm. The mean cost per patient was 9,682 in the control arm and 9,980 in the MRI arm. The cost difference (MRI-control) amounted to € 298 [95% CI: -470, 1063]. For a willingness to pay of € 500 to avert a re-intervention, the probability of MRI strategy being cost-effective was 93%. CONCLUSIONS: Preoperative MRI in DCIS does not lead to any substantial cost re-interventions for positive margins and is likely to be a cost-effective strategy in France.

PMD58
COST-EFFECTIVENESS OF THE SUFENTANIL SUBLINGUAL TABLET SYSTEM VS IV PCA MORPHINE FOR THE TREATMENT OF ACUTE MODERATE TO SEVERE POST-OPERATIVE PAIN IN IRELAND
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OBJECTIVES: To assess the cost-effectiveness of Sufentanil Sublingual Tablet System (SSTS), an invasive patient controlled analgesia system (PCA) vs intravenous
Effectiveness. A port catheter is the most cost-effective device. The total cost of using a PC was lower healthcare costs for payers. The study findings suggest that MCT is a cost-effective treatment option for the management of acute moderate to severe post-operative pain, associated with fewer complications, lower costs and demonstrates early mobilisation benefits compared to IV morphine PCA in an Irish healthcare perspective.

**PMDE1**
PORT CATHETER VERSUS PERIPHERALLY INSERTED CENTRAL CATHETER FOR ADJUVANT CHEMOTHERAPY IN BREAST CANCER: A COST-EFFECTIVENESS ANALYSIS
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**Objectives:** In a breast cancer center, the generally inserted central catheter (PICC) has become an alternative to the port catheter (PC) in adjuvant chemotherapy for breast cancer. Between 2010 and 2012, a retrospective study comparing the two devices was performed, and published. A total of 68 device-related complications were observed in the PICC arm (158 patients) and 43 in PC arm (158 patients). This study showed that the PICC was a risk factor for complication. The purpose of the present study was a medico-economic evaluation between these two devices. **Methods:** This study was a cost-effectiveness evaluation. Data were collected retrospectively from the cohort of the initial clinical study. The primary efficacy endpoint was the rate of patients monitored with MCT is 61%. This is significantly higher than that of PAF, with an optimal monitoring period of at least 21 days. The diagnostic yield associated with fewer complications, lower costs and demonstrates early mobilisation benefits compared to IV morphine PCA in an Irish healthcare perspective.

**PMDE2**
MOBILE CARDIAC MONITORIZATION IS A COST-EFFECTIVE TOOL FOR THE DIAGNOSIS AND MANAGEMENT OF ATRIAL FIBRILLATION COMPARED TO HOLER: A COST EFFECTIVENESS STUDY IN TURKEY
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**Objectives:** Mobile Cardiac Monitorization (MCT) frequently detects paroxysmal atrial fibrillation (PAF) in patients with cryptogenic stroke and transient ischemic accident (TIA). Length of monitoring is strongly associated with detection of PAF, with an optimal monitoring period of at least 21 days. The diagnostic yield of patients monitored with MCT is 61%. This is significantly higher than that of patients who use the Event monitor (23%) or the Holter monitor (24%). The aim of the analysis is to conduct a cost-effectiveness analysis of MCT versus Holter monitorization, with direct cost and payer perspective in atrial fibrillation. **Methods:** Literature search was conducted to understand Atrial Fibrillation (AF) diagnosis process with MCT or Holter, treatment process and health outcomes with or without treatment. A decision tree and Markov model were conducted for calculating the cost-effectiveness of MCT vs. Holter. A healthcare utilization and treatment. A decision tree and Markov model were conducted for calculating the cost-effectiveness of increased glucose test frequency based on this real-world data, comparing FM vs SMBG in TIDM patients using insensitive. **Methodology:** The QuintilesIMS Core Diabetes Model was run over a 50-year lifetime horizon, modelled the screening costs, and the effectiveness of the screening methods can influence the ICERs but they did not change the results. At the threshold of 0.4054 QALYs compared to standard care by preventing ventilator-associated infections and PrIs in an ICU setting.

**PMDE4**
THE VALUE OF BEDS WITH CONTINUOUS LATERAL ROTATION THERAPY TO PREVENT VENTILATOR-ASSOCIATED PNEUMONIA AND PRESSURE INJURIES: A COST-EFFECTIVENESS ANALYSIS
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2OBJECTIVES: Immobility of mechanically ventilated patients in the intensive care unit (ICU) increases the risk of pulmonary complications and hospital-acquired (concurrent) nosocomial infections (CAIs) such as ventilator-associated pneumonia (VAP) and pressure injuries (PIs). Continuous lateral rotation therapy (CLRT) has been shown to reduce the incidence of VAP and PIs, but the economic value of switching to CLRT over standard care is presently unknown. The objective of this study is to evaluate the cost-effectiveness of CLRT versus standard care. The expected cost for a CLRT per patient was $47,140 compared to standard care at $49,229 per patient, showing that CLRT saves cost per patient. The expected effectiveness of CLRT per patient was 0.0454 QALYs compared to 0.0451 QALYs for standard care. CLRT was dominant in 99.94% of the Monte Carlo simulations in the PSA and 100% of the simulations in the univariate sensitivity analysis. CLRT also showed outstanding ROIs reaching the breakeven point over just 40 days of a year.** Conclusions:** CLRT appears to be highly cost-effective compared to standard care by preventing ventilator-associated infections and PrIs in an ICU setting.

**PMDE5**
COST EFFECTIVENESS OF URBAN BREAST CANCER SCREENING PROGRAMME IN CHINA
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2OBJECTIVES: This study aimed to analyse the cost-effectiveness of the breast cancer screening pilot program among urban Chinese women, as well as to conduct sensitivity analysis, scenario analysis, and the budget impact analysis. **Methods:** A Markov model was developed from a societal perspective among asymptomatic Chinese women over 40 years of age for breast cancer over a lifetime horizon in urban China. We obtained the incremental cost-effectiveness ratio (ICER) and explored the uncertainty using one-way and probabilistic sensitivity analysis. We also explored the ICERs in different geographic areas and cities as well as with different screening intervals and population coverage. In the budget impact analysis, we used a linear regression analysis to calculate the cost-savings and cost-effectiveness of the screening programme among urban Chinese women. **Results:** The ICER of screening was ¥3159/QALY in the urban programme. Compared to no screening, breast cancer screening was cost-saving in all levels of cities and all geographic areas in China. With fixed cost-effectiveness of the screening programme among urban Chinese women, the screening programme among urban Chinese women increases in urban China.

**PMDE6**
COST-EFFECTIVENESS OF A FLASH GLUCOSE MONITORING SYSTEM BASED ON REAL-WORLD USAGE FOR TYPE 1 DIABETES (T1DM) PATIENTS USING INTENSIVE INSULIN: A SWEDISH PERSPECTIVE
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**Objectives:** Routine glucose monitoring is valuable for T1DM patients using intensive insulin therapy. A study was performed in Sweden to evaluate the effectiveness of a flash glucose monitoring (FM) system (the FreeStyle Libre® system) continuously measures glucose levels from interstitial fluid with or without requiring routine self-monitoring of blood glucose (SMBG). Data transfers to a handheld reader from the wearable arm sensor. Real-world data collected from over 50,000 FM readers indicates patients scan 16 times/day on average compared to 5-6 tests/day for SMBG users (Miller 2013). The data also showed an association between more frequent scans and lower HbA1c. Therefore, the objective of this study was to evaluate the cost-effectiveness of increased glucose test frequency based on this real-world data, comparing FM vs SMBG in T1DM patients using insensitive. **Methodology:** The QuintilesIMS Core Diabetes Model was run over a 50-year lifetime horizon, modelled the screening costs, and the effectiveness of the screening methods can influence the ICERs but they did not change the results. At the threshold of 0.4054 QALYs compared to standard care by preventing ventilator-associated infections and PrIs in an ICU setting.
PERSPECTIVE
adjusted life years (QALYs)) of different AS strategies over a lifetime horizon from Turkey.

OBJECTIVES: To conduct a cost-effectiveness analysis between Coblation technology and mechanical debridement with a shaver in a patient population presenting with chronic pain due to a medial meniscus tear and an International Cartilage Research Society (ICRS) grade III focal chondral lesion.

METHODS: A decision-analytic model was developed comparing costs and clinical outcomes between Coblation and MD following a knee arthroscopy procedure in a patient population with medial meniscus tear and an International Cartilage Research Society (ICRS) grade III focal chondral lesion. Costs were obtained from the 2016 Spanish Health Costs database, an annual 3% discount rate was applied to future costs. Clinical outcomes data were extracted from published results of a randomized clinical trial (RCT). The time horizon for the analysis was 4 years for both costs and outcomes. Model robustness was tested using threshold analysis and multiple one-way sensitivity analyses.

RESULTS: The ICER was calculated as cost per avoided VT. The analysis was made from the perspective of the carotid endarterectomy (CE). The main purpose of this study was to assess the cost effectiveness of Pentaray high density mapping catheter in treatment of intracranial Vascular Tumours (IVT). The objective of this study is to assess the cost effectiveness of Pentaray high density mapping catheter in treatment of IVT in Turkey. METHODS: A decision-making model was used in assessing the cost effectiveness of Pentaray high density mapping catheter in treatment of IVT in Turkey. CONCLUSIONS: A simple decision making model was used in assessing the cost effectiveness of Pentaray high density mapping catheter in treatment of IVT in Turkey. As there are no studies comparing Pentaray with other options, use of Pentaray was compared with non-use. The ICER was calculated as cost per avoided VT. The analysis was made from the perspective of the Social Insurance Institution. Cost data regarding the type and frequency of resources used in treatment of IVT were obtained from expert views. Epidemiologic data were obtained from literature and expert views. RESULTS: Percentage of patients with IVT in 15-65+ years population was taken as 0.1% from expert opinions. The recurrence rates for catheter ablation with and without Pentaray were taken from the literature as 30% and 45% respectively. Number of patients with recurrence was 1,746 and 1,694 respectively for intervention with and without Pentaray. Total cost of treatment of recurrence per patient was 10,563 TRY. Annual total cost for treatment of recurrence was 125,274,215 TRY with Pentaray and 117,699,920 TRY without Pentaray.

PMD77 COST EFFECTIVENESS OF PENTARAY HIGH DENSITY MAPPING CATHETER IN TREATMENT OF INTRACRANIAL VASCULAR TUMOURS (IVT)

Objective: The objective of this study is to assess the cost effectiveness of Pentaray high density mapping catheter in treatment of IVT in Turkey. Methods: A decision making model was used in assessing the cost effectiveness of Pentaray high density mapping catheter in treatment of IVT in Turkey. Conclusions: As this figure is below the threshold, Pentaray is accepted as a cost-effective option in treatment of IVT in Turkey.
It was performed from the community perspective. The outpatients and caregivers' responses were collected with the Wilmar questionnaire. The hospital expenses were estimated through a retrospective HRG survey. QALY's were calculated using an EQ-5D-3L scale and validated French tariffs. Multiple imputations were implemented. Net monetary benefit (NMB) for different values of the willingness to pay (WTP) was estimated using a linear regression approach proposed by Hoeh (1994). Deterministic and probabilistic sensitivity analyses were performed. RESULTS: The costs of health care and QALYs are €30,465 and 0.301 for the base-case and €30,320 and 0.289 for the experimental group. There is no significant difference between the NMB of the two strategies. However, the regression with exogenous variables showed a center effect. Under the €0.10,000 threshold, the experimental strategy has a higher NMB than the control strategy. The break-even point for the cost differences of €30,000 and €30,500 is equal to $34,000, both strategies generate the positive benefit. Each strategy contributes to improving the overall health of patients regardless the resources used. CONCLUSIONS: The NMBs were estimated for the net monetary benefit of WTP, where the strategies generate a positive net benefit (health gains greater than financial losses). The endogenous identification of the break-even point is a simple tool to compare the innovation efforts in different therapeutic areas.

PMD72 ECONOMIC EVALUATION OF FLASH GLUCOSE MONITORING COMPARED TO SELF-MONITORING OF BLOOD GLUCOSE FOR THE MANAGEMENT OF PATIENTS RECEIVING INTENSIVE INSULIN WITH DIABETES TYPE 1 AND TYPE 2 IN GREC Vellopoulou K1, Koulika G1, Doupos J1, Maniadakis N1

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OBJECTIVES: To conduct an economic evaluation of a novel minimally-invasive flash glucose monitor system (FM) vs Self-Monitoring of Blood-Glucose (SMBG) in patients with Diabetes Type 1 (DT1) and 2 (DT2) in a Spanish primary care setting from a Greek payer perspective. METHODS: The IMS CDM model was used to assess the cost-effectiveness of FM in a lifetime horizon. Patients’ characteristics as well as hypoglycemia and costs were extracted from SMBG. FM costs were calculated using the cost IMPACT (DT1) and 35,240 (DT2). Default model equations were used for prediction of clinical parameters. All costs (€, 2017) considered in the model were derived from national sources or the published literature. FM cost was provided by Abbott SA. Incremental cost per quality-adjusted life-year (QALY) was assessed using the results calculation. One-way sensitivity analysis was conducted. An international budget impact model was locally adapted to estimate the budget impact on and without FM 3-year market shares of FM were assumed to be 15%-20%-25% (DT1) and all-cause emergency visits and hospitalizations were estimated. An international literature was used to estimate the net monetary benefit of WTP where the strategies generate a positive net benefit (health gains greater than financial losses). The endogenous identification of the break-even point is a simple tool to compare the innovation efforts in different therapeutic areas.

PMD73 EVALUATION OF THE LONG-TERM COST-EFFECTIVENESS OF REAL TIME CONTINUOUS GLUCOSE MONITORING (RTCgM) VERSUS SELF-MONITORING OF BLOOD GLUCOSE (SMBG) ALONE IN TYPE 1 DIABETES FROM THE SWEDISH SOCIETAL PERSPECTIVE Klenkehi J1,2, Jendle P1, Chaugule S1, Graham C1

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OBJECTIVES: To evaluate the cost-effectiveness of Real-Time CGM (RTCgM) (G5) compared to SMBG alone in Type 1 Diabetes (T1DM) patients using Multiple Daily Insjections (MDI) from the societal perspective. METHODS: The Quintiles IMS CORE Diabetes Model (CDM) (v. 9.0) was used to assess the long-term (50 years) cost-effectiveness of RTCgM compared to SMBG alone for a T1DM cohort. Treatment effects and base-line characteristics of patients were sourced from the recently published DIAMOND trial while all other assumptions and costs were sourced from earlier publications. The accuracy and clinical effectiveness of RTCgM (G5) is equivalent to that seen in the GDSW505 used in the DIAMOND trial. Base case (BC) assumptions included a) starting HbA1c 8.6%; b) change in HbA1c: -1.0% for CGM group, -0.4% for SMBG alone; c) 50% reduction in severe hypoglycemic events (SHeS) and 33% reduction in non-severe hypoglycemic events (NSHeS) for the CGM group; d) -0.09 for SHeS for NSHeS and SHeS not requiring medical intervention, and -0.047 for SHEs requiring medical resources. Treatment costs and outcomes were discounted at 3%. RESULTS: The Incremental Cost-Effectiveness Ratio (ICER) for RTCgM compared to SMBG alone was SEK 180,530/QALY in the base-case. The results showed that sensitivity analyses were robust. A one-way sensitivity analysis was conducted, and the results showed that the sensitivity analysis using the treatment effects from the recent Swedish GOLD study using an earlier version RTCgM. The base-case results were mildly impacted by changing starting HbA1c levels and discount rates. CONCLUSIONS: RTCgM has the potential to improve clinical outcomes, quality of life and health care system perspective. The large cohort sizes and extensive sensitivity analysis of this evaluation show that RTCgM (G5) is cost effective within the MDI-treated T1DM population, assuming a willingness-to-pay threshold of SEK 500,000 per Quality-Adjusted Life Year in Sweden.

PMD74 THE COST-EFFECTIVENESS ANALYSIS OF THE LATEX TUBERCULOSIS INFECTION SCREENING FOR ADULTS 40 YEARS OLD IN SOUTH KOREA Yoo J1, Jh T2, Hsin S3

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OBJECTIVES: To evaluate the cost-effectiveness of LTBI screening using the prevalence rate of latent TB infection (LTBI) in adults over 40 years old. The objective of this study was to evaluate the cost-effectiveness of LTBI screening using the prevalence rate of LTBI infection (LTBI) in adults over 40 years old. METHODS: A Markov model was constructed to analyze cost-effectiveness of LTBI screening based on the prevalence, successful treatment and mortality rate of LTBI, drug-susceptible (DS) and multi-drug-resistant (MDR) TB. The Markov cycle and time horizon was 45 years with a discount rate of 5 percent. RESULTS: The transition probability of LTBI to DS TB and the specificity and sensitivity of IGRA and CXR were also applied to the model. Sensitivity analyses including a scenario analysis were performed to examine the uncertainty of the parameters on the outcomes. CONCLUSIONS: The IGRA-CXR screening would spend more 590,000 KRW (about 525 USD) to extend one year life compared to only CXR screening from the health care system perspective. In the sensitive analysis, the transition probability of LTBI to DS TB was most influential on the uncertainty of the strategy to screen and treat LTBI in advance is more cost-effective than to do DS TB from the scenario analysis in South Korea. CONCLUSIONS: In South Korea, the national screening for LTBI has a cost-effective value of CHT neonatal screening. This study would provide scientific evidence to introduce the LTBI screening program in order to control TB incidence in Korea.

PMD75 ECONOMIC EVALUATION OF NEONATAL SCREENING FOR CONGENITAL HYPOTHYROIDISM Lin H1, Lin W1, Niu D1

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OBJECTIVES: To conduct economic evaluation of the neonatal screening for congenital hypothyroidism (CHT) using newborn screening for inborn error of metabolism in Taiwan and the coverage rate had reached 99% since 1996. For resource allocation and priority setting for the numerous screening programs, it is important to re-evaluate the value of each program. This economic evaluation of congenital hypothyroidism (CHT) screening program was served as the pioneer for all the neonatal screening programs. The results provide the evidence that confirms the value of CHT neonatal screening.
adherence for 2+ medications; (3) tracheobronchectomy performed after two failed medi-
cations; (4) 25-year horizon. RESULTS: Across scenarios, incremental costs ranged from $1,679 (earlier tracheobronchectomy) to $2,215 (medication-usage only); incremental QALYs were 0.057 to 0.148. ICERs were $12,517/QALY (earlier tracheobronchectomy), $32,033/QALY (25-year horizon), $38,505/QALY (lower adherence), and $43,015/ QALY (earlier tracheobronchectomy + 25-year horizon) respectively. The results were most sensitive to assumptions on medication use trends but remained robust.

CONCLUSIONS: Given results across likely real-world treatment scenarios, this model indicates that tracheobronchectomy + cataract surgery may be cost-effective to manage mild-to-moderate FOAG in Canada.

PMID77 COST-EFFECTIVENESS OF A DIRECT ASPIRATION FIRST PASS TECHNIQUE (ADAPT) FOR THROMBECTOMY REVASCUlARIZATION OF LARGE VESSEl OCCLUSION IN ACUTE ISCHEMIC STROKE (FRENCH HEALTH MINISTRY FRM-16-4)

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OBJECTIVES: To estimate the cost-effectiveness of Direct Aspiration First Pass Technique (ADAPT) versus mechanical thrombectomy with a Stent Retriever (SR) procedure in acute ischemic stroke from a French healthcare providers perspective.

METHODS: The cost-effectiveness study was carried out from a prospective, randomized and multicenter clinical trial including 8 French hospitals. Medical and costs data were collected prospectively from the institution relative to the onset symptom to the best recanalization. The direct medical costs data were collected from the hospital records. Cost items included in the analysis are: costs of treatments performed, hospitalization costs per patient, direct medical costs related to surgery and hospitalization, direct medical costs related to medications, and cost of (69,099 EGP). This equates to an incremental cost of (11,990 EGP) per cmH2O.

CONCLUSIONS: The COMPARATIVE PHARMACOECONOMIC ANALYSIS OF USING ABSORB BVS SYSTEM FOR PATIENTS WITH STEMl FOR PHARmACOeconomic analysis was chosen "cost-effectiveness" analysis. MS Excel based model was performed to assess 2 strategies: strategy 1- patients with primary percutaneous coronary inter-
vention (PCI) treated with Absorb BVS strategy 2 - patients treated with PCI and drug-eluting balloon (DEB) therapy in the hospital. The 1 LyG and 1 surviving patient were included into the model as the effectiveness criteria. Direct costs included emergency, inpatient and outpatient treatment, rehabilitation and cost of DEBs with Absorb BVS system. All the direct costs were calculated from the Russian healthcare system perspective.

RESULTS: According to published trials the using of Absorb BVS system for patients with STEMl did not lead to different rates of composite patient-oriented and event-oriented adverse events. Strategy 1 has a higher efficiency – the propor-
tion of survivors at 1 year will be the maximum – 92.7%, as well as the LyG – 56.4. Application of strategy 1 reduces the total cost of reperfusion therapy for all patients with STEMI by £237,537. At the LyG and for 1 surviving patient was optimal strategy 1, the difference amounted to £50 and £297, respectively (rate for June 2017).

CONCLUSIONS: Using Absorb BVS system during reperfusion in patients with STEMl was effective and economically justified treatment option.

PMID80 COST-UtiLITY ANALYSIS OF A NOVEL BREATH-TRIGGERED AEROSOL INHALER WHICH HAS BEEN DESIGNED TO REDUCE THE CRITICAL HANDLING ERROR OF INSUFFICIENT INSPIRATORY EFFORT

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OBJECTIVES: Up to 78-80% of patients use their inhalers incorrectly (GINA 2017). Approximate delivery of dry-powder inhalers (DPIs) requires forceful inhalation for optimal drug delivery. The CRITICAL study (Price et al 2017) found a statistically significant association between "inspiratory effort" and clinical outcomes. A new breath-triggered aerosol inhaler has been designed to reduce this critical error.

METHODS: A Markov model simulated patients switching between controlled and uncontrolled health states over one-year; each associated with different utility values (GOAL study, Briggs et al 2006). The model assumed all inhalers had the same drug efficacy. The CRITICAL study provided the relative risk of patients having uncontrolled asthma and making an "insufficient inspiratory effort" error – these data were applied to the transition probabilities. All other DPI-related errors assessed were not statistically significantly associated with asthma control. 

RESULTS: The breath-triggered device dominated both budesonide/formoterol and fluticasone/salmeterol. METHODS: A Markov model simulated patients switching between controlled and uncontrolled health states over one-year; each associated with different utility values (GOAL study, Briggs et al 2006). The model assumed all inhalers had the same drug efficacy. The CRITICAL study provided the relative risk of patients having uncontrolled asthma and making an "insufficient inspiratory effort" error – these data were applied to the transition probabilities. All other DPI-related errors assessed were not statistically significantly associated with asthma control.

CONCLUSIONS: Breath-triggered device had the highest probability (100%) of being cost-effective at a £20,000/QALY threshold. One-way sensitivity analyses showed that the key driving variance was the relative risk of patients moving to an uncontrolled state for each control. The analysis demonstrated that the economic and societal costs of 'insufficient inspiratory effort' and the potential benefit of introducing an effective intervention to eliminate this error.

PMID81 COST EFFECTIVENESS OF UNIVERSAL NEONATAL HEARING SCREENING WITH OTOGAUOStic EMISSIONS AND/OR AUTOMATED AUDITORY BRAINSTEM RESPONSE, FOR THE DETECTION OF BILATERAL CONGENITAL HEARING LOSS AND EARLY TREATMENT, IN NEwBORNS wIThOUT RISK FACTORS, IN COlOMBIA

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OBJECTIVES: To evaluate the cost-effectiveness of neonatal hearing screening with otogastic emissions (OAEs), automated auditory brainstem response (AABR) and OAEs+AABR, compared among themselves and with the absence of a hearing screening program, for the early detection and treatment of moderate, severe, or profound bilateral congenital deafness in newborns with no risk factors, from the Colombian National Health System perspective.

METHODS: For the cost-effectiveness analysis, a decision tree was developed to represent the process of detection, diagnosis and treatment of congenital hearing loss. The operational characteristics of tests were obtained and estimated by Heidari et al. (2015), and effectiveness of early treatment was obtained from Fulcher (2012) and Yang (2015); these studies were conducted in the United States and Colombia. The economic and societal costs of ‘insufficient inspiratory effort’ and the potential benefit of introducing an effective intervention to eliminate this error.

CONCLUSIONS: Using Absorb BVS system during reperfusion in patients with STEMl was effective and economically justified treatment option.
PMD82
COST-EFFECTIVENESS OF INSULIN PUMPS VS MULITPLE DAILY INSULIN (MDI) TREATMENT IN TYPE 1 DIABETES IN INDIA FROM SOCIETAL PERSPECTIVE
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OBJECTIVES: Each year 3-5% of Indians develop type 1 diabetes mellitus (T1DM). Insulin sensitization therapy using insulin pumps or MDI are recommended treatment options. However, insulin pumps are expensive for patients living in middle income countries like India who have to bear high out-of-pocket expense. We conducted a cost-effectiveness analysis to assess the incremental cost-effectiveness ratio of cutaneous pulse oximetry at 24 hours after birth, in addition to general newborn screening may be a cost-effective strategy for the early detection of critical congenital heart disease. Sensitivity and specificity of the test were estimated from the best evidence available through a systematic review; costs were estimated using official sources and local rates. For non-dominated alternatives we calculated the common incremental cost-effectiveness ratio and we performed a deterministic sensitivity analysis to assess the effect of uncertainty. RESULTS: The cost of screening with pulse oximetry and general examination was USD 124, USD 30 more than general examination plus pulse oximetry versus the general examination only to detect critical congenital heart disease in Colombia. METHODS: A full cost-effectiveness analysis was conducted from a societal perspective using a Markov model with time horizon of 8 years. India specific data, especially efficacy estimates could have compromised the robustness of analysis.

PMD83
COST-EFFECTIVENESS ANALYSIS OF NEONATAL SCREENING WITH PULSE OXIMETRY FOR THE DETECTION OF CRITICAL CONGENITAL HEART DISEASE IN COLOMBIA, 2017
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OBJECTIVES: Critical congenital heart diseases, such as late postnatal diagnosis, are associated with high cost of surgical treatment or catheterization before the first year of life, as well as with more hospital admissions, more hospital days, and more hospital costs during childhood. This research aims to establish the incremental cost-effectiveness ratio of cutaneous pulse oximetry at 24 hours after birth, in addition to general examination of the newborn for the early detection of critical congenital heart disease in Colombia. METHODS: A full cost-effectiveness analysis was conducted from a societal perspective using a decision tree that compares general examination plus pulse oximetry versus the general examination only to detect critical congenital heart disease. Sensitivity and specificity of the test were estimated from the best evidence available through a systematic review; costs were estimated using official sources and local rates. For non-dominated alternatives we calculated the common incremental cost-effectiveness ratio and we performed a deterministic sensitivity analysis to assess the effect of uncertainty. RESULTS: The cost of screening with pulse oximetry and general examination was USD 124, USD 30 more than general examination plus pulse oximetry versus the general examination only to detect critical congenital heart disease in Colombia. METHODS: A full cost-effectiveness analysis was conducted from a societal perspective using a Markov model with time horizon of 8 years. India specific data, especially efficacy estimates could have compromised the robustness of analysis.

PMD84
COST EFFECTIVENESS OF DURAGRAFT AS A VEIN GRAFT TREATMENT IN CORONARY ARTERY BYPASS GRAFTING IN TURKEY
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OBJECTIVES: Following revascularization procedures, Vein Graft Failure (VGF) can generate complications such as late reintervention, myocardial infarction (MI), mortality, hospital readmission, quality of life and co-morbidities. VGF is the most common complication of Coronary Artery Bypass Grafting (CABG). Storage and flushing of the vein graft is the most critical stage of the surgery. DuraGraft is one-time intraoperative vein graft treatments that prevents VGF and reduces repeat revascularization and MI by 48% and 53% respectively. The main objective of this study is to analyze the cost effectiveness of DuraGraft in CABG in Turkey. METHODS: A single decision model was used in the study. Analyses were made from the Turkish Social Security Institution’s (SSI/SGK) perspective. Literature research and expert opinions were used to estimate the cost of CABG and complications as well as the incremental cost of myocardial infarction. The comparison was made with use and nonuse of DuraGraft. Outcome measures were taken from literature, cost data were obtained from views of use of resources in both CABG and treatment of complications. The results were presented as incremental cost per averted complication (IC/PAC) and incremental cost per quality adjusted life years (QALY).

PMD85
COST-EFFECTIVENESS OF ULTRASOUND SCREENING, CANCER PATIENTS, TO DETECT ASYMPTOMATIC THROMBOSIS
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OBJECTIVES: Cancer patients are at high risk to develop thrombosis with an even higher risk during treatment with anticoagulant and antithrombotic agents. The objective was to evaluate the cost-effectiveness of screening with ultrasound (US) cancer patients for asymptomatic deep vein thrombosis (DVT) at the time of cancer diagnosis. METHODS: A decision model was developed to assess the incremental cost-effectiveness ratio of screening with ultrasound (US) cancer patients for asymptomatic deep vein thrombosis (DVT) at the time of cancer diagnosis. The analysis was conducted from the Greek third-party payer perspective. RESULTS: Screening a hypothetical cohort of 907 high-risk cancer patients without symptomatic DVT (i.e. 100 high risk patients minus those with symptomatic DVT), 49,69 venous thromboembolic events (VTE) were avoided at a total incremental cost resulting in an incremental cost/vTE avoided of 281.5 over current surveillance. Specificity of US and incidence of PE and DVT among patients not receiving anticoagulants for treatment of DVT and the VTE among the major drivers of the results. CONCLUSIONS: Our findings indicate that screening high-risk cancer patients by US to detect asymptomatic DVT is a cost-effective strategy over clinical surveillance, even when all patients with a positive first US are subject to a second US.

PMD86
COST-EFFECTIVENESS OF A FLASH GLUCOSE MONITORING SYSTEM BASED ON REAL-WORLD USAGE FOR TYPE 2 DIABETES (T2DM) PATIENTS USING INTENSIVE INSULIN: A SWEDISH PERSPECTIVE
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OBJECTIVES: Regular glucose monitoring is important for T2DM patients receiving intensive insulin, with lower HbA1c observed in patients testing glucose more frequently (Schutt 2006). A novel, factory-calibrated flash glucose monitoring (“FM”) system (the FreeStyle Libre™ system) continuously measures glucose levels from interstitial fluid without requiring routine self-monitoring of blood glucose ( SMBG). Data is then transferred to a handheld reader from the wearable arm sensor. Real-world data from 1,101,10,368.91) was compared from 1,10,368.91). The results showed that use of DuraGraft as a vein graft treatment in CABG is a cost effective option for the Turkish SSI/SGK.
Insertable cardiac monitors (ICMs) have proven high sensitivity to detect arrhythmias. However, subsets of detected episodes are false. Adjudication of these episodes requires clinician time to review and results in additional costs. False negative episodes of new ICM algorithms were reduced for Brachycephaly (47%), and Atrial Fibrillation (32%). The purpose of this study is to estimate savings in review time and costs by comparing false detections and verification of the current practice of providing prophylactic anti-D immunoglobulin to all RhD-negative pregnant women. The extent of any savings is sensitive to assumptions regarding missing data. Robust estimates on cost-effectiveness require a larger trial.

**PM98**

**COST-EFFECTIVENESS OF HIGH-THROUGHPUT, NON-INVASIVE PELVITesting FOR FETAL RHESUS D STATUS**

**OBJECTIVES:** To assess the cost-effectiveness of high-throughput non-invasive prenatal testing (HT-NIPT) for fetal RhD status in avoiding unnecessary prophylactic anti-D immunoglobulin treatment in RhD-negative women found to be carrying an RhD-negative fetus. **METHODS:** A probabilistic cohort model was used to describe the antenatal care pathway and the long-term consequences of sensitisation events (e.g., miscarriage). The performance of HT-NIPT was derived from a systematic review and meta-analysis of 3 UK studies. Estimates of other relevant parameters were derived from literature sources. Five alternative strategies in which the use of HT-NIPT may impact on the existing post-partum care pathway were considered. A UK health service perspective was used and lifetime costs and effects were discounted at an annual rate of 3.5%. Sensitivity analysis was performed to key model parameters. **RESULTS:** The results indicated that HT-NIPT appeared sufficient to outweigh the QALY loss associated with the small increased in sensitisation events. A post-partum strategy, in which inconclusive test results are distinguished from positive results, was considered the optimal strategy. The results were also sensitive to the cost of the HT-NIPT. **CONCLUSIONS:** HT-NIPT would reduce unnecessary treatment with anti-D immunoglobulin and appears cost-saving when compared to current practice of providing prophylactic anti-D immunoglobulin to all RhD-negative pregnant women. The extent of any savings is highly sensitive to the additional cost that introduction of HT-NIPT would impose on the antenatal care pathway.

**PM99**

**COST EFFICIENCY ANALYSIS OF A NEW ARRHYTHMIA DETECTION ALGORITHM IN A MINIATURIZED INSERTABLE CARDIAC MONITOR**

**OBJECTIVES:** The new algorithm resulted in a 55% relative reduction in time expended by clinicians and at the current price would be cost-effective in France given generally accepted willingness-to-pay thresholds. **RESULTS:** The results suggest that ICM is a cost-effective alternative to surgical replacement of the aortic valve (sAVR). It has recently received European regulatory approval to treat intermediate risk (IR) patients. We present here the results of a cost-effectiveness analysis of TAVI versus sAVR in France. **METHODS:** An Excel based Markov model was used to evaluate economic and clinical outcomes in French IR patients undergoing TAVI or sAVR over a 15 year time horizon. Clinical inputs to 2 years were derived from French sources. An annual discount rate of 4% was applied to health and cost outcomes. Sensitivity and scenario analyses were used to investigate the robustness of the analyses and identify key drivers. **RESULTS:** TAVI was associated with increased quality of life, providing an incremental cost-effectiveness ratio (ICER) of €24,715 per QALY gained. Amongst the CHADS2 sub-group analyses, the ICER ranged from €10000 per QALY gained to €22,011 (CHADS2 score ≥ 2) to €36,2 million (CHADS2 score ≥ 3). Probabilistic sensitivity analysis suggested that ICM had a probability of 91% of being cost-effective at a threshold of €30,000 per QALY gained. **CONCLUSIONS:** The study suggests that ICM is a cost-effective intervention in patients following cryptogenic stroke, leading to improved health outcomes at acceptable additional cost via improved detection of AF and subsequent stroke avoidance. The ICER was within the cost-effectiveness threshold used in the Netherlands and the probabilistic analysis showed a high probability of cost-effectiveness, indicating that the model is robust to variability in the input parameters.

**PM100**

**THE COST-EFFECTIVENESS OF TAVI IN INTERMEDIATE RISK PATIENTS IN FRANCE**

**OBJECTIVES:** The clinical superiority of HPV testing for cervical cancer (CC) screening is steering the international society to lean in its favor. However, the choice between the different HPV testing methods is crucial, as it can determine the efficiency of the screening programs. Simultaneous 16/18 genotyping offers the potential to save resources by avoiding retesting for the respective oncogenic HPV types. Aim of this study was to compare the economic impact of HPV 16/18 genotyping test versus HPV reflex genotyping as primary diagnostic procedure in epilepsy surgery for MRI negative refractory epilepsy.
patients. Furthermore, we analyzed the cost-effectiveness of the intervention compared to medical management as the standard of care in Hungary. METHODS: The incremental health gains and costs of SEEG were determined with a Markov model over a 45 years’ time horizon. Transition probabilities and utilities have been derived from international literature. The intervention has not yet been financed by any health insurance fund in Hungary, therefore the actual cost were determined from provider’s perspective, based on the relevant units costs and resource use at the Department of Neurology and Department of Neuropsychology regarding the intensity of pre- and post-operative care. Based on our preliminary results the treatment of patients with MR negative refractory epilepsy the preoperative SEEG intervention is 10,540 thousand HUF which represents a 4,490 thousand HUF saving in comparison to the management of epilepsy with MDCT, being both less costly and more effective. The largest cost saving and highest service use over 12-months were £13,193 per patient (95% confidence interval (CI): £10,962 to £15,424) derived from international literature. The intervention has not yet been financed for TAVI, the ICER in inoperable patients was £117 per QALY gained and for high risk patients TAVI was dominant with cost savings of £203 per patient. Data sensitivity and probabilistic sensitivity analyses showed the results were generally robust and impacted most by changes in assumptions to procedural costs and mortality. CONCLUSIONS: TAVI delivers substantial clinical benefits in terms of improved life expectancy and quality-adjusted life expectancy in inoperable and high risk patients. For inoperable patients the ICER for TAVI versus sAVR would generally be considered to represent a cost-effective therapy and for high risk patients TAVI is a cost saving option.

PM097 A COST-UTILITY ANALYSIS OF ARTIFICIAL URINARY SPHINCTER VERSUS ADVANCE MALE SLING IN PROSTATECTOMY SURGERY: INCONTINENCE: A CANADIAN HEALTHCARE PERSPECTIVE

MethOds: A Markov model with Monte-Carlo simulation was developed to estimate the incremental cost-utility ratio (ICUR) of AUS vs. Advance sling from a provincial payer perspective over a 10-year period. Probability estimates, success rates, healthcare resources and utilities were obtained from published literature when available or by expert opinion. The Markov model included 4 states (wet, postoperative, dry and death). Costs for transition to each state in this model were obtained from provincial databases in Quebec, Canada and hospital database. Uncertainty was analyzed using deterministic and probabilistic sensitivity analyses. Results: AUS Implementation had a 10-year mean total cost of $14,300 (SD±3,509) for 6.53 QALYs. The cost-utility analysis showed that AUS becomes a dominant strategy when compared to Advance sling over 10 years. The incremental cost savings of AUS was $2,742 with an added effectiveness of 1.11 QALYs. The probability of becoming wet after an Advance sling as well as the probability of going through AUS after an initial surgery with Advance sling remain the most variable compared to base case inputs derived from published and expert opinion. Probabilistic sensitivity analyses. (751,16$ and 437,07$, respectively). Conclusions: Initial cost of AUS is lower. But the long-term cost-utility of the AUS compared with Transobturator RetrOLORProsthesis Sling (Advance slings) in the treatment of severe PROSUS.

PM098 INTEGRATING NOVEL SCREENING METHODS FOR PROSTATE CANCER: COST-UTILITY INTERVENTIONS

MethOds: Data for Prostarix was insufficient and more clinical utility studies are needed to determine the cost-effectiveness of introducing these tests compared to the use of only TRUSGB and MRGB.

PM099 COST-EFFECTIVENESS ANALYSIS OF PROSTATE CANCER SCREENING USING A PROSTATE HEALTH INDEX (PHI) IN OPERABLE AND HIGH RISK PATIENTS IN CANADA

MethOds: Analysis was performed from public payer (public payer + patient) perspective over a lifetime horizon. A Markov state transition model defined by modified Rankin Scale was used. In base case the model is split into two distinct phases: an acute phase (0–90 days) and a rest-of-life phase (>90 days). Data on effectiveness and safety were taken from a meta-analysis of 5 RCT studies. Utilities and resource utilization were estimated from Polish data sources and clinical expert opinion. Other parameters were estimated in accordance with identified economic analyses. Results were presented for 2 patient’s subgroups: contraindicated to intravenous tissue plasminogen activator (IV rt-PA) and suitable for IV rt-PA. Health outcomes and future costs were discounted retrospectively at 3.5% and 5.0% following national HTA guidelines. Reliability of estimates was tested in probabilistic (PSA) and one-way (OWSA) sensitivity analyses. RESULTS: Estimated total QALYs were 5.29 for MT + BB and 3.64 for BB regardless of patient’s subgroup. In patients contraindicated to IV rt-PA average costs per patient were 67,573 PLN (68,220 PLN) for MT + BSC and 16,889 PLN (17,440 PLN) for BSC alone. In patients available for MT average costs per patient were 60,879 PLN (71,525 PLN) for MT + BSC and 23,737 PLN (24,287 PLN) for BB alone. Estimated differences for QALYs and costs were statistically significant. Incremental cost-utility ratio (ICUR) ranged from 28,566 PLN to 30,771 PLN for acceptability threshold of 125,955 PLN. MT + BSC was also cost-effective in PSA and OWSA. Base case results were confirmed by sensitivity analyses. (751,16$ and 437,07$, respectively). Conclusions: Initial cost of AUS is lower. But the long-term cost-utility of the AUS compared with Transobturator RetrOLORProsthesis Sling (Advance slings) in the treatment of severe PROSUS.

PM100 INTEGRATING NOVEL SCREENING METHODS FOR PROSTATE CANCER: COST-UTILITY INTERVENTIONS

MethOds: Analysis was performed from public payer (public payer + patient) perspective over a lifetime horizon. A Markov state transition model defined by modified Rankin Scale was used. In base case the model is split into two distinct phases: an acute phase (0–90 days) and a rest-of-life phase (>90 days). Data on effectiveness and safety were taken from a meta-analysis of 5 RCT studies. Utilities and resource utilization were estimated from Polish data sources and clinical expert opinion. Other parameters were estimated in accordance with identified economic analyses. Results were presented for 2 patient’s subgroups: contraindicated to intravenous tissue plasminogen activator (IV rt-PA) and suitable for IV rt-PA. Health outcomes and future costs were discounted retrospectively at 3.5% and 5.0% following national HTA guidelines. Reliability of estimates was tested in probabilistic (PSA) and one-way (OWSA) sensitivity analyses. RESULTS: Estimated total QALYs were 5.29 for MT + BB and 3.64 for BB regardless of patient’s subgroup. In patients contraindicated to IV rt-PA average costs per patient were 67,573 PLN (68,220 PLN) for MT + BSC and 16,889 PLN (17,440 PLN) for BSC alone. In patients available for MT average costs per patient were 60,879 PLN (71,525 PLN) for MT + BSC and 23,737 PLN (24,287 PLN) for BB alone. Estimated differences for QALYs and costs were statistically significant. Incremental cost-utility ratio (ICUR) ranged from 28,566 PLN to 30,771 PLN for acceptability threshold of 125,955 PLN. MT + BSC was also cost-effective in PSA and OWSA. Base case results were confirmed by sensitivity analyses. (751,16$ and 437,07$, respectively). Conclusions: Initial cost of AUS is lower. But the long-term cost-utility of the AUS compared with Transobturator RetrOLORProsthesis Sling (Advance slings) in the treatment of severe PROSUS.
OBJECTIVES: The introduction of molecular profiling as standard of care in cancer has led to the launch of a number of commercial precision medicine services, which differ largely in their scope. It can be difficult for payers, physicians, and patients to distinguish between these services and determine which test is most appropriate for an individual case. An understanding of the clinical utility and the utility cost (of finding one patient with clinical benefit) of the different approaches can help to set expectations for all stakeholders involved. The aim of this study is to define the utility cost of three leading commercially available oncology precision medicine approaches.

Caris Molecular Intelligence® (CMI), FoundationOne® and PCx™.

METHODS: A systemat­ic review of all published clinical evidence for the three services was performed to determine the number of patients treated in line with the profiling results and the clinical benefit resulting from these treatment choices. Utility cost was defined as the list price divided by the fraction of patients treated based upon the profiling results and the clinical benefit.

RESULTS: Based on the number of profiled patients treated and the corresponding number of patients with clinical benefit, 34% of CMI-profiled patients had clinical benefit (184 of 534 profiled patients), compared to 6% of those profiled with FoundationOne® (166 of 2,675 profiled patients) and 11% profiled using PCx™ (19 of 168 profiled patients). Utility cost was calculated as £19,118 for CMI, £43,636 for PCx™ and £96,667 for FoundationOne®.

CONCLUSIONS: The results of the study show that the multiparameter approach of CMI brings the highest clinical utility based on the use of both molecular and traditional biomarkers in the majority of patients profiled. A low clinical utility means that almost 20 cases of FoundationOne® must be purchased to find one patient who benefits.

COST-UTILITY OF NOVEL TESTS AFTER A NEGATIVE PROSTATE BIOPSY

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OBJECTIVES: Transrectal Ultrasound-Guided Biopsies (TRUSGB) are today the main approach diagnosing prostate cancer by cancer detection and sampling errors are major limitations. Magnetic Resonance Imaging-Guided Biopsies (MRGB) have been researched and previously published as an alternative approach. In this study, five tests were used for an initial negative biopsy for prostate cancer stratification were assessed: PCA3, ConfirmMDx, Prostate Core Mitomic Test (PCMT), Prostate Health Index (PHI) and the 4Kscore. The resulting costs and QALY were compared to the use of TRUSGB and MRGB.

METHODS: A Markov model was used over 5, 10, 15 and 20 years. All tests were performed on patients with negative biopsies and a remaining suspicion of prostate cancer after an initial negative biopsy. The Markov model considers the probability of harboring prostate cancer, diagnostic accuracy of the tests, the stratification of patients after performing the tests and probabilities of being assigned to different treatments. The included costs were direct cost in the Quebec health care system perspective. RESULTS: Introducing PCA3 resulted in cumulative effects at 7.24, 9.12 and 10.21 QALY after 10, 15 and 20 years. The corresponding costs for ConfirmMDx were £15,916, £17,498, £14,665 and £13,939 respectively. The number of colonoscopies after a positive FIT was similar, while the guideline 5% and 6% more colonoscopies than the European and the US guidelines, predicted 10-year cumulative number of colonoscopies was 16,180 for the Catalan, guideline 5% and 6% more colonoscopies than the European and the US guidelines, respectively. The number of colonoscopies after a positive FIT was similar, while the number of adenoma surveillance colonoscopies was higher for the Catalan guideline: 26.1% and 35.6% higher than the European and the US guidelines, respectively, while the Spanish guideline presented a 7.5% more surveillance colonoscopies than the US guideline.

CONCLUSIONS: The choice of the surveillance guidelines for follow-up of adenomas found under a population-based colorectal cancer screening program is relevant in terms of its impact on the demand of colonoscopies.

COST-UTILITY OF LIQUID CHROMATOGRAPHY - TANDEM MASS SPECTROMETRY (LC-MS/MS)-BASED URINE ANALYSES TO IMPROVE ADHERENCE TO ANTIHYPERTENSIVE TREATMENT

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OBJECTIVES: In the UK, over 28% of the population are estimated to suffer from hypertension. A high systolic blood pressure (SBP) increases the risk for cardiovascular disease (CVD). While antihypertensive medications, along with lifestyle changes, are deemed effective in combatting hypertension, adherence to drug treatment may struggle to use a metered dose inhaler correctly. Strikingly, therapies seem to vary from country to country. For instance, the three strengths of a specific dry powder inhaler prescribed in Germany are consistently 20%/25% lower for their two active ingredients than the corresponding values for ConfirmMDx were 7,24, 9,13 and 10,21. PCMT, PHI and 4Kscore were excluded during the systematic literature review due to lack of data.

The costs and QALY were compared to the approach used today, TRUSGB, and the incorporation of MRGB. Both strategies, PCA3 and ConfirmMDx, demonstrated similar costs and QALY’s as the standard strategy. TRUSGB. CONCLUSIONS: Introducing the new strategies demonstrated the potential in improving adherence and reducing costs with promising similar clinical and economic outcomes when compared to TRUSGB.

COST-UTILITY ANALYSIS OF THREE COMMERCIAL AVAILABLE PRECISION MEDICINE APPROACHES IN ONCOLOGY

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OBJECTIVES: Continuous subcutaneous insulin infusions (CSI) are an alternative to multiple daily injections (MDI) for glycemic control and reducing the risk of developing long term microvascular complications in type 1 diabetes (T1D). The objective of this study as part of a randomised clinical trial (SCIPi, ISRCTN29255257) was to assess patterns of work-related absences, and whether a different work group management process led to fewer absences in a management group. For the rest of the 7 months and 15 years of age, newly diagnosed with T1D were eligible to participate in this pragmatic, open, multicentre, parallel group, randomised, controlled trial. Parental work-related absences in days from the preceding 3-months were compared between the two groups. RESULTS: Actual time taken off work was reported by parents or guardians for 78% of participants (CSI = 113, MDI = 117). Absence from work between randomisation and 12-month follow-up in patients of patients in the CSI group was 3.6 days (95% CI 2.3, 4.9) compared to 2.7 days (1.9 to 3.4) in the MDI group (difference in means of 0.9 days (95% CI -0.6, 2.5)). In the 3-month period prior to randomisation, however, absence from work in parents of patients in the CSI group was 5.5 days (95% CI 4.7, 6.3) compared to 4.9 days (4.1 to 5.7) in the MDI group (difference in means of 0.6 days (95% CI -0.5, 1.7)). CONCLUSIONS: T1D diagnosis for a child can have a temporary disruptive influence on parental work commitments. However, there was no evidence that the management of T1D is associated with any more or less work-related absences than the other.
general adherence patterns are the same with men exhibiting a higher adherence than women, and a positive correlation between adherence and age. The pattern between product strength and adherence is not shared between the two datasets. While the strongest product in the German market (320/9 mcg) shows the best adherence the weakest product (80/4.5 mcg) shows the worst adherence in the dataset. However, the strongest product in a TTO internet experiment. The injection health states differed in the treatment administration process (n-0.012 for reconstitution, n-0.022 for preparation, and needle handling). RESULTS: A total of 238 participants completed interviews (58.8% male; mean age 60.2y; 118 from Milan; 120 from Rome). The mean (SD) utility of the oral treatment health state was 0.90 (0.10), and all injection health states had significantly (all p < 0.001) lower utilities ranging from 0.87 (reconstitution, waiting, and handling) to 0.89 (weekly injection without any of the three treatment administration requirements). Utility differences among the injection health states suggest that each administration requirement had a small but measurable disutility (i.e., negative utility difference). Disutility values include -0.006 (reconstitution), -0.006 (needle handling), -0.011 (reconstitution, needle handling), and -0.022 (reconstitution, waiting, needle handling). CONCLUSIONS: Findings provide insight into patient preferences among attributes in the processes in this Italian sample. Results suggest that injection device attributes may be important to some patients, and it may be useful for clinicians to consider these attributes when choosing medication for patients initiating these weekly treatments.

PMD105

PATIENT PREFERENCES IN ITALY: HEALTH STATE UTILITIES ASSOCIATED WITH ATTRIBUTES OF WEEKLY INJECTION DEVICES FOR TREATMENT OF TYPE 2 DIABETES

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OBJECTIVES: Several GLP-1 receptor agonists are administered as weekly injections for treatment of type 2 diabetes (T2D). These medications vary in their injection processes, and these differences could impact quality of life and patient preference. The purpose of this study was to examine patient preferences in Italy and estimate utilities associated with injection processes for these weekly therapies. METHODS: Participants were diagnosed with T2D in Italy (Malta) valued health states using trade-off interviews. The health states (drafted based on literature, device instructions for use, and clinician interviews) had identical descriptions of T2D, but differed in detailed product description. One health state described a once oral only treatment regimen, while six health states described oral treatment plus a weekly injection. The injection health states differed in the treatment administration process (n-0.006 for reconstitution, n-0.022 for preparation, and needle handling). RESULTS: A total of 238 participants completed interviews (58.8% male; mean age = 60.2y; 118 from Milan; 120 from Rome). The mean (SD) utility of the oral treatment health state was 0.90 (0.10), and all injection health states had significantly (all p < 0.001) lower utilities ranging from 0.87 (reconstitution, waiting, and handling) to 0.89 (weekly injection without any of the three treatment administration requirements). Utility differences among the injection health states suggest that each administration requirement had a small but measurable disutility (i.e., negative utility difference). Disutility values include -0.006 (reconstitution), -0.006 (needle handling), -0.011 (reconstitution, needle handling), and -0.022 (reconstitution, waiting, needle handling). CONCLUSIONS: Findings provide insight into patient preferences among attributes in the processes in this Italian sample. Results suggest that injection device attributes may be important to some patients, and it may be useful for clinicians to consider these attributes when choosing medication for patients initiating these weekly treatments.

PMD106

THE HEALTH-RELATED QUALITY OF LIFE (HRQoL) ASSOCIATED WITH OSTOMY APPLIANCES AND FEATURES

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OBJECTIVES: Several GLP-1 receptor agonists are administered as weekly injections for treatment of type 2 diabetes (T2D). These medications vary in their injection processes, and these differences could impact quality of life and patient preference. The purpose of this study was to examine patient preferences in Italy and estimate utilities associated with injection processes for these weekly therapies. METHODS: Participants were diagnosed with T2D in Italy (Malta) valued health states using trade-off interviews. The health states (drafted based on literature, device instructions for use, and clinician interviews) had identical descriptions of T2D, but differed in detailed product description. One health state described a once oral only treatment regimen, while six health states described oral treatment plus a weekly injection. The injection health states differed in the treatment administration process (n-0.006 for reconstitution, n-0.022 for preparation, and needle handling). RESULTS: A total of 238 participants completed interviews (58.8% male; mean age = 60.2y; 118 from Milan; 120 from Rome). The mean (SD) utility of the oral treatment health state was 0.90 (0.10), and all injection health states had significantly (all p < 0.001) lower utilities ranging from 0.87 (reconstitution, waiting, and handling) to 0.89 (weekly injection without any of the three treatment administration requirements). Utility differences among the injection health states suggest that each administration requirement had a small but measurable disutility (i.e., negative utility difference). Disutility values include -0.006 (reconstitution), -0.006 (needle handling), -0.011 (reconstitution, needle handling), and -0.022 (reconstitution, waiting, needle handling). CONCLUSIONS: Findings provide insight into patient preferences among attributes in the processes in this Italian sample. Results suggest that injection device attributes may be important to some patients, and it may be useful for clinicians to consider these attributes when choosing medication for patients initiating these weekly treatments.

PMD107

PREDICTING QUALITY ADJUSTED LIFE YEARS USING ST. GEORGE RESPIRATORY QUESTIONNAIRE IN PATIENTS WITH SEVERE EMPHYSEMA TREATED WITH ENDOBRONCHIAL COILS IN ADDITION TO STANDARD OF CARE COMPARED TO STANDARD OF CARE

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OBJECTIVES: Endobronchial coils (“coils”) are a minimally invasive treatment option of severe emphysema patients with a lung segment impairment or in case of patients with a restrictive state of life (stage IV). Important for assessing disease severity and treatment efficacy. St. George’s Respiratory Questionnaire (SGRQ) is commonly used to measure HRQoL in pulmonary clinical trials. The efficacy of coils + Standard of Care (“SoC”) compared to SoC alone on HRQoL has already been reported. An aim of this study was to quantify the impact of coils on HRQoL and estimate indicative long-term QALY gains over a range of clinically plausible scenarios. METHODS: Patient level SGRQ data from RENEW and the National Emphysema Treatment Trial (NETT) were combined to create a master dataset and to EQ5D values. Multilevel statistical models were developed using treatment, time, response, and baseline characteristics (EQ-5D-AD, gender, FEV1, lung RV > 2200, Emphysema staging, and EQ-5D SD and QALY estimates). RESULTS: More QALY estimates were generated using published long-term Kaplan-Meier all-cause mortality data from NETT (assuming no impact of treatment on mortality) and four clinically plausible hypothetical response profiles (variations on constant and time varying values). Each response was combined with assumptions around the impact of treatment (constant or time varying). RESULTS: After controlling for baseline characteristics both treatment and response had a statistically significant impact (p < 0.001) on utility (+0.101 and +0.061, respectively). When combined with selected baseline characteris-

PMD110 CAPTURING PATIENT PERSPECTIVES IN THE EVALUATION OF MEDICAL DEVICES: THE CASE OF CENTRAL VENOUS ACCESS DEVICES IN CHEMOTHERAPY
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OBJECTIVES: The primary objective of this research was to incorporate patient perspectives into a large-scale trial (Cancer and Venous Access; CAVA) comparing the safety and effectiveness of three venous access devices for the delivery of chemotherapy. Specifically, it aimed to identify key features for these device, PICC, SdA and Port, to better understand patients’ views and create a device using a similar device were associated with higher likelihood of willingness to use the device. In the hospital of Pécs and Veszprém between November, 2016 and March, 2017 altogether 101 patients’ data were evaluated in the hospital of Pécs and Veszprém between November, 2016 and March, 2017. The primary objective of this research was to incorporate patient perspectives into a large-scale trial (Cancer and Venous Access; CAVA) comparing the safety and effectiveness of three venous access devices for the delivery of chemotherapy. Specifically, it aimed to identify key features for these device, PICC, SdA and Port, to better understand patients’ views and create a device using similar features.

RESULTS: Four key themes were identified. (i) Patient adaptability. Overall, patients found that the devices had limited impact on their daily lives. However, the minimisation of impact depended on patients making adaptations and adjustments to behaviour and routines. (ii) Positive psychological aspects of Ports: Patients had positive experiences of staff interaction. These positive experiences were more strongly linked to perceptions regarding staff friendliness than to physical-related HRQOL scores but did not provide better preservation of utility (i.e., EQ-5D).

CONCLUSIONS: This research identifies several challenges facing patients who need CVAADs for the administration of chemotherapy, and offers novel insights regarding some potential benefits of Ports. It also suggests that conventional approaches using EQ-5D alone to capture the impact of medical devices on patient QoL were not adequate. These results support the use of watchful observation, FNAC intervention was associated with better vitality and physical-related HRQOL scores but did not provide better preservation of utility (i.e., EQ-5D).

PMD111 SURVEY OF LIFE QUALITY AMONG PATIENTS WITH INSULIN DEPENDANT DIABETES MELLITUS MANAGED BY INSULIN PUMP
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OBJECTIVES: The incidence of Type 1 Diabetes Mellitus is increasing consistently (3 percent per year). The insulin pump and the PEN also maintains the glycaemic control and improves the life quality, but still there is the question which is the better choice. The aim of the study was to measure the life quality and therapeutic satisfaction of patients with insulin pump and compare the results with the data of patients with PEN. METHODS: A quantitative, retrospective research was taken in the hospital of Pécs and Veszprém between November, 2016 and March, 2017 using a standardised questionnaire. Altogether 193 patients’ data was evaluated (nppump=43; nPEN=58) with descriptive statistics, t-test, ANOVA and linear regression (p<0.05). RESULTS: The therapeutic satisfaction of the patients with pump is significantly higher than the patients with PEN (p=0.01). Patients with pump experienced more freedom in their daily lives, but not significantly (p=0.49). We found no significant difference between the two groups’ life quality (p=0.55). Hypoglycaemia occurred more in cases with patients using insulin pump (p=0.73). CONCLUSIONS: Compared to previous researches the patients with insulin pump were more satisfied with their treatment than the patients with PEN, but their life quality was almost equal.

PMD112 WOMEN’S PREFERENCES: A DISCRETE-CHOICE EXPERIMENT FOR TREATMENT OF MENORRHAGIA WITH UTERUS-PRESERVING THERAPY
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OBJECTIVES: This study aimed to validate women’s preferences between radiofrequency and laser ablation as uterus-preserving therapy alternatives for treatment of Menorrhagia in Germany. Therefore, first aim of the study was to find the relevant attributes for decision making between both therapy alternatives. Second, to qualify the relative importance of this attributes between radiofrequency treatment compared with laser resection from a women’s perspective. Third, to evaluate the willingness to pay (out of pocket) to avoid relevant side-effects based on women’s perspective confronted with this choice set. METHODS: A Discrete-choice Experiment (DCE) was conducted. All attributes were found in a systematic literature review: amortisation charge, regular use of hormone medication, post surgery pain, hysterectomy rate, re-surgery rate. The study included a random sample of the female patients of 35 to 55. After a pre-test, the DCE was conducted in an online survey from December 1 to January 31, 2017. The willingness to pay was also obtained from the survey. The data was analysed using a multinomial mixed logit model. RESULTS: In sum, 228 women started the survey and there was 108 complete responses. Therefore, the response rate was 47%. The following attributes had a significant (p<0.05) impact on women’s choices: hormone medication (standardised beta (sb) = 0.39), hysterectomy rate (sb = 0.22), re-surgery rate (sb = 0.22), amenorrhea chance (sb = 0.14). The average willingness to pay for women in this study is in 10 times higher than the regular co-payment in Germany for a hospital stay. So women in this study are willing to pay up to 250 € for the preferred choice set.

PMD113 HEALTH-RELATED QUALITY-OF-LIFE AND UTILITY MEASURES IMPACT IN A RANDOMIZED CONTROLLED PROTOCOL NECESSITY STUDY: SYMPTOMATIC THYROID NODULES
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OBJECTIVES: To present the impact of treatment on health-related quality-of-life (HRQOL) and health utility measures from the randomized controlled trial (ClinicalTrials.gov Identifier: NCT02398721) that investigated the effect of fine needle aspiration cytology (FNAC) versus watchful observation in patients with symptomatic benign thyroid nodules. METHODS: Health utility and HRQOL were evaluated using the EuroQol 5-dimension 5-level (EQ-5D-5L), 6-item Short Form Health Survey (SF-6D), cancer chemotherapy (Hickman type device, PICC, implantable chest-wall Port). Secondary objectives included the assessment and development of a quality of life measure for patients using these devices, and to inform the education of clinicians caring for these patients. METHODS: Semi-structured focus group discussions were conducted with patients at six sites in England and Scotland participating in CAVA. Focus groups were audio-recorded, transcribed, and data were analysed using thematic analysis. A range of experiences with different devices were sampled. RESULTS: Four key themes were identified. (i) Patient adaptability. Overall, patients found that the devices had limited impact on their daily lives. However, the minimisation of impact depended on patients making adaptations and adjustments to behaviour and routines. (ii) Positive psychological aspects of Ports: Patients had positive experiences of staff interaction. These positive experiences were more strongly linked to perceptions regarding staff friendliness than to physical-related HRQOL scores but did not provide better preservation of utility (i.e., EQ-5D).

CONCLUSIONS: This research identifies several challenges facing patients who need CVAADs for the administration of chemotherapy, and offers novel insights regarding some potential benefits of Ports. It also suggests that conventional approaches using EQ-5D alone to capture the impact of medical devices on patient QoL were not adequate. These results support the use of watchful observation, FNAC intervention was associated with better vitality and physical-related HRQOL scores but did not provide better preservation of utility (i.e., EQ-5D).

PMD114 COST-EFFECTIVENESS OF REPERFUSION STRATEGIES FOR ST-ELEVATION MYOCARDIAL INFARCTION. REAL-WORLD DATA FROM THE STENT FOR LIFE INITIATIVE IN ITALY
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OBJECTIVES: To evaluate the one-year cost-effectiveness of different reperfusion strategies for ST-elevation acute myocardial infarction (STEMI) using real-world data obtained by the Surveillance STEMI in Italy. METHODS: Outcome and resources data were collected on 212 consecutive patients treated for STEMI in May 2012 at all public hospitals in Sicily, one of the target regions within the SFI Initiative in Italy. RESULTS: 69.3% of patients underwent primary angioplasty (pPCI) and 20.3% non-primary PCI (i.e., secondary PCI, rescue PCI and pharmaco-invasive strategy). 2.4% was treated with thrombolysis (TBL); 8% did not receive any reperfusion treatment. The economic analysis was performed adopting a societal perspective. On average, treated patients with pPCI costed €1,963 less than non-primary PCI (€18,371 vs. €20,334, p=0.26). This was mainly due to lower costs of index hospitalisation (€10,034 vs. €10,918, p=0.03), one-year follow-up (€1,907 vs. €2,772, p=0.05) and productivity losses (2,774 vs. €3,243, p=0.65). Quality-adjusted survival (QALY) was more favourable in case of pPCI (0.72 QALYs vs. 0.69, p=0.45). Based on expected willingness-to-pay (WTP) in case of pPCI was in line with non-significant difference (0.48 vs. 0.30, p=0.73). The cost of pPCI does not significantly differ from TBL, and a higher cost of pPCI does not provide better preservation of utility score improvement over the 12-month period.

PMD115 PUBLIC PERCEPTIONS, ATTITUDES AND WILLINGNESS TO PAY TOWARDS A MEDICAL DEVICE FOR DETECTING FOOT ULCERATION IN PEOPLE WITH DIABETES
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OBJECTIVES: Diabetic foot ulceration (DFU) is a common and serious complication among diabetic patients. A medical device has been developed to prevent the occurrence of DFU. The aim of this study was to investigate the willingness to pay (WTP) for a DFU detection device among people with diabetes in the UK. METHODS: A contingent valuation survey was administered to 1051 participants through an online survey including questions on socio-demographic characteristics, self-reported health, diabetes knowledge, attitude towards diabetes, and WTP. A two-part model was used to analyse determinants of WTP, including a logistic model in the first part and a generalised linear model with a log-transformed WTP in the second part. RESULTS: More than half of the participants (55.9%) expressed a positive WTP (The median WTP in £ was £0.00). Considering the mean (SD) and median (IQR) WTP values were £67.9 (69.1) and £50 (80), respectively. Older age, middle-level education, good/excellent self-reported health, visiting doctors once/2-5 times, diabetes experience, medical device experience, and more than average self-perceived likelihood of using similar devices were associated with higher likelihood of willingness to pay. So women in this study are willing to pay up to 250 € for the preferred choice set.
to pay. Younger age, male gender and higher household income were associated with higher WTP values, conditional on willingness to pay. CONCLUSIONS: We found that more than half of people are willing to pay for this diabetes device and they tend to contribute when they have experience of diabetes or similar devices and perceive self-benefit. These results highlight the strong public preference and provide an important component to the economic business model for this device.

**MEDICAL DEVICES/DIAGNOSTICS – Health Care Use & Policy Studies**

**PMD115**

**IMPACT OF GENOMIC TESTING ON UTILIZATION IN ACADEMIC HYBRID ONCOLOGY PRACTICE**

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**OBJECTIVES:** Molecular testing is often used to guide practitioners and patients to select treatment or clinical trials. Payment coverage for molecular testing varies by technology and vendor. We examined the impact of billing practices changes for genetic testing (GT) on utilization in an academic hybrid, multi-site community-based cancer institute.

**METHODS:** In June 2015, Levine Cancer Institute (LCI) standardized the availability and use of GT across its 26 sites. GT consisted of a commercially produced, tissue-based -600 gene panel (Panel A) which guided treatment and clinical trial selection with a maximum cost to patient of $550. In June 2017, vendor-negotiated rates with public/private insurers were implemented including increasing patient out-of-pocket (OOP) costs between 45% and 518% (insurance provider and service dependent). LCI instituted financial authority in order to sample patients who were asked OOP costs. A liquid biopsy panel (6-40 genes) was added in October 2016 for no charge to patients via institutional support. Due to institutional pressure, users of GT were asked to test samples to ensure patients understood OOP costs. A liquid biopsy panel (6-40 genes) was added in October 2016 for no charge to patients via institutional support.

**RESULTS:** Since its peak in April 2016 (n=122, 32 ordering physicians), Panel A was decreased (n=118, 30 ordering physicians). Panel B’s utilization remained constant until February 2017 when test volume increased (n=22, 3 ordering physicians) and continued increasing (May 2017, n=44, 6 ordering physicians; Feb-Jun 2017 mean=32). In June 2017, orders for Panel A decreased (n=18, 4 ordering physicians). Nine financial consents were returned and specimens were shipped for analysis. Panel B orders remained constant (n=30, 9 ordering physicians) in June 2017.

**CONCLUSIONS:** Preliminary data suggest billing practice changes could impact physicians’ willingness-to-order and patient’s willingness-to-pay for genomic tests. While Panels A and B are imperfect substitutes, these data provide real-world evidence of how GT can be impacted by billing practices.

**PMD117**

**ASSESSMENT OF INNOVATIVE MEDICAL DEVICES: PROVING THE BENEFIT FOR THE PATIENT – BEST PRACTICES FROM GERMANY AND FRANCE**

Ecker + Ecker GmbH, Hamburg, Germany

**OBJECTIVES:** While uniform rules apply for market entry of medical devices in the EU, coverage decisions by Social Health Insurance fall within national competence according to different procedures and criteria. The objective of our study was to define what are the key concepts for assessment of innovative devices and how do they reflect inherent characteristics of medical devices.

**METHODS:** Due to the special characteristics of medical devices in terms of complexity, learning curve, life-cycle and regulation, determining the benefit of an innovative technology for patient care at the earliest stages might be difficult. Methodology for evaluating innovations by Inserm’s Quality and Effectiveness Institute (IQWiG) in Germany and the medical devices evaluation committee (CNEDIMTS) in France has been analyzed in a comparative way taking into account key concepts of “innovation”, “benefit”, and “efficiency”. **RESULTS:** Both countries developed different approaches to bypass the evidence gap inherent to early developmental stage of a device in order to ensure patients fast access to safe and effective medical innovation. In Germany a testing regulation and early dialogue framework have been progressively developed to generate evidence along with the device manufacturer. In France, a fast-track for innovative devices has been designed to accelerate their market access and gain reliable technical data on added benefit for patients. Establishing an innovation pathway at European level based on patient registries to collect uniform data would make valuable contributions to the evaluation and monitoring of such disruptive innovation at early stage.

**CONCLUSIONS:** Development of medical devices is an iterative process and differs from pharmaceuticals. Assessment of innovative technologies should take these specificities into account when assessing added benefit for patients. On that basis, both countries progressively strengthened their legal framework. However in practice it still takes time for innovation to reach the market and be reimbursed.

**PMD118**

**CALCITONIN USE IN INFLAMMATORY BOWEL DISEASE IS CHARACTERISED BY IMPROVED DIAGNOSTIC ACCURACY, LESS PATIENT HARM AND DECREASED COSTS, COMPARED WITH CONVENTIONAL SEROLOGICAL MARKERS AND COLONOSCOPY, A SIMULATION STUDY IN THE NETHERLANDS AND IN THE UNITED KINGDOM**

Masclanche B1, Wiertz R2, Vora AA2


**OBJECTIVES:** Gastric and intestinal disorders may exhibit overlapping symptoms making diagnosis difficult in primary care. Inflammatory bowel disease (IBD) prevalence <0.5% is a chronic inflammation of the gastrointestinal tract. Irritable bowel syndrome (IBS) is a functional disorder without gastrointestinal inflammation (prevalence of 10-20%). Endoscopy is the gold standard to diagnose IBD vs. IBS, however IBD’s low prevalence is negative in most of cases. Furthermore, colonoscopy is invasive, expensive, and uncomfortable for the patient and not without risks. F-Calprotectin (FC) is a fecal marker of intestinal inflammation. IBD patients exhibit FC levels significantly higher than the general population whereas IBS patients show FC levels higher than healthy controls, but lower than IBD patients. Therefore, FC can be used as a pre-endoscopic test to differentiate between IBD and IBS. The present study evaluates the cost-effectiveness of a) FC compared to CRP+ESR, and b) colonoscopy to distinguish IBD from IBS in the UK and NL.

**METHODS:** A Markov model was developed for each diagnostic strategy, using data from the published literature. 1.6% of the colonoscopies brought about complications, resulting in Emergency Room visits/surgery. Inadequate colonoscopy preparation (23%) and inconclusive repeated colonoscopies were also considered. Outcomes include cost savings, cost-per-corrected-IBD diagnosed, and colonoscopy reduction. Uncertainty was addressed with sensitivity analysis and cost-effectiveness acceptability curves.

**RESULTS:** In NL: FV and FC were cost-effective compared to CRP+ESR and colonoscopy, with min. savings of €722 and €1022, respectively. FC was non-inferior to colonoscopy at an ICER of €562, and, if the median cost of colonoscopy was used, the ICER was calculated at €722. In NL the cost-effectiveness of FC vs. colonoscopy is dependent on the willingness to pay for colonoscopy. In the UK and NL.

**CONCLUSIONS:** FC can be used as a pre-endoscopic diagnostic tool associated with fewer colonoscopies and correctly identifies more disease while decreasing costs compared to colonoscopy. FC demonstrates superior value both from patient and payer perspective, while simultaneously increasing diagnostic efficacy.

**PMD119**

**SPIROMETRY COMPARISON OF LUNG FUNCTION BETWEEN COALMINERS AND NON-COALMINERS**

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**OBJECTIVES:** The study was conducted to assess the lung function of coalminers and non-coalminers by using Spirometry.

**METHODS:** This was a case-control study. Total 320 coal miners were selected for six months. The age range of the miners was 18-60 years. The data were collected at the end of one year of experience. Study was conducted in the tehsil Hernai, district Ziarat, Baluchistan, Pakistan. Self-designed questionnaire and Spirometer were used. The interview was conducted on coalminers and non-coalminers and facts were documented in the questionnaire andSpirometry was implemented for coalminers and non-coalminers individually. The FVC, FEV1, FEV1/ FVC and FEF25-75% and PEFR were recognized and calculated. The frequency, percentage, Friedman’s two-way analysis was applied and (P<0.05) detected via SPSS 22 for both groups, coalminers and non-coalminers.

**RESULTS:** The mean value of FVC in coalminers was (57.91%) and the mean value in non-coalminers was (66.14%), the FEV1 mean value in coalminers was (63.16%) and the mean value in non-coalminers was (73.09%). The mean value for FEF25-75% in coalminers was (97.46%) and in non-coalminers was 97.8%). The mean value for FEV1/FVC in coalminers was (112.87%) and in non-coalminers was (92.34%) and in non-coalminers was (70.3%). The mean value for PEFR in coalminers was (71.89%) and in non-coalminers was (84.61%).

**CONCLUSIONS:** The mean value for FVC in coalminers was (112.87%) and in non-coalminers was (92.34%) and in non-coalminers was (70.3%). CONCLUSION: This study was determined that the usage of FC as pre-endoscopic diagnostic tool is associated with fewer colonoscopies and correctly identifies more disease while decreasing costs compared to the alternatives. CONCLUSIONS: FC demonstrates superior value both from patient and payer perspective, while simultaneously increasing diagnostic efficacy.
WHAT ARE THE IMAGES USED TO DIAGNOSE AND ASSESS SUSPECTED STROKES? A SYSTEMATIC LITERATURE REVIEW OF CARE IN FOUR EUROPEAN COUNTRIES

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OBJECTIVES: The cost-effectiveness of clinical interventions is often assessed using current care as a comparator. However, various imaging options are available in current stroke care and evidence suggests clinical practice variation in acute stroke imaging across European countries. This research aims to describe the patterns of stroke imaging, examine variations across four selected countries and draw in results that will be used in future cost-effectiveness analyses of imaging strategies.

METHODS: A systematic literature review was conducted. Embase, Medline, Web of Science, the Cochrane Library and Google Scholar were searched in August 2015. A strategy focused on the five most common imaging options used in acute stroke care in clinical practice in Hungary, Germany, Sweden and the UK. Characteristics extracted from these studies included the type and number of health centres and patients, the study design and goal and information about the imaging techniques used. The data found were extracted and analysed.

RESULTS: The literature search yielded 3616 records. Sixteen eligible studies were identified for final analysis. The complete imaging methods used to diagnose stroke patients were poorly documented. Computed Tomography (CT) appeared to be the main diagnostic imaging used in stroke care (for 78 to 98% of patient profiles across the 3 countries over different periods). Magnetic Resonance Imaging (MRI) was reported to be substantially less used (for 4 to 6% of patient profiles). The UK revealed the highest proportion of scanned patients and timing of imaging.

CONCLUSIONS: The imaging strategy documentation, the proportion of patients scanned and the timing of imaging is insufficiently described in the literature. The heterogeneity in stroke imaging observed in this study reinforces the need to compare the quality of care in terms of process and outcomes within and between countries. Research is also needed to investigate the cost-effectiveness of different imaging strategies.

BOOSTING HOME ANALYSIS UPTAKE BY SETTING FIXED MODALITY CEILINGS: IS IT AN EVIDENCE-BASED POLICY APPROACH?

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1Maastricht University, Maastricht, The Netherlands, 2Fresenius Medical Care, Bad Nauheim vor der Höhe, Germany

OBJECTIVES: There is a global payer tendency to foster the share of home dialysis modalities (HDM) for cost saving purposes, with some countries, e. g. the Netherlands, proposing to set fixed modality ceilings. The aim was to analyse whether and how an evidence-based policy of considering cost-effectiveness analyses as well as patient preferences and healthcare professionals (HCP) perspectives towards HDM. METHODS: In order to assess current evidence, two systematic literature reviews (SR) were conducted to identify economic evaluations of home vs. ambulatory or hospital dialysis (SR 1) and to explore patient preferences and HCP perceptions (SR 2). To match global with local evidence, we additionally performed qualitative in-depth semi-structured interviews with Dutch dialysis patients and HCP. RESULTS: Of 1056 initial identified studies, twelve economic evaluations (SR 1) and 94 interviews (SR 2) were included. The majority of studies reported positive effects on quality-adjusted life years and cost savings associated with HDM. The consecutive patient and HCP HDM vs. Hospital mode preferences were observed in 2012 new Dutch guidelines. (1) Financial characteristics and demographics, (2) family situation, (3) patient motivation, and (4) dialysis reimbursement to influence HDM uptake. Interviews generally supported these findings and illustrated the importance of patients preferences as a major barrier for reimbursement to influence HDM uptake. Interviews generally supported these findings and illustrated the importance of patients preferences as a major barrier for reimbursement to influence HDM uptake.

CONCLUSIONS: In the Netherlands, as well as in other countries, a strategy to foster HDM should consider the patients preferences in addition to cost-effectiveness analyses. Further, all associated costs need to be analysed, including product safety for patients, higher quality of medical evidence to the attention of dialysis patients and healthcare workers and comply with NSI prevention laws. This analysis suggests that the reduced risk of NSI with the needless prefilled IV voriconazole infusion may provide cost-offsets and potential cost-savings to hospitals.

COST-EFFECTIVENESS OF HEMODIALYSIS MODALITIES: SPHERICAL BALLOON VALVE ANGIOPLASTY WITH STENT DEPLOYMENT OR CATHETER AORTIC VALVE IMPLANTATION (TAVI) AS ALTERNATIVE TREATMENT OPTIONS FOR PATIENTS WITH SEVERE AORTIC STENOSIS

Kolominsky-Rabas PL, Zhang S, Friedrich-Alexander-University of Erlangen-Nurnberg, Erlangen, Germany

OBJECTIVES: Transcatheter aortic valve implantation (TAVI) has been demonstrated to be a feasible, effective and safe treatment for high-risk surgical patients with severe aortic stenosis. However, the fast growth of TAVI has created difficulties in cross-study result comparison. In 2011 and 2013, Valve Academic Research Consortium (VARC) published standardized definitions on reporting endpoints in TAVI studies. The objective of this study was to compare the reporting of clinical outcomes based on VARC-2 definitions. METHODS: A systematic review of TAVI registries reporting VARC-2 definitions has been performed in line with VARC guidelines in PubMed, ScienceDirect, Scopus databases and EMBASE. Based on VARC-2, patients’ characteristics and procedure characteristics, 30-day clinical

awarding criteria of lots differed substantially among tenders, with quality weightings between 30 and 50% of the tender price. Consequently, the groups of MDs in the CND include heterogeneous devices. This should be considered in comparative analysis of MDs unit price. Finally, the ultimate goal of drafting a tender dossier for sanitary gloves, aimed at overcoming the current fragmentation of public contracts. Our analysis contributed to the implementation of the procurement of MDs and a standardized tender dossier for sanitary gloves, aimed at overcoming the current fragmentation in public document publications.

VALUE OF NEEDLELESS SAFETY DEVICES FOR IV VORICONAZOLE IN PREVENTION OF NEEDLESTICK INJURY (NSI)

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OBJECTIVES: In 2010, the European Union (EU) adopted the Framework Agreement on Procurement of Medical Devices (MDs). However, the regulations for the procurement of MDs in Italy in several ways. First, the Italian Ministry of Health (MoH) has started a revision of the CND. Second, the authorities supported the Italian MoH and Regions in drafting national tender strategies for the procurement of MDs and a standardized tender dossier for sanitary gloves, aimed at overcoming the current fragmentation in public document publications.

NEW EUROPEAN MEDICAL DEVICE DIRECTIVE (MDD) COMES INTO EFFECT IN 2020: CHANGES AND CONSEQUENCES FOR STAKEHOLDERS

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OBJECTIVES: Despite high requirements for approval of medical devices (MDs), considerable variations in approval procedures caused product specific quality deficiencies were observed during the past years. To ensure that all MDs (all classes ranging from heart valves to sticking plasters) are safe, the EU commision adopted a new Medical Devices Regulation (MDR) in 2017 extending the market surveillance, verifying scientific and technological evidence).

To assess the effect of the new MDD on four different stakeholders (i.e. manufactur- ers, regulators, health professionals, physicians and patients) a decision analytical framework has been used. METHODS: Based on a structured analysis of the strengths, weaknesses, opportunities and threats of the new MDD have been identified and a qualitative analysis of their occurrence rates was performed. RESULTS: The most often reported consequences by implementing the new MDD are the increased workload and higher product development costs for manufactures, but also an enhanced product safety for patients, higher quality of medical evidence to the attention of regulatory bodies and physicians. Outcomes occurring less often as a consequence of the implementation of the new MDD are a decline of new and also an enhanced products for diseases with a limited profitability or a reduction of small and mid-size manufacturers of MDs either due to buy up by bigger companies or by abandoning the business area. CONCLUSIONS: Overall, the implementation of the new MDD results in a benefit for all stakeholders. Nevertheless, an extended regulation causes also unfavorable consequences. Even though the implementation of the new regulation will come into effect in 2020, it is important that all stakeholders anticipate the wide range of potential consequences as early as possible. Therefore, the findings of the decision analytical framework may help to identify areas with a high impact and to develop strategic decisions.

REPORTING CLINICAL OUTCOMES IN TAVI REGISTRIES

Vodolazskiy, Bashir P, Zhang S

OBJECTIVES: Transcatheter aortic valve implantation (TAVI) has been demonstrated to be a feasible, effective and safe treatment for high-risk surgical patients with severe aortic stenosis. However, the fast growth of TAVI has created difficulties in cross-study result comparison. In 2011 and 2013, Valve Academic Research Consortium (VARC) published standardized definitions on reporting endpoints in TAVI studies. The objective of this study was to compare the reporting of clinical outcomes based on VARC-2 definitions. METHODS: A systematic review of TAVI registries reporting VARC-2 definitions has been performed in line with VARC guidelines in PubMed, ScienceDirect, Scopus databases and EMBASE. Based on VARC-2, patients’ characteristics and procedure characteristics, 30-day clinical

awarding criteria of lots differed substantially among tenders, with quality weightings between 30 and 50% of the tender price. Consequently, the groups of MDs in the CND include heterogeneous devices. This should be considered in comparative analysis of MDs unit price. Finally, the ultimate goal of drafting a tender dossier for sanitary gloves, aimed at overcoming the current fragmentation in public document publications.
The evolution of NICE MedTech innovation briefings and their associated technologies

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OBJECTIVES: A MedTech Innovation Briefing (MIB) is a document produced by the National Institute for Health and Care Excellence (NICE) designed to help NHS commissioners, patients and clinicians make informed decisions about new medical technologies evaluated by this process. Our objective was to establish how MIBs have evolved over time following the publication of the first briefing in February 2014, and to identify trends in the technologies evaluated by this process.

METHODS: Structured desk research was conducted to identify MIBs produced per month. Analyses were also conducted to identify the type of technologies included in the briefings. Areas of interest included regulatory details, contributions from patient groups and specialists, and MIB content. Results: The number of MIBs produced each year has steadily increased between 2014 and 2016 from 17 to 42. Across all years, devices with a Class IIa or IIb-CE mark comprised the most common technologies selected for evaluation, as did technologies with a purchasing price between €1,000 and €10,000. Our analysis also revealed that across this timeframe, the majority of MIBs (78%) did not contain comment from patient organisations or carers, however, all briefings contained contributions from patient groups and specialists concerned with the technology.

CONCLUSIONS: The number of MIBs produced each year is expected to increase. Implementing the Government’s Accelerated Access Review recommended the publication of the first briefing in February 2014, and to identify trends in the technologies evaluated by this process. The number of MIBs produced each year has steadily increased between 2014 and 2016 from 17 to 42. Across all years, devices with a Class IIa or IIb-CE mark comprised the most common technologies selected for evaluation, as did technologies with a purchasing price between €1,000 and €10,000. Our analysis also revealed that across this timeframe, the majority of MIBs (78%) did not contain comment from patient organisations or carers, however, all briefings contained contributions from patient groups and specialists concerned with the technology. The number of MIBs produced each year is expected to increase. Implementing the Government’s Accelerated Access Review recommended the publication of the first briefing in February 2014, and to identify trends in the technologies evaluated by this process. The number of MIBs produced each year has steadily increased between 2014 and 2016 from 17 to 42. Across all years, devices with a Class IIa or IIb-CE mark comprised the most common technologies selected for evaluation, as did technologies with a purchasing price between €1,000 and €10,000. Our analysis also revealed that across this timeframe, the majority of MIBs (78%) did not contain comment from patient organisations or carers, however, all briefings contained contributions from patient groups and specialists concerned with the technology.

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with the use of Echo PS™ Positioning System has demonstrated reduced procedure time variability in the outpatient surgery setting for all mesh sizes. Reductions in procedure time and variability in procedure time may lead to greater operating efficiencies, start time efficiencies, avoided staffing costs and improved patient satisfaction which may ultimately result in lower healthcare resource use.

PMD135

COST EFFECTIVENESS OF CONTOUR CURVED CUTTER STAPLER IN LOW ANTERIOR RESECTION IN TURKEY

Tatar M1, Şentürk A1, Tütüncü C2, Doğan M3, Türk F2

1Farol Health Economics & Policy Consultancy, Ankara, Turkey, 2Johnson & Johnson, Istanbul, Turkey

OBJECTIVES: Contour Curved Cutter Stapler is a multifire, single patient use device with a curved head that cuts and staples. The device is used for transection, resection, and/or creation of anastomoses. The instrument has application in multiple open or minimally invasive general (gastrointestinal and urologic), gynecologic, urologic and thoracic surgical procedures. The objective of this study is to assess the cost effectiveness of Contour in low anterior resection (LAR) in Turkey.

METHODS: A simple decision making model was used in assessing the cost-effectiveness of LAR with and without Contour stapler. The ICER was calculated as additional cost per avoided complication. The analyses were made from the perspective of the Social Insurance Institution. Cost data regarding the type and frequency of resources used before, during and after LAR and in treatment of complications with and without Contour were obtained from expert views. Complications were listed as recurrence, colostomy, anastomotic leakage and wound infection. Epidemiologic data and complication rates were obtained from literature. The expert view was used to determine the total cost per patient. The Contour stapler was found as 2,894 TRY Total number of LAR patients for 2017 was estimated as 13,694. Of these patients 8,379 had complications if Contour is not used whereas 1,675 had complications if Contour was used. The total annual costs of operations including cost of complications were 54,569,305 TRY and 97,775,068 TRY for LAR with Contour and LAR without Contour respectively. With these results, LAR with Contour dominated LAR without Contour.

CONCLUSIONS: These results showed that Contour is a cost-effective option in Turkey.

PMD136

A RETROSPECTIVE PREMIER DATABASE STUDY TO COMPARE REPAIR OF VENTRAL HERNIA WITH PHASIX™ VS STRATICTM IN THE INPATIENT HOSPITAL SURGICAL SETTING

Trippodi D1, Zhang X2, Wan Y2, Berhanie P1, Carrol M1

1C.R. Bard Inc, Warwick, RI, USA, 2C.R. Bard Inc., Murray Hill, NJ, USA

OBJECTIVES: There is no standard treatment for complex hernias or abdominal wall defects. In the United States, biologic grafts (e.g., biologic mesh, Phasix™) have been used to provide early reinforcement and remodeling over time and rarely need to be removed for a post-operative infection. The challenge with biologic graft is the cost. The cost of Phasix (Mesh) is a return absorbable synthetic mesh, was introduced into the market to address some limitations associated with biologic mesh. Phasix™ Mesh handles like synthetic mesh, retains it’s strength throughout the critical initial healing phase and remodels over time. The purpose of the study is to compare the clinical and cost-effectiveness of Phasix™ mesh vs the Stratit™ Surface Mesh in the inpatient hospital surgical setting.

METHODS: A retrospective analysis of inpatient hospital procedures using Premier Hospital Database in the Outpatient surgical setting was conducted. Laparoscopic and robotic incarcerated or reducible ventral hernia procedures (ICD-9 53.62 & 53.63) for patients with a procedure between July 1, 2013 to December 31, 2016 were evaluated.

RESULTS: A total of 1,794 patients (897 per block) were included after matching. Patients who received AA had significantly lower mean hospital LOS versus patients in the control group (2.06 ± 1.36 vs. 2.98 ± 1.58 days, p=0.0001). The adjusted proportion of patients discharged to home was nearly 20 percentage points higher in the AA cohort versus the control cohort (87.3% vs. 67.7%, p<0.001). Post-acute claim payments for AA patients were nearly 50% lower than those for control patients ($4,139 vs. $7,465, P<0.001).

CONCLUSIONS: AA patients had significantly lower in-hospital length of stay and post-acute care resource use when compared to control patients. Further research is warranted to evaluate the cost effectiveness of AA among surgeons of varying experience levels.

PMD134

A RETROSPECTIVE ANALYSIS OF SURGERY TIME FOR ECHO PS™ POSITIONING SYSTEM WITH VENTRALIGHT™ ST VS FLAT MESH BY SIZE IN OUTPATIENT HOSPITAL LAPAROSCOPIC HERNIA REPAIR PROCEDURES

Trippodi D1, Zhang X2, Wan Y2, Berhanie P1, Corral M1

1C.R. Bard Inc, Warwick, RI, USA, 2C.R. Bard Inc., Murray Hill, NJ, USA, 3CR BARD, Murray Hill, NJ, USA

OBJECTIVES: Several studies show that targeting factors that constrain efficiency in the operating room can provide important benefits to surgical staff and hospitals. This study compares the timing of the operations performed by the use of Echop™ PS Positioning System used with Ventralight™ ST vs flat mesh in laparoscopic hernia repair procedures.

METHODS: A retrospective analysis of laparoscopic hernia repair procedures using Premier Hospital Database. This is an improvement over the comparator Echop™ PS system used with Ventralight™ ST vs flat mesh in laparoscopic hernia repair procedures. METHODS: A retrospective analysis of laparoscopic hernia repair procedures using Premier Hospital Database. This is an improvement over the comparator Echop™ PS system used with Ventralight™ ST vs flat mesh in laparoscopic hernia repair procedures.

RESULTS: Propensity Score Matching resulted in differences in surgery time by size for Ventralight™ ST with Echo vs Flat Mesh without Echo: Small: 107.9 (N=120) vs 123.5 (N=120), 15.6 minutes, p=0.039; Medium: 105.2 (N=172) vs 106.4 (N=172), 1.26 minutes, p=0.820; Large: 91.7 (N=77) vs 107.0 (N=77), 23.4 minutes, p<0.001.

CONCLUSIONS: In this analysis, Ventralight™ ST
for EXPEDIUM VERSE and traditional pedicle screw systems in the treatment of Adolescent Idiopathic Scoliosis. Data was prospectively collected. Endpoints included number of instrument units for sterilization, operating room staff time performing set up and clean down, and the total duration of procedure. RESULTS: Use of EXPEDIUM VERSE led to a 29% reduction in the number of units sent for sterilization, a 50% reduction in the number of units sent for traditional transect, and a 60% reduction in the number of EXPEDIUM VERSE compared to the traditional pedicle screw system. Operating room staff time performing set up and clean down was reduced by over 40%. The total duration of the procedure from first incision to last suture was also reduced. CONCLUSIONS: Use of EXPEDIUM VERSE in the treatment of Adolescent Idiopathic Scoliosis leads to efficiency improvements in terms of sterilization and operating room staff time. These benefits could translate into financial efficiencies for hospital providers through reduced administrative efficiency. Further research is required to quantify the cost savings on a national level.

PMD138
BUDGET IMPACT ANALYSIS OF P4HB VS PERMANENT SYNTHETIC MESHES IN COMPLEX ABDOMINAL WALL REPAIR IN SPAIN
Busuttil R1, Tripodi D2, Corral M3
1PneumRx Ltd, London, UK, 2PneumRx GmbH, Düsseldorf, Germany, 3Charité - Medical University, Berlin, Germany
OBJECTIVES: Despite advances in surgical technique and prosthetic technologies, the risks for recurrence and infection are high following the repair of incisional ventral hernias. The current standard for reinforced hernia repair is synthetic mesh, which may reduce the risk for recurrence in many patients. Patients with comorbidities, contaminated wounds or previous wound infections experience higher rates of surgical site occurrences/infections (SSO/SSI) and mesh complications. This study evaluated the cost of mesh complications from a Spanish perspective.

METHODS: A retrospective chart review from July 2008 to June 2016 was conducted and included 5,294 patients implanted with P4HB or biologic mesh and 6,644 patients implanted with permanent synthetic meshes. Costs were calculated in Euros (€) using a 12 month time horizon and assuming 100% use for each mesh type. Costs were based on the variables of mesh type used, mesh complications, SSO/SSI, and re-operation. Patients were followed for a minimum of 3 years. The Markov model was used to estimate the mesh complication timeline. A time horizon was used to determine the number of ulcer-free weeks and the expected costs of treatment. Markov models were used for all meshes.

RESULTS: There were no significant differences in any of these variables between Attune and the reference group. The cost of treatment for P4HB mesh was significantly lower than the reference group across all complications (€10,554 vs. €11,327 for hydrogel-dressings; €10,200 vs. medical-honey; €10,054 vs. impregnated-dressings). In all those complications, P4HB mesh was found to be the most cost-effective mesh type in both the first and second calendar years. In all complications, P4HB mesh was associated with significant cost savings compared to the reference group.

CONCLUSIONS: P4HB mesh is the most cost-effective ventral hernia repair mesh and provides significant cost savings.
OBJECTIVES: Since CE mark was granted to BLVR technologies valvules and coils, respectively, in 2003, procedure volumes grew significantly in Germany, which among was the first country to adopt these technologies. Objectives of this research are exploring trend of adoption and estimating the number of candidates for BLVR in 9 European countries. METHODS: we used data from the German National Health Care Office database during the period 2010-2015. This is the only database available in Europe differentiating BLVR procedures to retrospectively draw therapy uptake. Including valves two different indications, we excluded codes associated with the implant of 1-2 valves because we used to treat air leak. For coils we computed code-specific volume and we approximated the number of patients treated per year using average number of units per procedure from literature.

RESULTS: Our analysis suggests a pronounced growth in BLVR treatments in the study period, reaching an adoption rate of 23 patients per million inhabitants in 2015 in Germany across 146 different clinics with 73 clinics performing less than 10 procedures, by excluding outliers clinics (<3 and >100 procedures) the average number of procedures per clinic per year was 1.7). Despite the prevalence of severe emphysema, nearly 10,000 patients per year can be considered for BLVR in the 9 selected European countries by applying a scenario similar to the German one. CONCLUSIONS: Since CE mark several new trials and Health Technology Assessment reports in the Netherlands are funded to support and driving the inclusion of BLVR technologies in the clinical guidelines. The reality is that with few exceptions the adoption of BLVR techniques outside Germany is still on its infancy. Many factors can influence diffusion: guideline adoption, physicians’ awareness, capacity, organisational factors, referral pathways, socio-economic indicators and coverage recommendations.

PMD144  
COST-EFFECTIVENESS ANALYSIS OF A POINT-OF-CARE TEST FOR RENAL FUNCTION MEASUREMENT IN COMMUNITY PHARMACIES IN THE NETHERLANDS  

OBJECTIVES: We estimated costs of adverse drug effects are an important source of unintentional patient harm and economic burden. A decreased kidney function is one of the risk factors for preventable drug-related hospital admissions. The incidence of renal impairment is increasing, thus medication monitoring will become even more important. However, while in public pharmacies, there is large number of unknown or outdated kidney function values, that can lead to an overload of signals from medication monitoring, which leads to alert fatigue. To reduce this problem, Point-of-Care tests can be introduced in public pharmacies. The objective of this study was to estimate the cost-effectiveness of a PoCT creatinine meter for renal function measurement in community pharmacies in the Netherlands, to prevent antibiotic-related hospitalizations. METHODS: The introduction of the PoCT in public pharmacies according to antibiotic prescriptions in case of impaired kidney functions. A decision tree was used to assess the process of an antibiotic prescription in public pharmacies and the possible consequences, based on real-life patient data. Direct cost of renal function screening, antibiotic treatments and medical care due to antibiotic-related hospitalization were included. For completeness, univariate and probabilistic sensitivity analysis were performed. RESULTS: The intervention is deemed cost-saving and gained 3.29 QALY’s with the probabiliy of being cost-effective of 81.1% for every threshold willingness to pay. The budget-impact analysis shows that the introduction of the PoCT in community pharmacies will save €95.38/patient each year. CONCLUSIONS: A prospective study is needed to introduce the PoCT in public pharmacies in the Netherlands is cost-saving. In addition, we estimate a positive year.

PMD145  
COST-SAVINGS IN PROCESS INNOVATIONS: A CASE EXAMPLE IN MYOCARDIAL INFARCTION PATIENTS  

OBJECTIVES: Patient age >65 years and previous MI are risk factors associated with greater odds of infection, the greatest being smoking and osteoporosis. Total cost savings varied between €2.146 (12% per patient in the US).

RESULTS: We used data from the German Federal Statistics Office databases for the period 2010-2015. This is the only database available in Europe differentiating BLVR procedures to retrospectively draw therapy uptake. Including valves two different indications, we excluded codes associated with the implant of 1-2 valves because we used to treat air leak. For coils we computed code-specific volume and we approximated the number of patients treated per year using average number of units per procedure from literature. The intervention is deemed cost-saving and gained 3.29 QALY’s with the probabiliy of being cost-effective of 81.1% for every threshold willingness to pay. The budget-impact analysis shows that the introduction of the PoCT in community pharmacies will save €95.38/patient each year. CONCLUSIONS: A prospective study is needed to introduce the PoCT in public pharmacies in the Netherlands is cost-saving. In addition, we estimate a positive year.
included in the study. Index surgery cost was estimated at €42,902 (SD €59,117) for adults and €50,180 (SD €37,582) for pediatric patients. The proportion of unexplained readmissions were surgical complications (78%), nonunion (58%), and fracture (58%). Mean costs of readmissions ranged from €28,000–€68,000 per readmission for adults, and €12,000–€37,000 for pediatrics. Post-index procedures were defined as the additional procedures, which are performed from 32.6 events in patients with no complications to 40.7 events for patients with non-unions. Post-operative outpatient care resulted in significant costs, ranging from €14,500–€36,000.

RESULTS: Local digital roadmaps were included in 39 (89%) STPs, however, only five STPs referenced the “Personalised Health and Care 2020” framework which outlines a review of the commitment of digital technology transformation. Telehealth and remote monitoring, particularly for the management of chronic conditions, were among the most popular areas selected for advancement and over half of the STPs (61%) included plans to integrate mobile applications onto clinical practice. In total, one STP proposed implementing NHS Digital.

CONCLUSIONS: While the scope of STPS is broad, the motivations for increasing the use of technology were limited, with many STPs focusing on technological advancements as an extension of improving care planning and co-ordination. Despite this, a recurring theme throughout the plans was that sharing patient data between provider sectors has the potential to offer both time and cost savings across the NHS. Future challenges in delivering technological transformation include unifying roadmaps with a single focus area, and collaboration across footprint areas to reduce variations in quality of care.

PMID154 EXAMINING GLOBAL OCCURRENCE OF COMPLICATIONS RELATED TO PERIPHERAL IV CATHETERS USING A FOCUSED LITERATURE REVIEW

METHOds: A systematic literature review, using multiple search engines identified 13,251 articles written in English and 11 additional articles were contributed by the BD internal repository. 985 articles were excluded before full-text examination with key outcomes other than PIVC-related complications, and/or with nonhuman subjects. Ultimately, 84 articles met inclusion criteria with data available for extraction, while the remaining 12,277 did not. PIVC-related complication rate was described under three units: % of catheters, % of patients, and per 1,000 catheter days. Complication rate in the same unit were weighted with study sample size and reported as weighted averages and are as follows: CRBSI: 4.33%, catheter related infections: 4.12%, bacteremia: 9.32%, occlusion: 6.87%, thrombosis: 7.00%, phlebitis: 13.60%, infiltration: 31.49%, extravasation: 5.30%, and dislodgement: 5.70%. Outliers include the neonatal population and a healthcare facility inside a developing nation. Complication rates under % patients and per 1,000 catheter days also showed similar results to each other.

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OBJECTIVES: To systematically assemble the evidence on the cost-effectiveness of robot-assisted hysterectomy (RAH). METHODS: Systematic review of the literature. We searched for publications until December 2016. Studies were included if they met the study criteria, we identified 429 were as statin users and 132 were non-users. RESULTS: In a population of patients with diabetes aged 40 years, without any previous statin prescription and who had a cardiovascular event between 1st January 2009 and 31st December 2013, we found that statin users had a lower rate of cardiovascular events than non-users. The rate of major cardiovascular events was 8.4% per year in non-users and 6.5% per year in users. The rate of minor cardiovascular events was 10.7% per year in non-users and 9.2% per year in users. The cost of major cardiovascular events was €1,848 per non-user and €1,570 per user. The cost of minor cardiovascular events was €1,183 per non-user and €1,037 per user. The incremental cost-effectiveness ratio (ICER) was €286 per year of life saved. The results were consistent across different subgroups, including age, sex, and baseline risk factors. CONCLUSIONS: Statin therapy is cost-effective for the prevention of cardiovascular events in patients with diabetes aged 40 years, without any previous statin prescription and who had a cardiovascular event. The results were consistent across different subgroups, including age, sex, and baseline risk factors.

DISEASE – SPECIFIC STUDIES

CARDIOVASCULAR DISORDERS – Clinical Outcome Studies

PCV1
STATIN INDUCED CATARACT IN CARDIOVASCULAR PATIENTS: A RETROSPECTIVE COHORT STUDY OF A TERTIARY HEALTHCARE FACILITY
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1Manipal College of Pharmaceutical Sciences, Manipal, India, 2Manipal University, manipal, India
OBJECTIVES: To assess the effect of statins on cataract development when used for secondary prevention.
METHODS: We conducted a retrospective cohort study in a tertiary healthcare facility in India. We identified patients with diabetes aged ≥ 50 years, who were on statin therapy for at least 1 year. We excluded patients with a history of cataract surgery or any other ocular condition. The primary outcome was the incidence of new-onset cataract during the study period. The secondary outcomes were the types of cataract, the need for cataract surgery, and any other ocular complications.
RESULTS: We included 350 patients, of whom 180 were on statin therapy and 170 were on placebo. The incidence of new-onset cataract was significantly higher in the statin group compared to the placebo group (7.8% vs 3.1%, p = 0.01). The types of cataract were nuclear, cortical, and cortical-capsular. The need for cataract surgery was significantly higher in the statin group compared to the placebo group (9.5% vs 3.9%, p = 0.03).
CONCLUSIONS: Statin therapy is associated with an increased risk of new-onset cataract and the need for cataract surgery. These findings highlight the importance of regular ophthalmologic assessments in patients on statin therapy.

PCV2
LONG-TERM HEALTH BENEFITS OF TREATING NON-VALVULAR ATRIAL FIBRILLATION WITH APIXABAN VERSUS VITAMIN K ANTAGONISTS IN GERMANY: A POPULATION-BASED MODELLING STUDY
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OBJECTIVES: To evaluate the long-term health benefits of apixaban compared to vitamin K antagonists (VKAs) in patients with non-valvular atrial fibrillation (NVAF) in Germany.
METHODS: We conducted a Markov modelling study. We compared the long-term health outcomes of patients with NVAF treated with apixaban or VKAs in Germany. We used data from the German Collaborative Cardiac (GKdG) registry and the German apixaban registry. We calculated the life expectancy, quality-adjusted life-years (QALYs), and incremental cost-effectiveness ratio (ICER) of apixaban compared to VKAs. The primary outcomes were the number of stroke, myocardial infarction, and major bleeding events. The secondary outcomes were the number of deaths and the number of hospital admissions.
RESULTS: In a Markov model, the ICER of apixaban compared to VKAs was €29,100 per QALY gained. The results were consistent across different subgroups, including age, sex, and baseline risk factors. CONCLUSIONS: Apixaban is a cost-effective treatment option for patients with NVAF in Germany. It results in a significant reduction in the number of stroke, myocardial infarction, and major bleeding events, and it is associated with a higher quality-adjusted life expectancy than VKAs.

A600 VALUE IN HEALTH 20 (2017) A399–A811

28 weeks), very premature (28-32 weeks), and late preterm (32-36 weeks). The total cost of RAH was recorded as €17,199 (95% CI: €16,236 - €17,965) per correct diagnosis. The study showed that the acid base balance POCT process must be modified and better controlled. The study is encouraging establishment of a HB-HTA unit in the Hospital. RC on 2017 through 2030. We calculated the incidence rate of recurrent risk of cataract using a cohort study. RESULTS: The incidence of cataract among patients with diabetes aged ≥ 50 years, without any previous statin prescription and who had a cardiovascular event between 1st January 2009 and 31st December 2013 was 8.4% per year in non-users and 6.5% per year in users. The rate of major cardiovascular events was €1,848 per non-user and €1,570 per user. The rate of minor cardiovascular events was €1,183 per non-user and €1,037 per user. The incremental cost-effectiveness ratio (ICER) was €286 per year of life saved. The results were consistent across different subgroups, including age, sex, and baseline risk factors. CONCLUSIONS: Statin therapy is cost-effective for the prevention of cardiovascular events in patients with diabetes aged ≥ 50 years, without any previous statin prescription and who had a cardiovascular event. The results were consistent across different subgroups, including age, sex, and baseline risk factors.

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the size of the axipapan population according to a claims-data based analysis in Germany and the predicted market share of axipapan. A Markov model based on the ARISTOTLE trial comparing axipapan and VKA for anticoagulation was applied to the German social health insurance (SHI) data to calculate the occurrence of strokes and systemic embolisms (SE), major bleeds and deaths on the patient level. To examine the incidence of these adverse events, we compared the size of the SHI population to the entire German NVAF populace, we created a dynamic population model. It links population forecast with epidemiological data and uses the event risks from the Markov model to predict the potential for reducing mortality and morbidity. RESULTS: In comparison to VKA therapy the administration of axipapan prevents 52,185 additional major clinical events in the assumed German NVAF populace from 2017 through 2030. This includes 15,383 non-fatal strokes or SEs, 22,483 non-fatal major bleeds, and 14,319 deaths, corresponding to 109,887 gained life years. CONCLUSIONS: We showed that utilization of axipapan instead of VKA for stroke prevention can lead to considerable reduction of mortality and morbidity in the German NVAF patient population.

PCV3 NO EVIDENCE FOR AN ASSOCIATION BETWEEN RENAL FUNCTION AND BLEEDING EVENTS IN PATIENTS ON COUMARIN THERAPY: A POPULATION-BASED STUDY

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1PhARMO Institute for Drug Outcomes Research, Utrecht, The Netherlands; 2PVU University Medical Centre, Amsterdam, The Netherlands; 3Royal Dutch Pharmacists Association (KNMP), Den Haag, NV, The Netherlands; 4Randolf University Medical Centre, Nijmegen, The Netherlands

OBJECTIVES: Although anticoagulation therapy is closely monitored by regional anti-coagulation laboratories at the hospital level, this monitoring is still performed on an individual basis, and still associated with serious bleeding events. Current literature suggests that these medication-related hospital admissions might be due to renal impairment. The objective of this study was to describe the association between renal function and bleeding events in patients on coumarin therapy.

METHODS: A nested case-control study was conducted using data from the PHARMO Database Network, a population-based network of electronic healthcare records in primary and hospital healthcare settings in the Netherlands. Hospitalized patients for bleeding events during coumarin therapy were selected as cases and matched to up to 2 controls using coumarins without hospitalisation for bleeding. The hospitalization date of the cases was set as index date and controls were assigned the index date of their matched case. As all assesses were done within 12 months either before or after the index date, the evaluation of confounders was possible. Estimated glomerular filtration rates (eGFR) calculated from serum creatinine test results were selected in the 12 months before the index date. These were compared between cases and controls using logistic regression analyses.

RESULTS: In total, 2,066 cases hospitalized for bleeding events during coumarin therapy were selected as cases and matched to up to 2 controls using coumarins without hospitalisation for bleeding. The hospitalization date of the cases was set as index date and controls were assigned the index date of their matched case. As all assesses were done within 12 months either before or after the index date, the evaluation of confounders was possible. Estimated glomerular filtration rates (eGFR) calculated from serum creatinine test results were selected in the 12 months before the index date. These were compared between cases and controls using logistic regression analyses.

CONCLUSIONS: No association between renal function and bleeding events during coumarin therapy was observed.

PCV4 INAPPROPRIATE PRESCRIBING OF ANTIINFLAMMATORY DRUGS CAUSES POOR DISCHARGE OUTCOMES IN HOSPITALIZED ELDERLY PATIENTS USING STOPP/START CRITERIA 2015, A RETROSPECTIVE COHORT STUDY

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1University of Gondar, Gondar, Ethiopia

OBJECTIVES: The aim of this study was to assess the impact of IP of antiinflammatory therapy (AT) on patient discharge outcomes of elderly patients. METHODS: This was a retrospective cohort study done in Internal Medicine ward of Gondar University Hospital (GUH) between May 1, 2013 – April 30, 2014.

RESULTS: Of 156 patients, 100 patients had a good (improved) prognosis and the remaining participants (56) had a poor (no change, worsened or dead) prognosis. Patients who had worsening of medical conditions (91.67%) and dead (69.23%) had higher IP. Based on the Kaplan Meier survival curves (Figure), there was a significant difference in survival between patients with IP and those with appropriate prescriptions (Log Rank test, P < 0.001). Multivariate Cox regression analysis showed that absence of both antiplatelet and anticoagulant medications (HR = 0.019, CI [0.001 – 0.322], P = 0.006) and presence of PIM (HR = 5.391, CI [2.03 – 14.56], P = 0.028) independently predicted mortality in all patients. Presence of stroke on admission (AHR = 8.368, CI [2.17 – 33.081], P = 0.002) and presence of IP (P = 0.001) like PIM (AHR = 5.093, CI [1.302 – 3.976]) showed the association between renal function and bleeding events in patients on coumarin therapy. The results were selected in the 12 months before the index date. These were compared between cases and controls using logistic regression analyses.

RESULTS: In total, 2,066 cases hospitalised for bleeding events during coumarin therapy were selected as cases and matched to up to 2 controls using coumarins without hospitalisation for bleeding. The hospitalization date of the cases was set as index date and controls were assigned the index date of their matched case. As all assesses were done within 12 months either before or after the index date, the evaluation of confounders was possible. Estimated glomerular filtration rates (eGFR) calculated from serum creatinine test results were selected in the 12 months before the index date. These were compared between cases and controls using logistic regression analyses.

CONCLUSIONS: No association between renal function and bleeding events during coumarin therapy was observed.
PCV1. THE CHANGING TREND OF CARDIOVASCULAR DISEASE AND ITS CLINICAL CHARACTERISTICS IN ETHIOPIA: HOSPITAL-BASED OBSERVATIONAL STUDY
Teferra YG1, Abebe TR2, Abezag TM3, Meekura AB1
1University of Gonder, City, Ethiopia, 2University of Gonder, Gondar, Ethiopia
OBJECTIVES: The main objective of this study was to identify the pattern of cardiovascular diseases (CVDs), their clinical characteristics, and associated factors in the outpatient department of the chronic illness clinic of Gonder University Referral Hospital. METHODS: A retrospective cross-sectional study was conducted among patients on follow-up at the outpatient chronic illness clinic of the hospital from October 2010 to October 2015. The source population for the study included patients with a diagnosis of CVD whose medical records have the required socio-demographic data and clinical findings during the study period. The data was collected between August 2015 to December 2015. Chi-square and binary logistic regression tests were performed to test the significance of difference among predictive variables and CVDs (p < 0.05) as the dependent variable. RESULTS: A total of 1,105 patient medical records were included. The highest number of patients was found in February (14.89 patients per practice) and the lowest in August (7.22 patients per practice). The highest share of patients with an epistaxis diagnosis was documented in March (2.14%) and the lowest in August (1.27%). The age- and gender-adjusted risk of epistaxis was significantly higher in the months of February (OR=1.36), March (OR=1.37), April (OR=1.34), May (OR=1.35), and December (OR=1.33) compared to August. RESULTS: The presentation of patients with epistaxis at German ENT practices shows a marked seasonal variation with a low in the summer, an increase in fall and winter, and a peak in February, March, and April.

PCV9. SECONDARY PREVENTION CARDIOVASCULAR PATIENTS IN IRELAND - POPULATION CHARACTERISTICS FOR COST-EFFECTIVENESS ANALYSIS
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1National Centre for Pharmacoeconomics, Dublin, Ireland, 2Trinity College Dublin, Dublin, Ireland
OBJECTIVES: To quantify the patient characteristics of a secondary prevention cardiovascular population in Ireland for use in cost-effectiveness analyses. METHODS: Data relating to patients with a history of myocardial infarction (MI) or stroke were extracted from the Irish Longitudinal Study on Ageing (TILDA). Patients were weighted to take account of age, gender, and education selection bias. Patients were analysed as one single cohort and divided into three mutually exclusive groups: recurrent events, history of single MI and history of single stroke. The TILDA dataset contains variables on relevant patient demographics and self-reported doctor diagnosis of important co-morbidities. For patients who completed as health assessment, we examine the values obtained with different techniques and the possible defects in the blood pressure measurement protocol. RESULTS: The mean average cohort characteristics were recorded. Median rather than mean age was calculated due to data availability. RESULTS: The mean population characteristics derived from the single cohort were as follows: 66.2% Male, 9.7% with hypertension, 15.2% with diabetes, 6.7% current smokers, 53.9% medicated in the past. The mean BMI of patients was 27.7. The mean age of patients who took the health assessment was 79.5±6.8. CONCLUSION: Population characteristics of patients with a history of MI or stroke were presented which may be used in cost-effectiveness analysis of treatments for cardiovascular disease. The presentation of results for mutually exclusive cohorts will allow subgroup analysis to be conducted without double counting the patients at highest risk.

PCV10. EXPLORING THE ASSOCIATION BETWEEN RISK OF BLEEDING AND COMORBID CONDITIONS FOR PATIENTS WITH WARFARIN TREATMENT
Altemus MY1, Colluci G2, Barry M2
1Prince Sattam Bin Abdulaziz University, Alkhair, Saudi Arabia, 2King Abdulaziz Medical City - National Guard Health Affairs, Riyadh, Saudi Arabia
OBJECTIVES: Warfarin is widely used in Saudi Arabia. Because risk of bleeding is one of the main concerns associated with the use of warfarin, regular warfarin monitoring is an essential part of ensuring that the international normalized ratio for all patients falls within the narrow therapeutic range. Accordingly, this study sought mainly to explore the association between risk of bleeding and diagnosis of different comorbid conditions using warfarin. METHODS: A cross-sectional study was conducted at King Abdulaziz Medical City (KAMC) among a sample of patients who were diagnosed with atrial fibrillation and on warfarin treatment between March and April 2014, during ambulatory care visits. The approval of the King Abdullah International Medical Research Center’s (KAIMRC) Institutional Review Board, a series of descriptive and inferential statistical analyses was conducted comparing patients with and without incidence of bleeding. The K Studio Integrated development environment (IDE) was used for this analysis. Statistical analysis was done using one-way ANOVA and logistic regression. RESULTS: A total of 626 patients were eligible and included in the study. About 55% of the patients were females and the majority were 65 years and older (91.1%). The highest prevalent disease was hypertension (75.9%) followed by diabetes mellitus (54.6%). It was estimated that patients with diabetes were 73% less likely to have major bleeding, compared to patients without diabetes. Also, patients with abnormal renal function were about three times more likely to have major bleeding. RESULTS: Comorbid conditions and hypertension were more likely to have minor bleeding than others. CONCLUSIONS: Careful evaluation of the type of each patient's comorbid condition could aid prediction of which patients have a high risk of both major and minor bleeding, thereby helping prevent major bleeding incidents.
PCV14 POSSIBLE ERRORS DURING BLOOD PRESSURE MEASUREMENT: INAPPROPRIATE POSTURE
Olah A1, Bogdán P2, Müller A1, Szabó L3, Szunmué A2, Borocz E1, Belethim J1, Paksi A1
1University of Pécs, Pécs, Hungary, 2University of Pécs, Zalaegerszeg, Hungary OBJECTIVES: It is essential to comply with the measurement protocol. Our goal was to examine the effect of improper posture and speaking during blood pressure measurement on blood pressure values. METHODS: Our research was cross-sectional, descriptive, quantitative analysis. The study took place in April 2017 at University of Pécs, Faculty of Health Sciences. Non-randomized, targeted sampling resulted selecting healthy students aged 18 to 30 (N=22) into the sample. On the first day a 4 error combination, on the second day a 3 error combination was performed. Prior to the measurements, the correct blood pressure values measured by the protocol were recorded. Exclusion criteria: cardiovascular disease, pregnancy, paralyzed arm, crevice, acute pain, emotional stress. We used devices of ±0.7 mmHg at the 95% confidence interval. In clinical trials, statins have proven effective for lowering LDL-C levels in patients with hyperlipidemia, but in routine care, statin use varies and most patients do not attain goal. This study describes LDL-C goal attainment among German patients with hypercholesterolaemia identified in young adulthood. It is unclear whether risk factor exposure and accounted for the competing risks of stroke and non-atherosclerotic cardiovascular disease, morbidity and mortality in hypertensive patients. Yet there is a lack of pharmacoeconomic evaluation on life style change interventions.

CONCLUSIONS: Overall, interventions were effective and achieved almost 5 mmHg decrease of SBP. This may have an impact on preventing cardiovascular disease, morbidity and mortality in hypertensive patients. There is a lack of pharmacoeconomic evaluation on life style change interventions.

PCV17 TREATMENT PATTERNS AND LOW-DENSITY LIPOPROTEIN CHOLESTEROL (LDL-C) GOAL ATTAINMENT AMONG HIGH-RISK PATIENTS USING HIGH OR MODERATE INTENSITY STATIN THERAPY IN GERMANY
Fox KM1, Fraass U1, Hatz M2, Qin Y3, Tai M4
1Strategic Healthcare Solutions, Aiken, SC, USA, 2Aymen GmbH, Muenchen, Germany, 3Aymen, Thailand, 4Aymen, Australia
OBJECTIVES: European Society of Cardiology and European Atherosclerosis Society dyslipidemia guidelines recommend a low-density lipoprotein cholesterol (LDL-C) goal of <70 mg/dL at high-risk patient. Yet, we used devices of ±0.7 mmHg at the 95% confidence interval. In clinical trials, statins have proven effective for lowering LDL-C levels in patients with hyperlipidemia, but in routine care, statin use varies and most patients do not attain goal. This study describes LDL-C goal attainment among German patients with hypercholesterolaemia identified in young adulthood. It is unclear whether risk factor exposure and accounted for the competing risks of stroke and non-atherosclerotic cardiovascular disease, morbidity and mortality in hypertensive patients. Yet there is a lack of pharmacoeconomic evaluation on life style change interventions.

CONCLUSIONS: Overall, interventions were effective and achieved almost 5 mmHg decrease of SBP. This may have an impact on preventing cardiovascular disease, morbidity and mortality in hypertensive patients. Yet there is a lack of pharmacoeconomic evaluation on life style change interventions.

PCV18 COMPARATIVE EFFECTIVENESS OF NON-VITAMIN K ANTAGONIST ORAL ANTICOAGULANTS (NOACs) AND WARFARIN IN THE SCOTTISH ATRIAL FIBRILLATION POPULATION: A COMPUTER SIMULATION STUDY
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1University of Glasgow, Glasgow, UK, 2University of York, York, UK, 3University of Turin, Turin, Italy
OBJECTIVES: This retrospective cohort study used electronic medical records data from the IMIS Disease Analyzer. ASCVD was defined as coronary atherosclerosis, stable/unstable angina, myocardial infarction, ischeimic stroke, transient ischemic attack, aneurysm, and peripheral arterial disease. Proportion of ASCVD patients on moderate/high intensity statin with LDL-C <70 mg/dL was determined using the lowest LDL-C value obtained for each patient (index year: 2009). The LDL-C assessment was required to occur within 30 days of the LDL-C measurement.

RESULTS: Blood pressure values are influenced by body posture and speech, so care should be taken to ensure that blood pressure measurement is always based on the currently protocols. Incorrect measurement technique may induce a misdiagnosis.
PCV20
PATIENT CHARACTERISTICS AND BLEEDING EVENTS IN NON-VALVULAR ATRIAL FIBRILLATION PATIENTS TREATED WITH APIXABAN OR VITAMIN K ANTAGONISTS: REAL-WORLD EVIDENCE FROM ITALIAN ADMINISTRATIVE DATABASES
Rosa Gualandi1, Sara Goni2, Delegi Exposti3, Alessandri D4, Ferriere V5, Buda S6, Styres G7, Tomà C5, Adinolfi V5, De Solda F5, Lefèvre C6

OBJECTIVES: This study aimed to evaluate the risk of major bleeding among two cohorts of Non-Valvular Atrial Fibrillation (NVAF) patients newly initiating a vitamin K antagonist (VKA) or apixaban in a real-world setting in Italy. METHODS: A retrospective analysis of two administrative databases Local Health Units (LHUs) database and ITALIAN database, was performed, using data from 7 LHUs. Patients were included from the date of new initiation of apixaban or VKA between January 2012 to June 2015, and followed until treatment discontinuation or switching, death, or end of follow-up. Risk estimates were calculated using the multivariate Cox regression model, adjusted for patient demographics, comorbidities, treatment discontinuation or switching, death, or end of follow-up. RESULTS: Overall, 1,127 patients initiated apixaban and 5,463 VKA. Mean age was 77.6 ± 9.8 years for apixaban patients and 75.4 ± 10.3 years for VKA (p < 0.001). Across both therapies, 52% were men, 15% had a history of stroke, 23% diabetes and 69% heart failure. Both therapies were associated with a reduced risk of major bleeding compared to the reference group (HR = 0.87 [0.63; 1.23]; p = 0.428; for intracranial hemorrhage 1.636 [1.189–2.251], were not significant for the other bleeding events). Further analyses show that these improvements would be highly cost-effective. CONCLUSIONS: Major bleeding risk among NVAF patients treated with apixaban was associated with a lower risk of major bleeding compared with VKA, however there are limitations to the study including the short follow-up period for apixaban users.

PCV21
DECREASING ACEF SCORE IN PATIENTS UNDERWENT MYOCARDIAL INFARCTION AFFECTS PATIENTS’ LIFE YEARS GAINED
Kwon S1, Hong S2, Lee E1

Objectives: To evaluated the impact of the conventional risk stratification system of patients with acute myocardial infarction (AMI) on patients’ life years gained. METHODS: A total of 4,721 AMI patients was included. The regression model which adjusted for independent variables, is a significant predictor of major adverse cardiac events for patients who underwent acute myocardial infarction. The long-term implications of decreasing ACEF score is unknown. In the absence of long-term clinical trials, modeling is a useful tool that allows an evaluation of the association between the risk of vascular events and the number of life years gained. RESULTS: The overall prevalence of hypertensive TOD was 40.3%. The presence of comorbidities, incidence rate of major bleeding was 1.54 per 100 person-years among apixaban patients and 75.4 [SD 10.3] years for VKA (p < 0.001). Across both therapies, 52% were men, 15% had a history of stroke, 23% diabetes and 69% heart failure. Apixaban patients had a higher history of major bleeding (6.7% vs 4.4% of VKA). Over a median follow-up of 10 months for VKA and 4 months for apixaban, the incidence rate of major bleeding was 1.54 per 100 person-years among apixaban initiators and 2.3 per 100 person-years among VKA initiators. Compared with VKA, apixaban had a significantly lower risk of major bleeding (HR = 0.42 [95% CI 0.21–0.87]). CONCLUSIONS: In this analysis, apixaban was associated with a lower risk of major bleeding compared with VKA, however there are limitations to the study including the short follow-up period for apixaban users.

PCV22
COMPARATIVE EFFECTIVENESS OF RIVAROXABAN VS VITAMIN K ANTAGONIST IN ROUTINE CARE PATIENTS TREATED FOR NON-VALVULAR ATRIAL FIBRILLATION WITH AND WITHOUT RENAL IMPAIRMENT SUBGROUP ANALYSIS
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Repository: This study compared the efficacy and safety of rivaroxaban and vitamin K antagonists (VKAs) in patients with and without renal impairment. Patients with renal impairment were defined as those with a creatinine clearance of ≤ 60 mL/min. The primary endpoint was the occurrence of major bleeding events, defined as intracranial, gastrointestinal, or genitourinary bleeding, as well as fatal bleeding. RESULTS: Patients with renal impairment had a higher risk of major bleeding compared to those without renal impairment (HR = 1.37 [1.13–1.66]). However, rivaroxaban was associated with a lower risk of major bleeding compared to VKAs, with a HR of 0.73 (0.59–0.90) for renal impairment patients. CONCLUSIONS: Rivaroxaban seems to offer a clear advantage compared with standard anticoagulation. Low-molecular-weight heparins (LMWH) and direct oral anticoagulants (DOACs) are available that allow for a higher treatment rate according to existing guidelines. Further analyses show that these improvements would be highly cost-effective.

PCV23
TARGET ORGAN DAMAGE AND THE LONG-TERM EFFECT OF NONADHERENCE TO CLINICAL PRACTICE GUIDELINES IN PATIENTS WITH HYPERTENSION: A RETROSPECTIVE COHORT STUDY
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Objectives: To evaluate the impact of nonadherence to clinical practice guidelines on target organ damage (TOD) in patients with hypertension. METHODS: A retrospective cohort study was conducted using a large administrative database of Italian Local Health Units (LHUs) and German sickness funds between January 1st, 2012 and March 31st, 2016. Patients with hypertension and diabetes mellitus were included. The incidence of TOD was calculated using the Kaplan-Meier method and the Log Rank test. RESULTS: The overall prevalence of hypertension was 40.3%. The presence of comorbidities, incidence rate of major bleeding was 1.54 per 100 person-years among apixaban patients and 75.4 [SD 10.3] years for VKA (p < 0.001). Across both therapies, 52% were men, 15% had a history of stroke, 23% diabetes and 69% heart failure. Apixaban patients had a higher history of major bleeding (6.7% vs 4.4% of VKA). Over a median follow-up of 10 months for VKA and 4 months for apixaban, the incidence rate of major bleeding was 1.54 per 100 person-years among apixaban initiators and 2.3 per 100 person-years among VKA initiators. Compared with VKA, apixaban had a significantly lower risk of major bleeding (HR = 0.42 [95% CI 0.21–0.87]). CONCLUSIONS: In this analysis, apixaban was associated with a lower risk of major bleeding compared with VKA, however there are limitations to the study including the short follow-up period for apixaban users.

PCV24
EFFICACY AND SAFETY OUTCOMES OF RECANALIZATION PROCEDURES IN PATIENTS WITH ACUTE SYMPTOMATIC PULMONARY EMBOLISM: SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS
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Objectives: To evaluate the efficacy and safety of the recanalization procedures for the treatment of acute symptomatic pulmonary embolism (PE). METHODS: Systematic review and network meta-analysis. Data were obtained using MEDLINE and EMBASE. A total of 2,494 patients were included, 1,954 patients on rivaroxaban and 3,871 patients on phenprocoumon were coded as renally impaired patients. RESULTS: Patients on rivaroxaban and 3,871 patients on phenprocoumon were coded as renally impaired. A significant risk reduction for ischemic stroke rivaroxaban vs. phenprocoumon was found in the overall population; HR: 0.77 (0.63; 0.93); p = 0.05. For renally impaired patients the HR was 1.073 [1.01–1.437], AOR = 1.196 [1.174–1.637], and nonadherence to clinical practice guidelines, CONCLUSIONS: More than forty percent of patients acquired TOD which is more significant. Presence of comorbidities and nonadherence to practice guidelines were correlated with the incidence of TOD. Appropriate management of hypertension and modification of triggering factors are essential to prevent complications.

PCV25
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TOD would be more significant. Presence of comorbidities and nonadherence to practice guidelines were correlated with the incidence of TOD. Appropriate management of hypertension and modification of triggering factors are essential to prevent complications.
PCV25

OPTIMAL USAGE OF SUCBUTRIL/VALSARTAN FOR HEART FAILURE TREATMENT IN CANADA POTENTIALLY REDUCES MORTALITY, HOSPITALIZATIONS AND EARLY DISCHARGE RE-ADMISSIONS

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OBJECTIVES: Despite multiple evidence-based therapies, HF continues to be a characterizing high mortality hospitalization rates. Sucbutil/valsartan (sac/va), a first-in-class angiotensin receptor neprilysin inhibitor treatment for HF with reduced ejection fraction (HFrEF), provided incremental cardiovascular and overall survival benefit in PARADIGM-HF over the ACE inhibitor enalapril. The objective was to quantify the number of deaths, HF hospitalizations, and 30-day HF re-admissions that potentially could be avoided with optimal usage of sac/va for the treatment of HFrEF patients in Canada.

METHODS: Data from Statistics Canada was used to quantify the population at risk in Canada, age 18 and over, with adjusted Canadian national HF prevalence of 2.31% applied to determine the population above 18 years of age. A literature search was then conducted to determine the HF prevalence in Canada, the proportion of these with NYHA Class III, and the proportion of HFrEF patients. The NNT to avoid one death, hospitalization, and 30-day HF re-admission, standardized to 12 months was derived from the published results. The potential number of deaths/hospitalizations prevented as a result of optimal usage of sac/va as per current Canadian indication was estimated using multiple-way sensitivity analysis and analysis-of-extremes method.

RESULTS: Canadian HF prevalence of 2.31% was applied to determine the population of HF patients; 64% were classified as NYHA Class III with 56% identified as HFrEF. In Canada, ~242,200 patients are affected with HFrEF, NYHA Class III. Based on a NNT of 80, optimal usage of sac/va therapy was estimated to prevent 3.016 deaths and 3.016 hospitalizations/year (range, 1,950–4,331). With a NNT of 64, a total of 3.068 30-day re-admissions/year (range, 2,546–5,744) would be prevented.

CONCLUSIONS: This analysis suggests that a substantial number of deaths, hospitalizations, and 30-day re-admissions in Canada could potentially be avoided by optimal usage of sac/va therapy. It supports the importance of implementing evidence-based therapy into routine clinical practice to improve clinical outcomes for HF patients in Canada as the hospitalization and mortality rates still remain elevated.

PCV26

PRELIMINARY RESULTS OF RESTARTING ORAL ANTICOAGULANT TREATMENT IN PATIENTS WITH NON-VALVULAR ATRIAL FIBRILLATION FOLLOWING INTRACRANIAL HEMORRHAGE: A POPULATION-BASED COHORT STUDY

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OBJECTIVES: Patients with non-valvular atrial fibrillation (AF) who survive an intracranial hemorrhage (ICH) have an increased risk of ischemic stroke and thromboembolic events. An unanswered question is the efficacy and safety of restarting oral anticoagulant treatment (OAC), relative to not restarting in those patients. Our aim was to investigate if restarting OAC among AF patients with an ICH is linked with a lower risk of Stroke/SE and all-cause mortality, but with a small increase in major bleeding compared to not restarting OAC.

METHODS: A cohort study built using administrative data from the Quebec RAMQ and Med-Echo databases. We identified older adults using inpatient coding (EC9-ICD-10) with AF from 1995 to 2014 who were discharged alive. Patient with subsequent incident ICH were included. After hospital discharge for ICH, patients were categorized as no, partial or full OAC exposure. The rate (per 100 person-years) of Stroke/SE, mortality, recurrent ICH and major bleeding after restarting OAC vs no OAC, for each event was compared. Data analysis consisted of using mean and standard deviations for continuous data and counts and percentages of categorical data to report socio-demographic characteristics, medication use, and CVD risk (moderate, high, and very high), which was derived using a modified Coronary Risk Evaluation algorithm (SCORE, 2013 version) that included self-reported low-density lipoprotein cholesterol (LDL-c) and blood pressure (BP).

RESULTS: Patients who were reported a diagnosis of dyslipidemia were more likely to be middle-aged (mean age=52.9, SD=13.6, women 58%, and from the middle/upper socio-economic class (27.1%). Only 28.2% of patients reported taking a PPIs at least once, using prescription medications for high cholesterol, 96% were statins. Only 448 respondents (27.4%) knew their LDL-C and BP. Application of the modified SCORE algorithm found that 67.0%, 22.8% and 10.6% had moderate, high, and very high risk for CVD, respectively.

CONCLUSIONS: A small percentage of adult Russians reported a diagnosis of dyslipidemia with lipid-lowering prescriptions or knew their LDL-C level and blood pressure. Taken together, these findings indicate most patients were unaware of their treatment options, which raises a concern for a range of potential health problems including premature death. It underscores the need for dyslipidemia assessment, education and treatment in Russia.

PCV30

THE PREVALENCE OF PATIENTS AT VERY HIGH RISK FOR CARDIOVASCULAR EVENTS IN THE UNITED KINGDOM

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OBJECTIVES: The primary objective was to estimate the prevalence of patients at very high risk of cardiovascular health status events. This was performed between January 1, 2013 with treated hypercholesterolemia (>2 prescriptions for lipid modifying therapy (LMT)). We defined two very high risk populations based on 2016 clinical guideline recommendations for guidelines for the diagnosis and treatment of obstetric care (GDM and type 2 diabetes), cardiovascular disease (CVD) and type 2 diabetes without documented CVD (DM2w/oCVD).

CVD included acute coronary syndrome (ACS) myocardial infarction, unstable angina, stroke, transient ischemic attack or cardiac ischemic stroke (IS), peripheral arterial disease (PAD) also included ischemic heart attack or carotid stenosis, and peripheral arterial disease (PAD) also included abdominal aortic aneurysm. Results: In 2013, 9.4% of UK patients (504,907) received LMT (95% received statin) and 4.8% were at very high risk for CVD (2.8% CVD and 2% DM2w/oCVD). In the CVD population, 73% had ACS, 18% had IS, and 9% had PAD. The ACS subgroup included 35% with myocardial infarction and 65% with stable or unstable angina, revascularization, or cardiac ischemic; in the IS subgroup 31% of patients had ischemic stroke and 69% had carotid stenosis; and the PAD subgroup included 93% with PAD and 7% with abdominal aortic aneurysm. In the overall CVD population, 25% had type 2 diabetes, 25% had recurrent CVD, and 7% had both. In the CVD and DM2w/oCVD populations, 24% and 14% respectively received a high-intensity statin or statin with ezetimibe. A substantial proportion of the CVD population had LDL-cholesterol levels above commonly suggested thresholds (24% above 2.6 mmol/L (100 mg/dL) and 62% above 1.8 mmol/L (70 mg/dL)). In the DM2w/oCVD population the respective proportions were 23% and 59%.

CONCLUSIONS: Our analysis shows the need for additional intensive LDL lowering in well-defined populations at very high risk for cardiovascular events.

PCV31

CHARACTERISTICS AND RISK FACTOR BURDEN OF PATIENTS RECEIVING LIPID MODIFYING THERAPY IN THE UNITED KINGDOM

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OBJECTIVES: To describe the characteristics and risk factor burden of patients taking lipid modifying therapy in the UK.

METHODS: This was a retrospective cohort study involving the Clinical Practice Research Datalink (CPRD) linked to hospital episode statistics (HES). We included patients ≥ 40 years old and ≥ 2 prescriptions for LMT between January 1, 2010 and December 31, 2013. Inclusion criteria included patients with atherosclerotic cardiovascular disease (CVD), familial hypercholesterolemia (FH), stage 4 chronic kidney disease (CKD), or type 2 diabetes (T2DM). Patients must have survived for one year after therapy initiation, and received ≥2 prescriptions during this time.
Further risk factor and treatment subgroups were analyzed. Follow-up continued until January 1, 2016, or until death or requiring cardiovascular death, or end of observation.

**RESULTS:** Within the CPDE-HES linked database 28,462 (0.6%) patients fulfilled the inclusion criteria (mean age 64 years; 57% male). Overall, 15,402 (54%) had CVD, 506 (2%) had FH, 623 (2%) had stage 4 CKD, and 12,154 (42%) had only T2DM. Most of the included patients were in a high (41%) or a very high (59%) cardiovascular risk level with a mean LDL cholesterol level of 5.7 mmol/L (in [23.447] and mean LDL-cholesterol was 3.6 mmol/L in [n = 17,336] in the 2 years before initiating therapy. At baseline, subgroups included patients with untreated FH without CVD and with LDL-cholesterol > 5.0 mmol/L, 2,095 patients with CVD and LDL-cholesterol ≥ 4.0 mmol/L, 805 patients with a history of ≥ 2 cardiovascular events and LDL-cholesterol ≥ 3.5 mmol/L and 56 patients whose initial therapy included ezetimibe. **CONCLUSIONS:** In this high risk cohort of patients initiating treatment for hypercholesterolemia, the cardiovascular risk factor burden is substantial. Longitudinal analyses evaluating the effects of both adherence and treatment intensity on cardiovascular outcomes are ongoing.

**PCV32: CARDIOVASCULAR DISEASE RISK AND RISK FACTORS ASSOCIATED WITH FAMILIAL HYPERCHOLESTEROLEMIA: A SYSTEMATIC REVIEW**

**Methods:** A systematic literature review was performed to identify publications describing cardiovascular risk in patients with FH (January–October 2016), extending a previous published review (2009–2010) assessed for bias by reviewers using the Newcastle-Ottawa assessment scale used for non-randomized studies. Additional risk factors studied included age, sex, FH mutations, and previous CVD. **RESULTS:** Three new studies were identified, conducted in the Netherlands, Spain, and Brazil, and reviewed together with 14 studies identified in a previous systematic review. The study with the lowest bias, comparing patients with/without FH, reported odds ratios (ORs) for coronary artery disease (CAD) of 10.3 (95% confidence interval [CI]: 7.8–13.8) and 13.2 (95% CI: 10.0–17.4) in patients treated/untreated with lipid-lowering therapy, respecti-

**CONCLUSIONS:** The highest risk increases in mortality were observed in the 30-60 years age band. Most studies found that men had a ~2.5-fold higher CVD risk compared with women, although the magnitude of the difference varied by study. Patients carrying null mutations had a significantly higher risk of premature CVD (OR: 1.68; 95% CI: 1.10–2.40), and recurrence of cardiovascular events vs. patients carrying defective mutations. Premature CVD was identified as a risk factor for mortality (standardised mortality ratio: 1.68; 95% CI: 1.33–2.09). FH-related CVD risk is high, even in treated patients, and represents an important unmet medical need. Alongside classical risk factors (age, blood pressure, body mass index, smoking, lipid levels), FH-causing mutations are important for understanding FH CVD risk. Other parameters, such as age at which statin therapy is started, require further research.

**PCV33: A REAL WORLD EVIDENCE MODEL TO COMPARE DIRECT ORAL ANTICOAGULANTS SAFETY OUTCOMES FOR ATRIAL FIBRILLATION PATIENTS IN SPAIN**

**Objectives:** To determine the incidence and outcomes of post-stroke dysphagia in France and Switzerland.

**Methods:** Dysphagia was defined as any difficulty or failure to swallow. Patients with dysphagia were identified using diagnosis codes and listing of procedures. The aim of the study was to assess the impact of dysphagia on hospital stays in patients with a stroke. The primary outcome of the analysis was the mean observed Length of Stay (LOS) for post-stroke dysphagia patients in comparison to patients without dysphagia. Sensitivity analyses were conducted to assess the influence of different patient characteristics and treatment patterns on the observed LOS differences.

**Results:** In the French database, 2,307 post-stroke dysphagia patients were identified, while in the Swiss database, 622 post-stroke dysphagia patients were identified. The mean observed LOS for post-stroke dysphagia patients in France was 22.7 days, compared to 14.9 days for patients without dysphagia. In Switzerland, the mean observed LOS for post-stroke dysphagia patients was 22.9 days, compared to 14.9 days for patients without dysphagia. Sensitivity analyses showed that the observed LOS differences were robust to variations in patient characteristics and treatment patterns.

**Conclusions:** Post-stroke dysphagia is a common complication in patients with a stroke and has a significant impact on hospital stays. Further research is needed to better understand the underlying mechanisms and develop effective interventions to reduce the LOS for post-stroke dysphagia patients.
compared to post-stroke patients without dysphagia. Post-stroke dysphagia was associated with €3,706.4 and CHF14,000 cost increase in France and Switzerland respectively. CONCLUSIONS: Post-stroke dysphagia is associated with increase of length of hospital stay and higher hospital costs.

PCV37 BUDGET IMPACT OF ALTEPLASE IN TREATMENT OF ACUTE ISCHEMIC STROKE IN TURKEY

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OBJECTIVES: Cerebrovascular diseases are the sixth cause of total DALYs in Turkey and the Turkish Social Security Institution (SSDI) faces a challenge on reimbursement decisions for treatment. Alteplase is a recombinant human tissue plasminogen activator indicated for treatment of acute ischemic stroke (AIS). Clinical trials have proven that Alteplase can reduce ischemic stroke disability measured by the Modified Rankin Score (mRS) if administered within 4.5 hours of onset of symptoms. The agent is used as an addition to Standard of Care (SoC). This study aimed at assessing the budget impact of Alteplase from national perspective in Turkey. METHODS: A budget impact model was developed, based on and without use of Alteplase was developed. First, the number of individuals with acute ischemic stroke that is hospitalized and eligible for Alteplase was determined from published data and expert views. Calculations were made for 0 to 1.5 hours after onset, 1.5 to 3.0 hours after onset and 3 to 4.5 hours after onset for both scenarios. Acute ischemic stroke hospitalization costs and the average annual costs after hospitalization were included. Cost estimations were calculated according to mRS score. Literature review and expert opinions were used in calculating the Turkish costs. RESULTS: Number of patients eligible for Alteplase was estimated as 12,950. The budget impact of Alteplase was estimated as €1,490,712 TRY, €1,510,634 TRY, €1,530,555 TRY, €1,550,477 TRY, €1,570,398 TRY for the first, second, third, fourth and fifth years respectively. The burden of AIS on the Turkish healthcare system and unmet need is expected to increase with current age trends. The budget impact model revealed that given the efficacy of the agent, the overall impact of hospitalization of AIS patients is expected to be reduced. The reduction in costs due to lower pharmacological cost and fewer events is projected to be substantial savings and to minimize budget deficit. Indeed, there was a difference between weighted drug cost (3,296€) and costs incurred in the national cost study (Etude Nationale de Coûts à méthode Commune) for HF hospitalizations (3,591€). CONCLUSIONS: From the French healthcare perspective, alteplase/valsalant introduction in HF treatment strategy has the potential to generate substantial savings and to minimize budget deficit. An analysis from a broader perspective (including drugs costs) should be conducted.

PCV40 BUDGET IMPACT OF IV IRON THERAPY WITH FERRIC CARBOXYHALMATE IN PATIENTS WITH CHRONIC HEART FAILURE AND IRON DEFICIENCY IN FRANCE

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OBJECTIVES: Iron deficiency (ID) is highly prevalent in chronic heart failure (CHF) patients and imposes a significant disease burden. CHF with ID is a major reason for hospitalization and represents important costs for national health care budgets. In France, intravenous iron therapy with ferric carboxyhalomate (FCM) is the only treatment recommended for these patients. This analysis aims to evaluate the budget impact of FCM versus placebo with clinical trial data and iron deficiency in the French health care setting. METHODS: An event-based budget impact model was adopted to forecast the budget impact from the French health insurance perspective. The main objective of this study is to compare the costs associated with changes of disease progression in patients treated with FCM versus placebo. In the model, cost saving may occur through NYHA class improvement, increase in walking distance and the Turkish Social Security Institution (SSI) faces a challenge on reimbursement decisions for treatment. Alteplase is a recombinant human tissue plasminogen activator indicated for treatment of acute ischemic stroke (AIS). Clinical trials have proven that Alteplase can reduce ischemic stroke disability measured by the Modified Rankin Score (mRS) if administered within 4.5 hours of onset of symptoms. The agent is used as an addition to Standard of Care (SoC). This study aimed at assessing the budget impact of Alteplase from national perspective in Turkey. METHODS: A budget impact model was developed, based on and without use of Alteplase was developed. First, the number of individuals with acute ischemic stroke that is hospitalized and eligible for Alteplase was determined from published data and expert views. Calculations were made for 0 to 1.5 hours after onset, 1.5 to 3.0 hours after onset and 3 to 4.5 hours after onset for both scenarios. Acute ischemic stroke hospitalization costs and the average annual costs after hospitalization were included. Cost estimations were calculated according to mRS score. Literature review and expert opinions were used in calculating the Turkish costs. RESULTS: Number of patients eligible for Alteplase was estimated as 12,950. The budget impact of Alteplase was estimated as €1,490,712 TRY, €1,510,634 TRY, €1,530,555 TRY, €1,550,477 TRY, €1,570,398 TRY for the first, second, third, fourth and fifth years respectively. The burden of AIS on the Turkish healthcare system and unmet need is expected to increase with current age trends. The budget impact model revealed that given the efficacy of the agent, the overall impact of hospitalization of AIS patients is expected to be reduced. The reduction in costs due to lower pharmacological cost and fewer events is projected to be substantial savings and to minimize budget deficit. Indeed, there was a difference between weighted drug cost (3,296€) and costs incurred in the national cost study (Etude Nationale de Coûts à méthode Commune) for HF hospitalizations (3,591€). CONCLUSIONS: From the French healthcare perspective, alteplase/valsalant introduction in HF treatment strategy has the potential to generate substantial savings and to minimize budget deficit. Indeed, there was a difference between weighted drug cost (3,296€) and costs incurred in the national cost study (Etude Nationale de Coûts à méthode Commune) for HF hospitalizations (3,591€). CONCLUSIONS: From the French healthcare perspective, alteplase/valsalant introduction in HF treatment strategy has the potential to generate substantial savings and to minimize budget deficit. Indeed, there was a difference between weighted drug cost (3,296€) and costs incurred in the national cost study (Etude Nationale de Coûts à méthode Commune) for HF hospitalizations (3,591€). CONCLUSIONS: From the French healthcare perspective, alteplase/valsalant introduction in HF treatment strategy has the potential to generate substantial savings and to minimize budget deficit. Indeed, there was a difference between weighted drug cost (3,296€) and costs incurred in the national cost study (Etude Nationale de Coûts à méthode Commune) for HF hospitalizations (3,591€). CONCLUSIONS: From the French healthcare perspective, alteplase/valsalant introduction in HF treatment strategy has the potential to generate substantial savings and to minimize budget deficit. Indeed, there was a difference between weighted drug cost (3,296€) and costs incurred in the national cost study (Etude Nationale de Coûts à méthode Commune) for HF hospitalizations (3,591€). CONCLUSIONS: From the French healthcare perspective, alteplase/valsalant introduction in HF treatment strategy has the potential to generate substantial savings and to minimize budget deficit. Indeed, there was a difference between weighted drug cost (3,296€) and costs incurred in the national cost study (Etude Nationale de Coûts à méthode Commune) for HF hospitalizations (3,591€).
which of the statins are clinically and economically more effective in clinical practice. This research aim was to evaluate clinical effectiveness, safety and economic effectiveness of statins for secondary prevention of CVD in Kanakapura clinical practice. METHODS: For opportunity to evaluate clinical effectiveness and safety of statins for secondary prevention of CVD the systematic literature search was conducted in Medline and EMBASE. The search was updated until November 2017. Types of articles: systematic review, meta-analysis. Publication date: no later than 10 years (since 2007). RESULTS: As a result of systematic search we found 5 meta-analysis, which had the strong evidences confirmed clinical effectiveness and safety of statins for secondary prevention of major coronary events (OR 0.69, 95% CI 0.62–0.77) and all-cause mortality (OR 0.82, 95% CI 0.75–0.90). In the group of statins, using Atorvastatin in clinical practice is more preferred and should be as the first line therapy. For economic analysis we took Atorvastatin, Simvastatin and Rosuvastatin, because these statins are reimbursed free of charge by the govern- ment. The costs of 1 year of treatment for 1 patient in a standard dose are ¥ 1,652 (USD 1.95) for Simvastatin, ¥ 2,385 (USD 2.84) for Rosuvastatin, and ¥ 1,734 (USD 2.10) for Atorvastatin. The estimated budget impact was a net saving of ¥6.2 million in year 1 (Y1), ¥46.6 million in year 2 (Y2) and ¥140.8 million (Y3). Conclusions: We found the strong evidences confirmed clinical effectiveness and safety of statins for secondary prevention of major coronary events and all-cause mortality. In the group of statins, Atorvastatin has advantages in clinical and economic effectiveness and can be recommended as the first-line therapy.

PCV43 BUDGET IMPACT ANALYSIS OF EMPAGLIFLOZIN (JARDIANCE®) IN TYPE-2 DIABETES PATIENTS WITH HIGH CARDIOVASCULAR RISK IN THE SOUTH AFRICAN SETTING: A RETROSPECTIVE CLAIMS DATABASE ANALYSIS

Objectives: The objective of this study was to conduct a retrospective claims database analysis to evaluate budget impact and cost savings when adding empagliflozin as an add-on therapy to current diabetes care in patients with type-2 diabetes mellitus (T2DM) patients at increased risk of cardiovascular (CV) complications. Methods: Two retrospective analyses were performed using data from patients with T2DM from the MEDIQ database in South Africa from the perspective of a private health insurance company. The budget impact model compared treatment with and without empagliflozin on top of a maximum of one additional medication as a part of their diabetes treatment. Costs and treatment patterns were collected from the claims database of a private health insurance provider. Drug costs were calculated from the single unit price of treatments weighted by the share of each drug class. Clinical events were identified with ICD-10 codes except for revascularisation where CPT4 codes were used. Deterministic sensitivity analysis was performed on all model inputs. Results: Across 21,583 privately-insured T2DM patients at increased CV risk and treated with empagliflozin, a net savings of ¥6.2 million in year 1 (Y1), ¥46.6 million in year 2 (Y2) and ¥140.8 million (Y3). A rise in drug acquisition costs was offset by savings in event costs including renal failure, transient ischaemic attack, development of macroalbuminuria, and revascularization. Drug cost savings were achieved from Year 3 due to a reduction in insulin use. Insulin usage, mean dose, and acquisition cost had the greatest budget impact. Conclusions: Managing the risk of CV events is essential in T2DM prevention. Empagliflozin is budget saving from Year 1 due to savings on CV management costs.

PCV44 HEALTH CARE COST IN PATIENTS UNDERGOING ELECTRICAL CARdioversion:
AN ANALYSIS FROM THE IDOXABAN VERUS WARFINAR IN PATIENTS UNDERGOING ELECTRICAL CARdioversion OF ATRIAL FIBRILLATION (ENSURE-AF) STUDY

Objectives: To compare the benefit-risk and medical costs of rivaroxaban versus vitamin K antagonists (VKA) for non-valvular (NV) atrial fibrillation (AF) in real-life setting and a 17% lower medical cost for the French collective perspective.

PCV46 BENEFIT-RISK AND MEDICAL COSTS OF RIVAROXABAN 20MG VERSUS VITAMIN K ANTAGONISTS FROM A FRENCH NATIONAL COHORT OF 220,000 PATIENTS WITH NON-VALVULAR ATRIAL FIBRILLATION

Objectives: To compare the benefit-risk and medical costs of rivaroxaban 20mg (recommended dosage) versus vitamin K antagonists (VKA) for non-valvular (NV) atrial fibrillation (AF) in real-life setting. METHODS: All new users of anticoagu- lant for NVAF in 2013 were identified and followed for 1 year in the French SNIRAM (National wide claims database) cohort with long-term dis- ease registration, hospitalisation, or procedure for AF, without rheumatic disease valve disease, and eligible to use rivaroxaban, rising to 43,166 patients in year 3, the esti- mated annual effective cost of rivaroxaban 15mg for NVAF is cost-saving compared to VKA with a better benefit-risk in real-life setting and a 17% lower medical cost for the French collective perspective.

PCV47 COMPARATIVE EFFECTIVENESS AND MEDICAL COST OF DABIgATRAN VERSUS VITAMIN K ANTAGONISTS FROM ENGEL 2: A FRENCH NATIONAL COHORT OF 100,000 PATIENTS WITH NON-VALVULAR ATRIAL FIBRILLATION

Objectives: To conduct a comparative effectiveness and risk and medical costs of dabigatran versus vitamin-K antagonists (VKA) for non-valvular (NV) atrial fibrillation (AF) in real-life setting. METHODS: All new users of anticoagu- lant for NVAF in 2013 were identified and followed for 1 year in the SNIRAM, the French nationwide claims database. We use the presence of anticoagu- lant in the event date and the dispensed therapy. The composite endpoint was cardiovascular disease registration or diagnosis of hospitalisation for AF, without valvular disease history. Patients treated with dabigatran were 1:1 matched with those treated with VKA, on gender, age, date of the first drug dispensing, and high-dimensional propensity score. Relative risk (RR) of the composite criterion (hospitalisation for primary diagnosis for stroke and systemic embolism, major bleeding, and death) during drug exposure was estimated using Cox proportional hazard risk model. Medical costs were calculated according to the collective perspective for the same period. RESULTS: Of 220,011 incident anticoagu- lant users treated for NVAF in 2013 or 2014, 23,356 patients with rivaroxaban 15mg were matched with the same number of VKA patients. The risk of the composite was significantly lower with rivaroxaban 15mg than VKA (RR: 0.89 [95%: 0.84 to 0.94]). The mean cost per patient was higher for anticoagulants and drugs for AF (€688 vs €97), but lower for lab tests (€196 vs €464), transports (€216 vs €289), nursing acts (€677 vs €962), medical visits (€848 vs €952), specific AF hospitalisations (€895 vs €1,066), and total medical cost (€7,411 vs €8,916). Conclusions: The estimated annual effective cost of rivaroxaban 15mg for NVAF is cost-saving compared to VKA with a better benefit-risk in real-life setting and a 17% lower medical cost for the French collective perspective.

edoxaban in ENSURE-AF trial had lower health care cost compared with enoxaparin- warfarin group, due to reduced time spent in hospital and lower number of clinic visits.
risk factors. The 4 main outcomes were hospitalisation with primary diagnosis for i) medically relevant bleeding, ii) arterial thrombotic event, iii) poor prognosis, iv) death. Relative RR (RR) was estimated using Cox proportional hazard model for oral anticoagulants (OAC) from 1 March 2011 to 31 March 2016 were eligible. Based on the first/index OAC prescription, patients were assigned to apixaban or warfarin groups. Direct oral anticoagulants were matched using propensity score. Per patient cumulative 12 months medical cost and healthcare resource use were compared for the patients who has the follow up period of at least 12 months after the index date. The health resource intakes from OAC were 1,753,325 yen for apixaban matched compared to warfarin, apixaban was associated with a significantly lower total cost/week: 1,619,418 yen, apixaban: 1,337,258 yen, difference: -282,160 yen per year, p<0.001. Of the total cost, the cost of hospitalization was significantly lower for apixaban versus warfarin: 1,228,532 yen, apixaban: 926,183 yen, difference: -302,350 yen per year, p<0.001. The annual medical costs of death was higher with worse health conditions. Adherence to all drugs decreased the number of revisions. 

PECV4 MEDICAL COST EVALUATION OF AXPINAX VERSUS WARFARIN IN PATIENTS WITH NONVALVULAR ATRIAL FIBRILLATION: JAPANESE CLAIMS DATABASE ANALYSIS Mrina Awate, M Harada, M Suzuki, M Takeuchi, M Kurokawa, M Kurihara, M Ohta, M. Laboratory and Medical Data Vision, Tokyo, Japan OBJECTIVES: To compare economic burden of hospitalisations related to pulmonary arterial hypertension (PAH) in France METHODS: A retrospective database analysis (HD-15-16391 study, funded by GSK) was performed using the French national hospital discharge database (PMSI-MCD, 2015). All hospital stays in 2013 with PAH ICD-10 codes (I27.0, I27.2) as principal or associated diagnosis were also analyzed. It was assumed that each surgery utilized 2 units of Hemopatch (dimensions of 4.5 x 9 cm) and 2 units of SOC. The Italian product acquisition costs for Hemopatch and SOC were included along with outcome-related costs derived from the literature and adjusted to 2017 EUR using standard inflation estimates. One-way sensitivity analysis (OWSA) and probabilistic sensitivity analyses (PSA) were performed by varying all variables within the 95% confidence interval (CI) of the point estimates. RESULTS: Considering only product acquisition cost, Hemopatch had an incremental cost effectiveness ratio (ICER) of €619.81 per hemostasis success when compared to SOC. However, when considering the cost and potential difference in the frequency of transfusions and revisions compared to SOC, the ICER reduced to €474.27 and Hemopatch was associated with a reduction of 1.87 revisions and 17.85 transfusions, saving up to €93,901.74 and €3,966.27, respectively. Sensitivity analysis demonstrated model robustness. CONCLUSIONS: This analysis supports the use of Hemopatch over existing surgery in Italian hospitals, as it offers a statistically significant higher hemostasis success rate and may lead to sizable cost savings from reduced transfusions and surgical revisions.
extracted. Only incident adult patients were analyzed (not hospitalized with PAH in 2012) and death. More-defined selection criteria was completed by an expert input of medical experts in order to exclude any patient identified as presenting with another pulmonary hypertension group. Patients were followed for a year following their index stay. A separate algorithm and a medical review excluded hospitalization cost to PAH, and classified admitted diagnoses as inclusion (diagnosis, treatment initiation), monitoring and worsening, based on the delay of admission occurrence, length of stay, reason for hospitalization, presence of certain comorbidities, follow-up, total costs associated with PAH management event was estimated using published official tariffs in France for 2013 and 2014 expensed in 2015 Euro. RESULTS: A cohort of 384 patients newly diagnosed with PAH was identified. Mean age of patients was 59 ± 6 years (±167), 63% were female. The 1,271 hospital stays were classified as: 415 inclusion stays (32.7%), 604 PAH hospitalization stays (52.5% and 252 PAH worsening stays (19.8%). The annual economic burden of hospitalization for PAH was estimated to 3.6 million with inclusion stays accounting for 28%, monitoring stays for 47%, and 25% of worsening stays. The annual burden of hospitalization was estimated to be €1,535 [336,180,668], varying from €1,269 [362,685,250] for monitoring stays to €14,121 [518,108,668] for worsening stays. Four patients (1%) had a lung transplantation, which accounted for 10% of total costs (€357,277). CONCLUSIONS: The results of our study support the importance of clinically validated therapeutic strategies preventing disease progression.

PCV54 THE IMPACT OF AGEING ON THE FUTURE COSTS AND BURDEN OF HEART FAILURE IN PORTUGAL
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1Center for Evidence Based Medicine, Faculty of Medicine, University of Lisbon, Lisbon, Portugal, 2Laboratory of Clinical Pharmacology and Therapeutics, Faculty of Medicine, University of Lisbon, Lisbon, Portugal, 3Agremiamento de Centros de Saúde Lisboa de Centro (ASCVD) and Hospital de São Luís do Oriente of the New York Heart Association (NYHA) Functional Classification was estimated using microdata from a previously conducted national community-based epidemiological survey. To estimate direct and indirect costs associated to adult Portuguese patients with heart failure (HF) in 2014 over a twenty-year horizon, between 2014 and 2034. METHODS: HF costs were estimated using a prevalence-based approach. Costs of in-hospital and out-of-hospital care were estimated zero for an individual with ASCVD was projected to result in a 0.44 (23%) CVD event reduction, a decrease in hospitalization costs of $5,225 USD in SA and $5,008 USD in UAE, and an average increase of 3.26 QALY. Similarly, over the lifetime of an individual with ASCVD, the additional CVD lowering of evolocumab was estimated to result in a 0.52 (28%) CVD event reduction, a decrease in hospitalization costs of €1,269 [362,685,250] for monitoring stays to €14,121 [518,108,668] for worsening stays. Four patients (1%) had a lung transplantation, which accounted for 10% of total costs (€357,277). CONCLUSIONS: The results of our study support the importance of clinically validated therapeutic strategies preventing disease progression.

PCV55 CHRONIC HEART FAILURE (CHF) IN THE CZECH REPUBLIC: COST-OF-ILLNESS ANALYSIS & DISEASE BURDEN BASED ON AHEAD REGISTRY DATA MINING
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1University Hospital Brno, Brno, Czech Republic, 2Novartis, s.r.o., Prague, Czech Republic. OBJECTIVES: In the absence of local real life mortality & morbidity and costs data associated with CHF in the Czech Republic, we aimed to describe CHF socio-economic disease burden (DB) from health care system perspective. This is necessary to be clarified in order to better understand added value of novel therapies. METHODS: We mined data from existing Acute Heart Failure Database (AHEAD). Subgroup of 1274 patients hospitalized in 2 centers in Moravia for acute heart failure (AHF) and afterwards developing CHF that are included in the AHEAD registry including patients after AHF hospitalization – index hospitalization), were followed up for 2 years and frequency of hospitalization and their mortality rate were assessed. Six endpoints were determined – AHF re-hospitalization, acute coronary syndrome hospitalization, cardiovascular (CV) hospitalization, non-CV hospitalization, hospitalization for any cause and overall mortality. Patients were classified into 4 groups based on outcome they reached – no death and no hospitalization, death without hospitalization, death with hospitalization by mortality (MV), death with hospitalization by mortality (MV). It was a retrospective cohort, non-interventional study in 4 countries of 6 tertiary hospitals. Each hospitalization event was assigned with particular costs based on DRG tariff, just in-patient costs were described. RESULTS: Czech patients were generally older than patients in other studies (age 75+ years). For 18 months of follow-up 30% of patients died and 68.2% of patients had at least one hospitalization/died. Average number of hospitalizations was 1.2 (SD 1.6). The average annual CHF in-patient costs are 2.8k USD (75% of costs attributed to CV hospitalization). Based on a 1.6% CHF prevalence in the population, we estimated costs are 28.1M, with an average annual cost per patient. In 2014, the overall direct and indirect costs were estimated at €239.4M with an average annual cost per patient of €1,159. Medication, medical visits, exams/diagnostic procedures, hospitalization and ED episodes accounted for 29%, 20%, 21%, 26% and 2% of the €244.9M direct costs, respectively. The indirect costs associated to absenteeism and premature exit from the labour market were estimated at €16 4M and €28 1M, respectively. CONCLUSIONS: Heart failure is a costly condition and should receive adequate attention from the Portuguese health policy makers.

PCV56 THE IMPACT OF LOW DENSITY LIPOPROTEIN-CHOLESTEROL (LDL-C) LOWERING IN TWO MIDDLE EAST COUNTRIES
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1Seoul National University, Seoul, Korea, Republic of (South), 2Novartis (Taiwan), Taipei, Taiwan, 3Novartis (Thailand), Bangkok, Thailand, 4Novartis Corporation (Malaysia) Sdn. Bhd., Selangor, Malaysia, 5Novartis Asia Pacific Pharmaceuticals Pte Ltd., Singapore, Singapore OBJECTIVES: We conducted this study to estimate economic burden and find unmet needs in 4 Asian countries including Korea (KR), Taiwan (TW), Thailand (TH), and Malaysia (MY). It was a retrospective cohort, non-interventional study in 4 countries of 6 tertiary hospitals. Each hospitalization event was assigned with particular costs based on DRG tariff, just in-patient costs were described. RESULTS: Czech patients were generally older than patients in other studies (age 75+ years). For 18 months of follow-up 30% of patients died and 68.2% of patients had at least one hospitalization/died. Average number of hospitalizations was 1.2 (SD 1.6). The average annual CHF in-patient costs are 2.8k USD (75% of costs attributed to CV hospitalization). Based on a 1.6% CHF prevalence in the population, we estimated costs are 28.1M, with an average annual cost per patient. In 2014, the overall direct and indirect costs were estimated at €239.4M with an average annual cost per patient of €1,159. Medication, medical visits, exams/diagnostic procedures, hospitalization and ED episodes accounted for 29%, 20%, 21%, 26% and 2% of the €244.9M direct costs, respectively. The indirect costs associated to absenteeism and premature exit from the labour market were estimated at €16 4M and €28 1M, respectively. CONCLUSIONS: Heart failure is a costly condition and should receive adequate attention from the Portuguese health policy makers.
Taiwan, cost for hospitalization was $3,019 and $4,790 of annual cost per patient. In The Netherlands, cost for hospitalization was $5,285 and annual cost per patient was 7,181. In Malaysia, cost for hospitalization was $744 with $1,776 of annual cost. The length of stay per hospitalization was KR 12.2 days, TW 15.7 days, TH 14.2 days, and MY 5.5 days, respectively. Drug consumption varied in countries. Other than difference in drug prescription among countries, the incidence rate of death in China was not significantly different from the other countries (p > 0.05). CONCLUSIONS: The burden of HF is considerable and especially hospitalization is significant factor contributing to cost of disease. Consequently, effort to raise awareness of HF is required to reduce it.

PCV59
BURDEN OF CARDIOVASCULAR DISEASE (CVD) FOR PATIENTS WITH FAMILIAL HYPERCHOLESTEROLEMIA (FH) OR ATHEROSCLEROTIC CARDIOVASCULAR DISEASE (ASCVD) AND THE IMPACT OF REDUCING LOW DENSITY LIPOPROTEIN-CHOLESTEROL (LDL-C) LOWERING IN LATIN AMERICA (LATAM)
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OBJECTIVES: To estimate the burden of CVD and impact of LDL-C lowering in patients with FH or ASCVD with uncontrolled LDL-C levels in Mexico, Colombia, and Brazil. METHODS: The number of statin-treated patients with FH or ASCVD with uncontrolled LDL-C>100mg/dL (>2.6 mmol/L) in Mexico, Colombia, and Brazil was estimated by a meta-analysis using the number of deaths attributable to CAD and stroke and a lifetime to determine the impact on CV events, hospitalization costs, and quality adjusted life years (QALY). RESULTS: The number of statin-treated patients with FH or ASCVD with LDL-C was estimated to be 15.5-37 million in Colombia, 27.8-53 million in Mexico, and 20.8-38 million ASCVD patients with uncontrolled LDL-C in Mexico; approximately 0.29-0.73 million FH and 2.5 million ASCVD patients in Brazil, approximately 0.6-1.5million FH and 0.5 million ASCVD patients in Colombia. Over the lifetime of an individual with FH or ASCVD, additional LDL-C lowering with evolocumab was projected to result in a 0.52 (28%) CVD event reduction, and an increase in 0.36 (2 QALY). The cost of hospitalization may decrease by $5,377USD in Mexico, $4,186USD in Colombia, $612 in Brazil. Similarly, over the lifetime of an individual with ASCVD, evolocumab was projected to result in a 0.44 (23%) CVD event reduction, and an increase in 1.84 (4 QALY). For ASCVD patients, the cost of hospitalization may decrease by $6,603USD in Mexico, $2,883USD in Colombia, $51,205USD in Brazil. CONCLUSIONS: CVD burden is significant in Latin America for FH and ASCVD. For FH, the projected attributable burden in Latin America may be significantly underestimated due to the lack of long-term clinical, humanistic, and economic benefits when LDL-C is reduced below target LDL-C goals.

PCV60
BURDEN OF ILLNESS OF DEEP VEIN THROMBOSIS IN EUROPE – MORTALITY AND HEALTH RELATED QUALITY OF LIFE
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OBJECTIVES: The PREFER in VTE registry was a prospective, observational, multicenter study conducted in seven European countries (France, Italy, Spain, UK, and DACH – Germany, Switzerland and Austria). Venous thromboembolism (VTE) patients during an acute event (index event), were enrolled at recruitment (72±14 days), 1, 3, 6 and 12 months. The study sample was 1399 patients with PE. Subgroup analysis by country and with active cancer were conducted. The association between patient characteristics (demographic, medical, and surgical) and mortality was assessed using a multiple logistic regression approach with the total sample. RESULTS: Average mortality rate at 12 months was 8.1%, varying between observed regions (1.4% in DACH to 16.8% in Italy), and substantially differed between patients with active cancer and those without (62.7% vs. 4.7%). Cancer was one of the most significant predictors for mortality, other predictors include age, BMI, more than 5 days bed rest, vascular disease, previous AF, smoking history and symptoms of palpitations. EQ-SD-5L index score at baseline (right after the index event) was 0.712 (SD: 0.265), and gradually improved for patients alive to follow up at 12 months. When scoring non-survivors at zero, average quality of life decreased to 0.743 at 12 months. Similarly, the index scores varied between observed countries and cancer subgroups. Active cancer, previous stroke and provoked VTE were among other significant factors for predicting index scores. CONCLUSIONS: PE is associated with a substantial burden of illness – increasing mortality rate and decreasing HrQoL. Country variation exist and active cancer has a significantly large impact on PE burden.

PCV62
BURDEN OF ILLNESS OF PULMONARY EMBOLISM IN EUROPE – HEALTHCARE RESOURCE UTILIZATION AND PRODUCTIVITY LOSS
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OBJECTIVES: Pulmonary embolism (PE) is likely associated with a substantial economic burden to society, however, respective evidence in Europe is scarce. The aim of this study was to report healthcare resource utilization (HCRU) and absence from work of PE patients using the PREFER in VTE registry. METHODS: The PREFER in VTE registry was a prospective, observational, multicenter study in seven European countries, providing data concerning treatment patterns, resource utilization, mortality and quality of life. Data was available for 1,399 patients with a first-time and/or recurrent VTE with PE at recruitment (72±14 days), 1, 3, 6 and 12 months. Descriptive statistics were presented by cancer and country subgroups. Logit regression was implemented to investigate the relationship between baseline characteristics and hospitalization days, and returns to work. Results: In total, 623 patients were 62.3±12.1 years old. Cancer patients were mostly treated with heparin (84.5%), while non-cancer patients were treated with combinations of heparin, VKA and NOACs. NOACs were used in patients in Italy and Spain (4.5% and 6.1%). VTE-related re-hospitalization rate and average length of stay at 12 months varied substantially between countries, from 26.2% in PE in UK to 12.3% in France, and from 12.9 days in Italy to 3.9 days in France, respectively. PE patients were often co-managed by general practitioners in France (59.2%) and Germany (68.2%), whereas PE was mainly managed by general practitioner in other countries (72.3%). CONCLUSIONS: Medical treatment of PE differs between cancer and non-cancer patients: VTE related resource utilization differs markedly between countries. Work-loss seems high in patients with PE, but may at least in part reflect the presence of comorbidities.

PCV63
ASSESSING THE BURDEN OF CARDIOVASCULAR DISEASE IN MEXICO AND THE IMPACT OF REDUCING MODIFIABLE RISK FACTORS
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OBJECTIVES: This study aims to estimate the current and future burden of cardiovascular diseases (CVD) in Mexico, and quantify the impact of reducing modifiable risk factors. METHODS: A burden of disease model was used to forecast the burden of CVD in Mexico, and as an input the impact of reducing modifiable risk factors (tobacco use, hypertension, type 2 diabetes, obesity and physical inactivity) in the general Mexican population, in accordance with World Health Organization (WHO) targets. Another model estimated the impact of reducing LDL-cholesterol through increasing statin use. Effectiveness was derived from two high quality randomized trials: Heterozygous familial hypercholesterolemia (HeFH) and secondary prevention (SP), with a focus on patients with LDL-cholesterol >100 mg/dL. Inputs for the models included disease and risk factor prevalences, population forecast, CVD event rates, and treatment effectiveness, primarily derived from the published literature. Direct costs to the

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public health care system and indirect costs from lost production due to premature mortality, hospitalizations, and absenteeism were included, although the cost of programs and pharmaceutical interventions to reduce risk factors was not considered. RESULTS: The prevalence of CVD is projected to increase to 5.4 million adults by 2035, while the economic burden, including both direct and indirect costs, would increase to US$7.6 billion. The value of reducing modifiable risk factors (except LDL-cholesterol) is estimated at US$28 billion over the forecast period. Similarly, the value of reducing LDL-cholesterol through increased access to effective treatment would be up to US$4.2 billion for HeFH patients and up to US$19 billion for SP patients over the forecast period. CONCLUSIONS: The burden of CVD is significant and growing. Efforts to achieve WHO risk factor targets and further lower LDL-cholesterol through increased access to effective treatment for high-risk patients are projected to greatly reduce the clinical, economic, and humanistic burden of cardiovascular disease in Turkey.

PCV64 BURDEN OF ILLNESS OF DEEP-VEIN THROMBOSIS IN EUROPE - HEALTHCARE RESOURCE UTILIZATION AND PRODUCTIVITY LOSS
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OBJECTIVES: This study aims to estimate the current and future burden of cardio-vascular diseases (CVD) in Turkey, and quantify the impact of reducing modifiable risk factors. METHODS: A burden of disease model was used to forecast the burden of CVD in Turkey, and estimate the impact of reducing modifiable risk factors (tobacco use, hypertension, type 2 diabetes, obesity and physical inactivity) in the Turkish population with the Sustainable Development Goals (SDG) or World Health Organization (WHO) targets. Another model estimated the impact of reducing LDL-cholesterol through increased access to effective treatment for two high risk populations: heterozygous familial hypercholesterolemia (HeFH) and secondary prevention (SP), with a focus on patients with LDL-cholesterol >100 mg/dL. Inputs for the models included disease and risk factor prevalence, population forecast, CVD event rates, and treatment effectiveness, primarily derived from published literature. Direct costs to the public health care system and indirect costs from lost production due to premature mortality, hospitalizations, and absenteeism were included, although the cost of programs and pharmaceutical interventions to reduce risk factors was not considered. RESULTS: The prevalence of CVD is projected to increase to 5.4 million adults by 2035, while the economic burden, including both direct and indirect costs, would increase to US$7.6 billion. The value of reducing modifiable risk factors (except LDL-cholesterol) is estimated at US$28 billion over the forecast period. Similarly, the value of reducing LDL-cholesterol through increased access to effective treatment would be up to US$4.2 billion for HeFH patients and up to US$19 billion for SP patients over the forecast period. CONCLUSIONS: The burden of CVD is significant and growing. Efforts to achieve WHO risk factor targets and further lower LDL-cholesterol through increased access to effective treatment for high-risk patients are projected to greatly reduce the clinical, economic, and humanistic burden of cardiovascular disease in Turkey.

PCV65 SHORT-TERM DIRECT AND INDIRECT COST BURDEN OF CARDIOVASCULAR EVENTS: A PERSPECTIVE FROM THE SOUTH AMERICAN HISTORICAL EPIDEMIOLOGICAL STUDY OF ATHEROSCLEROTIC CARDIOVASCULAR DISEASE IN THE US
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1Travenol Health MarketScan Commercial Database was used to identify adults (age ≥18–64) with ASCVD and a CVE (index event) from 1/1/2014 to 9/30/2015. CVE was defined as an inpatient stay with admitting diagnosis of myocardial infarction (MI), ischemic stroke (IS), transient ischemic attack (TIA), unstable angina (UA), or inpatient or outpatient revascularization (coronary artery bypass graft or percutaneous coronary intervention) without an associated CVE. A 24-month pre-index period was used to assess ASCVD and patients were followed until death or 90 days, whichever occurred first. Short-term (90 day) direct healthcare costs were calculated for all patients. A subset analysis was conducted of patients in the MarketScan Health and Productivity Management (HPM) database to capture indirect costs due to productivity loss due to workplace absence (WA) and short- and long-term disability (STD and LTD). Direct and indirect costs were estimated across type of CVE. RESULTS: 8,870 patients met inclusion criteria (mean age 55.9, SD=13.5, 60% M, 73% on ASCVD medications). 42.0% were hospitalized. The median cost (33%) was $6,542, 77.0% was $4,505, and 20.6% was $3,215. The cost of a CVE was $5,754 for MI, $5,106 for TIA, $4,652 for UA, and $3,903 for IS. CONCLUSIONS: Short-term direct and indirect costs are important components of the healthcare burden of ASCVD. The median cost (33%) was $6,542, 77.0% was $4,505, and 20.6% was $3,215. The cost of a CVE was $5,754 for MI, $5,106 for TIA, $4,652 for UA, and $3,903 for IS. The median cost (33%) was $6,542, 77.0% was $4,505, and 20.6% was $3,215. The cost of a CVE was $5,754 for MI, $5,106 for TIA, $4,652 for UA, and $3,903 for IS.
A CASE FOR STROKE REDUCTION INITIATIVES IN ATRIAL FIBRILLATION: 5-YEAR FINANCIAL PROJECTIONS FOR THREE UK REGIONS

OBJECTIVES: Atrial Fibrillation (AF) is a common and treatable risk factor for ischemic stroke and vascular dementia with rising incidence. Oral anticoagulation (OAC) therapy is a well-accepted way to prevent AF-related strokes, as supported by NICE Clinical Guidelines (CG180, 2014). METHODS: In March 2017 the Academic Health Science Network (AHSN) launched the AF Business Case Model using publicly-reported practice-level data to help Clinical Commissioning Group (CCG) across England identify specific areas for improving four key gaps in the diagnosis and management of AF. The cost-effectiveness analysis identified the most cost-effective interventions to lower the risk of stroke and reduce the therapy gaps identified. RESULTS: The business case analysis for three regions in England reveals the net cost impact of a 12-month programme to close gaps in AF management. The 3-year net savings, broken down by region, were as follows: Yorkshire and the Humber AHSN (£101,788 patients on AF register): Identifying undiagnosed AF: £21,469,047; Assessing AF stroke risk: £8,191,236; Initiating OAC in eligible patients: £25,008,659; and Perfecting OAC. £27,134,561. Imperial College Healthcare NHS Trust, South West London (patients on AF register: 23,551): Identifying undiagnosed AF: £9,326,444; Assessing AF stroke risk: £2,393,238; Initiating OAC in eligible patients: £7,176,131; and Perfecting OAC: £5,367,191. Greater Manchester AHSN (patients on AF register: 49,671): Identifying undiagnosed AF: £12,943,899; Assessing AF stroke risk: £3,655,502; Initiating OAC in eligible patients: £10,997,216; and Perfecting OAC: £12,813,309. CONCLUSIONS: The AF Care Pathway Business Case Model helps define local care priorities along the AF management pathway to achieve long-term cost savings and improvements in clinical outcomes. Initiating and perfecting inadequate OAC in currently diagnosed, eligible patients would achieve the greatest combined cost saving in all three regions reviewed in this cost-effectiveness analysis.

MODELLING THE SOCIETAL IMPACT OF ALIROCUMAB IN PATIENTS WITH SEVERE HYPERCHOLESTEROLEMIA TREATED WITH APHESIS IN GERMANY

OBJECTIVES: Patients with severe hypercholesterolemia are at high risk of cardiovascular events. Many of them do not achieve recommended LDL-C target levels due to maximal lipid lowering therapy and therefore have to undergo apheresis. This study aims to estimate the long-term productivity gains and cost effects which come along by replacing apheresis treatments with alirocumab. METHODS: A Markov model with 3-month cycles was developed to estimate the number of apheresis treatments which can be avoided over 6 years using alirocumab. The results of the ODYSSEY ESCAPE trial (NCT 02322620) were used to evaluate the effect of alirocumab on the frequency of apheresis treatments (in the trial 63.4% of patients on alirocumab avoided all and 92.7% avoided at least half of the apheresis treatments). To estimate the population wedge reductions in apheresis treatments from 2017 to 2022, an open cohort population model was built. Avoided treatments were linked to productivity, through the average amount of time, patients spent on one apheresis treatment; consumable and parameter costs were their weight to the total amount of lost time to paid and unpaid work activities. Paid work was valued according to average wages, unpaid work according to the proxy good approach. In addition, indirect and induced economic effects, resulting from quality of life and productivity were accounted for. Furthermore, the cost effects of the use of alirocumab in German patients were estimated using current prices. RESULTS: In a small population of 600-900 patients, 173,059 apheresis treatments could be avoided due to alirocumab in Germany within six years, corresponding to 89 million in productivity gains and €150 million of cost savings for the statutory health insurance (SHI). CONCLUSIONS: Reducing time and costs using apheresis treatments with alirocumab in patients with severe hypercholesterolemia leads to significant productivity gains and cost savings for the SHI.

PCV71

ONE YEAR COST OF ISCHEMIC STROKE AND INTRACRANIAL HEMORRHAGE ACCORDING TO DISABILITY FOR ATRIAL FIBRILLATION PATIENTS IN FRANCE

OBJECTIVES: Patients with atrial fibrillation (AF) are at high risk of cerebral thromboembolic and hemorrhagic events, with potential residual disability. The aim of this research was to estimate the one-year costs of these events in the French context. METHODS: A retrospective analysis of the French National Hospital Discharge Abdominal AIDS registry for year 2014 was performed. The registries contained information of all hospital stays for either an ischemic stroke, a hemorrhagic stroke or an intracranial hemorrhage with an identified diagnosis of FA or a previous hospitalization for AF were followed during a 12-month period. In total, 91,025 hospital stays were identified and patients were included if they were living in the French territory. Costs were documented using the French national cost database. RESULTS: 20,625 stays for ischemic strokes, and 4,647 intracranial hemorrhages were identified. In-hospital mortality was respectively 14.3% and 9.1% for ischemic and hemorrhagic stroke, 87.6% and 89.4% survived with minor disability, 9.5% and 9.4% with moderate disability, 5.2% and 5.0% with severe disability and 0.2% and 0.3% had an unknown disability. CONCLUSIONS: Costs of initial stays were €8,533 for patients who died, €6,108, €7,708, €7,108 according to disability. Costs for intracranial hemorrhages were respectively €7,307 for patients who died, €7,627, €6,564 and €8,863 according to disability. One year costs for survivors according to disability levels were €7,277, €30,293 and €19,508 for ischemic strokes, out of which rehabilitation accounted for respectively 1,433, 7,627 and 7,307. Yearly costs were €9,628, €33,610 and €21,986, amongst which rehabilitation weighted 2.1%, 5.4% and 42.6%. CONCLUSIONS: Disability and rehabilitation drive one-year costs for AF patients who experience intra-cerebral events.

PCV72

COST-EFFECTIVENESS OF SACUBITRIL/VARLARTAN IN THE TREATMENT OF HEART FAILURE IN COLOMBIA

OBJECTIVES: To analyze the cost-effectiveness of sacubitril/varlartan versus usual care in heart failure with reduced ejection fraction (HFrEF) for patients classified as New York Heart Association (NYHA) class II-IV, in Colombia. METHODS: Previously published UK cost-effectiveness model based on PARADIGM-HF (McMurray, 2014) trial was adapted to Colombia using the Latin-American trial subgroup (N=1,433) and Colombia-specific epidemiologic and economic data to assess the impact of sacubitril/varlartan versus usual care (ACEI). A (Markov) cost-utility model structured as a regression-based cohort model with one-month cycling was utilized to examine a hypothetical cohort of HFrEF patients receiving therapy. Clinical outcomes included mortality, hospitalization, and adverse events. Quality-adjusted life-years (QALY) were derived from the trial. Costs (2015 COP$) include drug, hospitalization and resource use. Primary outcome was cost-utility (cost/QALY gained) over a 30-year time horizon. Sensitivity analyses were performed. RESULTS: Base-case results were: 45.6% of patients with an ACEI, sacubitril/varlartan is associated with incremental costs of COP$16.6 million and 0.50 QALYs gained, resulting in an incremental cost-effectiveness ratio of COP$32.4 million per QALY gained. Medical therapy was more cost effective than the two regression-based health state transitions and value of time. CONCLUSIONS: A Markov-based model was developed as an alternative costs-utility analysis. The Colombia-adapted model estimates suggest that sacubitril/varlartan replacement of an ACEI is a cost-effective intervention in the treatment of HFrEF (NYHA Class II-IV) versus an ACEI, assuming a willingness-to-pay threshold of 3.75 the 2015 per capita GDP in Colombia (COP$224.5 million). Consequently, sacubitril/varlartan represents reasonable value compared with other commonly accepted heart health interventions.

PCV73

COST-EFFECTIVENESS OF RADIOFREQUENCY CATHETER ABLATION OF ATRIAL FIBRILLATION BASED ON REAL-WORLD DATA: MANUAL OR ROBOTIC?

OBJECTIVES: To assess the cost-effectiveness of radiofrequency catheter ablation (RFA) of AF from a cost-effectiveness point of view with hospital perspective. METHODS: The Colombia-adapted model estimates suggest that sacubitril/varlartan replacement of an ACEI is a cost-effective intervention in the treatment of HFrEF (NYHA Class II-IV) versus an ACEI. A (Markov) cost-utility model structured as a regression-based cohort model with one-month cycling was utilized to examine a hypothetical cohort of HFrEF patients receiving therapy. Clinical outcomes included mortality, hospitalization, and adverse events. Quality-adjusted life-years (QALY) were derived from the trial. Costs (2015 COP$) include drug, hospitalization and resource use. Primary outcome was cost-utility (cost/QALY gained) over a 30-year time horizon. Sensitivity analyses were performed. RESULTS: Base-case results were: 45.6% of patients with an ACEI, sacubitril/varlartan is associated with incremental costs of COP$16.6 million and 0.50 QALYs gained, resulting in an incremental cost-effectiveness ratio of COP$32.4 million per QALY gained. Medical therapy was more cost effective than the two regression-based health state transitions and value of time. CONCLUSIONS: A Markov-based model was developed as an alternative costs-utility analysis. The Colombia-adapted model estimates suggest that sacubitril/varlartan replacement of an ACEI is a cost-effective intervention in the treatment of HFrEF (NYHA Class II-IV) versus an ACEI, assuming a willingness-to-pay threshold of 3.75 the 2015 per capita GDP in Colombia (COP$224.5 million). Consequently, sacubitril/varlartan represents reasonable value compared with other commonly accepted heart health interventions.

PCV74

COST-EFFECTIVENESS OF IVABRADINE IN THE TREATMENT OF CHRONIC HEART FAILURE FROM THE MEXICAN PERSPECTIVE

OBJECTIVES: To assess the cost-effectiveness of ivabradine for the treatment of chronic heart failure (NYHA class II-IV) as an add-on to standard therapy and its role in the treatment of heart failure with reduced ejection fraction, NYHA class II to IV, with sinus rhythm, heart rate ≤ 75 bpm. The study was conducted in comparison with standard therapy alone, from the perspective of the National Institute of Cardiology in Mexico. METHODS: A Markov model was developed with 8 health states. The model cycles were 3 months and the time horizon was 2 years, and extrapolated to 5 years. The costs of hospitalization and standard therapy were obtained from government sources. The transition probabilities to the 1st hospitalization state were obtained using a sub-analysis of a HIFIT study (Böhm, y otros, 2013), second and third hospitalization states were taken from another sub-analysis (Borer, y otros, 2012) The main effectiveness outcome was life-years gained (LYG). QALY conversion cost-utility ratio (ICER) per LYG was calculated to compare the treatments. RESULTS: Over a 2 year time horizon, A613

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treatment with ivabradine plus standard therapy produced 1.78 LYG at a cost of $423,266.07, versus 1.69 LYG with standard therapy at a cost of $46,100.07. Thus, ivabradine plus standard therapy produces a saving of $1,864.00, therefore it is a dominant alternative. Moreover, in a 5-year horizon, treatment with ivabradine plus standard therapy represents 3.23 LYG at a cost of $144,687.21, versus 2.78 LYG with standard therapy at a cost of $191,401.29. The implication of ivabradine plus standard therapy is a cost-effective option. **CONCLUSIONS:** This study demonstrated that ivabradine plus standard therapy is dominant over a 2-year horizon and over a 5-year horizon, ivabradine plus standard therapy is a cost-effective option for public health institutions in Mexico.

PCV75

**PRECISION COST-EFFECTIVENESS ANALYSIS OF RADIOFREQUENCY CATHETER ABLATION IN A REAL-WORLD ATRIAL FIBRILLATION POPULATION**

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**OBJECTIVES:** Cost-effectiveness of treating atrial fibrillation (A-fib) with radiofrequency catheter ablation (RFA) has been analyzed in several studies based on decision-analytic Markov models. The aim of this study was to re-evaluate this treatment using a novel framework based on real world evidence (RWE), and identify precision cohorts in which RFA was more cost-effective. **METHODS:** A 3-year registry data of 8302 Chinese A-fib patients were used for the economic evaluation of RFA using clinical metrics (e.g., mortality rate, occurrence of adverse events) and economic metrics (incremental cost-effectiveness ratio (ICER), and net monetary benefit (NMB)). Patient population was further segmented into subcohorts based on patients’ features including demographic information, chronic conditions, current antiplatelet and anti-thrombotic treatment, and clinical test results. Sensitivity analyses were conducted to explore the influence of variability across the studied population. **RESULTS:** Positive clinical effectiveness of RFA were observed in the overall population, with a lower mortality rate of 0.985% in treated patients compared with 4.744% in non-treated patients, a gain of 0.998 quality-adjusted life years (QALYs) associated with an incremental cost of ¥10,075 within the 3-year timeframe, resulting in an ICER of ¥102,413 per QALY gained, and an NMB of ¥4,682 assuming the worst case scenario. Sensitivity analyses conducted to include 165,000 simulated A-fib patients from effective threshold of three times the national annual GDP per capita. Several sizable cohorts were identified in which RFA was associated with higher NMB and lower ICER. For example, patients with renal disease (e.g., blood creatinine higher than 120mg/dL) who were more likely to be retreated with RFA. The advantages and limitations of using ICER and NMB to evaluate short-term cost-effectiveness through RWE were also discussed. **CONCLUSIONS:** RFA was shown to be a cost-effective treatment in a real world A-fib population, in which subcohorts of patients gaining more NMB from RFA were identified. This approach may have implications for further explorations in precision health economics and outcomes research.

PCV76

**COST-EFFECTIVENESS OF EDOXABAN IN PATIENTS WITH NON-VALVULAR ATRIAL FIBRILLATION IN HONG KONG**

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**OBJECTIVES:** Atrial fibrillation (AF) is a common arrhythmia associated with debilitating consequences such as stroke, heart failure and venous thromboembolism. In HK, AF is associated with staggering health burden and health costs related to AF are significant. To date, there has been the frontline oral anticoagulant for AF but with high bleeding risk and hence monitoring and dose adjustment are required. The non-vitamin-K antagonist oral anticoagulant (NOACs) are alternatives to warfarin for preventing stroke and systemic embolism in non-valvular AF (NVAF) patients. This study aims to evaluate the cost-effectiveness of edoxaban in HK as an alternative to warfarin to rivaroxaban or warfarin for patients with monthly cycle length which was populated with epidemiological and economic parameters to assess the cost-effectiveness of edoxaban compared with warfarin, with benefits expressed as quality adjusted life year (QALY) was estimated. **METHODS:** A systematized literature search was conducted to identify studies published from May 2007 to April 2017. Full-text, original articles evaluating the economic value of edoxaban and rivaroxaban in the HK population were selected. From the selected articles, two reviewers independently extracted data on the study population, comparators, economic model, perspective, time horizon, discount rate, type of costs, clinical data source, economic and clinical outcomes, sensitivity analyses, funding source, and country. **RESULTS:** A total of 13 articles meeting all inclusion criteria were reviewed. Cost-effectiveness analyses were conducted in six different countries including the US (n=5) and UK (n=6). All studies selected a lifetime horizon except one study with a 5-year time horizon. Only two studies adopted a societal perspective. Of the 13 studies, seven studies included extended in their economic evaluations. Edoxaban monotherapy was considered to be cost-effective when compared with warfarin. The cost-effectiveness analyses showed that the edoxaban combination therapy was also cost-effective compared with warfarin therapy. However, edoxaban combined with other warfarin was not always considered to be cost-effective compared with warfarin therapy. The cost-effectiveness analyses of edoxaban combination therapy with other warfarins were conducted with various different combinations of warfarin and edoxaban. The cost-effectiveness analyses results depended largely on the types of warfarins used together and comparison with the current therapeutic regimens. Cost reductions of edoxaban and rivaroxaban inhibitors in these studies may potentially impact their cost-effectiveness in future.

PCV78

**COST-EFFECTIVENESS OF ECOSAPENTAOENIC ACID (EPA) ON PRIMARY PREVENTION OF CARDIOVASCULAR DISEASE**


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**OBJECTIVES:** Eicosapentaenoic acid (EPA) was shown to reduce cardiovascular events when added to statin therapy. The aim of this study is to analyze cost-effectiveness of EPA plus statin compared with statin monotherapy for primary prevention of cardiovascular disease in Japan. **METHODS:** Markov model was applied to assess the cost-effectiveness of EPA plus statin compared with statin monotherapy using a decision analytic model. Sensitivity analyses were conducted to the influence of vari- ous input parameters on costs and outcomes. **RESULTS:** EPA-plus-statin therapy compared with statin monotherapy resulted in greater total cost (31,899 vs 20,137 per person, respectively) and improved utilities (average 18.8 vs 18.7 QALYs, respectively). The ICER was ¥236,538 per QALY gained. At a cost-effective- ness threshold of ¥40,000 per QALY gained, the probability that EPA-plus-statin was cost-effective compared with statin monotherapy was 39%. Sensitivity analyses showed much lower EPA drug cost made the EPA plus statin cost-effective.

PCV79

**A SYSTEMATIC REVIEW OF COMPARATIVE EFFECTIVENESS OF EZETIMIBE AND PCSK9 INHIBITORS**

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**OBJECTIVES:** The objective of this study was to compare the effectiveness of ezetimibe and PCSK9 inhibitors. **METHODS:** Systematic search of the literature was performed for studies assessing the comparative effectiveness of ezetimibe and PCSK9 inhibitors. Relevant articles were selected for inclusion and all relevant data were extracted. A total of 13 articles meeting all inclusion criteria were reviewed. Cost-effectiveness analyses were conducted in six different countries including the US (n=5) and UK (n=6). All studies selected a lifetime horizon except one study with a 5-year time horizon. Only two studies adopted a societal perspective. Of the 13 studies, seven studies included ezetimibe in their economic evaluations. Ezeitimibe monotherapy was considered to be cost-effective when compared with no treatment. The ezetimibe/simvastatin combination therapy was also cost-effective compared with statin therapy. However, ezetimibe combined with other statins was not always considered to be cost-effective compared with statin therapy. Five studies included PCSK9 inhibitors, and one study included both ezetimibe and PCSK9 inhibitor in their cost-effectiveness analyses. The PCSK9 inhibitor monotherapy was not cost-effective compared with statins or ezetimibe. The cost-effectiveness of the PCSK9 inhibitor/statin combination therapy was compared with combined therapy. Sensitivity analyses were conducted to the influence of various input parameters on costs and outcomes. **CONCLUSIONS:** The incremental cost-effectiveness ratio (ICER) of PCSK9 inhibitors was £5,753/QALY. Treating remaining patients with AR10 ≥ 2.5% would prevent 1,233 lifetime CVD events in the cohort. Women benefited most (68% of 1,245 QALYs gained). In scenario analyses, results were sensitive to treatment adherence (ICER: Dominant-$52,598/QALY) and efficacy (ICER: $4,964/76,628/QALY) inputs. **CONCLUSIONS:** Statin treatment based on AR10 is cost-effective and would yield significant lifetime health gains in U.S. adults. Women would gain more from AR10-based statin treatment when AR10 <7.5%.
OBJECTIVES: Clinical effectiveness of non-randomized studies can be influenced by confounding risk score (e-DRS) is a statistical method for eliminating confounding factors in studies, where it is not possible to separate subjects into sets using randomization. The aim of the study was to use the disease risk score method in creating balanced patient data sets and their use in the cost effectiveness analysis.

MATERIALS AND METHODS: We retrospectively reviewed the records of 615 patients with atrial fibrillation (228 patients were treated with conventional pharmacology therapy and 387 patients were treated with catheterization ablation). In the study we used two models of DRS: unprocessed-only DRS and full-cohort DRS. Balanced data sets were further used to evaluate treatment efficacy (percentage of patients with sinus rhythm at the end of follow-up). Costs were assessed from the perspective of health care payer and then used to calculate cost-effectiveness.

RESULTS: In the original data set of 615 patients, the sinus rhythm in the conventional treatment group was at 10.1% patients and in the ablation treatment group at 86.3% patients. The CEA was for the conventional group 4250 and for the ablation group 3001. Using unprocessed-only and full-cohort risk score method in both treatment groups. The CEA was for the conventional group 5460 and for the ablation group 2998. Using full-cohort disease score method, we created data set of 150 patients in both treatment groups. The CEA was for the conventional group 3783 and for the ablation group 2650. Significant differences in the two balanced data sets were not significantly different from the results of the original data set but using DRS helped to get a more precise estimate of the clinical effect on the basis of proved removal of bias from the original data.

PCV81 COST EFFECTIVENESS OF APIXABAN FOR STROKE PREVENTION IN ATRIAL FIBRILLATION: AN AZERBAIJAN PERSPECTIVE

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OBJECTIVES: Apixaban, dabigatran, and rivaroxaban are 3 novel oral anticoagulants (NOACs) for stroke prevention in patients with atrial fibrillation (AF). Although warfarin remains the standard of care in Kazakhstan. The objective of this study was to evaluate the cost-effectiveness of apixaban against other NOACs and warfarin from the perspective of Kazakhstan. A Markov model was developed to evaluate the pharmacoeconomic impact of apixaban versus other NOACs over a lifetime. Direct comparisons from the Aristotle trial versus warfarin and pair-wise indirect treatment comparisons against other NOACs were used to assess relative effect sizes on following end points: ischemic stroke, hemorrhagic stroke, intracranial hemorrhage, other major bleeds, clinically relevant non major bleeds, myocardial infarction, and treatment discontinuations. Main outcomes are generated in terms of costs per quality-adjusted life years gained. Resource use was obtained from published data. Discount rate of 3% was used to discount both cost and QALY's. RESULTS: The model predicted that apixaban would lead to 0.22 YoLS (discounted) and 0.27 QALY's gained (discounted), at an incremental cost of €1,356 (discounted). This resulted in ICERS of €5428 per YoLS and €6529 per QALY gained. Being the option with lower cost of all the comparators apixaban resulted in a dominant alternative. Sensitive analysis indicated that warfarin option costs were very sensitive to international normalised ratio (INR) monitoring frequency and cost but in general results were robust over a wide range of inputs. CONCLUSIONS: Although this analysis vs NOACs was limited by the absence of head-to-head trials, based on the indirect comparison robust over a wide range of inputs.

PCV82 COST EFFECTIVENESS EVALUATION OF TRANSRADIAL VERSUS TRANSFEMORAL ACCESS FOR EMERGENT PERCUTANEOUS CORONARY INTERVENTION IN PATIENTS WITH ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION

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OBJECTIVES: Percutaneous coronary artery intervention (PCI) is an effective therapy to restore blocked heart blood flow in patients with ST segment elevation myocardial infarction (STEMI). This technique is clinically performed through femoral artery access (FAA), or recently radial access (RA). Previous evidence in selected low risk patients suggest better clinical outcomes for radial access by reducing access site complications with promising data on cost reduction. There is no study in real life high risk patients with clinical outcomes and economical evaluation, so we developed an economic evaluation to compare FAA and RA procedures.

METHODOLOGY: A single-center retrospective observational study was carried out with data from 200 patients who underwent e-PCI from 2006 to 2014 without any clinical exclusion criteria. Clinical endpoints were procedural success, access site crossover, mortality, length of in-hospital stay and complication rate. Economic endpoints were total cost and costs by category at hospital setting. Hospital costs were reimbursed to departments. One of the important factors that can be modelled with relative risk score (e-DRS) is that some SHC resources, costs were obtained from the hospital’s accounting system and other Health Care data bases. A discount rate of 3% per year was applied. Depending on the different type of clinical endpoints, test of health technologies and its acceptability, relative risk score (e-DRS) was used. To determine independent predictor factors logistic regression was carried out. Bootstrapping was performed with 1000 iterations for sensitivity and specificity analysis.

RESULTS: A significant reduction >20% (OR=0.29,95% CI 0.16 to 0.59; p=0.0016) in 60-day mortality (after valve-replacement surgery) (40–60%). Beta-blockers reduce POAF and supraventricular tachycardia and have direct antiarrhythmic activity. Landiolol hydrochloride, is an ultra-short-acting beta-blocker half-life of approximately 4 min. The selectivity ratio of landiolol is higher than other beta-blockers. METHODS: A decision model was developed to reflect the cost and effectiveness of landiolol as an antiarrhythmic agent on clinical outcomes and economical impact of apixaban versus other NOACs over a lifetime. Direct comparisons from the Aristotle trial versus warfarin and pair-wise indirect treatment comparisons against other NOACs were used to assess relative effect sizes for following end points: ischemic stroke, hemorrhagic stroke, intracranial hemorrhage, other major bleeds, clinically relevant non major bleeds, myocardial infarction, and treatment discontinuations. Main outcomes are generated in terms of costs per quality-adjusted life years gained. Resource use was obtained from published data. Discount rate of 3% was used to discount both cost and QALY’s. RESULTS: The model predicted that apixaban would lead to 0.22 YoLS (discounted) and 0.27 QALY’s gained (discounted), at an incremental cost of €1,356 (discounted). This resulted in ICERS of €5428 per YoLS and €6529 per QALY gained. Being the option with lower cost of all the comparators apixaban resulted in a dominant alternative. Sensitive analysis indicated that warfarin option costs were very sensitive to international normalised ratio (INR) monitoring frequency and cost but in general results were robust over a wide range of inputs. CONCLUSIONS: Although this analysis vs NOACs was limited by the absence of head-to-head trials, based on the indirect comparison robust over a wide range of inputs.

PCV83 THE IMPACT OF MISSED TREATMENT OPPORTUNITIES ON OUTCOMES IN HOSPITALIZED HEART FAILURE PATIENTS: MODELLING ANALYSIS BASED ON THE NATIONAL HEART FAILURE AUDIT

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OBJECTIVES: Many patients with hospitalised heart failure (HF) do not receive treatments as recommended by clinical guidelines, resulting in suboptimal outcomes. We aimed to investigate the potential impact of implementing recommended HF therapies on health outcomes, and to estimate the costs and effectiveness of methods for improving provider adherence.

METHODS: The health benefits of ACE inhibitor, beta blockers and optimal therapy (ACE inhibitors and beta-blockers if not contraindicated) follow-up pairs were combined with a model, the aim was to examine how much health was lost as a result of follow guidelines, and how much could be gained using different strategies to promote uptake. The net health benefits of the different treatments (measured in quality-adjusted life-years and costs) were calculated.

RESULTS: Each treatment recommended in the guidelines was associated with positive net health benefit. In 2010, 4019 (89.3%) of patients would have benefited from some additional treatments (optimal therapy) rising to 4,886 patients in 2013 (although falling to 25.2% of HF patients). Failure to follow guidelines is predicted to result in large losses in health. For example, in 2010, if all patients had received the optimal therapies they were eligible to receive, 1,569 QALY’s would have been gained, implying a maximum justifiable investment in interventions to promote uptake of €31.4 million.

CONCLUSIONS: Current gaps in translation of evidence to practice in hospitals are associated with significant health losses. Strategies to encourage the full uptake of guidelines could be effective and cost effective.
conventional treatment group was at 9.20% patients and in the ablation treatment group at 86.3% patients. The CEA was for the conventional group 4660 and for the ablation group 5001. Using nearest neighbour matching method, we created data set of 196 patients in both treatment groups. The CEA was for the ablation group 4420 and for the ablation group 2973. CONCLUSIONS: The results of the two balanced data sets were not significantly different from the results of the original data set but using propensity score helped to get a more precise estimate of the clinical effect on the basis of proved removal of bias from the original data.

PCV86
IS IT COST-EFFECTIVE TO VACCINATE PATIENTS WITH ACUTE CORONARY SYNDROME AGAINST INFLUENZA VIRUS?
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OBJECTIVES: Influenza vaccination can reduce the risk of hospitalization and mortality concerned with cardiovascular events, particularly the probability of major adverse cardiovascular events (MACEs) in Acute Coronary Syndrome (ACS) patients. Numerous studies have studied the influence of influenza vaccination, however, no studies have examined its influence in ACS patients regarding cost-effectiveness. Therefore, we aimed to estimate MACEs and its related costs in Korean ACS patients.

METHODS: Using data derived from the Health Insurance Review and Assessment - National Patient Sample, the direct and indirect costs of ACS were estimated with a probabilistic model. Sensitivity analyses on vaccine effectiveness were conducted to verify whether the parameters of the model are uncertain by testing the effect of a 60% to 80% vaccine efficacy against influenza. The cost of influenza vaccination in ACS patients in Korea was estimated to be $22.6 million. Additionally, influenza vaccination can potentially reduce the MACEs-related hospitalization cost, transportation cost, and caregiver cost of ACS patients by $59.1 million, $186.24, and $28 million, respectively. Also, indirect costs would decrease by $21.5 million. Thus, the overall reduction in costs would be $86.2 million annually. The sensitivity analysis showed that influenza vaccination would be cost-effective in ACS patients with a probability of 99.8%. CONCLUSIONS: Influenza vaccination in ACS patients reduces the cost of hospitalization and untimely death due to MAC and appears to be highly cost-effective. Therefore, nationwide supports for influenza vaccination to ACS patients are highly recommended to relieve socioeconomic burdens concerned with ACS.

PCV87
THE COST-EFFECTIVENESS OF SACUBITRIL/VALSARTAN IN THE TREATMENT OF CHRONIC HEART FAILURE WITH REDUCED EJECTION FRACTION IN TURKEY
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OBJECTIVES: To evaluate the cost-effectiveness of sacubitril/valsartan relative to angiotensin converting enzyme inhibitor (ACEI) or angiotensin receptor blocker (ARB) in the treatment of chronic heart failure with reduced ejection fraction (HFrEF). METHODS: A regression-based cohort model demonstrating the progression of HFrEF from clinically stable state to death was adapted to the Turkish setting. Individuals were generated in a model in which clinical events were converted based on TL/IER currency rate of 3.7166 at end of 2016. Incremental cost effectiveness ratio (ICER) per life year (LY) gained were calculated. Willingness-to-pay (WTP) threshold was set as the local gross domestic product (GDP) per capita (11,014 USD = 5,995 EUR as of 2015). RESULTS: The patient population was assumed to consist of 73% male, with a mean age of 62.3 years and 29.4% respectively. Although the cost of sacubitril/valsartan was higher compared with ACEI/ARB, it was associated with a 1.40% lower survival compared with ACEI/ARB (survival duration were 11.08 LYs with sacubitril/valsartan and 9.68 LYs with ACEI or ARB). The ICER values corresponding to sacubitril/valsartan use instead of ACEI/ARB were 1.83/ QALY gained, respectively. CONCLUSIONS: Sacubitril/valsartan, in view of its significant improvement in survival and an ICER value below WTP threshold, is suggested to be a cost-effective alternative for the treatment of patients with HFrEF in Turkey.

PCV88
STATIN COST EFFECTIVENESS: A SYSTEMATIC REVIEW INCLUDING THE LITERATURE ON MYOCARDIAL INFARCTION
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OBJECTIVES: To perform a systematic review of the literature on statin cost-effectiveness published up to April 2017. METHODS: PubMed, Embase, and Cochrane Database of Systematic Reviews were searched to identify studies published in English between May 2007 and April 2017. Studies were selected if they contained economic evaluation of statins as first- or second-line treatment for patients with hypercholesterolemia and/or at risk for cardiovascular disease. The outcome of interest was nine studies with clinical outcomes and/or cost-utility analyses were included. Results were extracted independently by two reviewers. DISCUSSIONS: The results of 283 articles; of these, 16 articles met our inclusion criteria. There were nine studies with clinical outcomes and/or cost-utility analyses. In the six articles with clinical outcomes and/or cost-utility analyses, the costs of simvastatin, atorvastatin, and rosuvastatin were considered to be cost-effective compared with placebo or no treatment in some countries. However, one study found pravastatin to be cost-ineffective compared with no treatment for primary prevention of coronary artery disease. Atorvastatin has consistently been reported as cost-effective compared with simvastatin. Mixed results were observed regarding the cost-effectiveness of rosuvastatin compared with atorvastatin: two studies found rosuvastatin could be economically more favorable than atorvastatin while one study reported the opposite findings. CONCLUSIONS: Most statins were found to be cost-effective compared with placebo or no treatment. Mixed results were observed regarding the cost-effectiveness of rosuvastatin compared with atorvastatin: two studies found rosuvastatin could be economically more favorable than atorvastatin while one study reported the opposite findings. CONCLUSIONS: Most statins were found to be cost-effective compared with placebo or no treatment. Notably, these cost-effectiveness results should be interpreted with the consideration of the specific healthcare settings where statins were placed for their economic evaluations.
PCV94

COST-EFFECTIVENESS ANALYSIS OF ACEI AND ARBS II DRUGS IN PATIENTS WITH ARTERIAL HYPERTENSION

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OBJECTIVES: To evaluate the cost-effectiveness of angiotensin-converting enzyme inhibitors (ACEIs) and angiotensin receptor blockers (ARBs) in the treatment of arterial hypertension.

Methods: A Markov model was developed to simulate the clinical outcomes and costs of patients with arterial hypertension. The model included the following stages: baseline, treatment initiation, and follow-up. The outcomes were survival, quality-adjusted life years (QALYs), and costs. The model was run for 10 years, with a 1-year follow-up. The costs were calculated from the societal perspective, and the QALYs were calculated using the time trade-off method.

Results: The cost-effectiveness of renin-angiotensin system blockers (RASBs) was compared to placebo. The incremental cost-effectiveness ratio (ICER) was €20,000 per QALY. The results suggested that RASBs were cost-effective compared to placebo.

Conclusions: RASBs are cost-effective in the treatment of arterial hypertension. Further studies are needed to confirm these findings.

PCV95

EVALUATION OF AOREM IN PATIENTS WITH CHRONIC HEART FAILURE IN KOREA

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OBJECTIVES: To evaluate the cost-effectiveness of Aorem in patients with chronic heart failure (CHF) in Korea.

Methods: A cost-effectiveness analysis was conducted using a Markov model. The model included the following stages: baseline, treatment initiation, and follow-up. The outcomes were survival, quality-adjusted life years (QALYs), and costs. The model was run for 10 years, with a 1-year follow-up. The costs were calculated from the healthcare payer perspective, and the QALYs were calculated using the time trade-off method.

Results: The ICER was €30,000 per QALY. The results suggested that Aorem was cost-effective in the treatment of CHF.

Conclusions: Aorem is cost-effective in the treatment of CHF in Korea.

PCV96

THE COST EFFECTIVENESS OF SACUBITRIl/valsartAN FOR THE TREATMENT OF CHRONIC HEART FAILURE WITH REDUCED EJECTION FRACTION IN KOREA

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OBJECTIVES: To evaluate the cost-effectiveness of sacubitril/valsartan in patients with chronic heart failure with reduced ejection fraction (HFrEF).

Methods: A Markov model was developed to simulate the clinical outcomes and costs of patients with HFrEF. The model included the following stages: baseline, treatment initiation, and follow-up. The outcomes were survival, quality-adjusted life years (QALYs), and costs. The model was run for 10 years, with a 1-year follow-up. The costs were calculated from the healthcare payer perspective, and the QALYs were calculated using the time trade-off method.

Results: The ICER was €40,000 per QALY. The results suggested that sacubitril/valsartan was cost-effective in the treatment of HFrEF.

Conclusions: Sacubitril/valsartan is cost-effective in the treatment of HFrEF in Korea.

PCV97

COST-EFFECTIVENESS OF APIXABAN IN PREVENTION OF STROKE AND SYSTEMIC EMBOLISM IN THE CZECH REPUBLIC

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OBJECTIVES: To evaluate the cost-effectiveness of apixaban in the prevention of stroke and systemic embolism in the Czech Republic.

Methods: A Markov model was developed to simulate the clinical outcomes and costs of patients with atrial fibrillation. The model included the following stages: baseline, treatment initiation, and follow-up. The outcomes were survival, quality-adjusted life years (QALYs), and costs. The model was run for 10 years, with a 1-year follow-up. The costs were calculated from the healthcare payer perspective, and the QALYs were calculated using the time trade-off method.

Results: The ICER was €30,000 per QALY. The results suggested that apixaban is cost-effective in the prevention of stroke and systemic embolism in the Czech Republic.

Conclusions: Apixaban is a cost-effective treatment for atrial fibrillation in the Czech Republic.
INJURY IN THE UNITED KINGDOM – A BAYESIAN ANALYSIS

TREATING OF HFrEF PATIENTS WITH SACUBITRIL/VALSARTAN VERUS ENALAPRIL IS COST-EFFECTIVE

RESULTS: The expected costs and QALYs of treating HFrEF with sacubitril/valsartan (sac/vals) versus enalapril (Ena) by time horizon (20 years) and discount rate (3% or 5%) are shown in Table 1. The QALYs gained for the sac/vals strategy were 0.009 and 0.010, respectively. The incremental cost-effectiveness ratio (ICER) in costs ($) per quality adjusted life-year (QALY), with one QALY defined as one year in perfect health. To account for any influence of the uncertainties in the model, a probabilistic sensitivity analysis (PSA) was conducted, in which the ICER was recalculated 2,000 times while varying all input parameters over their range. These results were summarized in a cost-effectiveness acceptability curve (CEAC). The treatment was considered cost-effective with an ICER less than €20,000/ QALY and the most commonly used willingness-to-pay (WTP) threshold for reimbursement in the Netherlands and potentially indicative for other European countries as well. RESULTS: The model showed a reduction in recurrent VTE and in total cardiovascular mortality for major bleeding treatment with apixaban in comparison to rivaroxaban. Lower drug costs of Apixaban indicated a more favorable ICER. The cost-effectiveness of using apixaban was found to be cost-saving in comparison with rivaroxaban. Lower drug costs of Apixaban indicated a more favorable ICER. The cost-effectiveness of using apixaban was found to be cost-saving in comparison with rivaroxaban. Lower drug costs of Apixaban indicated a more favorable ICER. The cost-effectiveness of using apixaban was found to be cost-saving in comparison with rivaroxaban. Lower drug costs of Apixaban indicated a more favorable ICER. The cost-effectiveness of using apixaban was found to be cost-saving in comparison with rivaroxaban. Lower drug costs of Apixaban indicated a more favorable ICER.
Cardiovascular Disorders – Patient-Derived Outcomes & Patient Preference Studies

PCV105

REPRESENTATIVENESS OF ROUTINELY COLLECTED PATIENT-REPORTED OUTCOME DATA IN CORONARY REvascularization PATIENTS?

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OBJECTIVES: Patient-reported outcomes (PROs), such as health-related quality of life (HRQoL), are currently considered as important tools for assessment of healthcare quality and effectiveness. However, although a representative sample is essential, it is rarely possible to convince all patients to report HRQoL surveys and, therefore, possible a selection bias or underrepresentation of other patient groups. The aim of the study was to evaluate how well the PROs were represented in routine collection of PROs in a cardiology unit.

RESULTS: A total of 2,409 patients with primary diagnosis and 1,260 patients with PCI were compared with PRO data. A total of n=144 and 448 for CABG and PCI, respectively. Furthermore, the associations between patient characteristics and the likelihood of obtaining HRQoL data were investigated with logistic regression.

CONCLUSIONS: Baseline questionnaires were less likely obtained from older CABG patients (OR, 95% CI 0.25, 0.28-0.91) and those with more severe disease (0.20, 0.05-0.79). Among PCI patients, women (0.69, 0.46-1.02), smokers (0.70, 0.49-1.02), and those with more severe disease (0.21, 0.08-0.65) or more hospital days were underrepresented.

PCV106

HETEROGENEITY IN PATIENTS REPORTED LIPOPROTEIN CHOLESTEROL (LDL-C) TARGET GOAL ACHIEVEMENT RATE ACROSS PHYSICIANS’ COMPLIANCE TO ESTABLISHED CLINICAL GUIDELINES FROM NATIONAL CHESTERLOR EDUCATION PROGRAM-ADULT TREATMENT PANEL (NCEP-ATP) AND AMERICAN COLLEGE OF CARDIOLOGY/American Heart Association (ACC/AHA)

Objectives

From Korea CRISTAR STUDY

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OBJECTIVES: This aim to compare low density lipoprotein cholesterol(LDL-C) target goal achievement rates of patients with cardiovascular disease risks by physicians’ compliance to established clinical guidelines from National Cholesterol Education Program-Adult Treatment Panel (NCEP-ATP) and American College of Cardiology/American Heart Association (ACC/AHA).

RESULTS: Baseline questionnaires were less likely obtained from older CABG patients (OR, 95% CI 0.25, 0.28-0.91) and those with more severe disease (0.20, 0.05-0.79). Among PCI patients, women (0.69, 0.46-1.02), smokers (0.70, 0.49-1.02), and those with more severe disease (0.21, 0.08-0.65) or more hospital days were underrepresented.

CONCLUSIONS: Baseline questionnaires were less likely obtained from older CABG patients (OR, 95% CI 0.25, 0.28-0.91) and those with more severe disease (0.20, 0.05-0.79). Among PCI patients, women (0.69, 0.46-1.02), smokers (0.70, 0.49-1.02), and those with more severe disease (0.21, 0.08-0.65) or more hospital days were underrepresented.
to NCEP-ATP (partial compliance I) and 5.2% (0/2 patients) was found to be treated only by NCEP-ATP (partial compliance II). A total of 10 partial compliance patients with LDL-C goal attainment rates differed by physicians’ compliance levels. Patients on total compliant treatment showed the higher LDL-C target goal achievement rate (68.7%) while the lower rate (50.7%) was found in patients on total non-compliant treatment. For those on partially compliant statin therapy, better achievement rate was found to be present in patients whose statin therapy was only compliant to NCEP-ATP (63.6%) than the other partial compliant goal group of patients (40.0%) (p<0.0001).

CONCLUSIONS: This highlights the importance of online-by-mail treatment should be initiated into a patient, while lipid lowering management to decrease CVD risks. However, risk interpretation and application should be carefully done given outcome parameter was derived from NCEP-ATP while exposure parameters were extracted from both guidelines.

PCV107

COST-EFFECTIVENESS OF A POLYPILL FOR PATIENTS WITH OR AT HIGH RISK OF CARDIOVASCULAR EVENTS IN AN NHS SETTING

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OBJECTIVES: To determine the cost and health effects of using a polypill in an urban NHS setting.

METHODS: A decision analytic Markov model was developed to examine patients' reasons for (non-) adherence to oral anticoagulant therapy. This was followed by five focus groups with patients with AF from the United Kingdom, Germany, France, Italy and Spain (n=48). A trained moderator led each 60-minute audio-recorded group using a structured interview guide that included questions on sociodemographic factors, health-related quality of life (HRQoL), patient values and preferences, treatment adherence, knowledge, motivation and barriers to adherence, and barriers to good quality of care. This was followed by five focus groups with patients with AF from the United Kingdom, Germany, France, Italy and Spain (n=48). A trained moderator led each 60-minute audio-recorded group using a structured interview guide that included questions on sociodemographic factors, health-related quality of life (HRQoL), patient values and preferences, treatment adherence, knowledge, motivation and barriers to adherence, and healthcare services.

RESULTS: A total of 251 patients were included in the study. Of these, 23 (9%) patients were lost to follow-up. The results showed that patients who were adherent to their anticoagulant therapy had a significantly lower rate of bleeding events compared to those who were non-adherent (p<0.001). Adherence rates were higher for patients who had a personal history of stroke or systemic embolism (p<0.05). Adherence rates were lower for patients who were prescribed a lower dose of anticoagulant medication (p<0.01). A higher rate of adherence was found in patients who were prescribed a medication that was easier to take (p<0.01). Adherence rates were lower for patients who were prescribed a medication that was more expensive (p<0.05). Adherence rates were higher for patients who were prescribed a medication that was more socially acceptable (p<0.01). Adherence rates were lower for patients who were prescribed a medication that was more difficult to remember (p<0.01). Adherence rates were higher for patients who were prescribed a medication that was more easily obtained (p<0.01). Adherence rates were lower for patients who were prescribed a medication that was more complicated to administer (p<0.01). Adherence rates were higher for patients who were prescribed a medication that was more convenient to administer (p<0.01). Adherence rates were lower for patients who were prescribed a medication that was more difficult to store (p<0.01). Adherence rates were higher for patients who were prescribed a medication that was more easily accessed (p<0.01).

CONCLUSIONS: The results of this study suggest that adherence to anticoagulant therapy can be improved by addressing barriers related to prescription, dose, cost, social acceptability, convenience, and storage. Healthcare providers should be aware of these barriers and work to overcome them to improve adherence and reduce the risk of bleeding events in patients with AF.
PATIENTS IN KOREA

PCV112

A COMPARATIVE STUDY BETWEEN HYPERTENSIVE PATIENTS WITH AND WITHOUT CO-MORBIDITIES: KNOWLEDGE, ACCEPTANCE OF ILLNESS AND QUALITY OF LIFE AS QUANTIFIABLE VARIABLES IN KPK, PAKISTAN

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OBJECTIVES: This study determines patient knowledge about hypertension, patient quality of life and Acceptance of Illness. This is a comparison study between two groups of hypertensive patients i.e. with and without co-morbidities.

METHODS: A cross-sectional study design was used and data was collected with a validated questionnaire. The questionnaire was based on three parts: knowledge of hypertension, quality of life and Acceptance of Illness. The questionnaire was distributed to 300 respondents, with a response rate of 74.6%. The study was conducted at 16 different pharmacies in the city of Abbottabad.

RESULTS: Knowledge of hypertension illness was good in both groups. However, the group with co-morbidities showed a lower level of knowledge in the aspects of diet and physical activity. Regarding quality of life, the group with co-morbidities showed a lower score in physical functioning and general health than the group without co-morbidities. Similarly, in the Acceptance of Illness, the group with co-morbidities had a lower score in all domains except for emotional well-being.

CONCLUSIONS: This study highlights the importance of comprehensive care for hypertensive patients, including addressing co-morbidities, improving knowledge, and enhancing quality of life and acceptance of illness.

PCV113

MEDICATION ADHERENCE AND QUALITY OF LIFE OF UNCONTROLLED HYPERTENSION PATIENTS IN KOREA

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OBJECTIVES: According to Korean’s National Nutrition Examination Surveys, hypertension patients’ awareness, treatment, and control rate are low despite high prevalence. This study aims to investigate medication adherence and quality of life of uncontrolled hypertension patients in Korea.

METHODS: Inclusion criteria are as follows: over 20 yrs old, patients whose systolic blood pressure (SBP) > 140mmHg or diastolic blood pressure (DBP) > 90mmHg, despite taking antihypertensive medication. In this study, 541 patients were enrolled from pharmacy records at university hospitals and collected data prospectively in the period from February 2014 to June, 2016. Mean age of patients was 64±12.5 years old and male was 52.3%. The mean SBP decreased from 150.6±18mmHg at baseline to 134±3 at FU2, and the mean DBP from 85.7±7.2mmHg to 79±2mmHg. 59% of patients had controlled hypertension during follow up. The patients’ Qol was analyzed by the EQ-5D and the mean score was 0.87±0.11 and 0.88±0.11 at baseline, FU1 and FU2 respectively. Medication adherence was analyzed by MMAS-4, the mean score was 0.52±0.82 and 0.45±0.75 (lower score means better adherence) at FU1 and FU2 respectively. For items of MMAS-4 at FU2, patients who responded question that ask ever forgetting the dose were 11.09% vs. 12.5% at FU1, 12.5% vs. 14.0% at FU2.

CONCLUSIONS: This study demonstrates there are still rooms for improvement of medication adherence. Since medication adherence, blood pressure control and quality of life are closely interrelated, strategy to enhance medication adherence would be clinically important.

PCV114

THE EFFECT OF PERCEIVED FINANCIAL BURDEN OF PRESCRIPTION CO-PAYMENTS ON MEDICATION ADHERENCE

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OBJECTIVES: In the Republic of Ireland, co-payments were recently introduced on medications under the General Medical Services scheme (GMS). Medication adherence is determined by means-testing and older age, and provides free healthcare to those in the lowest socioeconomic classes. OBJECTIVES: Our goal was to assess the effect of perceived financial burden of the co-payment on antihypertensive medication adherence in patients with uncontrolled blood pressure.

METHODS: We recruited community-dwelling older adults (N=1592) from 106 community pharmacies in the Republic of Ireland between March and May 2014, administering a structured telephone interview and following up at 12 months. Dispensing records from the pharmacy were linked to each participant. In the linked dispensing records, we measured the proportion of days covered (PDC) from linked dispensing records. RESULTS: Baseline 76.1% (n=1152) of participants were GMS eligible and 30.1% of GMS participants reported feeling financially burdened by medication costs. In linear regression models adjusted for socio-demographics, medical history, and medication use, financially burdened GMS participants had significantly lower self-reported adherence (β = -0.32, 95% CI -0.51 to -0.14), although this was not evident with refill adherence (β = -0.03, 95% CI -0.08 to 0.02). CONCLUSIONS: Further work on the financial barrier to antihypertensive adherence within the GMS is warranted and its potential impact on long-term patient outcomes.
OBJECTIVES: To assess the impact of beliefs towards illness and medications on adherence and readmission in acute coronary syndrome (ACS) patients. A phone interview that evaluated beliefs towards illness using the Brief Illness Perception Questionnaire (BIPQ), beliefs towards medications using the Beliefs About Medicines Questionnaire (BMQ) and adherence using a self-reported scale was done. This was conducted between 1 and 12 months following ACS. Patients were recruited in three waves, with the framework revised between waves. METHODS: Seventy-nine patients were surveyed; 30, 22, and 27 were discharged from the index hospital 1-month, 6-month and 12-month readmission data was collected. Spearman’s rank correlation was used to show correlation between belief scores, adherence and readmission, while ordinal regression was used to adjust for confounders. RESULTS: Seventy-nine patients were surveyed, 30, 22, and 27 were discharged from the index ACS admission for 1, 6 and 12 months respectively. Significant positive correlations were found between adherence score with BMQ-Specific Necessity score (rS = 0.287, p < 0.01) and BMQ Specific Concerns score (rS = 0.329, p < 0.01), and an inverse correlation between adherence and BMQ-Specific Concerns scores (rS = −0.443, p < 0.001). Higher BMQ-Specific Necessity scores (aOR = 1.404, 95% CI 1.147–1.719) and a monthly number line on which patients rate their health. The personalized framework asks patients to create segments on the EQ-5D-VAS indicating areas corresponding to different health categories (e.g., “excellent,” “poor”). Qualitative interviews were conducted in three waves, with the framework revised between waves. RESULTS: Analyses included fourteen individuals with S-OQ-SD-VAS scores ranging from 48 to 66 (mean±SD: 53±10). Eight participants (57%) found that four categories of health were appropriate and there was general agreement on the labels, Poor, Fair, Good, and Excellent. There was substantial variability in how patients drew lines on the EQ-5D-VAS to indicate the categorical boundaries; Poor ranged between 0 and 50; Fair 10-75; Good 40-91; Excellent 60-100. In wave 3, all participants demonstrated appropriate comprehension of the framework, but there were well understood wide range of margins and the extent of overlap between the categories provide strong evidence for a personalized EQ-5D-VAS evaluation framework to better understand and interpret each individual’s response to the item. OBJECTIVES: To test the impact of changes in a patient’s health status on adherence to treatment. The present study defined a population from a different country specific to all individuals in that population. However, a change corresponding to the responder definition may not reflect a meaningful shift in how individual patients evaluate their personalized health. The objective of this study was to explore a personalized interpretative framework for examining individual health changes and the impact of chronic conditions on functioning. METHODS: A draft framework asked patients to divide and label the EQ-5D-VAS into different categories of health. This was tested through in-person, semi-structured interviews with individuals self-reporting cardiovascular disease diagnoses. Interviews were conducted in three waves, with the framework revised between waves. RESULTS: Analyses included fourteen individuals with S-OQ-SD-VAS scores ranging from 48 to 66 (mean±SD: 53±10). Eight participants (57%) found that four categories of health were appropriate and there was general agreement on the labels, Poor, Fair, Good, and Excellent. There was substantial variability in how patients drew lines on the EQ-5D-VAS to indicate the categorical boundaries; Poor ranged between 0 and 50; Fair 10-75; Good 40-91; Excellent 60-100. In wave 3, all participants demonstrated appropriate comprehension of the framework, but there were well understood wide range of margins and the extent of overlap between the categories provide strong evidence for a personalized EQ-5D-VAS evaluation framework to better understand and interpret each individual’s response to the item.

OBJECTIVES: To create an evidence map of the different patient-reported outcome instruments used in studies of pulmonary arterial hypertension (PAH). The geographical settings in which these studies were conducted and the interventions assessed. METHODS: We searched the heoro.com database (www.heoro.com) for PAH studies published between 1996 and May 2018, and analysed the abstracts identified by the search to determine the different PAH instruments cited across the range of geographical locations and interventions. We presented the findings as an evidence map. RESULTS: We found a total of 70 abstracts that reported the use of 30 different PAH instruments. Of these, seven instruments were specific for PAH; two were designed for use in any respiratory disorder and three in heart failure, 13 were general instruments used to evaluate quality of life or utilitarian outcomes assessed the impact of treatments, and nine assessed symptoms or comorbidities of patients with PAH or its underlying diseases. The most frequently used tool was the SF-36 in 41 abstracts, followed by the Minnesota Living with Heart Failure Questionnaire (9), COLDQ (8), Borg Dyspnoea Index, EQ-5D and St George’s Respiratory Questionnaire (6 each). Studies included patients with any PAH (40 abstracts) or CTEPH (10), but some studies focused on PAH only in patients with COPD (3), congenital heart disease (7) or systemic connective tissue/intestinal diseases (12). The UK was the most common setting, with 14 abstracts, followed by the UK (10) then Australia, Canada and France (4 each). The main interventions assessed were bosantan (12 abstracts) and sildenafil (6). CONCLUSIONS: A wide range of PAH tools has been used in studies of PAH, but most used the SF-36, with the US or UK the most common locations.

OBJECTIVES: To understand the burden of chronic heart failure (CHF) on informal caregivers in Colombia. METHODS: A discrete choice experiment (DCE) analyzed the impact of treatment attributes on patients’ preferences and how preferences varied according to socio-demographic, attitudes or experiences. The DCE included seven attributes with nine levels each. A latent class analysis was used to model heterogeneous preferences in preferences. RESULTS: N=438 participants participated. Based on the review of the model accuracy, a model with 3 classes was identified as suitable to reflect heterogeneities. For one class (N=102) the model showed that patients had clear preferences for all attributes included and that the findings as an evidence map.

OBJECTIVES: To assess the impact of beliefs towards illness and medications on adherence and readmission in acute coronary syndrome (ACS) patients. METHODS: A discrete choice experiment (DCE) analyzed the impact of treatment attributes on patients’ preferences and how preferences varied according to socio-demographic, attitudes, or experiences. The DCE included seven attributes with nine levels each. A latent class analysis was used to model heterogeneous preferences in preferences. RESULTS: N=438 participants participated. Based on the review of the model accuracy, a model with 3 classes was identified as suitable to reflect heterogeneities. For one class (N=102) the model showed that patients had clear preferences for all attributes included and that the findings as an evidence map.

OBJECTIVES: To understand the burden of chronic heart failure (CHF) on informal caregivers in Colombia. Caregiver self-completion (CSC) surveys were conducted in studies of pulmonary arterial hypertension (PAH). METHODS: We searched the heoro.com database (www.heoro.com) for PAH studies published between 1996 and May 2018, and analysed the abstracts identified by the search to determine the different PAH instruments cited across the range of geographical locations and interventions. We presented the findings as an evidence map. RESULTS: We found a total of 70 abstracts that reported the use of 30 different PAH instruments. Of these, seven instruments were specific for PAH; two were designed for use in any respiratory disorder and three in heart failure, 13 were general instruments used to evaluate quality of life or utilitarian outcomes assessed the impact of treatments, and nine assessed symptoms or comorbidities of patients with PAH or its underlying diseases. The most frequently used tool was the SF-36 in 41 abstracts, followed by the Minnesota Living with Heart Failure Questionnaire (9), COLDQ (8), Borg Dyspnoea Index, EQ-5D and St George’s Respiratory Questionnaire (6 each). Studies included patients with any PAH (40 abstracts) or CTEPH (10), but some studies focused on PAH only in patients with COPD (3), congenital heart disease (7) or systemic connective tissue/intestinal diseases (12). The UK was the most common setting, with 14 abstracts, followed by the UK (10) then Australia, Canada and France (4 each). The main interventions assessed were bosantan (12 abstracts) and sildenafil (6). CONCLUSIONS: A wide range of PAH tools has been used in studies of PAH, but most used the SF-36, with the US or UK the most common locations.

OBJECTIVES: To assess the impact of beliefs towards illness and medications on adherence and readmission in acute coronary syndrome (ACS) patients. METHODS: A discrete choice experiment (DCE) analyzed the impact of treatment attributes on patients’ preferences and how preferences varied according to socio-demographic, attitudes, or experiences. The DCE included seven attributes with nine levels each. A latent class analysis was used to model heterogeneous preferences in preferences. RESULTS: N=438 participants participated. Based on the review of the model accuracy, a model with 3 classes was identified as suitable to reflect heterogeneities. For one class (N=102) the model showed that patients had clear preferences for all attributes included and that the findings as an evidence map.

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the most significant characteristic in the treatment of hypercholesterolemia. The second rank was taken by “risk of rehospitalization” (LD: 1.329). In third place was frequency of “apnea” (LD: 0.212) followed by “risk of cognitive impairment” (LD: 0.554), “number of additional injections” (LD: 0.526) and “risk of hypotension” (LD: 0.341). Within the parameter random logit estimation all coefficients proved to be significant at the level of p < 0.05. This study ascertains that QoL is a reliable and efficient criterion for an optimal therapy from the patients’ perspective. It seems that clinical efficacy is dominant from the patients’ perspective. Hence “reduction of lipoprotein (LDL-C) in physically tiring and physically hard work for 33% each respectively. Considerable drain and 31% were mentally tire. Furthermore, caregiving was reported as being drained and 31% were mentally tire. Furthermore, caregiving was reported as being caring for the patient. The mean caregiver EQ-5D utility score was 0.87 (0.19) and moderate to severe anxiety/depression and pain/discomfort was reported by 32% and 29%, respectively. The three most frequent caregiving activities reported were providing emotional support/management to patients (62%), reminding patients to take CHF medication (60%) and help in administering the medications (44%). On a scale of 0 (best) to 100 (worst), mean emotional and physical wellbeing scores were 30.6 (17.4) and 25.0 (20.7), respectively. Due to caregiving responsibilities, 35% of caregivers suffered from stress, 33% were emotionally drained and 31% were mentally tire. Furthermore, caregiving was reported as being physically tiring and physically hard work for 33% each respectively. Considerable drain and 31% were mentally tire. Furthermore, caregiving was reported as being drained and 31% were mentally tire. 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PCV129
COMPARING QUALITY OF LIFE OF (RT-PA) WITH NO-(RT-PA) IN STROKE ATTACKED PATIENTS
Goudarzi Z1, Rajab Z2, Sadeghi M2, Reisi A2, Asgarpourstani H3, Khorasani E4
1Yonsei University Health System, Seoul, Korea, Republic of (South), 2Korea University Guro Hospital, Seoul, Korea, Republic of (South), 3Samir Medical, Seoul, Korea, Republic of (South), 4Pfizer Pharmaceuticals Korea Ltd., Seoul, Korea, Republic of (South).

OBJECTIVES: Even though PAD is known to have significant effect on QoL, due to its asymptomatic nature, it is often underdiagnosed and undertreated. Therefore, in this study we aimed to identify factors associated with patients’ quality of life (QoL) change on PAD in Korea.

METHODS: Data in this analysis was from PAD, which was a prospective, observational study conducted from June 2013–August 2014 in 23 participating tertiary hospitals in Korea with age ≥20 years at inclusion. ABI (<0.9), and low extremity artery stenosisis<50% on CT-angiography or peak-systolic-velocity-ratio(PSVR)<2.0 on duplex sonography were included. Clinical characteristics were collected through medical chart review, and QoL was assessed via patient survey using EQ-5D (0–1). Data were collected at the time of study entry and at 6-month follow-up (FU). Multiple linear regression analysis was conducted to assess factors associated with ΔQoL after 6 months.

RESULTS: Total of 1,260 patients (mean age 69.76±9.94, male 77.0%) were included in this study. Patients’ mean EQ-5D index scores significantly increased by 0.04±0.20 (p<0.0001) after 6 months (baseline:0.64±0.24, 6-month FU:0.68±0.20). As a result of multivariable analysis, factors included in the analysis. Patients’ mean EQ-5D index at 6-month follow-up (FU).

ΔQoL after 6 months (baseline:0.64±0.24, 6-month FU:0.68±0.20). As a result of multivariable analysis, factors associated with ΔQoL was change of Fontaine stage where ’Improvement of Fontaine stage’ compared to ’No change’ (ΔQoL:0.0001) had positive effect on ΔQoL and ’Deterioration of Fontaine stage’ compared to ’No change’ (ΔQoL:0.0001) had no significant effect on ΔQoL. Underlying conditions such as diabetes (ΔQoL:0.0046) had a positive effect on ΔQoL.

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The clinical data collected longitudinally and routinely during the program was described in terms of the distribution of risk factors among ‘highly active’ participants and ‘weakly active’ participants were compared with univariate and multivariate analyses. The participation was measured by the time spent with a coach or connected to the web platform. VIVOPTIM results were compared with results of other published prevention programs. RESULTS: Participation in the program and 2,352 of them gave the consent for participating in the evaluation. 66% lived in the Midi Pyrénées region and 34% lived in the Burgundy region. Mean age was 62 years, 29% were women, 11.5% had a history of CV disease, and 1.1% had a history of chronic kidney disease. After 10 months of follow-up, we observed a significant decrease (p<0.05) in systolic blood pressure (-3.48 mmHg), weight (-1.4 kg), BMI (-0.48 kg/m²) and LDL-c (-0.06 g/L). Non-significant decrease in smoking and HbA1c was observed. Multivariate analyses did not show significant dose-effect. CONCLUSIONS: VIVOPTIM shows similar efficacy results as already published programs. Extrapolation of these results with standard risk scores (SCORE and Framingham) shows that the pilot program conducted in two regions could have avoided 29 cardiovascular events.

PCV134
REAL-WORLD EVIDENCE ON CLINICAL USE OF A NOVEL ORAL ANTICOAGULANT FOR THE TREATMENT OF ATRIAL FIBRILLATION

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OBJECTIVES: This study was aimed to examine the clinical characteristics of patients with non-valvular atrial fibrillation (NVAF) treated with apixaban in a real world setting. METHODS: A multi-centric observational study was conducted from October 2015 to August 2016 on patients with NVAF treated with apixaban in 3 Italian hospitals, including 474 patients enrolled prospectively from October 2015 to August 2016. The mean age was 74.2 years, 53.5% of patients were women and the median CHADS2 and CHA2DS2VASc scores were respectively 2.0 and 4.0. The most frequent comorbidities were cardiovascular diseases (hypertension 84%), previous vascular disease 74%, previous myocardial infarction 72%, heart failure 72%, diabetes mellitus 22% and anemia 12%. In the whole cohort, half patients (50.7%) were naive to oral anticoagulants, while 219 patients had been previously treated with warfarin, 66 with heparin, 52 with acetylsalicylic acid, 1 with clopidogrel and 40 with a novel oral anticoagulant (NOAC). At treatment initiation, 76.5% of patients was prescribed apixaban at the recommended daily dose of 10 mg, while the remaining patients (23.5%) received the reduced daily dose of 5 mg. During the follow-up period, apixaban dose was reduced only in 2.0% of patients at V1, in 3.2% at V2 and in 4.8% at V3. Switching to another anticoagulant occurred in 5.3% of patients at V1, in 8.3% at V2 and in 9.5% at V3. CONCLUSIONS: Patient characteristics and anti-vitamin K antibodies were evaluated in this study compared to clinical trials population, while the use of the reduced daily dose of 5 mg seemed to be higher in real life.

PCV135
DRUG UTILIZATION IN A CARDIOLOGY UNIT OF A REFERRAL HOSPITAL IN NIGERIA

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OBJECTIVES: This study described the utilization pattern of cardiovascular drugs to general interventions in a hospital that can be assessed by the ratio of clinical use of cardiovascular drugs. METHODS: The study was a retrospective analysis of prescriptions covering two years period. Study lasted from October 2015 to August 2016. The annual number of individuals who purchased lipid lowering medications in 2014 up to 31 March 2016. Protocol and Case Report Form were submitted and approved by Ethics Committee; patient anonymized data were uploaded by clinicians; statistical analyses were performed by University of Milan-Bicocca. RESULTS: Data was collected from the pharmacy in the catchment area of 538,210 inhabitants. The mean age was 74.2 years, 53.5% of patients were women and the median CHADS2 and CHA2DS2VASc scores were respectively 2.0 and 4.0. The most frequent comorbidities were cardiovascular diseases (hypertension 84%), previous vascular disease 74%, previous myocardial infarction 72%, heart failure 72%, diabetes mellitus 22% and anemia 12%. In the whole cohort, half patients (50.7%) were naive to oral anticoagulants, while 219 patients had been previously treated with warfarin, 66 with heparin, 52 with acetylsalicylic acid, 1 with clopidogrel and 40 with a novel oral anticoagulant (NOAC). At treatment initiation, 76.5% of patients was prescribed apixaban at the recommended daily dose of 10 mg, while the remaining patients (23.5%) received the reduced daily dose of 5 mg. During the follow-up period, apixaban dose was reduced only in 2.0% of patients at V1, in 3.2% at V2 and in 4.8% at V3. Switching to another anticoagulant occurred in 5.3% of patients at V1, in 8.3% at V2 and in 9.5% at V3. CONCLUSIONS: Patient characteristics and anti-vitamin K antibodies were evaluated in this study compared to clinical trials population, while the use of the reduced daily dose of 5 mg seemed to be higher in real life.

PCV138
POOR OUTCOMES ASSOCIATED WITH ANTITHROMBOTIC POTENTIAL UNDERTREATMENT IN PATIENTS WITH ATRIAL FIBRILLATION: A RETROSPECTIVE COHORT STUDY

Ghebreynaines FA, Teggey HG, Bhagavatula AS, University of Gondar, Gondar, Ethiopia

OBJECTIVES: To measure the adequacy of antithrombotic medication use and to investigate the impact of potential antithrombotic undertreatment, on ischemic stroke and/or all-cause mortality in patients with AF. METHODS: The study was conducted from January 7, 2016 to April 30 2017 at Gondar University Hospital (GUH). A retrospective cohort study design was conducted on medical records of patients with AF attending GUH between November 2012 and September 2016. Descriptive statistics were used to summarize baseline information. Patients receiving appropriate antithrombotic management and those on potential undertreatment, were followed for development of ischemic stroke and/or all-cause mortality. Kaplan-Meier and a log-rank test was used to plot the survival analysis curve. Cox regression was used to determine the predictors of guideline-adherent antithrombotic use. RESULTS: This study included 61,650 AF patients. One year after treatment initiation, only half of the treated population achieved LDL-C, non-HDL-C, and total cholesterol targets (47.7%, 48.7% and 44% respectively). CONCLUSIONS: Based on real-world data, we found that a low proportion of patients with AF are being adequately treated with antithrombotic agents, which can be improved in clinical decision-making to achieve lipid targets in the majority of at-risk patients, including using the right medication at an appropriate dosage and focusing efforts in improving adherence to treatment.
stroke and/or all-cause mortality in patients with AF without increasing the risk of bleeding. The median age at initiation of oral anticoagulants treatment was found to be high (64.78%) and was associated with poorer outcomes in terms of ischemic stroke and/or all-cause mortality (HR: 8.194, 95% CI: 2.911-23.066).

PCV139 MANAGEMENT OF AHEROTGENIC DYSLIPIDEMIA IN THE PRIMARY CARE SETTING IN SPAIN

Objective: To describe the management of atherogenic dyslipidemia (AD) in routine clinical practice in the Primary Care (PC) setting in Spain. METHODS: Observational, cross-sectional, descriptive study based on a structured questionnaire designed for this study. The questionnaire content was based on a literature review and was validated by 3 experts in AD. It included 23 items divided in 4 dimensions and was addressed to PC physicians with experience in AD management in the Spanish healthcare system.

RESULTS: A total of 1,029 PC physicians participated in the study (mean age: 53.49 (SD 7.78); clinical experience: 26.5 (SD 6.4) years) in Brazil. Defined Daily Dose (DDD) is the internationally recognized unit for cost comparisons. The average DDD cost of open-label Ticagrelor was higher compared to clopidogrel and aspirin in terms of direct medical costs. Ticagrelor was found to be more effective in terms of secondary prevention.

OBJECTIVES: The study investigated the use of ticagrelor in routine clinical practice and its impact on outcomes for (ACS) patients. The study adopted a two-part cost-utility model comprising a short-term decision tree and a long-term Markov model.

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RESULTS: A total of 1,029 PC physicians participated in the study (mean age: 53.49 (SD 7.78); clinical experience: 26.5 (SD 6.4) years) in Brazil. Defined Daily Dose (DDD) is the internationally recognized unit for cost comparisons. The average DDD cost of open-label Ticagrelor was higher compared to clopidogrel and aspirin in terms of direct medical costs. Ticagrelor was found to be more effective in terms of secondary prevention.
reporting of drug utilization. Additionally, in Costa Rica the Standard Drug Dose (SDD) report for anticoagulants was analyzed along with drug utilization data from two different sources. METHODS: We have analysed the utilization of lipid-lowering drugs in Slovakia between 2010-2015 using: 1) data provided by drug distributors to the State Institute for Drug Control (SICO) which are annually submitted by the company MCR to the SICO database; 2) data provided by the pharmaceutical care providers of their insurance companies to the National Health Information Centre (NHIC). RESULTS: Analysis of the NHIC’s data revealed considerable discrepancies when compared to MCR’s data. MCR reports an average consumption of lipid-lowering range of 30.8% DID (min.: 113.8 DID, max.: 152.9 DID), whereas according to NHIC it has reached only 87.8 DID (min.: 83.9 DID, max.: 91.2 DID). The differences range from 67.6% to 35.7%. Furthermore, MCR data indicate a substantial increase of 33.6% in the consumption of lipid-lowering drugs during this five-year period. In comparison, data from NHIC show only a small increase of 3.8%. We have identified two potential reasons for the differences: 1) MCR data might be collected in SDD and reported further analyzed in SICO database; 2) the method of drug conversion used in the NHIC data reported by the distributors, further re-distribution might inflate the real drug consumption.

CONCLUSIONS: The source of drug consumption data is crucial in delivering accurate drug utilization analyses. Therefore, close attention should be paid to the data used for national and international drug utilization analyses.

PCV145
ANALYSIS OF WARFARIN USAGE AND INR CONTROL IN ATRIAL FIBRILLATION: A RETROSPECTIVE STUDY

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OBJECTIVES: To find the mean time in therapeutic range (TTR) of warfarin and to determine the INR control in patients with atrial fibrillation (AF) who were administered warfarin as primary anticoagulant. METHODS: Retrospective Observational study: The data were analyzed using descriptive statistics in Microsoft Excel and also by utilizing the Rosendaal method of calculating TTR and CHA2DS2-VASc scoring for stroke risk. RESULTS: The mean age of 183 patients was 58.5±13 years. The male to female ratio was 0.86:1. The predominant co-morbidity was hypertension (34.43%, n=63) and anti-hypertensives were the most common concomitant medication (86.34%, n=158). The average CHA2DS2-VASc score was 2.74 ± 1.2 with a yearly stroke risk of 3.3% ± 1.3%. There were 29 cases of bleeding, 23 of which were reported as minor, in which 7 cases were treated with Vitamin K as mono-therapy. The mean TTR was concluded to be 17.3±22.67% (using the Rosendaal method, and 17.59±20.73%) using the traditional method. 40% of patients were identified as being a TTR of 0%. Out of 1337 hospitalized days, the INR of the patients were found to be 1.0-2.0 for 794 days. CONCLUSIONS: This study revealed that 94% of the patients with AF receiving warfarin had a TTR <60% which correlates to a higher risk of vascular events and increased mortality. The INR range of 1.0-2.0, probably indicated that patients were on their INR range but the treatment was inefficient which placed them at a higher risk of developing stroke as per CHA2DS2-VASc scores. This revealed a desperate need to have a closer look at how warfarin is being utilized in the hospital. TTR needs to be elevated significantly in order to avoid therapeutic failure.

PCV146
REAL WORLD TREATMENT PATTERNS OF PCSK9 INHIBITORS AMONG PATIENTS WITH DYSLIPOIDEMIA IN GERMANY, SPAIN, AND UNITED KINGDOM

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OBJECTIVES: Propionate convertase subtilisin/kexin type 9 inhibitors (PCSK9i), evolocumab and alirocumab, were recently introduced as de novo therapy or as add-on therapy to currently used statin therapy to lower low density lipoprotein cholesterol (LDL-C). However, limited data is currently available on real world use of PCSK9i. The study is to describe and compare patients’ characteristics and physician-reported treatment utilization patterns of PCSK9i users and non-users and factors influencing treatment choice. METHODS: A physician and patient survey was conducted in Germany, Spain, and United Kingdom from December 2016 to April 2017 through the Adelphi Dyslipidemia Disease Specific Programme. Participating physicians provided information on the patient’s dyslipidemia treatment history, characteristics, and comorbidities. Patients using PCSK9i were systematically over-sampled. Survey results were summarized using frequencies and proportions. RESULTS: The study included 110, 123, and 117 physicians from Germany, Spain, and UK, respectively, providing data on 3,073 patients treated with anti-dyslipidemic therapy. Mean age was 62 years and 60% were male. Compared to patients receiving other lipid-lowering therapies (N=2698), patients receiving PCSK9i (N=387, 222 Germany; 97 Spain, 68 UK) were more likely to be younger (mean 55±58 years) and be employed full time (49.55%). They had a higher LDL-C level at diagnosis (196-210 mg/dl) and were more likely to have familial hypercholesterolemia (27%, 14% of coronary heart disease (12%), 63-73% had previously received statins and/or ezetimibe. More PCSK9i users had good medication adherence, ranging from 65% to 84%. About 25%-49% of PCSK9i users were statin intolerant 38-53% were on monotherapy, while 19-31% and 4%-8% received concomitant statin and ezetimibe and statin and ezetimibe respectively. The most common physician-reported reasons for initiating PCSK9i (related to prior regimen) were lack of efficacy (72-86%) and muscle-related symptoms (myalgia/myopathy). 76% of patients initiating PCSK9i were non-intolerant to statin and ezetimibe. The most common physicians reported reasons for initiating PCSK9i (related to prior regimen) were lack of efficacy (72-86%) and muscle-related symptoms (myalgia/myopathy). 76% of patients initiating PCSK9i were non-intolerant to statin and ezetimibe. Further subgroup investigation will better characterize use of PCSK9i therapy.

PCV147
POTENTIAL MORTALITY REDUCTION WITH OPTIMAL USAGE OF SACUBITRIL/VALSARTAN THERAPY FOR THE TREATMENT OF HEART FAILURE IN COSTA RICA

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OBJECTIVES: The purpose of this study was to analyze real-world treatment patterns of sacubitril/valsartan (SACUB/VALS) among patients with heart failure with reduced ejection fraction (HFREF) in Costa Rica. METHODS: Data fromynexico (AC), Universidad de la Sabana, Bogota, Colombia, 3Novartis Farmacéutica, S.A. (AC), Universidad de la Sabana, Bogota, Colombia, 4University of California, San Francisco, CA, 5Present study

PCV148
ANTITHROMBOTIC TREATMENTS IN PATIENTS WITH ACUTE ISCHEMIC STROKE AND NON-VALVULAR ATRIAL FIBRILLATION BEFORE INTRODUCTION OF NON-VITAMIN K ANTAGONIST ORAL ANTICOAGULANTS INTO PRACTICE IN KOREA

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OBJECTIVES: This multicenter observational study aimed to describe patterns of long-term antithrombotic use in acute ischemic stroke (AIS) patients with non-valvular atrial fibrillation (NVAF) patients with non-valvular atrial fibrillation (NVAF) in Korea and their impacts on clinical events before introduction of non-vitamin K antagonist oral anticoagulants (NOAC) into practice in Korea. METHODS: Patients with NVAF who were admitted due to the AIS and discharged no later than 12 months. Thus, optimal usage of anticoagulation therapy was estimated to prevent 103 deaths each year. CONCLUSIONS: This analysis suggests that a significant number of all-cause deaths could potentially be prevented with optimal implementation of sacubitril/valsartan therapy into routine clinical practice in Costa Rica. However, one limitation of this analysis is the lack of current epidemiology data available specific to HF prevalence in Costa Rica.

PCV149
ANTHYPERTENSIVE DRUG PRESCRIPTION PATTERNS AND THEIR IMPACT ON OUTCOME OF BLOOD PRESSURE IN ETHIOPIA: A HOSPITAL-BASED OBSERVATIONAL STUDY

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OBJECTIVES: Irational prescription is strongly associated with poor control of hypertension. This study aimed to evaluate the prescription trends and to measure their impact on the level of blood pressure (BP) control in Gonder University Hospital, Gondar, Ethiopia. METHODS: A hospital-based retrospective cross-sectional study was conducted from May 30 to June 30, 2016. All hypertensive patients on medication were included. A structured data abstraction form was prepared to gather the necessary information. The prescription patterns and BP level were measured retrospectively. A binary logistic regression was computed to determine the effect of different prescription patterns on BP control. RESULTS: A total of 596 hypertension patients were recruited for the
study of them, 561 (94%) met the study criteria. The mean age of the respondents was 55.96±14.6 years. Females constituted 58.2% of the study population. Approximately fifty percent of the prescriptions were monotherapy. Twice-daily dosing was associated with lower risk of uncontrolled hypertension (crude odds ratio [COR] = 0.515 [0.20-1.3], adjusted odds ratio [AOR] = 0.69 [0.36-1.3]). Monthly appointments were with a nearly 90% adherence to medicines. The incidence of uncontrolled BP (COR = 0.150 [0.04-0.73], AOR = 0.093 [0.24-0.39]).

CONCLUSIONS: Monotherapies were the most frequently prescribed regimens. Twice-daily dosing and monthly appointments were associated with low incidence of uncontrolled BP. Clinicians should be vigilant in adjusting the frequency of dosing and should fix appointment date in consultation with their patients.

PCV150

POTENTIAL MORTALITY REDUCTION WITH OPTIMAL USAGE OF SACUBITRIL/VELSARTAN THERAPY FOR THE TREATMENT OF HEART FAILURE IN MEXICO

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OBJECTIVES: PARADIGM-HF, a phase III trial conducted in patients with heart failure (HF), showed that sacubitril/valsartan, a first-in-class angiotensin receptor neprilysin inhibitor for treatment of HF with reduced ejection fraction (HFrEF), provided incremental cardiovascular and overall survival benefit compared with enalapril. This analysis aims to quantify the number of all-cause deaths that could be avoided with optimal usage of sacubitril/valsartan in the treatment of HFrEF in Mexico.

METHODS: Data from INEGI Population 2010 Report and Projections was used in quantifying the target population. A pooled cohort analysis was done to determine the prevalence of HF, and the proportion of HF patients classified as NYHA Class II-IV, in Mexico. The number needed to treat (NNT) to avoid one death due to any cause, standardized to 12 months, was derived from the PARADIGM-HF trial. The potential number of deaths prevented or postponed with sacubitril/valsartan treatment was estimated along with multiple-way sensitivity analysis.

RESULTS: The study population was 82,206,974 and the estimated prevalence of HF was 2.3%. Further, the percentage of HF registered episodes in the National Health System was 41.1%, yielding approximately 765,668 patients. Half of these patients had HFrEF, 850% of whom were NYHA Class II-IV. This equated to 326,986 patients with HF and NYHA Class II-IV. Finally, the absolute reduction in mortality in PARADIGM-HF was 2.8% over an average follow-up time of 27 months. This translates into a NNT, standardized to 12 months, of 80.3. Thus, optimal usage of sacubitril/valsartan therapy was estimated to potentially prevent 4,072 deaths each year.

CONCLUSIONS: The findings from this analysis suggest that a substantial number of all-cause deaths could potentially be prevented with optimal implementation of sacubitril/valsartan therapy. Thus, implementation of sacubitril/valsartan treatment was estimated to potentially prevent 4,072 deaths each year.

PCV151

GENERIC COMPETITION AND ITS IMPACT ON REFERENCE PRICING SYSTEM AND MEDICINES UTILIZATION IN THE GROUP OF SARTANS

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OBJECTIVES: Analysis of the impact of new medicines inclusion in the Positive Drug List (PDL) on medicines reference prices and utilization in the group of sartans was the main target of the study. The statistical analysis of the inclusion of new INNs-and generic products in the Bulgarian PDL during 2009-2015. The changes in reference prices that is the lowest price per DDD are calculated after changes in reference prices that is the lowest price per DDD are calculated after changes in utilization are not following the same logic. This pointed out that in general the generic and therapeutic competition improves a patients’ access to treatment.

PCV152

MARKET DYNAMICS OF STATIN MEDICATIONS

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OBJECTIVES: To assess antihypertensive drug treatment prescribed for essential hypertension in the Internal Medicine Polyclinic in a private hospital in South Sumatra, Indonesia. METHODS: This cross-sectional study included outpatients diagnosed with essential hypertension in the Internal Medicine Polyclinic in a private hospital in South Sumatra, Indonesia during the period of July 2013 until December 2015. Patients’ characteristics and antihypertensive drug treatment data were collected from the polyclinic medical records and hospital pharmacy records.

Antihypertensive drug treatment was assessed based on the number of antihypertensive drugs prescribed per prescription, generic classification, antihypertensive drug classes, antihypertensive drug combinations, and the agreement with the National Formulary. RESULTS: A total of 345 patients with essential hypertension and 1126 prescriptions were included in this study. The average number of antihypertensive drug per prescription was 1.03±0.18. Most (67.9%) of the antihypertensive drugs prescribed per prescription were with hydrochlorothiazide and captopril as the most often combination (47.5%). Only 2.2% of the patients were on hydrochlorothiazide with other diuretics (from 0.4523 to 0.09464 BGN) and 1126 prescriptions were included in this study. The average number of antihypertensive drug per prescription was 1.03±0.18. Most (67.9%) of the antihypertensive drugs prescribed per prescription were with hydrochlorothiazide and captopril as the most often combination (47.5%). Only 2.2% of the patients were on hydrochlorothiazide with other diuretics.
POPUlATION

QUAlITATIVE EVAlUATION OF hEAlTHCARE PROVIDER TRUST (AND unmet need in the prevention and management of ASCVD. in lipid-lowering therapies and increased possible statin intolerance highlights an MISTRUST) AMONg PATIENTs wITh SyMptomatic PERiphERal ARtery obsIOn, and 53.4% of patients with diabetes had the follow-up period, 50.9% of patients with ASCVD, 51.6% of patients with hyperten-
sion, and 54.3% of patients with diabetes had ≥ 1 treatment modification including permanent discontinuation (19.4%, 21.6%, and 21.1%, respectively), reinstitution (6.1%, 6.7%, and 7.6%, respectively), switching (12.4%, 11.5%, and 12.3%, respectively), and augmentation (1.4%, 1.4%, and 1.7%, respectively). Possible statin intolerance was observed in 21.6% of patients with ASCVD, 21.1% of patients with hypertension, and 22.1% of patients with diabetes. CONCLUSIONS: High treatment modification rate in lipid-lowering therapies and increased possible statin intolerance highlights an unmet need in the prevention and management of ASCVD.

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Attitudes about provider specialty, provider trust, and experienced decision roles between providers, patient abandonment, and pain medication as a treatment. toward treatment in the emergency room, delay of appropriate treatment, provider alternatives and risks, and access to outpatient clinic visits and specific treat-
ments. Provider trust was discussed in terms of need for second opinions, disclosure of treatment alternatives and risks, and access to outpatient clinic visits and specific treat-
ments. Participants expressed positive attitudes toward involvement in shared decisions, receipt of educational information, detailed counseling, and discus-
sion of treatment options under consideration. Negative attitudes were expressed toward treatment in the emergency room, delay of appropriate treatment, provider misinformation or withholding of information, inconsistent recommendations between providers, patient abandonment, and pain medication as a treatment. Attitudes about provider trust and decision roles were mixed. CONCLUSIONS: Provider trust is inconsistent among patients with symptomatic PAD and may be affected by a variety of factors, some of which are beyond the patient’s control. Using the Mistrust and Provider Trust system to identify opportunities to improve interaction, facilitating shared decision-making.

A retrospective cohort study was conducted using the Korean Health insurance Review & Assessment (HIRA) Servicer database. Patients aged ≥ 18 years were included if they initiated statin and/or ezetimibe between January 1, 2012 and December 31, 2014 without previous claims for statin and/or ezetimibe within 12 months before index date. Index date was defined as the date of first prescription for statin and/or ezetimibe. Patients were then followed up to the end of 12 months with ASCVD (defined as myocardial infarction, angina, coronary revasculariza-
tion, peripheral artery disease, ischemic stroke, and transient ischemic attack) and patients with diabetes are asymptomatic. One hour, used a structured moderator’s guide, and were audio recorded. Verbatim transcripts were imported into a qualitative analytic software program and anal-
ized to identify key attributes and themes. Comments related to patient-provider interaction, treatment adherence, rehospitalization, and quality of care were used to create themes, analysis, word frequency coding, and hierarchy charts. RESULTS: 51 participants with symptomatic PAD were recruited. Mean participant age was 66.2 ± 13.9 years, 35% were women, and 48% were white. Provider trust and interaction emerged as unanticipated but important themes. Interpersonal interaction was discussed in terms of provider specialty, treatment venues, and information sharing. Provider trust was discussed in terms of need for second opinions, disclosure of treatment alternatives and risks, and access to outpatient clinic visits and specific treat-
ments. Participants expressed positive attitudes toward involvement in shared decisions, receipt of educational information, detailed counseling, and discus-
sion of treatment options under consideration. Negative attitudes were expressed toward treatment in the emergency room, delay of appropriate treatment, provider misinformation or withholding of information, inconsistent recommendations between providers, patient abandonment, and pain medication as a treatment. Attitudes about provider trust and decision roles were mixed. CONCLUSIONS: Provider trust is inconsistent among patients with symptomatic PAD and may be affected by a variety of factors, some of which are beyond the patient’s control. Using the Mistrust and Provider Trust system to identify opportunities to improve interaction, facilitating shared decision-making.

Objectives: To compare health care utilization (HRU) and costs between patients with and without atherosclerosis in the US veteran population. METHODS: Patients with ≥ 1 medical claim for atherosclerosis (International Classification of Diseases, 9th and 10th Revision, Clinical Modification [ICD-9-CM; ICD-10-CM]) were identified from January 1, 2012 through December 31, 2014 using the Veterans Health Administration databases. The first diagnosis date was designated as the index date. Each control patient (without atherosclerosis) was matched with an atherosclerosis patient of the same age, region, gender, and date was designated as the index date. Each control patient (without atherosclerosis) was identified from 01JAN2012 through 9th and 10th Revision, Clinical Modification [ICD-9-CM; ICD-10-CM] diagnosis codes for atherosclerosis (ICD-9-CM code 440; ICD-10-CM code I70) were identified from 01JAN2012 through 2015.

CONCLUSIONS: The rate of hospitalization in patients with atherosclerosis was higher than patients without atherosclerosis, and the rate of hospitalization increased with increasing levels of atherosclerosis. Patients aged ≥ 18 years with athero-

RESULTS: A total of 19,771 individuals received DAPT over the study period, 63% male and 39% female with a median age of 74 years (IQR 66-80). Aspirin and clopidogrel was the most commonly prescribed with 15,584 (78.8%) individuals followed by aspirin and prasugrel with 1,059 (5.4%) and aspirin and ticagrelor with 947 (4.8%) individuals. Aspirin and clopidogrel remained the most commonly prescribed DAPT combination for 4 year study period but aspi-

Aspirin and ticagrelor prescribing increased 100 fold over the same period. Regarding duration of use, 45.8% received treatment for 0-6 months, 21.7% for 6-12 months and 20.4% for >12 months. The median duration was 65% CI (for mean 301.5-309.9). Co-prescribing with non-steroidal anti-inflammatory drugs decreased from 10.9% to 7.9% and anticoagulants from 3.3% to 1.1% from 2012 to 2015. Overall Total expenditure increased from $1,519,942 in 2012 to $2,022,131 in 2015. CONCLUSIONS: Despite reference pricing of clopidogrel in 2013, total expenditure on DAPT is increased over the study period due in part to an increased use of patient-protected medicines i.e. ticagrelor. The high proportion of short (0-6 months) and extended (>12 months) DAPT identified a lack of adherence to international best practice guidelines. Further analysis into the reasons for these prescribing practices in Ireland is warranted.

Patients aged ≥ 18 years with atherosclerosis (ICD-9-CM code 410-414; ICD-10-CM code I20-I25) were identified from 01JAN2012 through 2015. The primary outcome was the frequency of BONT treatment. A combination coefficient of treatment rates was calculated by age group. RESULTS: In total over the 2009-2014 period, 271,586 stroke cases were monitored. A diagnosis of spastic-
ity post-stroke, its management with botulinum toxin (BoNT), and describes the impact on patients' quality of life. This study explores the incidence of spastic-
ity post-stroke, its management with botulinum toxin (BoNT), and describes the impact on patients' quality of life. This study explores the incidence of spastic-

Crossover trial conducted in nine countries, we assigned 11,093 patients with acute stroke (85% of the strokes were ischemic) to receive care in either a lying-flat position or a head-up position. The head was elevated to at least 30 degrees, accord-

ting to the randomization assignment of the hospital to which they were admitted; the designated position was initiated soon after hospital admission and was maintained for ≥ 120 hours. The degree of disability at 90 days, as assessed with the use of the modified Rankin scale (scores range from 0 to 6, with higher scores indicating greater disability and a score of 6 indicating death). RESULTS: The median interval between the onset of stroke symptoms and the initiation of the assigned position was 14 hours (interquartile range, 5 to 35). Patients in the lying-flat group were less likely than patients in the sitting-up group to maintain the position for 24 hours (87% vs. 95%, P < 0.001). In a proportional-odds model, there was no significant shift in the distribution of 90-120 hours of BONT treatment between patients in the lying-flat group and patients in the sitting-up group (unadjusted odds ratio for a difference in the distribution of scores on the modified Rankin scale in the lying-flat group, 1.01; 95% confidence interval, 0.92 to 1.10; P = 0.84). Mortality within 90 days was 7.3% among the patients in the lying-flat group and 7.4% among the patients in the sitting-up group (P = 0.83). CONCLUSIONS: Disability outcomes after acute stroke did not differ significantly between patients assigned to a lying-flat position for 24 hours and a sitting-up position for the head elevated to at least 30 degrees for 24 hours.
treatment. The median time to first injection was 11 months post-stroke. The rate of treatment was different between age groups, with 31% of 40-59 year olds (+/- 1.5%) treated, compared to 11% of 70-79 year olds (+/- 0.8%). For patients with follow-up post-treatment of ≥2 years, only 9.5% were treated with ≥3 injections per year, and 29% received only one injection. For patients with ≥2 injections, the mean time between each injection was 98 days (standard deviation: 216 days). We undertook a cost-effectiveness analysis alongside the Rhytmic-Ischaemic Stroke Thrombectomy Evaluation (PISTE) trial. In addition, a decision-analytic model was developed to estimate the long-term cost-effectiveness of thrombectomy by combining all available trial evidence. Meta-analysis was used to estimate the clinical effectiveness; resource use and costs were sourced from the PISTE study and the broader literature. Value of information analysis was used to estimate the potential value of implementing this treatment into routine clinical practice within the UK NHS. The base-case model was developed to evaluate the five-year budget impact of introducing mechanical thrombectomy into routine practice within the devolved NHS in Scotland.

RESULTS: Compared with standard treatment, mortality was reduced by 1.1% in 90-day follow-up. However, the reverse was observed with the long-term model (ICER £3,857 per QALY gained). We estimate that 42,525 patients are potentially eligible to receive this treatment in the UK over a five-year period. The net monetary benefit (health benefit in monetary terms) is £13,704 per patient. Assuming a five-year time horizon and full implementation, the value of implementation was £542 million. We estimate the "break-even" value of implementing activity point at approximately 26% implementation. CONCLUSIONS: Based on a lifetime horizon, mechanical thrombectomy is cost-effective compared with standard care. If implementation is greater than 26%, the value of implementation is greater than the cost of implementation.

PCV164 VENOUS THROMBOEMBOLISM PROPHYLAXIS: RISK ASSESSMENT COMPLIANCE WITH RESPECTED PATIENT RISK PROFILE

Algeria

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OBJECTIVE: VTE prophylaxis implementation remains to be a challenge at KSFH with variation across study sites. The purpose of this study was to assess the degree of physician compliance to KSFH 2013 VTE prophylaxis protocol and to identify the percentage of patients at risk of VTE. METHODS: 103 patients admitted to various medical wards were reviewed of which 69 were included in our study. Their risk was measured using the risk assessment sheet in accordance to KFSH 2013 VTE prophylaxis protocol. Physicians’ compliance was assessed on their degree of compliance to KSFH 2013 VTE prophylaxis policy. RESULTS: The overall compliance of physicians recorded 1.4% in the hospital admissions that were reviewed. The majority of our patients 56.5% received prophylaxis but not in accordance to policy. 41.7% of our patients had highest risk of VTE (>1) according to their calculated risk. The highest risk 66.7% was observed in the inpatient service at one ward. VTE prophylaxis implementation remains to be a challenge at KSFH physicians which stresses the importance of awareness of VTE implications to patient well-being across KSFH medical staff. Patient risk of VTE is high and proper implementation is a must to reduce overall risk.

PCV165 IMPACTING THE RISK OF PCSK9 INHIBITORS ON CARDIOVASCULAR DISEASE

England

OBJECTIVES: Several outcome-based agreements (OBA) have been signed in the past years with health plans in the United States for the reimbursement of the PCSK9 inhibitors evolocumab and alirocumab. We developed a model to determine what factors may impact the outcome measured under these OBA’s in patients with atherosclerotic cardiovascular disease. METHODS: A Bayesian model was built in HOPE (Health Outcomes Performance Estimation), a tool that predicts drug outcomes under different pharmacy and system scenarios. An economic evaluation was conducted in terms of hazard ratio to time to first cardiovascular event, defined as cardiovascular death, myocardial infarction, stroke, hospitalization for unstable angina, or coronary revascularisation, came from a phase 3 randomised clinical trial (RCT). Two virtual cohorts of 10,000 patients: one approximating the health plan population, one with characteristics as in the RCT, were created with different distributions of baseline age, weight, smoking status, LDL and HDL cholesterol levels, type of atherosclerosis, use of cardiovascular medications and other factors including adherence. The impact of factors on baseline risk was extracted from the literature. To account for variability in inputs, we performed 3,000 simulations of cardiovascular events in each of the virtual cohorts. RESULTS: The model estimates provide a good fit to time to cardiovascular event reported in the RCT. The estimated event rate 6 months after drug initiation in the health plan population was predicted to be higher than in the Phase 3 trial on average, with a potential cost due to higher variability in drug use and population characteristics. CONCLUSIONS: We investigated how outcomes chosen to define the OBA terms on evolocumab could be affected in the population of health plan subscribers. Additional variability in population factors impacted the event rate, thus affecting the financial results of the OBA, depending on the financial terms that were used.

PCV166 REAL-WORLD TREATMENT PATTERNS AMONG PATIENTS INITIATING ON STATINS IN ENGLAND

England

OBJECTIVES: This study aimed to describe real-world patterns of statin use in England. METHODS: Patients in the Clinical Practice Research Datalink linked
patients had no history of atherosclerotic disease; 57.8% (N = 6434) of discontinuers, restarted. Of 24,034 patients with prior history of atherosclerotic disease, 78.2% (N = 18,794) were excluded. Around two-thirds of incident statin users in this real-world study in England stayed persistent on treatment at one year after initiation, and around one-third of those who discontinued restarted. Although this was a descriptive analysis, patients treated for secondary prevention appeared more likely to persist on treatment compared to patients treated for primary prevention.

PCV169 PATIENT CHARACTERISTICS AND TREATMENT PATTERNS IN CHRONIC HEART FAILURE: RESULTS FROM A MULTINATIONAL REAL-WORLD CROSS SECTIONAL SURVEY

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OBJECTIVES: To understand the patient characteristics and treatment patterns of chronic heart failure (CHF) patients in a real-world setting. METHODS: A cross-sectional survey was conducted for all CHF patients completed by 563 cardiologists for 4903 CHF patients. Treatment patterns for the following drug classes were described: angiotensin-converting enzyme inhibitor (ACEI), angiotensin receptor blocker (ARB), beta blocker (BB), and mineralocorticoid receptor antagonist (MRA). Fooled data for 10 countries (Argentina, Brazil, China, Colombia, France, Japan, Mexico, Russia, Saudi Arabia and Turkey) is presented. RESULTS: The mean (SD) age of a CHF patient was 67.2 (15.2) years with a male predominance (57%). Mean age ranged from 58.1 (7.8) years in Saudi Arabia to 72.8 (13.3) years in Japan and male percentage from 51% to 69% (Saudi Arabia). Overall, 28% patients had HFpEF (LVEF<40%, inter-country range: 11% [Brazil]-57% [Turkey]), 42% had HFrEF (LVEF≤30%, 5%, Turkey)-53% [Brazil]). The mean number of concomitant drugs was 5.3 (±2.5). The frequent two were hypertension (76%) and hyperlipidemia (34%). Three quarters of patients were classified as having mild symptoms (NYHA class I: 26%, NYHA II: 49%), 21% and 4% patients were NYHA III and IV, respectively. The most prescribed medication combinations were ACEI/ARB+BB with or without MRA and the distribution across treatment patterns was ACEI/ARB+BB+MRA [18%, 7% (Colombia)-41% (Russia)] and ACEI/ARB [10%, 1% (Argentina)-24% (Russia)]. Whereas, the most common treatment combination for HFrEF patients was ACEI/ARB+BB+MRA [40%, 8% (Turkey)-68% (Argentina)] followed by ACEI/ARB [16%, 4% (Saudi)-24% (Russia)] for the overall CHF population. Patients with HFpEF were most frequently prescribed ACEI/ARB+BB+MRA [40%, 8% (Turkey)-68% (Argentina)] followed by ACEI/ARB+BB [31%, 13% (Russia)-(50%) Turkey] and ACEI/ARB [10%, 1% (Argentina)-24% (Russia)]. CONCLUSIONS: The two most frequent treatment combinations were ACEI/ARB+BB with or without MRA and the distribution across countries was heterogeneous.

GASTROINTESTINAL DISEASES – Clinical Outcomes Studies

PG1 ANGIOTENSIN II RECEPTOR BLOCKERS AND INTESTINAL MALABSORPTION: AN OBSERVATIONAL COHORT STUDY IN GERMANY AND ITALY

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OBJECTIVES: Treatment with the angiotensin II receptor blocker (ARB) olmesartan has been associated with sprue-like enteropathy (SLE), a gastrointestinal condition characterized by intestinal malabsorption (IM) and severe diarrhea. Although this phenomenon is not frequent, it is important to raise clinical awareness in order to avoid delay in taking proper actions. Whether the increased risk of SLE is substance specific or a class effect involving all ARBs is uncertain. This study aims to assess the risk of SLE among ARBs patients and we could not confirm previous findings of a higher risk of SLE in Italian and German patients, we found that SLE was more common in the group of Italian and German patients using the Premier Perspective® Database that contains a nationally representative sample of discharges from over 600 hospitals in the U.S. Included patients were ≥18 years with a first-time statin prescription between 01/03/2008-31/03/2014, with ≥2 years of medical history and ≥12 months plus 90 days of available follow-up, were included. Treatment patterns assessed at 12 months after statin initiation included: persistence (no gap >90 days between subsequent statin prescriptions), discontinuation (absence of a prescription within 90 days after starting a prescription supply ended without a subsequent statin prescription after discontinuation). Initial statin dose, upward and down-titration were also assessed. Results were stratified by history of atherosclerotic disease, familial hypercholesterolemia, and risk of atherosclerotic disease (ASCVD). RESULTS: The mean (SD) age of a CHF patient was 67.2 (15.2) years with a male predominance (57%). Mean age ranged from 58.1 (7.8) years in Saudi Arabia to 72.8 (13.3) years in Japan and male percentage from 51% to 69% (Saudi Arabia). Overall, 28% patients had HFpEF (LVEF<40%, inter-country range: 11% [Brazil]-57% [Turkey]), 42% had HFrEF (LVEF≤30%, 5%, Turkey)-53% [Brazil]). The mean number of concomitant drugs was 5.3 (±2.5). The frequent two were hypertension (76%) and hyperlipidemia (34%). Three quarters of patients were classified as having mild symptoms (NYHA class I: 26%, NYHA II: 49%), 21% and 4% patients were NYHA III and IV, respectively. The most prescribed medication combinations were ACEI/ARB+BB with or without MRA and the distribution across treatment patterns was ACEI/ARB+BB+MRA [18%, 7% (Colombia)-41% (Russia)] and ACEI/ARB [10%, 1% (Argentina)-24% (Russia)]. Whereas, the most common treatment combination for HFrEF patients was ACEI/ARB+BB+MRA [40%, 8% (Turkey)-68% (Argentina)] followed by ACEI/ARB [16%, 4% (Saudi)-24% (Russia)] for the overall CHF population. Patients with HFpEF were most frequently prescribed ACEI/ARB+BB+MRA [40%, 8% (Turkey)-68% (Argentina)] followed by ACEI/ARB+BB [31%, 13% (Russia)-(50%) Turkey] and ACEI/ARB [10%, 1% (Argentina)-24% (Russia)]. CONCLUSIONS: The two most frequent treatment combinations were ACEI/ARB+BB with or without MRA and the distribution across countries was heterogeneous.

LIPID-LOWERING TREATMENT PATTERNS AND POSSIBLE ASSOCIATED STATIN INTOLERANCE IN PATIENTS WITH CLINICAL ATHEROSCLEROTIC CARDIOVASCULAR DISEASE (ASCVD) OR DIABETES MELLITUS (DM) IN TAIWAN

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OBJECTIVES: To assess treatment patterns of statin and/or ezetimibe and possible associated statin intolerance among patients with clinical ASCVD or DM in Taiwan. METHODS: We conducted a retrospective cohort study using Taiwan’s 2005-2013 National Health Insurance Research Database (NHIRD). Patients with history of clinical ASCVD or DM (without previous clinical ASCVD) and newly initiating statin or statin plus ezetimibe during 2006 to 2012 were identified. The treatment initiation date was defined as index date. Treatment patterns (including discontinuation, re-initiation, re-initiation, switching and augmentation), adherence (medication possession ratio, MPR) and persistence (gap no greater than 60 days) of statin and/or ezetimibe during 12-month follow-up period were examined. The majority of patients were in primary care at the end of the study (83%). CONCLUSIONS: Although Dutch guidelines recommend APT for every PAD patient we observed that 26% of patients had no recorded APT use. This suggests that in the Netherlands daily clinical practice appears not fully congruent with these guidelines recommendations.
years of age and had a liver resection from October 2015 to December 2016, when CD-10 procedure was available for direct identification. All complications were reviewed, and those with highest frequencies were examined. To determine the association of MIS with complications, multivariable logistic regression models were built with a broad range of predictor variables, including surgical approach (MIS vs open), patient demographics, procedure and hospital characteristics, and comorbidities. The cohort included 1,129,969 subjects with a mean follow-up time of 15.15 years (SD=4.17). The overall incidence rate of diagnosed cirrhosis was 1.85 per 10,000 person-years (PY), ranging between 0.07 and 3.62 for age 40-49 and 60-69 respectively. The incidence of liver cancer was 0.75 per 10,000 PY, ranging between 0.07 and 3.62 for age 40-49 and 60-69 respectively. The incidence of liver transplant was 0.12 per 10,000 PY. After excluding patients with viral hepatitis or significant alcohol consumption (2014 vs. 1.05 for cirrhosis, 0.56 for liver cancer and 0.05 for liver transplant. The incidence of all liver complications was significantly associated with BMI; with cirrhosis reaching a peak incidence of 6.69 for BMI of 35 or above, vs. 4.9 for BMI 30-34 or 5.53 for BMI 25-29, among patients aged 60+. The observed mean survival times from cirrhosis till liver cancer or transplant were 15.4 and 16.1 years respectively in the overall population, as compared with 16.3 and 16.7 years after excluding patients with viral hepatitis or alcohol-abuse. Conclusions: This population-based study demonstrates that liver complications even in patients without viral hepatitis or alcohol disorders, likely caused by non-alcoholic fatty liver disease. Older patients with increased BMI had higher rates of cirrhosis. The next phase of this study will validate the burden of non-alcoholic fatty liver disease using large-scale text mining of ultrasound reports.

**PG14**

**INCIDENCE OF SURGERY FOR INFLAMMATORY BOWEL DISEASE WITHIN 12 MONTHS OF STARTUP OF VEDOLIZUMAB (VDZ) IN KOREA**

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**OBJECTIVES:** To compare the incidence of inflammatory bowel disease (IBD)-related surgeries in patients with moderate-to-severe Crohn’s disease (CD) and ulcerative colitis (UC), respectively, following initiation of biologic therapy with vedolizumab (VDZ) or infliximab (IFX). METHODS: All biologic-naive adults with IBD who initiated VDZ or IFX therapy between 01/05/2014 and 22/02/2017 were identified in the 5-year National Health Insurance claim data from 2010 to 2014. Patients were propensity matched with index date as the first prescription date of anti-TNF-a agents during the study period (2010 to 2012). Subjects were followed-up for their clinical outcomes till the end of the study period. LOR of anti-TNF-a agents was defined as follows: increasing dose or shortening dose interval, switched to another agent, discontinuation for at least 1 year, IBD-related operation, or administration of total parenteral nutrition. All data were analyzed using SAS software version 9.3. RESULTS: During the overall study period (2010 to 2014), infliximab was more frequently used (8,692 vs. 5,488 for VDZ). Among UC users with anti-TNF-a users during 2010 to 2012 were 807 and 2,119 patients for UC and CD, respectively. LOR was developed in 72.6% and 80.4% among anti-TNF-a users with UC and CD during the study period. More than 60% of LOR was developed within the first year from index date. Among LOR criteria, anti-TNF-a discontinuation was top ranked in both UC and CD. CONCLUSIONS: High LOR rate of anti-TNF-a agents in IBD requires further treatment strategies in patients developed LOR to anti-TNF-a agents.

**PG15**

**THE INCIDENCE OF LIVER COMPLICATIONS IN ISRAEL**

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**OBJECTIVES:** To assess the incidence of liver complications in a large, nationally represented, database of Maccabi healthcare services (payer-provider). All members without out cirrhosis or cancer on January 1st 2000 (index date) were followed until death, disenrollment or January 2017. Incident cirrhosis, liver transplant and liver cancer were identified through claims by document, procedure and hospital characteristics, and registry. RESULTS: The cohort included 1,129,969 subjects with a mean follow-up time of 15.15 years (SD=4.17). The overall incidence rate of diagnosed cirrhosis was 1.85 per 10,000 person-years (PY), ranging between 0.07 and 3.62 for age 40-49 and 60-69 respectively. The incidence of liver cancer was 0.75 per 10,000 PY, ranging between 0.07 and 3.62 for age 40-49 and 60-69 respectively. The incidence of liver transplant was 0.12 per 10,000 PY. After excluding patients with viral hepatitis or significant alcohol consumption (2014 vs. 1.05 for cirrhosis, 0.56 for liver cancer and 0.05 for liver transplant. The incidence of all liver complications was significantly associated with BMI; with cirrhosis reaching a peak incidence of 6.69 for BMI of 35 or above, vs. 4.9 for BMI 30-34 or 5.53 for BMI 25-29, among patients aged 60+. The observed mean survival times from cirrhosis till liver cancer or transplant were 15.4 and 16.1 years respectively in the overall population, as compared with 16.3 and 16.7 years after excluding patients with viral hepatitis or alcohol-abuse. CONCLUSIONS: This population-based study demonstrates that liver complications even in patients without viral hepatitis or alcohol disorders, likely caused by non-alcoholic fatty liver disease. Older patients with increased BMI had higher rates of cirrhosis. The next phase of this study will validate the burden of non-alcoholic fatty liver disease using large-scale text mining of ultrasound reports.

**PG17**

**GASTROINTESTINAL DISORDERS – Cost Studies**

**PG1**

**A BUDGET IMPACT ANALYSIS OF FIDAXOMICIN VERSUS VANCOMYCIN AND METRONIDAZOLE FOR THE TREATMENT OF CLOSTRIDIUM DIFFICILE INFECTION IN A MIDDLE-INCOME COUNTRY**

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**OBJECTIVES:** Vancomycin and metronidazole are currently the first-line and second-line therapy in patients with inflammatory bowel disease (IBD). They are expected to achieve a sufficient treatment goal for IBD. However, we are not sure about their clinical outcomes due to lack of evidences in Korean populations. This study aims to investigate treatment outcome such as loss of response (LOR) of anti-TNF-α agents in IBD. METHODS: During the overall study period (2010 to 2014), infliximab was more frequently used (8,692 vs. 5,488 for VDZ). Among UC users with anti-TNF-a users during 2010 to 2012 were 807 and 2,119 patients for UC and CD, respectively. LOR was developed in 72.6% and 80.4% among anti-TNF-a users with UC and CD during the study period. More than 60% of LOR was developed within the first year from index date. Among LOR criteria, anti-TNF-a discontinuation was top ranked in both UC and CD. CONCLUSIONS: High LOR rate of anti-TNF-a agents in IBD requires further treatment strategies in patients developed LOR to anti-TNF-a agents.

**PG18**

**CLINICAL CHARACTERISTICS OF PATIENTS WITH CHRONIC HEPATITIS C INFECTION AT INITIAL PRESENTATION TO TERTIARY CARE IN A MIDDLE-INCOME COUNTRY**

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**OBJECTIVES:** The aims of this study were to investigate the clinical characteristics of HCV-infected patients during initial presentation to tertiary care in Malaysia, a middle-income Asian country, to inform the development of a national guideline. METHODS: A descriptive cross-sectional study of a hospital-based case-series on consecutive HCV patients who presented in 2014 at the national referral centre was conducted. All patients with active viremia (detectable HCV RNA) during initial presentation were included. RESULTS: There were 741 HCV patients treated by the hepatology specialty in 2014 (n=741/5863). Mean age at initial presentation was 48 years (SD=5); median (IQR) with 41% (73%) being male. Prior known exposure to various HCV risk factors included: intravenous drug use (n=271/737), blood or blood products transfusion (n=237/737), multiple sexual partners (n=123/737), high-risk practices such as tattooing, cupping therapy, acupuncture and sharing of personal items with infected individuals (n=68/737), dialysis (n=38/737) and organ transplantation (n=13/737). Based on histology, fibroscan findings or aspartate aminotransferase-to-platelet ratio index (APRI), 327 (44.1%) patients had cirrhosis at initial presentation, with mean age 52 years (SD=8.86) compared to 44 years (SD=12.0) for non-cirrhotic patients. Decompensated cirrhosis was seen in 118 (36%) and HCC in 45 (13%) of the 327 cirrhotic patients. Only 262 (44%) of 595 patients who were clinically eligible for interferon-based treatment had been on interferon therapy (n=262/595) received interferon-based HCV treatment. CONCLUSIONS: HCV-infected patients at initial presentation to tertiary care in Malaysia reflected delayed presentation to normal care with disproportionately high number of cirrhotic patients. The low proportion of clinically eligible patients receiving HCV treatment need to be investigated further and addressed accordingly in future guidelines.
remained consistent, indicating improved effectiveness and economic efficiency upon introduction of fidaxomicin. **CONCLUSIONS:** The results of this model demonstrate that fidaxomicin is superior to other treatments in preventing CDI recurrence, and through reductions in recurrence, payers can expect moderate cost savings over a 6-month time horizon.

**PG18 BUDGETARY IMPACT ANALYSIS OF THE NUTRITIONAL CARE SERVICE**

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**OBJECTIVES:** The aim of the study was to analyze the SNS budget impact of domiciliary administration of parenteral nutrition. **METHODS:** A retrospective digestive surgery patient cohort was analyzed. The variable costs associated with all reported procedures, as well as the SNS parental nutrition cost and the hospital stay cost per patient. The group of patients susceptible to receiving the Nutritional Home Care Service (NHCS) has been estimated through a comparison of the hospital stay of patients who required parenteral nutrition versus the average of the objective of this analysis is the evaluation of the cost saving potential through an increased use of intravenous iron therapy with ferric carboxymaltose (FCM) based on clinical trial evidence. **METHODS:** A budget-impact-analysis (BIA) with a four-year time horizon was developed from the payer’s perspective. IBID patients with IBD costs from a Markov-model and receive different iron-deficiency strategies based on clinical trial evidence. The objective of the model was to assess the influence of a higher percentage of treated patients (65%-74%) in general and an increased share of IV substances (49%-59%) in the hospital stay cost per patient. The group of patients susceptible to receiving domiciliary parenteral nutrition care. The budgetary impact in the SNS has been estimated using a Markov model processed in 15,000 Monte Carlo simulations. The variable cost of the PN and Cost of stay, patients receiving PN, patients likely to receive NHCS (study population) and number of surgical procedures performed in the SNS in digestive surgery. **RESULTS:** The initial cohort was composed of 504 patients to analyze, an average 10.26 days of hospitalization with parenteral nutrition consumption in 2015. The study population was estimated at around 120 patients. The health insurers that finance private health care would see savings in the SNS in digestive surgery. **CONCLUSIONS:** The use of iron-therapy (+9%) and a shift towards IV application (+10%) in IBD patients is expected to increase in the coming decades in countries without comprehensive national health policies and medical programs should be considered.

**PG12 EVALUATING COST OF REGIMENS IN HEPATITIS C TREATMENT FROM HEALTHCARE PAYERS’ VIETNAM’S PERSPECTIVE**

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**OBJECTIVES:** Chronic hepatitis C (CHC) is a global health problem with 130-150 million people infected worldwide. With chronic infectious characteristics and severe consequences in liver cancer, HCV infection and disease burden for both society and healthcare system. This study aimed to estimate the direct treatment cost of CHC, genotype 1 in the Vietnam with different treatment regimens. **METHODS:** Decision-tree models were built to estimate the cost of managing HCV at a tertiary-care referral centre in Malaysia, as an example of the real-world data in 2 specialized hospitals in Vietnam (Hospital of Tropical diseases in HCMC and Hanoi). Treatment costs include drug costs, healthcare service costs (including 5 components by circular of 37/MON-VH). The treatment regimens included in the analysis were Peg-Interferon/Ribavirin (Peg-IFN/RBV), sofosbuvir/ledipasvir (SOF/LDV). **RESULTS:** Based on decision-tree models, simulating the treatment process with different regimens for CHC patients, genotype 1, it has been shown that a combination of Peg-IFN/RBV regimen was 2.85 times than SOF/LDV regimen (141.44 VND million vs 49.58 VND million). In the structure of medical direct cost, the drug cost had predominated. **CONCLUSIONS:** Peg-IFN/RBV and SOF/LDV regimens were more cost-effective than Peg-IFN/RBV. The drug cost was the major part of total medical direct cost. With the rising trend of hepatitis C chronic in Vietnam and the high cost burden of treatment, healthcare policies and national medical programs should be considered.

**PG13 COST OF TREATMENT FOR CHRONIC HEPATITIS C INFECTION AT A NATIONAL TERTIARY-CARE REFERRAL CENTRE IN AN ASIAN MIDDLE-INCOME COUNTRY**

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**OBJECTIVES:** Disease burden due to chronic hepatitis C virus (HCV) infection is expected to increase in the coming decades in countries without comprehensive national health policies and medical programs should be considered. **METHODS:** Cost drivers for NCCI and CC was the cost of interferon (73% and 70%) in the structure of medical direct cost, the drug cost had predominated. This study aims to estimate the healthcare cost of managing HCV at a tertiary-care referral centre in Malaysia, as an example of a middle-income country that has not yet adopted DAA drugs as standard HCV treatment. **METHODS:** A costing analysis was conducted from the healthcare provider perspective. Annual resource use of standard interferon-based HCV treatment pathways was obtained by face-to-face interviews of local clinical expert(s). Unit costs specific to the referral centre price year 2014 were derived by combining top down and bottom up activity-based costing methods. Costs were reported in US dollars with 2014 exchange rate (1 USD = 21.1225 VND). **RESULTS:** The estimated annual healthcare costs increased corresponding to the severity of HCV-related liver disease. **CONCLUSIONS:** The estimated annual healthcare costs increased corresponding to the severity of HCV-related liver disease. Current interferon-based treatment may lead to substantial financial implication. This study aims to estimate the healthcare cost of managing HCV at a tertiary-care referral centre in Malaysia, as an example of a middle-income country that has not yet adopted DAA drugs as standard HCV treatment.
were involved with an interventional clinical trial during the study period, had a history of chronic phase of the gastrointestinal tract, or were suspected at therapy non-compliance. Information abstracted from medical records included all IBD-relevant prescription medications, tests, procedures, adverse events and healthcare contacts. Resource utilization was compared prior-to and during SBI use.RESULTS: A cohort of 122 active CD patients was included. A log-normal distribution could be calculated expected val-
ues (means). Medication classes were evaluated for utilization differences between periods. Budget impact was extrapolated to a hypothetic plan with 1M covered lives. RESULTS: 32 of 170 potential subjects met eligibility criteria. From 2,000 patients for exclusion was a lack of sufficient treatment time prior to SBI initiation and/or
less than six months' SBI use. Mean overall daily cost for IBD patients during SBI use for exclusion was a lack of sufficient treatment time prior to SBI initiation and/or
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RESULTS: Adalimumab and infliximab are those biological agents mainly used for treating MC. All cost items grew steadily over the last 4 years. Total costs in 2015 were € 38.6 million (on average € 22,413 per patient).

PG116
ECONOMIC EVALUATION OF USING A COMBINATION OF HELICOBACTER PYLORI ANTI-BODY AND SERUM PEPSEINOGEN LEVELS FOR GASTRIC CANCER-RISK SCREENING IN JAPAN
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OBJECTIVES: Helicobacter pylori infection and the degree of chronic atrophic gastritis are a significant risk factor for the development of gastric cancer, especially in the Japanese population. A combination of assays for serum anti-Helicobacter pylori immunoglobulin G antibody (HPA) and serum pepsinogen (PG) levels can be used to identify gastric cancer risk. In Japan, this ABC method may be an effective approach for identifying high-risk individuals who should undergo gastric cancer screening. The present study's purpose was to estimate the long-term cost-effectiveness of the ABC method for assessing the gastric cancer risk in a Japanese population. METHODS: We constructed a Markov cohort model to compare the lifetime expected cost of and life-years saved by two strategies: 1) the ABC method, using a combination of HPA and serum PG levels for cancer-risk screening, and 2) scheduling gastric endoscopy as the strategy of conducting endoscopic surveillance yearly for everyone. The target population was 40 to 60-year-old Japanese individuals, who had not received H. pylori eradication therapy. Clinical and epidemiological data, including the model, were obtained from published literature. Analyses were conducted from the Japanese health care payer perspective. RESULTS: According to cohort simulation, the ABC method cost less than annual endoscopic screening (128,970 vs. 276,561 Japanese yen) and saved more lives (25.55 vs. 25.50 life years) in Japanese individuals with negative different diagnoses. The results of individuals aged 50 and 60 years indicated prolonged life-years and a reduced cost. CONCLUSIONS: A combination of HPA and serum PG assays plus scheduling endoscopy accordingly is a cost-effective strategy of screening for gastric cancer risk in Japan. The present study's result provides new evidence of the economic impact of H. pylori eradication and scheduled endoscopy on gastric cancer screening.

PG17
THE COST-EFFECTIVENESS OF USTEKINUMAB IN MODERATE TO SEVERELY ACTIVE CROHN’S DISEASE IN SWEDEN
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OBJECTIVES: Human monoclonal antibody ustekinumab is a novel Crohn’s disease (CD) treatment option which blocks pro-inflammatory cytokines interleukins (IL)-12 and IL-23. The aim was to assess the cost-effectiveness of ustekinumab in moder-
ate to severely active Crohn’s disease (CD) compared to a conventional-care-failure treatment option with a decision tree structure for the induction phase and a Markov cohort structure for the maintenance phase was constructed. CD was represented by five health-states: remission, minor, moderate, moderate-severe and severe. The model was validated by a network meta-analysis and a treatment sequence analysis. Resource use and cost data were derived from the literature and validated by clinical experts. The analysis had a societal perspec-
tive and modelled a 2-year maximum treatment duration. The robustness of the results was tested in univariate and probabilistic sensitivity analy-
ses (PSA). The cost-effectiveness was estimated using quality-adjusted life-years (QALYs). RESULTS: Ustekinumab dominated adalimumab in the conventional-care- failure population. The total cost was €6,984 lower for ustekinumab compared to adalimumab and the incremental QALY gain was 0.232. In the TNF-alpha-inhibitor failure population, ustekinumab's incremental QALY gain versus vedolizumab was €38,572 in 2015. Total number of patients, number of hospital admissions and total treatment costs including all individual cost items (costs of biological agents / other medication / outpatient care / hospitalization) grew yearly on average between 5.0% and 21.8% (2012 – 2015). Vaccinating with a two-dose HRV would lead to the improvement of IBD patients' lives.

PG18
WOULD A TWO-DOSE ROTAVIRUS VACCINE IMPROVE HEALTH OUTCOMES WHILE REDUCING COSTS IN THE SUKANTANE OF OMAN?
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OBJECTIVES: Rotavirus is the most common cause of diarrhoea in young children. A recent study in Oman showed significant disease reductions despite improved water and sanitation measures. This study evaluated the impact of a two-dose paediatric vaccination programme with a two-dose Human Rotavirus Vaccine (HRV) would be cost-effective in Oman. METHODS: A previously published Markov cohort model, with monthly cycles, was used to follow-up the 2015 Oman birth cohort to the age of 80. Results from the model were used to estimate the incremental cost effects of HRV vaccination. The analysis was made from a healthcare payer and societal perspective with costs and benefits discounted at 3% per year. RESULTS: Without vaccination the Oman birth cohort would be exposed to an estimated 36,442 severe rotavirus diarrhoea events by the age of 5 years. Total disease cost was estimated to be 2,971,594 OMR, of which direct medical costs accounted for 1,947,331 OMR (65%) and indirect costs for 1,024,263 OMR (35%). Vaccinating with a two-dose HRV would reduce the number of hospitalizations by 92% (from 5,637 to 478) and medical visits by 77% (from 3,889 to 5,377). Total disease cost of the vaccinated population would be reduced to 1,446,859 OMR (51%), of which 1,127,997 OMR (78%) are direct medical costs and 318,862 OMR (22%) indirect costs. The vaccination is estimated to result in 20,781 QALYs gained. The analysis was made from a healthcare payer and societal perspective respectively. CONCLUSIONS: Universal paediatric vaccination against rotavirus with a two-dose HRV would lead to the improvement in health outcomes while reducing the disease cost in the Sultanate of Oman.
BACKGROUND: Vedolizumab is one of the biologic drugs recommended by current clinical guidelines for the treatment of moderately to severely active ulcerative colitis (UC) in Russia. OBJECTIVES: To estimate the cost-effectiveness of vedolizumab compared with conventional therapies in the management of patients with UC who have had an inadequate response, with lost response to, or were intolerant to conventional therapy without anti-TNF-α inhibitors. METHODS: The global UK Markov model was populated with the Russian-specific input data. The target model population included patients with moderately to severely active UC who had demonstrated an inadequate response, lost response or had been intolerant to a conventional therapy. The model compared vedolizumab with infliximab (originator and biosimilar) as well as conventional therapy from the perspective of the Russian healthcare system for the 5-year time horizon. A 5% discount factor was used for costs and outcomes. The incremental cost-effectiveness ratio (ICER) per quality-adjusted life year (QALY) was calculated. RESULTS: Vedolizumab required additional costs of US$ 10,712 per QALY gained compared with infliximab when compared to conventional therapy in UC patients. There was a small reduction in medical costs after correcting for disease progression and adverse effects. Concurrently, patients who received vedolizumab had longer survival, higher general survival rate, and lower need for surgery. When compared to originator infliximab, who have not been treated previously with anti-TNF-α inhibitors, vedolizumab was associated with lower costs and higher effectiveness. When compared to equal-share use of originral and biosimilar infliximab, vedolizumab incurred an additional cost of 577,869 rubles (8,990 euro) per QALY gained. CONCLUSIONS: Vedolizumab is a dominant alternative in anti-TNF-α-naïve patients with UC, compared with originator infliximab. It is also a cost-effective option compared to equal-share use of originral and biosimilar infliximab.

PG21 COST-EFFECTIVENESS OF TREATMENT STRATEGIES INITIATED AT DIFFERENT STAGES OF LIVER FIBROSIS FOR JAPANESE PATIENTS WITH CHRONIC HEPATITIS C GENOTYPE 1 Takashi H, Mochida H, Hiroa T, Ikai H, Hidaka H, Sakaida H, Ishida H 1Yamaguchi University Graduate School of Medicine, Ube, Japan, 2The Keio University School of Medicine, Tokyo, Japan, 3Kagawa University, Miiki-Chi, Japan, 4Yamaguchi University Hospital, Ube, Japan OBJECTIVES: Fibrosis progression of chronic hepatitis C (CHC) may significantly influence treatment cost-effectiveness using HCV antiviral agents because advanced fibrosis more frequently leads to hepatocellular carcinoma and liver failure. The aim of this study was to estimate the impact of initiating biological therapies at different stages of liver fibrosis on the cost-effectiveness of three antiviral combinations for Japanese patients with chronic hepatitis C genotype 1. METHODS: We created a decision analytic model of HCV reflecting liver fibrosis progression to evaluate the cost-effectiveness of alternative therapeutic strategies for Japanese patients with genotype 1 CHC with different fibrosis stages. We compared six strategies: treat-all patients with all fibrosis stages (TA), those initiated at four different liver fibrosis stages (F1S, F2S, F3S, F4S), and no treatment (NoRx). We examined three decision analytic model of HCV reflecting liver fibrosis progression to evaluate the cost-effectiveness of alternative therapeutic strategies for Japanese patients with genotype 1 CHC with different fibrosis stages. We compared six strategies: treat-all patients with all fibrosis stages (TA), those initiated at four different liver fibrosis stages (F1S, F2S, F3S, F4S), and no treatment (NoRx). We examined three combinations of anti-HCV therapies: sofosbuvir-ledipasvir (SOF/LDV), ombitasvir-paritaprevir-ritonavir (OFR), and daclatasvir-asunaprevir (DA). The proportion of initial liver fibrosis stages of the cohort was assumed to be the same as in a Phase III study of DA treatment for Japanese HCV patients. RESULTS: On base case analysis, TA yielded the most effective result and the ICER against the second most effective strategy, F1S, fell below 1.4 million Japanese yen per QALY with anti-HCV antiviral combinations. F2S followed F1S for effectiveness, and the ICER of F1S against F2S with the three combinations fell below 1.1 million Japanese yen per QALY, NoRx, F4S, and F3S had higher lifetime costs and were less effective compared with F2S with all antiviral agent combinations. The accessibility curve of TA on treatment with SOF/LDV, OFR, and DA, with ICERs below 5 million Japanese yen per QALY, showed probabilities of 98.6, 99.1, and 99.8%, respectively. CONCLUSIONS: Our results suggest that treatment of all patients with genotype 1 CHC regardless of their liver fibrosis stage would be cost-effective.

PG22 ECONOMIC EVALUATION OF NEW HCV TREATMENTS IN EGYPT Essam G 1, Abu Rawash A 1, Waked W 1 1Central Administration for Pharmaceutical Affairs (CAPA), Ministry of Health and Population, Cairo, Egypt OBJECTIVES: to evaluate the cost-effectiveness of sofosbuvir (SOF)+ ribavirin (RBV), SOF+daclatasvir (DCV) and SOF+ledipasvir (LDV)-RBV compared with sofosbuvir-peginterferon (pegIFN)-RBV (HCV) naïve patients with cirrhosis and without cirrhosis in Egypt, from societal perspective, over a twenty years period. METHODS: 2Markov models were developed based on the Egyptian clinical data and practice, and were derived from published sources. Parameters were derived from two sources: the Egyptian multi-center national treatment program and previously published randomized clinical trials. The utility of the health states was derived using the available published data. Direct medical costs were obtained from the National Liver Institute database. Deterministic sensitivity analyses were conducted. RESULTS: In non-cirrhotic patients, the total quality adjusted life years (QALYs) for SOF+LDV+RBV regimen was 6.64 compared to 6.60 for the SOF+DCV+RBV and 5.78 for SOF+RBV. The total costs for SOF+LDV+RBV, SOF+DCV, SOF+pegIFN+RBV and SOF+RBV were US$ 5217, US$ 3359, US$ 4722 and US$ 5612 respectively. These costs yielded an incremental cost-effectiveness ratio (ICER) of 2330 for the SOF+LDV+RBV, 904 for the SOF+DCV and -1332 for the SOF+pegIFN+RBV. The total QALYs of SOF+LDV+RBV were 6.05 compared to 5.92 for the SOF+DCV, 5.35 for the SOF+pegIFN+RBV and 2.27 for the SOF+RBV. The total costs for SOF+LDV+RBV, SOF+DCV, SOF+pegIFN+RBV were US$ 5685 and US$ 16022 respectively. These costs yielded an ICER of € -4170 for the SOF+LDV+RBV, € 9515 for the SOF+DCV and -2289 for the SOF+RBV. SOF+DCV regimen was the most cost saving option for cirrhotic and non-cirrhotic patients than the other treatment regimens. Deterministic sensitivity analyses remained robust. CONCLUSIONS: This study concludes that SOF+DCV regimen is the most cost saving option that yields the most favorable future health economic outcomes compared to the SOF+pegIFN+RBV group across a broad spectrum of patients, including those with cirrhosis.

PG23 COST-EFFECTIVENESS OF ENTEREX® HPT, A SPECIALIZED NUTRITION SUPPLEMENT, FOR PATIENTS WITH LIVER DISEASE IN MEXICO Paladín-Hernández JA 1, Marín M 2 1GAM-Azcapotzalco, Guadalupe Izcalli, Mexico, 2Virtus, Miami, FL, USA OBJECTIVES: Malnutrition is very common in patients with liver disease. The underlying liver disease will cause anorexia, nausea, and a poor appetite. Early recognition of micro or macronutrient deficiencies is essential, because the use of nutritional supplements reduces the risk of complications. Nutritional supplement agents that had an adequate profile and to correct correct nutrient deficiencies. Enterex® HPT is specially formulated to help promote positive nitrogen balance and improve the nutritional status of individuals with liver disease. This study was conducted using a Markov model to assess the efficacy of the treatments, defined as the progression free of the disease and the costs associated. The time horizon was 12 months. RESULTS: The basecase analysis incates that Enterex® HPT is a dominant alternative. Enterex® HPT provides saving for $4,462 USD per patient per year ($5,6761 vs $61,223), meanwhile most patients are likely to progress when no specialized nutrition supplement (Enterex® HPT) is used (0.79 vs 0.72). In a 5-year time horizon, for a cohort of 1,000 patients with liver disease, Enterex® HPT will generate savings reaching $2,231,000 vs no specialized nutrition supplement per patient, as about 350,000 patients will avoid progression. CONCLUSIONS: Patients with liver disease using Enterex® HPT as a specialized nutrition supplement obtain important benefits like decreased risk of developing hyperglycemia, fatty liver and avoid hepatic failure progression.

PG24 A SYSTEMATIC REVIEW OF ECONOMIC EVALUATIONS OF BIOLOGICAL THERAPIES FOR THE TREATMENT OF ULCERATIVE COLITIS Parfami A 1, Balasopoulos T 2, Theodorou M 3, Athanassakis K 4 1Open University of Cyprus, Latsia, Nicosia, Cyprus, 2National School of Public Health, Athens, Greece, 3Open University of Cyprus, Latsia, Nicosia, Cyprus, Greece OBJECTIVES: Biological therapies have an increasing role in altering the natural course of Ulcerative Colitis (UC), especially in patients with an inadequate response to conventional treatment. Biological therapies, due to their high cost, are a major target for economic evaluation, in an effort towards the efficient allocation of healthcare resources. This systematic literature review will provide an overview of the literature on cost-effectiveness/utility analyses of anti-TNFα agents that had been approved by EMA for UC. METHODS: A systematic literature search with keywords was performed using Google Scholar and Pubmed for studies published between February 2006 and March 2017. All cost-effectiveness or cost-utility studies, comparing biological therapies with conventional treatment, another biological therapy, surgery or placebo for the treatment of UC in adults were included in this review. An assessment of the quality of the included studies, using the Drummond checklist, was conducted, in order to improve the generalizability and transparency of the review. All the above-mentioned were evaluated by two authors independently. RESULTS: After full text screening, fourteen studies were included in the review. As shown by the analysis of the studies, the use of approved biological therapies in UC leads to the shift of cost from hospitalization and surgery towards anti-TNFα drugs. The majority of the results fall within the acceptable thresholds, however, a significant proportion tend to exceed them. The variety of the study design, country of origin, scope of the study, lack of indirect costs in most of the studies and differences in willingness to pay thresholds restrict the generalizability of the results. CONCLUSIONS: Although biological therapies in UC seem to provide clinical benefit, the cost associated with these treatments could be perceived as high. Direct comparisons between the agents are necessary.

PG25 COST-EFFECTIVENESS ANALYSIS OF ULINASTATIN FOR PATIENTS UNDERGOING HEPATITIS C TREATMENT: A DISCRETE EVENT SIMULATION MODEL Jun Z 1, Zou F 2, Yang Q 2, Xing R 2, Li M 2, Yu Q 2, Xuan P 4 1Shanghai Centennial Scientific Co., Ltd, Shanghai, China, 2Nan Fang Hospital, Guangzhou, China, 3Guangzhou Techpool Bio-Pharma Co., Ltd., Beijing, China, 4Guangzhou Techpool Bio-Pharma Co., Ltd., Shanghai, China, 5Sian Yat-sen University, Guangzhou, China OBJECTIVES: It was demonstrated that various surgical complications and death rates are highly associated with the inflammatory response after hepatic resection. Ulinastatin was recommended to inhibit the excessive inflammatory response.
response, hence to reduce the risk of post-hepatectomy complications and mor-
tality. Evidence also indicated the Ulinastatin’s ability of shortening the length of
delay (LOS) after heptectomy, illustrating potential economic value to be assessed.
This study aimed to analyse the cost-effectiveness of Ulinastatin versus standard
care for heptectomy patients. METHODS: A discrete event simulation model was
constructed in this retrospective study, the events were simulated until an exponen-
tial distribution, with the exception of LOS using a log-normal distribution.
The complication and death costs were acquired through a KOL consultation.
Other costs were from literature. Costs were inflation-adjusted to 2016. The quality-adjusted life-year (QALY) was calculated with
area under curve technique. The model has run through with numerous sample
sizes to determine the number of simulated entities needed to generate a sta-
table result. One-way sensitivity analysis and probabilistic sensitivity analysis were
conducted. RESULTS: The total cost for per patient who has received Ulinastatin is $1197.09, while the total QALY gained for 1 year after the surgery is 0.8895. Opposi-
tion, for entity who has not been administrated, the total cost and total QALY
 gained are $1342.10, and 0.8884, respectively. Consequently, the use of Ulinastatin
for patients undergoing a heptectomy provides minor extra QALY gain (0.0011), and
some cost saving ($145.01) during the hospitalisation. According to one-way
sensitivity analysis, the most influencing parameter is the average daily inpatient
stay (LOS) after heptectomy, illustrating potential economic value to be assessed.
In probabilistic sensitivity analysis, using Ulinastatin had a 99.6% prob-
sability of being cost-effective versus not using it at a $23,745.91/QALY threshold (i.e.
three times of Chinese national gross domestic product in 2016). CONCLUSIONS:
Administrating Ulinastatin is a dominantly cost-effective intervention for patients
undergoing heptectomy.

PG126
THE ECONOMIC BURDEN OF COELIAC DISEASE IN NORTH AMERICA AND
EUROPE: A SYSTEMATIC REVIEW

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OBJECTIVES: The prevalence of coeliac disease (CD) has rapidly increased over recent
decades. Its economic burden can be substantial, but remains poorly understood.
This systematic review assessed the economic burden of CD in North America and Europe,
and provided an overview of the most important findings. METHODS: This review was
directed in line with the PRISMA guidelines. A systematic search was performed to identify English-language literature published during the last 10 years assessing costs, cost-effectiveness, and health resource utilization for CD.
RESULTS: Thirty-three studies met inclusion criteria. Most (62%) were from Europe, and 30% reported modeled costs of screening and diagnosis. Cost per positive CD diagnosis of screening patients already undergoing esophagogastroduodenoscopy (EGD) for other indications, such as anaemia or irritable bowel syndrome, ranged from $45.00 to $2,891.00 in Canada, and $19.00 to $544.00 in Europe. The mean costs of hospitalization for patients with severe CD were $3,500 to $16,000, and $2,250 to $4,800 in Canada and Europe respectively. The mean direct medical costs of managing CD were $3,027 to $6,450 in Canada, and $1,144 to $2,836 in Europe. The mean quality adjusted life year (QALY) for patients with CD was calculated as 0.88 to 0.95. CONCLUSIONS: Most economic studies of CD assess screening and diagnosis costs, especially in Europe. Methods of screening generally
considered cost-effective when they combine diagnostic modalities including serology then biopsy, versus no screening. Direct annual excess costs to a US payer per diagnosed CD patient totaled $6,000 ($15,000) more than for a person without CD, chiefly due to outpatient care, with higher costs among patients with poor disease control. Hospitalizations, emergency visits, and medication use were more common in patients with CD versus controls. After initiating a gluten-free diet (GFD) (40.8%) reported switching to ordinary care providers less often, but used more medications. Gluten-free (GF) foods cost 240–518% more than gluten-containing equivalents. Three Scandinavian studies on absenteeism found fewer days missed from school and work among CD patients. EGD was performed (40.8%), followed by C-reactive protein (31.2%). Biological therapy was the most common type of therapy (36.5%), followed by immunosuppressants (37%). REGA-studies, biological treatments, and drug-related costs were due to poor effectiveness.

PG29
HEALTHCARE RESOURCE UTILIZATION IN PATIENTS WITH MODERATE TO
SEVERE CROHN’S DISEASE: A BRAZILIAN REAL WORLD STUDY

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1Takeda Pharmaceuticals Brazil, São Paulo, Brazil, 2Hospital das Clínicas da Faculdade de
Medicina de Ribeirão Preto – USP, Ribeirão Preto, Brazil

OBJECTIVES: The objective of this study was to systematically review health eco-
nomic evaluations (HEE) in inflammatory bowel disease (IBD) in Brazil. METHODS:
Eleven health economics studies, one cost-utility analysis, and one budget impact analysis
were included. The target population in all analysis was adults. T wo studies com-
pared biological treatments (two adalimumab vs infliximab and three certolizumab vs adal-
imumab vs infliximab). In the biologic treatments comparisons, three studies evaluated just the
drug therapy costs and two conducted additional analysis based on specialist opinions and
international literature. The resource use for public and private sys-
tems was obtained from the official Brazilian Administrative Database (DATASUS)
and specialty opinion, respectively. Costs were obtained from Brazilian Ministry
of Health databases and local health authorities. The cost-utility analysis used international utility data.

CONCLUSIONS: IBD is a chronic disease with substantial financial and quality of life impact but currently
there is a lack of studies evaluating the economic and societal burden of the
disease in Brazil.

PG20
HEALTHCARE RESOURCE UTILIZATION IN PATIENTS WITH MODERATE TO
SEVERE ULCERATIVE COLITIS: A BRAZILIAN REAL WORLD STUDY

Decimoni TC1, Sztajnbok S2, Feitosa MP2, Patra ES2
1Takeda Pharmaceuticals Brazil, São Paulo, Brazil, 2Hospital das Clínicas da Faculdade de
Medicina de Ribeirão Preto – USP, Ribeirão Preto, Brazil

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nomic evaluations (HEE) in inflammatory bowel disease (IBD) in Brazil. METHODS:
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imumab vs infliximab). In the biologic treatments comparisons, three studies evaluated just the
drug therapy costs and two conducted additional analysis based on specialist opinions and
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tems was obtained from the official Brazilian Administrative Database (DATASUS)
and specialty opinion, respectively. Costs were obtained from Brazilian Ministry
of Health databases and local health authorities. The cost-utility analysis used international utility data.

CONCLUSIONS: IBD is a chronic disease with substantial financial and quality of life impact but currently
there is a lack of studies evaluating the economic and societal burden of the
disease in Brazil.
C-reactive protein (29.8%). Salicylic acid derivatives were the main type of therapy prescribed after the disease diagnosis (60.2%), followed by biological therapy (10.6%). **CONCLUSIONS:** Moderate to severe IUC was associated with substantial healthcare resource utilization in Brazil.

**GASTROINTESTINAL DISORDERS – Patient Reported Outcomes and Preference Studies**

**PG31**

**PATIENT REPORTED OUTCOME OF CELIAC DISEASE**

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University of Pes, Pes, Germany

**OBJECTIVES:** Statistics show that in Hungary, one in ten people has celiac disease, which has a significant burden for both the families, the health system and the economy. Our research was designed to provide a comprehensive picture of all children diagnosed with celiac disease at the children’s ward in Tolna County Hospital in 2016. We aimed to explore, identify correlates by reviewing the documents (final report, medical record, and nursing diary) of 132 persons (84 male and 48 female) were reviewed. Their average age was 7.74 years (SD ± 4.46). 28 questions based on the following variables - basic demographic data, symptoms, diagnostic tests, comorbidities, family – were analysed. Descriptive statistics and Chi-square test were used with 95% probability level, we used the SPSS statistics program.

**RESULTS:** 79.5% of the patients were diagnosed with classical clinical symptoms, 17.4% were atypical and 3% did not show any symptoms. Regarding diagnosed patients significantly more (65%) girls (p < 0.00) with classic symptoms occurred than boys (35%). Associated diseases occurred in 59%, these include anemia (34%), celiac disease (5%), iron deficiency (17%), diabetes (8%) and eczema (8%). The sample mainly had serological studies (60%), only four cases were negative results due to low levels of IgA, or lack IgA. In patients with IgA deficiency, a biopsy confirmed the disease in 100%. More invasive procedure, biopsy were made in 62.12%, which revealed villus atrophy in 96.23. Due to the family involvement celiac disease occurred in 43.2%, 65% in siblings, 16% in mothers, and only some cases in fathers, grandparents and cousins.

**CONCLUSIONS:** The investigation shows that celiac disease can appear not only in young children but later in life and need to pay attention to family history because they can help in the rapid diagnosis.

**PG33**

**A SOCIETAL UTILITY STUDY TO ELICIT VALUES FOR ADVERSE EVENTS AND SURGICAL COMPLICATIONS IN MODERATE TO SEVERE CROHN'S DISEASE IN UK**

Worbes-Cerezo M1, Naifee B2, Gallyp K3, Ludha P1


**OBJECTIVES:** The impact of Crohn’s disease (CD) treatments and adverse events (AEs) has been previously researched and reported. However, less is known about surgical complications for CD in the UK. This study aimed to establish the prevalence of severe AEs and surgical complications for CD in the UK general population.

**METHODS:** We developed eight health states varying the route of administration (subcutaneous injection/intravenous infusion), frequency (every 1/2/4/8/12 weeks), and location (hospital/home) to correspond with treatment regimens for a number of commonly used biologic compounds. The best combination of treatment was elicited via a stated preference method, eliciting individual preferences about every health state. Respondents were repeatedly asked to ‘trade off’ a portion of their remaining lifespan for perfect health until a point of indifference was found. Respondents were recruited through a representative internet-based survey panel completed the questionnaire. A utility value was assigned to each health state based on each individual’s response, derived from the midpoint of the indifference interval.

**RESULTS:** Respondents preferred less frequent biologic administrations for both subcutaneous injections (weekly subcutaneous injections at home: 0.859; bi-weekly: 0.859; 8-weekly: 0.871; 12-weekly: 0.874) and infusions (infusions at the hospital 4-weekly: 0.831; 8-weekly: 0.838). Additionally, respondents prefer a subcutaneous injection at home rather than at the hospital (subcutaneous injections every 12 weeks at the hospital: 0.870; at home: 0.874 and subcutaneous injection to infusion (treatment every 8 weeks at the hospital: 0.838; subcutaneous injection: 0.856). Receiving a subcutaneous injection at home was preferred less frequently than other health states (however not significantly for subcutaneous injection at home every 4/8 weeks). **CONCLUSIONS:** Route, frequency and location of administration matter for members of the general public as they have an impact on convenience. The best combination of administration and frequency is receiving a subcutaneous injection every 12 weeks at home, showing that more convenient treatment regimens are associated with higher utility values.

**PG36**

**PREFERENCES FOR ROUTE OF ADMINISTRATION, FREQUENCY AND LOCATION – A TIME-TRADE-OFF STUDY IN THE ITALIAN GENERAL POPULATION**

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**OBJECTIVES:** The objective of this study was to investigate preferences from the Italian general population for route, frequency and location of treatment administration, independent of disease area. **METHODS:** We developed eight health states varying the route of administration (subcutaneous injection/intravenous infusion), frequency (every 1/2/4/8/12 weeks), and location (hospital/home) to correspond with treatment regimens for a number of commonly used biologic compounds. The best combination of treatment was elicited via a stated preference method, eliciting individual preferences about every health state. Respondents were recruited through a representative internet-based survey panel completed the questionnaire. A utility value was assigned to each health state based on each individual’s response, derived from the midpoint of the indifference interval.

**RESULTS:** Respondents preferred less frequent biologic administrations for both subcutaneous injections (weekly subcutaneous injections at home: 0.861; bi-weekly: 0.861; 8-weekly: 0.878; 12-weekly: 0.879) and infusions (infusions at the hospital 4-weekly: 0.836; 8-weekly: 0.849). Additionally, respondents prefer a subcutaneous injection at home rather than at the hospital (subcutaneous injections every 12 weeks at the hospital: 0.873; at home: 0.879 and subcutaneous injection to infusion (treatment every 8 weeks at the hospital: 0.838; subcutaneous injection: 0.856). Receiving a subcutaneous injection at home was preferred less frequently than other health states (however not significantly for subcutaneous injection at home every 4/8 weeks). **CONCLUSIONS:** Route, frequency and location of administration matter for members of the general public as they have an impact on convenience. The best combination of administration and frequency is receiving a subcutaneous injection every 12 weeks at home, showing that more convenient treatment regimens are associated with higher utility values.

**PG37**

**INTERROGATING SOCIAL MEDIA SOURCES TO GAIN INSIGHT ON OPIOID-INDUCED CONSTIPATION SYMPTOMS AS REPORTED BY PATIENTS**

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**OBJECTIVES:** The objective of the general public as a use case partner (on number of fills, days’ supply), healthcare resource use, patient characteristics and demographics) best predicted treatment success by examining concordance/discordance between the predicted satisfaction, based on claims, and patient-reported treatment satisfaction with opioid analgesics. **RESULTS:** Of 350 eligible patients identified from CONTOR (mean age 46.0 years, 94.4% female), 64.6% (n=205) reported satisfaction with linaclotide treatment. Patients who reported treatment satisfaction had significantly more linaclotide fillets compared to unsatisfied patients (mean 2.2 v. 0.5, respectively; p<0.001). As well as a higher number of days’ supply of linaclotide (mean 7.15 v. 20.5 days, respectively; p<0.001). The number of linaclotide fillings was the strongest predictor of patient-reported treatment satisfaction (odds ratio=1.87; p<0.0001). For a cut-off point of ≥2 linaclotide fillings during the past 8 weeks, the satisfaction model had a sensitivity of 0.52 and a specificity of 0.89. **CONCLUSIONS:** A referral of a linaclotide prescription is the best claims-based method of defining patient satisfaction with linaclotide treatment, consistent with behavioural expectations.
OBJECTIVES: Opioid-induced constipation (OIC) is the most common adverse effect associated with prolonged use of opioids, and it can have a major impact on patient’s lives. This exploratory project employed text mining techniques to gather information from a range of social media sources, including patient forums, to better understand which symptoms are associated with OIC. METHODS: A web crawling tool was used to seed the URLs of websites likely to contain the content we were looking for; this was then run to retrieve web-pages containing mentions of OIC. A machine-learning application was developed to extract patient-reported symptoms relating to OIC from the web-pages. The performance of the model was evaluated and tuned using standard cross-validation techniques. The narrative content of the posts was anonymised and analysed manually. RESULTS: Of the 42,000 web-pages retrieved, we found 128 posts that described symptoms of OIC as reported by patients. Some posts mentioned more than one symptom. The most common symptoms were having pain (39 posts), feeling blocked (37 posts), evacuation issues (22 posts) and bloating (22 posts). There were a range of other symptoms which included, weight change, nausea, dyspepsia, constipation, stomach pressure, headache, urgh, stitch, leakage, anus not closing, gassy, brain fog, bleeding and feeling tired. Patients also reported a fear of rupture (4 posts) and of piles (1 post). CONCLUSIONS: A range of symptoms were reported by patients with OIC. This research project shows that social media can be an important source of insight on patient symptoms, which could be invaluable when designing further qualitative or quantitative research or in better understanding the burden of a condition.

PG135
PATIENT-REPORTED OUTCOMES OF OPIOID-INDUCED CONSTIPATION AS IDENTIFIED THROUGH SOCIAL MEDIA

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KMHD Limited, Brighton, UK

OBJECTIVES: The aim of this exploratory project was to better understand the patient-reported impact of opioid-induced constipation (OIC) as discussed in social media. METHODS: In this project, we applied text mining and machine-learning techniques to a large social media data set. A total of 12,022 web-pages were identified and assessed. Initial URLs of websites likely to be relevant to the content we were seeking were found by the crawler. A machine-learning application was developed to extract data from the web-pages anonymous patient-reported concepts relevant to the impact of OIC of the patient. Of the 12,022 web-pages retrieved, 122 described the patient-reported impact of OIC. There were 40 pages that spoke about the impact of OIC on dietary habits or the need for laxatives (with an additional 6 pages speaking about the need for enemas or manual evacuations). There were 36 posts describing the emotional impact (including worry) associated with OIC, with 23 posts describing how OIC had necessitated a change in opioid use. The impact of OIC on global health and everyday functioning (including work) were other topics discussed (9 and 13 patients respectively). CONCLUSIONS: Social media posts can offer an important source of data on patient experiences of disease. In this exploratory study, these posts have indicated that OIC impacts a number of different aspects of people’s lives, including general health, daily functioning, and emotional well-being. OIC also impacts behaviour (dietary change, need for procedures) as patients attempt to reduce its burden. Findings from this study could be used as an input to the development of a conceptual model, or to supplement other qualitative research on the patient-reported impact of OIC.

PG139
DEVELOPMENT OF A NEW PATIENT-REPORTED OUTCOME MEASURE FOR NON-ALCOHOLIC STEATOHEPATITIS: NASH-CHECK

Twice 1, Bulp M2, Oxenard L1, Noto C3, Cryer D2, Langford A1, Cullen R3, Agashivala N1, Brass G1, Manjana A1, Anania A1

1RTI Health Solutions, Manchester, UK, 2Novartis Pharma AG, Basel, Switzerland, 3RTI Health Solutions, Research Triangle Park, NC, USA, 4Global Liver Institute, Washington, DC, USA, 5Bristol-Myers Squibb Company, USA, 6Virginia Commonwealth University, Richmond, VA, 7USA, 8Novartis Pharmaceuticals Corporation, East Hanover, NJ, USA, 9RTI Health Solutions, Newcastle Upon-Tyne, UK

OBJECTIVES: Non-alcoholic steatohepatitis (NASH) is the most advanced form of nonalcoholic fatty liver disease, characterized by excessive liver fat accumulation, inflammation, cell injury and fibrosis. Here we report on the initial development of the NASH-CHECK, a new NASH-specific patient-reported outcome (PRO) measure. METHODS: Content for the NASH-CHECK was generated via thematic analyses of semi-structured, concept elicitation (CE) interviews conducted with NASH patients in Virginia, USA. Item selection was guided by a task-force group including clinical experts, patient representatives and PRO researchers. The content validity of the draft measure was assessed through cognitive debriefing (CD) interviews. RESULTS: Twenty-three CE interviews were conducted (females=18[78%], age: mean[SD]=55±12,range 31-70), post sleep quality (n=12; 52.2%), cognition problems (impaired memory [n=13; 56.5%]; reduced focus [n=11; 47.8%]) and pruritus [n=10; 43.5%]. Key health-related-quality-of-life (HRQOL) impact included; impaired physical function, poor sleep, headaches, fatigue, loss of appetite, nausea and self-consciousness. The first draft NASH-CHECK included 52 items (16 symptoms/36 HRQOL), duplicate items were included to allow patient-selection of most appropriate item phrasing. Fifteen CD interviews were conducted (females=7[46.7%], age: mean[SD]=53±6, range 31-68) with NASH patients (76.2% F) who had biopsy-diagnosed NASH (fibrosis grade:F1=3[20.0%];F2=2[13.3%];F3=6[40.0%]), 4 patients (26.7%) had biopsy-diagnosed NASH. Mean (SD) years since diagnosis: 3.2(2.8). The NASH-CHECK was reduced to 31-items based on patient preferences for item relevance, acceptability and comprehension. Minor changes were made to the instructions and item wording. The final version was considered relevant and acceptable to the 26 eligible patients. US-English validation was successful in producing a US-English NASH-specific PRO measure assessing symptoms and HRQOL suitable for further psychometric evaluation.

GASTROINTESTINAL DISORDERS — Health Care Use & Policy Studies

PG40
A WEB-BASED HUB & SPEKE MODEL FOR THE MANAGEMENT OF HCV PATIENTS AND INNOVATIVE TREATMENTS: THE RESIST - HCV SICILY NETWORK EXPERIENCE

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OBJECTIVES: To develop a web-based platform for connecting hub and spoke centres, gastroenterologists, infectivologists and general practitioners for identifying patients with HCV chronic diseases, characterizing pathology and patients characteristics and for managing drug prescriptions in accordance with guidelines and ensuring therapeutic appropriateness. METHODS: The Sicily HCV Network and CINECA Interuniversity Consortium have designed and implemented an online system for data collection and analysis to support the management and treatment of chronic hepatitis and cirrhosis. The network includes 42 centres, 96 gastroenterologists or infectivologists and around 300 general practitioners connected by a web platform in which patients registration, disease evaluation, validation (if applicable), therapeutic plan, follow-up visits and EHR data are collected. The web platform, through an electronic agenda system, also guarantees fibroscan and therapies booking from Spoke to Hub centres (enabled to prescribe antiviral therapies). In just two years from March 2015 to June 2017, over 12,000 patients (57% male, mean age 63 years) have been recorded in the web platform; more than 50% of patients was included in the Registry for Chronic hepatitis and genotype 1b has been the most frequent observed in the population (64%), 4,754 patients completed the treatment, and 3,697 completed the 12 weeks of follow-up. The Sustained Virological Response (SVR) was achieved in 3,499 patients (94.6%). CONCLUSIONS: The HCV Sicily Network is an effective system to manage HCV chronic diseases that need a complex diagnostic and therapeutic approach and represents a Health Value Added for all stakeholders: it facilitates Regional Health Department in monitoring drug consumption and related costs, helps specialists in prescribing a more appropriate therapy, it improves both continuity of care and equity of access to innovative medicines and, moreover, it allows the collection of a huge amount of real-world data for epidemiological estimations, pharma-economical evaluations and other scientific purposes.

PG41
BARRIERS TO ACCESS AND PAYING NEGOTIATIONS CRITERIAL SELECTION FOR NOVEL TREATMENTS FOR HEPATITIS C IN THE GREEK HEALTHCARE CONTEXT

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OBJECTIVES: Novel treatments with direct-acting antivirals (DAAs) against Hepatitis C (HCV) address the issue of chronic diseases that need a complex diagnostic and therapeutic approach and represents a Health Value Added for all stakeholders: it facilitates Regional Health Department in monitoring drug consumption and related costs, helps specialists in prescribing a more appropriate therapy, it improves both continuity of care and equity of access to innovative medicines and, moreover, it allows the collection of a huge amount of real-world data for epidemiological estimations, pharma-economical evaluations and other scientific purposes.

RESULTS: According to the Delphi process, the major barriers in access to treatment for Greek patients include patient ineligibility in meeting treatment criteria (restricted to F3 treatment experienced and F4 only) (90.0), limited patient awareness on the available treatments and their efficacy (56.8), lack of system capacity for the management of the disease (46.3) and lack of specialized medical personnel (26.8). Major criteria highlighted for pricing/negotiation process for DAAs were therapeutic efficacy of medicines (96.87), cost-effectiveness (93.37) and severity of the disease (91.62), followed by parameters such as safety, incidence of the disease etc. Objectives: Novel treatments with direct-acting antivirals (DAAs) against Hepatitis C (HCV) address the issue of chronic diseases that need a complex diagnostic and therapeutic approach and represents a Health Value Added for all stakeholders: it facilitates Regional Health Department in monitoring drug consumption and related costs, helps specialists in prescribing a more appropriate therapy, it improves both continuity of care and equity of access to innovative medicines and, moreover, it allows the collection of a huge amount of real-world data for epidemiological estimations, pharma-economical evaluations and other scientific purposes.

PG42
THE VALUE OF REAL-WORLD EVIDENCE TO SUPPORT VALUE-BASED DECISION-MAKING: EXAMPLES FOR VEDOLIZUMAB IN INFLAMMATORY BOWEL DISEASE

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OBJECTIVES: Efficacy of interventions from randomised controlled trials (RCTs) forms the backbone of reimbursement submissions. However, RCTs have limited external validity, providing insufficient insights for payers to make resource-allocation decisions for their populations. Real-world evidence (RWE) provides a more...
accurate representation of drug utilisation and healthcare expenditure in clinical practice and can inform on comparative effectiveness, most of which was based on the absence of head-to-head trials. We present examples of vedolizumab (VDZ) outcomes in inflammatory bowel disease (IBD) to demonstrate how RWE can support value-based decision-making by payers.

**OBJECTIVES**: Awareness of the prevalence and burden of celiac disease is increasing globally. This study summarizes the latest estimations of celiac disease prevalence and burden disease, including impact on quality of life, of celiac disease in the US, and provides a comparative method to assess size and reliability of data.

**METHODS**: Meta-review of literature and comparison of methods and estimations from peer-reviewed studies in 6 countries. **RESULTS**: The reliability of estimations of treatment prevalence and its burden disease is increasing around the world, with the exception of Northern Europe. The number of 68 countries. **CONCLUSIONS**: Celiac disease estimates from peer-reviewed studies in 6 countries. **CONCLUSIONS**: Celiac disease continues to be poorly understood, underdiagnosed and mismanaged, with differences in prevalence and burden disease.

**RESPIRATORY-RELATED DISORDERS – Clinical Outcomes Studies**

**PRS1**

**AGING AND GENDER RELATIONSHIPS WITH SYSTEMIC CORTICOSTEROID-INDUCED MORBIDITY IN ASTHMA: A CARE-CENTERED STUDY**

**Objective**: To assess the long-term effectiveness of grass-pollen (GP) sublingual immunotherapy (SLIT) tablet on allergic rhinitis (AR) and asthma in France. **Methods**: A retrospective analysis using real-world data from IMS Longitudinal Data (LUD) IBD was performed on 60% of French retail pharmacies was performed on 40% (March 2012 to December 2016). Two cohorts of patients with GP AR were selected: patients treated with GP SLIT tablet for at least 2 treatments were included for AR (n=2,412) (high corticosteroid exposure) were matched by age and gender with patients with mild asthma (n=3,975) (low corticosteroid exposure) and a non-asthma control cohort (with a diagnosis of rhinitis; n=2,412) (no corticosteroid exposure) from nationally representative primary care databases - the Optimum Patient Care Research Database (OPCRID). **Results**: Younger patients with high oral corticosteroid (OCS) exposure had a greater odds of a range of conditions (infectious, autoimmune, psychiatric, allergic, and chronic kidney disease, cardiovascular disease, cataracts, hypertension and obesity (p < 0.01)) related to those with low OCS exposure in this age group. This difference in odds was much less evident in older patients. Both males and females with high OCS exposure compared to low OCS exposure had a lower odds of chronic conditions. Their differential pattern of morbidity prevalence was also reflected in mean healthcare costs per patient per year. **Conclusions**: This data demonstrates important differential prevalence of corticosteroid-induced morbidity by age and gender which is paralleled by differences in healthcare costs. This is important for cost-effectiveness analysis of corticosteroid-sparing therapies as these therapies may exhibit different incremental cost-effectiveness ratios for specific subgroups notably younger patients.

**PRS2**

**LONG-TERM IMPACT OF GRASS-POLLEN (GP) SUBLINGUAL IMMUNOTHERAPY TABLET (SLIT) ON ALLERGIC RHINITIS (AR) AND ON ALLERGIC ASTHMA (AA)**

**OBJECTIVES**: To assess the long-term effectiveness of grass-pollen (GP) sublingual immunotherapy (SLIT) tablet on allergic rhinitis (AR) and asthma in France. **Methods**: A retrospective analysis using real-world data from IMS Longitudinal Data (LUD) IBD was performed on 40% (March 2012 to December 2016). Two cohorts of patients with GP AR were selected: patients treated with GP SLIT tablet for at least 2 treatments were included for AR (n=2,412) (high corticosteroid exposure) were matched by age and gender with patients with mild asthma (n=3,975) (low corticosteroid exposure) and a non-asthma control cohort (with a diagnosis of rhinitis; n=2,412) (no corticosteroid exposure) from nationally representative primary care databases - the Optimum Patient Care Research Database (OPCRID). **Results**: Younger patients with high oral corticosteroid (OCS) exposure had a greater odds of a range of conditions (infectious, autoimmune, psychiatric, allergic, and chronic kidney disease, cardiovascular disease, cataracts, hypertension and obesity (p < 0.01)) related to those with low OCS exposure in this age group. This difference in odds was much less evident in older patients. Both males and females with high OCS exposure compared to low OCS exposure had a lower odds of chronic conditions. Their differential pattern of morbidity prevalence was also reflected in mean healthcare costs per patient per year. **Conclusions**: This data demonstrates important differential prevalence of corticosteroid-induced morbidity by age and gender which is paralleled by differences in healthcare costs. This is important for cost-effectiveness analysis of corticosteroid-sparing therapies as these therapies may exhibit different incremental cost-effectiveness ratios for specific subgroups notably younger patients.
significantly higher in STG (p < 0.001). In STG, asthma occurred in 13.7% of patients without asthma before index versus 20.6% in the CG and logistic regression allowed to conclude that this rate was significantly lower in STG (p < 0.001). For patients with asthma, with a median reduction of 50% of asthma MD during analysis period, STG presented a significant reduction compared to CG which remained stable over time on observation period. **CONCLUSIONS:** The SLIT tablets significantly reduced AR progression after treatment cessation, asthma occurrence and progression during and after treatment cessation, as assessed by MD. These real-life data confirms a previous German study and reinforces SLIT tablets overall value.

**PSR3**
EVALUATION OF ANTI-ASTHOMATIC POTENTIAL OF ARTEMESIA PALLENS WALLS IN OVALBUMIN-INDUCED AIRWAY HYPERRESPONSIVENESS IN LABORATORY RATS

Mukherjee AK, Kandhare AD, Bodhanikar SL

**OBJECTIVES:** To evaluate the anti-asthmatic potential of Artemisia pallens methanol extract (APME) in ovalbumin (OVA)-induced airway hyperresponsiveness (AHR) in laboratory rats. **METHODS:** The methanolic extract of aerial parts of Artemisia pallens (APME) was prepared. The AHR was induced in the male Wistar by intraperitoneal (ip) injection of OVA. Rats received treatment of either APME (100, 200, and 400 mg/kg, p.o.) or vehicle from next 28 day. Various behavioral, biochemical, molecular and histopathological parameter were assessed. **RESULTS:** Treatment with APME (200 and 400 mg/kg) showed the significant restoration (p < 0.01) in altered lung function test, hematology, and bronchoalveolar lavage fluid (BALF) cellular count. OVA-induced alteration in airway nitro-oxidative stress and IgG level was significantly reduced by APME (95% CI: 0.93-0.99) by p < 0.01). APME had a significantly up-regulation (p < 0.001) in nuclear factor erythroid 2-related factor 2 (Nrf2) mRNA expressions, whereas it significantly down-regulated (p < 0.01) tumor necrosis factor-α (TNF-α), interleukin-6 and -8 and other large primer factor beta (TGF-β) mRNA expressions. Histological alteration induced in the lung by OVA was ameliorated by APME. **CONCLUSIONS:** APME has suppressive properties for the pathogenesis of AHR through modulation of oxido-inflammatory factors.

**PSR4**
EFFICACY OF INDACATEROL/GLYCOPYRRONIUM IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE: A META-ANALYSIS OF DIRECT COMPARISONS

Restrepo P1, Yecuma D1, Triana J1,2, Bayona J1,2, Lasalvia P1,3, Gil-Rojas Y1,2, Castella-Castilla C1, Reddy DP

**OBJECTIVES:** Chronic obstructive pulmonary disease (COPD) is the fourth most common cause of death globally, and is expected to be the third by 2030. New therapies have been recently included for its treatment highlighting the need to compare their outcomes and clinical benefits. **METHODS:** Retrospective cohort study of patients with COPD was conducted. Electronic data from 5 hospitals located in northern Colombia was used. A 95% CI was calculated for each comparison. **RESULTS:** Of the 85 references evaluated, 12 were included for data extraction. Statistically significant differences were found between IND/GLY and isotropium for Trough FEV1 70.7 ml (95% CI: 40.4-101.9 vs 64.2 ml (95% CI: 36.4-92.9) and SORQ. 2.68 (95% CI: 3.92–14.4). Compared with salmeterol/fluticasone, IND/GLY had a statistically significant difference in Through FEV1 90 ml (95% CI: 60-120). IND/GLY showed higher efficacy over other first-line therapies. Compared to monocomponents, IND/GLY showed statistically significant advantage. No differences were found on safety. No serious risk of bias was identified in the trials included. **CONCLUSIONS:** IND/GLY showed favorable differences in efficacy compared with all comparators. There were no statistically significant differences in safety. IND/GLY demonstrated higher efficacy than standard therapy for moderate to severe COPD.

**PSR5**
CLINICAL EFFECTIVENESS OF SMOKING CESSATION THERAPY DURING PREGNANCY

OMarchu1,2, Cullinan F1, Moran P1, Harrington P1, Ryan M2

**OBJECTIVES:** This study aims to assess the clinical effectiveness of smoking cessation interventions available to women during pregnancy, both pharmacological and non-pharmacological (psychosocial). **METHODS:** Searches were carried out for recent systematic reviews of eligible smoking cessation interventions in women during pregnancy. Two systematic reviews relevant to this HTA were identified, both Cochrane Reviews. These reviews were subsequently updated with additional studies that have emerged since the original review was published. Electronic searches were conducted in Medline, Embase and the Cochrane Register of Clinical Trials to identify relevant studies. Eligible smoking cessation intervention in women during pregnancy to another eligible intervention or to no treatment. **RESULTS:** A total of 73 relevant studies were identified, published between 1976 and 2016. The studies broadly support the view that smoking cessation interventions are effective in pregnancy. NRT is the only pharmacotherapy licensed for use in pregnant smokers who wish to quit, and its efficacy appears to be lower in pregnant smokers than in non-pregnant smokers. Eight trials investigated NRT use as a smoking cessation intervention in pregnancy. Hospitalisation rates, but this did not reach statistical significance. The review identified 64 studies evaluating psychosocial interventions for smoking cessation in pregnancy. However, these were rated as being of low quality. There was some evidence to suggest that counselling, health education and financial incentives increase cessation rates in pregnant smokers. **CONCLUSIONS:** Pregnant smokers should be offered a psychosocial intervention in the first instance. However, due to the limited effectiveness of interventions in pregnancy, smokers should be encouraged to quit prior to conception when more treatment options are available and therapy is more likely to succeed.

**PSR6**
CLINICAL OUTCOMES OF THEOPHYLLINE USE AS ADD-ON THERAPY IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE: A PROPENSITY SCORE MATCHING ANALYSIS

Wilamet P1,2, Kengka L1, Thayawat C1, Phalaissontong P1, Sombunseem S1, Saowak S2

**OBJECTIVES:** To examine clinical outcomes of theophylline use in COPD patients receiving ICS+LABA. **METHODS:** Electronic data from 5 hospitals located in northern Thailand were reviewed, January 1, 2012 to December 31, 2015 were included. Propensity score matching (2:1 ratio) technique was used to minimize confounding factors. **RESULTS:** After propensity score matching, of 711 patients with COPD, 474 used theophylline and 237 non-theophylline users (mean age, 70.1 years, 74.4% male, 60.8% severely affected). Mean follow-up time was 2.26 years. Theophylline was significantly increased risk of overall exacerbation (aHR 1.48, 95% CI: 1.11–1.96; p = 0.008), and tended to increased pneumonia (aHR 1.28, 95% CI: 0.89–1.86; 0.10) and all-cause hospitalizations (aHR 1.28, 95% CI: 0.98–1.70; 0.08). **CONCLUSIONS:** Theophylline use as add-on therapy to ICS and LABA in COPD patients was increased risk of overall exacerbation. Therefore, prescribing of theophylline in COPD patients should be considered in a restrictive way. Prospective study of theophylline use in both safety and efficacy issues was warranted.

**PSR7**
COMPARING INHALED CORTICOSTEROIDS AND LONG-ACTING BETAZONES COMBINATION TO INHALED CORTICOSTEROIDS ON RISK OF ISCHEMIC CARDIOVASCULAR DISEASES IN PATIENTS WITH ASTHMA

Park J1, Kang H1, Hong K1, Lee E1

**OBJECTIVES:** Despite inhaled corticosteroids and long-acting beta agonists (ICS-LABA) combination treatment is commonly practiced for patients with chronic obstructive pulmonary disease (COPD), only randomized controlled trials (RCT) on safety in ischemic cardiovascular diseases (ICVD) were conducted while real-world studies are scarce. This study aimed to compare the ICVD risk in ICS and LABA treatment groups using real-world data. **METHODS:** A sample cohort data provided by the South Korea National Health Insurance Service. Study patients included those from the age of 40 with new diagnosis of asthma and pre-existing cardiovascular disease (ICVD). **RESULTS:** Eligible patients were found for 60 days from their index dates. The incidence rate and crude adjusted odds ratios (OR) of ICVD associated with ICS-LABA compared to ICS were estimated with 95% confidence intervals. Patients were adjusted for CCI, hypertension, age group, and gender. Compared to ICS, crude OR was 0.89 (95% CI: 0.82–1.00), while adjusted OR was 0.965 (95% CI: 0.487–1.915) in ICS-LABA group. The result showed no statistical significance. **CONCLUSIONS:** The unadjusted and adjusted risk of ICVD in ICS-LABA group compared to ICS did not show significant difference, which corresponded to the result from previous study that systematically reviewed RCT's. More real-world studies considering patients' pre-existing cardiovascular diseases should be conducted in order to reflect various conditions in patients with asthma.

**PSR8**
ESTIMATING THE PROPORTION OF PATIENTS DIAGNOSED WITH ALLERGIC RHINITIS, AT RISK OF DEVELOPING ALLERGIC RHINITIS AND ASTHMA

Romano M1,2, Burton CM1, Godfrey P1, Dungarwalla MH3, Boxall NS3

**OBJECTIVES:** Continuous exposure to allergens can lead to the development of allergic rhinitis (AR) and asthma. This study estimates the proportion of patients at risk of developing asthma, and how many of those patients have allergen specific diagnoses. **METHODS:** The study was performed using The Health Improvement Network (THIN), a UK primary care database. Patients were selected using Read codes indicating a diagnosis of AR, and included if they had at least 12 months medical history prior to AR diagnosis. Patients were excluded if a Read code indicated a diagnosis of asthma at that of AR. The medical notes of 200 randomly selected patients were examined for the mention of key terms and their misspellings, to identify allergen-specific AR. **RESULTS:** The THIN population comprised 13,217,187. In total, 940,259 (7.1%) patients had ever been diagnosed with AR. Of these, 786,727 (83.7%) were registered in THIN for at least 12 months prior to AR diagnosis date. There were 593,471 (75.4%) patients identified as being at risk of developing asthma. Ten of the 200 randomly sampled patients (5.0% (95% confidence interval (CI) 2.9–7.9)) had a record of sensitization to any specific allergens included in free text fields, and four (2.0% (95% CI 0.8–5.0)) denoted sensitization to grass pollen. **CONCLUSIONS:** A large number of patients with AR are at risk of developing asthma. Only a small proportion of patients with AR at risk of developing asthma, have allergen-specific diagnoses.
PRS9

FACTORS ASSOCIATED WITH MULTI-DRUG RESISTANT TUBERCULOSIS INCLUSION IN GHANA: A 1:2 UNMATCHED CASE CONTROL STUDY, 2017

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OBJECTIVES: To assess the economic benefits of a change in therapy with separate inhalers of budesonide and formoterol for mild and severe COPD patients. Methods: This economic analysis included a decision tree model simulating the clinical pathways of patients with COPD with and without exacerbations and outcomes. The analysis was performed using Markov models to compare the cost of treatment with formoterol and budesonide monotherapies with formoterol and budesonide in a fixed combination (FDC). Outcomes were total costs, and rates of exacerbation and hospitalization. Results: The estimated cost savings for non-exacerbators and exacerbators, respectively, were $109.3 million and $33.7 million per patient over 5 years. Conclusions: The FDC is cost-effective and is associated with reduced exacerbations and hospitalizations.

PRS10

RISK OF ACUTE EXACERBATION AND SEVERE ACUTE EXACERBATION ASSOCIATED WITH DIFFERENT SEVERITIES OF COPD: A PROSPECTIVE COHORT STUDY IN KOREA

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OBJECTIVES: To investigate the economic impact of different severities of COPD on health-related costs among patients with COPD. Methods: This prospective cohort study included 426 patients with COPD who were divided into four severity groups: mild (n=137), moderate (n=138), severe (n=132), and very severe (n=19). The follow-up period was 5 years. Results: The annual total costs were significantly higher in the severe and very severe groups compared to the mild and moderate groups. Conclusions: The economic impact of COPD severity is significant and increases with the severity of the disease.

PRS11

RISK FACTORS AND THEIR ROLE IN TRIGGERING THE ASTHMATIC ATTACK

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OBJECTIVES: To identify the risk factors associated with asthma attacks and their role in triggering the asthmatic attack. Methods: A cross-sectional study was conducted from February 2015 to June 2016 in Bahawalpur. Total 341 patients were approached using systematic sampling method while only 299 patients completed the study. The data were analyzed using descriptive, demographic information, triggering risk factors, and use of precautionary measures. Results: Summary of data was accomplished by descriptive statistics. Complete analysis was done using SPSS version 16.0. Results: Out of 209, 109 (51.2%) were males and 90 (46.6%) were females with the age range of 17-31 years. 22.9% of the population had asthma attacks. Factors such as smoking, air pollution, and medication use were the leading causes of asthma attacks. Conclusions: There is an increasing interest in understanding what the asthma risk factors are, and their frequency in triggering asthma attacks in Pakistan. So, the main aim is to evaluate the frequency of risk factors triggering the asthmatic attack and their role in triggering the asthmatic attack.

RESPIRATORY-RELATED DISORDERS – Cost Studies

PRS12

BUDGET IMPACT ANALYSIS OF A NEW, FIRST-IN-CLASS TRIPLE FIXED DOSE COMBINATION THERAPY FOR COPD PATIENTS

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OBJECTIVES: To assess the budget impact of a new, first-in-class triple fixed-dose combination therapy for COPD patients. Methods: A decision model was developed to assess the budget impact of a new triple fixed-dose combination therapy compared to current therapies. Results: The model demonstrated that the new therapy was cost-effective and associated with reduced exacerbations and hospitalizations. Conclusions: The new therapy is a cost-effective and safe alternative to current therapies for COPD patients.

PRS13

BUDGET IMPACT ANALYSIS OF SAME AND MIXED BUDGESETION AND FORMOTEROL INHALERS IN THE TREATMENT OF ASTHMA IN RUSSIAN FEDERATION

Makarova E, Yagudina R, Kulikov A

OBJECTIVES: To assess the budget impact of using same and mixed budesonide and formoterol inhalers in the treatment of asthma in Russian Federation. Methods: A decision model was developed to assess the budget impact of using same and mixed inhalers compared to current therapies. Results: The model demonstrated that the use of same and mixed inhalers was cost-effective and associated with reduced exacerbations and hospitalizations. Conclusions: The use of same and mixed inhalers is a cost-effective and safe alternative to current therapies for asthma patients in Russian Federation.

PRS14

BUDGET IMPACT OF SELEXPAG FOR THE TREATMENT OF PULMONARY ARTERIAL HYPERTENSION (PAH) IN GREECE

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OBJECTIVES: To estimate the budgetary impact for the National Organization for Health and Social Solidarity of the introduction of a fixed-dose combination of amlodipine, bosentan, and selexipag for the treatment of PAH in Greece. Methods: A decision model was developed to assess the budgetary impact of the new therapy compared to current therapies. Results: The model demonstrated that the new therapy was cost-effective and associated with reduced exacerbations and hospitalizations. Conclusions: The use of the new therapy is a cost-effective and safe alternative to current therapies for PAH patients in Greece.
treatment were calculated and compared for two scenarios: market distributions with and without the use of tiotropium Smcg + olodaterol 5 mcg (Spipitol® Respimat®). METHODS: A disease-state model was developed in Excel® with equations which estimated the annual per patient cost of COPD management by treatment. Only direct medical costs were included in the analysis. The model took into consideration the costs associated with medications and treatment options. RESULTS: The pharmacological costs, representing 109% of annual income. CONCLUSIONS: The introduction of tiotropium 5mcg + olodaterol 5 mcg in the management of COPD in Greece is anticipated to have a manageable budget impact to EOPYY.

PRS16 EVALUATING THE ANNUAL COST PER RESPONSE RATE OF PIRFENIDONE AND NINTEDANIB FOR THE TREATMENT OF PATIENTS WITH IDIOPATHIC PULMONARY FIBROSIS Papageorgiou L, Szczepańska A, Sampietro K, Caporos X Roche (Hellas) S A, Athens, Greece

OBJECTIVES: The current clinical practice for the management of patients with Idiopathic Pulmonary Fibrosis (IPF) includes two alternative therapeutic options, pirfenidone and nintedanib. The analysis aimed at evaluating their efficiency within the Greek healthcare system by comparing their annual cost per response rate from a payer’s perspective. METHODS: In assessing the efficiency of the two therapeutic options, the cost per response rate was estimated to reflect the annual drug cost for achieving a rate of decline not more than 10 percentage points in the % predicted FVC, an endpoint consistent with a slowing of disease progression and clinical stabilization. Clinical data for the IPF patient populations of mild-to-moderate physiologial impairment were derived from pirfenidone’s ASCEND & CAPACITY 1 & 2 trials (weighted average) and nintedanib’s INSULIS 1 & 2 trials. For each therapeutic option, respective costing data of drug acquisition were obtained from official government sources (values in €, 2017). RESULTS: The analysis estimated that the annual costs to achieve clinical stabilization was €27,856 and €31,802 with pirfenidone and nintedanib, respectively. Difference in the annual cost per response rate between the two alternatives was in favor of pirfenidone with generated savings of €3,947 (€31,802 vs €27,856). For the treated IPF patient population, results indicate that the savings realized from treating patients with pirfenidone instead of nintedanib could be invested in covering the annual cost for 17% more IPP patients receiving therapy with pirfenidone or for 14% more IPP patients reaching clinical stability. CONCLUSIONS: Within the Greek healthcare environment of scarce resources, pirfenidone treatment can be a cost-saving therapeutic alternative to nintedanib for the treatment of patients with mild-to-moderate IPF and yields sufficient savings to treat and stabilize disease progression for more patients compared to its competitor.

PRS17 SYSTEMATIC REVIEW OF ECONOMIC IMPACT OF AIR POLLUTION ON HEALTH Sivaraj A1, Azzeri A2, Isahak M2, Dahlu M2

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OBJECTIVES: The impact of the exposure to air pollution can be seen from both health and economical perspective. This review study synthesizes available literatures that related to the financial implications of air pollution on human’s health. METHODS: The database used for this review was PubMed, Scopus and Web of Science. Online databases were searched until April 2017. Searching strategies were done using Mesh terms and identified keywords for each databases. The articles were limited to English language and journal articles only. Articles were included if the review papers, proceedings and reports were excluded from this review. From initial search of 2095 articles, 268 duplicate articles were removed. After reviewing titles and abstracts, 36 articles fulfilled our inclusion criteria. ECOEVAL website was included in this review. ARTICLES: The present review included the literature on the effects of air pollution on health cost and utility. For every increased in particulate matter 10-2.5, there were 0.3% to 3.7% increased in hospital admissions and outpatient visits due to air pollution related illnesses. The effects of air pollution on health cost and utility were mostly prominent in short-term, high level of particulate matter exposures. The health care costs associated with air pollution were highest in children and young adults. The monetization of health costs related to air pollution was estimated in the range of $30 to $150 per person in 2017. CONCLUSIONS: The high healthcare costs and increased health care utilization rates due to air pollution are a significant burden at a global scale, with the economic burden in low and middle income countries being the highest. The burden of disease and the increase in healthcare expenditure was very significant. This review study synthesizes the available evidence on the financial burden of air pollution on human health in low and middle income countries. Keywords: Air pollution, Air pollution-related illnesses, Health care costs, financial burden, Economic impact.
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PRS23

PHARMACO-ECONOMIC ASSESSMENT OF CAPTIVIG (ROXALAN) IN PHARMACOECONOMICS AND ECONOMIC EFFICACY IN ATHEROSCLEROSIS AND CARDIOVASCULAR DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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OBJECTIVES: To conduct a systematic review and meta-analysis of controlled comparative trials investigating the cost-effectiveness of CAPTIVIG (roxalaprevir) on the treatment of chronic hepatitis C (CHC) patients.

RESULTS: A total of 20 randomized controlled trials were included in this meta-analysis. The mean difference in healthcare costs was $11,549 (IQR: $6,060–$17,034) per patient with CHC treated with CAPTIVIG, compared to interferon-based therapy.

CONCLUSIONS: CAPTIVIG is an effective and cost-effective treatment for CHC, based on the results of this meta-analysis.

PRS24

ESTIMATING THE EXCESS COSTS OF COMMUNITY-ACQUIRED PNEUMONIA IN ELDERLY PEOPLE IN JAPAN

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OBJECTIVES: The purpose of this study was to estimate the excess costs of community-acquired pneumonia (CAP) in elderly people in Japan.

METHODS: This study included patients who were ≥65 years old, received any treatment every year from August 1, 2012 to July 31, 2015 obtained from people in Japan.

RESULTS: Overall, 123 IPF patients were included in the study. The purpose of the current study was to estimate the excess costs of CAP in elderly people in Japan. METHODS: This study included patients who were ≥65 years old, received any treatment every year from August 1, 2012 to July 31, 2015 obtained from people in Japan. The estimated total economic cost of CAP for the year 2014 was $43.1 million (€32.5 million).

CONCLUSIONS: The excess costs of CAP in elderly people in Japan were $9,500 per year due to CAP. In order to consider the appropriate distribution of medical care costs and benefits in the health system and the patients in Greece, the cost of IFP highlights the necessity to improve the disease management in order to avoid unnecessary expenditures and to ensure equal access to the health care services and in outcomes.

PRS25

ESTIMATING THE LIFETIME TOTAL ECONOMIC COSTS OF RESPIRATORY DISEASE IN BEEF AND DAIRY CATTLE IN THE UK

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BACKGROUND: Penetration of calf respiratory disease vaccination in the UK is low (estimated 25% of dairy calves and 35% of beef calves). Market research indicates that an important barrier to vaccination is a limited understanding of costs of calf respiratory disease.

METHODOLOGY: Separate analyses were conducted for dairy heifer (DH), dairy-bred beef (DBB) and beef suckler (BS) calves. Analyses considered costs at the individual animal level from the perspective of the producer. Costs on expenditure (additional resources) and losses (decrease in production) were derived from the published literature.

RESULTS: The financial burden of CRD in Austria is substantial. Because COPD is the major cost driver and causally linked to smoking, these social costs are largely preventable.

CONCLUSIONS: The costs of impaired lifetime productivity exceed the immediate costs of calf respiratory disease. The estimated total economic lifetime cost of respiratory disease was £772 (€1,131) (DBB moderate) £677 (DBB severe); £129 (BS moderate), £263 (BS severe). CONCLUSIONS: Calf respiratory disease leads to significant immediate and subsequent lifetime productivity economic costs. These cost estimates have potential to inform partial budget models to assess the incremental net benefit of vaccine interventions.

PRS26

EVIDENCE MAP OF COSTS STUDIES IN CYSTIC FIBROSIS SINCE 2000

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OBJECTIVES: To create an evidence map of studies reporting the direct and indirect costs associated with cystic fibrosis, and the geographical settings in which these studies were conducted. METHODS: We searched the heoro.com database (www.heoro.com) for costs studies in cystic fibrosis published between 2000 and 17 May 2017. We analyzed the costs identified by the search to determine the different types of costs reported across the range of geographical locations and interventions. We presented the findings as an evidence map. RESULTS: We found a total of 60 abstracts which described costs. Eighteen abstracts described indirect costs from 11 countries and seven reported indirect costs from five countries. The most common setting was the United States, with 15 abstracts, followed by the UK (13), Australia (7), Canada (6), Germany and France (4), the Netherlands and Ireland (3), and Switzerland (2). Nine studies were reviews of the international literature. Fourteen studies reported costs of healthcare in general. Specific interventions studied included prenatal or neonatal screening (18 abstracts), antibiotics for respiratory infections (usually Pseudomonas aeruginosa, but also Haemophilus influenzae and lung transplant). The economic burden of cystic fibrosis was substantial. The costs of impaired lifetime productivity exceed the immediate costs of calf respiratory disease. The estimated total economic lifetime cost of respiratory disease was £772 (€1,131) (DBB moderate) £677 (DBB severe); £129 (BS moderate), £263 (BS severe). CONCLUSIONS: Calf respiratory disease leads to significant immediate and subsequent lifetime productivity economic costs. These cost estimates have potential to inform partial budget models to assess the incremental net benefit of vaccine interventions.
The most common pharmacologic treatment was fixed dose combination of β2-adrenergic receptor antagonists/inhaled glucocorticoids (96.7%), followed by leukotriene receptor antagonists (77.1%) and biologic treatment (omalizumab) (93.9%). 139 (49.5%) patients (61% of total exacerbation mean: 1.9 exacerbation/patient) of whom 22 patients required hospitalization, with a mean hospital stay of 10.9 days/patient. Mean sick leave due to severe asthma was 9.15 days per patient. Mean annual direct cost (confidence interval 95%) was $7,393 (6,509-8,514) per patient. 62% of the total cost was due to asthma-related healthcare visits or emergency department/patient. Total direct cost was $1,195/patient. When indirect costs were added (#856/patient (476-1,573)), the total annual mean cost rose to $8,250/patient (7,193-9,733). CONCLUSIONS: The economic impact of severe asthma in Spain amounts to $8,250/patient from the societal perspective.

### PRS29

**DISEASE-RELATED COST BURDEN IN PATIENTS UNDERGOING SINUS SURGERY FOR CHRONIC RHINOSINUSITIS: A CLAIMS-BASED ANALYSIS**

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**Abstract:**

The aim was to describe treatment with endoscopic sinus surgery (ESS). The additive contributions of nasal polyposis (NP) and revision surgery to 1-year costs were also evaluated. METHODS: Data from 2012-2015 were extracted from the Blue Health Intelligence database. Adult patients (age 18-64) having ESS (ethmoidectomy CPT 31254 or 31255) for CRS, with index visits of <1 week and medical and pharmacy enrollment for ≥1 year pre- and post-index surgery were included. Related healthcare utilization was defined as any visit with a primary diagnosis of GES, acute sinusitis, or NO or any prescription from a therapeutic category commonly used to treat CRS or related comorbidities. The primary outcomes included one-year revision rates and one-year medical and pharmacy expenditures. RESULTS: A total of 23,942 patients met all inclusion criteria (mean age 44; 50% male), and 9,665 (41.1%) also had NP. The revision ESS rate within 1 year was 2.1%, and these occurred twice as often in CRSwNP compared to CRSsNP (3.6% vs. 1.7%). Mean one-year cost of treatment was $17,092 vs. $8,686 for CRSwNP and $10,757 for CRSwNP in patients not requiring revision ESS. For those requiring revision ESS within the first year, mean one-year expenditures increased by $11,186 to $19,853 for CRSwNP and by $13,395 to $24,134 for CRSsNP. CONCLUSIONS: The healthcare-related costs for patients having ESS for CRS are substantial, as are the additive impacts of NP and revision surgery. CRSwNP doubled the risk of revision surgery in the first year after ESS compared to CRSwNP and cost 24% more, even in the absence of a second procedure.

### PRS30

**PREVALENCE AND TREATMENT COST OF NON-COMMUNICABLE DISEASES RELATED TO SMOKING IN INDONESIA**

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**Abstract:**

This study aimed to estimate the current incidence and treatment cost of non-communicable diseases attributed to tobacco among Indonesian population in 2015. METHODS: An epidemiological study was performed. Using national universal coverage database in 2015 we calculated the incidence and treatment cost of 19 diseases. Proportion of smoking attribution toward diseases and treatment cost due to smoking were calculated using attributable fraction (AF) formula, and using the prevalence of smoking and relative risk of each disease. RESULTS: The study revealed that the incidence of smoking related diseases accounted for 991,331 (1.6%) total incidence of all non-communicable diseases in Indonesia. The highest rank of disease prevalence was hypertension, chronic obstructive pulmonary diseases (COPD) and ischemic heart disease. The treatment cost of smoking in Indonesia was conservatively estimated to be at least US$ 2,177 million, approximately 2.5% of the 2015 gross domestic product. A majority of the cost was largely concentrated in the male population (US$2.164 million). Treatment costs of hypertension, COPD, and ischemic heart disease had the highest cost burden. CONCLUSIONS: This study finding provides scientific evidence about economic burden of smoking, particularly the healthcare expenditure covered by government. Tobacco control efforts need to be prioritized in to prevent higher losses of the nation. This study’s evidence is important for informing national public health policy to advocate the health promotion and prevention program.

### PRS31

**COST-BENEFIT ANALYSIS OF A SMOKING CESSATION PROGRAM FUNDED BY THE SPANISH NATIONAL SYSTEM IN PRE-OPERATIVE PATIENTS**

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**Abstract:**

The smoking-prevalent is a primary objective for healthcare professionals and authorities yet. The aim was to analyze the efficiency of a smoking-cessation program in pre-operative patients funded by the National (INS) or regional (CPS) administrations. METHODS: A cost-benefit analysis was performed from the NHS per-patient in year 2016 in a smoking annual any-type surgery cohort ready to quit smoking. This cohort was identified from the year-2014 national annual hospital discharge registering patients included in the smoking cessation program survey. Included costs corresponded to the implementation of the smoking-cessation program, and were medical counselling/follow up and quitting smoking drug (varenicline, bupropion and nicotine-replacement-therapy), which are not funded currently were considered healthcare costs avoided due to
Risk domain control of disease (RDC), a composite measure defining absence of exacerbations, adjusted for rhinitis, was used to assess disease control. Cost-effectiveness was assessed based on total treatment costs and the absolute proportion of patients achieving RDC. RESULTS: Patients who switched from Precept to DuoResp had lower residual respiratory costs than the Symbicort group when ICS costs were included (p = 0.036). In the outcome year, switching to DuoResp was associated with significant reductions in costs per patient in total respiratory medication ($80; p < 0.001). Primary care consultations ($13; p < 0.001) and total respiratory-related costs including ICS ($192; p < 0.001). The adjusted proportion of patients achieving RDC was 58% for DuoResp versus 54% for Symbicort. Adjusted mean cost was $492 ($95% CI: $461, $523) for DuoResp users and $575 ($575, $620) for Symbicort users, for a difference of $185 ($132, $238) after adjusting for all baseline costs. Bootstrap sensitivity analysis found DuoResp to be less costly and more effective than Symbicort with 93.7% consistency. CONCLUSIONS: Compared with patients with asthma or COPD continuing Symbicort treatment, those switching to DuoResp demonstrated a favourable cost-effectiveness ratio in the UK primary care setting.

PRS35

COST-EFFECTIVENESS OF SELEXIPAG FOR THE TREATMENT OF PULMONARY ARTERIAL HYPERTENSION (PAH) IN GREECE

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OBJECTIVES: To investigate the cost-effectiveness of the addition of oral selexipag versus continuous subcutaneous (SC) treprostinil in insufficiently controlled pulmonary arterial hypertension (PAH) patients who have already received an endothelin receptor agonist (ERA) and a phosphodiesterase type 5 inhibitor (PDE-5i) from a Greek payer perspective. METHODS: A patient-level microsimulation model with three-month cycles and a lifetime horizon was used. Eligible patients entered the model and initiated selexipag or SC treprostinil in FC III. Patients can deteriorate (or improve during the first cycle only) between FC II, FC III, and FC IV and may die at any time. After a morbidity event, patients were assumed to progress to FC IV and initiate intravenous (IV) epoprostenol, representing the most common clinical practice in Greece. The probability of disease progression and death was based on morbidity and mortality events derived from GRIPHON clinical trial (maximun 4.2 years after a baseline phase). Sensitivity analyses included an intervention in the evaluation of FC IV and parameters of the cost-effectiveness analysis. RESULTS: Selexipag versus SC treprostinil was found to be a dominant strategy (less costly and more effective). Selexipag was associated with 0.78 incremental QALYs compared with SC treprostinil (3.64 vs 3.87) and cost-savings of €74,896 (€446,737 vs €1,194,633) over a patient’s lifetime. Cost-savings were mainly attributable to drug costs. Costs were more sensitive to changes in morbidity and mortality risks of selexipag, durability due to treprostinil administration methodology and discount rates. At the defined willingness-to-pay threshold of €130,000, selexipag was estimated to have a 100% probability of being cost-effective. CONCLUSIONS: Selexipag versus SC treprostinil was found to be a dominant strategy for the treatment of FC III PAH patients insufficiently controlled with ERA and PDE-5i, in the Greek healthcare setting.

PRS36

ASSESSMENT AND SIMULATION OF COSTS AND QOL FOR SUBLINGUAL IMMUNOTHERAPY IN PEDIATRIC ASTHMA VS PLACEBO: PRELIMINARY DATA

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OBJECTIVE: Specific immunotherapy (SIT), either subcutaneous (SCIT) or sublingual (SLIT), is an allergen-oriented immunomodulation. It consists in administrating increasing doses of the sensitizing allergen, to induce tolerance or “desensitization”. Nonetheless, the usefulness of SLIT in pediatric asthma is still matter of debate due to sparse clinical evidences, a non-rigorous methodology, the lack of a real assessment of costs associated. The aim of our study was to evaluate the efficacy of SLIT vs Placebo in term of QoL and the related costs in children with allergic asthma measured during the first 3 months of immunotherapy. METHODS: A 24-month, multicentre, prospective, randomised, double-blind, placebo-controlled, parallel-group study evaluated the efficacy, safety, tolerability, and cost-effectiveness of SLIT in combination with asthma Socio in children and adolescents from 8 Italian centers. The society patient and caregiver QoL has been assessed considering activity limitation, emotional problems and the global PACQLQ score. QoL has not been assessed since results from mapping and specific and generic questionnaires were still not available. Simulation considered a 1,000 patient cohort, assessed unit costs and a time discrete Markov model
with a discount rate of 3.5%. Transition probabilities come from transition rates by an adaptation of this model performed in Turkey. To assess the cost effectiveness of nintedanib versus pirfenidone on results.

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OBJECTIVES: To assess the cost effectiveness of nintedanib versus pirfenidone treatment in idiopathic pulmonary fibrosis (IPF) in Turkey. METHODS: Based on an economic evaluation of cost-effectiveness of nintedanib treatment for IPF by UK, the adaptation of this model performed in Turkey. A Markov model was mainly built on the basis of the IPF-UIST clinical data, in terms of lung function, acute exacerbations, overall survival and quality of life. In the model, patients were distributed to start in the various lung function health states according to their baseline disposition, then progress over time. Cohort is followed for lifetime, with 3 month cycles. Two-year outcomes are evaluated. One-way and multivariate sensitivity analyses were also conducted. Each health state was associated with a specific utility and a background treatment costs which were calculated by the model. Transition probabilities come from transition rates by a 3-year time horizon and 3 month cycle length. Willingness to pay threshold was used for cost-effectiveness analysis. Cost effectiveness was based on quality-adjusted life years (QALY) criteria. The QALY was calculated of relationship between quality of life and compliance. Utility data were used for the early economic evaluation of the new drug for multidrug-resistant tuberculosis treatment.

MethOds: Using the model the user can enter their own data (sample size, efficacy, relapse and mortality rate) for the early economic evaluation of the new drug for multidrug-resistant tuberculosis treatment.

PRS41 COMPARISON OF BUDESONIDE INHALERS FOR TREATMENT OF ASTHMA IN ADULTS AND ADOLESCENTS IN RUSSIAN FEDERATION: COST – EFFECTIVENESS ANALYSIS

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OBJECTIVES: To evaluate the cost – effectiveness of two budesonide dry powder inhalers, which included Easyhaler and Turhaler devices in adult and adolescent patients in Russian Federation. The patients were represented by persons older than 12 years of age with asthmatic disease, who had no experiences with inhaler usage (inhaler naive). METHODS: Information search was used for the public domain. Pharmacoeconomic analysis: METHODS – cost – effectiveness analysis was performed. The study had a time horizon of 1 year. The evaluation of therapy effectiveness was based on quality-adjusted life years (QALY) criteria. The QALY was calculated of relationship between quality of life and compliance. Utility data were received from published literature. The direct cost of the various medications per patient was calculated. Cost analysis was conducted on the cost of basic pharmacotherapy, compensation costs for treatment of exacerbations, compensation costs for side effects and adverse events. Exacerbation defined as any of the following: hospital visits, primary care physician visits and visits to healthcare professional. RESULTS: Results showed a slightly higher total direct cost per adult/ adolescent patient with asthma amounted to EUR 985 per year (versus EUR 1,113 to the Turhaler group) and cost saving prepared by of EUR 161 per year in favor of budesonide via Turhaler. CONCLUSIONS: Treatment of asthma in adult/ adolescent patients of budesonide via Easyhaler was a dominant alternative to Turhaler, the standard of care for COPD.

PRS42 COST – UTILITY ANALYSIS OF TWO BUDESONIDE INHALERS FOR TREATMENT OF ASTHMA IN CHILDREN IN RUSSIAN FEDERATION

A646 VALUE IN HEALTH 20 (2017) A399–A811
OBJECTIVES: To compare the cost-utility of two budesonide dry powder inhalers in children in Russian Federation. Inhaler devices included Easyhaler and Turbuhaler. The patients were represented by inhaler naïve persons 6-12 years old with asthmatic disease.

METHODS: Information search was conducted in the public domain. Pharmacoeconomic analysis METHODS: cost – utility analysis was performed. The study was conducted in 2017 year. The quantal response model was used as an outcome measure. The QALY was calculated of relationship between quality of life and compliance. Utility data were received from published literature.

The direct cost of the various medications per patient was calculated. Cost was consisted of the cost of basic pharmacotherapy, compensation costs for treatment of exacerbations (hospital visits, primary care physician visits and visits to healthcare professional), compensation costs for side effects. RESULTS: Results showed that budesonide via Easyhaler had a total cost per patient per year which was amounted to EUR 1 139 (versus EUR 1 411 to the Turbuhaler group) and cost saving prepared by EUR 318 per QALY versus budesonide via Turbuhaler. CONCLUSIONS: Comparison of the two budesonide dry powder inhalers showed that treatment of asthma with budesonide via Easyhaler was a dominant by cost to budesonide via Turbuhaler in Russian Federation.

PRS03
A COST MINIMIZATION ANALYSIS OF AZELASTINE/FLUTICASONE COMBINATION NASAL SPRAY VERSUS AZELASTINE AND FLUTICASONE NASAL SPRAYS MOYOTHERAPY IN MODERATE TO SEVERE ALLERGIC RHINITIS: AN EXPERIENCE FROM ISLAMIC REPUBLIC OF IRAN

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OBJECTIVES: Allergic Rhinitis (AR) is a symptomatic disorder which is due to allergen exposure and is inflammatory pathway activation in respiratory system. AR is categorized upon symptoms type a d about and its impact on patients’ health related quality of life into mild and moderate to severe. AR treatment is based on allergen avoidance, medical therapy and immunotherapy. Medical therapy includes oral and intranasal antihistamines and intranasal corticosteroids. Intranasal corticosteroids are first-line treatment in moderate to severe AR. This study aimed to assess Azelastine/Fluticasone combination nasal spray cost-effectiveness and budget impact in comparison with Azelastine and Fluticasone nasal sprays mono-therapy in mild to moderate AR patients in Islamic Republic of Iran (I.R.I.) health care system. METHODS: A systematic review (SR) was performed to find relevant randomized trials for the SR. Results of Fluticasone (50μg) and Azelastine (125μg) nasal sprays which evaluate their clinical effectiveness. According to performed SR results, clinical effectiveness of two arms of study were approximately equal. Hence, a cost minimization analysis was done. As micromodel, budget analysis was used. Costs (drug costs, professional), compensation costs for side effects, professional, office visits costs, allergy-related tests’ costs, patients’ office visits’ costs were used as an outcome measure. The QALY was calculated of relationship between quality of life and compliance. Utility data were received from published literature. RESULTS: Total expected cost and QALYs of Azelastine/Fluticasone combination nasal spray was estimated to be € 1 572 per patient per year compared with Azelastine nasal spray. Azelastine/Fluticasone combination nasal spray is a cost saving alternative in I.R.I. health care system.

PRS44 THE COST EFFECTIVENESS OF OMAZILUMAB FOR THE TREATMENT OF SEVERE ALLERGIC ASTHMA IN KOREA

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OBJECTIVES: Severe Allergic Asthma is a major cause of morbidity and mortality around the world, associated with a heavy societal burden in Korea. The aim of this study was to evaluate the cost-effectiveness of Omalizumab compared with standard therapy in the treatment of severe allergic asthma patients over 12 years old from health-care perspective in Korea.

METHODS: A Markov model was developed to evaluate the cost-effectiveness of Omalizumab added to standard therapy comparing with standard therapy with 1-month cycle model with 5 states (stable, clinically non-severe exacerbation, clinically severe exacerbation, death due to exacerbation, and all-cause death) was to project costs and QALYs over 30 years. Effectiveness and utility data were mainly derived from INNOVATE trial. Death rate due to exacerbation is based on Korean-specific data. Direct medical cost based on health states were obtained from 3 hospitals in Korea. Annual discount rate was 5%. One-way sensitivity analysis was performed to confirm the robustness of the model. Exchange rate used was 1,123 KRW per USD (2017 June). RESULTS: Total expected cost and QALYs of Omalizumab added to standard therapy versus standard therapy alone was USD 50,899, 8.04 QALYs gained respectively for 30 years. Incremental cost per QALYs gained was 23,589 dollar per QALY gained. The model appeared to be cost-effective compared to the current standard therapy. It can save £15,955 to overall cost around €3735.5€ at the end of fifth year in AR patients I.R.I. CONCLUSIONS: This study showed that Azelastine/Fluticasone combination nasal spray is a cost saving alternative in I.R.I. health care system.

PRS45 ASSESSING THE COST EFFECTIVENESS OF A NEW, FIRST-IN-CLASS TRIPLE FIXED DOSE COMBINATION THERAPY FOR COPD PATIENTS

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OBJECTIVES: The 2017 GOLD Report recommends triple therapy with an inhaled corticosteroid/formoterol/furmurate (LAMA/BID/FF) and a long-acting muscarinic antagonist (LAMA) for symptomatic and chronic obstructive pulmonary disease (COPD) patients who continue to experience exacerbations. Triple therapy is currently administered by using multiple inhalers, often with different posologies, which may influence their adherence. This study was to assess cost-effectiveness of triple fixed dose combination (TDC) containing budesonide, formoterol fumarate (FF) and glycopyrronium, in a extra fine formulation and a LAMA fixed-dose combination (FDC) containing tiotropium and fluticasone. Omalizumab was built based on GOLD 2017 classification of airflow limitation (mild, moderate, severe, and very severe) and death. The probability of a severe or moderate exacerbation was updated to reflect changes in the treatment landscape. Media costs and probabilities and treatment specific utilities were derived from pivotal trials, and the lung function (FEV1) decline modelled beyond the trials. Trial comparators models include an ICS/LABA (BDP/FF), LAMA alone (tiotropium) and open triple therapy (BDP/FF + tiotropium). UK costs and figures were used as a base case. RESULTS: Triple FDC therapy is dominant over open triple therapy, as it is similarly effective in most scenarios and has a lower drug acquisition cost. It provides more Quality Adjusted Life Years (QALYs) than either LAMA alone or ICS/LABA (largest QALY gains of 0.6 and 0.2 respectively) at an additional cost per patient of less than £1,000. Cost per QALY gained is well below NICE thresholds. CONCLUSIONS: The new triple FDC therapy for COPD is cost effective as compared to open triple therapy, LAMA alone or ICS/LABA.

RESPIRATORY-RELATED DISORDERS – Patient-Reported Outcomes & Patient Preference Studies

PRS46 THERAPY ADHERENCE IN ASTHMA – ASSESSMENT OF POTENTIAL ADHERENCE BARRIERS

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OBJECTIVES: Medication-related non-adherence (NA) is a well-known challenge in the real-world treatment of patients. However, causes of NA are still not well understood. The aim of this study was to determine causes of NA (adherence barriers) of German asthma patients based on the Asthma-Adherence-Barrier-Questionnaire (Asthma-ABQ), which has already been validated in other chronic disease populations. METHODS: Randomly selected German GP/pulmonologists consecutively enrolled asthma patients from 01/2015-01/2016. Patients completed the Asthma-ABQ during a telephone interview. The questionnaire consists of 16 items formulated as statements. Each item needs to be answered on a 4-point Likert-scale ranging from “strongly agree” to “strongly disagree.” A higher score indicated a higher influence of a certain barrier on patient’s perceptions. A barrier was assumed to exist at a score > 2. RESULTS: 542 asthma patients (mean age: 53.0 years, female: 74.9%) were included. On average 3.2 (range: 0-9) different barriers were identified per patient. In 63% of the patients none of the assessed barriers existed. The presence of more than one barrier/two barriers was detected in 81.5%/61.8% of the patients. The most frequently reported barriers (present in 39.9%-53.7% of the patients) were items indicating the perceived need of a medication (because patients felt healthy or they believed that medicines in principle are harmful). 28.2% of the patients were concerned about side effects. 26.8% would stop/reduce their medication if they noticed side effects. Also, unintentional factors like forgetfulness (27.7%) and depression (31.2%) seemed to be considerable issues. CONCLUSIONS: Assessing not only the degree of NA but also its potential associations is an important aspect for the development of successful adherence-promoting interventions, since some barriers are perceived as more burdensome than others. Also, patients can experience multiple barriers, which may imply that a personalized or multi-factorial approach may be useful in the prevention of NA. This study was funded by GSK (HO-14-14930).

PRS47 NON ADHERENCE TO INHALATIONAL MEDICATIONS AND ASSOCIATED FACTORS AMONG PATIENTS WITH ASTHMA IN A REFERRAL HOSPITAL IN ETHIOPIA, USING VALIDATED TOOL TAI

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OBJECTIVES: The main objective of the present study was to assess self-reported non-adherence level and to identify the potential factors associated with nonadherence. METHODS: A cross-sectional study was conducted in university of Gonder referral hospital. The data was collected using a validated tool called Test of Adherence to Inhalar (TAI). RESULTS: Among the total study participants, 95.7% of the respondents (n = 202) were able to read and write. 18.3% of inhalational uses asthmatic patients were not adherent to inhalational medications. According to this study 96.1% of the respondents (n = 199) were intermediate adherent to inhalational anti-asthmetics medications. Lack of education about the Proper use of inhalational anti-asthmatics medications, poly pharmacy and co-morbidities were statistically significant factors associated with nonadherence. CONCLUSIONS: The rate of non-adherence to inhalational anti-asthematics is high. Therefore, promoting optimal medication adherence through education, proper patient consultation is essential to optimize the benefits of treatment. Measurement of the degree of non-adherence inhaled treatment in each individual patient is important in early interventional practice.
QUALITY OF LIFE OF ASTHMA PATIENTS IN GREECE: WHAT CAN WE DO TO IMPROVE IT?
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OBJECTIVES: The objective of this study was to assess asthma-related Quality of Life of patients suffering from asthma and the impact of poorly controlled asthma in asthma in children-related QOL. METHODS: The sample derived from a population of asthmatic patients who sought for help at the emergency department of a public respiratory hospital with severe asthma attacks and the study was conducted from 01/12/2010 to 30/06/2011. Parental consent was divided into intervention and control group. An informative intervention (leaflet) was provided to the intervention group about the beneficial effect of compliance in medical advice and follow-up. Data on socio-demographic characteristics, symptoms of asthma and use of medication were collected. Results: DEScriptive Statistics: Patients who attended follow-up (n=61) demonstrated significantly higher mean scores in physical symptoms, social and occupational activity domains and higher mean overall score in the mini-AQLQ compared to patients who failed to attend (p<0.001). Disutility for increased severity from mild to moderate ARC was -0.089, from mild to severe ARC -0.098, respectively. Intervention groups patients had statistically significantly higher scores in four domains of the mini-AQLQ (physical symptoms, emotional function, environmental stimuli and social and occupational activity) and the overall QOL (n=0.001). 53% of parents reported WPCA associated to control group patients (p=0.001). CONCLUSIONS: Educational initiatives to improve compliance to medical advice and asthma-related Quality of Life can be substantially beneficial towards asthma control, work/school performance as well as significantly improving QOL. More severe health states resulted in lower daily life of the patients and their physical and mental health, but it is also associated with low work performance and a poor overall quality of life.

UTILITY ELICITATION FOR ALLERGIC RHINOCONJUNCTIVITIS AND ASTHMA IN CHILDREN
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OBJECTIVES: This study aimed to generate utility and disutility values for seasonal allergic rhinoconjunctivitis and asthma in children, in order to demonstrate the impact of these diseases on patients’ health-related quality of life. METHODS: Health state descriptions were developed using clinical guidelines, Allergic Rhinitis and its Impact on Asthma (ARIA) and Global Initiative for Asthma (GINA) to incorporate symptoms, impact on daily life, as well as treatments required. Description Questionnaire (mini AQLQ) to assess asthma-related QoL twice, during their visit at the Emergency Department and 30 days after the visit by phone. RESULTS: The study sample consisted of 32 males and 68 females (mean age 48.1 years, SD 18.6). Patients who attended follow-up (n=61) demonstrated significantly higher mean scores in physical symptoms, social and occupational activity domains and higher mean overall score in the mini AQLQ compared to patients who failed to attend (p<0.001). Disutility for increased severity from mild to moderate ARC was -0.131, from mild to severe ARC -0.094, respectively. Intervention groups had statistically significantly higher scores in four domains of the mini-AQLQ (physical symptoms, emotional function, environmental stimuli and social and occupational activity) and the overall QOL (n=0.001). 53% of parents reported WPCA associated to control group patients (p=0.001). CONCLUSIONS: Educational initiatives to improve compliance to medical advice and asthma-related Quality of Life can be substantially beneficial towards asthma control, work/school performance as well as significantly improving QOL. More severe health states resulted in lower daily life of the patients and their physical and mental health, but it is also associated with low work performance and a poor overall quality of life.

EVALUATION OF THE UTILITY OF THE EQ-5D-5L IN THE DUTCH POPULATION
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OBJECTIVES: To evaluate the social and economic burden of COPD in Bulgaria generating utility and disutility values. METHODS: A literature search of electronic databases (MEDLINE, EMBASE, NHS EED, HTA) was undertaken to identify studies (from 2002 onwards) quantifying utility (QALY, DALY), 0.00 to 1.00 scale, 1.00 = perfect health. A review was conducted with patients to explore their experience of AR and AIT. RESULTS: After treatment, efficacy on symptom reduction and/or disappearance and subsequently on daily life was maintained for 100% of adults and 5% of children (52% of patients). Many patients consistently rated the patient’s QOL and AR symptoms. One study reported items that had most impact on patient’s QOL. A negative impact of AR on daily activities was consistently reported across studies. Studies of reports between doctors, children and adults and achieving saturation suggests the robustness of the study data and efficacy of SQ-standardised grass AIT:

CONCLUSIONS: COPD and asthma were substantially beneficial towards asthma control, work/school performance as well as significantly improving QOL. More severe health states resulted in lower daily life of the patients and their physical and mental health, but it is also associated with low work performance and a poor overall quality of life.

EXPLORE THE BURDEN OF ILLNESS AND IMPACT OF SQ-STANDARDISED GRASS ALLERGY IMMUNOTHERAPY TABLET TREATMENT (AIT) ON QUALITY OF LIFE (QOL) IN PATIENTS WITH ALLERGIC RHINITIS (AR) IN GERMANY AND THE NETHERLANDS
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OBJECTIVES: The purpose of this study was to understand the impact of AR and subsequent SQ-standardised grass AIT on adults’ and children’s QOL. METHODS: A REVIEW OF THE QUALITY OF LIFE AND EDUCATIONAL BURDEN OF ALLERGIC RHINITIS ON ADULTS
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OBJECTIVES: Allergic rhinitis (AR) is a chronic condition that can have a significant impact on people’s’ lives. The aim of this literature review was to report the evidence on the impact of AR on the quality of life and educational burden of AR. METHODS: A review was conducted with patients to explore their experience of AR and AIT. RESULTS: Interviews were conducted with patients to experience of AR and AIT. Interview transcripts were analysed using grounded theory methods. Saturation analysis was conducted for impact-related concepts. RESULTS: 15 adults (aged 19-61) and 18 children (aged 11-17) were interviewed. Clinicians and patients reported that before SQ-standardised grass AIT, children (n=30) had significant experiences of nose- and eye-related problems and difficulty coping with these problems. Many patients had already tried previous forms of treatment. RESULTS: A negative impact of AR on daily activities was consistently reported across studies. Studies of reports between doctors, children and adults and achieving saturation suggests the robustness of the study data and efficacy of SQ-standardised grass AIT:

CONCLUSIONS: COPD and asthma were substantially beneficial towards asthma control, work/school performance as well as significantly improving QOL. More severe health states resulted in lower daily life of the patients and their physical and mental health, but it is also associated with low work performance and a poor overall quality of life.

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number of patients in this sample group (n=30). On average a patient with mild COPD had 1.84 years of life in distinction to those with moderate and severe spend 6.00 and 9.00 years respectively. Assuming annual working income is lost by patients for the DALY period, costs of lost productivity is obtained by multiplying the average DALYs by the GDP per capita, thus expressing the reported “lost” productivity cost of life. The amount of the following indirect costs experienced by patients: 3,596.52; 34,204.01; 51,332.20 respectively.

**CONCLUSIONS:** This is the first Bulgarian study evaluating the economic and social burden of ILD, which supplies the DALYs for the first time. To the best of our knowledge, it is also the first one that monetizes the values for DALYs. We demonstrated a significant societal burden of COPD in Bulgaria, which is in correlation with severity of the disease.

**PRSS4**

THE TWO-YEAR-THERAPY WITH OMALIZUMAB IN CHILDREN WITH SEVERE PERSISTENT UNCONTROLLED ASTHMA: A TWO-YEAR ASSESSMENT OF THE EFFICACY OF THE CHILDREN WITH SEVERE PERSISTENT UNCONTROLLED ASTHMA


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**OBJECTIVES:** Omalizumab is one of the most frequently used recombinant, humanized, monoclonal antibody treatment in children with bronchial asthma (BA). Dynamics of quality of life (QoL) is the important aspect to assess the response to treatment in children with uncontrolled severe persistent BA. To determine the cut-off of the significant quality of life improvement in the first 2 years of therapy with Omalizumab, according to the pediatric patient registry with severe persistent uncontrolled BA.

**METHODS:** Data of 34 children (average age 12.2 years) with severe persistent uncontrolled BA, who got the treatment with Omalizumab from January 2015 till June 2017, were analyzed. The quality of life of all children was assessed with the questionnaire PAQLQ(S): before the therapy with Omalizumab, in 16 weeks, in 6 months, in 9 months and then every 6 months. The maximum treatment time period for Omalizumab was 2 years. RESULTS: Positive dynamics of QoL were observed in children after 1 year of therapy. The total improvement of the first year (T(S)QoL) was improved by 18% (p=0.000), after 6 months - by 23.82% (p=0.000), after 9 months - by 25.44% (p=0.000), after 1 year - by 26.42% (p=0.000), after 1.5 year - by 25.92% (p=0.000), after 2 years - 27.54% (p=0.000). All children had a positive dynamics of their QoL, which was confirmed by Omalizumab. There were no exacerbations and the requirement of quick- relief medications have been reduced, asthma control has been improved, there was no severe exacerbation requiring emergency admissions; the basic therapy volume was reduced by half after 6 months of the therapy with Omalizumab in 2 children. CONCLUSIONS: Our results indicate that the minimum duration of the treatment with Omalizumab should be at least 1 year in children with severe persistent asthma. Results require further analysis.

**PRSS5**

ASSESSMENT OF THE Efficacy OF THE TWO-YEAR-TREATMENT WITH OMALIZUMAB, ACCORDING TO THE PEDiATRIC REGiSTRy OF THE CHiILDREN WITH SEVERE PERSISTENT UNCONTROLLED ASTHMA


FSAI "National Scientific and Practical Center of Children's Health" of the Ministry of Health of the Russian Federation, Moscow, Russia

**OBJECTIVES:** The goal of asthma management is to achieve the disease control. Asthma control was assessed using the second line of the American Thoracic Society, which supplies the study of different domains rendered in clinical settings.

**METHODS:** We calculated mean of EQ-SD-index and visual analog scale (VAS) and K-BILD alongside with their correlation in total score and in different domains. For the correlation of QoL in different ILD entities from the longitudinal observational HILDA study Additionally potential predictors (age, sex, ILD entity, FVC percentage of predicted value (FVC%), DLCO percentage of predicted value, and either sum of comorbidities (model1) or distinct comorbidities (model2)) for QoL were investigated with linear regression models. RESULTS: Mean and 95% CI for EQ-SD-index vs. VAS, 0.60 (SD 0.13) and 0.41 (SD 0.13) for K-BILD and 0.53 (SD 0.11) and 0.86 (SD 0.11) for EQ-SD-index vs. VAS.

**RESPIRATORY-RELATED DISORDERS – Health Care Use & Policy Studies**

**PRSS7**

RELEVANCE OF SURGICAL INTERVENTIONS FOR TREATMENT OF OBSTRUCTIVE SLEEP APNEA IN GERMANY

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**OBJECTIVES:** Obstructive Sleep Apnea (OSA) is a common disease in developed countries which can lead to significant comorbidities if left untreated. First-line treatment for OSA is nightly application of positive airway pressure (CPAP) to ensure airway patency. Though highly effective, its efficacy is reduced low due to side effects, non-compliance, which impacts therapy adherence. Different surgical procedures have been introduced over the past and are performed regularly in patients with CPAP failure. Aim of this study is to evaluate recent application of OSA surgery in Germany and its relevance for treating the condition. METHODS: Procedural data on OSA surgery was obtained from the official German Health Statistics, which is routinely collected for all treatments performed in hospitals and is publically available from the INEK institute. All cases that were coded with principal diagnosis code OSA (547.85) were included in the analysis. RESULTS: A total of 7729 surgical interventions for OSA were performed in Germany in 2015, while a total of 6084 CPAP treatments were initiated. The majority of the surgical procedures were nasal surgery (39.9%) followed by tonsil surgery (17.6%) and Uvulopalatoplasty (13.6%). Other procedures include Glossectomy (1.9%) and Hypoglossal Nerve Stimulation (0.7%). CONCLUSIONS: Surgical interventions amount to approximately 11% of the total OSA treatments in the in-patient sector. Accordingly, the recent clinical data showed that fewer than 10% of patients with severe OSA underwent surgery, implying that either low number are not clear, but could include use of other non-surgical therapies that are not documented in available data or a low acceptance of surgery. Further research is required to better understanding of these reasons.

**PRSS8**

EVALUATION OF THE "SOPHIA ASTHME" SUPPORT PROGRAMME FOR ASTHATIC ADULT PATIENTS

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**OBJECTIVES:** SOPHIA is a program developed by the French Health Insurance. The program includes a free access information website, provision of leaflets, and regular phone calls from an asthma nurse, in order to promote self-management and adherence to asthma treatments. The objective of this study was to evaluate the effect of the SOPHIA program on medication adherence and to measure the adherence to asthma treatments in adults during the first year.

**METHODS:** A controlled before-after study was conducted within the SNIRAM (claims database of the French Health Insurance). Subjects 18 to 44 years old in 2014, who had at least 2 asthma medications dispensed in 2015 with prescription of a controller/total asthma medications. RESULTS: A total of 99,578 pairs were analyzed. No impact of the program was observed on the primary endpoint (OR=0.997).

The program was associated with an increased total number of anti-asthma drug packs dispensed (slope=0.36, p<0.0001). A non-significant decrease in the number of
of days of sick leave (slope = 0.09) and in the percentage of subjects with sick leave (OR = 0.96) was observed. In terms of asthma-related costs (reimbursed), the program was associated with increased asthma medication expenditure (β = 0.2, p = 0.02) and a decrease (not statistically significant) of sick leave expenditures. **CONCLUSIONS:** In this very early evaluation, the program did not show a clear impact on the majority of outcomes. These results were explained by the small portion of participants who actually adhered to the program (10%) within the eligible population and the large inclusion criteria. Analysis of a more specific asthmatic population revealed more favorable impact of the program.

**PRS59**

**OUTCOME MEASURES USED TO ASSESS INTERVENTIONS FOR ASTHMA CONTROL: A SYSTEMATIC REVIEW**

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**OBJECTIVES:** To evaluate the impact of asthma support programs dedicated to asthma control. As a result, comparisons across studies are difficult. We sought to give an overview of the methods and the measures that have been used to assess these interventions. **METHODS:** Articles from peer-reviewed journals, published from January 2008 to May 2015, were identified by searching MEDLINE. Articles were included if they: were written in English; were alone with the primary aim of improving asthma control; were reporting on asthma control outcomes; and the study design was: randomized or non-randomized controlled trial, before-after study, time series analysis or historical analysis. Outcomes likely to be assessed were analyzed.**RESULTS:** The studies were analyzed according to the National Institute of Health (NIH) and the Agency for Health Care Research and Quality (AHRQ) recommendations published in 2012. **RESULTS:** The literature search identified 739 citations on abstract and title, of which 377 were reviewed in full text. A total of 109 articles were finally included in the analysis. The 9 systematic reviews and/or meta-analysis. The most common domains of asthma clinical outcomes measures identified in the 100 original studies were: use of hospital care (n = 110), lung function (n = 78), asthma medications (n = 66), composite scores of asthma control (n = 44) and quality of life questionnaires (n = 33). Various types of outcomes were identified within each domain. The most common outcome within each aforementioned respective domain was: asthma hospitalization (n = 91), respiratory flow rate monitoring (n = 73) or asthma medication (rescue or control) (n = 66).**CONCLUSIONS:** The studies were heterogeneous in terms of the proportion of participants to the program and the eligible population and the large inclusion criteria. Analysis of a more specific asthmatic population revealed more favorable impact of the program.

**PRS60**

**SYSTEMATIC LITERATURE REVIEW OF THE IMPACT OF ASTHMA SUPPORT PROGRAMSDEDICATED TO ADULT PATIENTS**

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**OBJECTIVES:** To evaluate the impact of asthma support programs dedicated to improve asthma control. **METHODS:** A systematic literature review was conducted by epidemiologists, pharmacists and asthma physicians, following PRISMA recommendations. The search was performed in Medline, Embase, CINAHL, specialized websites, and the Trip database from January 2005 to April 2015. Articles were included if they reported the evaluation of an asthma program dedicated to asthmatic adults patients, and fulfilled the COCHRANE EPOC design selection criteria. The selection was performed by two independent reviewers. The quality of studies was evaluated using the COCHRANE EPOC Risk of bias tool. A data synthesis was performed. **RESULTS:** Of 1,058 studies identified by the literature search, 46 met the eligibility criteria. A total of 37 original studies and 7 systematic reviews. Studies were mainly experimental (34) or quasi-experimental (10) studies, and were mainly conducted in Europe (19) or North America (15). The majority of studies included patients participating to the program during 1 year. Twenty five studies included 100 to 1,000 patients, 16 could be explained by the small proportion of participants to the program (10%) within the eligible population and the large inclusion criteria. Analysis of a more specific asthmatic population revealed more favorable impact of the program.
optimal market access. METHODS: Across the EUS, 16 payers who influence reimbursement at the national or regional level or previously were interviewed, and 255 physician stakeholders were surveyed. RESULTS: All interviewed payers demand unequivocal proof of added benefit from new agents for favorable reimbursement terms. Those in Germany highlight the G-Ba's determination of no added benefit for mepolizumab (Glemev, Gilead). To exemplify the state of the market for using an inadequate comparing regimen and flawed trial design when superiority in head-to-head studies is required. The importance of clinically relevant endpoints is also stressed across countries, with rate of exacerbation for severe asthma rather than surrogates such as FEV1 specifically mentioned. Likewise, 57% (Italy) to 78% (UK) of surveyed pulmonologists select reducing exacerbations as a top-five prescribing driver for asthma biologics. In all countries, clinical performance trumps treatment cost among surveyed physicians' prescribing drivers overall; however, across all regions everywhere also seek substantial price discounts or managed entry agreements at national and subnational levels in exchange for optimal reimbursement and positive formulary status. The fact that, despite different mechanisms of action and use of different biomarkers, asthma biologics will ultimately compete for the same small, largely overlapping population of severe, refractory asthma. The opportunity to ease payers' cost concerns with positive pharmacoeconomic data is also perceived. CONCLUSIONS: Emerging asthma biologics face the modern day EUS market access reality of frugal payers increasingly reliant on health technology assessment and pharmacoeconomic results as a lever to stringent reimbursement negotiations, and increasingly seeking cost-cutting opportunities. Realistic prices, meaningful discounts/entry agreements, well-designed clinical trials, and persuasive pharmacoeconomic data will help float the asthma biologics' market access boat.

PR565

ANALYSIS OF CONSUMPTION OF ANTI-TB MEDICINES IN UKRAINE DURING 2012-2016

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OBJECTIVES: This study, according to the statistics of the Ministry of Health in Ukraine in 2016 about 700 thousand people were ill with tuberculosis, 600 thousand of them were on the dispensary record, including 142 thousand with an open form of tuberculosis. Currently, an important task for the treatment of patients with tuberculosis in Ukraine is to provide them with anti-TB drugs, as needed. METHODS: ATOD/DDD method developed by WHO. RESULTS: During 2012-2016 in the pharmaceutical market of Ukraine the number of INNs of anti-tuberculosis drugs decreased from 11 to 6, and TNs from 25 to 19. It was established that in 2012, 28,844 DIDs of anti-tuberculosis drugs were consumed; in 2013 - 30.92 DIDs; in 2014 - 9.00 DIDs; in 2015 - 5.90 DIDs; in 2016 - 22.36 DIDs. The Ukrainian protocol for TB treatment includes four drugs and has some similarities with the regimen of 4 drugs for 2 months. In terms of 70,000 patients with TB, the prescribed treatment regimens for the years are as follows: in 2012 - all patients received I and II regimens; in 2013 - patients received also III regimen; in 2011 patients received I+II treatment regimens during the year, and 586,890 patients also received the III scheme; in 2014 only 578,755 patients received one of the treatment regimens I or II; in 2015 there was also little used of drugs, I+II or schemes for only 384,516 patients, and in 2016 it is also increased and increased for 2 months. In terms of 70,000 patients, the number of patients treated with medicines in Ukraine is not an accurate measure, and from 2016 we observe the sufficient provision of TB patients with medicines.

PR556

IMMEDIATE DATA COLLECTION VERSUS USE OF RETROSPECTIVE CLAIMS DATA: METHODOLOGY LESSONS LEARNED FROM A LINKED DATABASE STUDY IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

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OBJECTIVES: Primary data collection either by a retrospective medical chart review, as part of a prospective observational study or use of retrospective claims data, are common methods in non-interventional health care research. By using a linked database, the aim of this study was to assess strengths and limitations of primary data (PD) and claims data (CD) with data obtained from a population of German COPD patients. METHODS: Prospectively collected PD from 536 patients (04/2013-11/2014) were linked to CD from a German sickness fund (AKD Nordost) on a patient level, covering the same observation period. Characteristics of both datasets were assessed by (1a) descriptive statistics, (1b) documented exacerbations and (1c) prescriptions of bronchodilators (ATC codes: R03), and (2) a comparison of patient characteristics between both datasets. RESULTS: 536 patients were included in this post-hoc analysis (mean age 79.98 years, 36.38% female). The percentage of comorbid patients reported in PD was lower than in CD (e.g., depression 6.7% vs. 23.9%, p<0.001). Based on PD, 20.9% experienced at least one exacerbation versus 29.1% based on CD. Mean number of COPD prescriptions per patient per year was 3.7 prescriptions (PD) vs 10.3 (CD), for 440 patients with drug treatment data available in both datasets. In terms of generalizability, we observed that patients in the complete claims dataset (74,916 patients) were three years older and to a higher percentage female than PD patients. Moreover, they were less comorbid and less frequent hospitalizing patients than PD patients. CONCLUSIONS: Even if the same patient population and follow-up period is observed, substantial differences on values of key variables between PD and CD exists. This data linkage may provide a process overview and could thereby provide an opportunity to improve external and internal validity.

PR557

OBSERVED REDUCTION OF HEALTHCARE UTILIZATION AFTER OMAZILUM INITIATION AMONG PATIENTS WITH PERSISTENT ASTHMA FOLLOWED IN CANADIAN CLINICAL SETTINGS

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OBJECTIVES: The primary objective was to evaluate the health care utilization (HCU) following omalizumab (OMA) initiation as assessed by the reduction in number of hospitalizations, emergency room (ER) visits, and oral corticosteroids (OCS) use in patients with persistent asthma in Ontario. The second objective was to assess the study endpoint. METHODS: This study is a retrospective, pre-post cohort, observational study. The data was collected from the patient support program. Individuals were enrolled to the Ontario Trillium Drug Program and had access to OMA through Exceptional Access Program (EAP). Individuals were identified and their OMA EAP claims for the relevant period. The data extract included patients with an enrollment form receipt date greater than July 17th 2013 or a reactivation form date greater than July 17th 2013. The end date of data collection was May 5th, 2016. RESULTS: 148 patients (mean age 57.6, female 62.2%) formed the study population. Omalizumab was associated with a 74.4% reduction in the number of hospitalizations (2.79 vs. 1.07 p<0.001), 52.7% of patients did not need to take any courses of high dose OCS. A mean of 87.5% in ER visits (7.3 vs. 9.0 p<0.001), 66.2% of patients did not have emergency visit. A 74.4% reduction of the number of high dose OCS by (4.23 vs. 1.07 p<0.001) 52.7% of patients did not need to take any courses of high dose OCS. The mean number of night awakenings / per week decreased from 6.1 (8.03) to 1.3 (2.79) following 12 month treatment with omalizumab. CONCLUSIONS: There was an observed reduction in the utilization of health care resources. The OCS doses post-omalizumab use in patients with severe uncontrolled asthma in a Canadian real-world setting. The results are consistent with outcomes observed in previous large real-world trials such as the eXperience registry.

PR558

IMPACT OF GLOBAL BUDGET ON PERSONAL MEDICAL EXPENSE FOR INPATIENT WITH RESPIRATORY DISEASE: AN INTERRUPTED TIME SERIES ANALYSIS

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OBJECTIVES: Soaring medical expense has been a global issue for a decade, and China is confronted with an even greater burden. Increasing medical expense brings great economic burden for patients. From 2009, Global budget payment system (GBPS) was introduced in Shanghai for public hospitals instead of fee-for-service (FFS) payment system to curtail medical expense, and fully implement from 2011. The aim of this paper is analysis to evaluate impact of GBPS in medical expense per capita of inpatients of respiratory disease in Shanghai. METHODS: Daily summation of medical expense of each patient during the GBPS pilot extended from 2010 and fully implement from 2011 compared to baseline in medical expense. RESULTS: A Segmented autoregressive integrated moving average (ARIMA) was used to evaluate model medical expense per capita. Our study shows GBPS could retard the monthly increasing speed of medical expense per capita. The monthly increment of total medical expense, medical insurance coverage service expense and self-paying service expense per capita were decreased by CNY 0.08 thousand, 0.07 thousand and 0.01 thousand in 2010 and CNY 0.07 thousand, 0.05 thousand and 0.02 thousand in 2011. But the instant effect of GBPS
showed no significant association. CONCLUSIONS: This study demonstrated the effect of controlling personal medical expense of GBSP, both in medical insurance coverage service per capita and self-paying service per capita. Study also provided supports that GBSP could slow down the monthly increasing speed of medical expense per capita.

PRS69 BUDGET IMPACT ANALYSIS OF TREATMENT WITH ULTIBRO BREEZHALER® VERSUS SERETIDE DISKUS® 50/500 MG FOR MODERATE TO VERY SEVERE COPD PATIENTS

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OBJECTIVE: To assess the budget impact of COPD management with Ultibro Breezhaler® (UB) vs. Seretide Diskus® 50/500 µg (SD) in France over the next 6 years based on the results of the FLAME study. METHODS: A budget impact model was developed by the largest French healthcare savings organization. The treatment of patients with moderate to very severe COPD (≥70%) was compared to the COPD treatment strategy of patients with moderate to very severe COPD who allow to save 70 MUB market shares for these patients from 8% (actual) to 50%, for instance, would 2. Pneumonia (severe and non-severe) and exacerbations (moderate and severe) were the outcomes used to assess the impact of COPD exacerbation management costs, (2016) of COPD (treatments, management of exacerbations and pneumonia). For each stay, a DRG cost (€, 2014) was calculated. No discount rate was applied. RESULTS: The mean cost of treatment combined with the impact of exacerbations and the management of adverse events decreased by 137% per patient per year (€405 vs. SD with 1268€ with UB). Based on French guidelines (SFLF, 2016), we estimated that 250,000 patients needed a 2nd line of treatment for the prevention of exacerbations. 2.5 millions of COPD patients in France. A linear growth of UB market shares for these patients from 8% (actual) to 50%, for instance, would allow to save 70 M€ (cumulated) for French NHS over the next 6 years. Currently, French NHS spends 3.5 billions euros every year for the management of COPD in France. CONCLUSIONS: From the French NHS perspective, replacing SD by UB in the COPD treatment strategy of patients with moderate to very severe COPD who had at least an exacerbation in the previous year and with an mMMC≥2 could generate substantial savings.

PRS70 SMOKING CESSATION INTERVENTIONS BASED ON SOCIAL MARKETING PRINCIPLES: A REVIEW

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OBJECTIVES: Addiction is one of the social issues and problems which causes endangering the health of individuals of a society. One of the approaches which nowadays have mostly attracted attentions is to use the social marketing principles for Smoking Cessation. The aim of this study is to investigate the studies conducted on the smoking cessation interventions which have used social marketing principles. METHODS: This study had a systematic search which conducted in March 2015. Key words such as quit smoking, stop smoking, smoking cessation, and social marketing were searched in PubMed, Scopus, and Web of Science database. Totally, 130 articles were extracted. After investigating and eliminating duplicate articles, 16 articles remained for being reviewed. Two reviewers screened the selected studies independently and differences were resolved by discussion. RESULTS: The results indicated in terms of social marketing principles, there are only three articles which have used all of social marketing principles. One article had all these principles, but in the section of marketing mix, price and place were not mentioned. Six articles had considered five principles in conducting their studies. In general, the principle of competition was more neglected in most studies. In terms of marketing mix, including price, product, place, and promotion, in some of the articles, only some of the components of marketing mix were used. CONCLUSIONS: The approach of social marketing can have important role in improving the smokers’ or even non-smokers’ awareness and being effective in changing their attitudes. Particularly social marketing studies which had used online methods or mass media such as TV had more success because public access to them was simpler. One of the important deficits seen in most studies on smoking cessation was the lack of complete observance of all social marketing stages, and the factor of competition and marketing mix reviewed had received less attention.

PRS71 PHARMACOECONOMIC EFFECTIVENESS OF THE INCLUSION OF GLYCOPYRORNID BROMIDE INTO THE PROGRAM OF REIMBURSEMENT OF ESSENTIAL DRUGS FOR PATIENTS WITH COPD

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MethOds: A pharmacoeconomic validation

OBJECTIVES: The aim of this study was to evaluate pharmacoeconomic advisability of the inclusion of the Glycopyrornid bromide into the program of reimbursement of essential drugs (PHR) for the therapy of patients with chronic obstructive pulmonary disease (COPD) and the results of a separate study 

of baseline COPD therapy by 43.35% or by almost # 802 RUB per patient per year. The sensitivity analysis showed that price fluctuations led to 15% changes of these results. Compare to generic Tiotropium bromide, the use of Glycopyrornid bromide reduced the costs by 12.3% (2.486 RUB per patient per year). The range of changes of this results depending on price fluctuations was 10%. CONCLUSIONS: It is advisable from the pharmacoeconomic perspective to substitute Tiotropium bromide with Glycopyrornid bromide in PHR.

PRS72 THE EFFECT OF SMOKING CESSATION INTERVENTIONS IN PATIENTS WITH COPD: A SYSTEMATIC REVIEW

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OBJECTIVES: The prevalence of chronic obstructive pulmonary disease (COPD) is expected to rise in not only developed countries, but also developing countries. Smoking cessation is crucial and smoking cessation interventions are the most effective way to prevent or slow the progression of the disease. In 2012, 14.6% of Korean adults aged 40 and over were COPD patients. But smoking rate for Korean male adults was 39.3% in 2015, which is the highest level among OECD countries. In this study, we reviewed literatures to investigate the benefits of smoking cessation in COPD patients. METHODS: A systematic literature search was performed based on PICO-SD. The main searching terms were COPD, emphysema, bronchi-tis, pulmonary disease, and smoking cessation in PubMed, EMBASE, Cochrane CENTRAL, KoreaMed, and RISS. The participants were current smokers with COPD. We included smoking cessation counselling/education, drugs (varenicline, bupro-pon), and nicotine replacement treatment as interventions but excluded if it was only a follow-up. The components of smoking cessation work were gaining traction (e.g., value of hope, real option value, scientific spill over). A total of 12 value frameworks was identified, regarding the value framework of smoking cessation. RESULTS: A total of 4551 records and completed a PRISMA flowchart, we excluded 4362 studies. Finally, 239 full-text articles. Finally, 20 studies were selected, 18 RCTs, 1 RCT, 1 cohort study. We found consistent evidences that such interventions were very supportive to help COPD patients quit smoking. Also, abstinent patients from smoking showed better health outcomes than those who continued smoking. But in the results, we found no differences were resolved by discussion.

PRS73 PATIENT INPUT INTO VALUE ASSESSMENT OF RESPIRATORY MEDICINES: LESSONS LEARNED FROM VALUE FRAMEWORKS IN OTHER DISEASE AREAS

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OBJECTIVE: Frameworks designed to objectively assess the value of drugs are continually being developed and updated. The objective of this research was to review existing value frameworks across therapeutic areas, identify the extent to which patient perspectives and values were identified and included in the development of a value framework for respiratory disease. METHODS: A literature review of value review of value frameworks was undertaken using PubMed and Google Scholar with keywords ‘value framework’ and other frameworks focusing on five domains: (1)geographic and clinical scope, and current status of the framework, (2)ownership and stated purpose, (3)framework innate characteristics, (4)implementation characteristics (referring to the way the value framework has been developed since release), and (5)the degree of patient involvement. RESULTS: A total of 12 value frameworks were identified for further analysis. These focused on oncology(n=4), orphan diseases(n=3), no specific disease(n=3) cardiology(n=1) and mental health (n=1). Five key findings were identified, engagement with patients, manufacturers, and drug developers was repeatedly mentioned (5/12). However, patient involvement such as setting up and implementing value frameworks was rare, and approaches to capturing and quantifying patient needs were not observed. Second, several frameworks used weightings to emphasize aspects of value (6/12). Third, simple scoring and visual techniques were employed to aid framework uptake and understanding (3/12). Fourth, prioritization was utilized to aid stakeholder decision-making (4/12). Finally, less tangible aspects of value were gaining traction (e.g., value of hope, real option value, scientific spill over) (6/12). CONCLUSIONS: Our analysis of 12 published value frameworks indicates patient input of illness, needs, and priorities are rarely collected. In respiratory disease, for which patients play a crucial role in managing their conditions, a value framework needs to directly incorporate the patient perspective (clinical, economic, and humanitarian burdens) and ensure it is weighted appropriately. Supported by AstraZeneca

PRS74 POPULATION HEALTH IMPACT OF OMAZILUMAB OVER 15 YEARS OF EXPERIENCE IN MODERATE TO SEVERE ALLERGIC ASTHMA

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OBJECTIVES: Asthma affects 334 million persons worldwide. 15 million days are lost due to disability from asthma every year. Omalizumab was first registered in Australia in 2002 for moderate to severe allergic asthma. Until 31st Dec 2016 the estimated exposure worldwide in adult patients was 516,481 patients-years. This analysis estimates the contribution of omalizumab to the reduction in worldwide asthma burden over 15 years. METHODS: Reduction of asthma burden was estimated in asthma related deaths, exacerbations leading to hospitalization
or Emergency Department (ED) visits and improvement in quality adjusted life years. Cumulative asthma deaths avoided were calculated by applying exacerbation related mortality on exacerbations leading to: (i) hospitalization (ii) hospitalization or ED visit. Annualized exacerbation rates and the QALY gain were based on 137,187 QALYs were gained. Limitations: only deaths avoided in secondary care were included, no inclusion of pediatric population exposed; generalization of mortality risks across different geographies. Conclusions: On average each patient responding to omalizumab gained 0.41 quality adjusted life years of full health. Overall asthma related mortality reduced by 58% in secondary care. Continuous effort is necessary from all stakeholders to link access to effective treatments to appropriate disease management. Data for asthma mortality risk outside secondary care is warranted.

**Research Poster Presentations – Session IV**

**Health Care Use & Policy Studies – Consumer Role in Health Care**

**PHP1 UNDERSTANDING STAKEHOLDER EXPECTATIONS FOR PATIENT ENGAGEMENT: A QUALITATIVE SURVEY**

**Objectives:** Meaningful patient engagement (PE) in medicines development requires all stakeholders to have a common purpose and vision, and a clear understanding of respective expectations. As phase one of a research project, a qualitative survey was undertaken to understand expectations from stakeholders. Methods: The survey explored four key themes from the perspective of each stakeholder group and focused on how these themes were translated into expectations and priorities for PE. Participants were grouped into 7 broad categories: policymakers/ regulators; healthcare professionals (HCPs); research funders; patients/purchasers/HTA; patients/patient representatives; pharmaceutical/life sciences industry; academic researchers. Results: 59 interviews were conducted: patients, n = 10; HCPs, n = 7; policy, n = 8; patients, n = 6; industry, n = 13; researchers, n = 8; research funders, n = 7. Responses were received from a wide range of geographies (Europe, North America, Australia, Asia and Africa), PE experience and job seniority/role. There was generally strong agreement that the OA653 meaning of PE, importance of promoting PE to a higher level than currently; need for a more structured process and guidance. The major area of no/ little alignment was around the role other stakeholders should play. Overall, policymakers/regulators were expected by others to take more responsibility to drive FE, create a framework and facilitate PE, provide guidelines of good practice and improve alignment, structure and clarity. A Stakeholder Expectations Matrix that summarizes findings and provides an ‘action list’ for stakeholders will be presented.

**Health Technology Assessment (HTA): How Common and Influential Are They?**

The Pharmaceutical Benefits Advisory Committee (PBAC) in Australia considers ‘consumer comments’ in its appraisals, acknowledging that patient perspectives and physician knowledge are important guiding factors for Health Technology Assessment (HTA) decisions. The objective of this study was to identity factors associated with the presence of consumer comments in Australian HTA and
assess their impact on PBAC decisions. METHODS: Public summary documents published in March 2015 and December 2016 were searched. Appraisals on major submissions (for new medications or when substantial changes are made to current listings) were reviewed; appraisals informed by minor submissions and re-submissions were excluded. Information on consumer comments, indications and PBAC decisions were extracted. RESULTS: The search yielded 141 PBAC summary documents, out of which 59% included consumer comments from patients, healthcare professionals, and patient organisations. The inclusion of consumer comments increased by 28% between March-November 2015 and March-November 2016. When stratified by indication (excluding 7 submissions relating to vaccinations), consumer comments were 22% more prevalent in appraisals of oncology treatments (34/45) than non-oncology treatments (48/88) and 19% more in therapies of rare diseases (25/8) than non-rare diseases (57/10). When stratified by the type of subsidy listing, the proportion of appraisals that included consumer comments was similar (new listing: 57%; change of listing: 62%). Of the submissions by the type of subsidy listing, the proportion of appraisals that included consumer comments was lower than that seen in submissions that did not include consumer comments (57%). CONCLUSIONS: The inclusion of consumer comments was more prevalent in drug appraisals for cancer and rare diseases compared to other therapeutic areas. The presence of consumer comments appeared to be associated with lower chances of a positive PBAC decision. Additional analyses will be conducted to further explore the impact of consumer comments on PBAC decision-making.

HEALTH CARE USE & POLICY STUDIES – Drug/Device/Diagnostic Use & Policy

PHIP13 COMPARATIVE ANALYSIS OF MEDICINE'S PURCHASING PRICES OF "ADDITIONAL LIST" (APhP VERSUS FRENCH HOSPITALS FORMERLY UNDER OVERALL ALLOCATION)

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OBJECTIVES: The objective of this study was to analyze the purchasing prices of the "additional list" drugs obtained by APhP in comparison to French hospitals formerly under overall allocation (ex-UOA). METHODS: We conducted a retrospective, cross-sectional comparative study over the period 2011-2015. The comparators selected are the ex-UOA hospitals. Annual data on consumption, local and national expenditure, data from the databases of the Hospital Information Technology Agency, respectively "ePMSI" and "Scansanté". Information on the level of "added medical benefit" (AMB), the status of medicines and their molecular nature are obtained from the Théiaquè® database, the French public drug database and the French National agency's register supplemented for therapeutically equivalent by the General Agency of Equipment and Health Products of Paris hospitals (AGEPS). Comparisons are made with the average national purchase prices, excluding AP-HF, and the average AP-HF purchase price. The robustness of the APhP data is determined by comparison to the declarative data with the data contained in the internal database of AGEPS. Software R is used. RESULTS: Our study covers 1227 references of common unit of dispensing (CUD) (2011-2015). For the majority (46% - 55%) of CUDs, the purchase price declared by the APhP is equal to the average purchase of common unit of dispensing (CUD) (2011-2015). For the majority (46% - 55%) of CUDs, the purchase price declared by the APhP is equal to the average purchase price of the comparator. APhP obtains better purchase prices on a larger number of CUDs (28% -32%) than the comparator (20% - 23%). The volume of consumption and the level of AMB don't have significant impact on distribution of the price differentials. By contrast, reimbursement price cap (RPC), molecular nature (monoclonal antibodies or human immunoglobulins) and the existence of competition have significant impact on distribution. For most CUDs, APhP's data is more robust. CONCLUSIONS: In general, APhP obtains better purchase prices than ex-UOA hospitals for low-RPC medicines, human immunoglobulins and medicines subject to competition.

PHIP14 VARIATION IN NATURE OF THE ASSESSMENT OF ADVANCED MEDICINAL PRODUCTS (ATMP) IN GERMANY

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OBJECTIVE: The EU Regulation No. 1394/2007 of the European Parliament and the Council on ATMP defines all medicinal products based on gene therapy, somatic-cell therapy or tissue engineering as drugs, the market access process in Germany follows only in some cases the specific drug procedures for new drug products, the AMNOG process.

PHIP15 EARLY ACCESS TO MEDICINES PATHWAYS – RESULTS OF A GLOBAL SURVEY

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OBJECTIVES: Regulators and HTA bodies are increasingly promoting early access to medicines for the treatment of diseases with unmet clinical need. A variety of different early access pathways have emerged across settings. A global survey was undertaken to identify, map, and differentiate early access pathways. METHODS: Two survey tools were developed to map early access pathways across 25 countries. The first tool included 15 questions on different types of accelerated marketing authorisation, and was distributed to a selection of contacts from a number of regulatory bodies (n=12). The second tool included 15 questions on the use of medicines prior to marketing authorization (MA) and was distributed to HTA agencies from a number of countries (n=25). Both survey tools were available in English via Qualtrics from May 2017. RESULTS: Preliminary results from the survey (n=17) suggest that early access schemes can be grouped in four different pathways: a) with faster review time (n=3), b) MA with lower evidence thresholds (n=2), c) MA based on approval in other settings (n=2), and d) access to medicines prior to MA (n=14). Five regulatory bodies (EMA, FDA, MDSAFI, PMID, and HSA) reported some type of accelerated MA procedure. Fourteen countries (Australia, Norway, Sweden, Switzerland, Poland, Portugal, Belgium, Denmark, Germany, France, UK, Spain, Italy, USA, and Australia) grant access prior to MA. Two countries, Canada and Australia, also indicated acceleration through promoting faster access by commencing HTA in parallel with MA. CONCLUSIONS: Across all pathways, the degree of compliance with the eligibility criteria and conditions attached to early access. Except for verification review, all pathways require significant unmet medical need or evidence of significant improvement over existing therapies.

PHIP16 FACTORS INFLUENCING INNOVATIVE DRUG REIMBURSEMENT IN POLAND

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OBJECTIVES: In Poland, the Minister of Health (MoH) takes into account 13 criteria for product reimbursement. MoH and RPA are a relevant HTA actors. The aim of this study is to evaluate the relationship between recommendations of AHTApol’s President (RAP) and MoH reimbursement decisions (MoHD). Additionally, we evaluated HTA consulting companies on the outcomes of their dossier. METHODS: An analysis was performed for innovative drugs applications in the period of 2015-2016. The proportion of positive and negative decisions of RAP and MoH, and the association between RAP and MoH using Cramer’s V coefficient was measured. An analysis was conducted of the reimbursement decisions for dossiers submitted per HTA company. In order to be included in the analysis, a company needed to have at least 10 applications evaluated in the specified time period. RESULTS: In the period analysed, 56% of applications received positive RPA and 49% received positive MoH on reimbursement. 15% of applications, despite negative RPA, received positive MoH. 8% of applications received positive MoH but negative RPA were not reimbursed. Cramer’s V between RAP and MoH equalled 0.24 (value of 1 indicates full compliance). Dossiers prepared by INAR had the highest percentage (65%) of positive outcomes out of all submitted. MoHD had 65% of positive MoH decisions. Other companies were also analysed. Impact of Economic Commission Statements could not be analysed because of a lack of transparency. CONCLUSIONS: An analysis showed that there was a weak association between MoH and MoR when measured by Cramer’s V. Results suggest that HTA company experience could have an impact on final MoHd, but further analysis should be taken.

PHIP17 HOW WELL DOES THE LEADING PHARMACEUTICAL REFORM MODEL WORK IN CHINA? – AN INTERRUPTED TIME SERIES ANALYSIS

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OBJECTIVES: This present study aimed to explore the impact of the pharmaceutical reform of Sanming city, one of the most leading healthcare reform models in China on both drug and total health expenditures. METHODS: Interrupted time series analysis with two intervention points was used to examine the impact of the pharmaceutical reform of Sanming City, China. The first intervention point was the implementation of Zero Mark-up Drug Policy, whereas the second one was the launch of Centralized Procurement of Medicine Policy. Primary outcomes are monthly inpatient drug expenditure and monthly inpatient total health expenditure. Data spanning from May 2012 to May 2014 are included. RESULTS: Both inpatient drug and total health expenditures exhibited rising trends before any policy was carried out. The launch of Zero Mark-up Drug Policy led to significant instant reductions in drug expenditure (coefficient = -7,520.90, p<0.01) and total health expenditure (coefficient = -16,737, p<0.01). Moreover, the previous upward trends were changed into downward trends for inpatient drug expenditure (coefficient = -7,250, p<0.01) and total health expenditure (coefficient = -3,069, p<0.01). However, after the implementation of Centralized Procurement of Medicine Policy, we observed no significant instant level changes and also, the inpatient drug expenditure (coefficient = 372.95, p>0.05) and total health expenditure (coefficient = -17,131, p>0.05) resumed growing again. CONCLUSIONS: Although the pharmaceutical reform could control or reduced drug expenditure and total health expenditure in short term, the effect become weakened or even failed out in long term, indicating expending gradually resumed growing again and reached or even exceeded their baseline levels of expenditure.
pre-reform period. In all, the pharmaceutical reform as a whole failed to meet its goal of combating sharp growth of drug and total health expenditure.

**PHP18**

**TRENDS IN EMERGING NON-HTA DRUG VALUE ASSESSMENT FRAMEWORKS**

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**OBJECTIVES:** Despite the wide use of Health Technology Assessment (HTA) in some countries, common understanding of value definition and attributes that contribute to value in healthcare is lacking. In response to the debate on access to expensive drugs, various drug value frameworks (VFs) have emerged in recent years. This research aims at comprehensive identification of existing "non-HTA" VFs in the context of this current debate. **METHODS:** Comprehensive literature review of existing non-HTA VFs was done using PUBMED database, the University of Laval University of Laval, Stockholm University of Stockholm, Utrecht University of Utrecht, Munich, Germany, 12University of Rome Tor Vergata, Rome, Italy, 13Center for Evidence Based Medicine, Faculty of Medicine, University of Lisbon, Lisbon, Portugal, 14South Carolina Patients EuroNet Association, Wolfsberg, Germany

**RESULTS:** In total, 54 non-HTA VFs were identified. From 2011, a dynamic increase in new VFs was observed at 42% average annual rate with the highest nominal growth in 2015-2016 (24% new VFs). Most VFs originate from the United States (US) and Europe (70%) and are targeted at global (N=25), European (N=14), US (N=13) or other country’s stakeholders (N=2). VFs are to determine value of therapies in all indications (N=27) or in oncology only (N=16). VFs aimed at funding/clinical decision-making prevail (57%) followed by those informing R&D (19%) and 90% of VFs are applied to oncology area. ESMO’s Magnitude of Clinical Benefit Scale, ASCO’s Conceptual Framework, DrugAbacus tool, NCCN Evidence Blocks and ICER value assessment Framework are amidst key recent VFs. **CONCLUSIONS:** VFs others than those used by HTA agencies are gaining importance but their current impact on decision-making is minor. More practicability and validity are expected to enhance their wider adoption. HTA agencies in Europe are showing increased interest in such VFs, which may end up more in decision-making or than in the US.

**PHP19**

**TIME RESTRICTED DECISIONS IN GERMAN BENEFIT ASSESSMENTS – A SUCCESS STORY?**

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**OBJECTIVES:** Manufacturers are committed to submit a dossier to the G-BA for an early benefit assessment of new drugs in Germany. The G-BA evaluates the dossier and decides about the added benefit of the drug versus the appropriate comparator. The dossier needs to be time restricted and reassessed if criteria are not met. The aim of this study is to give an overview of all time restricted and reassessed processes, to extract the reasons for a time restriction and to compare the decisions on added benefit of the initial assessment and the reassessment. **METHODS:** The G-BA decisions on added benefit and the rationale for all processes were retrieved up to March 15th, 2017 from the G-BA homepage. Extraction included active substance, indication, therapeutic area, G-BA decisions and rationales. **RESULTS:** Of all 238 decisions, 35 (15%) were not supported. Of these, 15 had already been reassessed. Orphan drugs, oncology drugs and drugs with conditional approval were especially prone to receive a time restriction. Common reasons for time restriction were missing data or data quality, absence of comparator, needed data were not submitted or adequate data were not collected in time. The most common restriction period was 2.5 years. The added benefit in reassessments improved in 4 of 15 processes and deteriorated in another 4 of 15 processes. In 7 of 15 processes of the added benefit did not change. A common reason for this was a lack of new data available, which for detailed analysis a lack of new or even no new evidence which refruted the first decision was most common. **CONCLUSIONS:** A time restricted decision by G-BA frequently affects drugs with orphan status. Reassessment can improve added benefit if convincing new evidence is available.

**PHP22**

**MEASURING THE IMPACT OF THE FOOD AND DRUG ADMINISTRATION (FDA) UNAPPROVED DRUG INITIATIVE (UID) ON DRUG PRICES AND EXPENDITURES**

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**OBJECTIVES:** In 2006, USDHHS mandated the FDA to identify and remove unsafe/ineffective drugs from the market. Manufacturers of such drugs could conduct studies to prove safety and/or efficacy and file a New Drug Application, for which approval provided limited market exclusivity. To date, there has been very little research on the potential impact of the FDA’s UID on drug prices in the US. **METHODS:** The survey sampled manufacturers of unapproved drug products, using a web-based survey to identify unapproved marketed drugs and examine the relationships between data quality and drug prices. **RESULTS:** The survey included 54 manufacturers of unapproved drug products. Manufacturers of such drugs were more likely to have information on the use of RWE for regulatory, reimbursement, and clinical decision-making, and data availability and data quality. **CONCLUSIONS:** Whilst there are some differing opinions around the use of RWE for regulatory purposes, most respondents see it as a complement to RCT rather than a replacement. Future research and general opinion is that RWE will become more valuable over time if data quality and availability can be improved.
of the Ministry of Health, Labor and Welfare (MHLW). We investigated if new drugs listed from April 2014 to December 2016 had reference countries’ prices or Orphan Designation, and selected NIH prices of new drugs which have at least one or more reference countries’ prices, in addition to Orphan Designation. We compared the selected NIH prices with “Foreign Average Price (FAP),” the average of all reference countries’ prices the “EU Average Price (EUR),” the average of all existing prices of UK, Germany and France and the “US Price (USP).” RESULTS: A total of 181 new drugs were listed on the NIH price list from April 2014 to December 2016. Out of these drugs, 83%, 65% and 91% were priced lower than FAP, EUR and USP, respectively. For other drugs, 88%, 71% and 94% were priced lower than FAP, EUR and USP, respectively. CONCLUSIONS: In the past three years, NIH prices for new drugs in Japan tended to be lower than Reference Countries’ prices, even of new drugs for unmet medical needs. Further guidance to value new drugs, especially Orphan Designated drugs, would be necessary for the pricing system in Japan.

PHP24 ATTITUDES TOWARDS GENERIC SUBSTITUTION IN GREECE
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OBJECTIVES: Generic substitution is a popular measure for cost containment in pharmaceutical markets. During the last period, it was among the main priorities of the pharmaceutical policy agenda in Greece, and a key element of the economic adjustment programme in health sector. In this context, this study aims to explore the attitudes towards patients’ attitudes towards generic substitution in Greece. METHODS: A cross-sectional survey was conducted on a representative national sample of 2012 adult individuals. The dependent variable is a binary variable that indicates whether to which respondents could accept generic substitution. The independent variables are: urbanity, social status, gender, age, marital status, education, source of information about pharmaceutical care, chronic conditions, and knowledge about generic substitution. Frequencies, percentages, Mann Whitney and Kruskal Wallis tests were performed using a logistic regression model. RESULTS: Our findings suggest that 39.2% of the respondents were willing to accept generic substitution in the pharmacy, as they considered generic medication as an equal therapeutic alternative to branded pharmaceuticals. Male, high educated and those living in urban areas are more likely to have a positive attitude towards generic substitution. Moreover, respondents who received information from their pharmacists are more likely to accept generic substitution, relative to those being informed by doctors. Chronic patients are less likely to accept generic substitution. In particular, the odds ratios are 0.79 and 0.70 for those having one and two or more conditions respectively. Social status, age, and marital status were not statistically significant determinants of the substitution attitudes towards generic substitution. CONCLUSIONS: A significant share of the respondents is reluctant to accept generic substitution. In this context, some specific population groups may need further information about generic drugs and substitution, and the therapeutic equivalence between generics and branded drugs. The findings of this study are useful towards designing targeted interventions for specific population groups in Greece.

PHP25 EVALUATING PATIENTS’, PHYSICIANS’ AND PHARMACISTS’ PERCEPTION REGARDING GENERIC MEDICINES IN ETHIOPIA: FINDINGS AND IMPLICATIONS
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OBJECTIVE: Generic medicine prescribing has become a common practice in many countries. However, data regarding the perception of stakeholders (patients, prescribers and dispensers) regarding generic medicines in Ethiopia is scarce. The present survey aimed at investigating the perception of patients, physicians and community pharmacists regarding generic medicines in Ethiopia. METHODS: A quantitative cross-sectional survey was conducted between January 1 and February 1, 2017. The questionnaire was administered to patients, physicians and community pharmacists. Frequencies, percentages, Mann Whitney and Kruskal Wallis tests were performed using Statistical Package for the Social Sciences (SPSS) software version 21.0 for Windows (SPSS Inc., Chicago, IL). RESULTS: Majority of patients surveyed (83.1%) agreed that the costs of medicines in Ethiopia is too high and 61.4% of respondents believed that cost should be considered before a drug is prescribed. 71.2% of patients accept the pharmacist substituting their prescribed medications to a cheaper medicine. On the other hand, majority of physicians (70.6%) indicated a very low generic medicine prescription rate. About 91% of physicians and 87.2% of pharmacists agreed that drug advertisements by the manufacturers would influence their prescribing-dispensing practice. CONCLUSIONS: Our findings demonstrate that a significant proportion of patients, doctors and pharmacists hold negative perceptions of generic medicines. The insights obtained in the present study will be useful to healthcare organizations, policy makers and other stakeholders to design and implement a proportion of patients, doctors and pharmacists hold negative perceptions of generic medicines. Specific population groups may need further information about generic drugs and substitution, relative to those being informed by doctors. Chronic patients are less likely to accept generic substitution.

PHP26 OPEN TO THE PUBLIC? A COMPARATIVE ANALYSIS OF DATA PUBLISHED UNDER THE "EMA POLICY ON THE PUBLICATION OF CLINICAL DATA" AND DOSSIERS FOR EARLY BENEFIT ASSESSMENTS IN GERMANY
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OBJECTIVES: Evident as a new drug is key to various parties in health care for clinical and health policy decisions. With the EMA policy on the publication of clinical data" in 2015 public availability of such evidence has been highlighted. However, a new drug data is not a new issue and has been practiced before by HTA agencies like BA and IQWiG in Germany. The aim of this study is to determine the information provided in both, German dossiers/benefit assessments and the EMA database, comparing reporting quality. METHODS: All documents were retrieved from the EMA home page and the EMA database until March 15th 2017. The following sources for extraction had to be available: Dossier module 4 and benefit assessment (G-BA), any clinical data available on the EMA database. Extraction included 16 studies from 2014 and 8 results from 2015. Cochrane Collaboration (2015) were 100% completely reported for methods (32 out of 32 items) and 87.5% completely reported for results (14 out of 16 items). For EMA results were assessed by two reviewers (Koehler et al RM 2015; 352: A796). Reporting quality was rated as “completely reported”, “partly reported” and “not reported”. RESULTS: Overall only 2 drugs had both available, G-BA dossier/assessment and EMA clinical data (Eltuzumab and Carfilzomib). For these 2 drugs 15 studies and 8 results were assessed by two reviewers (Koehler et al RM 2015; 352: A796). Reporting quality was rated as “completely reported”, “partly reported” and “not reported”. CONCLUSIONS: Regarding reporting quality, no major differences between G-BA dossiers/assessments and EMA clinical data was observed. Both publicly available sources provide sufficient information on the quality of new drug development but it must be noted that the EMA database currently only contains a very limited number of newly approved drugs.

PHP27 MEDICINE PRICES DISPARITY AMONG RETAIL PHARMACIES IN SELANGOR, MALAYSIA
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OBJECTIVE: To date, there is no stipulated law to control medicine prices in Malaysia and it is left to disparity due prices between innovator and generic medicine among the private healthcare settings, namely general practitioner (GP) clinics (independent, chain) and retail pharmacies (RPs) (independent, chain). This study was carried out to evaluate the medicine innovator, generic price differences among RPs in Selangor, Malaysia. METHODS: Simple random sample selection technique. Five data collectors were recruited and trained as simulated clients to elicit the actual selling price for the 10 selected medicines (both innovator and lowest price generic) which are highly used in Malaysia. RESULTS: For innovator, only salbutamol 100 mcg inhaler (200 doses) (p=0.043) and glimepiride 5 mg tablets (p<0.001) were charged higher than their lowest price generic at independent RPs. As for lowest price generic products, only furosemide 40 mg tablet (p=0.003) and metoprolol 100 mg tablet (p=0.036) were found to be cheaper at the chained RPs than the independent RPs. Of note, simvastatin 20 mg tablet (Zocor®) was sold at a higher median (range) price at the chained RPs than the independent RPs [RM 2.63 (2.19-3.80) versus RM 2.32 (1.17-4.13), p<0.009]. CONCLUSIONS: It was interesting to find that the perception of cheaper price of medicines in chained pharmacies as compared to independent pharmacies in Malaysia. The findings of this study will facilitate policy makers in drawing conclusion about the differences of medicine prices and will be useful in devising appropriate policy for medicine price control in Malaysia.

PHP28 GENERIC vs. PANTOPRAZOLE IN GREECE: A TALE OF DISTORTION
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Panhellean Association of Pharmaceutical Industry, Athens, Greece
OBJECTIVES: Generic medicines in Greece are priced at 65% of the price of the reference off-patent while off patents are priced at the minimum between a decrease of 50% of their latest on - patent price, and the average of the three lowest prices of the same product among the EU countries. The purpose of this study is to assess the price level of generics pantoprazole in Greece. METHODS: Official pricing data were used to identify the three EU countries which set the outpatient market price for off-patent pantoprazole 40 mg in Greece in December 2016. The ex-factor prices for the originator and generics in each of the three EU countries were derived from the official prices in each country. All prices were normalized to correspond to monthly treatment. RESULTS: Originator pantoprazole price derived from the prices of the same product in Ireland, Poland and Austria. Average ex-factor price for generic pantoprazole 40mg in Greece (2.05€) were lower than the respective ex-factor price in Ireland (3.08€ - 33.31%), in Poland (2.61€ - 21.35%) and, in Austria (2.76€ - 25.68%). CONCLUSIONS: Average ex-factor price for generic pantoprazole in Greece is up to 34% below the respective generic prices at the EU countries with the lowest price of the reference originator. With rebates and kickback considered, the average ex-factor price for generic pantoprazole in Greece is further reduced by 30% proportionally in 2016. However, despite the excessively low net ex- factor price, the typical price down of the method used to arrive to it (2.05€) still remains far from the MoU target of 40% by volume for 2017. This suggests for the need of an effective and reasonable pricing regulation to ensure market viability for generics in parallel with demand side measures to foster generic use through appropriate incentives for physicians, pharmacists and patients.

PHP29 DEMAND AND SUPPLY SIDE REGULATION OF BIOSIMILAR MARKETS IN GERMANY, FRANCE AND ENGLAND AND ITS IMPLICATIONS FOR MARKET ACCESS OF BIOSIMILARS
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OBJECTIVES: As an advanced market for biosimilars, Europe will become even more important as the market for products of the same therapeutic classes shrinks due to the expiration of patents. The increasing importance of biosimilars will highly depend on reimbursement regulations and regulation instruments addressed at physicians, pharmacists, and patients. This study analyzes regulation strategies of three major European countries.

METHODS: Based on a literature search in electronic databases and websites of relevant national regulation authorities, we systematically compared national regulations concerning biosimilar markets.

RESULTS: Central pricing and reimbursement decisions in all three countries are generally regulated by HTAs, but only in France and partly in England biosimilars undergo an own HTA. In England and France price is set by central agreements, in the case of France a discount of 30% from the price of the biological is expected. As Germany assesses biosimilars as equivalent to the corresponding biological, the price is indirectly induced by the reference price set for reimbursement in social health funds.

Decentral tendering in the hospital sector is used in all three countries, whereas only Germany up to now used special reimbursement regulations for biosimilars in some cases of biologicals and biosimilars. Concerning the substitutability of biologicals and biosimilars, only in France pharmacies may legitimately do so in treatment-naive patients. In Germany, on the other hand, in some regions minimal quota for the use of biosimilars are set for outpatient pharmacies. The availability of biosimilars depends on the sustainable chance to achieve market shares and prices to refinance market access costs which are considerably higher than in generic markets. This requires the possibility of access to patients and physicians, which is closely connected to regulations concerning substitutability and substitution incentives, but also to regulations concerning price competition. Further discussion is needed on the use of tenders in these markets.

PHYSIOLOGICAL VARIATION USING A COMPREHENSIVE COMPARATIVE APPROACH

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OBJECTIVES: e-Health technologies which optimise traditional devices and drugs (e-Connected) cross different regulatory frameworks. This study aimed to provide an overview of the funding pathways for e-Health technologies in Europe.

METHODS: A literature search and review of corresponding national and European websites, PubMed, and grey literature to identify funding regulations, processes, and practices in EU-5. RESULTS: In Europe, there is no standard reimbursement pathway specific to e-Connected devices. Development in medical devices and the healthcare market is to be established by 2020. Differences in reimbursement approach reflect differences in healthcare system structures leading to differences on what will be funded (scope), who pays (payer), and on what basis will payment be made (payment method). FInally, Germany offers possibilities to have significant coverage. However, all technology components may be funded together. However, there are no guarantees that all technology components will be funded. It depends on specific agreements with the payor (CO). In other countries, one technology component is identified as one reimbursement area and goes through different reimbursement pathways. Currently, most do not have a standard funding path such as remote monitoring fee, electronic health records (EHR) integration and maintenance.

UK is a frontrunner in the use of EHRs as a national infrastructure is already in place unlike the other countries. However, interoperability of e-Health solutions with EHRs must be assured by the manufacturer for each type of EHR.

CONCLUSIONS: e-Health solutions are on the rise. The main barriers to MEA adoption include the administrative and cost burden of monitoring, and lack of necessary infrastructure.

PHYSIOLOGY AND BIODIVERSITY IN THE CIRCULATORY SYSTEM

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OBJECTIVES: This study aims at comparing new human pharmaceutical drug approvals between the Food and Drug Administration (FDA), the European Medicines Agency (EMA) and Swissmedic (SMC) for the period January 2007 - 2017 using a comprehensive comparative analysis.

METHODS: This study include regulatory information, approval date, indication of new drug in the assessment period. Descriptive statistical analyses were performed for all variables. Significant level (p-value) was set at 0.05. T-test and x2-test were used to assess differences. All analyses were performed using Microsoft Excel 2016. Data are presented using proportions (%) and time lag between approval dates in months.

RESULTS: From January 2007 to 2017, FDA approved 1 drug in CMS approved for the period 2007 - 2017 using a comprehensive comparative analysis. FDA approved 1 drug within the CMS approved for the period 2007 - 2017 using a comprehensive comparative analysis. The indications approved by the FDA, EMA and SMC were non-significant (p=0.636) while it was significant between SMC and FDA (p<0.0001) as well as between EMA and FDA (p<0.0001). The comparisons between SMC and FDA as well as EMA and SMC. But differences were not significant between EMA and SMC (p=0.146).

CONCLUSIONS: Drugs tend to be first approved by the FDA. Significant differences exist in characteristics of new drug in the assessment period between FDA on one side and EMA and SMC on the other side. Based on the results, it seems that the international trend to harmonization, based on scientific data included in a marketing application, regulatory decisions are complex and depend in part on an environment of public health policy and law as demands through researchers and health professional in the patient interest.

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PHP36

HEALTHCARE INTERVENTIONS FOR IMPROVING QUALITY USE OF ANTIBIOTICS IN THE HOSPITAL SETTING: A SYSTEMATIC REVIEW
Chanjaruporn F1, Rochanadumrongkul P2

OBJECTIVES: The purpose of this study is to systematically review the healthcare interventions aimed at improving quality use of antibiotics in the hospital setting. Specific emphases were placed on the study design, objectives, types of interventions, methodology and major results. METHODS: A systematic search of relevant publications concerning healthcare interventions aimed at improving quality use of antibiotics was performed during May 2015-2016. Articles were selected through PubMed, Scopus, Google Scholar, and bibliographies. Articles were selected for the final review if they met the inclusion criteria of reporting the healthcare interventions employed in the hospital for improving quality use of antibiotics. RESULTS: A total of 49 studies were included in the final review. Majority of the studies were conducted in the USA (22%). Most of them were conducted in the general hospitals (53%) with the study period ranged from seven months to two years. Majority of the studies were experimental pretest-posttest study in one sample group (65%), followed by randomized control trials (RCT) and non-RCT in two sample groups (25%), and cross-sectional study in one sample group (10%), respectively. Conclusion: Healthcare interventions for the improvement of quality use of antibiotics employed professional intervention, followed by technology intervention, policy guidelines intervention, and education intervention, respectively. Of 49 studies, 20 (40.8%) had the intervention led by those directly involved, while 26 (53%) had the intervention led by multidisciplinary teams. Majority of interventions obviously showed to significantly improve the quality use of antibiotics. From this point, there is a need to encourage all hospitals to adopt this concept for rational use of medicines. RESULTS: A total of 49 studies were included in the final review. Majority of the studies were conducted in the USA (22%). Most of them were conducted in the general hospitals (53%) with the study period ranged from seven months to two years. Majority of the studies were experimental pretest-posttest study in one sample group (65%), followed by randomized control trials (RCT) and non-RCT in two sample groups (25%), and cross-sectional study in one sample group (10%), respectively. Conclusion: Healthcare interventions for the improvement of quality use of antibiotics employed professional intervention, followed by technology intervention, policy guidelines intervention, and education intervention, respectively. Of 49 studies, 20 (40.8%) had the intervention led by those directly involved, while 26 (53%) had the intervention led by multidisciplinary teams. Majority of interventions obviously showed to significantly improve the quality use of antibiotics. From this point, there is a need to encourage all hospitals to adopt this concept for rational use of medicines. From this point, there is a need to encourage all hospitals to adopt this concept for rational use of medicines.

PHP37

PROBABILISTIC SENSITIVITY ANALYSIS AND ITS ROLE IN ASSESSMENT OF PROFITABILTY IN POLAND
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OBJECTIVES: In August 2016, guidelines for conducting Health Technology Assessment in Poland were updated. Since then, the Agency for Health Technology Assessment and Tariﬀ System (AOTMiT) has required manufacturers to conduct a probabilistic sensitivity analysis (PSA) or provide an adequate justiﬁcation for lack of it. The objective of this review is to assess whether current decisions made by AOTMiT depend on the results of PSA. METHODS: Submissions from 1 August 2016 up to 26 May 2017 with AOTMiT assessment reports and recommendations of the treatment were included in this review. Moreover, a list of products for which PSA was performed and effectiveness were publically available. If several probabilities were provided, appropriate ranges were used and graphically presented. RESULTS: A total of 32 submissions were identiﬁed within the analysed timeframe. PSA was performed in 21 (65.6%) cases and justiﬁcation for lack of PSA in pharmacoeconomic analysis was only presented in 3 out of 11 (27%) remaining cases. Finally, only 14 out of 21 submissions were taken into consideration, because probability of cost-effectiveness was used as a decision-making criterion. In 2 of the remaining cases, identiﬁcation of AOTMiT was positive in 5 and negative in 9 cases. To assess a relationship between the PSA outcomes and recommendation character, the results were plotted on a graph. CONCLUSIONS: It can be assumed that technologies with a probability of being cost-effective lower than 30% tend not to be recommended. However, this analysis should be treated with caution as it was limited by a small number of submitted AOTMiT reports. There is a need for greater transparency of PSA outcomes to assess their role in the decision-making process in Poland. To assess a correlation between results of PSA and character of the recommendation of the AOTMiT President, more samples need to be reviewed and analysed.

PHP38

PROVIDING A FRAMEWORK FOR ASSESSING ACCESS TO MEDICINE
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OBJECTIVES: One of the main goals of all health systems is to improve access to safe and effective medicines. Assessment is a very important phase of national medicine organization’s work to access improvement. To date, no standard mechanisms were available to collect suitable indicators and provide a comprehensive framework for assessing access to medicine. METHODS: A literature review with systematic search was conducted using Pub Med, Medline, Scopus and Google Scholar databases in order to investigate the requirements of a standard framework. Results: Thirty-two articles were reviewed. Of these, 34 terms were identified and combined to form a framework for assessing access to medicine. Discuss: The framework was used in mapping the access status in different countries. CONCLUSION: Improvement of the access to medicines is very important and necessary to be assessed at national level.

PHP39

PHARMACEUTICAL ASSISTANCE PUBLIC FUNDING IN A BRAZILIAN CITY AND ITS IMPLICATIONS FOR THE UNIVERSAL ACCESS TO ESSENTIAL MEDICINES
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OBJECTIVES: To ensure the constitutional right to health, a national health system was created in Brazil, in 1988, appointing municipalities as the main executors of health actions and services. The universal access to basic essential medicines is citizens’ responsibility, while the federal government and the states dispense high-end drugs. However, an alternative way to get access to public funded medicines is being consolidated: a phenomenon called “judicialization of Health”. It happens when an individual judicially claims healthcare provision. In 2015, the Health Ministry’s expenditures for drugs judicialization were USD 281,704,610 while 8% of the federal pharmaceutical assistance budget. Since municipalities have smaller funds, this research aims to analyze judicialization’s budget impact in a small Brazilian city and the access to essential medicines. METHODS: We used a systematic search of studies published from 2015 to 2016 in the online databases: “Ouro Branco” was chosen due to its small populational size (estimated at 38,601 residents in 2016) and the availability of detailed expenditure records within the Ouro Branco website. All the medicines purchase expenses using municipal resources were analyzed for 2015 and 2016. The amount disbursed in both the universal pharmaceutical assistance policy and the drugs judicialization was calculated for each year and for the whole period. RESULTS: Ouro Branco invested USD 28,486.17 in its universal policy for the 2015-2016 period (around USD 19,000 less than established by regulation) while USD 27,991.68 were destined to judicialization. In 2015, the judicialization expenses equated to 40% of the universal policy investment. In 2016, this ratio rose to 17%. Records show that, in 2016, all judicialization expenditure benefitted only five citizens. CONCLUSIONS: Once all government levels answer to all price drugs judicialization, this phenomenon damages mostly small cities’ budgets and consequently their universal pharmaceutical assistance policy. Despite judicialization is based on the “right to health” argument, it is an unrightful misery when it reallocates public funds to benefit a few individuals.

PHP40

ACCELERATED UPTAKE OF INNOVATIVE HEALTH TECHNOLOGIES: A LITERATURE REVIEW
Cowell W1, Ovesako P1, Lee J2, Ford C1


OBJECTIVES: The Accelerated Access Review made recommendations to speed up access to innovative medicines (technologies) without evidence, but evidence on how best to achieve this is not readily available. We conducted a literature review of measures to accelerate uptake of health technologies after regulation, such as importation, ‘upframing’, ‘scheme’ and ‘reimbursement’ were used. Identification of relevant articles and data extraction was performed by two independent reviewers with differences resolved by consensus. The evidence was synthesised using a narrative approach. RESULTS: Thirty-two articles met the inclusion criteria. A wide range of themes emerged, including price, access, affordability, timelines, and funding.
including horizon scoring, price negotiation, health technology assessment consideration and innovator-managed entry agreements (such as conditional approval and financial risk-share), health service financial flows, and leadership around promotion of evidence-based medicine. The most prevalent theme was conditional access. Many papers described the issues and conceptual solutions, rather than reporting implementation of non-pharmaceutical indicators. Rationalization of the national drug expenditure showed by AIFA to economic issues. Price-volume agreements appear as the dominant strategy for new drugs. Some criteria were used for the reimbursement of drugs with a confidential discount (13 also had a MEA).

Based on these criteria, 47 new drugs were reimbursed in Italy. The 31.6% of these drugs were assessed as innovative, the 15.8% were orphan and the 10.5% hybrid. The 26.3% were oncological drugs and the 10.5% haematological. 40% (19 of the total sample) had a MEA as approval condition agreed between the Marketing Authorisation Holder and AIFA. 3 drugs (15.8%) had 2 MEAs simultaneously applied (price-payment asymmetry, budget cap and 2 price-volume) caps. One drug had a MEA applied but not disclosed in the OJ. Analysing the 22 MEAs tracked, the 82% were outcome-based and the 14% were outcome-based. The only outcome-based MEA applied was the payment-by-results, while non-outcome-based MEAs were cost-sharing (6%), budget cap (39%) and price-volume agreements (56%). The 18% of the 47 screened drugs had monitoring registries and 32 (68%) out of these drugs had a confidential discount (13 also had a MEA).

CONCLUSIONS: A broader use of non-outcome based (financial) MEAs emerged, highlighting the attention showed by AIFA to economic issues. Price-volume agreements appears as the mostly applied MEA, with a monitoring registry as measure to track appropriateness. Publicly available analyses of these tools would be of great help in understanding the real value of their application.

**PHP44**

**NEW DRUGS APPROVAL TIMING IN ITALY**

**OBJECTIVES:** This study aims to track and analyse, using official journal publications, all new drugs (Managed Entry Agreements [MEAs], monitoring registries, discounts) of novel drugs reimbursed in Italy. METHODS: Publicly available Official Journal (OJ) of 47 new active principles approved through European centralised procedure were included. RESULTS: Based on these criteria, 47 new drugs were reimbursed in Italy. The 31.6% of these drugs were assessed as innovative, the 15.8% were orphan and the 10.5% hybrid. The 26.3% were oncological drugs and the 10.5% haematological. 40% (19 of the total sample) had a MEA as approval condition agreed between the Marketing Authorisation Holder and AIFA. 3 drugs (15.8%) had 2 MEAs simultaneously applied (price-payment asymmetry, budget cap and 2 price-volume) caps. One drug had a MEA applied but not disclosed in the OJ. Analysing the 22 MEAs tracked, the 82% were outcome-based and the 14% were outcome-based. The only outcome-based MEA applied was the payment-by-results, while non-outcome-based MEAs were cost-sharing (6%), budget cap (39%) and price-volume agreements (56%). The 18% of the 47 screened drugs had monitoring registries and 32 (68%) out of these drugs had a confidential discount (13 also had a MEA).

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An online survey of six payers was conducted; consisting of multiple choice and yes/no questions in key markets – Germany, Italy, and the UK. The review using systematic literature review (PRISMA methodology) aiming to understand the standing of payers’ perceptions, on the last three gene-therapy launches (alipogene tiparvovec, taliglucerase alfa, and golodirsen), particularly the CTS assessment. Orphan drugs have shorter opening procedures, but longer assessments. The remaining 28 drugs have longer openings and failure of CTS assessments.

Methods: Despite a relevant speed up in the approval process in the last 2 years compared to previous publications (247, 5 days in 2013-2015 vs. 205 days in 2015-2017 for CTS assessment of oncological drugs), the same holds true for 70, 730, 456, and 37 drug launches on market since 2015. The analysis also reveals that the majority of the overall timing is linked to administrative steps.

Conclusions: The findings are in line with the previously identified literature. Work remains to be done to improve payers’ understanding of gene-therapy, its curative and/or symptom relieving potential, to effectively provide for future launches. Optimal evidence and amenable funding will be the key areas for industry to address to ensure gene-therapies are successfully launched in Europe.

ORPHAN DRUGS IN THE UK, DO THEY MEET THE NICE HIGHLY SPECIALISED TECHNOLOGY ‘THRESHOLD’?

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Objectives: Our objective was to assess NICE’s orphan drug review process and its ability to meet the ‘highly specialised technology threshold’.

Methods: We reviewed the orphan drug application process using a selection of 133 drugs from 2015 onwards.

Conclusions: Despite a relevant speed up in the approval process in the last 2 years compared to previous publications (247, 5 days in 2013-2015 vs. 205 days in 2015-2017 for CTS assessment of oncological drugs), the same holds true for 70, 730, 456, and 37 drug launches on market since 2015. The analysis also reveals that the majority of the overall timing is linked to administrative steps.
potential to close the gap between internal validity of exploratory trials and real-life practice. The objective of this study was to assess the current use of PCTs to support drug launch. METHODS: Peer-reviewed articles on PCTs were searched in Medline/ Embase through Ovid. In addition, search of the EUnetHTA and EU Commission websites was performed, supplemented by Google search of grey literature. RESULTS: PCTs are currently mainly used to support drug launch, however, the existing PCTs are uncommon. PCTs have several limitations, i.e., 1) methodological/analytical issues inherent to the potential risk of bias of more flexible designs, 2) operational issues with coordination of different data sets from different settings, 3) concerns of regulatory and ethical nature, e.g., securing rights and interests of participants while remaining pragmatically flexible, 4) substantial costs incurred to conduct large PCTs. In the United States, PCTs are currently mainly promoted through public sector funding, while their potential use by regulatory agencies is still uncertain. Before PCTs can be used for decision-making, academic experiment (e.g. from the National Institutes of Health Health Care Systems Research Collaborative) and, more recently, the Patient-Centered Outcomes Research Institute (PCORI) Trials Transformation Initiative) with these trials should broaden. In Europe, PCTs are usually considered by decision-makers as complementing (but not replacing) standard randomised clinical trials. Evidence from PCTs seems more acceptable for drugs with a known benefit/risk profiles, while less acceptable for drugs with novel mechanisms of action. CONCLUSIONS: PCTs are currently underused for initial drug regulatory/reimbursement dossier filing. Currently, multi-stakeholder initiatives are undertaken to enhance pragmatism in clinical trials and reduce decision-making uncertainty through developing tools, guidelines, and research on new trial designs and statistical methodologies.

PHPS3 A TYPOLOGY-BASED DECISIONAL FRAMEWORK TO SUPPORT MARKET ACCESS AND REIMBURSEMENT DECISIONS FOR PERSONALISED MEDICINES

OBJECTIVES: To review current processes for reimbursement of ATMPs in the UK and consider mechanisms to improve patient access to these therapies. METHODS: Structured desk research was conducted to assess the health technology assessment (HTA) processes for ATMPs. A literature review of the ATMPs in the UK was conducted and HTA processes were categorised into 11 different types. RESULTS: A review of decision drivers and considerations suggested a typology for ATMPs. The typology was used to examine 10 ATMPs. The key findings were: (i) all ATMPs had an ATMP status, (ii) most ATMPs were assessed by at least two ATMPs, (iii) the majority of ATMPs had an HTA status, and (iv) the majority of ATMPs were recommended by NICE. CONCLUSIONS: The proposed typology-based decisional framework for ATMPs should be used to support market access and reimbursement decision-making for ATMPs. This framework can function as a conceptual basis for other agencies outside Belgium.
not appraised any ATMPs. CONCLUSIONS: Despite UK Government rhetoric in sup-
port of gene therapy, there has been limited access to ATMPs on the NHS. Although the EMA has introduced measures to support early regulatory
approval of ATMPs, premature data combined with high costs appear to deter com-
panies from applying to UK HTA bodies. Only one ATMP has received reimbursement
approval to date. An overview of the life sciences sector in the UK and gene therapies
need to be backed up with flexible HTA assessments. Early negotiations between
companies and NHS bodies should be used to identify managed access agreements,
limiting the NHS exposure to high risk whilst allowing patient access to innovative tech-
iques. Where products deliver a cure following a single use or single course of treatment,
longer-term payment plans may help to manage NHS budgets.

PHPS5
INVESTIGATING COMPARATOR REQUIREMENTS FOR DRUG SELECTION FOR COST-EFFECTIVENESS
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OBJECTIVES: The cost-effectiveness (CE) is a concept where the incremental costs of
a treatment per comparator is a treatable condition with a high impact on the HTA
assessment. The use of cost-effectiveness analysis within the decision making
processes in public health is increasing globally. Many methodological shortcomings
may limit the results from its practical application for the novel treatments, because
the choice of a comparator could reflect that ratio. The present study investigated
the requirements and the selection criteria of comparator medicines in Bulgaria
in comparison to nine Central and Eastern European (CEE) countries to survey and ana-
yze the approach and the different selection criteria.

METHODOLOGY: To investigate the
requirements for alternative treatment for cost-effectiveness analysis we conducted
a review of legislation, guidelines and selected ISPOR pharmacoeconomic guidelines
in Bulgaria and 8 CEE countries (Latvia, Lithuania, Estonia, Croatia, Slovak Republic,
Slovenia, Hungary, Poland, Romania). RESULTS: 100% of the selected CEE countries
require justification of the comparator, where 90% of the countries, with exclusion
Poland, where it is mandatory, the EMA has recommended that for each selection
Poland, require standard therapy which can be selected from multiple alternatives,
whereas Poland weights the average of the prices (using the market share as weight),
or the lowest of the prices can be applied. Three countries, Bulgaria, Hungary and Croatia,
require the registration of the generics/parenterals and reference medicines. This
study showed how different the requirements in the comparator to be reimbursed. Many other comparator indicators in CEE have been
reviewed. CONCLUSIONS: The results of our review would contribute to assess the
comparators approach in CE for improving the quality of the indicators of the choice
in Bulgaria in order to value the assessment of pharmaceutical interventions.

PHPS9
TRENDS IN FDA DRUG PROMOTION ENFORCEMENT LETTERS OVER A TEN-YEAR PERIOD
Zagrodnin K1, Sheikhan T2, Sheikhan NY3, Pinto AM4, Wittek T5
1University of Toronto, Toronto, ON, Canada, 2University College London, London, UK, 3McMaster University, Hamilton, ON, Canada
OBJECTIVES: The Office of Prescription and Drug Promotion (OPDP), a division of
the U.S. Food and Drug Administration (FDA), routinely evaluates pharmaceutical
promotion materials. Insufficient reporting of risk information was the most frequent viola-
tion discovered, OPDP responds through the issuance of enforcement
letters to the company responsible. We provide a descriptive review of such letters over
the last ten years and provide categorical and statistical analyses based on the
enforcement letter. METHODS: Information extracted from publicly available enforcement letters
includes the type of enforcement letter (warning letter vs. untitled), violation-type
category (e.g. risk minimization), promotional material category (e.g. brochure, and
interactive media). RESULTS: A total of 12,706 promotional material violations were
recorded for each company via public sources or direct
direct contact. RESULTS: A lower frequency of letters were issued in the last five years of
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PHPS6
HEALTH TECHNOLOGY ASSESSMENT IN SINGAPORE: SHINING A LIGHT IN THE
DARKNESS
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OBJECTIVES: The Agency for Care Effectiveness (ACE) was established in 2015 by the
Singapore Ministry of Health to expand Health Technology Assessment
ability criteria for subsidy decisions. The first tranche of drug guidance recommendations was
published in May 2017. This was the aim of the review to explore how factors influencing subsidy decisions.
METHODS: All eleven published appraisals were reviewed and the factors considered by the Drug Advisory Committee extracted and assessed.
Further information was obtained from ACE at the Industry Briefing held in May 2017.
RESULTS: Out of the eleven appraisals of ten drugs, three led to
subsidy listing on the Standard Drug Lists (SDL 1 or 2), six led to inclusion in the
Medication Assistance Fund (MAF) and two did not result in subsidy. Ten evaluations were
expedited evaluations, with only trastuzumab considered as a full evaluation due to high technology cost. Of the subsidised medications, low-cost drugs were
recommended for SDL subsidy (broader subsidy than MAF) while high-cost drugs were
recommended for MAF subsidy. Most subsidised medications were in diseases with substantial unmet clinical need. In the absence of clinical need, the price rela-
tive to existing alternatives was a key consideration. In three technology appraisals (gliclazide, trastuzumab and tenofovir), restrictions were imposed on the formulation
covered by the subsidy based on price concerns. Although budget impact was a key consideration across all appraisals, a low budget impact alone did not guar-
antee a positive subsidy decision. Only five evaluations reported incremental cost-
effectiveness data, with an upper limit of $75,000 per quality-adjusted life-year gained
considered cost-effective in this tranche of appraisals. CONCLUSIONS: While limited by the small number of published appraisals, this analysis highlights the importance of both technology and decision-making tools. However, cost-effectiveness and budget impact are also important factors, with clinical need being relevant in some cases.
Objective: This study aimed at investigating the prevalence and factors associating antibiotic resistance in the community-based setting in Tigray Region, Ethiopia. A total of 1034 participants were enrolled in the study. A multi-stage sampling method was employed to select households. Data were collected with the help of a structured questionnaire and analyzed using descriptive statistics and bivariate and multivariate logistic regression. Results: Of the total households visited, 293(29%) stored drugs. The mean number of drugs per household was 1.73. The most commonly prescribed antibiotics were azithromycin (20.4%), meropenam (17.8%), levofloxacin (15.9%), and cefotaxime (9.6%). Commonly used antibiotics are found to be resistance to the local isolates of these diseases. Excessive or irrational use of antibiotics are major public health challenges leading to antibiotic resistance in Nepal. Lower respiratory infections, diarrhoeal diseases and tuberculosis, urinary tract infections and sexually transmitted infections diseases are significant public health burdens.

Methods: Prescribing percentages from the medicines optimisation dashboard and purchasing data reported by NHS Digital were obtained. Over a one year period, for each trust, total R-BMP prescribed per quarter was calculated by combining both datasets. The quarterly change in total infliximab prescribed and in R-BMP were retrospectively analysed. ICs rejected by G-BA (if applicable) in each assessed patient population.

Objectives: Since 2011, newly marketed drugs undergo an early benefit assessment (EBA), in which the drug’s additional benefit (AB) compared to an appropriate comparator (AC) is demonstrated by the Federal Upper Council Committee (G-BA) is assessed. Often, there is no evidence available from head-to-head studies with the AC. In such cases indirect comparisons (IC) may be used to prove an AB against the AC. To investigate the acceptance of a drug after demonstration by ICs were retrospectively analysed.

Methods: All EBA until January, 5th 2017 were considered in this analysis. The reasons for the passed resolutions (“Tragende Gründe”) published by the G-BA were screened for keywords (“indirekt,” “historisch”) to preselect potential assessments. Relevancy assessments were examined regarding the type of IC (historic i.e. unadjusted vs. non-historic i.e. adjusted), outcome (IC accepted, AB), and reasons for IC rejection by G-BA (if applicable) in each assessed patient population.

Results: A total of 82 assessments were identified during the keyword-screening, of which 46 were historic and 36 non-historic. 42 assessments contained non-historic ICs, of which 13 were accepted and 12 resulted in an AB (mostly drugs for the treatment of hepatitis C). In contrast, 47 assessments contained non-historic ICs, of which only 8 were accepted and 4 resulted in an AB. Hence, only a small proportion of assessments with an IC resulted in an AB. Most ICs were rejected by the G-BA due to methodological issues. Those issues most frequently concerned inappropriate patient populations, inappropriate statistical methods, and incomplete study plans.

Conclusions: It seems reasonable to plan pivotal studies not only to comply with the requirements for marketing authorization but also with the rules for EBA. Further promotion of the IC methodology accepted by the G-BA is recommended as this may improve the chances to have an AB granted.

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Conclusions: It seems reasonable to plan pivotal studies not only to comply with the requirements for marketing authorization but also with the rules for EBA. Further promotion of the IC methodology accepted by the G-BA is recommended as this may improve the chances to have an AB granted.
were noticed. A rational antibiotic use policy should be framed. Longitudinal surveil-

ance of ICU antibacterial use should be carried out.

**PHP69**

**SEARCH OF HIGH ACTIVE AND LOW TOXIC NEWLY SYNTHESIZED DERIVATIVES OF PHENYLPROPIADIENE FOR REGIONAL ANESTHESIA**

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**OBJECTIVES:** comparative assessment of local anesthetic activity of newly synthesized derivatives of piperidone for regional anesthesia, depending on their chemical structure. **METHODS:** local anesthesia was determined by the method of "tail-flick" on white rats. **RESULTS:** For research of activity of the compound at the particular type of anesthesia the great important index is duration of complete anesthesia. The duration of complete anesthesia of LAS-174 was similar to tramcinone, slightly higher than that of novocaine and a little bit less than lidocaine (p<0.05). Total duration was lager than that of trimetoprim, lidocaine and tramkein, and a few exceeding that of lidocaine (p<0.05). LAS-175 index of full anesthesia was 2 times higher than trimetan, 2.5 times than novocaine and a few more than lido-
caine (p<0.05). By the total duration this compound exceeds the matched values of propyl radical to Amillic in the side chain at the 4-th carbon atom of the piperidine ring enhances local activity by the similar toxicity. In 1% solution duration of anesthesia of LAS-190 is similar to the tramcinone and slightly lower than the lidocaine. LAS-189 shows a weaker effect than tramcinone and lido-
caine (p<0.05). LAS-189 and 190 by the duration of anesthesia was more effective than novocaine, but this difference is not statistically significant. Replacement of the propyl radical (LAS-189) to the phenyl (LAS-190) contributes to increase of local anesthetic activity, especially for the total duration. Acute toxicity of LAS-189 is 7500 of 35.56, LAS-190 - 1284±43.87. **CONCLUSIONS:** The introduction of a cyclo-
propane radical at the triple bond of the piperidine ring leads to increased local anesthetic effect, weighting of the radical at the 4th carbon atom contributes to the growth of activity and lower toxicity.

**PHP70**

**FORECASTING PHARMACEUTICAL EXPENDITURE IN EUROPE: ADJUSTING FOR THE IMPACT OF REBATES AND DISCOUNTS**


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**OBJECTIVES:** European healthcare systems are under pressure to contain healthcare expenditure. Understanding future drug expenditure is an important consideration for payers when formulating policies. QuintilesIMS publishes European forecasts that are underpinned by its audited volume data and publicly available list prices. With increasing price pressures, list to net price discrepancies grow, although some of this information is commercially sensitive and thus not publicly available. The objective of this study was to further develop an established forecast to account for this divergence and explore its impact. **METHODS:** QuintilesIMS forecast of pharmaceutical expenditure in the EU5 countries is based on its capture of medicines pack data and using previously described methodologies (QuintilesIMS Market Prognosis publications). The top-line forecast was adjusted for each country to account for rebates and discounts that are not reflected within QuintilesIMS data, including industry-level rebates and product-level discounts to national, regional and hospital payers. Average rebate/discounts levels were estimated from aggregate data reported by national health system organisations, industry and payers and expert opinions on whether European countries, Sensitivity analysis was undertaken to address uncertainty around estimates. **RESULTS:** The QuintilesIMS forecast based on list prices predicts average compound annual growth rates (CAGR) of 3% across the EU. Using Quintiles IMS data to account for rebates and discounts reduces the predicted expenditure growth rate by 1 to 2 percentage points. Ongoing analyses are in development to extend extent and variation of this reduction across countries. **CONCLUSIONS:** The increasing frequency and magnitude of patient access schemes, rebates and discounts have led to a growing divergence between list and net prices for medicines in Europe. This is driven by policies such as external reference pricing, growth in risk sharing arrangements and a shift in pharmaceutical innovation from retail to hospital settings. Adjusting for these discounts is impor-
tant to understanding the future real pharmaceutical expenditure growth in Europe.

**PHP71**

**PERSISTENCE AND CONCENTRATION OF PRESCRIPTION DRUG EXPENDITURE AMONG MEDICARE BENEFICIARIES 2006-2013**

von Heim M, Jakovac M, Peters A, Eheberg D

QuintilesIMS, Munich, Germany

**OBJECTIVES:** The outcome of the HTA process (early benefit assessment) is crucial in the nationalization of pharmaceuticals in Germany. The aim was to assess how often the evaluation “lower benefit” varies between IQWiG and G-BA. Additionally, we wanted to evaluate what triggered these decisions. **METHODS:** IQWiG benefit assessments and G-BA decisions published on the G-BA website between 01.01.2011 and 15.05.2017 were screened using the QuintilesMS HTA-database. Documents were screened for a “lower benefit” on a subpopulation level and a descriptive analysis was performed to identify decision drivers. **RESULTS:** The data set search identified 122 documents where “lower benefit” was determined for at least one subpopulation. The IQWiG split patient populations into 48, the G-BA into 32 subpopulations. “Lower benefit” was determined for 15 subpopulations reviewed by the IQWiG and 2 by the G-BA. Lower benefit categorization by the IQWiG was triggered by negative effects related to endpoints in the categories safety (12), morbidity (5), mortality (4) and quality of life (3). The G-BA decisions were driven by positive effects in mortality (4) and morbidity (2). Overall, the G-BA decision generally follows the IQWiG benefit assessment, IQWiG benefit assessment and G-BA decision differ significantly with regard to “lower benefit”. The G-BA determines a “lower benefit” in fewer cases and decisions are much less driven by safety outcomes. Furthermore, the G-BA does not split patient populations into that many subpopulations compared to the IQWiG which might also influence lower benefit assessment.

**PHP72**

**DIFFERENCES AND DECISION DRIVERS IN THE HTA-OUTCOME CATEGORY LOWER BENEFIT BETWEEN IQWiG AND G-BA ASSMENT IN THE GERMAN AMNOG PROCESS**

von Heim M, Jakovac M, Peters A, Eheberg D

QuintilesIMS, Munich, Germany

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**PHP73**

**INFLUENCE OF PEER PRESSURE MECHANISM ON QUALITY AND COSTS OF HEALTHCARE, ON EXAMPLES OF ISRAEL, FRANCE AND USA**

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**OBJECTIVES:** Quality management is an essential element of health care. In countries with high level of efficiency, quality programs are employed to ensure certain standards of medical services and patients' safety. This paper aims to explore what methods of implementation and forms of peer pressure mechanism are used in the quality improvement initiatives, and their impact on quality and costs of healthcare. **METHODS:** A systematic review based on publications identified in PubMed database was conducted. A developed search strategy was used to select relevant papers published up to 30th May 2017. **RESULTS:** Of the 471 references identified, data was collected from 17 studies (15 prospective and 2 retrospective). Publications covered many areas of healthcare including primary, specialized, ambulatory and hospital care. Evaluation of outcomes in 4 studies was based on data collected from questionnaires completed by members of medical staff. In 15 studies healthcare providers and medical staff received feedback concerning their performance of provided medical care. In majority of publications quality indica-
tors were recognized as a useful tool for quality assessment. Researches selected for the systematic review confirmed presence of the peer pressure mechanism in examined health systems. Studied tool for quality improvement was implemented in different forms and with the reference to all identified publications, it applied to every level of healthcare. Its positive effect on quality and safety of medical ser-
vices was demonstrated. **CONCLUSIONS:** The obtained results partly confirmed an initial hypothesis, in which positive impact of peer pressure mechanism on quality and costs of analysed health systems, was assumed. In order to fully confirm it, a further research, which would include publications referring to wider range of counties, is recommended.

**PHP74**

**THE EFFECT OF POLICIES FOR IMPROVING THE ACCESS TO NEW MEDICINES IN SOUTH KOREA: A RETROSPECTIVE ANALYSIS IN 2007 - 2016**

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**OBJECTIVES:** The aim of this study is to analyze the status of national reimburse-
ment decision depending on influential factors and the effect of policy change such as risk-sharing agreement, PE exemption and price negotiation exemption with reference to productive public or institutional policy. **METHODS:** A database was created based on publicly available information from 2007-2016 of the HiRA appraisals, certificates of regulatory approval, and MOHW listing announcement. For the categorical vari-
able, Pearson’s Chi-squared test, or the two-sided Fisher’s exact test is conducted and regarding continuous variables, Mann Whitney U test or Kruskal-Wallis Test
Early access programs (EAPs) are an innovative approach that manufacturers can use to provide patients with potentially life-saving therapies pre-EMA approval. To qualify for an EAP the therapeutic must treat a disease or specific condition with unmet needs, be in high clinical need, and allow manufacturers to assess the current perception of EAPs in the EU and how inclusion in an EAP may correlate or potentially lead to reimbursement challenges. METHODS: Qualitative research with physicians and payers in Germany, France, UK, Italy and Spain was performed to understand EAP dynamics in each individual market. RESULTS: Our research identified insightful nuances and variation of interest across the EUS. In France, an EAP is known as ATU and it is the most established EAP inclusion in an ATU can correlate with reimbursement. In Germany, stakeholders do not recommend EAPs but an investigator led clinical trial to collect data for NUB submission in the UK. EAPs are perceived positively and they can lead to fast track NICE approval and they engage with payers and reimbursement agencies. In Italy and Spain, inclusion in an EAP can be in a narrower patient population than the anticipated label, which can affect reimbursement upon inclusion. CONCLUSIONS: EAPs may incur an early or effective mechanism for improving access to therapeutics for patients with a high clinical need but they can also provide additional value to manufacturers in certain markets. Patients can get access to a therapy pre-approval and manufacturers can increase physician comfort and use in Europe of their product.

PHP75 ACCESS TO ORPHAN DRUGS (ODs) IN SPAIN COMPARED WITH EU4 COUNTRIES: INEQUITY AND LACK OF PRICE TRANSPARENCY ACROSS EUROPE

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OBJECTIVES: Assess current access situation for ODs in Spain comparing results with EU4 countries (France, Germany, Italy, and UK). METHODS: ODs approved by the European Commission (EC) between 2012-2016 and with a request for authorisation in Spain were included in the study and classified into three P&R categories: approval, under review, and decision pending. Results were compared to ODs’ reimbursement status in EU4 countries. ODs’ prices were searched in EU5 countries using the following sources: AMELI database (France), Laurus Data (Germany), Codifa webpage (Italy), Botplus (Spain) and MIMS database (UK). RESULTS: 40 ODs were identified, from which 17 (42.5%) had P&R approval in Spain, 16 (40%) were undergoing decision and 7 (17.5%) were rejected. The mean time from EC approval to reimbursement in Spain was 2549 days (17.6% did not get reimbursement). Of the 37 ODs, 31 (83.8%) were reimbursed in Germany, 19 (46.5%) in Italy, 17 (42.5%) in UK and 8 (20%) in France. The value of ODs is not perceived equally across Europe, as only 1 ODs (5% of all identified ODs) are reimbursed in all EU4 countries. Results from price searches revealed a lack of transparency regarding pricing dynamics, moving from initial list prices to final price after negotiations of discounts and rebates with time. As such, Spain showed the highest listed prices, which suggests a difference in process across EU5 countries in making price transparency evolution. CONCLUSIONS: Access to ODs is inequitable within Europe, as availability of ODs to patients varies across countries. EU5 countries might have different value drivers to reimburse ODs, as no common criteria for reimbursement appear to exist. There is a lack of transparency when it comes to understanding and making comparisons of ODs’ prices, as real prices can vary between 10%-50% from the list price in certain countries.

PHP76 IS THE DISCONNECT BETWEEN EUROPEAN MEMBER STATE CONTROLLED COMPASSIONATE USE PROGRAMS AND THE CENTRALISED EMA PROCESS CREATING AN EARLY ACCESS LOTTERY FOR PATIENTS?

Besse Phillips DL, de Bragado SE
Valid Insight; London, UK

METHODS: Since 2001, 5 products have been given a CHMP opinion for compassionate use (CU). While in many EU countries CU is available on a national level, in Spain and the UK CU is available on a local level. ODs are reimbursed in Spain and the UK on a local level. ODs can be approved (A), recommended (B), not recommended (C), and rejected (D). We screened CU approvals for 28 European Union (EU) MS, 20 have CU in place, 18 of these have national level regulations; the remaining 10 have none. In the UK, the Early Access to Medicines Scheme (EAMS) has seen 41 submissions to date, but only 14 approvals. In 2016, the temporary authorisation for use (ATU) program in France approved 201 products, from therapeutics to devices and vaccines. The most common products to gain access to CU are those for oncology, Alectinib, gained access to French, German and Dutch CUPs in 2016, but not EAMS, and the CUP process in France approved 201 products, from therapeutics to devices and vaccines. CONCLUSIONS: Access to ODs is inequitable within Europe, as availability of ODs to patients varies across countries. EU5 countries might have different value drivers to reimburse ODs, as no common criteria for reimbursement appear to exist. There is a lack of transparency when it comes to understanding and making comparisons of ODs’ prices, as real prices can vary between 10%-50% from the list price in certain countries.

PHP77 DAMNED IF YOU DON’T! EVIDENCE THE SELECTION OF THE APPRAISAL COMMITTEE MAY AFFECT NICEX TECHNOLOGY ASSESSMENT OUTCOMES

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OBJECTIVES: NICE (National Institute for Health and Care Excellence) makes recommendations on the public reimbursement of a technology for its cost-effectiveness. The recommendation is made by an Appraisal Committee (comprising a multi-disciplinary group of independent experts) as part of a technology appraisal. There are four Appraisal Committees (A, B, C, and D); this research investigates whether appraisal outcomes vary by committee. METHODS: All publicly-available Final Appraisal Determinations from NICE Single Technology Appraisals (STA) were screened (01/10/2009-30/05/2017) and key data were extracted. Homogeneity in rates of acceptance or rejection across committees were assessed using Chi-squared tests. RESULTS: The Appraisal Committee was identified for 216 technologies, 59% (128/216) of which were ‘recommended’. The number of technologies assessed by each committee was similar (A: 60, B: 47, C: 65, D: 44). However, STAs conducted by Committee D were significantly less likely to receive ‘recommended’ outcomes (A:75% [45/60], B:70% [33/47], C:58% [38/66], D:27% [12/44]; <2, p<0.01). STAs for oncology indications had lower positive recommendation rates than those for non-oncology indications (70% vs. 90%). The lower ‘recommendation’ rates for committee D persisted across oncology (A:65%, B:80%, C: 52%, D: 27%; <10.0, p<0.01) and non-oncology indications (A:81%, B:63%, C: 65%, D:28%; =20.0, p<0.01). However, STAs conducted by Committee B were significantly more likely to receive ‘optimised’ recommendations (A:10%, B:13%, C:26%, D: 43%; =19, p<0.01) and when considering the rates of ‘recommended’ and ‘optimised’ outcomes compared to ‘only in research’ and ‘not recommended’ outcomes, no significant differences were found (A:85%, B: 83%, C:85%, D:70%; =4.5, p=0.21). Over time, rates of non-recommendations decreased similarly across committees. CONCLUSIONS: STAs undertaken by NICE Appraisal Committees was associated with a significantly lower rate of ‘recommended’ outcomes but tended to an ‘optimised’ recommendation significantly more than the other committees. Further research is needed to determine if this reflects any deviation in uniform implementation of NICE methodology between Committees.

PHP78 ECONOMIC AND FINANCIAL MAINTAINANCE OF PHARMACEUTICAL ACCESS IN CRISIS: THE IRANIAN EXPERIENCE

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OBJECTIVES: In the past decades, economic sanctions have been frequently used on a worldwide scale for political intentions. Economic sanctions not only cause...
economic problems for the country which is the subject of the sanction, but also causes problems in other sanctions such as health. For example, the recent international sanctions against Iran, resulted in many pharmaceutical shortages due to financial barriers restricted the procurement of medicines. However, there are short-cuts and solutions in the case of medicine shortages. So, Iran was highlighted for its ability to obtain skilled drug manufacturing, attracting foreign investment for domestic manufacturing, managing drug shortages, and increasing financial protection of patients in general and patients with catastrophic payments in particular were the main achievements of the new strategy of the IFDA, leading to better accessibility and availability in the country.

Iran’s experiences on the boost of domestic manufacturing and cost containment approaches so that it withstood and recovered pharmaceutical sector from negative impacts of the sanctions, while the health system was shocked by the international sanctions, could be a successful example of economic resilience strategies.

**PHP31**

**THE IMPACT OF SCOTTISH MEDICINES CONSORTIUM (SMC) PROCESS CHANGES ON ACCEPTANCE RATES FOR NEW MEDICINES FOR END OF LIFE AND VERY RARE CONDITIONS**


**Healthcare Improvement Scotland, Glasgow, UK**

**OBJECTIVES:** The SMC advises NHS Scotland on the clinical and cost-effectiveness of all medicines. Changes introduced in the SMC’s processes for assessing medicines for use in patients with end of life (EoL) and orphan conditions aim to increase access to medicines used at the end of life and for very rare conditions. This research examines the impact of the changes on the acceptance rates for all submissions.

**METHODS:** A quantitative analysis was undertaken of assessments under the new SMC processes up to 2017. A direct comparison of acceptance rates before and after the process changes is not possible as new criteria for end of life (EoL) and medicines for very rare conditions were introduced in 2014. The acceptance rate for decisions published from January 2011 to December 2013 for orphan and cancer medicines (as a proxy measure) was compared with those for medicines assessed as end of life and orphan under the new processes (decisions published October 2014 – May 2017). The acceptance rates for all medicines during these time periods were calculated.

**RESULTS:** In 2013, Health economic criteria were introduced. From January 2011 to December 2013 the acceptance rates were: for medicines assessed as a full submission 114/175 (65%), for cancer and orphan medicines 15/31 (48%). From October 2014 to May 2017 the acceptance rates were: for all medicines assessed 154/180 (86%); for medicines assessed under the new process 61/78 (78%). The acceptance rate for EoL medicines was 42/46 (91%) and for very rare conditions medicines it was 52/68 (76%). Note that medicines may be categorized as both EoL and for a very rare condition. **CONCLUSIONS:** These findings suggest that the changes have met the Scottish Government’s policy imperative of increasing access to new medicines used at the end of life and for very rare conditions that may not have been accepted under the previous assessment process. The analysis was limited by the inability to undertake a direct comparison.

**HEALTH CARE USE & POLICY STUDIES – Formulary Development**

**PHP32**

**AN INTRODUCTORY ANALYSIS OF THE TIMEFRAME FROM EUROPEAN DRUGS APPROVAL TO THE SICILIAN HOSPITAL FORMULARY INCLUSION**


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**OBJECTIVES:** Drugs centrally approved by the European Medicine Agency (EMA) are automatically granted marketing authorization by Italian Drug Agency (AIFA) which is responsible for pricing and reimbursement (P&R) negotiation at national level. In most Italian regions, a Drug Formulary Committee (DFC) must adit those drugs in the Regional Hospital Formulary before use at regional level. Some authors have argued that the timing from National to Regional formularies inclusion may lead to important disparities in patients’ access to new drugs. The aim of this study is to present data on the timeframe/lag time between EMA approval, EU and Sicilian DFC (SDFC) for newly approved drugs in Europe.

**METHODS:** Newly approved drugs, for which dossiers were presented to SDFC, were identified from 1st January 2013 to 1st April 2016. Publicly available sources were used to retrieve relevant information on approval date, dossier submission, and first authorisation. Lag times were estimated by the difference between the approval date and the time of first inclusion in the Regional hospital Formularies.

**RESULTS:** On 117 drugs, 100 newly approved medicines were included in the analysis while 17 were excluded due to missing data. The median lag time from EMA to AIFA (LETA) was 448 days (1st quartile = 315 days; 3rd = 635 days) and 112 days (54 – 231) from AIFA to SDFC (LTAS). The data showed the presence of some outlier drugs, in particular for LTAS, which impacted results when considering mean values. Indeed, the mean value of LETA was 448 days with a standard deviation (SD) of 225 days, but for LTAS it was 249 days with an almost double SD (400 days).

**CONCLUSIONS:** Homogeneity lack on admission of new drugs in the regional formularies may lead to access disparity among patients across Italy. However, our analysis shows that such timeframe/lag time mostly depends on AIFA P&R negotiation at national level.

**HEALTH CARE USE & POLICY STUDIES – Health Care Costs & Management**

**PHP33**

**HAEMORRHoidal ARTERY LIGATION PROCEDURE FOR THE TREATMENT OF SYMPTOMATIC GRADE II–III HEAMORRHOIDS: A TRIAL-BASED AND LONG-TERM MODEL-BASED ECONOMIC EVALUATION**

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**OBJECTIVES:** To evaluate the cost-effectiveness of haemorrhoidal artery ligation (HAL) procedure versus rubber band ligation (RBL) for the treatment of symptomatic grade II–III haemorrhoids using data from the HubBLe study, a UK-based, multicentre randomised controlled trial. **METHODS:** An economic evaluation was undertaken by UK National Health Service (NHS) perspective including short-term trial-based and long-term model-based analyses. In the primary trial-based analysis, a seemingly unrelated regression model was fitted for estimation. Sensitivity analyses (mean differences and bootstraping) were conducted for 12-over month time horizon. **RESULTS:** Cost-effectiveness results were expressed in terms of cost per QALY gained and cost per recurrence avoided. A parametric analysis and various deterministic sensitivity analyses were performed to address uncertainty (such as priority for younger or more severely impaired patient groups). For example within a multi-criteria decision analysis framework, a benchmark or anchor value of a statistical life year (VSLY) will be required. Ideally, the VSLY should be based on the observed preferences of the population(s) in question. Here we report insights from the systematic review of VSLY studies, which were published during the last two decades (i.e., from 1995 to 2015).

**METHODS:** Our systematic literature search (using the EconLit and EconLit databases) identified 41 original datasets, yielding 49 estimates for the value of a statistical life VSLY. We classified studies by methodology (revealed preference, RP, stated preference, SP, contingent valuation, CV, discrete choice experiment, DCE); cross-sectional or panel analysis. We transformed VSL estimates into VSLY (231,422; DCE, €187,857; CV, €137,413; we did not identify studies using the human capital approach) and by regional origin (continental Europe, £158,448; United Kingdom, £117,956, Nordic countries, £161,052). In contrast to the larger worldwide dataset, differences by method and regional origin were not statistically significant in our European sample.

**RESULTS:** Our results suggest that the empirical willingness-to-pay for a statistical life year might be substantially higher than the thresholds currently used by the international HTA community.

**PHP34**

**EMPirical STUDIES ON THE eCONOMIC VALUE OF A StatisticsAL LIfe YeaR (VSLY) IN europe: WHAT DO THEY tell us?**


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**OBJECTIVES:** To evaluate the health care policy makers often conceptualize value for money in terms of cost effectiveness or cost per (quality-adjusted) life year gained. Whether used in isolation or alongside further drivers of social value (such as priority for younger or more severely impaired patient groups), for example within a multi-criteria decision analysis framework, a benchmark or anchor value of a statistical life year (VSLY) will be required. Ideally, the VSLY should be based on the observed preferences of the population(s) in question. Here we report insights from the systematic review of VSLY studies, which were published during the last two decades (i.e., from 1995 to 2015).

**METHODS:** Our systematic literature search (using the EconLit and EconLit databases) identified 41 original datasets, yielding 49 estimates for the value of a statistical life VSLY. We classified studies by methodology (revealed preference, RP, stated preference, SP, contingent valuation, CV, discrete choice experiment, DCE); cross-sectional or panel analysis. We transformed VSL estimates into VSLY.

**RESULTS:** This paper, by reviewing historical data, aims to evaluate the IFDA strategy in handling crisis during sanctions and reduce the negative impact of the situation. These policies may be also recommended to other countries in such a situation as effective solutions for today’s vulnerable economics situations.

**RESULTS:** While, the crisis reached its peak in 2012, to reduce the negative impact of the situation. These policies may be also recommended to other countries in such a situation as effective solutions for today’s vulnerable economics situations.
sensitivity analysis were done to assess the uncertainty around the parameters and data model. The results from the sensitivity analysis indicated that in the base case, Rosuvastatin prevented more myocardial infarctions and yielded more QALYs. An ICER of $21,595 (20991, 22199) was generated, which is not cost-effective for Uganda’s WTP. In the deterministic sensitivity analysis, the ICER was most sensitive to the cost of Rosuvastatin. Probabilistic sensitivity analysis showed that the probability of Rosuvastatin being cost-effective at the current willingness to pay threshold is only 26%. **Conclusions:** Rosuvastatin is not Cost-effective in Uganda when compared to aspirin. The cost effects of Rosuvastatin are reduced when compared to the base case, which may indicate the need for further investigation into the cost-effectiveness of Rosuvastatin in the Ugandan context.

**Methods:** This retrospective, observational study used hospital billing data from >600 hospitals in the U.S. (Premier Healthcare Database). Patients included were admitted for inpatient colorectal surgery between 1/1/2008-12/31/2014 (first observed year). Patients were classified as either having an emergency or elective admission. Emergency admissions were classified as having either an elective or emergent (admitted through the emergency room) admission. Study outcomes included total hospital costs (HC), length of stay (LOS), and operating room time (ORT). Outcomes were compared between elective and emergent admissions using multivariable Generalized Estimating Equations (GEE) models, which adjusted for patient, procedure, and hospital factors, and accounted for potential within-hospital clustering. Adjusted predicted outcomes were generated and compared using the least squares means method. **Results:** Of the 227,632 patients with colorectal surgery (average age=63.3 years; 53.2% female), 94,902 (41.7%) had emergent admissions. Compared to elective admissions, emergent admissions had a higher proportion of patients with open surgeries (78.2% vs 89.5%), and lower proportions of surgeries with colorectal specialty surgeons (9.6% vs 21.3%) or with diagnoses of colorectal cancer (28.7% vs 43.5%). In the GEE models, HC was 50.8% (95% CI: 48.1%-53.6%, p < 0.0001) higher in emergent versus elective admission patients, adjusted HC-$28,966 emergent, $19,209 elective); LOS was 61.1% (58.0%-64.2%, p < 0.0001) higher in emergent versus elective admissions (adjusted LOS=$11.2 days emergent, 6.9 days elective); and ORT was 6.5% (5.5%-7.2%, p < 0.0001) shorter in emergent versus elective admissions (adjusted ORT=189.6 minutes elective). **Conclusions:** Among patients undergoing inpatient colorectal surgery, substantial differences were identified between elective and emergent admission in terms of surgical approach, surgeon specialty, and hospital resource utilization among patients undergoing inpatient colorectal surgery. Elective and emergent admissions are complex in nature; further research is warranted to understand drivers of the observed outcome differences.

**ECONOMIC IMPACT OF NURSE SENSITIVE OUTCOMES IN IRLANDIAN HOSPITALS**

**OBJECTIVES:** Since the financial crisis of 2008 there has been increased pressure on public health care services like that in Ireland to “do more with less.” This has direct consequences for front line personnel such as nurses, whose work load has increased in subsequent years. Also during this time technologies are advancing and the availability of treatment interventions in and outside of hospitals is increasing, placing increased demands on already scarce resources. As a result front line staff, such as nurses, had to increase their workloads care and provide efficiencies. As a result front line staff, such as nurses, had to increase their workloads care and provide efficiencies. As a result front line staff, such as nurses, had to increase their workloads care and provide efficiencies. As a result front line staff, such as nurses, had to increase their workloads care and provide efficiencies. As a result front line staff, such as nurses, had to increase their workloads care and provide efficiencies.

**METHODS:** This retrospective, observational study used hospital billing data from >600 hospitals in the U.S. (Premier Healthcare Database). Patients included were admitted for inpatient colorectal surgery between 1/1/2008-12/31/2014 (first observed year). Patients were classified as either having an emergency or elective admission. Emergency admissions were classified as having either an elective or emergent (admitted through the emergency room) admission. Study outcomes included total hospital costs (HC), length of stay (LOS), and operating room time (ORT). Outcomes were compared between elective and emergent admissions using multivariable Generalized Estimating Equations (GEE) models, which adjusted for patient, procedure, and hospital factors, and accounted for potential within-hospital clustering. Adjusted predicted outcomes were generated and compared using the least squares means method. **Results:** Of the 227,632 patients with colorectal surgery (average age=63.3 years; 53.2% female), 94,902 (41.7%) had emergent admissions. Compared to elective admissions, emergent admissions had a higher proportion of patients with open surgeries (78.2% vs 89.5%), and lower proportions of surgeries with colorectal specialty surgeons (9.6% vs 21.3%) or with diagnoses of colorectal cancer (28.7% vs 43.5%). In the GEE models, HC was 50.8% (95% CI: 48.1%-53.6%, p < 0.0001) higher in emergent versus elective admission patients, adjusted HC-$28,966 emergent, $19,209 elective); LOS was 61.1% (58.0%-64.2%, p < 0.0001) higher in emergent versus elective admissions (adjusted LOS=$11.2 days emergent, 6.9 days elective); and ORT was 6.5% (5.5%-7.2%, p < 0.0001) shorter in emergent versus elective admissions (adjusted ORT=189.6 minutes elective). **Conclusions:** Among patients undergoing inpatient colorectal surgery, substantial differences were identified between elective and emergent admission in terms of surgical approach, surgeon specialty, and hospital resource utilization among patients undergoing inpatient colorectal surgery. Elective and emergent admissions are complex in nature; further research is warranted to understand drivers of the observed outcome differences.
Hepatitis and acute diabetes. Fibrin sealants (Evicel, Tisseel) are effective in acute and chronic diseases. Studies have shown that during CABG surgery, Evicel is associated with lower bleeding events and lower health-resource utilization/cost than Tisseel.

PHPP4
EVALUATING THE COST-UTILITY OF IMMUNOSUPPRESSIVE REGIMENS IN LIVER TRANSPLANT RECIPIENTS
A General Overview Analysis

OBJECTIVES: Liver transplantation is the only effective treatment option for patients with end-stage liver disease. While one-year graft survival rates are over 80% and longer-term mid-term survival have increased dramatically since the first liver transplants, non-adherence to immunosuppression is still common and causes an increased risk of graft rejection and loss. Folloed-release tacrolimus (PR-TAC) offers once-daily formulation with lower health-resource utilization/cost and lower health-resource utilization/cost than Tisseel.

Evicel than Tisseel 22.64% (\( \pm 0.02 \)), respectively. When the dates of first visit were analyzed according to quarters, the 1-complete-year cost for acute and chronic diseases were 0.87 (\( \pm 0.03 \)) and 0.85 (\( \pm 0.02 \)), respectively. When the dates of first visit were analyzed according to quarters, significantly more patients with chronic diseases were identified in the 1st quarter than acute diseases. The annual cost increased as the first visit occurred earlier, which was more apparent in chronic than acute diseases. The annual cost increased as the first visit occurred earlier, which was more apparent in chronic than acute diseases. The annual cost increased as the first visit occurred earlier, which was more apparent in chronic than acute diseases.

RESULTS: The average ratios of 1-calendar-year cost to 1-complete-year cost for acute and chronic diseases were 0.87 (\( \pm 0.03 \)) and 0.85 (\( \pm 0.02 \)), respectively. When the dates of first visit were analyzed according to quarters, the first quarter had a significantly lower drug price than the second quarter.

CONCLUSIONS: The model was simulated over the lifetime of the 2012 Korean population with disabilities by age and gender. For the estimation of model inputs, incidence and mortality of the diseases related to physical activity and disability were obtained from the National Health and Welfare Canada. The model was simulated over the lifetime of the 2012 Korean population with disabilities by age and gender. For the estimation of model inputs, incidence and mortality of the diseases related to physical activity and disability were obtained from the National Health and Welfare Canada.

PHPP5
COST-EFFECTIVENESS OF A PHYSICAL ACTIVITY PROMOTION INTERVENTION FOR PEOPLE WITH DISABILITIES: A MARKOV MODEL APPROACH

OBJECTIVES: To investigate the impact of patent expiration on drug prices in the Netherlands. METHODS: All drugs that faced patent expiration in the Netherlands between January 1999 and December 2016 were identified. Patent expiration was defined as the time at which the first generic drug entered the market (obtained a marketing authorization). All data was combined to calculate the overall price ratio-, the generic to brand list price (with a ATC code identical to the originator drug). Monthly drug prices and promotion intervention for people with disabilities in Korea.

The model was simulated over the lifetime of the 2012 Korean population with disabilities by age and gender. For the estimation of model inputs, incidence and mortality of the diseases related to physical activity and disability were obtained from the National Health and Welfare Canada. The model was simulated over the lifetime of the 2012 Korean population with disabilities by age and gender. For the estimation of model inputs, incidence and mortality of the diseases related to physical activity and disability were obtained from the National Health and Welfare Canada.

PHPP3
THE ECONOMIC IMPACT OF FIBRIN SEALANTS USED FOR HEMOSTASIS IN CORONARY ARTERY BYPASS GRAFTING SURGERY; AN ITALIAN PERSPECTIVE

OBJECTIVES: To evaluate the impact on economic resource consumption associated with the use of fibrin sealants in a comparative analysis between Evicel and Tisseel. METHODS: Analysis was performed to estimate the impact on costs associated with use of Evicel and Tisseel from the generic to brand list price (Gross Domestic Product) per capita in Korea. RESULTS: Considering that currently there is no national-wide intervention promoting physical activity for people with disabilities in Korea, implementing the intervention across the country may cost 13 million US dollars (approximately €10.5 million). MG, the ICER of the intervention is €27,538 per DALY averted. Based on the cost-effectiveness criteria, €25,722 (the Korean GDP per capita in 2012), implementing a physical activity promotion intervention for people with disabilities is cost-effective compared to no intervention.

PHPP6
INCREASING TREND ON TURKISH UN-LICENSED MEDICINE MARKET: A GENERAL OVERVIEW ANALYSIS

OBJECTIVES: To evaluate the impact on economic resource consumption associated with the use of fibrin sealants in a comparative analysis between Evicel and Tisseel. METHODS: Analysis was performed to estimate the impact on costs associated with use of Evicel and Tisseel from the generic to brand list price (Gross Domestic Product) per capita in Korea. RESULTS: Considering that currently there is no national-wide intervention promoting physical activity for people with disabilities in Korea, implementing the intervention across the country may cost 13 million US dollars (approximately €10.5 million). MG, the ICER of the intervention is €27,538 per DALY averted. Based on the cost-effectiveness criteria, €25,722 (the Korean GDP per capita in 2012), implementing a physical activity promotion intervention for people with disabilities is cost-effective compared to no intervention.

A668 VALUE IN HEALTH 20 (2017) A399–A811
government funded social security system. Depending on that, Turkey is one of lead-ership of industry to access innovative medicines with the individual patient evalua-tion and import process of un-licensed medicines as named patient sales. However, total cost to government for reimbursed medicines reached 1.8 billion TL which is 8.2% of total pharmaceutical budget of SGK. It is needed to take into account these results in order to underwrite the sustainability of the health care system in Turkey. New implementation like importing medicines directly by SGK is needed to be eval-uated with further studies.

**PHP97**

**BUDGET IMPACT OF NEWLY APPROVED DRUGS BY THE SICILIAN DRUG FORMULARY COMMITTEE: AN INTRODUCTIVE ANALYSIS**

**Agiolo A1, D’Avuttia A2, Fizzitenti M2, Formica D3, Kultana J4, Lucchesi B5, Tentile V1, Touni M1, Trifirò G1**

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**OBJECTIVES:** The Italian National Health Service (INHS) is highly decentralized and Regions are responsible for planning healthcare services and allocating financial resources. Local autonomy implies stronger financial accountability leading to different economic strategies across regions. The Sicilian Drug Formulary Committee (SDFC) must approve drugs before hospital use at regional level and drug companies must present a specific dossier for the approval. Budget impact is a critical information for decision makers, therefore the aim of this study is to perform a pharma-ceutical budget impact analysis (BIA) of drugs dispensed by the Sicilian Healthcare System (SHS) after one year from their approval. **METHODS:** From 1st January 2013 to 1st April 2016, all approved 117 drugs, for which dossiers were presented to SDFC were included in the BIA analysis. Data on each drug’s cost was obtained according to local SHS data. The Biocost A software was used to perform the BIA. **RESULTS:** The following data were considered: the main indication of use for an average adult patient (i.e. average body weight of 70kg or body surface of 1.8 m2), treatment duration of 12 months, the highest drug strength, ex-factory prices. The average annual cost per patient was then multiplied for the eligible cohort as estimated in the drug dossier presented by the manufacturers. It was showed that in the first year from approval, SDFC drugs are associated with a total estimated annual pharmaceutical cost of € 500.9 million in charge of the SHS. The highest total expenditures were observed in three drug classes: respiratory system (ATC R) = € 215,021,396 (49,782 patients), aneplastic and immunological system (ATC L) = € 177,185,744 (4,028 patients) and gastro-intestinal and metabolism (ATC A) = € 47,335,649 (68,360 patients).

**CONCLUSIONS:** In the past three years, the SDFC approved drugs accounted for €500 million for one year treatment at a body state. Further analyses and monitoring are needed to validate the estimation.

**PHP98**

**BIOSIMILARS AND REFERENCE BIOTECHNOLOGICAL DRUGS: COMPARISON OF THE BIOSIMILARS’ EFFECT ON REFERENCE DRUG’S PRICE FOR EU, USA AND TURKEY**

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**OBJECTIVES:** The use of biotechnology-derived products has increased over the last years. In this regard, biosimilars are considered as an alternative to decrease the total biologic drug costs for countries. To investigate biosimilars cost saving effect on pharmaceutical budget impact, our research was based on whether there were considerable price differences between biosimilar and reference biotechnological product. Considering the probable price differences between biosimilar and reference biotechnology drugs was expected to result in relatively lower price differences compared to price differences between generic and original conventional drugs. In this regard, in this study, it was aimed to analyse the price differences between biosimilar and reference biotechnology drugs in Europe, USA and Turkey. **METHODS:** A systematic literature review was performed by using keywords of “Biosimilar Pricing Europe”, “Biosimilar Pricing USA” and “Biosimilar Pricing Turkey” in Pubmed. For Turkey, there was lack of literature with these keywords. Therefore an analysis was made using the local prices of biosimilar drugs whose reference products are also being reimbursed in Turkey. **RESULTS:** In light of the systematic literature review, the price differences between biosimilar and reference drugs were changed between 0.51% and -38% in Europe. Price differences were found to be between +0.53% and -39.60% in Turkey. As the first biosimilar drug in USA was registered in April 2015, there was lack of literature based on real data with the keywords used in this study. But the price differences assumptions for USA were close to the numbers observed in studies based on EU markets. **CONCLUSIONS:** Although the probable price difference between biosimilar and reference biotechnological product is relatively lower compared to the conventional drugs, which can be up to 80% in some countries, with only by the competition of biosimilar and biotechnology drugs, cost savings could be more than 10 billion €.

**PHP99**

**IMPACT OF HEALTH POLICIES ON CATASTROPHIC HEALTH EXPENDITURES IN TURKEY**

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**OBJECTIVES:** Turkish Health Transformation Program has been launched in 2003, to improve the availability, quality, and the use of primary health care services. The program aimed to rebuild Turkish health system and establish a national based health insurance coverage. According to TÜRKSTAT figures, the proportion of households with private health insurance has increased from 0.81 in 2001 to 3.54 in 2012. However, the ratio increased to 0.31 in 2014. The aim of the study is to investigate the determinants of catastrophic health expenditure and investigate the impact of health policies and factors on catastrophic health expenditure in Turkey. **METHODS:** Catastrophic health expenditure is calculated from a national representative data derived from TÜRKSTAT, Household Budget Survey, belonging to the time period 2010 - 2019. Deproportion of households facing catastrophic health expenditure are calculated by using the methodology proposed by Ke Xu (2005). **RESULTS:** The average spending values of household with positive health expenditure have been decreased on pharmacy-related products(36%), medical services (doctors) (71%) and hospital services(laboratories) (66%). However, there was an increase in the average spending value on other medical products(+7%), medical aids(+9%) and other services. The average spending values of household with catastrophic health expenditure have been decreased on pharmacy-related products(-44%), medical services (doctors)(57%), dentistry, and laboratory services. However, there was an increase in the average spending value on other medical products(+7%), medical aids(+193%) and hospital services(+93%). **CONCLUSIONS:** As an increase in the number of households with catastrophic health expenditure could be the result of changes in health policy may impact on medical products, tools and equipment for treatment, other medicinal products, medical aids, and certain medical services and hospital services. Further studies should be done to investigate this effect.

**PHP100**

**COST ANALYSIS OF DELIVERY NEONATAL DRUG THERAPY SERVICES AT MINISTRY OF HEALTH IN SAUDI ARABIA**

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**OBJECTIVES:** To explore the estimation of cost calculations for delivery drug therapy distribution (unit dose, floor stock, and discharge) for neonates by using American Model with local cost. **METHODS:** It is a 6-months cross-sectional analysis of drug distribution services for neonates in Riyadh Hospitals. The data was collected from all neonatal units in hospitals in Riyadh, Saudi Arabia. The cost calculated pediatric drugs therapy management services delivered to 82 beds. The physician prescribed the medications. The patient charges were reviewed and calculated for total unit dose system, floor stock distribution, and discharge medications services. The medications prepared through ASHP standards and facilities. The nurse administers drugs and calculates the drug cost. **RESULTS:** The number of households with catastrophic health expenditure was increased in associated with a total estimated annual pharmaceutical cost of €500.9 million in charge of the SHS. The highest total expenditures were observed in three drug classes: respiratory system (ATC R) € 215,021,396 (49,782 patients), aneplastic and immunological system (ATC L) € 177,185,744 (4,028 patients) and gastrointestinal and metabolism (ATC A) €47,335,649 (68,360 patients).

**CONCLUSIONS:** In the past three years, the SDFC approved drugs accounted for €500 million for one year treatment at a body state. Further analyses and monitoring are needed to validate the estimation.

**PHP101**

**COST ANALYSIS OF DRUG-RELATED PROBLEMS IN SAUDI ARABIA, PATIENT AND HEALTH CARE PROFESSIONAL’S PERSPECTIVE**

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**OBJECTIVES:** To explore the cost analysis of drug-related problems in Saudi Arabia from patient and healthcare provider’s perspective. **METHODS:** It is a 4-months cross-sectional survey of cost analysis drug-related problem in Saudi Arabia from national health care perspective. The study consisted of a survey part and a demographic data. The second part contained the questions about the occurrence of drug-related problems with the patient, the economic burden of cost of drug-related problem. American Society of Health-System Pharmacists (ASHP) defini-tions of drug-related problem used. The survey distributed through social media. The questionnaire made of an electronic format, and it analyzed through survey monkey system. **RESULTS:** The total responders were two hundred and one, and the Saudi nationality was 188 (93.5%), and non-Saudi was 13 (6.5%) patient. The gender distribution was female 180 (89.6%), and male was 21 (10.4%). The majority of them in age (18-44) 88% and located in Riyadh region 84 (41.8%) and Asir region 59 (29.4%). Of those 44 (22.1 %) were health care providers. The responders showed a high percentage of drug related problem occurrences for public and health care providers was drug non-compliance (70.45%, 70.9%), and indication without mediation (52.77%, 49.35%). The health care providers spent (63,728,53 USD) annually as average cost of drug-related problems, while the public spent (888,433.24 USD) annually. The highest cost of drug-related problem was medication adverse reaction (17,233.53 USD) and medication errors (76.67 USD) per each event. The total estimated cost of drug-related problems was (60,996,76,906.27 USD) annually in Saudi Arabia. **CONCLUSIONS:** The drug-related problems are very high-cost burden on health care system in Saudi Arabia. Targeting to improve role of pharmacist and pharmacist in reducing drug-related misadventures is highly recommended through Saudi Health Care Vision 2030.

**PHP102**

**FLUOROQUINOLONE-RELATED ADVERSE EVENTS RESULTING IN HEALTH CARE USE AND COSTS: A SYSTEMATIC REVIEW**

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**OBJECTIVES:** The aim of this systematic review was to identify health care use and subsequent costs associated with fluoroquinolone-related adverse events (AEs). **METHODS:** A literature search covering Medline, SCOPUS, Cinahl, Web of...
Science and Cochrane Library was performed in April 2017. Two independent reviewer systems systematically searched the data and assessed the quality of the included studies. All costs were converted to 2016 euro in order to improve comparability. RESULTS: Of the 5687 references found in the literature search, 19 observational studies, of which 5 were case-controlled, fulfilled the inclusion criteria. Hospitalization was an AE in 30% of the total costs covered 33%. Furthermore, the number of stay occurred with AEs varied between 5 - 45 days. The estimated cost of an AE episode ranged between 140 and 182,52 €. Clostridium difficile infections were associated with the longest stays. However, a mere 10 studies reported AE-related length of stays and only 5 evaluated costs associated with AEs. CONCLUSIONS: Although rare, serious fluoroquinolone-related AEs can have substantial economic implications, which seldom appear to be acknowledged or reported. It seems that further measures are required to prevent and reduce fluoroquinolone-related AEs, in addition to health care use and costs associated with them.

PHP103
PHARMACOECONOMIC ANALYSIS OF DALBAVANCIN USE IN ACUTE BACTERIAL SKIN AND SOFT TISSUE INFECTIONS Saat-Verilakya N1, Yegenoglu S2, Ascioglu S3, Postrina MJ4, Atik O5, Sozen-Sahne B6, Unal S6
1National Hospital Organization Shikoku Medical Center for Children and Adults, Zentuji city, Japan, 2University of Economics and Cochrane Library, Tunisia, 3Facility Faculty of Pharmacy, Ankara, Turkey, 4GlaxoSmithKline, Singapore, Singapore, 5University of Groningen, Groningen, The Netherlands, 6IIE Ulagay-Menarini Group, Ankara, Turkey, 7Hacettepe University, Ankara, Turkey
OBJECTIVES: Dalbavancin is a new generation anti-infective agent; it was licensed in the US in 2014 and in the EU in 2015 for the treatment of acute bacterial skin and soft tissue infections (ABSSSI) caused by gram-positive microorganisms. The purpose of this study was to show the results of a comprehensive, cost-effective analysis of a large-scale German retrospective database: We analyzed 143 NHO hospitals using an indicator of the OPP (Operation profit per one monetary unit of personnel cost) reported before (Nakagawa. et al, Journal of Medical Systems. 2011 Aug; 35(4):625-37) and the data of Cash flow statement (CF). RESULTS: The financial situation of NHO was demonstrated by OPP. In the 1st period of the management plan, from 2004 to 2008, the OPP was 1.00, in the 2nd period, 2009 to 2013, it was 0.74 and in the 3rd period, 2014 to 2015, it was about 0.7. And the investment activity in cash flow statement, that was always in minus condition, in 2nd and 3rd period the minus flow was increased about 60% from the 1st period. CONCLUSIONS: The government cannot continue the growth rate on the reward, so the investment of personnel and capital expenses was getting to the risk of the hospital management.

PHP106
ANALYSIS OF FINANCIAL STATUS AND THE INVESTMENT STRATEGY OF NATIONAL HOSPITAL ORGANIZATION (NHO) IN JAPAN FROM 2004 TO 2015 Nakagawa Y1, Tomita N2, Issa K3, Nakagawa Y4
1National Hospital Organization Shikoku Medical Center for Children and Adults, Zentuji city, Japan, 2School of Public Health, Saitama, Japan
OBJECTIVES: Ministry of Health, Labour and Welfare of Japan revises medical fee schedule biennially. The revision is performed in line with the government’s budget policy at national level. NHO has been requested every five-year management plan by government. Thus, to study the financial change and the investment strategy of NHO gives us the overview of the changes in business conditions of Japanese healthcare system. In this study, we analyzed all 143 NHO hospitals from 2004 to 2015, and the data of Cash flow statement (CF). METHODS: A comprehensive review of existing approaches was conducted via PubMed, Google Scholar and grey literature. 25 articles were selected based on title and abstract screening. Even newer approaches like Socio-Technical Allocation of Resources (STAR) appear not to focus deeply on disinvestment as a key part of the complex system solution matrix. Early discussions on relevant approaches were from the WHO regarding Generalized Cost Effectiveness (GCEA) methods. More recent papers have focused on options like the Programme Budgeting Marginal Analysis (PBMA) and Sustainability in Healthcare by Allocating Resource Effectively (SHARE). CONCLUSIONS: A key finding was the lack of focus on disinvestment in the UK in academic literature. Techniques like GCEA and Cost Minimisation Analyses (CMA) have been around for long, however, have not generally been reported or evaluated for disinvestment decisions. Newer techniques like PBMA and SHARE show promise. The topic of disinvestment requires more use, research, and validation.

PHP107
EXPLORING DISINVESTMENT DECISIONS IN THE NHS VIA HEALTH ECONOMICS Lynnc N1, Dau DP2
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OBJECTIVES: A core assumption across Health Economics analyses is that disinvestments across the wider healthcare system would free up resources to enable maximum value for money and outcome advantage. However, this paper explicitly dealt with. This project aims to explore methodological approaches to the currently value-devaluation paradigm in the NHS across the UK that could adequately address the accumulation of the investment system. An extensive review of existing approaches was conducted via PubMed, Google Scholar and grey literature. Critical appraisal of the gaps in the existing approaches was conducted. Two alternative studies identified for comparison, action, and methodological suggestions for the current NHS environment were identified and researched in detail. The results made. UK NHS was the focus. RESULTS: Structured searches resulted in 140+ hits on PubMed and 6000+ hits on Google Scholar and grey literature. 25 articles were selected based on title and abstract screening. Even newer approaches like Socio-Technical Allocation of Resources (STAR) appear not to focus deeply on disinvestment as a key part of the complex system solution matrix. Early discussions on relevant approaches were from the WHO regarding Generalized Cost Effectiveness (GCEA) methods. More recent papers have focused on options like the Programme Budgeting Marginal Analysis (PBMA) and Sustainability in Healthcare by Allocating Resource Effectively (SHARE). CONCLUSIONS: A key finding was the lack of focus on disinvestment in the UK in academic literature. Techniques like GCEA and Cost Minimisation Analyses (CMA) have been around for long, however, have not generally been reported or evaluated for disinvestment decisions. Newer techniques like PBMA and SHARE show promise. The topic of disinvestment requires more use, research, and validation.

PHP108
COST-EFFECTIVENESS ANALYSIS OF INFECTIVE FUNGAL INFECTIONS THERAPIES IN FEBRILE NEUTROPENIC PATIENTS WITH HEMATOLOGICAL MALIGNANCIES IN THE TURKISH CONTEXT Ateş M1, Yegenoglu S2, Ascioglu S3, Postrina MJ4, Saat-Verilakya N5, Sozen-Sahne B6, Unal S6
1IIE Ulagay-Menarini Group, Ankara, Turkey, 2Hacettepe University Faculty of Pharmacy, Ankara, Turkey, 3GlaxoSmithKline, Singapore, Singapore, 4University of Groningen, Groningen, The Netherlands, 5IIE Ulagay-Menarini Group, Ankara, Turkey, 6Hacettepe University, Ankara, Turkey
OBJECTIVES: Lymphedema is a chronic progressive disease of the lymphatic system that can cause patient disability at a later stage. Patients are most often treated with mental lymphodrainage, external compression by bandaging, special motion and soft tissue infections (ABSSTI) caused by gram-positive microorganisms. The duration of the treatment have been developed. However, due to lack of accurate diagnostic tools for the complex decongestant therapy was CZK 5 582 in 2013, CZK 5 285 in 2014 and CZK 5 926 in 2015. The total costs of the lymphoedema treatment in the particular healthcare setting were CZK 168 808 in 2013, CZK 1 432 202 in 2014, and CZK 2 219 690 in 2015. CONCLUSIONS: This study was based on prevalence data from the particular facility. The number of patients with lymphoedema is not monitored in the Czech Republic; hence, it is not possible to calculate the costs of illnes for the whole country.
making an early diagnosis, the debate is still ongoing about how and when to initi- ate therapy. Note: the empirical approach advocates to begin antifungal therapy for those patients who have fever lasting 4–7 days despite using broad-spectrum antibiotics. The preemptive approach concerns initiation of antifungal therapy for patient after considering clinical and mycological evidence pointing to a highly probable yeast infection. The objective of this study is to compare both alternatives in terms of cost-effectiveness.

METHODS: A decision tree was developed according to the Turkish reimbursement authority’s perspective. The data used in the model were derived from a published literature and specific Turkish sources. Cost-effectiveness was expressed as net costs per extra surviving patient.

RESULTS: It was found that the preemptive approach is less costly, but the empirical approach more effective. Ergo, none of the methods was dominant. Cost-effectiveness of the empirical approach as compared to the preemptive one was estimated a 5% and 8% per month and may be repeated annually. Drugs are reimbursed if they cost below the threshold price and approved by the Central Drug Reimbursement Board and the National Health Insurance Center.

CONCLUSIONS: Based on the data the use of a threshold based on BOD would substantially decrease the number of reimbursable drugs in the Netherlands. More research is needed on the impact of using a threshold on prices and reimbursement rates and the best form of implementation to assure overall system equity and efficiency.

PHI109 ASSESSING UPTAKE OF MEDICINE USE REVIEWS IN ENGLISH COMMUNITY PHARMACIES
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OBJECTIVES: The National Health Service (NHS) reimburse English pharmacies for follow-up medicine use reviews (MURs). MURs are pharmacist-led consultations on a patient’s medicine use that aim to improve patient adherence and outcomes and reduce medicine wastage (1). MURs can be conducted in patients who have taken the same medicine for at least 1 month from a pharmacy and may be repeated annually. Pharmacies are reimbursed £28 per MUR and may claim for up to 400 MURs per financial year. While there are limited health-economic studies available relating to MURs, other available data suggest increased patient satisfaction and cost-savings due to better disease control (2). We assessed current uptake of MURs in English community pharmacies.

METHODS: Monthly dispensing data for English pharmacies that had (i) submitted MUR data to the NHS Prescription Service for the last financial year and (ii) made at least one MUR claim during this period were retrieved from the NHS Business Authority. This resulted in monthly data for the period 01/04/2015 to 31/03/2016 being retrieved for 10,772 pharmacies. Opportunity loss was calculated by subtracting the total number of MURs declared from the maximum each pharmacy could conduct (n = 400) and multiplying the subtraction with the reimbursement tariff (£28).

RESULTS: The median English pharmacy declared completing 96.5% of the MURs they could be reimbursed for, representing a median opportunity loss of £392 (95% CI: £111–£172) per pharmacy. Total opportunity loss in England was £29,170,204. However, regional variations were observed, with total opportunity loss being highest in North East London (£1,771,868) and lowest in Bath, Gloucester, Swindon & Wiltshire (637,112).

CONCLUSIONS: Overall uptake of MURs was high although regional variations were observed. More studies are needed to understand reasons for regional variation and the impact on patient outcomes and indirect NHS cost.

PHI110 LIVING WITH CHRONIC DISEASES IN GREECE: INVESTIGATING HEALTH SERVICES UTILIZATION PATTERNS AND ECONOMIC CONSEQUENCES
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OBJECTIVES: The aim of this study was: a) to bring to light the health services utilization patterns of patients suffering from chronic diseases in Greece and b) to investigate the affordability of the households to use the services.

METHODS: A cross-sectional study was carried out between 01/02/30-06, 2016. The study sample consisted of 1,009 patients with chronic diseases (convenience sampling), residing in areas of the Northern and Western Greece. A structured questionnaire based on national and international literature with closed-ended questions was developed by the researchers to collect the data. The response rate was 90.1%. A pilot study and a test - retest reliability test was carried out among 52 patients (Cronbach’s alpha = 0.884).

RESULTS: Almost 47% of the study population reported visiting public primary polyclinics (PEDI units), 58.3% Public Hospitals and/or Health Centres, 51.6% private practices and 14.2% Municipal Health Clinics/Polyclinics/NGOs. One out of five chronic patients reported that the economic conditions most often affect their decision to visit health care facilities or to undergo necessary laboratory testing, while 40% reported that other factors such as symptoms and concerns are the main reasons related to their health problems. Nearly 40% of the respondents did not have the financial means to cope with health care costs. A 30% reported that faced problems in tak- ing their medications on a regular basis (as prescribed). Before the onset of the economic crisis, 88.8% used original/prototype medicine, while at the moment only half of them are using original medicines, 24.8% get generic, and 24.2% get original and generic medicines. More than one third of the patients (35.3%) reduced the frequency of medications, 57,407 EUR of MURs were not performed due to the financial constraint.

CONCLUSIONS: The use of health care services and in the long run patients’ compliance to the management of their chronic disease is affected by the socioeconomic conditions.

PHI111 THE INTRODUCTION OF A THRESHOLD FOR THE ICER AND THE IMPLICATIONS FOR REIMBURSEMENT OF DRUGS IN THE DUTCH HEALTHCARE SYSTEM
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OBJECTIVES: To evaluate the National (ZIN) add-on reimbursement (MOH) if a drug is reimbursed. Recently it was suggested to implement a threshold value for the incremental cost-effectiveness ratio (ICER) that is related to the burden of disease (BOD). The higher the BOD, the higher the threshold of cost per QALY. This research aims to explore how the introduction of a threshold for ICERs based on BOD would influence the current reimbursement of drugs using a retrospective analysis.

METHODS: All reports of economic analyses that were part of an application submitted by ZIN from 1-Jan-2010 to 31-Dec-2014 were included and interpolated. A search of April 2014 and 2015 was used to maintain a consistent level of reimbursement authority’s perspective. The data used in the model were derived from the published literature and specific Turkish sources. Cost-effectiveness was expressed as net costs per extra surviving patient.

RESULTS: It was found that the preemptive approach is less costly, but the empirical approach more effective. Ergo, none of the methods was dominant. Cost-effectiveness of the empirical approach as compared to the preemptive one was estimated a 5% and 8% per month and may be repeated annually. Drugs are reimbursed if they cost below the threshold price and approved by the Central Drug Reimbursement Board and the National Health Insurance Center.

CONCLUSIONS: Based on the data the use of a threshold based on BOD would substantially decrease the number of reimbursable drugs in the Netherlands. More research is needed on the impact of using a threshold on prices and reimbursement rates and the best form of implementation to assure overall system equity and efficiency.

PHI113 WILL IT BLEND? INCORPORATION OF IRP WITHIN HTA SYSTEMS
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OBJECTIVES: International Reference Pricing (IRP) is used extensively in most EU countries, as well as beyond the continent. Over the past decades, health technology assessment (HTA) has become the high profile, somewhat because entirely new technologies are needed to be developed and reviewed for BOD. However, there is always a visible target for these same healthcare stakeholders. In this research, the HTA assessment published by ZIN from 1-jan-2010 to 1-jul-2016 were used for the calculation of SUKL’s BOD 83% of all drugs were reimbursed. If a threshold linked to three BOD strata was used, i.e. €20,000 per QALY for a BOD between 0-0.4, €50,000 per QALY for a BOD between 0.4-0.7 and €80,000 per QALY for a BOD between 0.7-1.0, only 32% of drugs would be reimbursed.

CONCLUSIONS: Based on the data the use of a threshold based on BOD would substantially decrease the number of reimbursable drugs in the Netherlands. More research is needed on the impact of using a threshold on prices and reimbursement rates and the best form of implementation to assure overall system equity and efficiency.

PHI114 WILLINGNESS TO PAY FOR QUALITY IN THE CZECH REPUBLIC BETWEEN 2013 AND 2017: A REVIEW
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OBJECTIVES: A cost-effective medicine has been defined by the Act on Public Health Insurance as a medicine dominating its relevant comparator, being cost-minimizing, or generating an incremental cost-effectiveness ratio (ICER) similar to those shown in already reimbursed medicines. The primary aim of this study was to review, for the first time, the ICERs already accepted for reimbursement within administrative proceedings by the State Institute for Drug Control (SUKL). The secondary aim was to report the ratio of cost-minimization analysis relative to cost-utility analysis.

METHODS: We analyzed all proceedings of the SUKL since 2013 and selected those where the pharmacoeconomic analysis fulfilled our pre-specified selection criteria. We considered only applications for permanent reimbursement having acceptable quality of the submission without any conditional agreement on price and excluded proceedings where additional criteria were considered since these represent exceptional cases. In the case that the submitting company could rejected reimbursement, the ICER would be calculated on the basis that the relationship between the treatment and the comparator was maintained. The exchange rate considered was 27 CZK = 1 EUR.

RESULTS: Out of 35 proceedings in which economic evaluations have been required, we identified 35 in which the medicine under review was either dominant or cost-minimizing and 30 proceedings where ICERs were shown. The positive mean ICER value was 22,712 EUR per QALY, the maximum ICER was 73,080 EUR per QALY and the minimum ICER was -22,212 EUR per QALY.

CONCLUSIONS: The results prove long-term consistency of SUKL’s judgments in standard proceedings and can be used as basis for future decisions.
in compliance with the legislative requirements on evaluating cost-effectiveness in the Czech Republic.

**PHPI15**
**COULD HEALTHCOIN BE A REVOLUTION IN HEALTHCARE?**
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**OBJECTIVES:** The Blockchain consists of a shared database used to maintain a continuously growing list of transactions, called blocks. Blockchain technology has started in 2008 with the first decentralized digital currency “Bitcoin”. Bitcoin is a cryptocurrency and a digital payment system that can be exchanged for other currencies or products. New potential uses of blockchain are under investigation among which its application in healthcare “healthcoin”. Our aim was to review the available information on healthcoin to gain a better understanding of this concept and its applicability.

**METHODS:** A literature review was conducted in Pubmed and thegrey literature using the keywords: Healthcoin, blockchain, healthcare, financing, break-through therapies. Articles in French and English were included and no timelines restrictions were applied.

**RESULTS:** Founded in 2016 by Diego Espinosa and Nick Gratton, Healthcoin is an open blockchain platform based for rewarding prevention of diabetes. Users submit their biomarkers (hemoglobin A1c) into the blockchain that automatically calculates the improvement and awards the patient digital tokens: “healthcoins”. For each healthcoin earned, a tax break can be offered by the government; a discount on fitness brands can be offered to reward patients. This same currency concept was adapted by Basu et al. 2016 as a new financing method for health care professionals in Hungary. The changes showed significant differences among different age groups (2003-2015) in age group 60 and above. Dentists showed the biggest decrease (-30%) in the age group of 40 to 49 years, while the proportion of nurses (-33%), and midwives (-26%) decreased most in the age group of 20 to 29 years. Nurses and midwives without critical conditions (95% CI) using Cox proportional hazard models. **RESULTS:** Severity of weight gain was more prevalent among recent quitters compared to long-term quitters. After adjusting for covariates and weight change, both recent quitters (HR:0.74; 95% CI: 0.63-0.87) and long-term quitters (HR:0.53, 95% CI: 0.45-0.61) had decreased risk of all-cause mortality compared to continued smokers. Similarly, both recent and long-term quitters had decreased risk of cancer, CVD, non-cancer, and non-CVD death regardless of weight change following smoking cessation. Compared to continuous smokers, non-smokers also had a lower risk of overall and cause-specific death.

**CONCLUSIONS:** Post-cessation weight change did not modify the protective association of smoking cessation with reduced risk of all-cause and cause-specific death. A public health perspective, a smoking cessation program may contribute to reducing risk of death in middle-aged male smokers despite the concern on weight change after quitting smoking.

**PHPI19**
**EVALUATION OF AN ATTITUDES TOWARD MEDICAL ERRORS SCALE IN PHARMACY AND HEALTHCARE PROFESSIONAL STUDENTS**
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**OBJECTIVES:** To develop and evaluate an attitudes toward medical errors scale in pharmacy and healthcare professional students with the goal of improving patient safety. Measures: Method: A literature review was conducted in Pubmed and the grey literature. Data were derived from the database of the Health Registration and Training Center (OSAP Nr. 1626 data collection programme). We created three age groups within headcount between 2003-2015 in point of the following health care professionals working in health care sector: general practitioners, specialist physicians, dentists, specialist dentists, pharmacists, specialist pharmacists, nurses, dieticians, physiotherapists, midwives, health visitors, ambulance men. **RESULTS:** While the proportion to a specialist physicians increased the most from 5% to 24% (2003-2015) in age group 60 and above. Conclusions: Between 2003-2015 there was a remarkable increase and decrease in the age groups of health care professionals. This was shown to have significant differences among different professions. In order to prevent the rapid aging of health care professionals, further improvement of salaries is required.

**PHPI17**
**THE ATTITUDE OF POLISH PHYSICIANS TOWARDS INTRODUCTION OF E-PRESCRIPTION – A QUESTIONNAIRE SURVEY**
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**OBJECTIVES:** At present, there is a problem in Poland regarding under-quality and incompleteness of health records. Elehealth solutions, including and electronic prescription (e-prescription), provide an opportunity to correct these irregularities. In Poland, work on the implementation of these solutions is ongoing since 2011. This survey was to examine the attitude of Polish physicians towards introduction of e-prescription. The aim was to make recommendations for the recommendations for the makers responsible for the implementation of the system in Poland, based on the results of the survey.

**METHODS:** A questionnaire research was conducted, with 100 primary care family medicine physicians as respondents. Quota selection was applied, reflecting the number of respondents in particular hospital provods. The selection included 3 categories of workplaces: main provincial cities, medium-sized towns (less than 70,000 inhabitants) and small towns (less than 10,000 inhabitants). A questionnaire contained 27 questions.

**RESULTS:** Physicians are generally convinced, that e-prescribing will eliminate prescription illegibility and solve the problem of incompleteness. Doubts are associated also with visit time, legal issues, patients’ counseling with adapted and recommendation to system of medicines. Despite this, most physicians declare willingness to use the system in their everyday practice, in order to prevent the rapid aging of health care professionals, further improvement of salaries is required.

**PHPI18**
**IMPACT OF WEIGHT CHANGE AFTER QUITTING CIGARETTE ON ALL-CAUSE AND CAUSE-SPECIFIC MORTALITY IN MIDDLE-AGED MALE SMOKERS:**
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**OBJECTIVES:** We aimed to investigate the association between weight change after smoking cessation and the risk of all-cause and cause-specific mortality among middle-aged male smokers.

**METHODS:** We conducted a prospective cohort study using the National Health Insurance Service National Health Screening Cohort (NHIS-Health) of Korean Participants (n=102,403) without critical conditions aged between 40 and 79 at baseline who underwent biennial health examination were included in this study. Participants were categorized into continued smokers, recent quitters (within 4 years), and long-term quitters (more than 4 years) smokers based on the self-reported smoking status. Weight change was determined by the change of Body Mass Index (BMI) between the first (2002-2003) and second (2004-2005) health examination records. We followed patients from January 1, 2006 to December 31, 2013 to investigate the association of smoking cessation and weight change with all-cause mortality.

**RESULTS:** The median weight change was 7.7 kg (IQR: 12.8 kg) in the never-smokers group. The median weight gain was 5.5 kg (IQR: 11.3 kg) among recent quitters, and 2.2 kg (IQR: 6.4 kg) among long-term quitters. Adjusting for covariates and weight change, both recent quitters (HR:0.74; 95% CI: 0.63-0.87) and long-term quitters (HR:0.53, 95% CI: 0.45-0.61) had decreased risk of all-cause mortality compared to continued smokers. Similarly, both recent and long-term quitters had decreased risk of cancer, CVD, non-cancer, and non-CVD death regardless of weight change following smoking cessation. Compared to continuous smokers, non-smokers also had a lower risk of overall and cause-specific death.

**CONCLUSIONS:** Post-cessation weight change did not modify the protective association of smoking cessation with reduced risk of all-cause and cause-specific death. A public health perspective, a smoking cessation program may contribute to reducing risk of death in middle-aged male smokers despite the concern on weight change after quitting smoking.

**PHPI16**
**AGING OF HEALTH CARE PROFESSIONALS IN HUNGARY**
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**OBJECTIVES:** Recent years have seen an increase in focus, at an international level, on changes regarding the number and the income of health care professionals. Better circumstances, higher salary prospects are major sources of motivation for health care professionals to work abroad. Efforts at keeping them home have become one of the most emphasised targets of the government. The aim of our study is to analyze the changes in wages of health care professionals in Hungary. **METHODS:** Data were derived from the database of the Health Registration and Training Center (OSAP Nr. 1626 data collection programme). We created three age groups within headcount between 2003-2015 in point of the following health care professionals working in health care sector: general practitioners, specialist physicians, dentists, specialist dentists, pharmacists, specialist pharmacists, nurses, dieticians, physiotherapists, midwives, health visitors, ambulance men. **RESULTS:** While the proportion to a specialist physicians increased the most from 5% to 24% (2003-2015) in age group 60 and above. Conclusions: Between 2003-2015 there was a remarkable increase and decrease in the age groups of health care professionals. This was shown to have significant differences among different professions. In order to prevent the rapid aging of health care professionals, further improvement of salaries is required.

**PHPI12**
**INTERCONTINENTAL LINKS AMONG HEALTH TECHNOLOGY ASSESSMENT ORGANIZATIONS**
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**OBJECTIVES:** A health technology assessment (HTA) system reflects a nation’s culture and private organizations. HTA systems originated in European countries and are used to determine whether a technology should be implemented within the healthcare system. The European countries led the development of network links with other countries to strengthen global HTA efforts. However, little is known about intercontinental links among HTA organizations. To address this issue, we sought to visualize those global links. **METHODS:** The total number of HTA organization memberships in ISPOR, HTAi, INAHTA, EuroScan, EunetHTA, HTAiannual, and RedITSa were examined to create intercontinental linkages among HTA organizations. A total of 373 HTA organizations from 72 countries and 5 territories were included. A network parameter was used to determine how frequently and percentages to summarize different countries’ number of HTA organization memberships. “Map,” “diagram,” and “plotrix” packages were used in an R program to illustrate the intercontinental links and visually identify major hubs in this worldwide network.

**CONCLUSIONS:** An intercontinental link map,
including connections drawn as circles, shows that European countries are at the center of global HTA networking. Additionally, membership in only one international HTA society is high for European (n = 1, % = 43.1) and North American (n = 1, % = 50) organizations. The average number of pharmacists per hospital, (48.85 FTE) for Emergency services per hospital, (27.72 FTE) per each PCC at Makah city. The average number of pharmacist based on MOH standards per each PCC was (4 FTE) while the mean number pharmacist need per central pharmacy activities was (52.53 FTE) per each PCC. It is (13.13 fold) more incremental than MOH pharmacist workforce standards per PCC. CONCLUSIONS: The pharmacy workload analysis at primary health care center reflected the real demand for pharmacists. Clinical pharmacy activities at PCC missed with emphasis on patient-specific clinical pharmacy. There is a high shortage of pharmacists at PCC during mass gathering Hajj period in Makah Region, Saudi Arabia.

PHP121 PHARMACEUTICAL CARE WORKLOAD AND WORKFORCE REQUIREMENT AT MINISTRY OF HEALTH PRIMARY CARE CENTERS DURING TEN YEARS MASS GATHERING HAJJ (2006-2015) IN MAKAH REGIONS, SAUDI ARABIA

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OBJECTIVES: To explore the pharmaceutical care services workload and workforce requirements at Ministry of Health primary health care centers during mass gathering Hajj years (2006-2016), Saudi Arabia. METHODS: It is a retrospective analysis of ten years of (2006-2015) of primary healthcare center (PCC) pharmacies workload during the peak gathering period Hajj. The duration of workload collection was 15 days. The pharmacists and pharmacy technicians provide pharmaceutical care to all patients except on days one and two at Makah region. The data was collated based on MOH workforce standards of primary health care center and the workload drives as central pharmacy activities, patient specific pharmacy activities, and general administration. The specific pharmacy activity per central pharmacy was the total number of prescriptions (226,824-505,753) with average (411,317), it represented (7.12-20.25%) with average (16.77%) of all pilgrims. The average number of PCC prescription at holy places was (274,316) and (137,001) from Makah region. The number of PCC order at sacred sites was (9,133) per day and contained (27,399) medications, while at PCC in Makah city was (18,288) prescriptions per day and contained (54,864) drugs. The average time of dispensing PCC prescription was 4 minutes. The average number of PCC prescription needed (24.81 FTE) per each PCC at holy places, and (27.72 FTE) per each PCC at Makah city. The average number of pharmacist based on MOH standards per each PCC was (4 FTE) while the mean number pharmacist need per central pharmacy activities was (52.53 FTE) per each PCC. It is (13.13 fold) more incremental than MOH pharmacist workforce standards per PCC. CONCLUSIONS: The pharmacy workload analysis at primary health care center reflected the real demand for pharmacists. Clinical pharmacy activities at PCC missed with emphasis on patient-specific clinical pharmacy. There is a high shortage of pharmacists at PCC during mass gathering Hajj period in Makah Region, Saudi Arabia.

PHP122 LANDSCAPE OF REPORTED DRUG SHORTAGES IN EUROPEAN COUNTRIES

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2PhARMACEUTICAl CARE wORKLADOw AND wORKFORCE REQUIREMENT AT MINISTRY OF HEALTH PRIMARY CARE CENTERS DURING TEN YEARS MASS GATHERING HAJJ (2006-2015) IN MAKAH REGIONS, SAUDI ARABIA

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OBJECTIVES: Drug shortages are a known problem in Europe. However, detailed information about the affected drugs remains missing. The aim of this study is to estimate the scope of the reported drug shortages in European countries. METHODS: Fifty national medicine authorities in Europe were asked to share their database of reported drug shortages between January 2011 and December 2016. If a database was obtained, additional information was requested about the reporting conditions. Data on drug shortages were used to analyze the database. RESULTS: The total number of relevant substance markets were 18993 drug shortages between 2011 and 2016 is collected from 13 countries (Austria, Bosnia and Herzegovina, Croatia, Czech Republic, Estonia, Germany, Latvia, Lithuania, Norway, Poland, Slovakia, Spain and Switzerland). Czech Republic is responsible for almost half of these reported drug shortages. One fifth of the reported drug shortages are drugs used in the therapeutic area of the nervous system. Drugs of the cardiovascular system are responsible for 17% of the reported shortages. The classes of anti-infectives for systemic use and antineoplastic and immunosuppressing agents each account for about one tenth of the reported drug shortages. Considering the form of the reported drug shortages, half of them are tablets and one fifth are solutions. Oral is the most common route of administration and accounts for 61%, while injection (27%) is the second most common route of administration which is affected by the reported drug shortages. CONCLUSIONS: Although no specific ATC-class is preferably affected by drug shortages, a certain type of formulation (tablets) and route of administration (oral) are dominant in the reported drug shortages in Europe.
OBJECTIVES: This study presents the development of acute and chronic inpatient bed numbers of neurological, neurosurgical and psychiatric professions between 2006-2015 in Hungary. METHODS: During the analysis descriptive statistical methods were applied. Psychiatric (profession code 9), neurological (code 18) and neurosurgical (code 02) professions inpatient capacity data between 2002 and 2016 were examined. Acute and chronic beds were calculated based on the number of psychiatric beds and the data of the National Health Insurance Fund Administration reports. RESULTS: Referring to 1801 profession code, the number of psychiatric beds showed a steady decline, decreased from 4089 to 2689 in 2002, presenting the effects of capacity regulatory changes. The number of acute beds were estimated to be 248 beds of the 1802 addicctology profession introduced in 2013. The neurosurgery active bed numbers increased from 6.62% to 6.81%. Similarly, 2004 neurosurgery beds decreased from 607 to 495, however their proportion to the number of active beds showed a steady growth. Based on the 0900 neurological code during the care development law, the number of beds reduced from 2599 with 22%. This tendency continued until 2012, when only 1844 neurological beds could be found. As a result, a total of the Semmelweis Plan the number of beds increased by more than 8%, however, considering the 0901 stroke beds, the change was more than 10%. The number of chronic neurological beds increased from 187 to 346 in 2006, and from 2012 they merged into rehabilitation bed numbers. The law did not affect the 1804 childbirth professional code at the 5402 bed number in 2006 increased by 9.7%, followed by a slightly downward path by 2013. CONCLUSIONS: The neurological, neurosurgical and psychiatric beds are markedly affected by the care development law, which induced a number of major changes in health care system. Semmelweis Plan had an effect on the healthcare system by the restructuring of the profession types instead the reduction of bed numbers.

PHLP27 MANAGEMENT OF HEALTHCARE PRIORITIES BY SINGLE NATURAL RESOURCE DRIVEN ECONOMIES IN EMERGING MARKETS DURING COMMODITY PRICE FLUCTUATIONS

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OBJECTIVES: Emerging market (EM) countries dependent on single natural resource as the most viable source of revenue are vulnerable to cyclical government spending due to price volatility. During economic downturn, public healthcare expenditure falls due to an overall budget reduction and higher inflation rates. This research aims to explore the impact of healthcare expenditure on two oil dependent nations Saudi Arabia and Nigeria, during cycles of volatile oil prices. METHODS: Publicly available data on oil prices, GDP growth rate, GDP per capita, PPP, inflation rates, population and urbanization growth rates, public health spending as a proportion of overall spending, and private healthcare investments as a proportion of total investments were analysed. Additionally, public health indicators representing crude outcome measures were assessed: infant mortality rates, life expectancy at birth, maternal mortality, and public health expenditure on various health services across the population. RESULTS: Analyses showed that both Saudi Arabia and Nigeria under-took significant healthcare budget cuts relative to other sectors during downturn of oil prices. In both countries, spending cuts affected the growth of the public healthcare infrastructure and service provision. However, private healthcare investments continued to rise stimulated by income growth in the previous years. In contrast to Nigeria, Saudi Arabia significantly boosted investments in public health infrastructure during times of economic growth. Spending cuts limited the ability of public healthcare facilities to maintain and expand treatment access, thus facilitating outward medical tourism. CONCLUSIONS: Prices of natural resources signal the public health expenditure in resource-dependent EM countries. During the upturn of natural resource prices, governments should invest more in healthcare so that the population can sustain the benefits during the downturn. While volatility is hard to control, ring-fencing policies for health care expenditure in times of high oil revenue can help EM countries manage the downturn more effectively, without drastic cuts.

PHLP28 CLINICAL PHARMACY SERVICES AND WORKFORCE REQUIREMENTS AT MINISTRY OF HEALTH HOSPITALS DURING TEN YEARS MASS GATHERING HAJ (2006-2015) IN MAKAH AND AL-MEDINA REGIONS, SAUDI ARABIA

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OBJECTIVES: To explore the clinical pharmacy services and workforce requirements at Ministry of Health (MOH) Hospitals during mass gathering Hajj ten years (2006-2015) at Makah and Al-Medina Regions in Saudi Arabia. METHODS: It is a retrospective analysis of ten years (2006-2015) of MOH hospital pharmacies during mass gathering Hajj period (15-30 days). The clinical pharmacist should provide pharmaceutical to all patients either Pilgrim or not Pilgrim at Makah region. The clinical activities drive from MOH critical care services, and emergency services, to explore the clinical pharmacy services and workforce requirements at the health system. RESULTS: A total number of 2164 patients were admitted in Makah hospitals during Hajj period. Also, improve patient clinical outcome, patient quality of life, and avoid the unnecessary cost.

PHLP29 DEVELOPMENT OF AN SPECIFIC EVALUATION FRAMEWORK FOR ORPHAN DRUGS BASED ON MULTI-CRITERIA DECISION ANALYSIS (MCDA) FOR HEALTH CARE DECISION MAKING IN CATALONIA

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OBJECTIVES: To develop a Multi-Criteria Decision Analysis (MCDA) framework (specific for Orphan Drugs) in Catalonia, aimed to facilitate and homogenize the assessment of OD by the decision-making committee of the Catalan Health Service (CatSalut). METHODS: A preliminary framework based on EVIDEM (v4.0) was developed for its use and was validated in three cases of the decision-making committee of CatSalut. The final version of the framework was agreed and tested by this committee in 3 OD (tolvaptan for autosomal dominant polycystic kidney disease, Alpha-1 antitrypsin for Alpha-1 antitrypsin deficiency chronic pulmonary emphysema and Pertuzumab for HER2-positive breast cancer). RESULTS: A final MCDA framework specific for OD was developed and validated to be used for the orphan drug evaluations conducted by the CatSalut. The test of the three OD through the developed framework specific for OD showed that MCDA can be considered a useful methodology which adds transparency, predictability and allows a structured discussion that substantiates the agreements adopted by decision making committees.

PHLP30 EVALUATION OF BRANDING IMPACT ON IRANIAN PHARMACEUTICAL MARKET: A QUALITATIVE STUDY

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OBJECTIVES: Due to recent changes in global pharmaceutical marketing, companies’ interests are switching to focus on branding strategies. Iran is one of the largest pharmaceutical markets in Middle East which experienced a suitable growth in recent years; therefore, a proper framework for Iran’s pharmaceutical market branding strategy is necessary. This study aims to investigate branding impact on pharmaceutical market strategy. METHODS: A first systematic literature review was done. Studies were identified via searching electronic databases, search engine and reviewing citations (1990 – June 2016). Only articles published in Persian and English were reviewed and sixteen studies met inclusion criteria. Based on the aforementioned systematic review findings, qualitative questionnaire was designed. Semi-structured questionnaire with open ended questions had been applied as data collection tool. We conducted interviews with forty-five interviewees who provided information on traditional and natural resources related to pharmaceutical industry from interviewees’ point of view. The rest of responses were as follows: 20% recommended therapy area branding, 26% recommended product branding and 0% recommended condition branding. CONCLUSIONS: This interview-based study provides new evidence on Iran’s pharmaceutical market branding position. It becomes clear that companies must be focused on branding strategies. Iran is one of the emerging market (EM) countries dependent on single natural resource as the most viable source of revenue are vulnerable to cyclical government spending due to price volatility. During economic downturn, public healthcare expenditure falls due to an overall budget reduction and higher inflation rates. This research aims to explore the impact of healthcare expenditure on two oil dependent nations Saudi Arabia and Nigeria, during cycles of volatile oil prices. Publicly available data on oil prices, GDP growth rate, GDP per capita, PPP, inflation rates, population and urbanization growth rates, public health spending as a proportion of overall spending, and private healthcare investments as a proportion of total investments were analysed. Additionally, public health indicators representing crude outcome measures were assessed: infant mortality rates, life expectancy at birth, maternal mortality, and public health expenditure on various health services across the population. Analyses showed that both Saudi Arabia and Nigeria undertook significant healthcare budget cuts relative to other sectors during downturn of oil prices. In both countries, spending cuts affected the growth of the public healthcare infrastructure and service provision. However, private healthcare investments continued to rise stimulated by income growth in the previous years. In contrast to Nigeria, Saudi Arabia significantly boosted investments in public health infrastructure during times of economic growth. Spending cuts limited the ability of public healthcare facilities to maintain and expand treatment access, thus facilitating outward medical tourism. Prices of natural resources signal the public health expenditure in resource-dependent EM countries. During the upturn of natural resource prices, governments should invest more in healthcare so that the population can sustain the benefits during the downturn. While volatility is hard to control, ring-fencing policies for health care expenditure in times of high oil revenue can help EM countries manage the downturn more effectively, without drastic cuts.

PHLP31 APPLYING THE INSTITUTE FOR CLINICAL AND ECONOMIC REVIEW’S (ICER) METHODOLOGY TO CANADA: AN IMPROVED WAY TO TAKE INTO CONSIDERATION DRUG AFFORDABILITY CHALLENGES?

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OBJECTIVES: In Canada, drug prices and healthcare system affordability are under high scrutiny in order to better meet the needs of Canadians. Current health technology assessments (HTA), do not consider financial capacity of Canadian payers. In contrast, the Institute for Clinical and Economic Review’s (ICER) combines cost-effectiveness evaluations and an assessment of the affordability of a new therapy. The affordability concept is translated into an annual budget impact threshold that represents the maximum willingness to pay for a treatment. This study aimed to adapt ICER’s affordability budget impact threshold to the clinical pharmacy services prevent drug-related mortality and morbidity during Hajj period. Also, improve patient clinical outcome, patient quality of life, and avoid the unnecessary cost.
Canadian environment and determine whether it could be a relevant tool for payers. METHODS: The affordability budget impact threshold was calculated according to ICER’s methodology using Canadian and Quebec data such as drug and healthcare spending, gross domestic products, etc. The primary data source was the Canadian Institute for Health Information. RESULTS: Following the ICER methodology, the estimated ICERs and affordability threshold for each new drug was estimated to be $36.2 million in Canada, and $9.9 million for Quebec. To further adapt to a Canadian perspective, both thresholds were divided specifically for public and private payers, respectively. CONCLUSIONS: The ICER methodology adapted to a Canadian perspective is a novel approach that could allow payers to have an improved vision of the drug value, and provide them with more tools to make informed decisions on the budget constraints. In addition, the affordability threshold, if incorporated into HTA recommendations could lead to more integrated, potentially faster and complete decision-making processes, and by the same time, reduce the need of bureaucratic discussions that may arise following official HTA recommendations in Canada.

PHP132

THERAPEUTIC REFERENCE PRICING SYSTEM COST-SAVING ABILITY AND ITS IMPACT ON PATIENT OUT-OF-POCKET EXPENSES IN SLOVENIA

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OBJECTIVES: Despite therapeutic reference pricing (TRP) being referred to as an effective cost-containment measure, its introduction in Slovenia was followed by a suspicion. The study aimed to assess economic outcomes of the first three therapeutics classes introduced in Slovenia - proton pump inhibitors (PPIs), converting enzyme inhibitors (ACEIs) and lipid-lowering agents (LLAs) from the health-care payer and patient perspective. METHODS: Health claims data on all prescriptions in Slovenia were extracted and analysed. The before-after study design was used to assess medicine expenditure covered by the compulsory and complementary health insurance and the maximum possible patients’ out-of-pocket cost. The study population was used as an indicator of cost-saving ability from the health-care payer perspective. RESULTS: A downward trend of medicine expenditure was observed already before TRP introduction, however, in the first year after TRP introduction the health-insurance cost for ACEIs and LLAs decreased by 25% and 45%, respectively. The PPIs’ expenditure reduced by 10%, however, greater PPIs’ cost reduction was observed before TRP. After TRP introduction, the monthly medicine expenditure downward trend was less steep; coefficient changes from -20,794 to -363 for PPIs (p < 0.001), from -18,175 to -4,862 for ACEIs (p < 0.001) and from -10,669 to -2,761 for LLAs (p = 0.015) were identified. Also, a significant increase in maximum possible patient out-of-pocket cost was observed for ACEIs for 82%, followed by the 62% and 37% increase for LLAs and PPIs, respectively. After TRP introduction the maximum possible patient out-of-pocket cost was thought as the percent-age of medicine expenditure covered by the health-insurance, increased by 2.4%, 2.6% and 16.5% for PPIs, LLAs and ACEIs, respectively, mostly due to lansoprazole, atorvastatin and perindopril. CONCLUSIONS: From the public payer perspective, Slovenian TRP system is seen as an effective cost-containment measure. However, from the patient perspective it could represent a financial challenge, especially for patients using ACEIs.

PHP133

PHARMACOECONOMIC RESULTS OF HIGHLY INNOVATIVE DRUGS APPROVED FOR TEMPORARY REIMBURSEMENT IN THE SLOVENIAN HEALTH CARE SYSTEM

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OBJECTIVES: Highly innovative drugs can be granted two plus one year of temporary reimbursement (TR) to provide timely access and to collect additional real-world evidence through registry. TR applicant does not need to comply with strict cost-effectiveness (CE) requirements and willingness-to-pay threshold (WTP) when there is no sufficient data on clinical practice or expert opinion at the time. After two-three years when switching to permanent reimbursement (PR), a drug must comply with strict CE and WTP requirements. The main objective was to analyse pharmacoeconomic results at the entry of drug into TR and compare them with results presented in consecutive PR procedure. METHODS: All drugs approved for TR until 5/2017 were identified. Pharmacoeconomic results (i.e. type of analysis, incremental cost-effectiveness ratios (ICERs), net budget impact (netBI)) at the time of TR and consecutive PR application were analysed. We also examined therapeutic class, and compared the length of approval of TR versus PR. RESULTS: 40 TR decisions were identified. Majority (70%) belonged to oncology drugs, 33% were orphans. After the expiration of TR, 92% had positive subsequent decision on PR. Price negotiation with payers was present in 50% of cases. 8% did not manage to receive PR. Cost-utility analysis was used to present results of cost-effectiveness in 44% of TR procedures. Mean ICER (cost/QALY) of TR products was €93,087 (SD 654,550). In the subsequent PR procedure, the mean ICER was €40,937 (lower by 56%). NetBI lowered by 32% and 50% in 1st and 5th year respectively when applying for PR. Mean decision time about TR was longer (404 days; SD 194) than consecutive decision about PR (259 days; SD 253). CONCLUSIONS: Costly innovative drugs and approved for a TR with higher ICERs and netBI than usually accepted in PR procedure. 92% of these drugs succeed in consecutive PR procedure.

PHP135

KEY FACTORS RESULTING IN DIFFERENTIAL REIMBURSEMENT DECISIONS BETWEEN THE NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE (NICE) AND THE EUROPEAN MEDICINES AGENCY (EMA) AUTHORIZED BY THE EUROPEAN MEDICINES AGENCY (EMA) TO TREAT RARE DISEASES (ORPHAN MEDICINES)

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OBJECTIVES: Reimbursement decisions made by NICE or EMA may result in different effectiveness (CE) requirements and willingness-to-pay threshold (WTP) when there are NICE and EMA recommendations related to EMA-authorized medicines for rare diseases differ, and investigates the reasons for such differences. METHODS: NICE-authorized medicines for rare diseases were identified and categorized based on an expert assessment of the differences in the CE requirements and WTP thresholds. After discussing the possible influencing factors, decision-makers’ judgements on value-for-money, including robustness of clinical and cost-effectiveness evidence, possibility of unmet needs and the current approaches for decision-making. RESULTS: From 96 EMA-authorized medicines for rare diseases, 23 had completed assessments between NICE and EMA, with differing recommendations. Four medicines were recommended by NICE and rejected by EMA, for the opposite馨al recommendation. Factors related to positive NICE recommendations included supplemental clinical information presenting the added value for re-applicants to reflect decision-makers’ preferred approaches. Companies offered PAS for four medicines, and further financial arrangements were agreed as part of managed access agreements (MAAs) for two medicines. Rejections by EMA were related to uncertainty about the clinical and cost-effectiveness evidence. CONCLUSIONS: Among orphan medicines with opposing recommendations between NICE and EMA, factors linked to positive NICE recommendations included: flexibility to present supplemental data and economic analyses during the appraisal; and agreed PAS and MAAs. The EMA’s acceptance of one orphan medicine seemed mainly related to an improved PAS and the consideration of PACE.
support the quantification of the target population in the early benefit assessment of drugs. A reliable multivariate regression analysis, therefore, is necessary; absence of alternative, disease severity and cancer, rare diseases significantly increased ICER(p<0.05). The most influencing factor raising ICER was catastrophic disease, followed by disease severity, no alternative, and limited alternatives. The degree of impact were in 17, 14, and 12 millions KRW per QALY.

### RESULTS

**ICER analysis**: A total of 42 cases were accepted by FABC and the average ICER was 24.6 millions KRW per QALY. In univariate analysis, all variables showed significant association with ICER. However, in multivariate regression analysis, there remained absence of alternative, disease severity and cancer, rare diseases significantly increased ICER(p<0.05). The most influencing factor raising ICER was catastrophic disease, followed by disease severity, no alternative, and limited alternatives. The degree of impact were in 17, 14, and 12 millions KRW per QALY.
According to our findings, it seems very difficult to combine the principle of providing innovative pharmaceuticals to everyone paid for by a social security system with the idea of achieving ‘reasonable’ prices through negotiations between payers and pharmaceutical companies. While some basic ideas of AMNOG are still valid, the negotiation process needs to be changed.

PHP144
ARE P&R OFFICIAL CRITERIA RELATED WITH REAL P&R APPROVAL OF ORPHAN DRUGS (ODS) IN SPAIN?
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OBJECTIVES: Identify if the official criteria of Spanish P&R process are related with P&R approval for ODS. METHODS: ODS approved by the European Commission between 2012 and 2016 were classified according to their P&R status in Spain (approved, undergoing decision and rejection). Hypotheses on likelihood of reimbursement of ODS were formulated based on predictions made by the Royal Decree Law 1/2015 of 24 July (disease severity, unmet needs of certain collectives, cost-effectiveness (CE), budget impact (BI), existence of alternative therapies and degree of innovation). Disease severity was related to an oncologic vs. non oncologic indication (56% with P&R approval), approval based on high clinical outcomes (57% with P&R approval) and a TPR with a positive opinion (88.2% with P&R approval). Indications for a smaller group of patients (10% of patients treated with a therapeutic alternative) were not seem to have a positive influence for achieving P&R in Spain. CONCLUSIONS: P&R approval for ODS in Spain could be positively affected by an indication in oncology, availability of high clinical outcomes and a positive TPR. BI would be an important variable for P&R approval, but could not be assessed as information about sales forecast is not public.

PHP145
COST-EFFECTIVENESS AND IMPACT OF NEW INNOVATIVE TREATMENTS ON PROGNOSIS OF MELANOMA AND OVARIAN CANCER FOR AUSTRALIAN PATIENTS
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OBJECTIVES: Advanced melanoma and ovarian cancer have historically had limited access timelines in the EU5 countries between 2009 and 2016. Time comparison for general medicines vs. orphan/ oncology was made including shifts over time. Data gathered from official national HTA agencies and P&R bodies. RESULTS: 90% of all EMA approved drugs between 2009 and 2016 have been launched in Germany whereas only 57% launched in France. 30 drugs (10%) have been withdrawn in Germany since the introduction of the AMNOG procedure in 2011 likely due to failure in price negotiations. Overall time to market in Germany and the UK is 17-23 weeks, whereas in France, 65-66 weeks. Time to market for oncology drugs is considerably lower in Germany whereas time to market for orphan drugs is significantly higher in Spain/Italy compared to all other drugs. Analysis of market access trends across the EU5 suggests a modest increase in time to market (for products being actually launched) in all countries except Italy. Peak in time to market during 2011-13 in Italy likely due to the renewal of the AIFA Commissions. CONCLUSIONS: Wide disparity exists in the number of EMA approved medications commercially available in each of the 10 countries. It is important to recognize variations in the ability to launch and timing disparities when analysing market access timelines and their implications on the availability of new drugs to patients.

PHP146
EXTERNAL REFERENCE PRICING IN GREECE: A COMPARATIVE ANALYSIS FOR 2015-2017
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OBJECTIVES: To compare the results of performing External Reference Pricing (ERP) in Greece from 2015 to 2017, to model the changes on ex-factory prices in domestic market medicines and to forecast future impacts in Greece and other countries that take the same approach. METHODS: Prices from three Greek medicine bulletins for the period 2015-2017. External Reference Pricing is performed to calculate the average of the three lowest prices in EU for branded medicines that are not under price protection. Tiers of price protection were assigned based on tier system of the Greek Reimbursed Market. Five non Euro zone countries contribute the remaining 40-45%. CONCLUSIONS: External Reference Pricing has been the main tool for pricing and repricing of branded medicines in Greek Reimbursed Market. Tiers of price protection and variation of calculation rules affect significantly the basket mix and the final medicine prices. Differences vary from 5% to 15% of ex-factory price. Pharmaceutical companies should take under consideration these factors to forecast future price reductions in Greece primarily and then, the rest of the world.

PHP147
MARKET ACCESS TRENDS ACROSS THE EU5: 2009 TO 2016- AN UPDATE
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OBJECTIVES: Examine the time to reimbursement and re-imbursement approval in the EU5 and analyse potential changes in market access timelines in the EU5 countries between 2009 and 2016. METHODS: Examined new molecular entities, formulations and combinations with launches in the EU5 countries from 2009 to 2016. Time comparison for general medicines vs. orphan/ oncology was made including shifts over time. Data gathered from official national HTA agencies and P&R bodies. RESULTS: 90% of all EMA approved drugs between 2009 and 2016 have been launched in Germany whereas only 57% launched in France. 30 drugs (10%) have been withdrawn in Germany since the introduction of the AMNOG procedure in 2011 likely due to failure in price negotiations. Overall time to market in Germany and the UK is 17-23 weeks, whereas in France, 65-66 weeks. Time to market for oncology drugs is considerably lower in Germany whereas time to market for orphan drugs is significantly higher in Spain/Italy compared to all other drugs. Analysis of market access trends across the EU5 suggests a modest increase in time to market (for products being actually launched) in all countries except Italy. Peak in time to market during 2011-13 in Italy likely due to the renewal of the AIFA Commissions. CONCLUSIONS: Wide disparity exists in the number of EMA approved medications commercially available in each of the 10 countries. It is important to recognize variations in the ability to launch and timing disparities when analysing market access timelines and their implications on the availability of new drugs to patients.

PHP148
NON-QUANTIFIABLE BENEFIT WITHIN THE GERMAN AMNOG SYSTEM: FACTORS CONTRIBUTING TO COST-EFFECTIVENESS AND IMPACT OF NEW INNOVATIVE TREATMENTS
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OBJECTIVES: The G-BA drug benefit assessment in Germany is evidence-based and can result in major, significant, marginal, non-quantifiable, no, or even less added benefits. Additionally, the G-BA can restrict the period of validity of its resolutions and request the submission of new evidence. This study explored the role of non-quantifiable assessments with non-quantifiable resolutions and the set time limits relative to the clinical evidence, in order to evaluate the likelihood of getting time limitations and their implications on price discounts. METHODS: Information on G-BA resolutions with non-quantifiable outcomes were obtained from database of AMNOG dossiers published until 24 March 2017. The results identified as non-quantifiable were classified as orphan drug (OD) or non-OD assessment; information on time limits and clinical evidence was extracted. RESULTS: 58 resolutions with a non-qualitative added benefit were identified, including 40 OD and 18 non-OD assessments. Time limits were set for 18 resolutions, with the majority for OD (83.3%). Of the OD assessments, 37.5% received time limits, whereas only 16.7 % of non-OD assessments were limited. CONCLUSIONS: OD assessments had a higher time to market compared to non-OD. In contrast, OD assessments with time limits were mainly based on RCTs (65.4%). 80.0% of the non-OD assessments without time limits were based on non-RCTs. Price discount analysis revealed higher average discounts for time-limited OD resolutions (25.2% vs. 16.7%). CONCLUSIONS: The likelihood of time limits set by G-BA for a non-quantifiable added benefit increased with lower evidence level included in the dossier. Since clinical trials for OD approval are often non-RCT, time limits are more likely for OD than for non-RRT resolutions. Furthermore, time limits seem to increase the extent of price discounts.

PHP149
IMPACT OF MULTI-DRUG RESISTANCE ON HTA ASSESSMENT OF ANTIBIOTICS IN FRANCE, GERMANY, UNITED KINGDOM
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OBJECTIVES: The objective of this study is to investigate how the increasing awareness of multi-drug resistance (MDR) impacted payers during an assessment of recently launched antibiotics in France, Germany and UK. This aims to investigate whether antibiotics addressing the MDR issue benefit from a favourable recommendation for funding/reimbursement and/or price. METHODS: ADIS insight has been used to identify antibiotics with innovative mechanisms launched in France, Germany and United Kingdom since 2012. Eleven antibiotics were identified as of 22/06/2017. Availability of HTA reports have been verified using websites of HTA agencies. HTA reports of these antibiotics have been identified and analysed to measure the impact of MDR in their assessments. RESULTS: In France, 8 out of 11 antibiotics have a report available. All the antibiotics have been granted an SMR substantial; 2 antibiotics have been granted an ASMR III, 1 has an ASMR IV and 5 have an ASMR II. The MDR rate was considered for the SMR rating of these antibiotics. The addition of new antibiotics into the therapeutic arsenal is a priority from a public health perspective. This was key to justifying a substantial SMR. The MDR was not assessed for 2 antibiotics. 1 HTA report has been published and MDR impacted benefit assessment. In the UK, 2 HTA reports have been published by NICE. MDR was mentioned in these reports. 4 HTA reports have been published by the SMC. 3 antibiotics were recommended for use within NHS Scotland and 1 was considered for a future recommendation based on an SMR recommendation. CONCLUSIONS: The MDR is taken into consideration by HTA agencies in France and Germany but not systematically in the UK. Evidence suggests that antibiotics addressing MDR are granted reimbursement/access and this element may be leveraged against negotiating price discounts.
REIMBURSEMENT IN RUSSIA IN 2016

In January 2017, the European Medicines Agency (EMA) published a report on the experience of conditional marketing authorisation (CMA) pathway from 2006 to 2016. While it provided valuable insights for drugs that have gained a CMA, there is little understanding of how these drugs perform in the market. This research aims to provide insights into the health technology assessment (HTA) outcomes for the CMA products at initial assessment and subsequent re-evaluation. METHODS: EMA report and website were assessed for updates on CMA products between June 2006 and July 2016. Reports from HTA body were analysed to understand the reimbursement decisions. Market-specific pricing websites for the submitted dossiers were subject to understand price levels. RESULTS: In France, almost all CMA products were assessed by HTA within a year after receiving the CMA. Among them, 11 CMA products received ASMR V or IV (no or minor improvement), and 15 CMA products received ASMR III or I (major improvement or more). When re-evaluated once full data was available and the full market authorization (MA) is given, a significant majority of these products were given the same ASMR rating (i.e. confirming the initial HTA decision). Concurrently, the price of the CMA products often did not change significantly after the full data was available and the full MA was given.

CONCLUSIONS: The value of CMA drugs is recognized by HTA body, with over 40% receiving an ASMR of III or higher in France. In addition, the ASMR rates over 40% received an ASMR of III or higher in France. In addition, the ASMR rates given. The significant majority of these products were given the same ASMR rating (i.e. confirming the initial HTA decision). Concurrently, the price of the CMA products often did not change significantly after the full data was available and the full MA was given. The number of RR requests available was retrieved from the documents: ICER, drug costs, budget impact, and other variables.cząsteczkowo St. Petersburg, Russia.

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but the modal publication sequence was SMC followed by NICE. CONCLUSIONS: Submissions are most often made to NICE but SMC are usually first to publish recommendations. This is likely due to the shorter timelines of the SMC process compared with NICE. Sequencing of submissions to NICE were variable, which may be due to international reference pricing strategy, or due to limited manufacturer resource since some companies are structured with one team covering the UK and Ireland. AVMMSG completed few HTAs owing to the applicability of NICE decisions to England and Wales.

PHP156 A TREND TOWARDS INCREASED USE OF PATIENT ACCESS SCALES (PAS) TO GAIN UK REIMBURSEMENT

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OBJECTIVES: The UK is a free-pricing country, meaning manufacturers can set a list price for a drug to be clinically evaluated by the local NHS. This market, with international reference pricing, however, to gain reimbursement in the NHS, manufacturers may have to offer confidential discounts. Our objectives are to assess whether PAS in National Institute for Health and Care Excellence (NICE) and Scottish Medicines Consortium (SMC) appraisals has increased since 2014 and if inclusion influences the outcome. METHODS: All submissions to NICE and SMC between January 2015 and June 2017 were reviewed. We hypothesised that the use of PAS is increasing and that the inclusion of PAS has an impact on recommendation rates, which was tested using one-tailed and two-tailed tests, respectively. RESULTS: The proportion of appraisals with PAS significantly increased between 2015 and 2016 (p=0.0031) and between 2016 and 2017 (p=0.0026). So far in 2017, 100% of NICE appraisals and 62% of SMC appraisals have included PAS. The proportion of appraisals with PAS gaining positive recommendations has remained consistently above 90% for NICE and has insignificantly increased from 74% to 87% for SMC. There is no significant difference in recommendation rates between appraisals with PAS and without PAS for NICE (92% versus 82% respectively, p=0.08) or SMC (77% versus 87% respectively, p=0.07). CONCLUSIONS: Despite the increasing trend in PAS observations, the significant increase in PAS associated with positive recommendations from NICE and SMC. The inclusion of PAS is unlikely to be independently predictive of outcome because the product may be cost-effective at list price. PAS enable companies to maintain high published prices whilst providing value for money to the NHS. Conversely, in their recent Council conclusions, EU health ministers have expressed the desire for pricing transparency, whereby companies will be encouraged to voluntarily share information to enhance affordability across the EU.

PHP157 CENTRALIZATION AND COMPLEXITY OF DRUG MARKET ACCESS PROCESS ACROSS ITALIAN REGIONS

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OBJECTIVES: In Italy, the National Healthcare Service is based on three different levels (National, Regional, Local) resulting in a decentralized and fragmented market access process. The national access is assured by AIFA, but Regions are autonomous in establishing the access within their areas. The aim of this research is to map the presence of formularies (Regional, Wide Area, Local) and assess the complexity and presence of formularies on the centralization level as the number of evaluation steps needed for the inclusion of a new drug on the formulary and the area of influence of the formulary itself. The presence of formularies (Regional, Wide Area, Local) and assess the complexity and the area of influence of the formulary itself. The presence of formularies can facilitate the drug access because it binds local level to the presentation of working adults. These indices are calculated based on the number of formularies (Regional, Wide Area, Local) and assess the complexity and the area of influence of the formulary itself. The presence of formularies can facilitate the drug access because it binds local level to the presentation of working adults. These indices are calculated based on the number of formularies.
RASCh MEASUREMENT ANALYSIS OF THE LOWER EXTREMITY FUNCTIONAL SCALE FOR FOOT AND ANKLE PATIENTS

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OBJECTIVE: Lower Extremity Functional Scale (LEFS) is a widely used 20-item patient-reported outcome instrument with five response categories. The purpose of this study was to investigate the measurement properties of the Finnish version of the LEFS among foot and ankle patients and refine the scale to measure more accurately what matters to the patient. METHODS: We refined the scale from an earlier cross-sectional validation study of the Finnish version of the LEFS. Altogether 185 patients who had undergone foot and ankle surgery for various reasons were included. We used item response theory measurement methods (polytomous Rasch model), validity, model and individual item fit, and reliability. RESULTS: Misfit of thresholds was noted in 13 of the 20 original LEFS items and thus scale unidimensionality was not supported. After collapsing the response categories 1 (“Quite a bit of difficulty”) and 2 (“Moderate difficulty”) together, two items (item 10 “Getting into or out of a car” and item 11 “Walking 2 blocks”) showed threshold misfit. As unidimensionality was not supported by deleting items 10 and 11, three more items were omitted. This new 15-item scale with four response categories supported unidimensionality (proportion of significant t-tests, 1.4%). All items had ordered thresholds and good item fit (fit residuals inside -2.5 and 2.5). Reliability of the revised scale was high as the Person Separation Index and Cronbach’s alpha were 0.85 and 0.95, respectively. Validity was supported by cross-validation studies in which the new 15-item LEFS showed a unidimensional construct. The refined LEFS seems to be more valid than the original 20-item LEFS in assessing foot and ankle function. This scale should be further tested for its reliability, validity and responsiveness.

A SYSTEMATIC LITERATURE REVIEW OF THE MEASUREMENT PROPERTIES OF GENERAL UTILITY INSTRUMENTS IN EAST AND SOUTHEAST ASIA

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OBJECTIVES: The aim of this systematic literature review was to summarize the measurement properties of general utility instruments in East and Southeast Asian populations. METHODS: Medline, Embase, Psycinfo, Web of Science and the Cochrane Library were searched for original research that met the following criteria: 1) original research articles or brief communication/reports; 2) use of one of the following utility measures: EQ-5D, EQ-6D, HUI3, HUI2, HUI1, EQ-VAS, EQ-TTO, QWB, 15D and/or AQoL, and 4) assessment of validity, reliability, sensitivity, and/or measurement equivalence of one or more of the utility instruments in the study. The database search was conducted at October 2016. RESULTS: A total of 9298 records were identified through searching of the five databases. After title/abstract selection and full-text assessment, sixty-four studies were included for the final review. Of which the most commonly assessed instrument was EQ-SD (n = 63), followed by SF-6D (n = 13), HUI3 (n = 3), HUI2 (n = 2) and QWB (n = 1). Construct validity (n = 48) and test-retest reliability (n = 25) were the most widely examined measurement properties in the studies. Generally, the instruments showed validity in 75% of the studies, reliability in 67.5%, and responsiveness in 76.9% of the studies. EQ-5D was shown to have poor agreement with SF-6D (n = 4) but good agreement with QWB-S (n = 1). The majority of the studies were from Singapore (34, 34.4%) or China (including Hong Kong) (26.6%). There was none from Indonesia or the Philippines. CONCLUSIONS: EQ-SD and SF-6D are the most psychometrically validated general utility instruments in East and Southeast Asia. This review may provide a useful guide for users of utility instruments as to which instrument(s) to use in Asian populations.

EVALUATION OF QOL IN PATIENTS WITH PSORIASIS: A SYSTEMATIC REVIEW

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OBJECTIVES: This study investigated the ability to conduct a prospective cohort study in patients with psoriasis. METHODS: We used a prospective cohort study in patients with chronic plaque psoriasis. A total of 277 patients (mean age 48.4 [standard deviation 13.1] years; 48% male, mean age 61.2 [12.9], 62.1% female), and 200 Ps (mean age 61.3 [13.2], 50.0% female) patients were analyzed. Percentage of matched patient-patient disease severity ratings ranged from 73.5% to 79.5% in HS, 61.0% to 80.3% in RA, and 57.8 to 78.0% in Ps, and the level of agreement ranged from 0.69 to 0.71, 0.61 to 0.79, and 0.43 to 0.75 for categorical variables (kappa coefficients (κw) for categorical variables) to assess the level of patient-clinician agreement within each disease. These analyses were repeated among patient demographic subgroups (i.e., sex, race, level of education). RESULTS: Data from 190 HS (n = 95, age ≥71 years; 13.1% female, mean age 61.2 [12.9], 62.1% female), and 200 Ps (mean age 61.3 [13.2], 50.0% female) patients were analyzed. Percentage of matched patient-patient disease severity ratings ranged from 73.5% to 79.5% in HS, 61.0% to 80.3% in RA, and 57.8 to 78.0% in Ps, and the level of agreement ranged from 0.69 to 0.71.
in HS, RA, and Ps, respectively. Lower agreement levels were found in the follow-
ing demographic subgroups: females (HS), non-Caucasian (HS), and patients with lower education levels (HS, RA, Ps). CONCLUSIONS: Overall, clinicians and patients report high levels of agreement, demonstrating some level of consistency in disease rating across the three researched diseases. Less agreement in demographic sub-
populations indicates that race, and education are potential factors in patient-reported severity of disease.

**PHP168**

**PREDICTORS OF ACTIVITY AND PARTICIPATION IN PEOPLE WITH MOTOR NEURONE DISEASE, MULTIPLE SCLEROSIS AND PARKINSON’S DISEASE**

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OBJECTIVES: To identify predictors of activity and participation in people with motor neurone disease (MND), multiple sclerosis (MS) and Parkinson’s disease (PD).

METHOds: An internet-based observational study. Descriptive data and Medical Outcomes Study 36-Item Short Form Survey (MOS SF-36) were administered by postal survey to 386 people with a confirmed diagnosis of MND, MS or PD. Recruitment of participants was undertaken via their relevant support organisation in the United Kingdom. Data analyses focused on stepwise regression analyses in order to identify predictors of activity and participation in the three conditions assessed.

RESULTS: Three hundred and thirty-four participants completed the survey, a response rate of 86.5%. The mean age was 60.06 years, the mean age at diagnosis 52.82 years and the mean disease duration 7.31 years. The sample comprised 162 males and 172 females. Regression analyses identified multiple predictors of activity and participation according to Ox-PAQ domain and social consequences of neurological illness are of greatest relevance to people with Parkinson’s disease.

CONCLUSIONS: The findings could be used to guide healthcare provision and help healthcare practitioners with the care of patients with motor neurone disease, multiple sclerosis and Parkinson’s disease.

**PHP169**

**PARENT-REPORTED OUTCOMES IN LABELS AND PACKAGE LEAFLETS OF DRUGS APPROVED BY THE EUROPEAN MEDICINES AGENCY FROM 2007 TO 2017**

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OBJECTIVES: The paediatric perspective is becoming increasingly important to pre-
scribing decision-making. Both the European Medicines Agency (EMA) and the US Food and Drug Administration (FDA) have published guidance on the use and inclusion of patient-reported outcome (PRO) data in product labelling. The objective of this study was to search for relevant articles based on pre-defined inclusion criteria. Two reviewers independently assessed eligibility.

RESULTS: A total of 33 studies were included in this analysis. Overall, clinicians and patients use between those with and without private health insurance with reference to the Hong Kong ethic. Observed differences in healthcare use related to insurance status in this context likely reflect differences in access.

**PHP172**

**EVALUATION OF WEARABLE TECHNOLOGY USE IN CLINICIAN OUTCOMES ASSESSMENT STUDIES**

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OBJECTIVES: Alongside the increased use of electronic patient-reported outcomes (ePROs) in trials, the modalities utilized by ePROs have become progressively more varied. Wearable technology has seen rapid consumer adoption and has started to be used in the collection of health data. The aim of this research is to evaluate the use of wearables in clinical outcome assessment (COA) studies.

METHOds: A literature search was conducted to find published work reporting the use of wearables.

RESULTS: We found 26 studies that reported the use of wearables in COA studies. Three categories were identified: 1) Data security and privacy, 2) Regulatory acceptance, 3) Different modes of input, algorithms improved and standardized, security concerns addressed and costs brought down, this technology may become increasingly useful in the future.

**PHP173**

**RELIABILITY TESTING OF THE FINNISH VERSION OF THE NON-TECHNICAL SKILLS SCALE FOR TRAUMA (T-NOTECHS)**

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OBJECTIVES: Various studies have interpreted observed differences in healthcare use between those who do and without private health insurance with reference to the different access insurance typically affords. In principle, however, it is possible that individuals with insurance attach higher values to health and this explains different propensities both to acquire insurance and to utilise services. The collection of health state preferences across groups differentiated by insurance status is expected to yield important insights into the difference in values across insurance status.

METHOds: Using the EuroQol Valuation Technology (EQ-VT), EQ-5D-5L valuation tasks were administered to a sample of 1160 residents of the Republic of Ireland in 2015/16. Each respondent provided 10 time-trade-off and 7 discrete choice valuation tasks for randomly assigned health states. Censored panel regression, condi-
tional logit and hybrid analyses were used to estimate the relationship between health states and the values assigned to these. Private insurance was entered among covariates as a binary variable and in separate analyses the role of insurance was examined when the sample was partitioned by insurance status.

RESULTS: A hybrid model produced an Irish value set with coefficients showing a reduction in utility as health deteriorates. Among domains, anxiety/depression was weighted more heavily than other domains, the coefficients for mobility, self-
care, usual activities, pain/discomfort and anxiety/depression at the most extreme levels were 0.29, 0.18, 0.51, 0.09, 0.24, 0.89 respectively. Insufficient data as a covariate were not there any material differences in weights between groups differentiated by insurance within or across domains when the sample was parti-
tioned.

CONCLUSIONS: There are no material differences in the value attached to health states with and without private health insurance in the Republic of Ireland. Observed differences in healthcare use related to insurance status in this context likely reflect differences in access.
Hypertension (HK) is associated with increased risk of mortality. Renin-angiotensin-aldosterone system inhibitors (RAAS) can reduce mortality risk and slow disease progression in heart failure (HF) and chronic kidney disease (CKD); however, their use may be limited by their potential to cause HK. This study aimed to quantify the relationship between elevated serum potassium (K+) levels and risk of mortality and RAAS discontinuation in HF and CKD.

Methods: The study utilized real-world UK data, with the strong association between elevated K+ levels and increased incidence of RAAS discontinuation and mortality. The risk outputs from this study are fit for use within long-term cost-effectiveness models assessing the benefits of effective K+ management in CKD and HF.

Conclusions: Discontinuing RAAS was associated with increased mortality risk: 0.263, 0.269, and 0.674 (both genders) in HF, for K+ levels of 4.5, 5.5 and 6.5 mEq/L, respectively. In CKD, the equivalent mortality rates for K+ levels of 4.5, 5.5 and 6.5 mEq/L were 0.326, 0.419, and 0.652, 0.701, 1.055 (0.508, 0.546, and 0.821) in HF, for K+ levels of 4.5, 5.5 and 6.5 mEq/L, respectively.

For K+ levels of 4.5, 5.5 and 6.5 mEq/L, respectively; equivalent mortality rates for CKD were 0.326, 0.419, and 0.652 (0.508, 0.546, and 0.821) in HF, for K+ levels of 4.5, 5.5 and 6.5 mEq/L, respectively.

Poisson regression was used to predict the incidence of all-cause mortality and RAAS discontinuation. Five-year event rates were estimated across a range of K+ levels, adjusting for demographics, comorbidities and concomitant medication. Results were stratified by sex and age, and 30% of patients had a history of heart failure. For male patients, the incidence of all-cause mortality increased from 0.05% (95% CI: 0.00-0.09) at K+ levels of 4.5 mEq/L to 0.11% (95% CI: 0.06-0.16) at K+ levels of 6.5 mEq/L.

The study used a hybrid model incorporating Markovian and non-Markovian components to assess the impact of RAAS discontinuation on mortality. The hybrid model was estimated in Bayesian setting, with non-informative priors. All the flagged interviews were removed. The final model was validated in a separate data set to test the goodness-of-fit of the model.

The study compared the estimated increase in mortality rates with the observed increase in real-world data. The hybrid model was found to be a better fit compared to the non-hybrid model, with a lower root mean squared error (RMSE) and higher coefficient of determination (R²).

Conclusions: Utilising real-world UK data, this evaluation of the impact of clinical risk factors on mortality risk in patients with CKD or HK serves as the structural framework for a broader tool to enhance the assessment of risk of outcomes in patients susceptible to HK.

PHP177

The First EQ-SD-5L Value Set in Central and Eastern Europe: A682

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Objectives: There is no EQ-SD-5L value set for any central and eastern European country. Our objective was to derive a tariff for the EQ-SD-5L in Poland.

Methods: Quota sampling was used to achieve a representative sample of the Polish population with regard to age, sex, geographical region, and the size of locality. The sample size was calculated following the EQ-VT protocol (v2.0). During the face-to-face interviews, professional interviewers performed computer-assisted face-to-face interviews between June and October 2016. Each respondent valued ten health states using composite time trade-off (c-TTO) method. Results were compared with EQ-5D-3L and EQ-5D-5L tariffs using vector alignment technique (VAT).

Results: The EQ-SD-5L utility values were compared with EQ-5D-3L and EQ-5D-5L tariffs. The EQ-SD-5L tariffs were found to be comparable with the EQ-5D-3L and EQ-5D-5L tariffs. The EQ-SD-5L tariffs were found to be comparable with the EQ-5D-3L and EQ-5D-5L tariffs.

Conclusions: The EQ-SD-5L value set is available and should be used in health technology assessment in Poland. It may be considered as a second best choice in other CEE countries, lacking a national or directly measured value set. The EQ-SD-5L value set can be applied in reimbursement decisions in Poland and other CEE countries.
OBJECTIVES: It aims to examine two proxy versions of EQ-5D-5L in Japanese for their appropriateness. METHODS: We surveyed various patient groups with the use of EQ-5D-5L in Japanese version (Self-response version) and two proxy versions. In Proxy 1, a proxy will be asked how he/she would make an evaluation when evaluating a health condition for a subject. In Proxy 2, a proxy will be asked how it should be determined when a subject can communicate his/her own health condition. A proxy version evaluated an occupational therapist in charge. For the statistical processing, reliability and validity were calculated with Cronbach’s α coefficient and Pearson’s correlation coefficient respectively through using STATA14.0. RESULTS: Total 251 patients became the subjects. The breakdown of disorders was 101 patients for cardiac disorder, 75 patients for respiratory disorder, 41 patients for cerebral tumor, and 34 patients for cerebral myelopathy. 159 patients were female (63.3%). The mean (SD) score in knowledge part was 3.65 (1.46) points out of 6 and the mean (SD) score in confidence part was 3.4 (1.23) points out of 5. There was a statistically significant difference in the mean (SD) score in the knowledge part between Proxy 1 and Proxy 2 (p < 0.001). The mean (SD) score in the confidence part between Proxy 1 and Proxy 2 (p < 0.001). The correlation coefficient was 0.867 for Self-response/Proxy 1 and 0.912 for Self-response/Proxy 2. CONCLUSIONS: We found that 2 proxy versions were valid and reliable for two proxy versions of EQ-5D-5L in Japanese. It was concerned that Proxy 2 may possibly estimate a QOL to be lower and the reliability would become less depending on disorder. Thus, it is required to give careful attention to those results when using Proxy versions.

PH180
ALLOWING RESPONDENTS TO SKIP ITEMS DURING ELECTRONIC COLLECTION OF PATIENT-REPORTED OUTCOME (PRO) DATA: DOES IT MATTER?
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OBJECTIVES: The electronic collection of patient-reported outcome (PRO) data in clinical trials and pre-approval submissions is becoming increasingly common. Missing data due to respondents being asked to respond to all items in order to complete the questionnaire. However, implementation of this data entry rule can have unintended consequences. The purpose of this report is to share considerations around requiring subjects to respond to all items, or to allow skipping of questions, items or scales/scales/items in three therapeutic areas and ePRO modes. METHODS: Three quantitative pilot studies conducted by the PRO Consortium allowed participants to skip items on the draft questionnaires, one of three scenarios described by O’Donohoe et al. (2015) in three considerations for requiring completion. Use of an “active skip” ensured that participants indicated they were choosing to skip an item, and that it was not missed accidentally. Data on skipped items were analysed from the Non-Small Cell Lung Cancer Assessment Questionnaire (NSCLC-SAQ) on a tablet device, the Symptoms of Major Depressive Disorder Scale (SMSDS) on a web-based system, and the Asthma Daily Symptom Diary (ADSD) on a handheld device. RESULTS: Diverse samples were recruited for the NSCLC-SAQ (N=152), SMSDS (Wave 1-315, Wave 2-207), and ADSD (N=219) studies. No items were skipped on the NSCLC-SAQ, while rates of item-level skipping ranged from 0.09% to 2% of possible completions on the SMSDS and ADSD, respectively. Missing data appeared to be at random and did not indicate problems with the items skipped. CONCLUSIONS: Requiring completion of items may reduce missing data but can result in questionable data. Careful implementation of skipping rules and strategies and use of item-level skipping questionnaires and appropriate concepts for the context of use may reduce respondents’ desire to skip items when allowed to do so, as evidenced by the low rates of missing item-level data seen in three PRO Consortium studies.

PH181
KNOWLEDGE AND CONFIDENCE OF HEALTHCARE PROVIDERS WORKING AT HOSPITALS ABOUT APPROPRIATE PRESCRIBING FOR GERIATRICS
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OBJECTIVES: To assess the knowledge of health care providers (HCPs) about inappropriate prescribing (IP) in geriatrics, and their confidence in prescribing for this population. METHODS: Six clinical vignettes were developed based on 2015 Beers criteria and the STOPP/START criteria version 2 to assess the knowledge. The confidence was investigated by asking the HCPs about their agreement on the following statement “I have confidence in my ability to recommend appropriate medications for the older patients”. The scale was validated by expert panel, piloted on 34 HCPs and then distributed to 123 physicians and clinical pharmacists working in general medical wards of two tertiary hospitals in Malaysia. RESULTS: The scale content validity index value of 0.95 and the Cronbach’s Alpha value of 0.717 indicate good content validity and reliability, respectively. Of the 82 HCPs who completed the questionnaire, 35% were clinical pharmacists, 9.8% had ever undergone a training in geriatric medicine, and 70.8% stated that about 25% of their patients are geriatric pharmacotherapy is needed to boost HCP’s knowledge and confidence in prescribing for older patients.

PH182
THE EFFECT OF CHRONIC DISEASES, FINANCIAL HARDSHIP AND PERSONALITY TYPES IN PATIENT’S MEDICATION ADHERENCE
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OBJECTIVES: Medication adherence has been shown to be associated with the nature of the prescribed treatment and characteristics of the prescribed treatment. Non-adherence typically ranges between 30–50% of all patients. In addition, patients’ beliefs about health and illness and their behavioral expressions of their personality types may be important contributors to medication adherence. The objective of this study was to examine the association between disease type, financial hardship and four personality temperaments (Traditionalists, Experience, Idealists, Conceptualizers) with self-reported medication adherence. METHODS: Data from the National Consumer Health Interview Survey of Experience and Pharmacists’ Roles, via an on-line, self-administered survey coordinated by Qualtrics Panels in the United States of America, between April 28, 2015, and June 22, 2015. Data were analyzed using IBM/SPSS version 24.0 software. Logistic regression analysis and descriptive statistics were used. RESULTS: Out of 26,173 responses, 12,195 were taking at least one prescription medication and were not a licensed health professional, making them eligible for this study. Of these, the highest proportion of non-adherence among those without financial hardship was shown in breathing problems disease (37%), and least was in cancer (19%). Among those with financial hardship, non-adherence increased significantly (listed from the highest increase to lowest: 41% for cancer, 40% for heart disease, 48% for diabetes, 45% for arthritis, 50% for depression, and 44% for stroke). Of the four personality types, Traditionalists had the highest rate of non-adherence and Traditionalists were the lowest in all disease types regardless of financial hardship. Logistic regression showed that diabetes, financial hardship, and personality type all affected the likelihood of non-adherence. CONCLUSIONS: In addition to acknowledging disease and treatment characteristics, financial hardship and personality type are important considerations for improving adherence to medications.

PH183
WHY DO PEOPLE PARTICIPATE IN HEALTH-RELATED PREFERENCE STUDIES? A DISCRETE-CHOICE EXPERIMENT
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OBJECTIVES: Patient and citizen engagement is increasing in health-related preference studies and public involvement in surveys about health to promote community centeredness. Ethical standards govern how one might interact with respondents, but there is a paucity of research asking what potential respondents want out of this type of research. We sought to describe motivations of potential respondents to participate in a survey about health. METHODS: Respondents from a national panel completed a discrete-choice experiment comparing pairs of potential studies respondents could participate in at a local hospital. Studies were defined across six attributes (validity, relevance, bias, burden, time, and reimbursement) with three possible levels each. A D-efficient design resulted in three blocks of 12 tasks. A choice model was estimated using a continuous coded mixed logit and latent class analysis (LCA). After completing a choice set, respondents were asked which motivating factors they used to justify their choices from pre-defined list of factors that were identified through community engagement. RESULTS: 623 people participated in the survey. Participants valued validity (OR = 2.8), relevance (OR = 1.8), and time (OR = 1.7) the most. A 2-class LCA confirmed that the majority of participants (76%) valued quality indicators, but 24% of respondents strongly valued incentives such as increasing remuneration (OR = 3.4) or decreasing time (OR = 3.9). While both generic and familiar motivations, the quality-focused effect was more likely to be motivated by “measuring real preference” (p < 0.001) and “benefits to society” (p = 0.009). CONCLUSIONS: Given the increase in studies focused on patient and community centeredness, the paucity of preference-based research focused on what patients and citizens want out of research is surprising. Understanding the motivations of respondents is not only important in designing future studies, but also in interpreting the results of existing studies.

PH184
BREAKFAST CONSUMPTION AND ASSOCIATED FACTORS AMONG STUDENTS IN OLABISI ONABANJO UNIVERSITY, OGUN STATE, NIGERIA
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OBJECTIVES: This study therefore assessed the pattern of breakfast consumption and associated factors in undergraduate students and its associated factors. METHODS: A cross-sectional study was carried out among 302 students of allied health sciences in Olabisi Onabanjo University, Sagamu, Ogun State, selected via multi-stage sampling. Data was collected with the aid of a semi-structured, self-administered questionnaire and analyzed using SPSS 2.0. Relevant descriptive and inferential statistics were calculated. Participation was fully voluntary. RESULTS: The mean age of respondents was 20±2 years, 73.5% of the respondents had a low Individual Dietary Diversity Score (IDDS). Only 32.5% of the respondents consumed breakfast on a daily basis while 67.5% skipped breakfast. About 4% of the total respondents ate breakfast weekly. Only 32.5% of the respondents consumed breakfast on a daily basis while 67.5% skipped breakfast. About 4% of the total respondents ate breakfast weekly. Majority (67.9%) of the individuals had a low Individual Dietary Diversity Score (IDDS). There was a significant relationship between breakfast consumption and academic performance of the students (p=0.000) as well as breakfast consumption and eating outside the home (p=0.004). Out of the breakfast skippers in this study (67.5%) majority of them were skipping breakfast due to financial constraints. CONCLUSIONS: Majority of the respondents had no knowledge about the importance of breakfast consumption. The pattern of breakfast consumption of the respondents was irregular and was majorly influenced by time constraints,
financial constraints and fasting purposes. Keywords: Breakfast, undergraduates, associated factors.

PHQ185
THE ASSOCIATION BETWEEN MULTIMORBIDITY, SOCIOECONOMIC FACTORS, AND RISK OF ECONOMICALLY RELATED EXCESS HEALTHCARE USE - RESULTS FROM THE 2014 NATIONAL HEALTH INTERVIEW SURVEY
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OBJECTIVES: In a context of increasing aging of the population and rising number of chronic diseases, it is crucial to better understand multimorbidity and its impact. We measured the association between multimorbidity and socioeconomic factors, self-reported health status, and functional impact. Additionally, we measured the excess healthcare use (HCRU) related to multimorbidity.
METHODS: Our sample included all people aged above 15 years old from mainland Portugal (7,944 men and 7,960 women) who participated in the 2014 Portuguese National Health Interview Survey, conducted in 2014. We considered the following chronic conditions: hypertension, diabetes, coronary disease, stroke or myocardial infarction in the previous year, arthritis, chronic back or neck pain, chronic obstructive pulmonary disease, chronic lung disease, liver cirrhosis, and depression. Multimorbidity was measured by the presence of two or more of these self-reported conditions. Linear/logistic regression models were used to test the association between number of chronic diseases/multimorbidity and relevant factors.
RESULTS: Overall, 42% of participants reported multimorbidity. The likelihood of having multimorbidity increased with age (OR 1.30, 95% CI: 1.27-1.33) and female gender (OR 1.90, 95% CI: 1.69-2.14). The number of chronic conditions and multimorbidity were associated with lower educational level, lower income, self-rated health status, lower functional capacity. In addition, participants with multimorbidity reported higher HCRU, namely general practice appointments (86.9% vs. 66.5%; p < 0.001), specialist appointments (58.6% vs. 40.5%; p < 0.001), and hospital admissions (6.1% vs. 3.1%; p < 0.001) in the previous 12 months, compared with those without multimorbidity. We observed a 23% increased risk of hospitalization for multimorbidity (OR 0.78, 95% CI: 0.61-1.00). Multimorbidity is associated with key socioeconomic factors, worse health status and reduced functional capacity. It also seems to generate greater healthcare consumption, particularly hospitalizations. Given the expected rise of this condition, health systems should prioritize patients with multimorbidity as well as those at higher risk, given the identified factors.

PHQ186
THE COMPARISON AMONG DIFFERENT COUNTRIES’ EQ-5D-3L VALUES SETS APPLIED IN CHINESE GENERAL POPULATION
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OBJECTIVES: EQ-5D-3L value sets have been estimated in several countries: China, Korea, Canada etc. The value sets can be used to generate utility in both general population and disease population. The object of this work is to study the difference of health utilities calculated by China and six other countries’ EQ-5D-3L value sets (Dutch, Spain, England, Uruguay, Korea and Canada) which are applied in Chinese general population, and to explore the cross-cultural adaptation of four different EQ-5D-3L value sets. METHODS: In this study, the difference of health utilities among 7 countries’ EQ-5D-3L value sets applied in Chinese general population was analyzed. RESULTS: Compared with the 317 patients who were face-to-face interviewed in Nanjing, China, 241 have completed the EQ-5D-3L questionnaires. The mean health utility calculated by China value set is the second highest (0.963), while the highest and lowest is Uruguay (0.983) and Korea (0.935), respectively. In terms of the difference in mean utility regarding sex and samples with or without chronic diseases, conclusions are consistent. The variation of utility is biggest in Dutch (0.505-1), while Uruguay is the smallest one (0.800-1). When it comes to China (0.667-1), it just has a larger utility range than Dutch and Canada (0.620-1). CONCLUSIONS: The estimation of EQ-5D-3L value sets are based on local people’s health preference and affected by culture, social environment, as well as economic development. China value set of EQ-5D-3L is available now; it’s more appropriate to apply it in Chinese general population.

PHQ187
PREFERENCES OF THE GENERAL PUBLIC FOR REIMBURSEMENT CRITERIA FOR EXPENSIVE DRUGS: A MULTI CRITERIA DECISION ANALYSIS FOR RITUXIMAB AND BEVACIZUMAB
van Steen C1, Cakar E1, Treur M2, Verbeek NA1, Franken M3
1Erasmus University Rotterdam, Rotterdam, The Netherlands, 2Pharminter, Rotterdam, The Netherlands, 3Erasmus University Rotterdam, Rotterdam, The Netherlands
OBJECTIVES: Policy makers increasingly have to make complex reimbursement decisions involving making trade-offs between multiple potentially conflicting criteria. This study aims to assess the general public’s preferences for reimbursement criteria for two expensive drugs by means of multi criteria decision analysis (MCDA) and patient group efforts addressing standards, quality and proper applicability of preference studies, there is limited understanding of the range of methods to assess preferences and the trade-offs between them. To develop evidence-based recommendations to guide different stakeholders on how and when patient preference data should be used, we developed a comprehensive overview of patient preference and elicitation methods. METHODS: We used a three-step approach to identify existing preference evaluation (qualitative) and elicitation (quantitative) methods: 1) listing methods identified in previous preference method reviews, 2) conducting a systematic literature review on 4,572 unique papers

PHQ188
COMPARATIVE EFFECTIVENESS AND SAFETY OF MEDICAL ABORTION FOR SECOND-TRIMESTER PREGNANCY TERMINATION: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS
Eidsness S1, Suan-ek F1, Khussawangi C1, Rattanangkul T1, Netthip J1, Hongamsimit S1, Kengkla K2
1University of Phayao, Phayao, Thailand, 2University of Phayao, Phayao, Thailand
OBJECTIVES: Unsafe abortion is one of major causes of illness and death of pregnancy. Medications for second-trimester abortion has been investigated, but the optimal regimen had been not specifically compared. METHODS: We performed a systematic review and network meta-analysis by including randomized controlled trials (RCTs). The following databases were searched: Medline (PUBMED), EMBASE, Cochrane Central Register of Control Trials, CINAHL (EBSCO), Web of science, WHO trial registry and ClinicalTrials.gov, up to Dec 31, 2015. Studies of medical abortions to second trimester pregnancy were included. The primary outcome was success abortion within 24 hours. This study was registered with PROSPERO (CRD420150126888). RESULTS: We identified 1136 studies from searching, 56 randomized controlled trials were included. Regarding to the second-trimester pregnancy, 7637 patients, which had social or medical indication to terminate pregnancy were included in this analysis. Form network meta-analysis, that oral mifepristone then buccal misoprostol found the highest safety (RR 0.65, 95% CI: 0.59-0.72), followed by vaginal misoprostol (RR 0.91, 95% CI: 0.85-0.97), whereas oral mifepristone then buccal misoprostol 400 mcg every 6 hours had the highest efficacy (RR 0.76, 95% CI: 0.67-0.85). CONCLUSIONS: Chronic conditions were found to contribute to HRQOL loss in older Chinese population. The utility and utility decrement estimated can be used for quality-adjusted life-year calculation.

PHQ189
EVALUATING HEALTH IMPACT OF COMMON CHRONIC CONDITIONS ON QUALITY OF LIFE OF EQ-5D-3L IN OLDER CHINESE
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2China Medical University, Beijing, China
OBJECTIVES: This study aimed to estimate the loss of health-related quality of life (HRQOL) associated with common chronic conditions in older Chinese population. METHODS: Weittang Geriatric Diseases Study is a community-based health survey on 5,557 Chinese aged 60 years or older. The study population was measured with EQ-5D-3L for HRQOL assessment. We also assessed the coexisting chronic conditions of depression, cognitive dysfunction, stroke, heart disease, diabetes, hyper-tension and visual impairment. The sample included the 314 participants who were face-to-face interviewed in Nanjing, China, 241 have completed the EQ-5D-3L questionnaires. The mean health utility calculated by China value set is the second highest (0.963), while the highest and lowest is Uruguay (0.983) and Korea (0.935), respectively. In terms of the difference in mean utility regarding sex and samples with or without chronic diseases, conclusions are consistent. The variation of utility is biggest in Dutch (0.505-1), while Uruguay is the smallest one (0.800-1). When it comes to China (0.667-1), it just has a larger utility range than Dutch and Canada (0.620-1). CONCLUSIONS: The estimation of EQ-5D-3L value sets are based on local people’s health preference and affected by culture, social environment, as well as economic development. China value set of EQ-5D-3L is available now; it’s more appropriate to apply it in Chinese general population.

PHQ190
PREFERENCES OF THE GENERAL PUBLIC FOR REIMBURSEMENT CRITERIA FOR EXPENSIVE DRUGS: A MULTI CRITERIA DECISION ANALYSIS FOR RITUXIMAB AND BEVACIZUMAB
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1Erasmus University Rotterdam, Rotterdam, The Netherlands, 2Pharminter, Rotterdam, The Netherlands, 3Erasmus University Rotterdam, Rotterdam, The Netherlands
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identified through multiple scientific databases, using English full-text papers published between January 2016 and January 2017, and 3) having a full text in English. We included 2172 articles, of which 1714 articles met the inclusion criteria (N=14) in the field of health preferences and/or medical decision making to validate the methods found. RESULTS: We identified 32 unique preference methods: 10 exploration and 22 elicitation methods. Consensus was reached among the experts interested to cluster exploration methods in three main groups: ‘Individual technicals’, “Group techniques” and methods that were both “Individual and Group techniques”. Elicitation methods were clustered in four groups: “Discrete Choice Based related techniques”, “Indifference Curves based related techniques”, “Rating related techniques” and “Ranking related techniques”. CONCLUSIONS: This study identified 32 unique methods for exploring and measuring patient preferences, and reached consensus in clustering the methods. This compendium is a resource for researchers in the patient preference field and also serves as the basis to additional studies that appraise the methods and determine which methods are most appropriate for measuring patient preferences in which phase of the medical product lifecycle to support patient-centric decision making.

PHP191 MINIMALLY IMPORTANT DIFFERENCE: EMPIRICAL COMPARISON OF ESTIMATION METHODS USING ORTHOPAEDICS AND OTOLARYNGOLOGY Peterson AC1, Sutherland IM2, Crump RTP1, Liu G1, Januza A1, Wing K1, Penner MJ1, Younger A1
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OBJECTIVES: The concept of minimally important difference (MID) is defined as the smallest change on a patient-reported outcome (PRO) questionnaire that a patient considers meaningful. There is currently little guidance on selecting the appropriate MID method or for interpreting MID results. In addition, studies rarely differentiate between effect-size-based (MIDE) estimates, which can be used for sample size determination, and change-based (MIDC) estimates which can be used for interpreting changes in scores. This study compared MID estimation methods in two PROs to provide empirical evidence on the 1) efficiency of different MID estimation methods, 2) the difference between MIDE and MIDC estimates, and 3) the relative magnitude of MID estimates across different PROs. METHODS: This study was a retrospective analysis of observational data from patients undergoing elective surgery for chronic rhinosinusitis or end-stage ankle arthritis. The PROs investigated in this study were the Philadelphia Obstructive Sleep Apnea Scale (OSAS). The study applied three distribution-based MID methods and three anchor-based MID methods. Bootstrap 95% confidence intervals were used to assess efficiency. RESULTS: 123 patients were included for the SNOT-22 and 138 patients were included for the AOS. MIDC estimates were much smaller in magnitude than MIDE estimates for both the SNOT-22 and AOS. MIDC estimates were similar for both instruments. The mean change method produced the widest confidence intervals for both PROs. CONCLUSIONS: Because it produces unstable and inefficient estimates, the popular mean change method should be discontinued in favor of regression-based methods that use the entire study sample. This study found a two-fold difference between MIDE and MIDC estimates – therefore, studies should provide additional studies that appraise the methods and determine which methods are most appropriate for measuring patient preferences in which phase of the medical product lifecycle to support patient-centric decision making.

PHP192 THE FRENCH COMPASSIONATE PROGRAM “TEMPORARY AUTHORIZATION FOR USE” AND THEREAFTER… HOW CAN IT AFFECT DRUG MARKET ACCESS? PhP192
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OBJECTIVES: “Temporary Authorization for Use” (ATU) is a French compassionate program allowing the use of drugs before their marketing authorization (MA). Only hospital pharmacies are allowed to deliver these drugs, even for outpatient. After the MA, the reimbursement is maintained during the HTA assessment and national agreements on reimbursement and price. This period, so-called “post-ATU” and that has been reframed in 2014, should not exceed 180 days as it sustains a “free pricing window” for pharmaceutical companies. The aim of this study is to assess the economic impact of the post-ATU period from the hospital perspective and to identify the determinants of its duration. METHODS: We included all drugs that have been through the post-ATU process since 2014. We censured data in May 2017. The financial impact was calculated for the 37 public hospitals of Paris (AP-HP); Faculté of pharmacy, Paris Descartes University, Sorbonne University, Paris, France.
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PHP196

DO CHANGING ATTITUDES TO DEATH HAVE IMPLICATIONS FOR NATIONAL TARIFFS FOR HEALTH STATES? RESULTS FROM AN EXAMINATION OF ATTITUDES TO EUTHANASIA IN THE REPUBLIC OF IRELAND


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OBJECTIVES: Many religions teach that life has intrinsic value regardless of the condition in which it is experienced. Those who adhere to such religions may be less likely to assign “worse than dead” values to health states or favour access to services such as euthanasia when quality of life is poor. Quantitative methods may be useful in understanding more precisely the role religious adherence and attitudes to euthanasia may have on the propensity to assign worse than dead values. METHODS: Using the EuroQol Valuation Technology (EQ-VT), EQ-5D-SE valuation tasks were administered to a sample of 153 residents of the Irish Republic in 2016. Data included mean valuations of health states and attitudes towards euthanasia as well as how frequently they attended religious services. Each respondent provided 10 time trade-off valuations for health states drawn at random. Data were analysed using a recursive bivariate probit (RBP) in which endogeneity related to attitudes to euthanasia was identified and addressed in a model examining propensity to assign worse than dead values. RESULTS: 96% of respondents whose religion was identified were Roman Catholic. A Wald test revealed that attitudes to euthanasia were endogenous at p<0.01. RBP results revealed that those who favour access to euthanasia were 30 percentage points (p<0.01) more likely to assign worse than dead values than those who were not. Those who were older were also more likely to exhibit a higher propensity to assign worse than dead values. CONCLUSIONS: Religious factors studied in this study may influence values assigned to health states. These may influence the values assigned to health states. Societies undergoing social change may experience shifts in social norms that impact on values and the distribution of values to health states. This will have implications for value sets and the frequency with which they require revision.

PHP197

A SYSTEMATIC REVIEW TO EVALUATE THE ASSOCIATION BETWEEN MEDICATION ADHERENCE AND PERSONALITY TRAITS

Eilin HK

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OBJECTIVES: Medication adherence is a matter of concern for clinicians, healthcare systems, and payers. We empirically evaluated the association between prescription medication adherence and personality traits. METHODS: PsychINFO®, Embase®, MEDLINE®, and CINAHL were searched from database start to January 2017. Studies assessing impact of personality constructs on medication adherence in patients with chronic conditions (hypertension, heart failure, HIV, diabetes, asthma, dialysis, organ transplant, RA, Alzheimer’s) were included in the review. Reference lists of the selected papers were reconciled by a third independent reviewer. RESULTS: A total of 9800 individual references were identified through database searches. Personality was found to be associated with adherence across 47 included studies. Prospective observational cohort design was employed in 47% of the included studies. Self-report for measuring adherence was used in 63% of the studies. Neuroticism (16 studies), openness to experience (10 studies), hostility (5 studies), and extraversion (4 studies) were the most commonly investigated personality traits associated with non-adherence. Conscientiousness (17 studies), extraversion (13 studies), and agreeableness (12 studies) were the most commonly investigated personality traits associated with adherence. In a random effects logistic regression analysis, neuroticism was associated with medication non-adherence (<80% of prescribed pills), with an increase in log odds of 1.35 for every one unit increase in neuroticism (95% CI: 1.24-1.46). extraversion was associated with medication adherence (≥80% of prescribed pills) with a decrease in log odds of 0.82 for every one unit increase in extraversion (95% CI: 0.6-1.02). Agreeableness was not related to medication adherence. The results of the study should be interpreted with caution due to heterogeneity across the studies including study design, population, personality inventories, and statistical techniques.

PHP198

PATIENT OUTCOMES IN WALES: THE PMOMS, PREMS & EFFECTIVENESS PROGRAMME (PFP)

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OBJECTIVES: The PFP is a national programme supported by Welsh Government, Welsh health boards and the NHS Wales Informatics Service, with the aim of providing an electronic platform for data collection across the country. The programme has been funded via the Welsh Government Efficiency through Technology Fund. Its purpose is to make patient-level data available during clinical consultations, and collated data to be analysed for clinical effectiveness assessments to assist with commissioning. METHODS: Patients are invited to submit PMOMs at baseline and post-treatment. Tools are available for completion in English and Welsh, and are currently collected at home through self-completion via tablet computer. Participants who do not complete these questionnaires are invited to make phone calls to discuss their data. All patients include the EQ5D-3L, co-morbidities, BMI, employment status and work productivity impairment, as well as lifestyle information such as smoking history, alcohol intake and physical activity. Data was collected from October 2014. METHODS: A sample included all patients aged 15 years of age or older, with any diagnosis of cancer. A further 15 condition-specific PROMs and a generic PREMS survey will be available imminently. The platform is currently being piloted in 4 of the 7 health boards in Wales with all consenting responses linked to clinical data. RESULTS: 2,263 generic PROMs have been collected on consenting patients to date. 20% of these were collected within 60 days of hospital discharge. Analysis confirmed that the 72.2% of responding patients who do not meet the NICE guideline exercise had worse health scores than those who do (p<0.01). Furthermore, the constant conditional value of high blood pressure and the 63.7% who were overweight/obese also had worse generic health scores (p<0.01). CONCLUSIONS: Such data analyses will facilitate service improvements while informing patient and clinician decision making as part of the prudent healthcare agenda. The platform has allowed large dataset collection in a small space of time, with the programme continuing to capture datasets for chronic and acute conditions across Wales.

PHP199

LOCAL PRODUCTION POLICIES IN THE TURKISH PHARMACEUTICAL MARKET

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OBJECTIVES: Health care reforms in the last decade have resulted in improved access to health care services and pharmaceuticals in Turkey. As a result of this, several measures were taken to curb the increasing healthcare expenditures. In recent years, the government has been keen on the burden of imported drugs on the Turkish economy and has declared increasing R&D activities and supporting local production as the main objectives of the 10th Development Plan. In this respect, the government has committed to make 60% of the pharmaceutical need in terms of value through local production. Pharmaceutical companies are required to invest for local production of their products. This study aimed at outlining the local production policies in Turkey. METHODS: Data for the study are obtained from the Turkish Pharmaceuticals (TITCK). RESULTS: Local production policies are comprised of five stages. There are different policies for drugs with equivalent groups and without equivalent groups. For drugs with equivalent groups, there will be three stages. Local production policies are first applied to drugs with 50% or more local products in the market. Followed by drugs with more than 10% and less than 10% local products. The fourth stage will be applied to imported drugs and fifth stage will be applied to drugs without an equivalent group. CONCLUSIONS: The first stage of local production policies has been completed where 48 drugs will be delisted from the reimbursement list as of 8 February 2018. The government expects to save $221 million (5.7 billion TRY) in The Ministry for the next five years. In addition, the TITCK’s programmes to promote the local production of drugs are on the agenda of the Ministry.

PHP200

MEASUREMENT OF MULTIMORBIDITY TO PREDICT ALL-CAUSE MORTALITY IN A NATIONWIDE POPULATION, USING THE FRENCH NATIONAL HEALTH INSURANCE DATABASE (SNIFFER)

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OBJECTIVES: Summary health-state measures are essential for risk-adjustment in comparative effectiveness or performance measurement studies and to inform policy-makers. The SNIFFER database provides morbidity information for each beneficiary. The OMS database contains morbidity data for each insured. Among beneficiaries, drugs were conducted by two independent reviewers, and any discrepancies between reviewers were reconciled by a third independent reviewer. RESULTS: A total of 9800 individual references were identified through database searches. Personality was found to be associated with adherence across 47 included studies. Prospective observational cohort design was employed in 47% of the included studies. Self-report for measuring adherence was used in 63% of the studies. Neuroticism (16 studies), openness to experience (10 studies), hostility (5 studies), and extraversion (4 studies) were the most commonly investigated personality traits associated with non-adherence. Conscientiousness (17 studies), extraversion (13 studies), and agreeableness (12 studies) were the most commonly investigated personality traits associated with adherence. In a random effects logistic regression analysis, neuroticism was associated with medication non-adherence (<80% of prescribed pills), with an increase in log odds of 1.35 for every one unit increase in neuroticism (95% CI: 1.24-1.46). extraversion was associated with medication adherence (≥80% of prescribed pills) with a decrease in log odds of 0.82 for every one unit increase in extraversion (95% CI: 0.6-1.02). Agreeableness was not related to medication adherence. The results of the study should be interpreted with caution due to heterogeneity across the studies including study design, population, personality inventories, and statistical techniques.

PHP201

THE PREVALENCE OF CHRONIC HEALTH CONDITIONS AND MULTIMORBIDITY IN THE PORTUGUESE POPULATION – RESULTS FROM THE 2014 NATIONAL HEALTH INTERVIEW SURVEY

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OBJECTIVES: In a context of severe population aging, knowing the prevalence of chronic health conditions is crucial to improve the management of health care needs, as these are the most costly health conditions. We measured the prevalence of self-reported chronic health conditions multimorbidity in the adult Portuguese population. METHODS: The 2014 National Health Interview Survey included a sample of 2,469 people aged 15 years old from mainland Portugal (7,944 men and 10,260 women) who participated in the fifth Portuguese National Health Interview Survey, conducted in 2014. We considered the following chronic conditions: hypertension, diabetes, coronary disease, chronic obstructive pulmonary disease, asthma, allergy, kidney disease, urinary incontinence, liver cirrhosis, and depression. Multimorbidity was measured either by the presence of two or more of these self-reported chronic conditions. RESULTS: Chronic back pain was the most prevalent self-reported condition.
condition (32.9%), followed by hypertension (25.3%), neck pain (24.1%), arthrosis (19.4%), depression (17.8%), and diabetes (15.4%). Alcohol use disorder affected 42% of the population, was higher among women (49.7%), and increased sharply with age (age ≥ 45 yo: 66.1%; age ≥ 65 yo: 78.8%) and decreasing education (high: 24.6%, low: 47.3%, and no education: 81.0%).

CONCLUSIONS: Multimorbidity was commonly observed in the Portuguese population (31.19%), particularly among low-educated people. The co-occurrence of chronic health conditions increased sharply with age. These findings highlight the relevance of the issue, particularly amongst the most vulnerable groups.

PHP202
VARIATION IN OPIOID UTILIZATION BY PHYSICIAN SPECIALTY AND PAYER USING A LINKED CLAIMS-EMR DATABASE
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OBJECTIVES: To describe variation in opioid utilization by provider specialty and payer type.

RESULTS: A total of 176,282 patients met the study inclusion criteria (age ≥ 40; 59.6% female; mean days supply (DS) on the first opioid claim was 14.2 days [SD=16.7]). On average, patients received 4.9 [SD=5.4] opioid claims with total DS of 92.5 [SD=126.9]. Average number of opioid claims and total DS per year was similar among family practitioners (4.8 claims, 88.7 DS) and emergency medicine doctors (4.8 claims, 80.3 DS). Higher number of claims and total DS was seen for patients who saw an oncologist (5.7 claims, 110.9 DS), dermatologist (5.7 claims, 108.3 DS), or primary care specialist (4.7 claims, 102.6 DS), while pain specialists had the highest rates (9.3 claims, 210.7 DS). Pediatricians (3.0 claims, 43.1 DS) and OB/GYN practitioners (3.4 claims, 51.9 DS) had similarly lower opioid utilization. Overall, opioid utilization was slightly higher among Medicare (5.7 claims, 125.2 DS) than other payers. Patients in category 4 (1.5 claims, 86.2 DS) did not have any opioid claims.

CONCLUSIONS: There was substantial variation by provider specialty and payer type on the amount of expected opioid usage. It is important to identify areas of variation that can be improved.
pain/discomfort (PD), anxiety/depression (AD), subjective perception of quality of life (QoL), and information on the parents of the child’s personal family doctor.

The most of parents chosen the vaccine of against chicken pox (49.0%) and the vaccine of encephalitis caused by ticks (49.0%). Additionally, they chosen in 38.3% the vaccine of against rota virus single or multiple multi-choice options.

Objectives: Nowdays, there are different kind of opinions about vaccination all over the world. This essential decision has to be made by parents. In our thesis we are going to investigate parents’ attitude and hesitation in connection with optional vaccination in Hungary. We used the research method, was a cross sectional survey in Hungary. Most of responses were from Pest county, Fejér county, Baranya county and Komárom-Esztergom county. The total numbers of patients included into the study were 206. The questionnaire included a closed type and the socio-demographic questions moreover, it had special questions about vaccines. Parents could give their answers respondents from 1 to 4 Likert-scale, single or multiple multi-choice options.

Results: The most of parents chosen the vaccine of against meningitis (72.3%), after that they chosen in equal numbers for the vaccine of against chicken pox (49.0%) and the vaccine of encephalitis caused by ticks (49.0%). Additionally, they chosen in 38.3% the vaccine of against rotavirus infection.
OBJECTIVES: Measurement of health states QoL is at the base of resource allocation of health care expenditure. Currently, the public evaluates health states in a hypothetical scenario. However, studies confirm there are differences between the assessment of health states by the public and patients. The aim of this paper is to gauge the existence of adaptation based on a survey on amputees and controls, and finding an appropriate adaptation to the methodological issues of measuring QoL in the process of adaptation. METHODS: We test different hypothesis on QoL evaluations done by patients with acquired amputations, and the public. Our methodology consists of OLS estimations for proof of adaptation and Probit for determinants of gaps between specialists and patients and the public evaluations. RESULTS: We observe that patients adapt to health states whereas the public perception does not reflect this phenomenon; in our dataset, each additional month results in an increase of 8.8% in QoL. QoL values were higher by patients individually after 2 years since event adaptation is the main determinant of the gap between patients’ and the public QoL evaluations. We also analyse the dynamics of the QoL evaluations of patients. Our main interest is the evaluations done by amputees on behalf of peers. While patients with shorter duration since event evaluate their own QoL higher than those of peers, the QoL reported converges over time, and thus patients themselves acknowledge adaptation. CONCLUSIONS: This later phenomenon is relevant in moving forward and improving measurement of health state of life. This inference could be easily tested and replicated in patients with different conditions, such as diabetes or urology conditions, where adaptation has already been proven. If patients acknowledge themselves adaptation, their evaluations are more accurate compared to the public.

PHP217

SURVEY OF NURSES’ KNOWLEDGE ABOUT SURGICAL WOUND CARE AND ITS COMPLICATIONS AND THE KNOWLEDGE OF WOUND DRESSINGS

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OBJECTIVES: The rapid and extraordinary advancements in medicine felt the impact in a very short period of time. In many cases due to a very frequent treatment material and wound dressing appeared on the market. Thus we witness a significant improvement in several areas of wound healing. Multicentre studies related to wound care made in the 20th century today. What is the state of the art knowledge behind this today? Our research aims to assess the nurses’ knowledge of the affected departments about management of surgical wounds, complications and phases of wound healing as well as intelligent dressings. METHODS: The quantitative and retrospective study was carried out between 1st of Oct and 30th of December 2016 through non-randomly sampling of experts and self-made questionnaire. Main groups of the questionnaire are about sociodemographic, knowledge of surgical wounds, complications and dressings. and the target group is the registered nurses from ear-nose-throat, traumatology, obstetrics and gynecology and general surgical departments of Kalnzsai Dorottya Hospital in Nagykánya (n=85). Descriptive statistic and t test (p=0.05) was used in moving forward and improving measurements of adaptation.

PHP218

METODOLOGY TO ASSESS PRICING AND REIMBURSEMENT (P&R) POTENTIAL IN CENTRAL AND EUROPEAN (CEE) COUNTRIES

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OBJECTIVES: CEE region is characterized by its wide range of approaches to granting public funding for drugs – from a “no submission and no HTA” approach up to an extensive HTA with systematic review and economic evaluation. The aim is to create and test the methodological approach on assessment of P&R potential in CEE countries. The further goal is to identify countries with the highest reimbursement potential for a particular drug in the region. METHODS: The methodology approach on P&R potential assessment took into account: current management of disease, patient numbers, KOL mapping, patient pathways, guidelines and funding mechanisms, drug pricing and reimbursement processes, timelines, likelihood of achieving an average European list price and opportunities to supply drug on a Named Patient Programs basis. The necessary information was divided into six categories: epidemiology, patient population, disease management, reimbursement, time, analytical cost, cost of adaptation. For each category, a weight reflecting the importance and impact of parameters was assigned. The methodology has been tested on an orphan drug example in 15 CEE countries. RESULTS: The CEE countries basis on the assessment were Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Turkey and Ukraine. The greatest weights were incorporated to probability of public funding, epidemiology, price and time - 24%, 22%, 18% respectively. Cost of adaptation and cost of time effort were assessed as of lower importance: 10% and 6%. Turkey was assessed to have the highest P&R potential for tested drug. Poland and Slovakia were also found as important with attractive achievable price and similar moderate probability of reimbursement. CONCLUSIONS: Despite many differences among countries, using
P&R potential overview method makes it possible to inform on strategic business decisions for which countries to prioritize for launch and for allocation of efforts to obtain public funding.

OBJECTIVES: To show market results of implementing patients oriented access scheme (POAS) method based on balanced risk sharing that allows an efficient profit for inclusion of newly introduced pharmaceuticals into the public package and deals with market failures that unable all players to reach their goals. METHODS: An ongoing analysis of Moli database to examine the influence of the POAS on the inclusion of pharmaceuticals into the public package and number of beneficaries. RESULTS: This method creates an opportunity for cross-national learning constraints of public budget available by promoting the achievement of the goals seems to successfully facilitate patient access to the newest treatment under the PH220 ACCESS GAP TO INNOVATIVE TREATMENTS IN ROMANIA

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Objective: To illustrate how the current drug reimbursement legislation results in preventing access of innovative drugs from the HTA stage due to rigid scorecard criteria and excessive focus on costs. METHODS: A critical appraisal of over 100 HTA reports issued after implementation of the HTA legislation 2014 in Romania and searching for the reasons which lead to unconditional reimbursement or negative reimbursement decision. An analysis of the impact of lack of NICE/IQWIG reports on the coverage with treatment for some oncology areas was performed, and a review of prescription protocols for some oncology areas: lung, breast, colorectal cancer. RESULTS: The current HTA scorecard criteria, according an important number of points to HAS, NICE, IQWIG reports and to direct costs budget impact, resulted in negative HTA decisions for 81 drugs, condition reimbursement decision for 51 and unconditional reimbursement for 45. For many drugs reimbursed in Germany before 2011, the lack of IQWIG report caused negative decisions and for many oncology drugs negative NICE report caused a not reimbursement decision (14 drugs rejected). Also, in several therapeutic areas the most significant agreements were those which allowed Israel to be the one of the first countries which publicly funds the direct-acting antivirals (DAAs) indicated for the treatment of chronic hepatitis C (CHC) drugs. CONCLUSIONS: The method seems to successfully facilitate patient access to the newest treatment under the constraints of public budget available by promoting the achievement of the goals of the various players. This study creates an opportunity for cross-national learning to face the challenge of pharmaceuticals spending.

PHP223 INPATIENT MEDICATION ERRORS AND PHARMACIST INTERVENTION AT MINISTRY OF HEALTH PUBLIC HOSPITAL IN RIYADH, SAUDI ARABIA


Objective: To explore the inpatient medication errors and pharmacist intervention at MOH public Hospital, Riyadh, Saudi Arabia. METHODS: It is a 9-month cross sectional study involving all hospital through pharmacist response and prevents of inpatient medications errors in adults and pediatrics. The hospital medication safety officer with medication safety committee. The medication errors documented in a form comprising patient demographic information, the sources of medication errors, time of errors, type of medication errors, and description of mistakes. The Causes of errors, the recommendation to prevent the errors, and the outcome of medication errors by using National Council for Medicines (NCC) for Medicines Information and Reporting System (MERS) system. The pharmacist prevented 3,089 medication errors occurred within 805 patients. The number of medication errors prevented was (3.8 errors) per each prescription. The majority of patients were in the age of 18-65 (71%). The most errors prevented were near missed (93.3%) followed by (6.2%) errors reached to the patient without any harm. Patient-related errors (50.63%) and prescriber-related errors (46.46%) were the highest type errors of all. The most package error occurred was the packaging container and syringe (9.41%). The highest percentages causes of medication errors were clinical information missing (83.74%) and miscommunication of drug dose (80.9%). The most medications involved in medication errors were Intravenous Paracetamol and enoxaparin sodium which were in the very crucial role in preventing medication errors. In order, to prevents medication misadventures and improve patient outcome, the pharmacists provide the health care team with professional education for medication safety, and establish the intravenous medications guidelines at hospital practice.

PHP224 CONDITIONS AND CONTEXTUAL FACTORS THAT INFLUENCE THE UTILITY AND APPLICATION OF PATIENT PREFERENCE STUDIES: A STUDY COMBINING LITERATURE AND FOCUS GROUPS

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OBJECTIVES: The aim of this study was to identify conditions and contextual factors that influence the utility and application of patient preference studies in decision making by Health Technology Assessment (HTA) bodies, regulators and industry, throughout the life cycle of medical products. In parallel, it was sought to identify the current applications of patient preferences in decision making. METHODS: The study design consisted of a literature review and focus groups. A systematic literature search was conducted in five scientific databases. In addition, 94 publications were included documents of national and international health agencies and patient-centred initiatives. Focus groups were designed to include HTA representatives, regulators, industry representatives, patient representatives, physicians from the United Kingdom, Sweden, Romania and Italy. NVivo was chosen to analyse the results. RESULTS: A total of 742 publications were retrieved and 85 were included. The literature revealed conditions and contextual factors affecting the utility of patient preference studies related to the organization, study design, conduct and use of patient preference studies. In study design, question framing for example was found to be an influencer of the utility of patient preference studies. Evidence was found on the possible applications of patient preferences in decision making, but limited evidence was found on their actual inclusion in decision making.
making. Patient preferences were mostly found to be used to identify outcomes relevant to patients and to weigh outcomes. Results of the focus groups (n=8) will also be presented at the ISPOR congress. CONCLUSIONS: Patient preferences can be incorporated in decision making through different applications. However, many conditions and contextual factors have to be taken into account when designing and conducting a preference study in order to retrieve valuable results that can be used in evaluations.

**PH225**

**OVERVIEW OF INNOVATIVE MEDICINE SECTOR IN TURKEY**

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**OBJECTIVES:** Investors in innovative medicines are prioritized and prompted by Turkish government. Turkish Biotechnology Strategy Document and Action Plan for 2015-2018 have been published. Main challenges and weaknesses are lack of infrastructure, the need for more facilities to support the industry, lack of research funds and a weak regulatory system. The role of regulations on intellectual property rights with the investment and manufacturing goals in long term and transferability of know how to Turkey. aim of this study is to compare Turkey with EU countries in terms of access to innovative medicines. A policy environment report for biotechnology sector in Turkey has been conducted. Marketing authorization of innovative products were compared between TITCK and EMA from 2011 to 2016.**RESULTS:** Regulations on licensing are compatible with the EU regulations. No specific regulations regarding biotech (genetically modified), and innovative medicines in terms of pricing and market access is available for Turkey. General problems faced by originator drugs are also valid for biotechnological and innovative medicines as fixed exchange rate, cost containment, price pressure. 59 innovative medicines have been granted marketing authorization by EMA between 2011 to 2016, while TITCK granted only 17.**CONCLUSIONS:** Depending on the selected system, R&D, development, marketing, and regulatory agencies need to collaborate in order to increase the potential value as an industry tool.

**FK228**

**NAZIYEH HAJI**

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**OBJECTIVE:** To explore the medication safety practice at Ministry of Health (MOH) hospitals during mass gathering (Hajj) 2016 in Saudi Arabia.**METHODS:** It is a 15-days cross-sectional national survey of medication practice at Makkah hospitals during mass gathering Hajj period. The study modified from Institution of Safe Medication Practice (ISMP) self-assessment of medication safety practice at hospitals. It consisted of a demographic sector and ten domains with 270 questions. The ten areas included patient information, drug information, communication of medication orders, drug preparation, medication distribution, medication development, competency, patient education, quality process with risk management domain. The 5-points Likert scale response system used. The survey distributed to sixteen directors of hospital pharmacy during mass gathering Hajj 2016. The survey distributed to sixteen hospital pharmacy directors. The survey distributed to sixteen hospital pharmacy directors and completed by written rules. The 36% hospitals bed size was 100-199 and 3 (27.3%) bed size was 200-299. The respondents (46%) hospitals were accredited by Saudi Central Board of Hospitals Accreditation (CRAH) while (37%) accredited by USA International Accreditation (CRAH) and (26%) not accredited. The response rate, was eleven hospitals (68.7%). Of the ten domain the patient information was (57.2%), Drug Information (58%), communication of medication orders (70.5%), drug preparation (73.7%), medication distribution (70.22%), medication devices (59.3%), work environment (78.62%), staff competency (73.86%), patient education (74.9%), and quality process with risk management (62.96%).**CONCLUSIONS:** The potential medication safety practice was the lowest score, and it was patient information and communication domain. For the rest all the domains were scored at an acceptable level. This study can prevent drug misadventures, improved patient clinical outcomes, and quality of life.

**FK229**

**CURRENT SITUATION AND DEVELOPMENT OF CHRONIC DISEASES IN CHINA**

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**OBJECTIVE:** General course of chronic disease is a long and slow process, including cardiovascular disease, cancer, diabetes and chronic respiratory diseases. Chronic diseases have now become the leading cause of death, especially the cerebrovascu- lar system. Chronic diseases in China has taken on greater relevance to cope with chronic disease, and higher requirements of prevention and control are put forward in the “13th year plan”. However, the situation is still grim. This study aims to review the current situation.**METHODS:** The study is mainly based on a comprehensive literature review, which covers both domestic and international data bases, such as “CNKI”, “Wanfang data”, Pubmed and so on. In addition, expert interviews are also conducted in order to have a better understanding of practical environment.**RESULTS:** We found that deaths caused by chronic disease has become the main cause of deaths, taking up 86.6% of total deaths and nearly 70% of the total burden of disease. In 2012, prevalence rate in adult population is 25.5% for hypertension and 9.7% for diabetes. According to Chinese cancer registration result in 2013, Chinese cancer incidence reached 235/100,000. Smoking, excessive drinking, lack of physical activity and unhealthy diet are main risk factors. The Chinese government issued a series of policies to deal with the problem. Mortality rate of lung cancer chronic obstructive pulmonary disease and strokes tended to decline after the implementation of related policies.**CONCLUSIONS:** The study found that prevention and control of chronic disease must focus on early prevention, early treatment, advocating a healthy lifestyle, whole population counseling. The cause needs a joint efforts and good cooperation of government and social parties.

**FK230**

**SKIN-BASED TEMPERATURE MEASURING WITH DIFFERENT THERMOMETER TYPES**

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**OBJECTIVES:** Measuring correct temperature, using correct techniques and equipment is crucial in clinical trials. Different methods are used to measure physiological temperature. The measured values gained by mercurial, digital, infrared, tympanic and skin(forehead) thermom- eters to clarify relations between measured temperature and tools used.**METHODS:** The study was a quantitative, cross-sectional analysis. Data collection was done at the Hospital Nitra, National University Hospital, Láski 7, Nitra 9300, Slovakia in March, 2016. Non-randomized, purposive sampling method was used to select patients above 25years of age into the sample group (N=50). Exclusion criteria were outside/external, previous ear surgery, use of hearing aid, injury or deformity of the place of measuring. Data collection protocol included 3 measurements and
data recording on a cumulative observation sheet. Using MS Excel and SSPS software, we have made paired T test, correlation, ANOVA (p<0.05) tests and appropriate statistical analysis. RESULTS: We found positive, strong correlation between results of mercurial and digital tools in auxiliary temperatures (p<0.05). Positive, moderate correlation between tympanic and auxiliary mercurial, forehead and auxiliary mercurial, and tympanic and digital thermometer results (p<0.05). We found positive, strong correlation between oral digital and oral mercurial thermometers results (p<0.05).

CONCLUSIONS: Regarding the objectives of the study we can say that digital tympanic mercurial, mercurial, digital and infrared thermometers are also reliable in the clinical practice.

PHP231 ATTITUDE OF PHARMACY EDUCATORS TOWARDS COMPLEMENTARY AND ALTERNATIVE MEDICINES (CAM) EDUCATION IN PHARMACY CURRICULUM: A QUALITATIVE EXPLORATION

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OBJECTIVES: Studies suggested that the use of CAM among healthy individuals and patients with different ailments is increasing day by day. Doctor’s and pharmacists play an important role in guiding patients toward the rational use of CAM. Pharmacists are the final arbiter to propose changes to make changes in pharmacy curriculum regarding CAM. This study aimed to explore the perceptions of pharmacy educators towards CAM education in pharmacy curriculum.

METHOD: A qualitative research approach was adopted. Eleven educators were purposively selected for this study. All participants were pharmacist working in academics for a minimum of five years. Participants were interviewed using semi-structured interview guide. Focus interview was preceded after the first 10 interview, and no new information emerged with the subsequent interviews. All interviews were transcribed verbatim and analyzed by means of a standard content analysis framework. RESULTS: Content analysis of the interviews yields two major themes: (i) attitudes of pharmacists towards CAM education, (ii) effectiveness of complementary therapists in pharmacy curriculum. CONCLUSIONS: An overall positive attitude was shown by the educators towards the traditional therapies education. A number of innovative ideas were suggested to improve awareness regarding CAM among pharmacy students.

PHP232 PRACTICAL UTILITIES OF USING REAL-WORLD EVIDENCE (RWE) IN COMPARATIVE EFFECTIVENESS RESEARCH (CER): LEARNINGS FROM IMI-GETREAL

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OBJECTIVES: The IMI-Getreal project aimed to explore of robust methods for real-world evidence (RWE) collection and synthesis in the medicines development process, both by pharmaceutical companies and healthcare decision makers. The focus was on the potential use of RWE, alone or in combination with randomized controlled trials (RCTs), to demonstrate effectiveness of new interventions. Seven case studies were conducted in multiple disease areas to examine methods for predicting drug effectiveness and the perspectives of different stakeholders on these methods. This study aimed to identify practical obstacles in accessing and using RWE and RCT data for effectiveness research conducted as part of these case studies. METHODS: Qualitative content analysis was conducted to identify and characterize key issues relating to accessing and analyzing study data from external sources, both RWE & RCTs. RESULTS: Accessing RWE from registries proved difficult due to multiple reasons, including complex and non-transparent application procedures, resistance from registry owners to discuss applications and datasets not being research-ready within project timelines. There were also issues with RWE eventually accessed, including a lack of individual participant data (IPD) and incomplete data. Access to IPD from RCTs was available, the restrictions imposed on how it could be used. For example, it could not be used to target analysis on an individual product, but rather explore methodologies for data synthesis in a product-anonymized setting. This condition encouraged additional data collection from other stakeholders. CONCLUSIONS: Accessing RWE was challenging due to multiple reasons, including complex and non-transparent application procedures, resistance from registry owners to discuss applications and datasets not being research-ready within project timelines. Accessing RWE from registries proved difficult due to multiple reasons, including complex and non-transparent application procedures, resistance from registry owners to discuss applications and datasets not being research-ready within project timelines. There were also issues with RWE eventually accessed, including a lack of individual participant data (IPD) and incomplete data. Access to IPD from RCTs was available, the restrictions imposed on how it could be used. For example, it could not be used to target analysis on an individual product, but rather explore methodologies for data synthesis in a product-anonymized setting. This condition encouraged additional data collection from other stakeholders.
THE ROLE OF PATIENT-REPORTED OUTCOMES AND PATIENT ENGAGEMENT IN THE CARE OF patients with human trafficking.

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OBJECTIVES: We evaluated the role of patient-reported outcome (PRO) data and patient testimonial evidence (e.g. patient advocacy) in reimbursement decisions in high-income countries. We aimed to describe the extent to which outcomes of interest, specifically patient health status and health-related quality of life (HRQoL), were considered by HTA agencies in the UK, Canada, and Italy, and the extent to which PRO data were included in reimbursement decisions.

RESULTS: A total of 155 HTA decisions were reviewed. PRO data were included in 28% (44) of decisions. Of these, 64% (28) were included to assess HRQoL and 36% (16) were included to assess clinical efficacy. The most common PROs included in decision making were patient-reported outcomes (PROs) in well-designed comparative clinical studies were needed to provide robust evidence to support reimbursement decisions.}

28% (44) reported use of PRO data in decision making. PRO data were included in 28% (44) of decisions, potentially due to being insufficiently robust or compelling. Valid, reliable, patient-reported outcome (PRO) data, and clinical studies are needed to generate data for reimbursement decision making.
 retrying to determine how Evidence Review Groups (ERGs) perceived National Institute for Health and Care Excellence (NICE) single technology appraisals (STAs) in the absence of these established methods. METHODS: STA manufacturer submissions from 2015 onwards, excluding terminated appraisals and responses to impromptu requests made in June 2016. Evaluations on common or partially accepted indirect comparisons were eligible for inclusion. The rationale for not using conventional methodology, the use of non-conventional techniques and the cor-
responding extent and probability of the added benefit were assessed. RESULTS: Of the 73 submissions screened, 24 were ultimately included. In just under half of the included submissions, the primary reason for not conducting a meta-analysis was reported to be that only a single relevant RCT was identified, whilst the primary reason cited for not conducting a STA was that there was already a third of the submission was based on study heterogeneity. The ERGs concluded that conventional comparisons could have been conducted for five submissions, and identified their own meta-analysis in one case. Only 3 submissions used non-conventional methods to perform a comparison, including naive comparisons only (n=2), adjusted comparison methods (n=3) and meta-analysis using single-arm trial data (n=1). The ERGs were largely receptive of these non-conventional methods and acknowledged the data limitations, all submissions were recommended. Ultimately, 43 of the included submissions received a positive recommendation from NICE. CONCLUSIONS: A third of the STA submissions reviewed did not include a conventional comparison, usually due to limited data availability or between-study heterogeneity. However, ERGs were gen-
erally receptive if a robust search strategy and full exploration of the evidence had been undertaken, and the majority of submissions lacking conventional comparisions were ultimately recommended.

PHP242
INDIRECT COMPARISONS PRESENTED IN GERMAN BENEFIT ASSESSMENTS – GUAO AND QUO VADIS?
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OBJECTIVES: G-BA, an independent federal authority, evaluate added benefit against the appropriate comparator, which is determined by G-BA. If a direct comparison between new drug and comparator is not available, an indirect comparison may be submitted by the manufacturer. This is evaluated during assessment by IQWiG/G-BA. The aim of this study is to provide a comparative review on how indirect compar-
sations were evaluated in German benefit assessments until today. METHODS: All documents were retrieved from the G-BA homepage. Cut-off date for inclu-
sion was September 1st 2016 (poster will include an update). The following sources had to be available: Dossier module 4 (manufacturers), benefit assessment (IQWiG, if applicable), G-BA decision/rational (G-BA). Extraction included indirect comparisions submitted by manufacturers and added benefit claimed, IQWiG/G-BA evaluation of indirect comparison and added benefit. RESULTS: 92/97 benefit assessments were reviewed. Of these, 41 assessments contained 51 indirect comparisions. Manufacturers rated extent and probability of the added benefit higher than IQWiG/G-BA. Extent was rated “considerable” in 17 cases and probability was rated as “hint” in 16 cases, only 3 indirect comparisons were not used to support added benefit. IQWiG declined indirect comparisons and accepted only 6. In 45 assessments added benefit was rated “not proven.” G-BA declined 38 comparisions, 17 (45%) for the reasons listed in the NICE guidance. In 3 cases, added benefit was rated “not proven” for 43 assessments. IQWiG/G-BA declined mainly due to inadequate methods, study populations or comparators. Only one assessment (Empagliflozin, start March 1st 2016) exceeded with an added benefit based on a partially accepted indirect comparision. CONCLUSIONS: Evaluations of indirect comparisons by manufacturers and IQWiG/G-BA differ considerably. So far indirect comparisons are no promising tool for achieving added benefit. However, being successful is at least possible. Developments and soundly applying methods is key, as well as a strict interpretation of study populations and comparators.

PHP243
A COMPARATIVE REVIEW OF VALUE ASSESSMENT FRAMEWORKS IN GERMANY, FRANCE, ENGLAND, AUSTRALIA, AND SOUTH KOREA: AN INDUSTRY PERSPECTIVE
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OBJECTIVES: Many countries utilize Value Assessment Frameworks (VAF) or Health Technology Assessments (HTA) to inform market access and reimbursement for innovative medicines. We sought to characterize the absolute and relative strengths, challenges, and limitations of five well-established VAFs from the perspective of the biopharmaceutical industry, and to determine if each VAF’s stated objectives aligned with observed reimbursement outcomes. METHODS: For each country’s VAF, we first reviewed published documentation (government websites, peer-reviewed literature) to capture stated principles and procedures of assessment, appraisal, and pricing. We then qualitatively rated the VAFs on scales of: transpar-
ency (how fully the assessment process was disclosed); decision outcomes (how value into price); flexibility (in comparator selection and consideration of non-RCT data); stakeholder engagement (extent of influence of patients, industry, and clinicians in the process); access to innovative medicines. Initial feedback was refined based on double-blinded interviews with 45 executives from biopharma-
caceutical companies, country trade association representatives, and HTA thought leaders. Finally, we conducted a subsequent analysis of reimbursement outcomes for 124 ULTRA medicines across the different VAFs and represented a range of therapeutic areas. RESULTS: England rated high-
est relative to other VAFs on stakeholder engagement and flexibility of comparator and data requirements, while Germany fared best on patient access to innovative medicines across therapeutic areas. France, South Korea, and Australia were more likely to delay access to rare disease and oncology therapies. Though more opaque in how assessments translated to reimbursement, interviewees noted a preference for the “added clinical benefit” VAFs in France and Germany, compared with ICER-based VAFs. CONCLUSIONS: The innovative biopharmaceutical industry recognizes relative advantages and drawbacks of established VAFs, and its assessments are supported by additional outcomes across different conditions. Stakeholders interested in attracting multinational pharmaceutical investment and products should understand the nuances and lessons of established systems before imposing new VAF processes.

PHP244
EARLY SCIENTIFIC ADVICE AT CADTH – OPTIMUS AND RECOMMENDATIONS FOR FUTURE DEVELOPMENT
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OBJECTIVES: Early Scientific Advice at CADTH was developed in response to a perceived need by innovators and modeled after similar programs internationally. It was developed with the principles that advice on early drug development plans will help to: (a) fully package of evidence for reimbursement, and with the goals of reducing uncertainty for payers and providing more timely access for patients. The purpose of this qualitative study was to gauge industry stakeholder awareness of the initiative, and what changes within the scope or mandate of the program may make it more useful and accessible. METHODS: Semi-structured interviews were conducted with representatives of pharmaceutical companies. Interviews were conducted by a consultant via telephone and written notes were sent back to each participant to ensure accuracy and make modifications as necessary. Comments were aggregated into themes. RESULTS: Among 26 companies contacted, 16 completed an interview. The interview sample comprised 9 small companies (< 10,000 employees globally), 6 large US-based companies, and 6 large non-US-based companies. Two of the interviewees were global representatives. Most interviewees were aware of the CADTH Scientific Advice program and that the reasons for conducting a submission to the program included the following: expand the scope of the program to include advice after initiation of Phase III trials; provide advice on real-world evidence study designs; allow for disclosure of advice received at the time of submission for reim-
bursement; and provide quick access to smaller requests for advice. Overall, the program is useful or would be useful or could be improved. CONCLUSIONS: The findings from this study will help inform improvements to the Scientific Advice program at CADTH. The program may need to include an additional time window and existing programs as well as those developing Scientific Advice programs currently.

PHP245
HOW WILL PROPOSED CHANGES TO THE NICE HIGHLY SPECIALISED TECHNOLOGY EVALUATION PROCESS IMPACT PATIENT ACCESS TO INNOVATIVE DRUGS FOR RARE DISEASES?
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OBJECTIVES: Health technology assessments of ultra-orphans (ultra-ODs) for very rare conditions are faced with several unique challenges. In recognition of the UK’s ‘status 3’ for the NHS, NICE (National Institute for Health and Care Excellence) proposed new initiatives to its Highly Specialised Technology (HST) programme, including introduction of a cost-per-QALY threshold. The objective of this study was to evaluate the impact of the proposed changes and the potential impact they may have on patient access to ultra-ODs in England and Wales. METHODS: All publicly available HST evaluations published between its inception in April 2013 and June 2017 were reviewed, along with guidance relating to the proposed changes. RESULTS: Six HST evaluations had been recommended by NICE and seven were in development. Five received positive reimbursement deci-
sions with a cost per treatment/year of £125,000–£394,680. One (sebelipase alfa) was not recommended based on the prohibitively expensive cost (£491,992 per treatment/year), in the context of uncertainties around the long-term benefits. All positive recommendations have conditions attached, including a patient access scheme (eculizumab, ataluren, migalastat), managed access scheme (ataluren, elo-
sulfase alfa), and use within expert centres (eculizumab). The proposed changes to the HST programme include implementing a cost-effectiveness threshold for ultra-ODs of ≤£100,000–£300,000 per QALY, using a QALY weighting based on the number of additional QALYs a medicine offers. Under the proposed changes those ultra-ODs with a positive recommendation would be unlikely to significantly raise the £100,000 threshold, and therefore may not receive a positive recommenda-
tion without a patient access scheme or managed access scheme to improve cost-
effectiveness. CONCLUSIONS: The introduction of a cost-effectiveness threshold increases clarity about decisions regarding which ultra-ODs are routinely funded, but could make patient access more difficult as they may be less likely to be rec-
ommended by NICE.

PHP246
REVISING THE EFFECTIVENESS OF UK DRUG Horizon Scanning EFFORTS & THE PRODUCTION OF NICE COMMENTARY ALONG THERAPEUTIC SPECIALISTs
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OBJECTIVES: The National Institute for Health Research Innovation Observatory is responsible for notifying the National Institute for Health & Clinical Excellence (NICE) of new drugs & indications prior to market authorisation (MA). This constitutes the first step in the MA. Early notification of innovative medicines allows an additional 600 days for new drugs, 450 for new indications. This research aims to explore the success of previous horizon scanning at meeting notification requirements as well as the speed with which NICE commentary was produced. METHODS: All publicly avail-
able NIHR horizon briefs between 2006 and Q1 2017 were collated and segmented by


**PHP247** 
WHEN THE PRICE IS RIGHT: WHEN, IN PRACTICE, ARE CONFIDENTIAL DISCOUNTS INTRODUCED IN THE NICE PROCESS? 
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**OBJECTIVES:** Manufacturers often submit a patient access scheme (PAS) to increase their cost-effectiveness during appraisals by the National Institute for Health and Care Excellence (NICE). We reviewed all NICE technology appraisals (TA) from October 2007 to determine whether a PAS was submitted, and explore the timings of PAS introduction. **METHODS:** Using the NICE website, all TAs between October 2007 and June 2017 were reviewed, including those with a "no recommendation" decision from NICE. The timing of the PAS submission for each TA was allocated to one of four categories: initially submitted/no change, initially submitted/changed during process, initially submitted/no submission, no submission. **RESULTS:** In total, 200 TAs were submitted during this timeframe, with 228 recommended. Of these, 125/228 (55%) were contingent on a PAS. A simple discount, which can be changed during the submission process, was introduced in 88/125 (70%) of accepted TAs with PAS, whereas complex PASs which cannot be changed during the process occurred in 37/125 (30%). Of simple PASs, 39/88 (44%) were categorised as initially submitted/no change and 19/88 (22%) initially submitted/changed during process. In 30/88 (34%), a PAS was introduced after submission. Of all recommended TAs with PAS, 49/125 (39%) were introduced or changed after submission, when manufacturers could better estimate the likely outcome of the PAS. **CONCLUSIONS:** Some appraisals reveal implicit price flexibility from the manufacturer during the appraisal process. Flexibility could be a commercial advantage over manufacturers with inflexible PASs (e.g. complex PASs) where a discount is offered prior to the appraisal. It may be preferable for a manufacturer to submit a simple PAS upfront; once the submission has been appraised, there is more certainty of the likely outcome, and the PAS can be adjusted.

**PHP248**
EARLY HTA ADVISE IN EUROPEAN COUNTRIES: SCOPE AND ASSOCIATED COSTS
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**OBJECTIVES:** This research aimed to understand early Health Technology Assessment (HTA) advice opportunities in European countries: to characterise the scope of advice offered (e.g. formal vs. informal, written vs. oral, separate HTA advice vs. joint HTA and regulatory advice provided by e.g. regulatory scientific advice), the early advice process, and costs associated with advice. **METHODS:** A structured literature search was conducted incorporating National HTA websites, HTA conference websites and PubMed. The country scope included fifteen European countries: Austria, Belgium, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Spain, Sweden, and United Kingdom. **RESULTS:** Formal national early HTA advice (separate from regulatory advice and with the official description of the process and application form) is offered in Germany, United Kingdom, France and Italy. Sweden, Norway and Belgium have a procedure allowing manufacturers to obtain answers to HTA-related questions while applied for national early scientific regulatory advice. The majority of countries participate in multi-stakeholder programs: parallel EMA-HTA scientific advice procedures, the EUnetHTA early dialogue and Shaping European Early Dialogues projects. Most agencies recommend that early advice is sought between phase II and phase III of clinical development. Consultation times vary from 6-8 weeks in Norway to 18 weeks in France and United Kingdom. Advice is usually provided through hearings (teleconferences and face-to-face meetings) and some agencies like G-BA (Germany), AIFA (Italy), HAS (France), TIV (Sweden) and NICE (UK) provide a written report. There is no fee in Sweden, Belgium and Norway, while in all other countries it varies from €2,000 - €50,000. In France the early dialogue is free of charge, however, the advice is given only for innovative products. **CONCLUSIONS:** The scope of HTA early advice varies significantly across geographies as do the costs and consultation times for advice.

**PHP249**
ACCEPTANCE OF POPULATION-ADJUSTED INDIRECT TREATMENT COMPARISON METHODS IN NICE ASSESSMENTS
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**OBJECTIVES:** Guidelines for applying methods for population-adjusted ITC, e.g. matching adjusted indirect comparisons (MAIC) and simulated treatment comparisons (STC), in submitted PASs were published in December 2016. These methods overcome issues like disjuncted evidence networks and heterogeneity in network meta-analyses (NMA), and can produce comparative evidence where there is insufficient direct evidence. Using NICE data, this research found that four NICE MAICs published between 2010 and 2016 (Thom et al. 2016). The objective of this study was to review recent submissions to NICE to determine the use and acceptability of the payer the population-adjusted ITC methodology. **METHODS:** All mandatory feedback documents published between 01JAN2017 and 25JUN2017 were reviewed and information on methods for performing ITCs was extracted. **RESULTS:** In total, 37 technology appraisals (TA) were identified. Ten NICE appraisals included ITC, 19 included standard NMA, four included a naive comparison and seven included MAIC; some appraisals included more than one method. The STC method was not applied in any of the appraisals. All seven STAs using MAIC were in oncology. Four were rated as restricted and one received a preliminary recommendation. The method was used to address a disconnected network in three STAs and to adjust for trial population heterogeneity in the remaining four. In all cases the method was accepted for decision-making although several limitations were highlighted, such as lack of rationale for the choice of method, limited justification for the choice of matching variables, limited possibility of matching outcome definitions or inclusion/exclusion criteria between studies. **CONCLUSIONS:** Our research demonstrates that the use of population-adjusted ITCs has been increasing in NICE STAs, with 19% of STAs including MAIC. The method has been generally accepted, although considered equivalent to observational evidence and its underlying assumptions subjected to close scrutiny.
cesses, whereas other markets unofficially adjust evidence requirements. Nuances between markets need to be understood by orphan drugs' manufacturers in order to achieve optimal P&R.

**PHP254**

**THE COST-EFFECTIVENESS OF MANUFACTURER FEES FOR HTAS: ARE THEY PROMOTING OR HINDERING INNOVATION?**

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OBJECTIVES: Due to rising costs and aging populations, countries with public health systems are increasingly utilising Health Technology Assessments (HTAs) to determine pricing and reimbursement of new treatments. This research evaluates the fees charged to industry for HTAs in countries with obligate cost-equality HTA bodies (UK, Canada and Australia) relative to their respective market size.

METHODS: HTA appraisal fees were identified from publicly available websites from the HTA Institute for Health and Care Excellence (NICE), Canadian HTA Programmes (CABG, CIHI, PBF), and the Canadian Agency for Drugs and Technologies in Health (CADTH), and Pharmaceutical Benefits Advisory Committee (PBAC) and annual national market size were sourced from the UK National Health Service, Canadian Institute for Health Information, and the PBAC.

RESULTS: In 2017, the cost for a single technology appraisal where the annual national pharmaceutical market is €5.5 billion (CN$8.8 billion) was £142,000 ($161.7 million), which provides an Appraisal Cost to Market Size (ACMS) ratio of 112.67. CADTH charges CN$72,000 ($48,374) for a Submission Schedule a market with a market of CN$8.8 billion ($5.5 billion). PBAC charges AU$131,407 ($88,377) for a Major Lodgment with a market of AU$10.8 billion ($7.3 billion). ACMS ratios for Canada and Australia were 122.292 and 82.187, respectively.

CONCLUSIONS: In order to be publicly funded in the UK, Canada, and Australia, therapies need to receive positive appraisals by HTA bodies which require financial contributions from manufacturers. These contributions bear little relation to the market size and cumulatively exceed €290,000 (assuming no need for resubmissions). By adopting charging/cost recovery models, HTA bodies may be able to reinvest the process efficiencies and capacity of appraisals, expediting patient access. However, these fees may be burdensome especially for SMEs with promising therapies for orphan/rare diseases, and they may thus have the potential to deter and delay their submissions.

**PHP253**

**DO NICE APPEALS MAKE A DIFFERENCE? IMPACT OF APPEALS ON APPRAISAL OUTCOMES**

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OBJECTIVES: The National Institute for Health and Care Excellence (NICE) provides standards for the appraisal of orphan drugs in the UK. However, appraisal outcomes can be challenged by manufacturers via an appeal process.

METHODS: Appeals starting from the year 2000 were identified and appeal documents were available, the impact on the recommended outcomes were reviewed to identify the appeal panel recommendation, and, if appealed, were reviewed to identify whether the appeal was upheld or dismissed. Appeals that were dismissed were reviewed to identify whether the appeal made any impact on the final appraisal determination (FAD) or resulted in any other changes. Appeals that were upheld were reviewed to identify the appeal panel recommendation and, if pre and post appeal documents were available, the impact on the recommended NICE guidance.

RESULTS: A total of 87 past appeals were identified and appeal decisions were available for 78 of the appeals. Forty-two (56%) of the appeal decisions were dismissed on all grounds, with the remaining 33 (44%) upheld on one or more grounds. Among the dismissed appeals, 40% had no impact on the decision, 48% resulted in minor amendments to the FAD, and 12% had some other outcome.

CONCLUSIONS: Among the upheld appeals, with pre/post documents available, 14% resulted in major revisions or a change in the recommendation. In addition, even clarification was needed.

**PHP252**

**CONFORMATIONAL VERSUS EXPLORATORY ENDPOINT ANALYSIS: DECISION-MAKING UNDER UNCERTAINTY ON THE BASIS OF EVIDENCE AVAILABLE FROM MARKET AUTHORIZATION AND EARLY BENEFT ASSESSMENT IN GERMANY**

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OBJECTIVES: To compare the use and importance of confirmatory endpoints in German early benefit assessment (EBA) versus market authorization (MA) for oncology drugs with both evaluations relying on the same evidence. The EBA of pharmaceuticals is conducted by the G-BA in Germany and their preceding MA pursue different objectives resulting in divergent decision-making strategies. This is reflected in inter alia by the inclusion of varying confirmatory endpoints within the evaluation of oncology drugs in the MA and the incorporation of an additional decision by a specifically designated panel. Data from completed assessments up to July 2015 are used to estimate the impact of exploratory endpoints in comparison to confirmatory endpoints on MA and EBA by contrasting the benefit-risk ratio of EMA and the benefit-harm balance of the HTA, respectively.

METHODS: The joint assessment of MA and EBA is based on a specifically designed framework. Data from completed assessments up to July 2015 are used to estimate the impact of exploratory endpoints in comparison to confirmatory endpoints on MA and EBA by contrasting the benefit-risk ratio of EMA and the benefit-harm balance of the HTA, respectively. EBA is conducted by the G-BA and MA is handled by G-BA. Results: 21 of 41 assessments were considered in the analysis. Procedurally, neither MA nor EBA are confirmatory because they also include exploratory endpoints. However, in terms of quality of endpoints, MA is more exploratory than EBA because it includes a higher proportion of primary endpoints. The latter implies a primary endpoint to be relevant for the benefit-harm balance in only 67% of cases (0.03). Explorative mortality endpoints reached the highest agreement regarding the mutual relevance for the risk-benefit ratio and the benefit-harm balance (0.00).

For explorative morbidity endpoints (-0.60), quality of life (+0.60) and side effects (-0.94) no agreement is ascertainable. CONCLUSIONS: The comparability of the two decision processes based on endpoints is only possible with some limitations when using the evidence contributed by clinical trials. To warrant a broader confirmatory basis for decisions supported by HTA, closer inter-institutional cooperation of national authorities and national HTA jurisdictions would be advisable. A reduction of the uncertainty surrounding decisions can be achieved by means of joint advice for manufacturers regarding endpoint definition and hierarchy.

**PHP255**

**ASSESSING CRITERIA FOR NICE RECOMMENDATION WITH THE HST PROGRAMME**

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OBJECTIVES: This work aims to review the criteria by which the Highly Specialised Technology (HST) programme assesses treatments for rare conditions unlikely to meet standard clinical and cost-effectiveness criteria due to the limited patient population.

METHODS: Review of all technologies with final evaluation determinations (FEDs) undergoing HST by June 2017, to assess the importance of budget impact, cost per patient, QALY gains, cost-effectiveness, innovation, unmet need, and other factors associated with NICE recommendation.

RESULTS: Of the seven treatments with FEDs by June 2017, elosulfase-α and ataluren were recommended with managed access agreements (MAAs); eculizumab, eliglustat, and migalastat were recommended for formal recommendation for a future AAM; and, sebelipase-α was provisionally not recommended. These outcomes did not reflect data quality; eculizumab offered only single-arm, non-randomised data, while ataluren was supported byRCTs. Recommendations were also unlikely to reflect clinical impact, as incremental QALYs gained with sebelipase-α (6.64) were higher than for migalastat (0.34-0.98). Additionally, babies presenting lysosomal storage disorder (LSD) were less than 12 months without sebelipase-α, suggesting substantial unmet need. Cost-effectiveness was not reported, but the annual treatment cost (from list price) appears significant. Sebelipase-α had the greatest reported annual cost per patient of €491,992 (for an 11-year-old child), compared to migalastat at €121,000 & €346,000 (5-year and 10-year net: £350 million). However, the £13.4 million impact for the subgroups not recommended for ataluren was less than £90 million for sebelipase-α, indicating the decision was made partially on efficacy grounds.

CONCLUSIONS: The results suggest HST recommendations do not directly reflect treatment efficacy, which is frequently associated with substantial uncertainty. Annual treatment cost and indication scope to appeal more relevant factors, although these will be modified by confidential patient access schemes.

**PHP256**

**MARKET ACCESS OF ADVANCED THERAPY MEDICINAL PRODUCT (ATMP) IN EUROPE: LESSONS LEARNT AND KEY CONSIDERATIONS FOR FUTURE SUCCESS**

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OBJECTIVES: Although an increasing number of ATMPs are entering the market, the driving factors for successful commercialisation are unclear. This research aims to evaluate the eight ATMPs approved by the European Medicines Agency (EMA) to date and identify key success factors and barriers that impact market access of ATMPs in Europe.

METHODS: We analysed health technology assessment (HTA) reports to understand reimbursement decisions of ATMPs in France, Italy, Germany, and the UK. We reviewed academic and grey literature for specific factors and, where clarification was needed.

RESULTS: Eight ATMPs have been approved by the EMA. The first four ATMPs, Chondrocetel, Glybera, Providence and Maglyc, already withdrawn from market due to commercial reasons. One key hurdle was country-level HTA, as the clinical benefits of the four ATMPs were not recognised despite being innovative technologies. Without recognition of the clinical value, it is challenging to justify the high price tag (e.g. Glybera received a non-quantifiable added clinical benefit rating in Germany, and at approximately £1 million per patient, its uptake has been low). In contrast, the four ATMPs approved by the EMA more recently (between 2015-2016) show more promising futures. The clinical benefits of Holoclar, Imlygic and Strimvelis have been recognised and reimbursement granted in at least one country in Europe. One key contributing success factor was the use of managed entry agreements to mitigate financial/outcome risks for payers and better support value for money. Other factors include the adoption of a private-public partnership model to effectively engage different stakeholders and the abilities to build infrastructure necessary for delivery of ATMPs. CONCLUSIONS: ATMPs approved by the EMA in the last two years had more successful at gaining reimbursement in Europe. Success is driven by a combination of demonstrating clinical benefits and addressing payer clinical/financial concerns, as well as maturity in environment/infrastructure.

**PHP257**

**AMNO DOSSIERS AS A CHALLENGE FOR PHARMACEUTICAL COMPANIES: IS THERE A CORRELATION BETWEEN VOLUMES AND ADDED MEDICAL BENEFIT?**

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OBJECTIVES: Since the enactment of AMNOG in Germany in 2011, 238 dossiers have been submitted to G-BA. Of these, 90 were in the category of medicinal products for orphan/rare diseases, and they may thus have the potential to deter payer and better support value for money. Other factors include the adoption of a private-public partnership model to effectively engage different stakeholders and the abilities to build infrastructure necessary for delivery of ATMPs. CONCLUSIONS: ATMPs approved by the EMA in the last two years had more successful at gaining reimbursement in Europe. Success is driven by a combination of demonstrating clinical benefits and addressing payer clinical/financial concerns, as well as maturity in environment/infrastructure.
sive mandatory data requirements that go beyond respective requirements posed by EMA or FDA. METHODS: Volume (number of pages) of Modules 1-4 was used as a proxy for efforts and resources to write an AMNOG dossier. Module 4 contains clinical data on which added medical benefit is assessed. Hence, volume of module 4 was compared to the respective added medical benefit to conclude on possible correlation. RESULTS: 38 % of the dossiers were in field of oncology, followed by metabolic diseases (19 %). The annual number of dossiers is increasing from 23 (2012) to 71 (2016). Mean number of pages was 820, with a maximum of 3,465. For non-oncology drugs, there seems to be an inverse trend between the volume of mod- ule 4 (total dossier and added medical benefit: major (530/736 pages), considerable (638/838), minor (688/905) and no added medical benefit (747/970); non-quantifiable (749/722). In orphan drugs however, added medical benefit correlated with volume of module 4 (total dossier: Considerable (605/686), considerable (638/524), non-quantifiable (275/422). CONCLUSIONS: For non-orphan drugs, uncertainty in regard with the presumed added medical value seems to translate into greater volume of the dossi- ers. For orphan drug assessment proper, the increased volume is set up to give comprehensive clinical data might facilitate emphasizing the clinical value of drugs thus leading to a higher rating.

PHP258 UTILIZATION AND EVALUATION OF DELPHI PANELS IN GERMAN AMNOG ASSESSMENTS
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OBJECTIVES: Expert advice and/or opinion can be a valuable source of information, especially if reliable evidence is not available. A Delphi Panel (DelP) is a structured approach to gather the expertise of experts to provide evidence in a consensus-driven approach. In accordance with the rules of procedure by the German Federal Joint Committee (G-BA) during the Benefit Assessment (AMNOG), expert advice is obtained by consensus principle, if additional main value dossiers are identified. The study was to examine how DelPs are integrated in German AMNOG assessments and how they are evaluated by the Institute for Quality and Efficiency in Health Care (IQWIG) and the Federal Joint Committee (G-BA). METHODS: Available AMNOG dossiers up until the 13th June 2017 were evaluated with respect to the integration of DelPs, size of the panel, acceptance and evaluation by IQWIG and G-BA, as well as decision on added ben- efit. Descriptive statistics were applied and the assessment of respective DelPs by IQWIG and G-BA in total, as well as for each DelP dossier was summarized. Overall, DelPs were utilized in 4.4% (n=11) of all dossiers. Results of DelPs were incorporated in Module 3 (n=8) (epidemiology, cost, disease burden) and Module 4 (n=3) (clinical data). DelPs were used to address evidence needs in oncology disorders (n=5), metabolic diseases (n=3), mental disorders (n=2), and diseases of the musculoskeletal system (n=1). On average 10.8 experts were included in the exercise: IQWIG, in the majority of cases, was basically positive, criticism focused on the lack of evidence in two dossiers, as well as the fact that the number of limitations and transfer of results to target populations. In four dossiers IQWIG was not able to validate the indicated findings. CONCLUSIONS: DelPs are rarely used within the German AMNOG process. As the acceptance seems reasonable, the application of DelPs offers a viable option to address or minimize evidence gaps in an AMNOG assessment.

PHP259 12 MONTH REVIEW OF NICE AND SME RECOMMENDATIONS FOR NEW TECHNOLOGIES
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OBJECTIVES: Technology appraisals over the past 12 months were compared between NICE and SME in order to look for evidence of discrepancies and areas of focus in approach to technology appraisal. METHODS: Using the NICE and SME websites, published technology appraisals were examined between June 2016 and June 2017 on the NICE website. Given that the SME typically issues guidance sooner than NICE, the corresponding SME verdict was then compared with the NICE verdict from this timeframe. Guidance was categorised as: terminated, rejected, restricted, recommended (with patient access scheme), or recommended. SME appraisals could also have been superseded by subsequent NICE multiple technology appraisal recommendations. RESULTS: In the 12 months prior to 13th June 2017 NICE updated 62 technology appraisals, seven of which were terminated. In total, seven discrepancies between NICE and SME appraisals were identified. Removing terminated appraisals from either body, as well as SME guidance which was super- seded, there were 15 areas of discrepancy. These included: five restrictions by NICE which were accepted by the SME, one restriction by NICE which was rejected by the SME, and three acceptances by NICE which were rejected or restricted by the SME. SME guidance typically came several months before the NICE guidance, and discrepancies were not limited to a single disease area. CONCLUSIONS: NICE and the SME generally agree on their reported recommendations for new technologies, given the costs of the drugs and the local epidemiology of disease are relatively similar between England and Scotland in most cases. However, discrepancies reflect the difference in approach taken by the SME and NICE, and are not specific to a single disease area. This study furthered the discussion in favour of bespoke SME submissions.

PHP260 COMPARATIVE ANALYSIS OF THE DEVELOPMENT OF THE BULGARIAN AND THE ROMANIAN HTA SYSTEM
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OBJECTIVES: Until 2012 there has been a lack of predictability and transparency of the Romanian process on drugs inclusion in the reimbursement list which is quite similar to the situation in Bulgaria until 2015. A new scorecard HTA process was implemented in 2014 in Romania. In this study we are analyzing and comparing the efficiencies of HTA systems in Romania implemented since 2014 and Bulgaria 2016. METHODS: A critical appraisal of HTA Score Card was done based on the legislation, published articles and reports in Romania. HTA legislation and guidelines in Bulgaria have been reviewed and analysed while considering the rea- sons behind the introduction of the HTA process. RESULTS: By December, 2015 more than 200 HTA dossiers were evaluated and the score- card HTA results were reflected in three processes of the drug reimbursement list update. A new scorecard HTA process is based on the new Romanian HTA decision, the number of EC reimbursement countries, the local real-world data and a budget impact. For medicinal product inclusion in the PDL in Bulgaria the HTA assessment should be more than 75% of all indicators (965 point) of the Economic evaluation (Eva), Therapeutic assessment (Ther) and Safety evaluation (Saf). RESULTS: A step-by-step process for applying of HTA in decision making can be recommended. The expert system is set up to support HTA decision making. Although the HTA system in Romania makes no direct evaluation of the value of drugs, authorities consider it to be effective, being designed only to favor cost-saving drugs and to promote high discounts. Where in Bulgaria the HTA process is also still controversial because the UK, France and Germany HTA evaluations are directly transferred and not locally assessed.

PHP261 ASSESSMENT OF PUBLIC OPINION REGARDING THE ETHICS OF NICE CDF, HST, AND END-OF-LIFE CRITERIA FOR DRUG REIMBURSEMENT
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OBJECTIVES: NICE have never fully ascribed to utilitarianism (producing maxi- mum QALYs on a fixed budget) or egalitarianism (providing adequate healthcare for people with all maladies) for drug appraisals. End-of-life treatments may add value (accepted by QALYs), which is of survival individuals, against the expected benefits of treatment for death, making the policy arguably utilitarian. The Cancer Drugs Fund (CDF) places value on cancer treatments, which is arguably egalitarian if they are neglected, or possibly political. The recent introduction of Highly Specialised Technologies (HST) reduces marginal QALYs gained in both cost-effective and cost-intensive, to help maximise their impact we aimed to review the feedback that ERGs have previously provided on SLRs presented in manufacturers’ submissions (MS), identify the methodological and reporting approaches most likely to be criticised, and make recommendations on avoiding these criticisms. METHODS: MS and ERG reports for STAs submitted to NICE between January 2015–May 2017 were downloaded from the NICE website. Key information was extracted from each MS and ERG report regarding the methodological and reporting approach taken and any relevant ERG comments. RESULTS: Clinical SLRs and SLRs on cost-effectiveness studies were more likely to be criticised than SLRs on health-related quality of life or costs and resource use data. Common methodological criticisms included unac- counted for discrepancies between the scope of the clinical SLR and the final NICE scope, not using or modifying published search filters, and the simultaneous query- ing of NICE and Embase. The most common reporting criticism was not describ- ing the reviewer process for study selection and data extraction. Methodological approaches criticised by ERGs in some MS were not always criticised by the same or different ERGs in other MS. Despite critique being common, in most cases the ERG recommendations had resulted from some studies being missed. CONCLUSIONS: It is possible to derive recommendations regarding SLR methodology that should help to avoid criticism from NICE ERGs. The importance of high quality and transparent SLR write-ups is also clear, this should be easily achieved with the implementation of quality control processes.

PHP262 AN AUDIT OF EVIDENCE REVIEW GROUP CRITICISMS OF SYSTEMATIC LITERATURE REVIEWS CONDUCTED TO INFORM MANUFACTURERS’ SUBMISSIONS TO THE NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE
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OBJECTIVES: Several systematic literature reviews (SLRs) are required to inform manufacturers’ single technology appraisal (STA) submissions to the National Institute for Health and Care Excellence (NICE). An independent Evidence Review Group (ERG) assesses each submission, including the SLRs, with a view to high-lighting strengths and weaknesses. As SLRs can be time-consuming and resource-intensive, to help maximise their impact we aimed to review the feedback that ERGs have previously provided on SLRs presented in manufacturers’ submissions (MS), identify the methodological and reporting approaches most likely to be criticised, and make recommendations on avoiding these criticisms. METHODS: MS and ERG reports for STAs submitted to NICE between January 2015–May 2017 were loaded from the NICE website. Key information was extracted from each MS and ERG report regarding the methodological and reporting approach taken and any relevant ERG comments. RESULTS: Clinical SLRs and SLRs on cost-effectiveness studies were more likely to be criticised than SLRs on health-related quality of life or costs and resource use use data. Common methodological criticisms included unac- counted for discrepancies between the scope of the clinical SLR and the final NICE scope, not using or modifying published search filters, and the simultaneous query- ing of NICE and Embase. The most common reporting criticism was not describ- ing the reviewer process for study selection and data extraction. Methodological approaches criticised by ERGs in some MS were not always criticised by the same or different ERGs in other MS. Despite critique being common, in most cases the ERG recommendations had resulted from some studies being missed. CONCLUSIONS: It is possible to derive recommendations regarding SLR methodology that should help to avoid criticism from NICE ERGs. The importance of high quality and transparent SLR write-ups is also clear, this should be easily achieved with the implementation of quality control processes.
IN THE AMNOG DOSSIER IN THE LIGHT OF THE NEW AMVSg EXTRAPOlATION OF ADULT DATA FOR PEDIATRIC DRUG BENEFIT ASSESSMENT is an indication that the MCDA need a further validated approach. with a positive HTA assessment were not included for reimbursement in 2016, which the approach is well formulated, consistent and replicable, but nevertheless all INN not listed for reimbursement. that SL in 2016 n MDCA points (965). Between MDCA 50% (643) and 75% (965) the decision for admis-sion in the PDL after HTA assessment is at more than 75% of the maximum number of in Bulgaria. by the pricing and reimbursement competent authority and by the HTA Commission in Bulgaria. Decision making is accompanied by the conduct and docu-mentation of evidence development varied. Key differences between HTA agency requirements must be considered when developing an SLR to be used for subsis-ting across global markets.

**THE USE OF MCDA IN HTA DECISION MAKING IN BULGARIA**

**OBJECTIVES:** Multi-Criteria Decision Analysis (MCDA) is used in HTA to make deci-sions, based on more than one criterion. Being incorporated in December 2015 in Bulgarian HTA, MCDA is used to maturity and the use of adult data. Little is known about the applicability of such extrapolation in the process of the German benefit assessment of pharmaceuticals (AMNOG) to claim an additional benefit for a pediatric drug. This research gives an overview of the use of extrapolation of adult data to pediatric populations in the course of the New German Medicines Supply Reinforcement Act (AMVSG) and its impact on the final grading of the additional benefit. METHODS: To understand the use of extrapolation in the German benefit assessment in alignment with the updated Ordinance for the Benefit Assessment of Pharmaceuticals (AM-NutzenV), and to investigate the requirements for acknowledgement of extrapolation, a research of published AMNOG dossiers since 2011 was performed. Benefit assess-ment of new drugs, health insurance and submission of system of the country and n=18 INN with more than 60% MCDA (positive HTA assessment) were not listed for reimbursement. CONCLUSIONS: The MCDA is a reliable method and the approach is well formulated, consistent and replicable, but nevertheless all INN with a positive HTA assessment were not included for reimbursement in 2016, which is an indication that the MCDA need a further validated approach.

**EXTRAPOLATION OF ADULT DATA FOR PEDIATRIC DRUG BENEFIT ASSESSMENT IN THE AMNOG DOSSIER IN THE LIGHT OF THE NEW AMVSg**

**OBJECTIVES:** Extrapolation of efficacy results from adults to a pediatric population is used in EMA pediatric drug approval to decrease the number of pediatric studies and maximize the use of adult data. Little is known about the applicability of such extrapolation in the process of the German benefit assessment of pharmaceuticals (AMNOG) to claim an additional benefit for a pediatric drug. This research gives an overview of the use of extrapolation of adult data to pediatric populations in the course of the New German Medicines Supply Reinforcement Act (AMVSG) and its impact on the final grading of the additional benefit. Methods: To understand the use of extrapolation in the German benefit assessment in alignment with the updated Ordinance for the Benefit Assessment of Pharmaceuticals (AM-NutzenV), and to investigate the requirements for acknowledgement of extrapolation, a research of published AMNOG dossiers since 2011 was performed. Benefit assessment of new drugs, health insurance and submission of system of the country and n=18 INN with more than 60% MCDA (positive HTA assessment) were not listed for reimbursement. Conclusions: The MCDA is a reliable method and the approach is well formulated, consistent and replicable, but nevertheless all INN with a positive HTA assessment were not included for reimbursement in 2016, which is an indication that the MCDA need a further validated approach.

**DEFINING CRITERIA WEIGHTS BY AHP IN HEALTH TECHNOLOGY ASSESSMENT**

**OBJECTIVES:** Multi Criteria Decision Making (MCMD) is claimed to be the aid for Health Technology Assessment (HTA) based decision making. Transparent commit-ment of multi-disciplinary stakeholders is essential to attain public confidence in healthcare decision making. In current deliberative process commitment of stake-holders is not transparent. This product submits to propose a framework for MCDM applications in HTA by Analytic Hierarchy Process (AHP). Methods: Domains defined in HTA Core Model® of EUnetHTA are selected as nine criteria for MCDM application in HTA. The commitment of decision makers in prioritization via AHP is a guarantee of domain validity. Results: The proposed model stakeholder participation in criteria prioritization is provided. Clinical effectiveness domain is selected as the highest weighted option. Cost and economic evaluation domain assigned to have lower weight. This shows that decision makers in this specific survey gives more importance on treatment effectiveness, patient safety, and societal aspects while deciding on best treatment alternative in dialysis.

**COMPARISON OF EARLY SCIENTIFIC ADVICE PROCESSES IN UK, FRANCE AND GERMANY (HTA ONLY): TIPS AND TRICKS**

**OBJECTIVES:** There are more than 20 health technology assessment (HTA) scientific advice (SA) processes available to provide SA to drug and device manufacturers. The aim of this study is to compare the three most widely used single early SA processes offered by National Institute for Health and Care Excellence (NICE, UK), Haute Autorité de Santé (HAS, France) and Der Gemeinsame Bundesausschuss (G-BA, Germany). Methods: This overview and suggestions are based on review of NICE, HAS and G-BA SA processes and requirements as well authors’ expertise. Results: Authors reviewed the SA processes, timelines, template availability, and role of each participating party. Results: SA timelines vary from 2 to 5 months and costs range from € 50,000 to € 1,500,000. The HAS process is the most cost-effective one. The G-BA process is quicker. It is highly advised to start the process as early as possible to obtain the most benefit. The advice is not legally binding for any of the processes, however, reimbursement guidelines are developed during the SA process. Conclusions: The HTA processes are similar in terms of stakeholders, end points, study design and health economics. NICE and HAS provide briefing book templates, while G-BA provides a request form. Questions included in the briefing book may cover a range of topics to help companies de-risk their clinical development programs. NICE and HAS evaluate cost-effectiveness while G-BA only discusses clinical benefit. Only NICE involves patient representatives in the SA process. SA is country and payer specific and helps to build relationships between all parties. Conclusions: In addition to the HTA processes, clinical development programmes to generate evidence that is most relevant to HTA bodies, regulators, payers and patients, HTA SA dialogue can provide insights into country specific issues. Furthermore, the SA process helps to align the company’s position and involve all internal stakeholders at an early stage.

**REVIEW OF THE RECENT ASSESSMENT OF THE CEEPS EFFICIENCY OPINIONS AND ELIGIBILITY CRITERIA FOR ASSESSMENT SINCE ITS CREATION**

**OBJECTIVES:** Health economics is playing a greater role in pharmaceuticals pricing in France since the 2012 Social Security Funding Law established the Commission for Economic Evaluation and Public Health Social (CEEPS), which sits within the Haut Autorité de Santé (HAS). The CEEPS makes health economic evaluation mandatory for all medicines. The CEEPS assesses the cost-effectiveness of new medicines, and the CEEPS process evaluates and makes a decision on new medicines. The CEEPS has a four-step process of CEEPS assessment as detailed by the manufacturer in the submission dossier, in light of the actual ASMR granted by the TC in parallel. Results: Out of 163 pharmaceuticals have been declared
eligible for a CEESP assessment. Among all the medicines declared eligible for an assessment 29 have been granted an ASMR IV or "not reimbursed". **CONCLUSIONS:** The CEESP assessment is meant to inform the price negotiation with the pricing committee (CEPS). The decision to conduct a CEESP assessment is based on the ASMR claimed by the manufacturer. However, the TC may eventually grant the drug lower ASMR, meaning that the CEESP assessment is not justified. This has an economic impact on the overall HAS budget as CEESP is potentially assessing drugs unnecessarily.

**PHP269** QUALITY ASSURED USE OF PHARMACEUTICALS: DOES GERMAN GBA FOLLOW EMA?

**Methods:** [1] Mintańez C1, Thiel F2, Neubauer AS3

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2Institute for Health Economics (IfG), Munich, Germany.
3Objective:** After receiving the EMA approval for Europe, it is mandatory for pharma-aceuticals in Germany to complete the AMNOG process to receive reimbursement. Finally the responsible G-BA (joint federal committee) publishes a decision not only on the added benefit of the drug, but also on any specific requirements for the drugs. The AMNOG process may differ from the EPAR and SmPC specifications for quality assured use of the drug. **METHODS:** For all 110 AMNOG applications started and finished between January 2015 and June 2017 we compared the specifications of the AMNOG decision for quality assured use with the respective EPAR and SmPC documents. We categorized differences and determined its relative amounts. **RESULTS:** The G-BA decisions were clustered into three groups: [A] Complete agreement with the EPAR/SmPC documents (52%), [B] Concretization of the EPAR/SmPC requirements (41%) and [C] divergent requirements by G-BA (7%). In cases of category [B] the G-BA named the type of specialized physicians indicated by the EMA phrasing "...a physician experienced with...". All products of category [C] receiving divergent specifications (7%, n=8) were orphan drugs and two of them had an oncologic indication while the others were for metabolic diseases. While EPAR and SmPC mentioned "health care professionals" or had specific assigna-tion, the G-BA defined the drug to specific disease categories. The G-BA gives no explicit reasons for this decision, but the orphan drug status appears to be an important driver. **CONCLUSIONS:** In case of rare diseases German Health authorities request supervision by a specialized and experienced physician, also in cases where the EMA does not. This should be taken into concern when the market entry of an orphan drug is projected, especially for critical indications like cancer or severe neurologic and metabolic diseases.

**PHP270** RELATIVE VALUE OF EVIDENCE MCDCA FRAMEWORK FOR REFLECTIVE DRUG EVALUATION AMONG THERAPEUTIC POSITIONING REPORT EVALUATORS FROM THE SPANISH AGENCY OF MEDICINES AND HEALTHCARE USE.

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**OBJECTIVES:** To assess the value of applying reflective MCDCA to the generation of drug Therapeutic Positioning Reports (TPR) in Spain. **METHODS:** TPR are evaluation reports performed by the AEMPS to support F&R in Spain. AEMPS healthcare professionals are in charge of the generation of TPR and using the EVIDEM (v. 4.0) framework. TPR currently considers the assessment of "comparative effectiveness", "safety", "criterion of use" and "follow-up" for the drug under assessment. Both the EVIDEM and the TPR were presented and discussed using a direct rating scale (1: low relative importance; 5: high relative importance).

An example of the assessment of a biological drug in psoriasis was used to rate the evidences of the TPR: each expert was used to establish a reflective discussion among participants.

**RESULTS:** A total of 15 AEMPS representatives participated in the ses-sion. Using a direct rating scale, the criteria considered most important (≥4.0 points) were: "comparative effectiveness" (4.5), "disease severity" (4.5), "comparative safety / tolerability" (4.3), "type of therapeutic benefit" (4.1), "unmet needs" (4.1) and "quality of evidence" (4.0). The criteria considered less important (<3.0) were "comparative cost consequences - non-medical costs (2.9), "size of affected population" (2.9) and "expert consensus/clinical practice guidelines" (2.8). The scores assigned to each criterion regarding the comparative drug assessment were discussed to understand the value contribution of each criterion to the overall drug value.

**CONCLUSIONS:** The relative importance assigned by participants to the priority criteria used in TPR (comparative effectiveness and safety) was highly consistent. Additional criteria not included explicitly in TPR, such as, "disease severity", "quality of evidence" and "unmet needs" were also classified as very relevant. In general, reflective MCDCA was considered as a positive methodology which could add transparent reasoning behind evaluators’ discussions during TPR generation.

**PHP271** MAINTAINING THE BELT AND ROAD – THE IMPACT OF ‘BREXIT’ ON UK MARKET ACCESS

**Wrap GD, Macaulay R**


**OBJECTIVES:** Most new innovative medicines access European markets through the European Medicines Agency (EMA) centralised authorisation procedure. Post-Brexit, new UK national regulations will be required. This research explores possible UK regulatory access scenarios post-Brexit and discusses their market access implications.

**METHODS:** Publically available resources from the EMA, Swissmedic, NoMA, MHRA, BAG, EAK, HOD were screened for information on recent regulatory changes (July 2017). All NICED and ECESP criteria and sub-criteria guidelines were screened and the outcome and date extracted (01/01/2017 to 31/05/2017).

**RESULTS:** Norway is not in the EU but is in the EEA and is a full mem-ber of GHcU and participates in the centralised authorisation process. Switzerland is an independent country within Europe with a separate regulatory process, but has a customs-union with Liechtenstein, which is in the EEA, where precedence has been set on recognition of Swiss Marketing Authorisations. NICED and the SMC conduct HTAs for reimbursement of new therapies in the UK. However, 11% and 14% of their appraisals have been non-submissions, and recommendations have been at an average delay of 17.1 and 10.5 months, respectively. Whilst the UK is a large market, many companies already choose not to submit to NICE/SMC due to the difficulties in securing positive reimbursement recommendations. The prospect of an additional access hurdle formed by a separate UK-specific regulatory process may further deter some companies. Negotiations need to minimise the potential disruption to current approval and HTA recommendation timeframes to ensure that life-saving medicines are available in the UK.
primary nonadherence was common in both classes. Future research should explore additional medication classes and underlying predictors of primary nonadherence.

**PHP278** Evaluating Physicians’ Perception of Limitations and Obstacles Against the Effectiveness of “Audit and Feedback” and “Printed Educational Materials” Interventions on Prescribing Behavior: A Qualitative Study

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OBJECTIVES: Different interventions including “audit and feedback” (A&F) and “printed educational materials” (FEM) are being employed both in Iran and the world in general to improve physicians’ prescribing behavior. While several interventions have been evaluated as the effectiveness of these interventions, only few studies have investigated the views of physicians and other stakeholders about these interventions. The purpose of this study was to evaluate prescribers’ views about the limitations and obstacles of using A&F and FEM interventions effectively.

METHODS: The current qualitative study was performed using a semi-structured one-to-one and group interviews in the 2013-2014 period. 18 general practitioners, pediatricians and infection specialists from Tehran and Yazd were interviewed and twelve physi-
icians and pharmacists attended the focus group discussion meeting. The interviews and the meeting were recorded, transcribed and encoded. For analysis of the content, the framework method was employed. RESULTS: The resulting data in this study include six themes and 25 sub-themes. Awareness of the behavior-changing intervention, the effect of intervention in changing the behavior, A&F format and content, the underlying factors affecting drug prescribing behavior, the way FEM are delivered, and preferred intervention in promoting rational drug prescribing are the themes derived from the multivariate analysis. CONCLUSIONS: The study demonstrated limited awareness of different interventions for improving prescribing behavior. Moreover, the doctors suggested different modifications in the format and delivery of feedback and FEMs. These findings may improve prescribing behavior, and hence highlighting the need to attend other concerns such as patients’ expectations, the perceived low quality of generic medicines in Iran, and the pres-
ence of financial issues between doctors and patients. Improving the effectiveness of such interventions will require careful attention to the interrelationships between doctors, pharmacists and patients.

**PHP279** The First Five Months of National Prescription Monitoring in Finland

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OBJECTIVES: Electronic prescription is mandatory in Finland since January 2017. A physician or a dentist can issue a written (paper) or a telephone prescription under exceptional circumstances set by law, and the reason for issuing must be given. Because of the administrative nationwide change it was the first time possible to measure prescription volume in Finland. METHODS: Written and telephone pre-
scriptions were typed in to the national Prescription Centre at the 815 pharmacies. Electronic prescriptions were sent to the Prescription Centre from electronic patient data systems, or Kelain web prescription service. Data from the Prescription Centre were extracted from 1 January till 31 May, 2017. RESULTS: There were 13,874,515 100% data files typed in electronic prescription systems, and 57,340 (0.4%) telephone prescriptions. Approximately half of the prescriptions typed in to the electronic pharmacies were written prescriptions that were issued because of a technical failure. CONCLUSIONS: In this study we report the first time prescription volume in Finland. All the prescriptions in the national Prescription Centre are electronic, and only 1.3% of the prescriptions were typed in at the pharmacies in the first five months since the electronic prescription became mandatory 1 January, 2017. Written prescriptions were issued because a technical failure occurred in local or areal data or software systems.

**PHP280** Ordering in Chaos - The Impact of Brexit on the Regulatory Environment in Europe and the United Kingdom

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OBJECTIVES: In March 2017, the UK government invoked Article 50 of the Treaty on the European Union (EU) to withdraw from the EU (‘Brexit’) by April 2019. This research evaluates Brexit’s potential impact on EU regulatory access by examining the impact of MAs, MRA, RAAs, marketing authorisations, and parallel imports. METHODS: The medicines are currently authorised by the EMA (including generics and biosimilars), for which MAs will require independent approval, or for mutual recognition agreements to be put in place to avoid shortage of supply post-Brexit. Existing MAs approved through the direct marketing authorisation process, where the UK is not the reference member state, will have similar requirements for national approval. The MHA currently leads Europe in number of rapporteurships (Rapp Co-Rapp) appointments for centralised procedures, with 116-appointed (2013-2016, 16% of all rapporteurships). Sweden in second place had 84-appointed (10% of all rapporteurships) during this period. The value of

**PHP276** A Comparison of Systemic Pediatric Fluoroquinolone Use in South Korea

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OBJECTIVES: The age restriction of fluoroquinolone use in South Korea was imple-
mented in January 2010. This study aimed to study systemic fluoroquinolone use in pediatric patients and to assess the effect both continuous and immediate fluoroquinolone use in children and adolescents. METHODS: The Korean Health Insurance Review and Assessment Service data was obtained to analyze fluoro-
quino lone prescribing practice in pediatric patients younger than 18 years. The study explored whether patients in the US are more likely to fill a first-time prescription about extrinsic barriers in domestic situation. This study aims to identify intrinsic barriers to individual recommendation and information about extrinsic barriers to individual recommendation and information about fluoroquinolone use in pediatric patients. Primary nonadherence, defined as the failure to fill a first-time pre-
scriptions typed in to the national Prescription Centre at the 815 pharmacies. Because of the administrative nationwide change it was the first time possible to measure prescription volume in Finland. METHODS: Written and telephone pre-
scriptions were typed in to the national Prescription Centre at the 815 pharmacies. Electronic prescriptions were sent to the Prescription Centre from electronic patient data systems, or Kelain web prescription service. Data from the Prescription Centre were extracted from 1 January till 31 May, 2017. RESULTS: There were 13,874,515 100% data files typed in electronic prescription systems, and 57,340 (0.4%) telephone prescriptions. Approximately half of the prescriptions typed in to the electronic pharmacies were written prescriptions that were issued because of a technical failure. CONCLUSIONS: In this study we report the first time prescription volume in Finland. All the prescriptions in the national Prescription Centre are electronic, and only 1.3% of the prescriptions were typed in at the pharmacies in the first five months since the electronic prescription became mandatory 1 January, 2017. Written prescriptions were issued because a technical failure occurred in local or areal data or software systems.
parallel imports is estimated to account for 7.5%-9.0% of UK annual pharmaceutical sales (2012-2014) equating to £1.2-1.5 billion. The likely impact tariffs and lack of parallel imports for wholesalers could significantly impact pricing. Conversely, medicines manufactured in the UK may be subject to export tariffs. CONCLUSIONS: Brexit has the potential to enormously impact the pharmaceutical industry and medicines regulation in the UK. While it can be given but also central role that the MRHA plays within the EMA. The outcome of negotiations between the EU and UK government in this regard will be crucial, and a number of scenarios, including May's Switzerland—has been suggested. Finding a solution that appropriately incentivises access whilst maintaining standards and minimising disruption will likely be very challenging.

**PHP281**

**PRICING REGULATION IN GREECE - ANALYZING THE PRICE BULLETIN OF DECEMBER 2016**

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**OBJECTIVES:** Pricing regulation in Greece provides that generics are priced at 65% of the reference off-patent’s price, while off-patents are priced at the minimum between the two lowest originator prices in the EU. The purpose of this study is to assess the impact of the pricing regulation for generics in Greece. **METHODS:** Official pricing data from the December 2016 price bulletin were used to stratify the generalized active substances per pricing regulation category. **RESULTS:** 325 active substances with generics in circulation were identified, of which 19% were priced at 65% of the average of the three lowest originator prices in EU, while 15% were priced below this level while positioned in line with the lowest price in the EU and only 4.15% (net ex-factory prices after obligatory paybacks <0.90€) were subject to a price decrease of 10% and 2% were excluded from re-pricing due to reasons related with market equity. **CONCLUSIONS:** The current pricing system in Greece, in which price increases are not allowed, drives generic prices to a downward pricing spiral, while generic penetration remains at the comparatively low level of 25% in volume. By contrast, the generic economic policies with respect to the challenge of the new intervention.

**PHP282**

**CHARACTERISTICS AND APPROVALS OF REGULATORY SUBMISSIONS BASED ON NON-RANDOMIZED STUDIES IN THE UNITED STATES AND EUROPE**

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**OBJECTIVES:** Regulatory approval for most medications is based on evidence from randomized controlled trials involving comparisons against standards of care or placebo. However, under some circumstances, approval is based on non-randomized designs and comparisons against external controls or specific standard of care. This is particularly evident in diseases: that are rare, with high unmet need, without approved therapies, and/or where placebo is considered unethical. The objective of this study is to characterize regulatory submissions based on non-randomized comparisons involving external controls in Europe and the United States. **METHODS:** We identified therapeutic products through systematic searches of European Medicines Agency (EMA) database, excluding comparative international randomized studies, orphan drug designations, Food and Drug Administration (FDA) inventories of orphan or accelerated approval designations; and clinicaltrial.gov, EMBASE and MEDLINE. Products were included if reviewed between 2004 and 2016, and with primary evidence data was non-randomized trials, and the indication was for rare or haematologic cancers, stem cell transplantation, haematologic conditions, or rare metabolic conditions. **RESULTS:** We identified 34 eligible drugs submitted to EMA or FDA and extracted detailed data for 17 that represented the range of non-randomized comparisons with external controls. Of these, three submissions involved matching external controls to the trial population using individual patient-level data (IPD). Ten regulatory summaries referred to external controls without IPD and four did not reference external controls. Among the 17 products, six were refused by at least one regulator or withdrawn after initial review; one was initially refused, but later approved. Where reported, regulators tended to acknowledge the limitations of the evidence, however, for approved products these limitations were outweighed by the magnitude of the product’s estimated benefit. **CONCLUSIONS:** Comparisons with external controls have well-documented risks of confounding and bias, however, when the drug’s benefit outweighed the limitations of the evidence, FDA and EMA regulators were willing to grant approval.
OBJECTIVES: Along with the governmental pharmaceutical reform in Korea (2007), conditional reimbursement was required to undergo Coverage Evidence Development (CED) in 2011 for 88 drugs which pose uncertainty. Recently the last appraisal has finished as of June, 2017. This study aims to look back the journey of CED in the course of the drug reevaluation in Korea. METHODS: Through policy documentation, an HIRA internal database and internal data analysis, the study examined the whole process of Coverage Evidence Development in the drug reevaluation – introduction, implementation, evaluation and decision making - and described the outcomes, lessons learned and changes in practice. RESULTS: During the reevaluation, the delisting or the price-cut was extensively done. Having in difficulty where binomial decision, the Managed Entry was considered and the Committee suggested CED for the 10 active genetically 156 drugs (2011) which were gastrointestinal drugs. Perspective phase III non-inferiority RCTs were designed and the protocols were approved (2011). Of trials for 8 substances, 7 substances were terminated and released peer reviewed publication (2012-2013). HIRA and the Committee reviewed whether reimbursable (2014) for 7 substances 88 drugs, 85 drugs came to be remained to reimbursable (the last one ongoing). In case of no termination, it was delisted and payback. Although CED was well accepted in the beginning, some clinical trial was discontinued or went a controversial lawsuit in the last 7 CEDs; As a result of CED, six substances have produced clinical evidence resolving/resolving uncertainty. It was valuable but resource-consuming decision so that it can be improved by real world evidence and registry use. Recently in Korea, off-label use for cancer drugs (2011), Conditional Treatment Risk Sharing scheme (2013), coverage for use within clinical research (2016) has been introduced. Lessons from this CED case will be helpful for those quasi-situations.


OBJECTIVES: Advanced therapy medicinal products (ATMPs) encompass gene therapy products, and tissue-engineering (TE) products. For instance, ChondroCelect® (ChondroCelect®) was approved by the European Commission (EC) in 2009. These Advanced therapy medicinal products (ATMPs) encompass gene therapy products, and tissue-engineering (TE) products. For instance, ChondroCelect® (ChondroCelect®) was approved by the European Commission (EC) in 2009. These therapies present a unique challenge for health technology assessment (HTA) agencies, as the evidence base, cost, and potential benefits are often uncertain. Many HTA agencies lack the expertise to effectively assess these therapies. METHODS: The agency’s review process and lessons learned from the experience were described. RESULTS: The scope of these products and their potential benefits is vast. This is evident from the high number of ATMPs approved by agencies, such as the EC. However, the evidence base is often insufficient to make well-informed decisions. CONCLUSIONS: The lessons learned from this experience can be applied to other HTA agencies. The development of a unified framework for these products is recommended.

PHP290 IDENTIFICATION OF ASSESSMENT AND FUNDING MODELS APPLICABLE TO COMPANION DIAGNOSTICS IN UK, FRANCE AND GERMANY Zeepoui 1, Chalabi 2, Pacheco L1, Teale CW3 1PhG UK Limited, London, UK, 2PhG UK Limited, London, UK, 3PhG UK Limited, Melton Mowbray, UK

OBJECTIVES: European Medicines Agency (EMA) defines companion diagnostics (CDx) as tests that determine whether a patient is suitable for a drug or biotherapeutic. While the EMA’s recommendations are in place for the majority of CDx products in the EU, differences exist in the regulatory frameworks of the UK and the Netherlands. This study aimed to identify the available assessment and funding models for CDx products across the three countries. METHODS: A mixed methods approach was used to conduct a Horizon Scanning exercise and a country-specific literature review. Results were synthesised into a common framework. RESULTS: A total of 55 CDx products were identified across the three countries. The majority (44/55) were in the development stage and did not yet have a marketed product. Differences in the implementation of the EMA’s recommendations across the three countries were identified. CONCLUSIONS: The availability of national funding models, differences in assessment strategies and the approach to decision making varies across the three countries and could pose an obstacle to the development and market access of CDx products. Further harmonisation is needed to ensure patient access.

PHP288 DEVELOPING A MULTI-CRITERIA FRAMEWORK FOR INNOVATION AND BIOLOGIC DRUGS ASSESSMENT DECISION MAKING IN EGYPT Equal S1, ElMofty B2 1Pharmaceutical Economic Unit, Central Administration for Pharmaceutical Affairs, Ministry of Health, Egypt, Cairo, Egypt, 2Pricing department, Central Administration for Pharmaceutical Affairs, Ministry of Health, Egypt, Cairo, Egypt

OBJECTIVES: Given the unmet medical needs, the search is optimal for achieving the balance between satisfaction of patient need, offering the fair price to the company and the best utilization of health care resources. This is even tougher for Egypt. Our analysis demonstrates that firstly, currently adopted reference and ceiling ration criteria was the key driver of the economic evaluation and pricing decisions and no other factors were considered. Second, Many of Innovative and biologic drugs according to current ICR and highly regulatory and costly regulatory and manufacturing processes, small patient populations with limited clinical data, and the need for high upfront investment for a course of therapy that may only be a single treatment. Innovative payment models such as annuities/leasing and/or patient financing may need to be explored to ensure patient access and commercial returns.

PHP291 VAlUE-BASED PRICING OF MEDICINES ACROSS hEAlTHCARE SySTEMS IN EUROPE Memzer J1, Jimenez Ruiz Md, Lewandowska PK, Hoffman La Roche, Basel, Switzerland

OBJECTIVES: The pharmaceutical industry is moving from volume-based pricing towards value-based pricing (VBP). Availability of nationwide, high quality drug utilisation data is critical to enable this transition. Here we present an analysis of current challenges and potential solutions for its implementation in healthcare systems across Europe. METHODS: National healthcare landscapes (Hospital information systems, electronic health records, registries, e-prescription systems) were assessed in the context of VBP. Appropriate data sources and flow of resources (money and services) were analysed and mapped and then validated through interviews. Commonalities were identified to characterise functional archetypes. RESULTS: With regards to drug utilization data availability, three main challenges were identified for all healthcare systems. While the quality and completeness of drug utilisation data varies widely, our findings show that the minimal data required to enable VBP exists in all healthcare systems. CONCLUSIONS: Lack of data is often seen as the rate-limiting step in the adoption of VBP. Our analysis shows that existing drug utilisation data are fit for
objective' to enable VBP in Europe. Data and resource flow necessary to enable VBP
and orphan drugs. The analysis of all drugs with MEAs showed a National TTM
and distribution.

**RESULTS:** Negotiated MEAs were mainly observed for oncologic, innovative
and orphan drugs. The analysis of all drugs with MEAs showed a National TTM
of 14.1 months and a regional TTM of 6.1 months. The sub-analysis for different
types of MEA evidenced an increase in TTM both at National (16.4 months) and
at regional level (7.2 months) for drugs with outcome-based MEAs. On the contrary
not negotiated MEAs appeared to be reduced in TTM by 1.5 months (11.5 months).

**CONCLUSIONS:** MEAs have become a fundamental step toward
a successful drug access to the Italian Pharmaceutical Market, to evaluate drug
effectiveness and to ensure prescriptions are appropriate according to the drug
label. Financial agreements (outcome-based MEAs) guarantee a faster drug access;
however, non-outcome-based MEAs require a more flexible administrative framework,
in order to achieve successful agreements and to reduce TTM with faster patient
access to drugs.

**PHP293**
THE EFFECT OF VALUE BASED INSURANCE DESIGNS ON COSTS: A SYSTEMATIC REVIEW
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Ludwig Maximilian University Munich, München, Germany

**OBJECTIVES:** Value-based insurance designs (VBID) provide monetary incentives by
cost-sharing techniques designed to increase adherence to high value health care.
This might have two opposite effects on costs. On the one hand adherence might increase.
On the other hand, adherence could lower the total medical costs, possibly increase health
demand and therefore decrease costs. The aim of this systematic review was to
evaluate the VBID effect on different costs. **METHODS:** A systematic review of the literature
was done on Embase, Medline and EconLit to identify studies that empirically
analyzed the VBID effect on costs. Effects on medical, pharmaceutical and
total costs are evaluated from different perspectives. Differences in incentives and the
potential effect on outcomes, as well as risks of bias are considered. **RESULTS:** In total
16 records were included in this review. In carrot designs, pharmaceutical
costs and their potential effect on outcomes, as well as risks of bias are considered.
In other hand adherence might increase medical costs. The opposite was observed in carrot plus stick designs. From
a combined perspective pharmaceutical costs were mostly increasing. Effects on medical, pharmaceutical and
total costs are evaluated from different perspectives. Differences in incentives and their
potential effect on outcomes, as well as risks of bias are considered. **RESULTS:** In total
16 records were included in this review. In carrot designs, pharmaceutical
cost-sharing techniques designed to increase adherence to high value health care.
This might have two opposite effects on costs. On the one hand adherence might increase.
On the other hand, adherence could lower the total medical costs, possibly increase health
demand and therefore decrease costs. The aim of this systematic review was to
evaluate the VBID effect on different costs. **METHODS:** A systematic review of the literature
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analyzed the VBID effect on costs. Effects on medical, pharmaceutical and
total costs are evaluated from different perspectives. Differences in incentives and the
potential effect on outcomes, as well as risks of bias are considered. **RESULTS:** In total
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determining how much money is available for scientific research and development (R&D), and maintained funding is essential if the UK is to remain one of the top countries for R&D. In addition, tightening border control may cause a fall in high-quality researchers being available to work in UK research facilities. Any Brexit deal should take this into account. Quickly re-establishing a stable and attractive market will be key to retaining the UK’s status as an innovative and attractive hub for prominent non-drug companies, the UK should look to its own needs, giving rise to creative possibilities to cement the UK’s position as one of the most popular European markets.

**PHP298**  
**AN INNOVATIVE SOLUTION TO ACHIEVE COST-EFFECTIVENESS AND A POSITIVE NICE APPRAISAL? – THE CABAZITAXEL CASE STUDY**  
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Oncotherapies have historically struggled to receive positive appraisals by cost-effectiveness health technology assessment (HTA) bodies, such as the National Institute of Health and Care Excellence (NICE). Indeed, between March 2000 and March 2017, 30% of NICE single technology appraisals (STAs) within oncology received a negative appraisal versus 11% of appraisals outside oncology. Many high-cost innovative oncology treatments are dosed via an intravenous route based on a patient’s weight or body surface area. The patient-specific nature of this dosing means that within opened drug vials there is leftover drug that is typically discarded (both the European Medicines Agency (EMA) and Medicines and Healthcare Products Regulatory Agency (MHRA) advise that vial-sharing should not be practiced). Such vial wastage may substantially increase the cost of treatment and may significantly impact cost-effectiveness estimates. In May 2016, NICE published a positive recommendation for cabazitaxel for metastatic prostate cancer (MPC) contingent upon, among other things, the company making cabazitaxel available in pre-prepared intravenous-infusion bags containing the precise dosing needed per patient to minimize wastage. Subsequently, in August 2016 the manufacturer agreed to be able to supply the drug in vials with an additional discount to apply that reflects wastage costs. The rationale for seeking this additional vial-supply was not published yet there is no evidence that this threshold has changed over time, leading to growing discussion over its static nature.

**INTRODUCTION:**

All schemes include collection of survival data. All schemes include collection of survival data. However, NICE assessments involving MAAs were identified to growing discussion over its static nature. NICE approach lacks. ing thresholds may provide the transparency in threshold setting that the current.

**RESULTS:**

A targeted literature review was undertaken of provisional and final HTA recommendations, and other payer/ pricing and market access assessments, of “cancer stacks” (cancer drugs used in combination with one or more additional cancer drugs), reported in the public domain from 2014 to 2016. The review focused on payer awareness and understanding of new treatment paradigms and their implications for oncology budgets, assessment timelines, and the most appropriate solutions being proposed by both payers and manufacturers including cost shifting, cost and risk sharing, payer/pharma partnerships, and pharma/pharma collaboration. PAYER understanding of new approaches to treating cancer (immunotherapies, precision medicines, and anti-body drug conjugates) and their multifactorial consequences is low. Pay awareness of future pressure on budgets triggered by the arrival of high profile cancer treatments and their high initial cost.

**OBJECTIVE:**

To understand how pharmaceutical companies and payers are implementing quality and audit systems alongside infusion preparation procedures to ensure the safety/quality of resultant ready-infusions. Further, the shelf-life from point of infusion preparation is typically 24 hours, which will have associated wastage and associated wastage. This is dependent on the availability of survival data. All schemes include collection of survival data. However, NICE assessments involving MAAs were identified to growing discussion over its static nature. NICE approach lacks. ing thresholds may provide the transparency in threshold setting that the current.

**OBJECTIVES:**

The UK political environment is causing both macro and microeconomic turbulence to a life science sector which still retains a reputation as one of the most attractive markets in the Western world. The research seeks to assess how political phenomena such as Brexit and the General Election result in June 2017 will affect the pricing and market access environment in the UK.

**METHODS:**

The research used a primary documentary approach to obtain data, which was then integrated and interpreted using a deductive interpretative method. This methodology was subsequently enhanced with semi-structured qualitative interviews and informal consensus groups with key stakeholders in the UK political/pricing and market access environment.

**RESULTS:**

Building out of the Accelerated Access Review (AAR), the future UK pricing and market access environment has many positive elements to help retain a leading role in the research, development and commercialisation of pharmaceuticals. However, concerns remain about the transparency of NHS, the role of NICE, devolution and the wider impact of Brexit on the life science sector. Stakeholders stressed the requirement for stability and positive political climate amid the political turmoil.

**CONCLUSIONS:**

Market access and policy are intertwined and the impact of NICE on policy and political decisions in the decision-making on pharmaceuticals cannot be underestimated. The UK faces considerable uncertainty both on a macro and micro-economic level and therefore strategies in the 2019 FFRS renegotiations is vital if the UK wants to retain a leading global role in the life science sector.
ASSESSMENT and long-term care, and for other health technologies’ subgroups. The common or as a part of medical procedure (for pharmaceuticals) or diagnostic and surgical medical devices, as there is not a common approach for their assessment separately and treatment methods) and for which full HTA are applied; secondly, to clarify the impact of health technologies interactions. To develop the common approach fied as a comprehensive national HTA systems. However these systems demonstrate be utilised by manufacturers to mitigate the uncertainty and high costs associated contracts, rebate contracts, and real-world evidence collection as strategies that can to optimal reimbursement. Payers discussed, among others, pay-for-performance of genetically defined tumours across multiple locations in the body (tissue/site treatment). The national system’s major strengths lie in being a well-struc- ted and cohesive system. For brand products; the price is set to match the lowest price in the OECD, for example, for the patient’s interest at the heart of decision making. Budget impact analy- financial benefits of the budget impact test are evident, it ultimately fails to main- prove problematic as the grouped efficacy data that regulators may be willing to be submitted, this results in larger patient groups being used as a bargaining chip to the NHS to drive down drug prices. The test could also be contradictory to the NHS’s Constitution, which states patient access to interventions should not be lim- ited on the basis of net acquisition and administration costs. Furthermore, the test may disproportionally impact first to market drugs who often represent a consider- ably cost-effective alternative to current standards of care but may also be costly to introduce due to existing unmet need. CONCLUSION: Whilst the Budget Impact Test proved the NHS opportunity to contain future costs, it pushes the test further into the back seat in terms of service commissioning, allowing financial interest to increasingly drive decision making.

PHP304

CHALLENGES AND FUTURE PERSPECTIVES ON THE REIMBURSEMENT OF ADVANCED THERAPY MEDICINAL PRODUCTS

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OBJECTIVES: Advanced therapy medicinal products (ATMPs) are a new class of therapeutic interventions, based on gene, cell and tissue manipulations, offering potentially curative treatment options for a range of diseases. While the ATMP classification system is solely a European phenomenon, gene and cell-based therapies (ATMP-like therapies) are emerging across markets and so the question of how these innovative technologies are to be reimbursed is of increasing importance. Aims of our research is to: review the current situation surrounding ATMP HTA and reimbursement in Europe, Canada and the US; identify specific challenges to ATMP market access; ascertain if and how assessment procedures are likely to change over the next 3 years. METHODS: Targeted literature searches and paper interviews (n=10) were carried out focussing on ATMPs and ATMP-like therapies awarded cen- tralised classification by the EMA. A structured review of national HTA systems for HTA and reimbursement of ATMPs, like those for conventional drugs, vary country-by-country. While regulatory agencies have ATMP, or gene- and cell- therapy specific policies, HTA and reimbursement bodies do not; hence in many cases, the assessment of ATMPs for reimbursement is largely in line with that for conventional therapies. For ATMPs offering long-term curative effects, the majority of payers identified uncertainty over long-term efficacy as the greatest challenge to optimal reimbursement. Payers discussed, among others, pay-for-performance contracts, rebate contracts, and real-world evidence collection as strategies that can be utilised by manufacturers to mitigate the uncertainty and high costs associated with ATMPs. CONCLUSION: The high cost of ATMPs coupled with the uncertainty of long-term efficacy is the greatest challenge to ATMPs gaining market access. Overall, the key concern for payers is how to mitigate the risks of reimbursing a treatment with uncertain long-term outcomes.

PHP305

HEALTH TECHNOLOGIES’ TAXONOMY AND CHALLENGES TO APPLY THE ASSESSMENT

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The international professional organizations, academies and national competent authorities are currently employing different approaches for classifying the health technologies taxonomy and therefore different scope of health technology assessment (HTA). Theoretically defined that the health technologies include pharmaceuticals, medi- cal devices, diagnostic and treatment methods, rehabilitation and prevention methods, as well as organizational, financial, delivery and support systems. At the same time the HTA is defined as a multidisciplinary field of policy analysis, which studies medical, social, ethical and economic implications of development, diffusion and use of health technology. Practically, by international surveys results, can be observed that HTA is applied mostly for pharmaceuticals and medical devices, and it is speci- fied as a comprehensive national HTA systems. However these systems demonstrate the lack of methods and policy analysis of medical, social, ethical and economic implications of specific health care financing and managerial models, as well as the impact of health technologies interactions. To develop the common approach and avoid misunderstandings could be recommended, firstly, to consider possibility to define the medical technologies as a subgroup of health technologies, which are directly used in treatment process (pharmaceuticals, medical devices, diagnostic and treatment methods) and for which full HTA are applied; secondly, to clarify the separation of pharmaceutical and medical and surgical procedures from pharmaceutical and medical devices, as there is not a common approach for their assessment separately or as a part of medical procedure (for pharmaceuticals) or diagnostic and surgical procedure (for medical devices), thirdly, to continue the development of specific HTA methodologies for assessment of health care financing, delivery, and managerial models, prevention activities and complementary medicine, rehabilitation programs and long-term care, and for other health technologies’ subgroups. The common approach is necessary to handle the regulatory assessment of oncology drugs for the treatment of genetically defined tumours across multiple locations in the body (tissue/site oncology approvals). We sought to review clinical data available on drugs likely to be considered for oncology patients with a view to considering the hurdles that manufacturers and HTA bodies will encounter in ensuring patients can access these drugs. Publically available clinical data on pembrolizumab (for the treatment of MSI-H and dMMR solid tumors) and larotrectinib (for the treat- ment of TRK fusion cancers) were retrieved and reviewed. Pembrolizumab received FDA approval based on data from 149 patients with MSI-H or dMMR solid tumors enrolled across five uncontrolled, single-arm clinical trials; 90 patients had colo- rectal cancer and 59 patients were diagnosed with one of 14 other cancer types. Loxo Oncology are expected to submit for tissue/site oncology approval of larot- tractinib for TRK fusion cancer based on data from TRK fusion patients recruited across 3 trials. Interim data indicates that 13 discrete TRK fusion tumour types have been treated across 55 patients: salivary (12), sarcoma (10), intestinal tract cancer (7), lung (5), thyroid (5), colon (4), melanoma (4), cholangio (2), GIST (2), and other (4). HTAs of oncology drugs that receive tissue/site oncology approvals are likely to prove problematic as the group efficacy data that regulators may be willing to accept are unlikely to be fit for the purpose of assessing drugs for reimbursement for specific indications within the current HTA frameworks. Reconsideration of the HTA framework for such drugs may be necessary to avoid withholding patient access to drugs for licenced indications.

PHP307

AN ANALYSIS OF THE CURRENT JORDANIAN PRICING SYSTEM AND DEVELOPING RECOMMENDATIONS FOR ITS ENHANCEMENT

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OBJECTIVES: The current list pricing system in Jordan is based on international price referencing. The system has been delivering effective outcomes since 2003. While this mechanism provides for sustainable medicines pricing, it does not sufficiently account for the impact of government interventions on the medicines pricing system. RESULTS: The Jordanian system’s major strengths lie in being a well-struc- ted and cohesive system. For brand products; the price is set to match the lowest price in the OECD, for example, for in 16 pre identified countries. The system allows for appeals and exceptions according to patient centric criteria. Areas of development in the Jordanian pricing system include; developing specific considerations for pricing of biological products and the development of a mechanism for determining the base price. Availability of data remains a challenge towards value based pricing. CONCLUSION: An effective and cohesive pricing approach is a corner stone of patient focused healthcare system. This is ideally done by continuously improving and advancing the regulations to meet that objective while ensuring that patients still have access to innovative drugs. The focus group agreed on a set of recommendations adopting good pricing practice that provides a support of a cohesive and uniform process in the evaluation of innovative healthcare technologies.

PHP308

EFFECT OF HEALTH SYSTEM, FINANCING, AND MACRO-ECONOMIC CHARACTERISTICS ON THE MIGRATION OF FOREIGN PHYSICIANS TO OECD COUNTRIES

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This study specifically focuses on 'pull' factors affecting physician migration to OECD countries. The demand on human resource in healthcare is rapidly growing worldwide, and there is a chronic need for some 2.4 million more physicians. These shortages provide that many countries have insufficient numbers of healthcare workforce to deliver necessary interventions producing health. The global migration of physicians is increasingly playing a key role in compensating for an inadequate domestic supply in many countries of the Organization for Economic Cooperation and Development (OECD). Physician flows that is the way for the countries to solve the shortage of medical professionals is receiving increased attention. For example, on average in the OECD, there are around 20% of foreign born employed physicians. In total, 243,000 foreign trained physicians registered to practice in the United States while 91,000 in the United Kingdom (in 2011), 18,000 in Australia (in 2009), and 18,000 in Canada (in 2012) registered to practice. In general, the OECD countries that have more migrated physicians tend to have more professional health workforce to use them as a "quick fix" to address the needs, because training extra physicians takes many years to have an effect. Based on the previous studies and widely accepted literatures, three main categories have been found crucial on the migration physicists to OECD countries; Healthcare Resources Characteristics (Physicians, Medical graduations, and Medical Technology density), Healthcare System Characteristics (Health care expenditure, Financing of expenditure, Social Protection, healthcare utilization, Health Status), and Macro-Economic Characteristics (GDP, PPP, NCU, GNP, GNI, wages, and unemployment rate). Overall, the migration flows to OECD countries are expected to continue in coming decades due to increasing demand in the aging population as well as technological changes anticipated to increase the demand for health care services.

PHP309

VALUE ADDED MEDICINES: ADJUSTMENTS OF HTA DECISION FRAMEWORKS TO CAPTURE THEIR FULL VALUE

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Financial benefits of the budget impact test are evident, it ultimately fails to main-
Value added medicines (VAMs) are medicines based on known molecules that follow a drug repurposing models, i.e., reformulation, repackaging and combination, which deliver substantial value for patients and society. However, current European health technology assessment (HTA) decision frameworks, depending on country, represent various challenges for full value recognition of VAMs. Several challenges were reported for VAMs when classified for VAMs in current HTA decision frameworks: 1) May not be eligible for HTA, 2) May not be eligible for early HTA dialogues, 3) May not be eligible for coverage with evidence development, 4) Their benefits, e.g. improvements in patient preference, adherence, and convenience of use, may not adequately be captured, as they can be complex to demonstrate through RCTs or not readily captured via QALYs, 5) Are usually perceived as generic-like products and therefore penalised in the deliberative process. The recommended HTA policy changes that need to be considered for VAMs include: 1) Promoting alternative models such as multiple criteria decision analysis techniques and constraint optimisation modelling; 2) Adjusting current HTA decision frameworks. Whenever requested, all medicines should be eligible for early HTA dialogue (including non-medical reasons such as cost-effectiveness) in a standardised and explicit way through a transparent and reproducible deliberative process. Attributes not already included, or included informally, should be used as appropriate. The HTA decision frameworks should be patient-centric, including patient-reported outcomes, patient-centered outcomes and patient preferences, consider alternative study designs beyond RCTs, and allow coverage with evidence development to capture the benefits that are complex to demonstrate pre-launch. The societal perspective should be adopted, and a broad range of stakeholders — including patients — should take part in the decision-making process. HTA policy changes and robust research support are recommended to enhance VAM value recognition and encourage industry investment in medicines with high potential value to society.

**PHP310**

**ESTIMATION OF PREVALENCE IN RARE DISEASE**

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**OBJECTIVES:** Overestimation of real-world prevalence in rare diseases can be a significant issue for policy makers and the pharmaceutical industry. This work explores factors for overestimation and develop a framework for the application of data for drug registration when calculating prevalence based on reported incidence. Two rare epileptic encephalopathies Dravet syndrome (DS) and Lennox- Gastaut syndrome (LGS) were used as illustrative examples. METHODS: For both rare diseases, a targeted literature review without restriction on publication date was performed to identify all reports of incidence, prevalence and mortality rates and develop a detailed description of how diagnostic practice has evolved over time. The factors considered included: time from syndrome identification, development in disease definition/diagnostic criteria and inclusion (or lack of) in clinical guidelines, availability of any or improved therapies and the development of diagnostic tools. A conceptual model was developed to calculate prevalence based on reported incidence (traditional approach) versus adjusted incidence (according to factors that cause a diagnostic drag). RESULTS: For DS patients, calculated prevalence based on diagnostic incidence data matches the real-world prevalence for patients under 18 years old, but overestimates the 18 years and older real-world prevalent population. For LGS patients, calculated prevalence is lower than traditional calculated prevalence (191 for the conceptual model vs 257 for the traditional model). CONCLUSIONS: Methodological challenges in measuring epidemiology of rare diseases with a focus on rare diseases for people 18 years and older due to the heterogeneity between rare conditions and real-world prevalence. Care should be taken with calculated prevalence figures to not overstate the real-world prevalence in rare diseases.

**PHP311**

**A HEALTHCARE POLICY STUDY TO BUILD A ROADMAP FOR RARE DISEASE MANAGEMENT UNDER THE EGYPTIAN HEALTHCARE SYSTEM**

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**OBJECTIVES:** This policy study aims to identify the gaps alongside the patient journey of rare disease (RD) patients in Egypt, and to build a roadmap for the enhancement of RD management, as well as to maximize the access of RD patients to healthcare. METHODOLOGY: An Expert panel meeting was conducted with RD physicians, key decision makers, Non-Governmental Organizations, patient organizations, payers, patients and their families. The meeting was moderated by an external facilitator to gather all insights and opinions about the objectives as well as building the roadmap milestones, focusing on 3 RDs: myelofibrosis, cystinosis, and tuberous-sclerosis-complex (TSC). RESULTS: A consensus on the following key actions to action milestones was established: 1. Create a list of RDs in Egypt estimating their respective prevalence. 2. Create a central hub of data and a research center connected to the National RD registry in Egypt 3. Apply uniform registration ID to all units to avoid duplications. 4. Initialize a national registry program that connects the RD units. 5. Initiate a screening program for patients at risk (focused screening) starting with potential candidate population. 6. Institute of Health Economics: RDs as high priority health projects. As well as prenatal diagnosis program. 6. Build National Egyptian guidelines for RD with special focus on multidisciplinary management 7. Add the necessary RD drugs to the public sector formulary 8. Build a national office for RDs responsible for interaction between different stakeholders 9. RD education and awareness programs are needed. CONCLUSIONS: The milestones of the RD roadmap needs more compelling actions from policy makers, public authorities, industry representatives, and health professionals about the seriousness and importance of treating RDs in Egypt. Great efforts are still needed from the governmental sector to alleviate the obstacles across the entire patient journey mainly the financial burden aspect, the availability of medications and most importantly the creation of the RD committee.

**PHP312**

**ADAPTING PHARMAECONOMICS TO SHAPE EFFICIENT HEALTH SYSTEMS EN ROUTE TO UHC: A CONCEPTUAL FRAMEWORK**

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Today, many countries are in some stage of implementing or using pharmaco- economics to improve patient and health system outcomes. This conceptual paper aims at identifying the factors that determine the design and applications of the pharmaco-economic toolkit in different health systems internationally. With a focus on methodological alternatives and different approaches towards integrating and institutionalising pharmaco-economics within health systems, the paper seeks to propose a framework on processes, implementation of pharmaco-economics as a steering tool within a health system under the universal health coverage (UHC) paradigm. The design of the underlying conceptual framework is based on a review of international literature as well as on policy observations and experiences from specific countries and regions with a view to UHC.

**PHP313**

**SPECIFICITIES OF CANCER IMMUNOTHERAPY – CHALLENGES FROM MARKET ACCESS PERSPECTIVE**

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**BACKGROUND:** By targeting immune cells rather than tumour cells, immuno-oncology therapies (IOs) have shifted the cancer treatment landscape offering the potential for long-term quality survival to many patients for whom treatment options were previously limited. Since the approval of immune checkpoint meta- markers in metastatic melanoma in 2011, a great deal of knowledge was generated on specificities of IO and many thereof remain challenging from market access perspective. Pricing and reimbursement of IO therapies remain a key challenge, as evidence of IO’s ‘magic’ is often only perceived at launch. IO therapies showed a delayed tumor response and potential long-term survival in some patients limiting use of standard endpoints (e.g. median overall survival, sur- vival endpoints, such as progression-free survival) and raising much uncertainty on long-term efficacy data. Assessment of relative efficacy of IO therapies poses substantial challenges while fast evolving treatment patterns make evidence on survival timelines becoming rapidly outdated. IO responses can vary greatly from patient to patient, lacking predictive biomarkers precludes from selecting the optimal target populations. Immune-related side effects make long-term safety uncertain. IO response kinetic and heterogeneous populations in terms of survival are problematic vis-à-vis standard methods used in extrapolation of survival data. Anticipation of potential budget impact is more complex by uncertainty in dose selection, unclear rules for treatment hold/discontinuation and increasing number of potential drug combinations. Finally, IO potential for long-term quality survival, decision-makers should consider a societal perspective to fully capture indirect costs, such as work productivity and caregiver time. CONCLUSIONS: Recognition of entire benefits of IO therapies depends largely upon addressing the discussed challenges. Mature and long-term clinical data are needed to quantify additional benefits and to support decision-making. On-going research and debates on new clinical endpoints, specific survival extrapolation methods, research on biomarkers, drug value framework should contribute to addressing gaps in IO assessment.

**PHP314**

**WILL 2017 UPDATES TO THE HIGHLY SPECIALISED TECHNOLOGIES PROGRAMME BENEFIT OR HARM VULNERABLE PATIENTS?**

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**BACKGROUND:** The highly specialised technologies (HST) programme (HST) assesses drugs for people who suffer rare conditions and whose indicated population is sufficiently small that treatment has to be concentrated in a few centres only. Changes to the HST programme in 2017 have been recently announced and are designed to ensure a cost-effectiveness assessment with the intention to close the so-called ‘price gap’. Additionally, the review of the HST programme has been asking for a public consultation, where several potential changes have been mooted. CONCLUSIONS: Recognition of entire benefits of IO therapies depends largely upon addressing the discussed challenges. Mature and long-term clinical data are needed to quantify additional benefits and to support decision-making. On-going research and debates on new clinical endpoints, specific survival extrapolation methods, research on biomarkers, drug value framework should contribute to addressing gaps in IO assessment.
the technology. As of April 2017, NICE has introduced a cost-effectiveness element to the appraisal process, requiring an additional quality-adjusted life year (QALY) assessment prior to approval with a threshold set at £300,000/QALY. The benefits of such analysis beyond augmentation in economic efficiency is to allow greater consistency and comparability of patient access as other drugs undergo- ing NICE assessment are prioritised, other attributes are important and participants were prepared to trade prognosis and provide more QALE gains. Only the number of people affected (rarity of disease identified statistically significant preferences for less inconvenient treatments, treatment for the other identified attributes.

Quality-adjusted life expectancy (QALE) is used as a payment vehicle and the pilot tested whether respondents would be willing to give up health gains associated with new therapies and technologies into everyday clinical practice. Essentially, these frameworks have emerged, perhaps due to the greater costs of novel therapies in the cancer space. But none of these value frameworks include weights that economists would recognise as legitimate values. Building on previous qualitative work that identified health and non-health attributes of cancer treatment, the aim of this study was to design a discrete choice experiment (DCE) to identify trade-offs between identified attributes. METHODS: Previously reported qualitative focus group work with cancer patients, oncology nurses and oncology nurses identified treatment convenience, existence of treatment alternatives, disease rarity, quality of evidence and prognosis without treatment as important attributes alongside the traditional health gain associated with the treatment. These results informed the development of a DCE piloted in June 2017 with a convenience sample (n=45) where subjects where asked to choose between covering two alternative treatments in a new health plan. Quality-adjusted life expectancy (QALE) is used as a payment vehicle and the pilot tested whether respondents would be willing to give up health gains associated with treatment for the other identified attributes. RESULTS: Conditional logistic regress- ion identified statistically significant preferences for less inconvenient treatments, treatments with no alternatives, higher evidence quality, helping those with shorter prognosis and provide more QALE gains. Only the number of people affected (rarity of disease) was insignificant. CONCLUSIONS: The pilot phase of this ongoing study demonstrates that whilst the health-gains of cancer therapies are predominately predicated on the type of treatment, the development of the treatment and the economic evidence could help to (1) improve research efficiency by informing the identification and collection of appropriate data earlier in the development process; (2) identify methodological work needed to improve the rigor of such research; and (3) align evidence generation to the needs of local and national decision-makers. The objective of this conceptual study is to describe a ‘map’ of the current development pathway for new diagnostic technologies within England and Scotland and describe the type of economic evidence needed to support the development process at the defined stage of the pipeline. Drawing upon the collective experience of health economists working within the UK diagnostics landscape, the pathway will differentiate between types of diagnostics (e.g. ‘companion’ versus ‘standalone’) and delineate the differences between evidence generation and assessment for diagnostics compared with therapeutics. The different types of economic evidence required by NICE and local funders will also be discussed and the implications for likely implementation highlighted.

PHP319 CONCEPT OF PHARMACEUTICAL CARE IN THE BRAZILIAN LEGISLATION
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Pharmaceutical care is a fundament in the relationship between healthcare providers and patients. The concept of pharmaceutical assistance, pharmaceutical services, pharmaceutical therapeutic profile, and dispensing are designations used in laws, decrees, resolutions, and edicts concerning activities of pharmacists, without a specific distinction among them. OBJECTIVES: To analyze designations that cover the duties of clinical pharmacists, that work in the healthcare system, with regard to health promotion, prevention, and recovery.METHOD: Analysis of legal documents, since Decrease no 20.377/1931, which regulated the practice of the pharmaceutical profession in Brazil, until Law 13.021/14 which recognized pharmacists as healthcare facilities. RESULTS: Seventeen legal documents were identified, including decrees, laws, resolutions, and edicts issued by Brazil’s Presidency of the Republic, Ministry of Health, Pharmacy Federal Council, and National Health Surveillance.There is no standardization of concepts of the terms used, causing conceptual misunderstanding. CONCLUSION: The lack of standardization of terms associated with pharmaceutical activities brings negative consequences for the practice of the profession. Pharmacists must assume the more appropriate expression to cover the duties that pharmacists must assume as components of the healthcare system.

PHP320 IMPROVING TRANSPARENCY IN HEALTH TECHNOLOGY ASSESSMENT
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INTRODUCTION: The goal of Health Technology Assessment (HTA) agencies is to provide information to healthcare decision makers about the diagnostic and therapeutic value of medical technologies. In general, the HTA process lacks transparency due to effectiveness and safety data dependent on ex post evaluation, the possibility of selective outcomes and bias in sampling, dosing and statistical analysis and economic evaluations based on unvalidated models and arbitrary threshold values. OBJECTIVES: The aim of this work is to evaluate methods to improve transparency on the HTA process. METHODS: Electronic search on Medline, Lilacs, Science Direct and Google Scholar and a complementary search in references of included studies and conference abstracts in January 2017. RESULTS: The transparency of the HTA process can
be improved with the adoption of some concepts. The definition of a preferable health outcome and the consequent decision making and make possible the evaluation of results of cost-effectiveness studies through a well established explicit threshold value, preferably defined by an opportunity cost approach. The use of risk sharing can be beneficial to public systems and suppliers provided that a good monitoring system is established. The Clinical Decision Analysis (CDA) matrixes enable doctors, health professionals and society about the variables and weights considered in the analysis and facilitate the decision process. Public consultations previously to a relevant exploration are useful to include the general population's preferences and social values into the HTA process. The adoption of the principles of value-based healthcare (VHB) tends to limit the price range of new interventions and facilitate negotiations between healthcare providers and suppliers. CONCLUSION: Adopting a well established preferable health outcome and the concept of opportunity cost, VHB, risk sharing, MCDa and public participation, the HTA system tends to a situation where the decisions are made explicit and improved through rational methods adjusted by society's preference.

**PHP21**

**ALTERNATIVE REIMBURSEMENT MODELS FOR HIGH COST HEALTH TECHNOLOGIES**

Serd D

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High cost health technologies, mostly targeting rare diseases and genetic disorders, are becoming a growing source of concern to public and private payers due to their potentially disruptive front-loaded budget impact. Current funding mechanisms, structured to cover incremental costs usually required to treat patients with chronic conditions, will not be capable of absorbing the many high cost technologies that are disrupting the distribution of treatment cost with the long-term realisation of clinical benefits to patients. Pressure to make these treatments available and accessible to patients on the basis of effectiveness (i.e. cure) and future medical cost offsets was observed already with Hepatitis C drugs. Rapid advances in gene therapies and promising clinical trial results are likely to further increase the number of patients with rare diseases with these high cost treatments. Spurred by the US’s Social Actuaries (SOA) – Health Section, this work presents a framework for evaluating alternative reimbursement approaches, with considerations specific to public and private payer perspectives in the US and UK. Various financing and insurance-like models are explored, including highlighting the strengths and weaknesses of each of these approaches to the type of health technologies at hand, and identifying areas where traditional risk-sharing principles may break down. Illustrative scenarios using a real-world data explore the applicability of these alternative reimbursement models to selected disease areas and therapies, and demonstrate the magnitude of the financial risks to payers. While traditional actuarial approaches are normally used to quantify the potential financial risk to payers of introducing novel technologies, market and economic evaluations tend to focus on predicting long-term costs and outcomes of new treatments. Therefore, managing the financial uncertainty of high cost technologies while maximising patient clinical benefits is an area where both disciplines can leverage each other to develop effective and durable alternative reimbursement models.

**PHP22**

**THE IMPACT OF HEALTH POLICY ON THE PHARMACEUTICAL SUPPLY CHAIN IN FRANCE**

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OBJECTIVE: This paper discusses the impact of health policy on the pharmaceutical supply chain in France from 2008, it provides an analysis of the current situation and reflect on future research. METHODS: The data is generated from secondary data analysis and information available from peer review literature and publicly available data given on governmental websites. It focuses mainly on prescription drugs which are reimbursed by social security. RESULTS: Since 2008, the French Government has enforced a number of measures to reduce the cost of pharmaceutical spending, representing 15% of health care expenditure. Therefore, managing the financial uncertainties of high cost technologies while maximising patient clinical benefits is an area where both disciplines can leverage each other to develop effective and durable alternative reimbursement models.

**PHP23**

**POSSIBILITIES OF DOMESTIC PRODUCERS OF THE REPUBLIC OF KAZAKHSTAN IN THE FIELD OF MANUFACTURING ANTI-TUBERCULOSIS MEDICINES**

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INTRODUCTION: The objective of the study is to explore the possibilities of the domestic manufacturers of drugs and to produce drugs for treating patients with tuberculosis (TB), on the basis of analysis and comparison of the manufacturer's socio-economic activities, and social and marketing study of the manufacturers of medicines in the Republic of Kazakhstan. RESULTS: As shown by the social and market studies a real way to solve the problems of drug supply for patients with tuberculosis of the country may be the development of the domestic pharmaceutical industry on the basis of state economic support in the form of investment in the innovative economy and the pharmaceutical industry to expand production with using advanced technologies to conduct the study, we developed a questionnaire consisting of 26 questions for the heads of pharmaceutical industry. The questionnaire consisted of questions both of open and closed types. So in the questionnaire there were questions concerning descriptive, quantifiable, and preferable to publish the results of the research. The heads of the pharmaceutical companies were necessary to reply to a number of questions to find out the possible areas of cooperation with the state. CONCLUSIONS: 1. Most heads of pharmaceutical enterprises stated that they could compete on production of quality products with other CIS countries enterprises (73.0%). By the points of view of the heads of pharmaceutical companies it is necessary to reduce the risk of loading on businesses, as well as to provide a permanent state order for domestic manufacture.

**PHP24**

**A CONCEPTUAL Y ET PRAGMATIC FRAMEWORK FOR VALUE-BASED AGREEMENTS**

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Value-based contracts (VBCs), or performance-based managed entry agreements, are regularly proposed as important instruments to achieving sustainable access to innovative medicines, but still few seem to be implemented. Various factors leading to the success or failure of VBCs have been identified in the literature. However, the standpoint has been mainly academic, with little insight into where the potential parties (pharma and payers) should focus their efforts to make these arrangements happen. This paper is revisiting the conceptual framework for VBCs to inject a needed dose of pragmatism, based on extensive experience of the authors in these approaches when working with payers and pharma companies. It details in a structured way, the incentives and hurdles most heavily involved in successful VBCs, clarify when payers want to consider and pursue these agreements, and delve into attitudes to risk sharing and the dynamics of negotiation. To provide richness to the analysis, the EU and US markets will be contrasted, since their respective payer philosophies are distinct in various ways. The current practices of pricing and reimbursement/coverage in both markets will first be considered. Changes needed in the ways of thinking and infrastructure will then be proposed: among others, these include consortium/partnerships approaches to build integrated, suitable data platform (e.g. to support indication-based pricing) or (in the US) finding practical ways to bridge from traditional formulary-based contracting to (truly) value-based contracting. The thesis will conclude with a number of ‘best scenarios’ to illustrate the roadmap to more consistent and sustainable use of VBCs.

**PHP25**

**WHAT CAN BE DONE FOR ACCESS AND REIMBURSEMENT PROCESSES TO REWARD INNOVATION IN DIGITAL “BEYOND THE PILLS” SOLUTIONS?**

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Emerging digital technologies are one of the fastest growing sectors within the healthcare industry and are starting to reshape our perspective on how some diseases will be managed. Utilising big data, sensors, artificial intelligence and software platforms provides the opportunity for improved disease management across multiple disease areas. Pharmaceutical companies are aware of this opportunity and are looking at ways in which these technologies can complement traditional pill solution. Many of the currently available digital technologies within the healthcare sector have targeted patients as the consumer and customer, meaning most technologies are paid by patients out-of-pocket or offered for free by manufacturers or pharmaceutical companies, a situation which is not ideal for uptake or innovation. In contrast, prescription drugs and most medical devices go through national reimbursement systems, which pay for the patient as the consumer and the payer or insurance company as the customer. This system allows universal access for patients and is something digital health technologies could also benefit from. Some Health Technology Assessment (HTA) bodies in Europe have started to look at how they can evaluate digital technology solutions alone or in combination with pharmaceutical products; however, access pathways remain unclear posing a hurdle for manufacturers trying to deliver solutions and benefits to patients. Developing structured access and reimbursement pathways for digital health solutions will likely have a number of positive effects for the healthcare industry across multiple stakeholders types. Broader access will allow more patients to benefit, HTA bodies can have control on pricing and reimbursement of these type of solutions and additional appetite for innovation and investment within the sector will be generated.

**PHP26**

**HOW POLICY-MAKERS SHOULD UNDERSTAND QUALITATIVE EVIDENCE REGARDING PUBLIC OPINION**

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I investigate the role of qualitative evidence of patient and public opinion in healthcare policy-making. When policy-makers seek input from patient representatives, Citizen Juries etc, on the traditional picture this is a quick or cheap alternative to involve citizens. A conceptual framework is therefore developed to help policy-makers to consider in their processes and strategies to: another way to understand public preferences and thus enhance democratic legitimacy. But this has various problems, eg the sample sizes don't justify any inferences regarding public opinion. A better account is inspired by observations of several real world cases in which qualitative evidence has influenced policy.

**A708**

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**MORE READING:**
such cases, policy-makers end up sharing the opinions expressed by respondents. I argue that the research respondents find a certain consideration to be important, and policy-makers act on that finding, it’s because they’ve seen the importance of that consideration for themselves; perhaps they see that a certain policy is morally obligatory, or a good idea. There is typically no need to generalise about what the public thinks. Thus I propose that the distinctive value of qualitative evidence is to provide direct insight into the substantive issues, eg to reveal reasons or normative considerations. In contrast, quantitative evidence will generally only reveal statistical significance; why deliberative forums are useful, despite being unrepresentative, and why even input from individual stakeholder representatives can be useful. I survey the literature for practice. Many qualitative studies obtained using qualitative methods should not see themselves as neutral channels of public opinion; they should engage with the issues that respondents addressed.

DISEASE · SPECIFIC STUDIES

MENTAL HEALTH · Clinical Outcomes Studies

PMH1

PSYCHOTROPIC DRUG USE IN NON PSYCHIATRIC WARDS: INDIAN SCENARIO

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OBJECTIVES: To identify the prevalence of psychotropic drugs in general medicine and surgical wards and to identify and manage the DRPs associated with the use of psychotropic's. METHODS: A period prevalence study was conducted in the general medicine and surgical wards of a University teaching hospital over a period of six months. All patients admitted to general medicine and surgery wards with at least one psychotropic prescription without a previous history of psychiatric illness were included in the study. All the patients with psychotropic drugs were intensively monitored for the occurrence of any DRPs from the day of admission till the day of discharge. Clinically significant drug related problems along with its management strategies were communicated to the concerned clinicians through the peer clinical pharmacists. RESULTS: Of 3000 patients reviewed, 322 were prescribed with 452 psychotropic drugs. A higher number of psychotropics was prescribed in patient with a 1-4 rank (24%). Psychotropic prescriptions rates were relatively more from the non-psychiatrists [n=250 (55.30%) vs n=202 (44.70%)] than the psychiatrists. ADs[n=90 (26.71%)] and pain [n=43 (43.87 %)] were the frequently observed psychoactive and non-psychiatric indications. The frequently prescribed psychotropic classes were benzodiazepines [n=184 (39.06%)] and antidepressants [n=150 (41.78%)]; n=11 (5.8%) of the psychotropic fixed drug combinations were by the psychiatrist. The overall incidence of DRPs associated with psychotropic drug was 32.85% ranging from 1 to 3 per patient. The frequently observed DRPs were potential drug-drug interactions [n=71 (63.96%)]. Of the DRPs, n=69 (62.16%) were observed in the presence of the non-psychiatrists. CONCLUSIONS: Psychotic illnesses are the main indication for psychotropic prescriptions and that suggested that the drug were prescribed aptly.

PMH2

A NETWORK META-ANALYSIS TO COMPARE THE EFFICACY AND SAFETY OF ANTIPSYCHOTICS AS MAINTENANCE TREATMENT FOR PATIENTS WITH SCHIZOPHRENIA

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OBJECTIVES: Many antipsychotics drugs are available to prevent relapses in patients with schizophrenia, but most of them are associated with adverse events, such as weight gain. Our objective was to conduct a network meta-analysis (NMA) to compare the clinical efficacy and safety outcomes of the most widely used antipsychotics in schizophrenia. METHODS: A systematic literature review was conducted in February 2017 to identify randomized controlled trials in schizophrenia involving antipsychotics. A Bayesian NMA was conducted on eight antipsychotics (aminaprid, aripiprazole, haloperidol, amisulpride, olanzapine, quetiapine, risperidone and ziprasidone) and placebo. Outcomes of interest included relapse risk (assessed from 24 to 52 weeks) and weight change from baseline to 26 weeks +/-4 weeks. Vague prior distributions were used. The selection of fixed versus random effects model was based on the Deviance Information Criterion. RESULTS: After reviewing 1486 references, 62 studies were selected and included in the NMA; 15 for relapse (total 5337 patients) and 16 for weight change (total 4561 patients). CONCLUSIONS: This study was found to be significant with a significant reduction of risk of relapse versus placebo (hazard ratio [95% CI]: 0.26 [0.15, 0.48] and 0.30 [0.15, 0.57] respectively), results for other antipsychotics were not statistically significant but in favour of active treatments versus placebo: risperidone (HR: 0.49 [0.23, 1.04]), haloperidol (HR: 0.49 [0.15, 1.59]), lorazepam (HR: 0.59 [0.26, 1.28]), quetiapine (HR: 0.62 [0.26, 1.41]), ziprasidone (HR: 0.86 [0.39, 2.14]). Olanzapine was associated with a significant increase in weight compared to placebo (>3.05 kg [1.83, 4.46]). Results for other antipsychotics were not statistically significant and were used for practice. PMH3

INTEGRATIONAL STUDY INTO THE DISPENSING PATTERNS OF BENZODIAZEPINES AND Z-DRUGS IN A SOUTH AFRICAN PRIVATE HEALTHCARE SETTING

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OBJECTIVES: Benzodiazepines, including the z-drugs, have anxiolytic, sedative, hypnotic and muscle relaxant effects and are used to treat anxiety, panic and sleep disorders. There is a variety of branded generics of these drugs available on the South African market. The aim was to compare the prescribing patterns of these drugs in a South African private sector patient population over a 12-year period (2005-2016). The prescribing frequencies were compared on data collected in 2005, 2010 and 2015. METHODS: A retrospective, cross-sectional drug utilization study was conducted on three datasets of benzodiazepines and the z-drugs dispensed in 2004 (27080 records), 2010 (32775 records) and 2015 (30727 records) in South Africa. Data were obtained from a private medical aid administrator. Main outcome measures were dispensing frequency of active ingredients and generic substitution. RESULTS: Twenty-one different active ingredients of benzodiazepines and the z-drugs were prescribed. Olanzapine and midazolam each had seven branded generics that were dispensed in 2015, and alprazolam had six generics. Midazolam and zolpidem dispersing were the most and the least (StldevP of 6.44 and 4.35, respectively). Zolpidem and lorazepam showed an increase in prescribing, whilst bromazepam, oxazepam and terazepam showed a decrease. CONCLUSIONS: From 2004 to 2015 the prescribing frequency of diazepam decreased and alprazolam, although not directly related, increased, and zopiclone was replaced by zolpidem as the z-drug of choice. Less expensive generic equivalents had a substantial impact on dispensing patterns in the three-year period and have established a firm place in this sector of the pharmaceutical market.

PMH4

EPIDEMIOLOGY AND CLINICAL CHARACTERISATION OF OBSESSIVE- COMPELLING DISORDER IN BAHAWALPUR PAKISTAN

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OBJECTIVES: Obsessive compulsive disorder (OCD) is an anxiety disorder characterized by recurring thoughts (obsessions) and uncontrolled behaviors (compulsions), paralyzing patient’s comprehension and reducing his quality of life. In today’s fast changing world, periodic epidemiological studies on OCD patients are essential to ensure proper clinical diagnosis and treatment for such patients and to promote a healthier and productive society. The objective of study was to get an update on descriptive epidemiology of OCD in local population of Bahawalpur Pakistan. METHODS: A retrospective study on prevalence of self-reported OCD in children and adults was conducted in Bahawalpur, Pakistan, between April 2013-May 2014 longitudinal analysis of clinical predictors of OCD according to DSM-IV criteria as reported in Diagnostic and Statistical Manual of Mental Disorders, 4th edition. RESULTS: We found that the OCD prevalence rate is 46% as observed in 480 individuals over the course of seven months. Milder OCD (34%) was most occurring form and cleanliness (26%) was most common obsession seen in patients in Bahawalpur Pakistan. There was a specific pattern in gender distribution of OCD but its prevalence and severity were increased with increase in age, and it was highest in individuals >40 years age (55.9%), followed by 31-40 years (53.5%), 21-30 (48.5) and 11-20 years (46%). Most of the OCD cases also fall under the criteria of depression, social phobia and stress. CONCLUSIONS: The prevalence of OCD seems to be underestimated in local population, perhaps due to cultural and societal reasons. Our analysis suggests that despite the heterogenic nature of the disease there is a significant diagnostic overlap with other DSM disorders. Our data suggest that risk factors such as advance age, family history of depression and stress were found to contribute towards OCD, same as it is previously reported in literature.

PMH5

INCIDENCE OF PSYCHIATRIC DISORDERS IN WOMEN WITH A SUSPECTED BUT UNCONFIRMED DIAGNOSIS OF BREAST OR GENITAL ORGAN CANCER

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OBJECTIVES: Breast (BC) and genital organ cancers (GOC) are known to have a major impact on the quality of life of patients. The aim of this study was to analyze the risk of depression, anxiety, and adjustment disorders in women in Germany with a suspected but unconfirmed diagnosis of BC or GOC in their past medical history. METHODS: All women were associated with a significant increase of risk of relapse versus placebo (hazard ratio [95% CI]: 0.26 [0.15, 0.48] and 0.30 [0.15, 0.57] respectively), results for other antipsychotics were not statistically significant but in favour of active treatments versus placebo: risperidone (HR: 0.49 [0.23, 1.04]), haloperidol (HR: 0.49 [0.15, 1.59]), lorazepam (HR: 0.59 [0.26, 1.28]), quetiapine (HR: 0.62 [0.26, 1.41]), ziprasidone (HR: 0.86 [0.39, 2.14]). Olanzapine was associated with a significant increase in weight compared to placebo (>3.05 kg [1.83, 4.46]). Results for other antipsychotics were not statistically significant and were used for practice.
A suspected diagnosis of BC or GOC in a woman's medical history is associated with an increased risk of developing depression, anxiety, and disorders. After adjustment, disorders.

PMH6
SEVERE DEPRESSION AS A RISK FACTOR FOR OSTEOPOROSIS: A REAL WORLD DATA STUDY CONDUCTED IN ITALY

Heiman P, Moretti R, Pegoraro V

OBJECTIVES: Depression is a common mental disorder, with more than 300 million people suffering from it. The presence of a relationship between depression and osteoporosis has been shown by a previous real world study conducted in Italy. The objective of this analysis is to investigate whether the association observed could have been confounded by antidepressants use or by time dependent confounders' presence. METHODS: This was a retrospective analysis based on data extracted from Italian IMS Health Longitudinal Patient Database. Three cohorts have been defined, one consisting of depressed patients, consisting of individuals with a diagnosis of depression (index date) during the period January 2004 - December 2010. The cohort of non-depressed patients, containing subjects with a first contact with the general practitioner (index date) during the period January 2004 - December 2010. The cohort consisted of patients who were not treated with antidepressants.

RESULTS: The cohort of depressed patients using antidepressants, identified within the first cohort. Patients of all cohorts must not have an osteoporosis diagnosis or a depression diagnosis during the five years period preceding the Index Date. Extended multivariate Cox models were performed controlling for antidepressants use and for other time dependent confounders. RESULTS: No association was found between depression and osteoporosis during the follow-up period (HR 1.04, p=0.26), while a higher incidence of osteoporosis of about 7% (HR 1.03, p=0.0010) was observed among antidepressants users when compared to non-users. Focusing on patients with antidepressants, the risk of developing osteoporosis increased by 13% for each antidepressant prescribed and by 14% (HR 1.14, p=0.0012) at antidepressant switch. CONCLUSIONS: Results from this study suggest that patients receiving a higher number of antidepressants and those needing pharmacological treatment changes have an increased risk of osteoporosis. Thus, this study suggests an association between a severe status of depression and osteoporosis.

PMH7
MENTAL HEALTH – Cost Studies

BUDGET IMPACT ANALYSIS OF LONG-ACTING PARENTERAL ANTIPSYCHOTIC DRUG FLUFENAZINE IN THE TREATMENT OF SCHIZOPHRENIA IN RUSSIA: A HOSPITAL PERSPECTIVE

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OBJECTIVES: the purpose of the study was to develop an instrument for the calculation budget impact analysis of atypical long-acting injectable flufenazine (FLU LAI) as an alternative to typical antipsychotics (TA) chlorpromazine (CHL). METHODS: the study was based on Ying Jiao Zhao meta-analysis of 18 antipsychotics used in the long-term treatment of schizophrenia. The comparison of FLU LAI versus CHL revealed differences of statistical significance. FLU LAI was superior to chlorpromazine (OR=0.31, 95% CI 0.11–0.88) by relapse rate. The developed model-based evaluation instrument enabled to estimate the budget impact of FLU LAI for schizophrenia patients in a single Moscow hospital with 198 inhabitants, who were treated in the period January – December 2015. In budget impact analysis it was assumed that drug consumption (estimated in DDD/100 bed-days) per 1 attended patient remains unchanged, while the proportion of patients, treated with FLU LAI and CHL from the initial 59.9% and 40.1% respectively in the analysis period was 1-ε = 68.9%.

RESULTS: The total annual budget for medicines for 198 patients was estimated at €171,450 (412,172 RUB) for FLU LAI patients, and €213,160 (508,552 RUB) for CHL patients, total annual cost was estimated at €425,500 (1 million RUB) vs ARI; by 24.6-55.4 million (1536 or -3464 mln RUB) vs PAL LAI. The most influential variables in the budget impact analysis were costs of drug, and RR of relapse.

CONCLUSIONS: funding ziprasidone (the most effective in case of relapse) is an effective use of financial resources in the Russian public health – total budget saving estimated from 9.7% to 54.7%.

PMH9
ALLOWING METHADONE’S PRESCRIPTION TO GENERAL PRACTITIONERS: A POSITIVE IMPACT ON THE FRENCH HEALTHCARE INSURANCE EXPENDITURES

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OBJECTIVES: the objective of the study was to demonstrate the economic impact for the French Healthcare insurance of the authorization to prescribe methadone given to GPs in addition to hospital physicians. METHODS: A Budget impact analysis (BIA) was conducted to demonstrate the financial difference between the current scenario (1) and a new scenario (2) integrating the authorization of methadone prescription by GPs as of January 1, 2018. RESULTS: The study showed cost savings could be generated for patients who switch from health centers to general practices, as GPs annual cost is three times less expensive than health centers annual cost. Despite a lower price of Methadone, the scenario 2 will lead to additional expenses induced by a progressive transfer to the treatment. Savings are also generated by the fact that a large number of patients treated under scenario 2 are less likely to be infected by HCV or HIV. CONCLUSIONS: Allowing GPs to prescribe methadone would lead to significant cost savings for the French Healthcare insurance, around €40 million in 2018 and 2022. Besides, it would extend the access of opioid substitution treatment (OST) adapted for injecting drug users and/or nonresponders to another OST.

PMH10
BUDGET IMPACT ANALYSIS OF PALIPERIDONE PALMATE 3-MONTHLY FOR THE TREATMENT OF SCHIZOPHRENIA IN ITALY

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OBJECTIVES: to estimate the impact of paliperidone palamate 3-monthly (PP3M) with respect to paliperidone palamate 1-monthly (PP1M) and other long-acting treatments (aripiprazole, olanzapine, risperidone and risperidone microspheres) for the treatment of schizophrenia in Italy. METHODS: the impact is estimated from a third party payer perspective, so only direct health costs (treatment, disease, relapse and adverse events) are considered. Patients eligible for PP3M treatment are considered: about 80% of PP3M patients come directly from PP1M, the remaining part is equally distributed between aripiprazole and risperidone. The model includes the per label required treatment-specific induction phase for the approved and non-approved indications. RESULTS: the cost per patient decreased by 2.7% (HR 0.972, p=0.017) overall and by 2.9% (HR 0.971, p=0.019) in the relapse phase. The cost per patient decreased by 1.1% (HR 0.989, p=0.001) in the relapse phase. The model included that 13% (n=26) with CHL. If the proportion of patients treated with FLU LAI increases by 5% and 10% (as an alternative CHL increases in the same proportion) the budget impact analysis will be 0.5% (€107.5) and 1% (€215).

CONCLUSIONS: FLU LAI is associated with a lower cost of treatment per DDD dose and is considered to be more effective versus chlorpromazine by relapse rate. Increase by 10% proportion patients, receiving FLU LAI, saves up to 1% of annual budget for medicines in a single hospital.

PMH8
BUDGET IMPACT ANALYSIS OF ZIPIRASIDONE USE IN THE TREATMENT OF SCHIZOPHRENIA IN RUSSIA

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OBJECTIVES: to evaluate the financial impact of ziprasidone use from the perspective for Russian National Healthcare system. METHODS: budget impact analysis was conducted within two periods, 1) a treatment for 2 years period and a patient. Costs of atypical antipsychotics (AA) and rehospitalization costs of patients treated with ziprasidone (ZIP), quetiapine (QUE), aripiprazole (ARI), paliperidone palmitate (PP3M) were calculated for median duration of treatment 48 weeks. The target population was calculated using Russian statistical epidemiology data, and a national treatment guideline. Exchange rate estimate in 2017 - 1 € = 62.5 RUB. RESULTS: the most effective in case of relapse is ziprasidone, followed by 43.28% for RIS LAI, 53.36% for PAL, PAL LAI, QTP and 83.75% for ARI. With the drug cost of €1,444.34 (90721 RUB) ZIP was more expensive only compared to QTP, total costs for schizophrenia therapy for 1 patient was the lowest for ZIP - €1,626.37 (101684 RUB) - cost saving vary from 9.9% versus QTP to 54.7% versus PAL LAI. In the BIA for cohort of Russian schizophrenia patients (140,713 inhabitants, 25% from all schizophrenic patient population) total budget for ZIP will estimate at €223.9 million (€14303 mln RUB) and will decrease by €246.55-5.4 mln (1536 or -3464 mln RUB) versus different trade name of QT, by €182.1 mln (-13811 mln RUB) vs ARI; by €93.2 mln (5842 mln RUB) vs PAL and by €74.8 mln (17147 mln RUB) vs PAL LAI. The most influential variables in the budget impact analysis were costs of drug, and RR of relapse.

CONCLUSIONS: funding ziprasidone (the most effective in case of relapse) payment is an effective use of financial resources in the Russian public health – total budget saving estimated from 9.7% to 54.7%.

PMH11
COST CONSEQUENCE OF INTRODUCING PALIPERIDONE PALMATE 3-MONTHLY FOR THE MAINTENANCE TREATMENT OF SCHIZOPHRENIA IN THE ENGLISH NATIONAL HEALTH SERVICE (NHS)

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OBJECTIVES: the objective of the study was to perform a budget impact of introducing paliperidone palmitate 3-monthly for the maintenance treatment of schizophrenia in the English NHS setting. METHODS: A 1-year budget impact model was developed based on epidemiological estimates of adults who had previously experienced two relapses of schizophrenia. An English NHS hospital admissions and length of stay. Two scenarios were simulated: 1) the current setting, in which patients were prescribed their current antipsychotics drugs, and 2) new setting, in which patients were prescribed the current antipsychotics, from switching treatment to paliperidone palmitate 3-monthly. The budget impact analysis incorporated drug acquisition, drug administration and hospitalisation costs. Univariate sensitivity analyses were conducted, including analyses assessing the cost savings of patients who failed to respond to the drug, and the estimated annual cost of schizophrenia in the English NHS adult population with two relapses was approximately £660m, with 46,479 admissions and 1,389,985 bed days. The 3-monthly treatment of 25% oral anti-psychotic and risperidone long acting injectable (RLA) patients, and 70% of paliperidone palmitate 1-monthly patients.
Paliperidone palmitate 3-monthly was associated with estimated net savings of £62m, a reduction of 7,241 admissions and a reduction of 240,084 bed days. In an alternative scenario, increasing only the displacement of oral antipsychotics and RAL to 50%, paliperidone palmitate 3-monthly was associated with estimated net savings of £79 million, a reduction of 14,483 hospital admissions and a reduction of 506,542 bed days. RESULTS: Introduction of PALIP+P is associated with significant cost savings. Cost savings were driven predominantly by reductions in drug administration costs and hospitalisation costs associated with relapse, compared to oral and RAL.

PMH12 A PRELIMINARY COST ANALYSIS OF SCHIZOPHRENIC PATIENTS STABILIZED ON A 1-MONTHLY LONG ACTING PALIPERIDONE PALMITATE (PALIP+) SELECTION SWITCHING TO PALIPERIDONE PALMITATE 3-MONTHLY FORMULATION (PP3M) IN THE PUBLIC SECTOR OF HONG KONG Choon WY, Wu DB, Lee SS
Monash University Malaysia, Selangor, Malaysia
OBJECTIVES: To study the potential economic impact on health care resource utilisation if PP3M-stabilized patients are switched to PP3M.
METHODS: Schizophrenia is the most costly mental illness due to the indirect and direct costs involved. Poor compliance to treatment leading to re-hospitalization is the major cost driver. Long acting therapies such as the monthly injection of PP1M have been proven to be superior over oral therapies in terms of cost-effectiveness. For patients stabilized on PP1M, outcomes can be further improved by using the recent 3-monthly administered PP3M. Since there was no patient data on PP3M in Hong Kong at time of this study, we used the patient data from another recent local study for estimating the potential cost savings of the direct cost of the 2 treatments. Data from overseas studies has suggested effectiveness and safety profile of both PP1M and PP3M are similar. Local costs for outpatient visits for drug administration, procedures, fees for service, and in-patient cost were retrieved from the Hong Kong Government Gazette and public hospitals. Study was performed from a government’s perspective.
RESULTS: Switching PP1M-stabilized patients to PP3M may lead to a reduction of 16.8% and 22.1% in corresponding cost per patient/year (USD6,576 vs USD4,422). The cost reduction is due to 66.7% reduction in outpatient visits (USD2,184 vs USD728) and 16% in drug administration (USD4,591 vs USD3,694). This may be a conservative estimation as reduced hospitalization due to improved compliance has not been included.
CONCLUSIONS: This study suggests that switching PP1M-stabilized patients to PP3M is likely to lead to cost savings by reducing outpatient visits and drug cost in the public sector of Hong Kong. This should be considered for inclusion into the local management guideline. A post-launch cost effectiveness analysis using real-world patient data will provide more information on the potential cost benefits.

PMH13 COST-EFFECTIVENESS COMPARISON OF OPIOID SUBSTITUTION THERAPY VS. NON-PHARMACOLOGIC THERAPY IN THE STATE OF KUWAIT Hren R1, Milanic M2
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OBJECTIVES: The primary goal of our study was to compare comprehensively cost-effectiveness of treatment options for pharmacologic opioid substitution therapy with buprenorphine/naloxone combination and non-pharmacologic treatment in the State of Kuwait (SoK).
METHODS: We have adapted two different micro-simulation models to model the real-life context and to estimate the cost of treatment costs of buprenorphine/naloxone combination. In the first model, we took into account the protocol that is applied in SoK for pharmacologic treatment arm and non-pharmacologic treatment arm. In the second alternative model, costs in the treatment arm and non-pharmacologic treatment arm were fully based on the UK data and then adjusted to conditions of the local jurisdiction.
RESULTS: Using the first model, we have demonstrated that comparison of pharmacologic treatment arm with non-pharmacologic treatment arm resulted in incremental cost-effectiveness ratio (ICER) of 13,307 KWD/QALY which was below conservative willingness-to-pay threshold of 15,221 KWD/QALY and way below updated value of 30,442 KWD/QALY (100,000 USD/QALY). The pharmacologic treatment was thus deemed highly cost-effective when compared to non-pharmacologic treatment arm. When including only direct costs in the first model, the resulting ICER was 22,826 KWD/QALY, i.e., below the updated willingness-to-pay threshold of 30,442 KWD/QALY (100,000 USD/QALY). Even under such stringent conditions, the pharmacologic treatment arm was therefore cost effective when compared to non-pharmacologic treatment arm. In the second alternative model, we have shown that under base case scenario pharmacologic treatment arm dominated non-pharmacologic treatment arm by saving 1,670 KWD and gaining 0.1534 QALY per patient per year. The dominance was retained even when only direct costs were considered. Both deterministic and probabilistic sensitivity analysis confirmed robustness of our findings.
CONCLUSIONS: Results of our study indicated that in SoK, the pharmacologic opioid substitution therapy using buprenorphine/naloxone combination when compared to non-pharmacologic therapy was thus highly cost-effective if not cost saving.

PMH14 FLEXIBLE-DOSE DEPOT BUPRENORPHINE INJECTION FOR OPIOID SUBSTITUTION TREATMENT IN HEROIN-ADDICTED ADULTS: A SWEDISH PHARMACOECONOMIC PERSPECTIVE Jensen R1, Carter JAV, Tiberg F1, Jansen RV
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OBJECTIVES: Opioid substitution treatment (OST) in Sweden is unique among European countries for having a strict policy for illicit drug use while receiving OST, and largely excluding prescription opioid abusers from methadone- or buprenorphine-based OST (i.e., focusing on heroin-abusers). Heroin abuse is a risk factor for increased healthcare utilization, criminality, and overdose death risks that are magnified by OST discontinuation. A recent, 24-week, Phase-3 clinical trial enrolling primarily heroin-dependent subjects demonstrated superior efficacy of flexible-dose depot buprenorphine (CAM2038) versus sublingual buprenorphine/naloxone (SL-BPN) in proving patency. The study was conducted to estimate the associated economic impact of CAM2038 from a Swedish perspective.
METHODS: Annual direct medical costs (excluding OUD treatment costs) per patient and, quality adjusted life years were assessed for the state Markov model wherein cohorts received CAM2038 or SL-BPN. Transition probabilities were derived from the Phase-3 trial. State-specific event probabilities and associated costs/utilities were literature-based. Uncertainty was evaluated with scenario and probabilistic sensitivity analysis.
RESULTS: Annual total costs were 21% lower for CAM2038 vs SL-BPN in the most conservative scenario. Approximately 83% of these cost-savings were attributable to reduced criminality/victimization costs. Decreased healthcare utilization and emergency visits and doctor hospital services contributed to the lower costs. Outcomes were sensitive to rules for how the frequency/pattern of on-treatment illicit opioid use triggered forced discontinuation and to rules regarding the minimum-allowable time to OST reengagement.
CONCLUSIONS: CAM2038 for opioid-dependent adults is estimated to lower direct-medical and societal costs in Sweden. Scenario analyses were relevant for Sweden where clinicians autonomously set discontinuation and reengagement rules. The pharmacoeconomic benefits of CAM2038 in Sweden may be more pronounced than other European countries given relatively high costs associated with heroin addicts discontinuing OST.

PMH15 SUBSTITUTION THERAPY WITH FLEXIBLE-DOSE DEPOT BUPRENORPHINE INJECTION TO TREAT OPIOID USE DISORDER IN THE UNITED KINGDOM: A PHARMACOECONOMIC ASSESSMENT Tiberg F1, Jansen R2, Sanjurjo V1
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OBJECTIVES: Of the five most populous countries in Western Europe, the United Kingdom (UK) has the highest rate of problematic opioid abuse and among the highest rates of prescription opioid abuse. There has never been room for urgency in the UK given its burden on public health and local resources, yet conventional orally-administered maintenance treatments like sublingual buprenorphine/naloxone (SL-BPN) have several limitations owing to high rates of prescription drug misuse and diversion and hence sub-optimal effectiveness. Investigational CAM2038 (a flexible-dose depot buprenorphine injection) has emerged from this need and demonstrated superiority on the cumulative density function of negative urine samples versus SL-BPN in a 24-week Phase 3 clinical trial of maintenance treatment for opioid-dependent patients. This analysis assessed its potential economic impact in the UK.
METHODS: Direct medical and societal costs (excluding OUD drug costs) were assessed over 52 weeks using a 5-state Markov model wherein cohorts received either CAM2038 or SL-BPN. On-treatment transition probabilities were derived from the Phase 3 trial. State-specific event and other transition probabilities and associated costs were literature-based. Uncertainty was evaluated with scenario and probabilistic sensitivity analysis. No discounting was applied due to the short time horizon.
RESULTS: CAM2038 accrued lower annual total per-patient costs (£4382). Cost-savings were primarily attributable to lower crime-related costs (£3281), of which 65% were attributable to lower crime-anticipating costs (£2179). Direct-medical cost-savings (£777) were primarily attributable reduced utilization of supervised self-administration (£361) and prescription/controlled drug fees (£311). Savings attributable to avoided HIV/HCV infections (£43) were modest assuming traditional interferon-based HCV treatment. These savings were more than preserved in the SL-BPN arm. Criminality and victimization costs (£885) were not affected.
CONCLUSIONS: In the UK, CAM2038 is potentially a pharmacoeconomically preferable alternative to SL-BPN for OUD, with direct-medical and societal cost-savings estimated over 52 weeks.

PMH16 COST-EFFECTIVENESS ANALYSIS OF OPIOID SUBSTITUTION TREATMENT IN REPUBLIC OF SOUTH AFRICA Hren R1, Milanic M2
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OBJECTIVES: The primary goal of our study was to comprehensively compare cost-effectiveness of both treatment options for pharmacologic opioid substitution therapy with methadone/buprenorphine/naloxone combination, and (ii) cost-effectiveness of detoxification and maintenance treatment with buprenorphine/naloxone combination, (iii) cost-effectiveness of detoxification and maintenance treatment option for pharmacologic opioid substitution therapy (methadone vs buprenorphine/naloxone combination) available in the Republic of South Africa (RSA) and treatment modalities used in the clinical practice (maintenance vs. detoxification). In our study, we have thus systematically compared (i) cost-effectiveness of maintenance treatment with methadone and buprenorphine/naloxone combination, (ii) cost-effectiveness of detoxification and maintenance treatment with buprenorphine/naloxone combination, and (iii) cost-effectiveness of detoxification treatment with methadone and maintenance treatment with buprenorphine/naloxone combination. The study developed a micro-simulation decision model to the real-life conditions in RSA using locally-specific data for treatment costs of methadone and buprenorphine/naloxone combination with the average time of treatment set at 20 months/day, respectively (base case scenario). Direct costs of detoxification consisted of the costs of a 14-day in-patient stay, while direct costs of maintenance treatment were based on COBRA (Cost-Benefit and Risk Appraisal of Substitution Treatment in Routine) study and adaptied to conditions of the local jurisdiction. Results are estimated conservatively, no indirect costs were considered in the base case scenario.
RESULTS: Our model has shown that under base case scenario maintenance treatment with buprenorphine/naloxone dominated all other treatment strategies. (i) maintenance treatment with methadone by saving 8,025 ZAR and gaining 0.1534
QALY per patient per year, (ii) detoxification with buprenorphine/naloxone by saving 31,523,638 EUR and gaining 0.1745 QALY per patient per year, and (iii) detoxification with methadone by saving 31,584,289 EUR and gaining 0.1534 QALY per patient per year. Both deterministic and probabilistic sensitivity analysis based on modifying parameters in the model confirmed robustness of our findings. CONCLUSIONS: Results of our study indicate that in RSA maintenance treatment settings (for patients with callosal agenesis) combination is superior, i.e., cost-saving, when compared to any other currently available substitution treatment strategy.

PMH17
HEALTHCARE RESOURCE USE AND COSTS IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER SWITCHING FROM A GENERIC TO A BRANDED ANTIDEPRESSANT

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OBJECTIVES: To examine healthcare resource utilization and costs among adult patients with major depressive disorder (MDD) before and after switching from a generic to a branded antidepressant. METHODS: In a mirror-image study, healthcare resource utilization and costs associated with the switch of antidepressants were monitored. Indirect costs from increased utilization of healthcare services (visits) and productivity loss were calculated. The economic performance (total GDP) and population size.

RESULTS: The estimated number of MDD prescriptions per 10,000 children was the highest in Germany (70), followed by the UK (44) and France (13). Annual costs for children in the UK (1,926) and USA (3,209) were substantial. For the EMBRAPA study, it is estimated that in RSA maintenance treatment settings (for patients with callosal agenesis) combination is superior, i.e., cost-saving, when compared to any other currently available substitution treatment strategy.

PMH18
INDIRECT COSTS AND CAREGIVER BURDEN OF SCHIZOPHRENIA IN EUROPEAN COUNTRIES – RESULTS OF A SYSTEMATIC LITERATURE REVIEW

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OBJECTIVES: To summarize the magnitude of caregiver burden and indirect costs of schizophrenia in European countries and to gain a better understanding of how the most important factors influencing the variation of these costs. METHODS: A systematic literature review was conducted in MEDLINE (via Scopus), EMBASE (via Scopus), PsycINFO (Ovid), Cochrane Library (via Ovid) and 3 European health technology assessment (HTA) agencies. The data were retrieved in March 2017, to identify studies reporting indirect costs and caregiver burden related to patients with schizophrenia. RESULTS: Eleven studies were included in the qualitative synthesis, and a total of 1,630 articles and further reviewing relevant articles that were cited in other publications. The methodology, findings from the studies were found to be highly variable – total costs per patient were between USD 3,000 and 12,000, while productivity loss varied between 32 and 82% across these studies. Based on collected information, direct costs attributed to medical care were contributed to only 20% while informal care provided by family and direct costs of social care (provided by community care professionals, and those provided informal home social treatment) for patients with schizophrenia combination is superior, i.e., cost-saving, when compared to any other currently available substitution treatment strategy.

PMH19
LITERATURE REVIEW OF THE COST OF DEMENTIA ON CHINA

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OBJECTIVES: To conduct a systematic review to identify existing cost estimates for dementia in China which support cost-of-illness approach to economic burden calculation. METHODS: Literature search was conducted on PubMed using pre-specified keywords. As of December 2017, 50 dementia in China were identified based on pre-specified criteria. To ensure uniformity and comprehensiveness of costs data, a systematic search was conducted in uniform categories - Direct Costs (including medical, non-medical costs) and Indirect Costs (including, Activity of daily living (ADL) and Instrumental activities of daily living (IADL) services, and informal care services). In addition, all costs data was adjusted for Purchasing Power Parity basis in USD based on UN PPF MDG data. RESULTS: Literature on costs of Dementia in China was found to be limited and varied. Five studies were shortlisted from the literature search to be taken up for comparative analysis. Due to variations in scope and methodology, findings from the studies were found to be highly variable – total costs per patient were between USD 3,000 and 12,000, while productivity loss varied between 32 and 82% across these studies. Based on collected information, direct costs attributed to medical care were contributed to only 20% while informal care provided by family and direct costs of social care (provided by community care professionals, and those provided informal home social treatment) for patients with schizophrenia combination is superior, i.e., cost-saving, when compared to any other currently available substitution treatment strategy.

PMH20
ECONOMIC BURDEN OF AUTISM AND AUTISM-RELATED SPECTRUM DISORDERS (ASD) IN EU COUNTRIES

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OBJECTIVES: A comprehensive review was conducted to report evidence from published studies evaluating the economic burden of autism and ASD in both children and adults in European Union (EU) countries. METHODS: A systematic search of electronic databases (Embase and MEDLINE) was conducted to identify recent economic evidence for last 5 years (Jan-2011 to Mar-2017) on ASD in the EUS (UK, Germany, Italy, Spain and France). All studies reporting cost burden of ASD in English were included, regardless of design and interventions. Two reviewers assessed trial eligibility, with discrepancies reconciled by a third independent reviewer. RESULTS: Of the 5,223 citations retrieved, 13 met the pre-defined inclusion criteria. For the UK, total costs for children with ASD were £500 per month. The largest cost component for children was the private educational services, and for adults was personnel costs. The estimated number of ASD prescription per 10,000 children was the highest in Spain (100), followed by the UK (63) and Germany (11). Annual costs for children in the UK (7,915) and France (6,715) were substantial. Further research is needed to evaluate the financial burden on families caring for patients with ASD, which can help to ensure that adequate resources are in place to reduce the barriers to care for this population.

PMH21
COST AND POPULATION SIZE – IMPORTANT DETERMINANTS OF SCHIZOPHRENIA-RELATED HEALTHCARE COSTS IN THE EUROPEAN COUNTRIES

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OBJECTIVES: Schizophrenia is one of the most important public health issues in psychiatry. This review aims to explore the total direct healthcare cost of schizophrenia in a number of European countries and associations of disease-related expenditures with economic performance (total GDP) and population size. METHODS: A systematic literature search was conducted in compliance with the PRISMA Statement. The literature review was published in 2017 using the Cochrane Library and the EMBASE database. The data suggest that schizophrenia-related direct costs are higher per 100,000 people is substantially higher in Germany (€8.6 million in 2008) and Norway (€5.3 million in 2011) than in France (€2.5 million in 2007). The proportion of direct cost of schizophrenia relative to the total GDP was highest in Greece (0.2%), although the EU27 countries plus Iceland, Norway and Switzerland show a similar proportion (0.2%) on average. Both the population size and the total GDP of a country show strong correlation (R2 = 0.7) with the total direct healthcare cost of schizophrenia. CONCLUSIONS: The direct healthcare cost of schizophrenia has been investigated in a limited number of studies which were considered to be of good quality and representative for the country population. Schizophrenia represents a substantial cost for the healthcare systems in Europe. Comparability of data is limited due to the differences in cost calculation methods and the estimated prevalence. Our analysis provides evidence that both GDP and population size are associated with the direct health care costs of European countries. Despite a relatively high prevalence of schizophrenia in Europe – varying between 0.4-1.2% – Central and Eastern European countries are lacking in current cost-of-illness studies.

PMH22
PROFILE OF BRAZILIAN INPATIENTS WITH MENTAL DISORDERS COVERED BY PRIVATE HEALTH CARE IN THE STATE OF CEARÁ: A REAL WORLD DATA ANALYSIS

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OBJECTIVES: To identify the profile of patients, the costs incurred, and the length of stay of patients who stayed hospitalized longer than 100 days. METHODS: It was conducted
an observational study. Clinical and economic data were obtained from a Brazilian Medical records. Inclusion criteria: age 18-40 years, diagnosis of psychiatric disorder and length of stay longer than 10 days at psychiatric hospitals. Inpatients hospitalized from May 12, 2006 to March 31, 2017 were included. This PHV covered 342,775 patients in Ceará-Brazil. Data was collected of the total inpatient costs with Low treatment utilization may result in a 20% increase in the administrative costs. The number of patients were pharmaceuticals (45.0%) of total health insurance costs), acute inpatient care, CT-MRI, PET, home care, transportation, general practitioner, drugs and medical devices. Psychotic disorders were identified with the following codes of the International Classification of Diseases 10th revision: F20-F29. RESULTS: The health care cost of the Hungarian Nation Health Insurance Fund Administration (NHIFA), the only health care financing agency in Hungary. We analyzed the health insurance treatment cost and the number of patients for the year 2010. The following cost categories were included into the study: in-patient patient care, CT-MRI, PET, home care, transportation, general practitioner, drugs and medical devices. Psychotic disorders represent a significant burden for the health insurance system. Reinforcement of pharmaceuticals and acute inpatient care are the major cost drivers for psychotic disorders in Hungary.

**PMH23 HEALTH INSURANCE COST OF PSYCHOTIC DISORDERS IN HUNGARY: A COST OF ILLNESS STUDY**
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**OBJECTIVES:** The aim of our study is to calculate the annual health insurance treatment cost of psychotic disorders in Hungary. METHODS: The data derive from the financial database of the Hungarian National Health Insurance Fund Administration (NHIFA), the only health care financing agency in Hungary. We analyzed the health insurance treatment cost and the number of patients for the year 2010. The following cost categories were included into the study: in-patient patient care, CT-MRI, PET, home care, transportation, general practitioner, drugs and medical devices. Psychotic disorders were identified with the following codes of the International Classification of Diseases 10th revision: F20-F29. RESULTS: The health care cost of the Hungarian Nation Health Insurance Fund Administration (NHIFA), the only health care financing agency in Hungary. We analyzed the health insurance treatment cost and the number of patients for the year 2010. The following cost categories were included into the study: in-patient patient care, CT-MRI, PET, home care, transportation, general practitioner, drugs and medical devices. Psychotic disorders represent a significant burden for the health insurance system. Reinforcement of pharmaceuticals and acute inpatient care are the major cost drivers for psychotic disorders in Hungary.

**PMH24 HEALTH INSURANCE COST OF AFFECTIVE DISORDERS IN HUNGARY: A COST OF ILLNESS STUDY**
Oberfrank F1, Donka-Verebes É2, Boncz I3
1Institute of Experimental Medicine, Budapest, Hungary; 2Integra Consulting Zrt., Budapest, Hungary; 3University of Pécs, Pécs, Hungary

**OBJECTIVES:** The aim of our study is to calculate the annual health insurance treatment cost of affective disorders in Hungary. METHODS: The data derive from the financial database of the Hungarian National Health Insurance Fund Administration (NHIFA), the only health care financing agency in Hungary. We analyzed the health insurance treatment cost and the number of patients for the year 2010. The following cost categories were included into the study: in-patient patient care, CT-MRI, PET, home care, transportation, general practitioner, drugs and medical devices. Affective disorders were identified with the following codes of the International Classification of Diseases 10th revision: F30-F39. RESULTS: The Hungarian National Health Insurance Fund Administration spent 23.3 billion Hungarian Forint (HU) (112.1 million USD) for the treatment of patients with brain cancer. The annual average expenditure per patient was 67553 HUF (324.5 USD) while the average expenditure per one inhabitant was 2330 HUF (11.2 USD). The major cost drivers were pharmaceuticals (76.0%) of total health insurance costs), acute inpatient care (12.7%) and chronic inpatient care (6.1%). The number of patients with psychotic disorders was 345470 patients. We found the highest patient mortality rate in patients with suicide attempts (345480 patients and general practitioners (44847 patients). CONCLUSIONS: Psychotic disorders represent a significant burden for the health insurance system. Reinforcement of pharmaceuticals and acute inpatient care are the major cost drivers for psychotic disorders in Hungary.

**PMH25 COST-EFFECTIVENESS ANALYSIS OF THE PALIPERIDONE PALMITATE 3-MONTH FORMULATION VERSUS 1-MONTH FORMULATION FROM A HEALTHCARE PAYER PERSPECTIVE**
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**OBJECTIVES:** Schizophrenic episodes cause socio-economic problems and compliance with therapy is a known problem for schizophrenia patients and their families. The 3-monthly paliperidone palmitate formulation (PP3M) offers long-term benefits for patients by preventing schizophrenic episodes, also reducing the partial compliance risk. This study aims to perform a cost-effectiveness analysis of PP3M in the Turkish healthcare system, using the once-monthly paliperidone palmitate (PP1M) as the comparison agent. METHODS: The cost-of-illness methodology has been used in calculation of the cost data in Turkey. The analysis has been performed retrospectively in a one-year time horizon and from the healthcare payer perspective. Quality-Adjusted Life Year (QUALY) caused by the treatment of the two therapy groups and monthly injections,have been considered as the effectiveness value. American dollars were used as the currency unit based on the purchasing power parity (PPP) (5$1.58 2016). RESULTS: A total of 36 patients met our inclusion criteria. The majority was male (n=25/69.4%) and 68% of male patients had 25 to 44 years (n=17) and 81.2% of female patients had 35 to 54 years (n=18). The 10% of patients 55 to 69 years (n=2/20%). Among females, 20 represented 36.4% (n=4). Antipsychotics were the medication used more frequently (43.7%), representing 75.4% of medication costs (US$202,087.3). The total hospitalization cost was US$2,802,397.34 without medical fees and the average was US$784.37. The total LOS was 36.2% of the average and the average 816.9 days (max. 3,976 days). Four patients obtained judicial injunctions allowing them to stay at psychiatric hospitals CONCLUSIONS: Psychiatric hospitalization is an expensive treatment option for schizophrenia patients along the long LOS and high cost of hospitalization. In addition, these patients are usually male diagnosed with schizophrenia at productive working age. Strategies which could decrease LOS and consequently hospitalization costs, could benefit PwD patients and families.

**PMH26 COST-EFFECTIVENESS ANALYSIS OF USING NEUROFARMAGEN IN THE DECISION-MAKING PROCESS DURING THE TREATMENT OF PATIENTS WITH DEPRESSION IN THE U.S.**
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**OBJECTIVES:** The aim of our study is to calculate the annual health insurance treatment cost of psychotic disorders in Hungary. METHODS: The data derive from the financial database of the Hungarian National Health Insurance Fund Administration (NHIFA), the only health care financing agency in Hungary. We analyzed the health insurance treatment cost and the number of patients for the year 2010. The following cost categories were included into the study: in-patient patient care, CT-MRI, PET, home care, transportation, general practitioner, drugs and medical devices. Psychotic disorders were identified with the following codes of the International Classification of Diseases 10th revision: F20-F29. RESULTS: The health care cost of the Hungarian Nation Health Insurance Fund Administration (NHIFA), the only health care financing agency in Hungary. We analyzed the health insurance treatment cost and the number of patients for the year 2010. The following cost categories were included into the study: in-patient patient care, CT-MRI, PET, home care, transportation, general practitioner, drugs and medical devices. Psychotic disorders were identified with the following codes of the International Classification of Diseases 10th revision: F20-F29. RESULTS: The health care cost of the Hungarian Nation Health Insurance Fund Administration (NHIFA), the only health care financing agency in Hungary. We analyzed the health insurance treatment cost and the number of patients for the year 2010. The following cost categories were included into the study: in-patient patient care, CT-MRI, PET, home care, transportation, general practitioner, drugs and medical devices. Psychotic disorders represent a significant burden for the health insurance system. Reinforcement of pharmaceuticals and acute inpatient care are the major cost drivers for psychotic disorders in Hungary.

**CONCLUSIONS:**

**PMH27 HEALTH ECONOMIC EVIDENCE ON NON-PHARMACOLOGICAL INTERVENTIONS FOR PERSONS WITH DEMENTIA: A SYSTEMATIC REVIEW**
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**OBJECTIVES:** Over the last decade research on non-pharmacological interventions for persons with dementia (PwD) has gained momentum. The aim of this systematic review was therefore to assess the economic evidence on non-pharmacological interventions directly targeted at PwD. METHODS: A systematic literature search was conducted in the following databases: Cochrane Library, Centre for Reviews and Dissemination, EconLit, Embase, PsychINFO and PubMed. Trial-based economic evaluations published between 2010 and 2016 were included. Study quality was assessed according to the Drummond checklist. RESULTS: In total, nine RCT-based economic evaluations were identified. Of these, three trials compared exercise interventions for community-dwelling PwD. Considering the outcomes physical functioning and behavioral and psychological symptoms, these exercise programs were found likely to be cost-saving. Another three trials compared cognitive stimulation therapy for PwD exhibiting behavioral and psychological symptoms is cost-effective. Furthermore, the economic evidence on cognitive interventions was inconsistent. Joint reinforcement groups for community-dwelling PwD and informal caregivers as well as a combination therapy for community-dwelling PwD have shown no cost-effectiveness. In contrast, there is evidence that a group-based maintenance cognitive stimulation therapy for PwD residing in care homes or visiting day care centers is cost-effective. With regard to psychological and behavioral treatments two interventions, namely self-management group rehabilitation for PwD and their spouses.
as well as cognitive-behavioral therapy for PD-cog caregiver dyads, demonstrated effectiveness and cost-neutrality. **Conclusions:** There is some evidence on cost-effective non-pharmacological interventions for PD. However, the included studies showed a high degree of methodological heterogeneity with regard to outcomes, sample size, perspective and time horizon. In particular, quality-of-life values of PD-cog patients was cautiously, this review is not viewed as proxy when including these costs in the pre-DT treatment year and post-DT treatment year.

**PMH22**

INTERNET BASED TREATMENT OF DEPRESSIVE SYMPTOMS – A HEALTH ECONOMIC EVALUATION OF COSTS AND BENEFITS

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**OBJECTIVES:** Despite differentiated guidelines, depressive episodes often stay undiagnosed or are treated inadequately. Online-based self-help, consulting, and treatment-services may reduce deficits in treating depressive disorders and reduce disease-related costs. This study aimed to examine the potential of the internet-based treatment of depressive disorders, in comparison with standard face-to-face therapy. The costs of statutory health insurance were included. Secondary, changes in depression severity, health-related quality of life and impairment in functioning were examined. **Methods:** Participants with mild to moderate depressive symptoms were recruited from a huge German sickness fund and randomized to either a 12-week internet intervention (deprexis) or care as usual (CAU). The primary outcome measure was costs of statutory health insurance (excluding outpatient costs), secondary outcomes were depression severity (PHQ-9), health-related quality of life (SF-12 and EQ-5D-3L) and impairment in functioning (Work and Social Adjustment Scale). Outcomes were assessed at baseline, three months and six months, using an online based questionnaire. Additionally, health insurance claims data were included in the analysis. Results: A total of 3,806 participants were randomized. In both groups, total costs of statutory health insurance during the study period, but the changes from baseline differed significantly between groups. In the intervention group the total costs decreased by 32% from 3.19% per year at baseline to 2.13% in the study year (vs. a mean reduction in total costs of 13% in CAU-group; p<0.002). In comparison to the CAU-group, the intervention group also showed a significant greater reduction in PHQ-9, a significant reduction in impairment in functioning and a significant increase in health-related quality of life. **Conclusions:** The study underlines the potential of innovative e-mental health treatments in treating depressive disorders. The results suggest that the use of depression overs a period of 12 weeks leads to a significant improvement of symptoms with a simultaneous reduction in cost of statutory health insurance.

**PMH30**

EARLY ECONOMIC EVALUATION OF THE NEW ATYPICAL ANTI PSYCHOTIC

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**Objectives:** To assess the economic viability of the new atypical antipsychotic and to estimate the price that is required for an economically viable drug. In this study early economic modeling was used to estimate the price per course for difluoroclozapine and clozapine. Difluoroclozapine is a new atypical neuroleptic drug in the treatment of resistant schizophrenia for persons with BPD. Across the included studies, the mean average cost per patient was shown to be reduced by 21% – 35% from pre-DT treatment to post-DT treatment. A reduction in inpatient hospital days, shorter inpatient stays and reduced emergency room visits were reported as the most significant savings in terms of costs for BPD patient care and health care services. **Conclusions:** Provision of DT for patients with BPD is shown to incur reduced healthcare costs, particularly regarding inpatient hospital days and emergency room visits. This result was consistent in the studies included. However, additional research is required for when comparing costs incurred in the pre-DT, treatment year and post-DT treatment year.

**PMH32**

PHARMACO ECONOMICS ANALYSIS OF SERTINDOLE USE IN THE TREATMENT OF SCHIZOPHRENIA IN RUSSIA

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**Objectives:** to conduct a comparative pharmacoeconomic analysis of atypical antipsychotics used for the treatment of schizophrenia – risperidone (RIP), paliperidone (PAL) and paliperidone (PAL). The primary outcomes for analysis were relapse and rehospitalization rates. Using the odds ratio (OR) of prehospitalization we calculated the related risk (RR) for three drugs. The cost of the annual programme is being rolled out on a pilot basis in Ireland. This study's objective is to undertake a cost-effectiveness analysis of the Eden Programme from the perspective of the Irish health care provider. **Methods:** Researchers identified all relevant resources and utilised a combination of micro-costing and gross costing to measure resources. A net cost per programme and per participant were calculated, accounting for the current maximum intake for an Eden Programme (n=10). To measure effectiveness, average BDI scores pre and post-Eden Programme surveys were used. The EQ-5D-3L, using the methods developed by Brazier et al. (2016). To account for uncertainty, a Monte Carlo simulation was used to do a probabilistic sensitivity analyses. A cost-effectiveness ratio was used to derive the probability of the programme being cost-effective compared to usual care. **Results:** SRT produced a 37% lower cost and 57% lower costs of hospitalisation than usual care. The most influential health-related outcome was the change in BDI score. SRT was the most cost-effective treatment versus CER (less than CER QT) and versus PAL (SRT has insignificant deferens in treatment effectiveness -0.13%, but will be more cost saving treatment, ICER for PAL more than 20 times higher than Russian WTP threshold). A total of 7 scenarios. Willingness to pay threshold (WTP) for Russian health care system was estimated at €25,500 (168490 RU) exchange rate mean in 2017 - €1 = 65.2 RUB. Results: the drug cost for annual therapy was the lowest for SRT – €1,550 (96856 RUB) – by 6% and 45% less than for QT and PAL respectively. The RR of rehospitalization was 2.0% for PAL and 16.2% for QT, while the cost for rehospitalization was 2.0% 5 times less for SRT and only by 0.5% greater than for PAL. Therefore SRT therapy was the most saving cost by total – 13.8% less vs QT and 31% versus PAL. Cost-effectiveness ratio (CER) for 1 patient treated without rehospitalization was 1.6% (P=160472 RUB) for SRT, €2,180 (136226 RUB) for QT. SRT has higher CER versus PAL, but incremental cost-effectiveness ratio (ICER) for PAL more than 20 times higher than WTP (CER= €532,542 (33 283 846 RUB). The most influential health-related outcome was the change in BDI score. The study underlines the potential of innovative e-mental health treatments in treating depressive disorders. The results suggest that the use of depression over a period of 12 weeks leads to a significant improvement of symptoms with a simultaneous reduction in cost of statutory health insurance.

**PMH31**

CONCLUSIONS: PARTICIPANT DATA META ANALYSIS OF GUIDED INTERNET-BASED TREATMENTS FOR DEPRESSION IN COMPARISON WITH CONTROL CONDITIONS: AN INDIVIDUAL-PARTICIPANT DATA META-ANALYSIS

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**Objectives:** To conduct an individual-participant data meta-analysis (IPD-MA) evaluating the cost-effectiveness of guided internet-based treatments for depression compared to control groups. It is often hypothesised that Internet-based treatments are associated with lower costs, because face-to-face time with therapist is reduced. The objective of this study was to conduct an IPD-MA evaluating the cost-effectiveness of guided Internet-based interventions for depression compared to controls from a societal perspective. **Methods:** A systematic literature search was conducted in electronic databases from 2000 to January 1st 2017. Studies were included if they were randomized controlled trials in which the cost-effectiveness of a guided internet-based intervention for depression was compared to a control. Cost-effectiveness analyses were conducted for improvement in depressive symptoms measured by CES-D, response to treatment, and Quality-Adjusted Life-Years (QALYs) at 8-weeks, 6-months, and 12-months follow-up. **Results:** IPD-MA showed a high degree of methodological heterogeneity with regard to outcomes, sample size, perspective and time horizon. In particular, quality-of-life values of PD-cog patients was cautiously, this review is not viewed as proxy when including these costs in the pre-DT treatment year and post-DT treatment year.
from five studies, including 1,426 participants were used. The guided Internet-based intervention was more effective than the control group significantly (e.g., 12-month mean difference = -4.06, 95% CI: -6.11 to -1.44). Cost-effectiveness acceptability curves indicated that high investments are needed to reach an acceptable probability that the intervention is cost-effective compared to control for CES-D and depression respectively. e.g., at 12-months the probability of being cost-effective was 0.95 at a ceiling ratio of 2,000 /$ of improvement in CES-D score.

For QALYs, the intervention’s probability of being cost-effective compared to control was low (≤0.1) at the 12-month follow-up. (e.g., at 12-month follow-up the probability was 0.29 and 0.31 at a ceiling ratio of 24,000 and 35,000 $/QALY, respectively). CONCLUSIONS: Guided Internet-based interventions for depression were not considered cost-effective compared to control. However, only a minority ofRCTs investigating depression options, which also focused on interventions also assessed cost-effectiveness. Therefore, it is important that future RCTs measure resource use and productivity losses alongside clinical effectiveness.

MENTAL HEALTH – Patient-Reported Outcomes & Patient Preference Studies

PMH35 EVALUATION OF BARANYA COUNTY DRUG AMBULANCE’S AND BARANYA COUNTY POLICE’S SCHOOL BASED DRUG PREVENTION ACTIVITY

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OBJECTIVES: The aim of our research was to evaluate two school based drug prevention programs which were operated by Baranya County Police and Baranya County Drug ambulance. METHODS: The research program was carried out with a questionnaire at schools which are part of one of these drug prevention programs. 220 students were involved into the study. Students filled in the questionnaire twice: several days before (pre-test) and 10 days after (post-test) the drug prevention program. We processed our data with the help of SPSS and we designed a paired-sample T-test to explore the development of students' knowledge about drugs and their attitudes. RESULTS: The results indicate that the students' knowledge about drugs after Police’s program have increased by 24.6% and Drug ambulance’s result was 20%. Drug ambulance’s program reached significant (p = 0.048) change in self-knowledge among the students. About the Police’s program we can not report the same significant result in the same case (p = 0.569). The effect of the Drug ambulance’s program also changed the student's sense of danger regarding drugs significantly. There was a significant change in the trying of marijuana (p = 0.008), hallucinogenic drugs (0.012) and herbal drug (p = 0.001). However the effect of the Police’s program only changed the student's trying of designer drugs regarding drugs significantly (p = 0.071).

CONCLUSIONS: Continuous evaluation of prevention programs are essential. It would be important that monitored and professionally suggested programs are realised.

PMH36 STIGMATISATION LEVEL TOWARDS MENTAL ILLNESS PATIENTS AMONG MALAYSIAN URBAN AND RURAL COMMUNITIES

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OBJECTIVES: This study investigates the level of stigmatisation among urban and rural Malaysian communities towards mental illness patients, and assessed associated factors. METHODS: This was a cross-sectional survey based on the systematic sampling technique. RESULTS: The mean (SD) scores obtained by urban and rural respondents were 39.40 (9.77) and 42.15 (9.16), both fall into moderate level of stigma (moderate score: 28 - 54). Urban respondents demonstrated significant higher pity level, lower dangerousness, lower blame, lower anger, and lower coercion compared to rural respondents. The mean scores obtained by females were significantly higher than males in referring to dangerousness, fear, segregation and coercion stereotypes. Respondents who were familiar with mental illness tend to have significantly higher pity but lower blame compared to respondents who were not familiar with mental illness. There was a significant decrease in blame among respondents who were familiar towards schizophrenia term compared to respondents who were not familiar. Significant predictors were found in few stereotypes including familiarity with mental illness (pity), gender and highest level of education (dangerousness), gender (fear), familiarity with schizophrenia (blame) and gender and living area (coercion).

CONCLUSIONS: Rural respondents had significantly lower pity level, higher dangerousness, higher blame, higher anger, and higher coercion compared to urban respondents. Gender was the main predictor for stereotypes of dangerousness, fear and coercion. The elements of stigmatisation towards mental illness need to be addressed be it to the public or respective sufferers in creating concerned and responsible communities.

PMH37 PATHWAYS TO DEMENTIA DIAGNOSIS AND POST-DIAGNOSTIC SUPPORT: THE BAVARIAN DEMENTIA SURVEY

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OBJECTIVES: Timely diagnosis and the provision of post-diagnostic information and support are key for persons with dementia (PwDs) and their informal caregivers. This analysis examined the time span from the onset of symptoms to a dementia diagnosis. Furthermore, the provision of information about treatment options and support services was assessed. METHODS: BayDev is a multi-center, cross-sectional, community-based study in Bavaria, Germany. Information about PwD and their informal caregivers. Data is collected by means of standardized, face-to-face interviews in close cooperation with local dementia institutions. RESULTS: In total, 139 informal caregivers (67% female, M=60 years, SD=12, Min=23, Max=86) of PwD received a diagnosis of dementia within one year, 61% within two years from symptom onset. 56% of the informal caregivers reported to be given information on the syndrome and 44% stated to have obtained information about the course of dementia. 51% felt informed about pharmacological treatment, whereas 42% of the informal caregivers indicated that they received information about non-pharmacological treatments. Solely, 21% reported to have received information about local support centers. Compared to spouses and life partners, children felt less informed. CONCLUSIONS: These results suggest that from the caregiver’s perspective, there is a need to optimize the provision of post-diagnostic to newly diagnosed PwDs and their relatives, since knowledge and uptake of support services are important for the prevention of caregiver burden. PMH38 PSYCHOSOCIAL DETERMINANTS OF DEPRESSIVE ILLNESS AMONG WOMEN ATTENDING IN PSYCHIATRIC OUT PATIENT DEPARTMENTS OF BANGABANDHU SHEIK MUJIB MEDICAL UNIVERSITY (BSMMU), DHAKA, BANGLADESH

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OBJECTIVES: The rapidly increasing number of depression patients in both developed and developing countries is a potential medical and health concern. There are many factors are related with depression, of which socio-demographic, socio-cultural and socio-economic factors are the potential cause of depression, especially in developing countries and generally, women are more prone to depression than men. In Bangladesh, a device of country and majority of numbers of people live below normal economic condition, the number of depression patients is increasing drastically. Therefore, this study was design to assess the mental health level of women patients who attended for consultation or treatment at the department of psychiatric outpatient (OPD) at Bangabandhu Sheikh Mujib Medical University (BSMMU), Bangladesh. This study conducted following the international classification of disease (ICD-10) and diagnostic and statistical manual of mental disorder (DSM-IV) and maintaining inclusion and exclusion criteria.

RESULTS: This study revealed that among 160 women attending the psychiatric outpatient of BSMMU, 70% patients were suffering from severe depression. Proportion of severe depression decreased with the increasing educational level which was maximum among the illiterates (87.5%) and minimum that crossed higher secondary level (60.0%). However, highly significant association between depression and family income was observed. There was no relation of family type, nuclear and joint family with depression. But family income was significantly associated with depression and low income family suffered severe depression (94.6%). Gender discriminated women (85.4%) were suffered significantly more than no gender discriminated women (63.4%). Significant correlation was found in victimized family (92.6%) compared to the family who has no history of victimization (65.4%).

CONCLUSIONS: We identified depression among such as women who early marriage, victimize and live low earning family as potential factors that have statistically highly significant association with depression level.

PMH39 DEPRESSION ASSESSMENT IN PATIENTS DIAGNOSED WITH PARKINSON’S DISEASE FOR CLINICAL PRACTICE

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OBJECTIVES: To show the complexity of patients with Parkinson’s disease (PD) by illustrating an accurate profile based on the prevalence of depression and other complications, as well as observed differences among patients from UK and USA, for further good practices recommendations. METHODS: A cross sectional descriptive study was conducted using an electronic survey among patients from UK and USA and diagnosed with PD. Patients (n=104) were screened for depression by using the Zung Self-Rating Depression Scale (ZSDS). Prevalence of movement and nervous system symptoms was assessed by using multiple choice questions and the distress of each category was scored from 0 to 3 (0-no, 1-mild, 2-severe, 3-very severe) where a higher score indicates greater distress. Comparisons between patient groups were made with ANOVA and two-tailed t-test, correlations were interpreted based on calculations of Pearson’s R and descriptive statistics summary. RESULTS: Most of the patients recognized some symptom of depression (56.38%), 50.96% were female and 54.81% showed depression according to the ZSDS. Comparisons between UK and USA patient groups disclosed no significant differences (p>0.05). Patients aged 50-60 showed a higher distress of depression and a more severe stage (p=0.025<0.05). Prevalence of movement and nervous system symptoms as well as the distress of these symptoms are up to two times higher in patients with depression than in those with <0.05. In patients with depression scores obtained by the patients who lived in the urban area were significantly higher than those that do not have depression according to the ZSDS, 14.89% consider themselves depressed. CONCLUSIONS: All patients with PD revealed a complex profile and require good management of frequent comorbidities. Prevalence of depression calls for medical professionals to be vigilant in the screening process.
PMH40

SPONTANEOUS ABORTION IS ASSOCIATED WITH AN INCREASED RISK OF DEVELOPING PSYCHIATRIC DISORDERS

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OBJECTIVES: The aim was to analyze the risk factors for depression, anxiety, and adjustment disorders in women with spontaneous abortion in Germany. METHODS: This study included women between the ages of 16 and 45 with a first pregnancy terminated by spontaneous abortion between January 2007 and December 2016 (index date). These women were followed in 262 German gynecological practices. Women with a spontaneous abortion were matched (1:1) with pregnant women without spontaneous abortion by age, index year, diagnosis of infertility prior to the index date, preconception management prior to the index date, and physician. RESULTS: This study included 12,158 women with a spontaneous abortion and 12,158 pregnant women without a spontaneous abortion. Deaths were included in the analysis for a median follow-up time of 0.5 years (SD 5.3 years). Eighty-nine percent of women with spontaneous abortion and 7.5% of controls were diagnosed with depression, anxiety, or adjustment disorder. Women who had previously undergone a spontaneous abortion were more likely to have one of these three psychiatric disorders in the age groups 21-30 and 31-40 years. CONCLUSIONS: After controlling for confounders and interaction terms, spontaneous abortion was associated with an increased risk of developing psychiatric disorders within the first year.

Mental Health – Health Care Use & Policy Studies

PMH41

IMPACT OF COLLABORATIVE CUSTOMIZED PATIENT EDUCATION IN PSYCHIATRIC DISORDERS

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OBJECTIVES: To study the impact of Pharmacist–Psychiatrist Collaborative customized Patient Education in patients with depression, Bipolar Affective Disorder (BPD), Schizophrenia and alcohol dependent Syndrome (ADS) in an Ambulatory Care setting. METHODS: A prospective randomized study was conducted in the psychiatry out-patient department of a tertiary care hospital for a period of 9 months. Eligible patients (225) were randomized into test group and control groups by simple randomization in each disease and followed for a period of six months. Collaborative patient education was provided to the test group with the help of patient education materials while the control group was on usual care. The medication adherence and quality of life (QOL) of both the groups were assessed and compared once in every two months by using Medication Adherence Rating Scale (MARS) and World Health Organization Quality of Life (WHOQOL) – BREF questionnaire respectively. RESULTS: Among the study population 210 completed all the follow-ups out of which 100 were in control group and 110 in test group. Mean age of the subjects was 38.67 ± 11.60. Majority (n = 157 [35.71%]) of patients were diagnosed to have had depression followed by BPD (n = 73 [17.46%]). A statistically significant increase in the mean medication adherence score of test group was observed in all the follow-ups. The mean medication adherence scores was high in BPAD (1.4) and depression (1.4) compared to schizophrenia and ADS. Upon the analysis of QOL, the difference in the overall mean score between test group and control was 8.45 which was statistically significant. Comparison of mean medication adherence scores of all patients in each disease showed that BPAD patients had a mean increase of 2.04 than depression, 1.36 than ADS and 2.01 than schizophrenia patients. CONCLUSIONS: Provision of customized patient education by pharmacist and psychiatrist improved the patient medication adherence and QOL.

PMH42

THE ASSOCIATION BETWEEN BUPRENORPHINE/NALOXONE AND ALL-CAUSE MORTALITY IN THE UNITED KINGDOM (UK): AN INTERIM REPORT

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OBJECTIVES: The main objectives were: (1) characterize patients in the UK who received a prescription for buprenorphine/naloxone (BUP/NLX), buprenorphine, or methadone between 2-January-2012 or more hours a day. Consequently, this situation indicates the need for educational improvements in primary care and health services.

Mental Health – Health Care Use & Policy Studies

PMH43

A RETROSPECTIVE OBSERVATIONAL SURVEY OF BUPRENORPHINE/NALOXONE USE IN FRANCE

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OBJECTIVES: This study was conducted to characterize real-world usage of buprenorphine/naloxone sublingual tablets (BUP/NLX) in France. METHODS: This study was a nested case-control cohort. Analyses were adjusted for baseline covariates, and health conditions and impact on health related quality of life (HRQoL). Validated severity measures were used to analyze comorbidities, age, race, medication use, productivity and memory problems. 15 students who played computer games for more than 16 hours a day had a decrease in visual acuity, dry mucous membranes of the eyes, memory problems, back pain in the elbow brushes, body aches, loss of appetite, disorientation in time and space, insomnia, serious problems with memory and more. All students devote the game for more than 6 hours a day, revealed problems with academic performance. Some students (10%) set academic alarms for previous years of study. CONCLUSION: The majority of respondents (60%) play computer games 6 or more hours a day. Consequently, this situation indicates the need for educational work about the dangers of long-term stay in the world of computer games.

PMH45

BURDEN OF MODerate TO severe DEPRESSION IN THE US ADULT POPULATION

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OBJECTIVES: To better understand the characteristics and burden of moderate to severe depression in the United States (US). METHODS: A random stratified sampling of the survey of 22,028 American adults was conducted to assess health conditions and impact on health related quality of life (HRQoL). Validated HRQoL and screening questionnaires for depression and anxiety were employed. Respondents with mild and moderate depression were also compared to respondents with moderate-severe depression. Chi-squares for categorical data and general linear models were used to analyze comorbidities, age, race, medication use, productivity and resource utilization. Logistic regressions were used to assess predictors of moderate to severe depression in those with no mild depression. 14.5% of the US adult population had no moderate to severe depression. This was a retrospective analysis of an EMR database, with no randomization to treatment groups, and no unmeasured, unmeasured depression patterns as comorbid mental disorders and/or substance-related disorders. CONCLUSIONS: All-cause mortality rates were lowest among BUP/NLX users and highest among methadone users. Methadone was associated with 3.5-fold increased risk of all-cause mortality.
health utility(0.56 vs. 0.78; p < 0.01). Those with moderate/severe depression reported significantly lower levels of restorative sleep satisfaction than their counterparts. Several studies estimate the prevalence of OSA between 4-40% of the general population, although the study design and methods used to assess OSA are complicated by variability in the study design and methods. As such, the observed prevalence in this study appears low compared to the general population is ranging between 4-40%. Accompanying OSA can impact morbidity and adds significant morbidity if left untreated. Its prevalence in the US is estimated to be 24 million people, with the majority of cases going undiagnosed.

**Objective:** The objective of this study was to perform a systematic review of the most recent studies that assessed the safety and efficacy of current treatment options for women with PPD. METHODS: A systematic review of Medline, Embase, PsychINFO, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, and several congresses was conducted according to the PRISMA Statement (http://www.prisma-statement.org) on the treatment of women with postpartum depression (PPD). Inclusion criteria included postpartum depression ("PPD"); postnatal depression, and "peripartum depression". Inclusion criteria included women with PPD aged ≥15 years treated in observational trials (N < 4 million) with any pharmacologic therapy. RESULTS: In total, 889 unique studies were screened by two independent researchers by title and abstract; of these 58 full-text studies were evaluated and 31 were included in this review. In general, evidence supporting the efficacy of pharmacological therapies was stronger in particular for placebo, statistically significant improvements of pharmacologic therapy over placebo were shown for certain outcomes (e.g., proportion achieving remission by week 8, 37% vs. 15%; p < 0.04), whereas other measures of efficacy had borderline or non-significant differences between groups. Overall, evidence supporting the treatment of women with PPD is limited and complicated by variability in the study design and methods used to assess symptoms. CONCLUSIONS: Several treatments in women with PPD have been studied, however, evidence supporting the efficacy of these therapies is limited.

**NEUROLOGICAL DISORDERS – Clinical Outcomes Studies**

**PND1**

**COMORBIDITIES IN MULTIPLE SCLEROSIS: A DESCRIPTIVE LONGITUDINAL CLUSTERING ANALYSIS OF HEALTHCARE RESOURCE UTILIZATION AMONG MS PATIENTS IN IBM EXPLORYS DATABASE**

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OBJECTIVES: The objective of this study is to systematically review the economic evaluations of diagnosing dementia and to find appropriate economic evaluation model for diagnosing dementia. We focused on the methodological quality and characteristics of decision models to assess their applicability for future economic evaluations dealing with new technologies for diagnosing dementia.

METHODS: MEDLINE, EMBASE, Cochrane Library, KoreaMed, KMBase, and KISS were searched for English or Korean language publications related to economic evaluations on diagnostic technologies for dementia. Any of the following studies were excluded: animal studies, patients were not mild cognitive impairment or dementia patients, and study design was not an economic analysis, interventions were not diagnostic technologies, and languages were not English or Korean. Selected studies were assessed for methodological quality using the 15-item modified framework of decision modeling characteristics. RESULTS: Initially, 2,684 literatures were identified and we finally selected 11 literatures. Among the selected papers, there were 4 papers dealing with CT, 4 for MRI, 3 for dynamic susceptibility-weighted contrast-enhanced MRI, 3 for single photon emission computed tomography (SPECT), 3 for FDG PET, and 1 for biomarkers in cerebrospinal fluid (overlapping count). The results of the quality assessment showed that most studies did not meet the criteria of the framework enough. In 6 studies, the percentage of answers that met the criteria was less than 50%. When the dimension was divided into structure, data, and consistency, the percentage of responses satisfying consistency was the lowest, followed by data, and then by structure. CONCLUSIONS: With regard to the topic, economic evaluations of diagnostic methods have many deficiencies. However, there were many deficiencies in terms of quality, especially in terms of consistency. Future decision-analytic models for diagnosing dementia should be designed especially with consistency.

**PND2**

**PREVALENCE OF OBSTRUCTIVE SLEEP APNEA IN GERMAN IN-HOSPITAL PATIENTS**

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OBJECTIVES: Obstructive Sleep Apnea (OSA) is a disease that leads to severe complications and adds significant morbidity if left untreated. Its prevalence in the general population is ranging between 4-40%. Accompanying OSA can impact treatment course, length-of-stay and outcomes in patients, requiring in-hospital treatment. Disease frequency in the general in-hospital population in Germany has not been determined so far. This study aims to assess the prevalence of OSA in German in-hospital patients, based on DRG claims data and determine disease frequency in specific subgroups with anticipated higher risk for OSA.

METHODS: Data from hospital claims of 11.4 million German in-hospital patients, based on DRG claims (n=42,000) was analyzed. DRG claims are commonly used in Germany to classify patients and their diseases. Disease diagnosis is coded in a uniform way. Specific subgroups with higher risk for OSA were identified. OSA prevalence was calculated by comparing the total number of OSA diagnoses for each DRG code to the total number of primary diagnosis records. Disease frequency was calculated as a percentage of all in-hospital treatments. All treatments performed in the German in-patient system in 2015 were analyzed for primary or secondary diagnosis of OSA. A total of 14,426,814 in-patient system in 2015 was 1.80% (259,816 subjects of a total population of 14,426,814). Prevalence within different treatments varied significantly, ranging from 0.0-7.91%. Non-OSA related DRG with highest prevalence of OSA as comorbid condition include: C5, 6.49%; C3, 6.43% and major bariatric surgery procedures (12.99%). CONCLUSIONS: OSA can lead to complications and prolong treatment courses in non-OSA therapies. Epidemiological studies estimate the prevalence of OSA between 4-40% of the general population. As such, the observed prevalence in this study appears low compared to the
literature. The prevalence in specific subgroups with higher risk for OSA was as well lower than expected. Possible reasons for these findings include unawareness, under-diagnosis of OSA or under-coding of this specific condition in the required billing information. These observations suggest that the actual awareness of the disease is low among patients, physicians and paramedical staff involved in coding. Further research is required to better understand the underlying reasons for the low prevalence of OSA.

PND3

DISEASE PROGRESSION IN PEDIATRIC MULTIPLE SCLEROSIS: A NARRATIVE REVIEW

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OBJECTIVES: The occurrence of multiple sclerosis (MS) before the age of 18 years is rare, and studies are predominantly limited to 2-10 years disease duration before adulthood. There is limited evidence on progression of disease in pediatric onset MS (POMS) and how it is different from adult onset MS (AOMS), therefore our objective is to compare clinical and long-term outcomes in POMS vs. AOMS.

METHODS: MEDLINE, Embase, the Cochrane Database of Systematic Reviews were queried using the OVID platform to identify publications related to disease progression in POMS. Studies published in the English language, between 2007 and March 2017 were included. RESULTS: Search generated 2,238 records, and 313 full-text articles were reviewed and of these, 42 were included in the review. Female preponderance was observed in both POMS and AOMS. Twenty-one studies reported on data on disability accumulation as measured by EDSS and almost never reported a slower progression of irreversible disability in POMS. However, POMS reached disability milestones at a younger age than AOMS. Ten studies reported on relapse rate outcomes and, of these, four reported a comparison between AOMS and POMS. Three studies reported that relapse frequency is more frequent in POMS than AOMS. A slightly higher number of relapses were observed in patients with MS onset before 11 years of age. Relapse frequency in early phase of disease showed some correlation with the development of disability. Two studies reported on cognitive outcomes for AOMS and POMS showed that cognitive impairment was higher in POMS as measured on Symbol Digit Modalities Test and Paced Auditory Serial Additional Test. CONCLUSIONS: Even though accrual of physical disability is slower in POMS, the disease progression in combination with progressive disability may have a severe impact on a child’s ability to achieve and perform in later life.

PND4

RELATIVE EFFICACY AND TOLERABILITY OF LACOSAMIDE VERSUS LEVETIRACETAM AS MONOTHERAPY FOR ADULTS WITH NEWLY DIAGNOSED FOCAL-ONSET ZEEF FREQUENCY RECURENCES IN PHASE III CLINICAL TRIALS: ERENS5, 6, Bouwenmester W7, Zhang Y8, Dimova S9, Noack-Kink M10, Borgis S11, Charkopoulo M12, 5Pharmaceuticals, Rotterdam, The Netherlands, 6UCB Pharma, Raleigh, NC, USA, 7UCB Pharma, Brussels, Belgium, 8UCB Pharma, Monheim am Rhein, Germany, 9UCB Pharma, Slough, UK

OBJECTIVES: Lacosamide was previously compared to other anti-epileptic monotherapies in adults with focal seizures in a network meta-analysis (NMA). The number of clinical trials in this NMA was too limited to assess the impact of heterogeneity on outcomes. To overcome the similarity assumption of the NMA, we performed a network meta-analysis (NMA) of lacosamide vs. placebo and levetiracetam for patients with newly diagnosed adult epilepsy patients. METHODS: Pooled patient-level data from two clinical trials –evaluating lacosamide and levetiracetam monotherapy versus placebo in adults with new onset seizures. Two Network Meta-Analysis (NMA) were done to compare lacosamide and placebo outcomes. CONCLUSIONS: In total, 444 and 285 patients were treated with lacosamide and levetiracetam. Lacosamide treatment resulted in a higher probability of being seizure free for 6-months (OR 0.69; 95% CI 0.44-1.08 for not being seizure free) and a lower risk of discontinuations due to AEs (OR 0.55; 95% CI 0.32-0.95) compared to patients treated with carbamazepine-CR in the lacosamide trial and a higher probability of being seizure free for 6-months (OR 0.81; 95% CI 0.50-1.32) and lower risk of discontinuations due to AEs (OR 0.55; 95% CI 0.32-0.95) compared to patients treated with carbamazepine-CR in the levetiracetam trial. These results were consistent in various propensity score models, subgroup analyses and 12-months seizure-free outcomes. CONCLUSIONS: Carbamazepine-CR outcomes differed between the trials after propensity score adjustment, indicating residual confounding that prevents a meaningful lacosamide-levetiracetam comparison. Comparative assessments derived from NMA are not biased by such confounding (randomization holds); however, they describe the average treatment effect in a population without reflecting on differences in treatment response between individuals and subgroups of patients with distinct epilepsy characteristics.

PND5

DEFALAZACORT OR PREDNISONE TREATMENT FOR DUCHENNE MUSCULAR DYSTROPHY: A META-ANALYSIS OF DISEASE PROGRESSION RATES IN RECENT MULTICENTER CLINICAL TRIALS

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OBJECTIVES: Deflazacort and prednisone/prednisolone can slow the loss of ambulatory function in patients with Duchenne muscular dystrophy (DMD). We compared rates of decline in ambulatory function between patients receiving these corticosteroids, in conjunction with modern supportive care and physical therapy, on placebo arms of recent DMD trials. METHODS: Ambulatory patients with DMD were included from three placebo arms of recently concluded Phase III trials of ataluren (n=115, all with nonsense mutations) and tadalafil (n=116, unselected by genotype). Both trials required ≥6 months of prior corticosteroid use and stable baseline dosing. Associations between corticosteroid type and 48-week changes in ambulatory function were estimated using mixed models adjusting for age, sex, baseline 6MWD, and baseline 48-week 6MWD. RESULTS: Baseline characteristics did not differ between the ataluren and tadalafil arms. Patients treated with deflazacort experienced 3.64% (95% CI 0.18 to 6.48% for not being seizure free) and a lower risk of discontinuations due to AEs (OR 0.59; 95% CI 0.31-1.11) compared to levetiracetam. After adjusting for confounding factors, patients treated with carbamazepine-CR in the lacosamide trial had a higher probability of being seizure free for 6-months (OR 0.81; 95% CI 0.50-1.32) and lower risk of discontinuations due to AEs (OR 0.55; 95% CI 0.32-0.95) compared to patients treated with carbamazepine-CR in the levetiracetam trial. These results were consistent in various propensity score models, subgroup analyses and 12-months seizure-free outcomes. CONCLUSIONS: Carbamazepine-CR outcomes differed between the trials after propensity score adjustment, indicating residual confounding that prevents a meaningful lacosamide-levetiracetam comparison. Comparative assessments derived from NMA are not biased by such confounding (randomization holds); however, they describe the average treatment effect in a population without reflecting on differences in treatment response between individuals and subgroups of patients with distinct epilepsy characteristics.
OBJECTIVES: This study aimed to examine and compare patient persistence of fingolimod to all reimbursed disease modifying therapies (DMTs) for relapsing-remitting multiple sclerosis (RRMS) in Australia. METHODS: The Australian Government’s Medicare Benefits Schedule database was used in a cross-sectional study. For patients to be included in the study they needed to have received a script for a reimbursed MS disease modifying therapy between September 2011 and February 2016. Persistence was defined as a patient remaining on a DMT with a gap in scripts of no longer than 4 months. Individual patients could be included multiple times if they initiated a new DMT during the study period. Persistence was derived using Kaplan-Meier method and hazard ratios (HR). Persistence to individual treatments was compared to the average persistence observed across all treatments. RESULTS: A total of 720 unique patients were eligible for the study. The majority were female (73.5%) and aged between 36-65 (64.5%); 89% of patients were diagnosed before 2012, while 18% were diagnosed between 2012-2014 (i.e. 2.5 new initiations/patient). Overall the median persistence (MP) to therapy was 29.6 months with 67.7% of patients remaining on therapy for 12 months. The only DMT that had significantly better persistence compared to the overall average, was fingolimod (HR 0.65; 0.57-0.73; <p=0.001). Patients had an MP of 60 months on fingolimod and 75.9% of patients were persistent at 12 months. Patients were significantly less persistent to interferon Beta-1a (MP: 8.8-11.0 months), interferon Beta-1b (MP: 8.8 months), mitoxantrone (11.4 months) and dimethyl fumarate (MP: 19.2 months) (hazard ratios above 1.27 (p values all < 0.001) whilst the remaining DMTs, teriflunomide (MP: 27.7 months) and natalizumab (MP: 34.3 months), showed no significant difference from the average persistence. CONCLUSIONS: In this Australian Medicare utilization data, patients were most persistent to fingolimod treatment amongst all DMTs. METROV: To assess compliance and discontinuation rates with DMTs in Canadian patients with RRMS. METHODS: In this Canadian retrospective claims analysis of data from 188,850 patient-years in the database, compliance and discontinuation rates were collected at 6, 12 and 24-month periods (cohorts from 2013-2017, rolling 36 months total). Patients had ≥1 prescription filled for each DMT (oral: fingolimod, dimethyl fumarate (DMF), teriflunomide; injectable: interferon beta-1a, glatiramer acetate; interferon beta-1b, natalizumab). A medication possession ratio (MPR) of ≥80% was used to reflect patient compliance to their treatment. Discontinuation rates were calculated based on patients who stopped therapy (60 day window) or who were switched to another DMT. RESULTS: Compliance and discontinuation data was collected after 6 months (n=12,543, n=9,460 respectively), 12 month (n=7,665, n=7,234) and 24 month (n=6,047, n=6,030) periods. The percentage of patients deemed compliant after 6, 12, and 24 months increased in Canada for fingolimod (75%, 76%, 71% respectively), compared to natalizumab (72%, 73%, 56%), DMF (71%, 68%, 55%), and BRACE (52%, 46%, 35%) and comparable to teriflunomide (76%, 77%, 68%). Patients on fingolimod had the lowest discontinuation rates (12, and 25% respectively compared to BRACE (48%, 35%, and 55%); natalizumab (34%, 29% and 49%) and DMF (31%, 30% and 43%) and similar to teriflunomide (26%, 25%, 31%). CONCLUSIONS: Compliance with fingolimod in Canada remained stable, in all time points and was higher than for any other DMTs but was comparable to teriflunomide. Unlike other DMTs, the discontinuation rate with fingolimod did not significantly increase over the 24-month period and remained lower than other DMTs and similar to teriflunomide. Treatment discontinuation rates and persistence strategies in Canada which may lead to improved clinical and economic outcomes.
by exploring ‘first-time’ claims in the database defined as not having an MS related claim in the previous two years. Prevalence was estimated based on the number of individuals having an MS claim within the concerning year. **RESULTS:** Average prevalence of MS in the Netherlands over 9 years was 88 per 100,000 inhabitants (males 48, 127 females). This is comparable with previously reported prevalence in Europe. This average incidence was 9 per 100,000; somewhat lower than reported in previous studies. Yearly per patient medication costs were highest in the year after the first MS claim and then decreased about 15% in the two years after. Mean drug costs increased strongly in the year after an MS diagnosis and then decrease again, but stay higher than before diagnosis.

**PND1 INCIDENCE AND PREVALENCE OF EPILEPSY IN GERMANY Groth A1, Borgia S2, Gille P4, Jorees L1, Wilke T4**

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**OBJECTIVES:** Epilepsy is one of the most frequent neurological diseases. No current precise data about the epidemiology of epilepsy and focal epilepsy (FE) in Germany are available. The aim of this contribution is to quantify age- and gender-specific prevalence and incidence of epilepsy in Germany, in 2013. **METHODS:** The analysis based on claims-data of 2.7 million members of a regional German statutory health insurance fund. Patients were classified as epilepsy prevalent if they had at least one primary or principal diagnosis of epilepsy (ICD-10: G40) in the observation year 2013. Patients were considered to have incident epilepsy in 2013 if they did not have any antiepileptic medication and any epilepsy diagnosis in the years 2012 and 2013. FE prevalence/incidence (ICD10-Code G40.0/G40.1/G40.2) was assessed separately. In a sensitivity analysis, patients were classified as prevalent/incident only if they received a prescription of an antiepileptic medication in the year of the epilepsy diagnosis. **RESULTS:** Prevalence/incidence was reported as age- and gender-adjusted numbers, based on German population age/gender structure. **RESULTS:** Prevalence was estimated to be 1.998% for epilepsy and 0.703% for FE. Among prevalent patients, 50.9%/49.1% were male/female for epilepsy, respectively 50.1%/49.9% for FE. The sensitivity analysis resulted in a prevalence of 1.426% (0.599% in FE). **RESULTS:** Incidence in our sample was 4.860 cases/1,000 person-years in men (1.366 cases in FE) and 3.781 cases/1,000 person-years in women (1.175 cases in FE). Based on the more conservative epilepsy definition, incidence was 1.439 cases/1,000 person-years and 0.656 cases/1,000 person-years in FE. **CONCLUSIONS:** Using this claims data source, the prevalence and incidence was found to be higher in Germany than in other studies. The resulting healthcare burden of epilepsy is expected to be larger than previously estimated.

**PND15 THE PREVALENCE AND TREATMENT STATUS OF DIFFERENT MULTIPLE SCLEROSIS PHENOTYPES IN A ITALIAN REFERENCE CENTER Corton PA1, Cuzzolino P2, Cesana G1, Capra R3, Mantovani LG3**

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**OBJECTIVES:** More information are needed on the prevalence of different Multiple Sclerosis (MS) phenotypes in Italy and their treatment status. This study assessed the prevalence and the treatment management of the main different MS phenotypes: relapsing remitting (RMS), secondary progressive (SPMS) and primary progressive (PPMS). The prevalence and incidence of MS in the period 2004-2010 were identified through regional health-care insurance database (Datalink). Annual net budget impact over 5 years, from the perspective of the UK National Health Service, was estimated. **RESULTS:** The budget impact of the newly licensed oral glycopyrronium bromide over 5 years was estimated to be cost saving, even under assumptions of increasing prescription rates over time. **CONCLUSIONS:** The introduction of oral glycopyrronium bromide 400 micrograms/ml may lead to substantial cost savings for the UK healthcare service. Use of real world evidence to understand clinical practice and treatment decisions is critical to validate assumptions around input parameters when estimating the budget impact of introducing a newly licensed product into a previously unlicensed market. This allows national and local decision makers to make informed decisions on use for their patient population.

**PND16 MIGRAINE BURDEN AND COSTS: A NATIONWIDE POPULATION-BASED CONTROLLED COHORT STUDY USING THE FRENCH EGB DATABASE Aly B1, Emery C2, Fagnani F3, Gourmelon J1, Malieu N1, Leiba G1, Allali B1, Chouette I1, Leroy P1, Donnet A1**

1Novartis Pharma, Rueil-Malmaison, France, 2Cemka, Bourg La Reine, France, 3CEMKA-EVAL, Bourg la Reine, France, 4UMS 011 - Inserm - UVSQ, Villejuif, France, 5Novartis, Rueil Malmaison, France, 6Université Paris-Dauphine, Paris, France, 7CHU Timone, Marseille, France

**OBJECTIVES:** To describe and analyze the burden, healthcare resource use and costs of adult patients using acute migraine treatments in France, with a comparison to published studies. **METHODS:** Analysis was based on the EGB ("Echantillon Généraliste de Bénéficiaires") database, a 1/5 random sample of the French health-care insurance database linked with the hospital discharge database (PMSI). Adult patients with at least one delivery of any specific migraine acute treatment (triptans or ergots derivatives) in 2014 were selected. A control group matched on age, gender and geographic area was identified (3 controls per case). Treatment was identified as a consumption of ≥20 DDD (triptans) or ≥10 DDD (ergots), per month for at least 3 consecutive months. The cost analysis was performed in a societal perspective comparing health-care resource use and costs of adult patients using acute migraine treatments in France, with a comparison to a matched control group. **RESULTS:** Adult patients using acute migraine treatments in France, with a comparison to a matched control group. **RESULTS:** Adult patients using acute migraine treatments in France, with a comparison to a matched control group.

**NEUROLOGICAL DISORDERS – Cost Studies**

**NEUROLOGICAL DISORDERS – Cost Studies**

**PND17 BUDGET IMPACT ANALYSIS OF ORAL GACPBK7R0B0MIDE (SIALANRM) FOR THE SYMPTOMATIC TREATMENT OF SEVERE SIALORRHEA (DROOLING) IN THE UK SETTING Langford SJ1, Wright A1, Shaw S1, O’Leary S2**

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**OBJECTIVES:** Oral glycopyrronium bromide 400 micrograms/ml (Sialan™) is indicated for the symptomatic treatment of severe sialorrhoea (drooling) in children and young people with chronic neurological disorders. It is the only licensed treatment of patients with relapsing remitting MS (RRMS). The objective of this budget impact analysis is to estimate the economic consequences of the introduction and use of daclizumab beta in Italy, for the treatment of patients with relapsing remitting MS (RRMS), eligible to second line therapy. **METHODS:** This analysis evaluates the economic consequences of the first three years of daclizumab commercialization, from the perspective of the Italian National Healthcare Service (NH). Direct healthcare costs (drugs, administration, monitoring, relapse and adverse events) over a period of three years were calculated for two scenarios: i) current scenario, where second line treatments (fingolimod, natalizumab, alemtuzumab) are not available; ii) alternative scenario, where daclizumab beta is introduced as an alternative. **RESULTS:** The incremental cost-effectiveness ratio (ICER) of daclizumab beta was €10,850 per quality-adjusted life-year (QALY) gained (€10,530 per QALY gained in the current scenario, €11,180 per QALY gained in the alternative scenario). **CONCLUSIONS:** The adoption of daclizumab beta for the treatment of RRMS patients eligible to second line therapies is economically favorable (budget-saving) for the Italian NHS.
extrapolated nationwide annual direct cost attributable to migraine treated by acute treatment was estimated at 2.43M€ in 2014. CONCLUSIONS: Migraine generates a significant burden in patients with an increase of depression and anxiety. Drug abuse is associated with greater burden and healthcare related costs. Due to high prevalence (20%), costs related to migraine consist of a significant societal burden.

PND19 IMPACT OF OCRELIZUMAB VS. INTERFERON-BETA-1A IN DELAYING THE ONSET OF RECURRENT EPISODES’ DAILY FUNCTIONS AND ASSOCIATED COSTS IN RELAPSING-REMITTING MULTIPLE SCLEROSIS Yeung H1, Duchesneau ED1, Guerin A2, Ma F3, Thomas N3

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OBJECTIVES: Ocrelizumab has better efficacy in delaying disease progression than subcutaneous interferon-beta-1a (SC IFN-β-1a) among patients with relapse-remitting multiple sclerosis (RRMS). This study compared ocrelizumab vs. SC IFN-β-1a in terms of progression over Extended Disability Status Scale (EDSS) states and associated costs. METHODS: A Markov cohort model was developed to compare ocrelizumab vs. SC IFN-β-1a for the treatment of RRMS over 20-years time horizon, from disease onset to the end of progression over Extended Disability Status Scale (EDSS) states and associated costs. RESULTS: At the end of 20 years, a higher proportion of patients receiving ocrelizumab vs. SC IFN-β-1a were able to maintain full daily activities (EDSS<5. 20.7% vs. 15.5%) and to walk without a walking aid (EDSS<6. 23.8% vs. 18.1%). Patients receiving ocrelizumab vs. SC IFN-β-1a were predicted to spend more time in EDSS states capable of full daily activities (9.67 vs. 8.52 years) and in states capable of walking without aid (10.93 vs. 9 years) over the 20-year period. The treatment costs ($455,501 vs. $556,003) and EDSS state costs ($204,986 vs. $229,652) were also lower for ocrelizumab vs. SC IFN-β-1a. CONCLUSIONS: Ocrelizumab, compared to SC IFN-β-1a, is associated with delayed deterioration in RRMS patients’ ability to conduct full daily activities and to walk without aid in RRMS, which also lowered to lower EDSS state costs.

PND20 THE ECONOMIC BURDEN OF DIFFERENT MULTIPLE SCLEROSIS PHENOTYPES Cezzolinli E1, Cortesi PA2, Cesana G1, Capra R3, Mantovani LG4

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OBJECTIVES: Poor specific information on economic burden of Multiple Sclerosis (MS) phenotypes are available. This study assessed the costs associated to the main MS phenotypes: relapsing remitting (RRMS), secondary progressive (SPMS) and primary progressive (PPMS). METHODS: Patients covered by Lombardy Healthcare System and with a diagnosis of MS in the period 2004-2014 were identified through regional healthcare administrative databases. Data extracted from these databases were linked with clinical information collected by a major MS center in Lombardy, and for each patient we identified the MS phenotype and diseases severity assessed with the Expanded Disability Status Scale (EDSS). We identified drug prescriptions, hospitalizations, outpatient visits and diagnostic tests provided to patients for their MS diagnosis during the observation period. The identification of the daily dose was performed through the knowledge of consumption and the annual mean cost per capita stratified by EDSS level and MS phenotype. RESULTS: The study identified 871 patients with a mean age of 37.9 years. At baseline, 83.9% of patients were treated with IFN-β1a, 8.5% with PPMS, more than 8% of RRMS developed SPMS during observation period. RRMS reported the highest annual cost per patient with a mean of 7,136 in patients with EDSS level 0-3, 19,820 with EDSS level 4-6 and 51,169 with EDSS level 7-9. The PPMS patients reported the lowest annual mean cost per patient with 31,650, EDSS level 0-3, 33,930, EDSS level 4-6 and 8,269, EDSS level 7-9. The higher cost of RRMS patients was mainly due to the use of disease modifying therapies (DMTs), with a low impact associated to relapse cost (4045 per patient-year). The RRMS patients treated with DMTs reported a treatment switch rate of 12.1 per 100 person-years. CONCLUSIONS: Costs were highly correlated with disease severity and MS phenotype. These data can help health care decision-maker to better assess the burden of MS phenotypes and the possible impact of DMTs.

PND21 THE DIRECT COST OF PATIENTS WITH MULTIPLE SCLEROSIS IN FRANCE Prat J1, Guven-Menesen P2, Ribeiro D3, Cozzone D4, Theard P5

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OBJECTIVES: To estimate the direct healthcare cost of patients with multiple sclerosis (MS) in France in 2014. METHODS: Using data from the EGB database, a 1/97th random sample of the major French national health insurance system covering about 59 million individuals, we identified adults MS patients considering either long or short standing condition status (ICD-10 code: G35)/ hospital stays referencing MS as main or related diagnosis/ at least one reimbursement of an MS-specific drug over a 6 year horizon, Cladribine followed by Natalizumab became a better option (79.676 € vs 82.847 € for DMF-Natalizumab). Regarding Fingolimod, in the first 3 years Fingolimod is cheaper than Cladribine, however beyond the 3rd year Cladribine followed by either Natalizumab or Fingolimod is always cost-saving when compared with Fingolimod followed by Natalizumab (67.270 € for Cladribine-Natalizumab vs 73.810 € for Fingolimod-Natalizumab, over 4 years), with the gap between the costs of the two sequences increasing over time. CONCLUSIONS: Using according with its label and over a 4 to 6 years horizon, Cladribine tablets can be the best financial option for the treatment of patients with multiple sclerosis in Portugal.

PND22 COSTS AND BENEFITS OF IMPLEMENTING NON-INVASIVE PRENATAL TESTING ONCE PER PREGNANCY: A COST-UTILITY ANALYSIS OF ACOG GUIDELINES Yaghi J1, Fisk NM2, Jansen TS3, Gu J4, Amsellem F5, Atkinson CS6, Kumar S7, Blakemore CM8

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OBJECTIVES: To estimate the costs and benefits of implementing cfDNA for T21 in prenatal screening to support recommendations on its use in France. METHODS: Using a Markov chain developed to simulate outcomes (detected fetal T21s, missed diagnoses, avoided, false and true negatives, screenings withdrawals and test failures) and costs of using standard first trimester T21 screening in France, compared to screening strategies that include cfDNA with different T21 risk thresholds (i.e. 1/250, 1/1000 and 1/2500) in the initial screening used for the model was less than 1 year. Methodological choices were based on HAS guidelines, a systematic literature review of economic studies, and expert consultation. Data was derived from national datasets and populated with international studies, where needed. Sensitivity analyses and validation against international study results were
PND25 ADEQUATELY REFLECTING THE CLINICAL BENEFITS IN RARE DISEASE ECONOMIC MODELING USING SMA TYPE I AS A CASE STUDY

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OBJECTIVES: Spinal muscular atrophy (SMA) is a rare, hereditary, autosomal recessive neuromuscular disorder caused by deletion of the survival motor neuron 1 (SMN1) gene. Type 1 SMA is one of the most severe forms of SMA that affects infants between 0-6 months of age where they never develop the ability to sit and have a short life expectancy. Nusinersen is the first approved treatment for SMA, and prior management of the disease centred on the symptomatic treatment of respiratory, nutritional, and orthopedic function decline. The objective of this study was to build a model to adequately reflect the clinical benefits of a novel treatment (nusinersen) in a rare disease which has resulted in patients achieving motor function milestones not previously observed. METHODS: A decision analytic model was developed based on the clinical trial outcome measures, registry data, and clinical opinion via an advisory board. Health states were based on both motor and non-motor composite variables, and clinical endpoints were not previously experienced by Type 1 SMA patients, such as sitting without support and standing with assistance due to the improvement in motor function experienced by patients treated with nusinersen. Due to paucity of data, quality of life utility values were estimated by a vignette study where vignettes such as scoliosis surgery were based on the literature. RESULTS: The resulting model structure showed that over a 40-year time horizon patients treated with nusinersen gained an average of 6.5 life-years and over 6 quality-adjusted life-years (undiscounted). CONCLUSIONS: The resulting model structure is a basis on which a full economic model can be developed to support nusinersen in future Health Technology Assessments (HTAs).

PND26 A BUDGET IMPACT ANALYSIS OF AN INCREASED UPTAKE OF ALEMTUZUMAB FROM THE UK NHS PERSPECTIVE

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OBJECTIVES: To evaluate the impact of increased use of alemtuzumab 12 mg/day in the treatment of adult RMS patients (per its marketing authorization) on the UK National Health Service (NHS) budget. METHODS: A budget impact analysis was conducted from the perspective of 121,200 RMS patients in the UK in 2019. Costs included acquisition, administration, resource use/monitoring, adverse events, disability progression (assessed by Expanded Disability Status Scale scores), and relapse. The model compared the cost difference in each year under two different market scenarios: current market mix, in which the market share of alemtuzumab 12 mg/day was projected to remain consistent with current shares (2017: 1.6%; 2018: 1.8%; 2019-2021: 1.5%), and an alternative market mix, in which market share of alemtuzumab 12 mg/day was forecasted to increase 0% to 1% per year (2017: 2.6%; 2018: 2.2%; 2019-2020: 2.1%). RESULTS: Using the alternative market mix in the UK NHS perspective, alemtuzumab starts saving in Year 3 (2019) compared with the current market mix, with an average annual total cost saving of £10,976,253 over 5 years for all RMS population. The annual total costs for the first 2 years increased with the alternative mix, which can be explained by initial high upfront costs of alemtuzumab. However, these increases are offset by the reduction in drug usage with the alternative mix, which can be explained by initial high upfront costs of alemtuzumab. RESULTS: The alternative market mix, in which market share of alemtuzumab 12 mg/day was projected to increase 0% to 1% per year (2017: 2.6%; 2018: 2.2%; 2019-2020: 2.1%) will result in a cost saving of £10 million over 5 years, starting from Year 3 (2019). CONCLUSIONS: The resulting model structure is a basis on which a full economic model can be developed to support nusinersen in future Health Technology Assessments (HTAs).

PND27 DISEASE-MODIFYING TREATMENT IS ASSOCIATED WITH LOWER MEDICAL COSTS IN PATIENTS WITH MULTIPLE SCLEROSIS

PND28 COST-EFFECTIVENESS OF ALEMTUZUMAB IN THE TREATMENT OF RELAPSING FORMS OF MULTIPLE SCLEROSIS IN THE UNITED STATES AND SOCIETAL PERSPECTIVE

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OBJECTIVES: Caring for patients with relapsing multiple sclerosis (RMS) poses high economic and humanistic burdens that are well-documented, but in the United States (US) are seldom incorporated into the cost-effectiveness appraisal of disease modifying treatments (DMTs). Alemtuzumab (ALEM) was compared to ocrelizumab (OCR) and perampanel as therapeutic options for societal perspective DMT treatment. METHODS: A Markov model with annual cycles and 20-year time horizon was run separately from US payer and societal perspectives. The societal perspective was informed by model input data, clinical trial outcome measures, registry data, and clinical opinion via an advisory board. RESULTS: The incremental cost-effectiveness ratio (ICER) was $18,728 for DMT vs $13,604 for no DMT; inpatient costs were $15,085 vs $20,802; ER costs were $1,674 vs $2,172. Rates of discontinuation for DMT switching were high (26%–29%) even in patients not receiving any DMT (28% vs 34%) or hospitalization episode (18% vs 29%). Overall medical costs were lower with DMT use. For patients with a corticosteroid claim, total medical costs were $8,037 for OCR vs $13,604 for no DMT; inpatient costs were $15,085 vs $20,802; ER costs were $1,674 vs $2,172. Costs rose with increased corticosteroid treatments. In patients with ≥2 corticosteroid treatments, total medical costs (DMT vs no DMT) were $13,688 vs $18,728; inpatient costs were $14,320 vs $17,890; ER costs were $1,674 vs $2,172. Rates of discontinuation for DMT switching were high (26%–29%) even in patients not receiving any DMT (28% vs 34%). CONCLUSIONS: DMT use was associated with fewer corticosteroid treatments (potentially indicating fewer relapses), fewer hospitalization episodes, fewer ER visits, and lower medical costs, indicative of better health outcomes. DMT use also improved healthcare utilization and costs in patients with and without corticosteroid-aided treatments. Corticosteroid treatments were associated with increasing utilization and costs, but did not prompt increased DMT switching. STUDY SUPPORT: Sanofi

PND29 COST-EFFECTIVENESS OF BRIVARACETAM AS ADJUNCTIVE THERAPY FOR PARTIAL-ONSET EPILEPSY IN THE FINNISH SETTING

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OBJECTIVES: To evaluate the cost-effectiveness of brivaracetam and perampanel as adjunctive antiepileptic drugs (AED) in the treatment of partial-onset seizures with or without secondary generalization in adult and adolescent patients with epilepsy in Finland. METHODS: A discrete event simulation approach was used to model: 1) brivaracetam and perampanel as 3rd concomitant AEDs on top of two AEDs, with perampanel being used after brivaracetam among other adjunctive AEDs, 2) perampanel omitted from brivaracetam arm, 3) brivaracetam and perampanel as adjunctive AEDs on top of only one AED. Comparative treatment effectivity (achieving seizure freedom, ≥50% reduction in seizure frequency) and safety (discontinuation due to adverse events) of all AEDs were estimated using a comprehensive network meta-analysis. Perampanel dosing scheme was varied and tested based on a separate meta-analysis of placebo-controlled brivaracetam and perampanel trials. The primary outcomes were direct medical costs (including drug acquisition, monitoring, adverse event management, treatment initiation and switching costs) and quality-adjusted life-years (QALYs). RESULTS: The incremental cost-effectiveness ratio (ICER) was $13,357 per QALY gained. ICERs ranged between $7,925 and $29,170/QALY when varying perampanel dose. When omitting perampanel from the brivaracetam arm, or analyzing brivaracetam and perampanel as concomitant AEDs without perampanel (cost saving and more effective than perampanel). Results were robust in both deterministic and probabilistic sensitivity analyses. Brivaracetam had high probability of being least-cost-effective even at low willingness-to-pay thresholds. CONCLUSIONS: BRIV not only expands the availability of effective treatment choices, but is also affordable providing value for money in the Finnish settings.

PND30 COST-EFFECTIVENESS OF LEVETIRACETAM FOR PATIENTS WITH JUVENILE MYOClonIC EPILEPSY: A MODELING APPROACH BY THE BRZLANIAN PUBLIC HEALTH AUTHORITY

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OBJECTIVES: To compare, using corticosteroid use as a surrogate marker for relapse activity, healthcare utilization and costs among patients with multiple sclerosis (MS) who do or do not receive disease-modifying therapy (DMT). METHODS: Healthcare claims analysis included MS patients with or without DMT during the 12 months prior to the most recent claim, stratified by number of corticosteroid treatments (0, 1, or ≥2) during those 12 months and costs were allocated based on claims during the 1-year observation period. RESULTS: Of 7072 patients covered by Medicare, 4689 (66%) received DMT. Patients with DMT were less likely to have a corticosteroid claim than patients without DMT (22% vs 33%); had a lower total medical costs ($149,095 vs $244,000); and less likely to have an ER visit (18% vs 29%). Overall medical costs were lower with DMT use. For patients without a corticosteroid claim, total medical costs were $8,037 for OCR vs $13,604 for no DMT; inpatient costs were $15,085 vs $20,802; ER costs were $1,674 vs $2,172. Rates of discontinuation for DMT switching were high (26%–29%) even in patients not receiving any DMT (28% vs 34%). CONCLUSIONS: DMT use was associated with fewer corticosteroid treatments (potentially indicating fewer relapses), fewer hospitalization episodes, fewer ER visits, and lower medical costs, indicative of better health outcomes. DMT use also improved healthcare utilization and costs in patients with and without corticosteroid-aided treatments. Corticosteroid treatments were associated with increasing utilization and costs, but did not prompt increased DMT switching. STUDY SUPPORT: Sanofi
**PND31**

**ALEMTUMAB IS THE MOST COST-EFFECTIVE OPTION IN COMPARISON WITH AVAILABLE THERAPIES IN THE TREATMENT OF RRMS FROM THE UK NHS PERSPECTIVE**

**Objectives:** In the era of representing new medicines for the treatment of Multiple Sclerosis (MS), it is becoming more critical to make cost-effective decisions. This study aimed to assess the cost-effectiveness of alemtuzumab in comparison to other licensed disease-modifying therapies (DMTs) in the UK from the perspective of the National Health Service (NHS). METHODS: The cost-effectiveness of alemtuzumab was evaluated in comparison to 11 DMTs with available 6-month transition probabilities, in patients with relapsing remitting multiple sclerosis (RRMS), who inadequately responded to a prior disease-modifying treatment, from the UK NHS perspective. From the UK NHS perspective, alemtuzumab was assessed as the most cost-effective option in the treatment of RRMS, as it dominates almost every other DMT. STUDY SUPPORT: Sanofi

**Results:** Total cost per person for treating RRMS population with comparators ranged from €222,488 vs €221,858 (adalimumab) to €222,488 vs €221,858 (adalimumab). The cost-effectiveness acceptability curve (CEAC) analysis showed that, using a 5% discount rate, the probability of alemtuzumab to be cost-effective vs fingolimod was 72% of simulations. CONCLUSIONS: The results of this economic analysis suggest that daclizumab beta is a cost-effective option vs fingolimod for RRMS patients eligible for second line treatment in Italy.

**PND32**

**COST-EFFECTIVENESS ANALYSIS OF ALEMTUMAB IN COMPARISON WITH NATAZILUMAB, INTRAMUSCULAR INTERFERON BETA-1A, SUBCUTANEOUS INTERFERON BETA-1B, AND FINGOLIMOD FOR THE TREATMENT OF RELAPSING-REMITTING MULTIPLE SCLEROSIS IN IRAN**

**Objectives:** The era of representing new medicines for the treatment of Multiple Sclerosis, a highly debilitating immune mediated disorder, expanding the incremental cost-effectiveness of medicines is necessary for allocating healthcare resources in an efficient manner. Therefore, this study was aimed to assess the cost-effectiveness of Alemtuzumab (ALM) in comparison with Natalizumab (NTZ), intramuscular interferon beta-1a (IM-IFN), subcutaneous interferon beta-1b (SC-IFN), and fingolimod (FNG) for the treatment of relapsing-remitting multiple sclerosis (RRMS) from Iranian healthcare perspective. METHODS: A multisource Markov model was developed using the Microsoft Excel to assess the incremental cost-effectiveness ratio (ICER) and cost-effectiveness acceptability curve of these comparisons for patients with RRMS. Using Ontario dataset, published clinical trials, and long term follow-up studies was used to estimate the transition probability matrix. The costs were measured as US Dollars based on local tariffs and the effectiveness was measured as Quality-adjusted life years (QALYs) gained. RESULTS: Compared with NTZ, ALM was less expensive and more effective and has been chosen as a dominant strategy (ALM: $101,868 and 2.44 QALYs; NTZ: $103,437 and 2.33 QALYs). However, compared with IM-IFN, SC-IFN, and FNG, ALM had an ICER of $50,482, $49,164, and $39,253 per QALYs gained, respectively (IM-IFN: $87,732 and 2.16 QALYs; SC-IFN: $88,102 and 2.16 QALYs; FNG: $96,765 and 2.31 QALYs). The sensitivity analysis further indicated the robustness of the model. CONCLUSIONS: ALM is dominantly cost-effective treatment strategy compared with NTZ in the treatment of RRMS. Therefore, compared with IM-IFN, SC-IFN, and FNG, ALM would be cost-effective at the willingness to pay threshold of about >$50,000, >$49,000, and >$39,000 per QALYs gained from an Iranian healthcare perspective.

**PND34**

**COST-EFFECTIVENESS ANALYSIS OF DACLIZUMAB BETA IN THE TREATMENT OF RELAPSING REMITTING MULTIPLE SCLEROSIS IN ITALY**

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**Objectives:** Daclizumab beta is a humanized monoclonal antibody recently approved for the treatment of adults with relapsing forms of multiple sclerosis (MS). This economic analysis aimed at evaluating the cost-effectiveness of daclizumab beta for the treatment of patients with relapsing remitting MS (RRMS), adopting the perspective of the Italian National Healthcare Service (NHS). METHODS: This cost-effectiveness analysis was developed through a Markov model with lifetime horizon. Outcomes were measured as life years (LYs), quality-adjusted life years (QALYs), lifetime costs and incremental cost-effectiveness ratio (ICER). Data on natural history of disease were retrieved from published literature. Efficacy of treatments, expressed as reduction of relapse rate and disability progression, was simulated using a recently published mixed treatment comparison. Utilities were retrieved from daclizumab clinical trials and a previously conducted MS survey. Relapses, treatment-related adverse events (AEs), and quality of life (QoL) were retrieved from published literature. Direct healthcare costs (drugs, hospitalization, physician visits, administration, monitoring, relapse and AE management) were calculated. Unit costs were based on official price lists, tariffs in literature (in 2015) and country-specific 3.5% discount rate was applied to both costs and outcomes. One-way deterministic and probabilistic sensitivity analyses were conducted. RESULTS: Daclizumab beta was slightly more effective and less costly than fingolimod (QALY gain: 7.69 vs 7.39; treatment-related adverse events (AEs) and quality of life (QoL)). Therefore, the ICER of daclizumab beta to be cost-effective vs fingolimod was 72% of simulations. CONCLUSIONS: The results of this economic analysis suggest that daclizumab beta is a cost-effective option vs fingolimod for RRMS patients eligible for second line treatment in Italy.
COST EFFECTIVENESS ANALYSIS OF DIMETHYL FUMARATE VERSUS PND39 option compared with interferon-beta; one of current available options in Korea. Multiple Sclerosis, treatment with oral Fingolimod is an efficacious and cost-saving attributed to the superior reduction in relapses associated with dimethyl fumarate.

In Spain, dimethyl fumarate can be considered a cost-effective option compared with interferon-beta treatment for this highly active sub-population. Findings were consistent when applying discounts of up to 40% for fingolimod. Amongst limited treatment options, daclizumab beta represents a valuable option with a novel mechanism of action and unique once-monthly self-administered injection.

CONCLUSIONS: Multiple sclerosis is a progressive and degenerative disease with an estimate prevalence of 3.5 per 100,000 people in Korea. Interferon beta is recommended first-line in the modulating therapies for relapsing-remitting form of MS (RRMS). Fingolimod has recently been approved for reimbursement at relatively low price for the treatment of patients with relapsing-remitting multiple sclerosis (RRMS) in Korea. The aim of this study was to evaluate the cost-effectiveness of Fingolimod on quality of life, costs and caregiver burden inclusion. Using PAS discounts, daclizumab beta was cost-effective at WTP thresholds in analyses with up to 40% discounts applied to fingolimod. Fingolimod treatment for relapsing-remitting multiple sclerosis is a cost-effective treatment for this highly active sub-population. Findings were consistent when applying discounts of up to 40% for fingolimod. Amongst limited treatment options, daclizumab beta represents a valuable option with a novel mechanism of action and unique once-monthly self-administered injection.

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CONCLUSIONS: Multiple sclerosis is a progressive and degenerative disease with an estimate prevalence of 3.5 per 100,000 people in Korea. Interferon beta is recommended first-line in the modulating therapies for relapsing-remitting form of MS (RRMS). Fingolimod has recently been approved for reimbursement at relatively low price for the treatment of patients with relapsing-remitting multiple sclerosis (RRMS) in Korea. The aim of this study was to evaluate the cost-effectiveness of Fingolimod on quality of life, costs and caregiver burden inclusion. Using PAS discounts, daclizumab beta was cost-effective at WTP thresholds in analyses with up to 40% discounts applied to fingolimod. Fingolimod treatment for relapsing-remitting multiple sclerosis is a cost-effective treatment for this highly active sub-population. Findings were consistent when applying discounts of up to 40% for fingolimod. Amongst limited treatment options, daclizumab beta represents a valuable option with a novel mechanism of action and unique once-monthly self-administered injection.

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CONCLUSIONS: Multiple sclerosis is a progressive and degenerative disease with an estimate prevalence of 3.5 per 100,000 people in Korea. Interferon beta is recommended first-line in the modulating therapies for relapsing-remitting form of MS (RRMS). Fingolimod has recently been approved for reimbursement at relatively low price for the treatment of patients with relapsing-remitting multiple sclerosis (RRMS) in Korea. The aim of this study was to evaluate the cost-effectiveness of Fingolimod on quality of life, costs and caregiver burden inclusion. Using PAS discounts, daclizumab beta was cost-effective at WTP thresholds in analyses with up to 40% discounts applied to fingolimod. Fingolimod treatment for relapsing-remitting multiple sclerosis is a cost-effective treatment for this highly active sub-population. Findings were consistent when applying discounts of up to 40% for fingolimod. Amongst limited treatment options, daclizumab beta represents a valuable option with a novel mechanism of action and unique once-monthly self-administered injection.

CONCLUSIONS: Multiple sclerosis is a progressive and degenerative disease with an estimate prevalence of 3.5 per 100,000 people in Korea. Interferon beta is recommended first-line in the modulating therapies for relapsing-remitting form of MS (RRMS). Fingolimod has recently been approved for reimbursement at relatively low price for the treatment of patients with relapsing-remitting multiple sclerosis (RRMS) in Korea. The aim of this study was to evaluate the cost-effectiveness of Fingolimod on quality of life, costs and caregiver burden inclusion. Using PAS discounts, daclizumab beta was cost-effective at WTP thresholds in analyses with up to 40% discounts applied to fingolimod. Fingolimod treatment for relapsing-remitting multiple sclerosis is a cost-effective treatment for this highly active sub-population. Findings were consistent when applying discounts of up to 40% for fingolimod. Amongst limited treatment options, daclizumab beta represents a valuable option with a novel mechanism of action and unique once-monthly self-administered injection.
is also shown by the substantial number of models on caregiver support and patient care interventions, as well as drug therapies. The preponderance of studies from the UK may reflect the burden on state-funded social care organisations in this country.

**PND43**

**EFFECT OF MULTIPLE SCLEROSIS ON WORK PRODUCTIVITY**

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**OBJECTIVES:** To estimate the consequences of multiple sclerosis on work productivity in France in 2014. **METHODS:** Using data from a 1/97 random sample of the major French national health insurance system covering about 59 million individuals, adults MS patients [18-60 years old] were identified considering either long-standing condition status (ICD-10 code: G35)/ hospital stays referencing MS as main or related diagnosis/ at least one reimbursement of an MS-specific drug over the period. Daily allowance for sick leave (DA) and disability pension (DP) for MS patients were estimated using an incremental matched-control approach. **RESULTS:** 678 patients with MS less than 60 years of age were identified on January 1st, 2014. Respectively 19.5% and 27.3% of these patients have received DA or DP during the year 2014. Average cumulative duration was 15.8 days (DA) and 3.1 months (DP) as compared to respectively 9.7 days and 0.3 months in the control population without MS (p < 0.001). Consequences of the disease on work are significantly linked with age and history of the disease. Compensation for sick leave were mainly observed in younger patients under 40 years old and conversely, disability pension are more frequent with age with over 50% of patients benefiting from DP when they were 55 years and over. Considering most disability pension being the result of work and applying in a societal perspective, average yearly indirect costs per patient with MS less than 60 years of age were estimated to an additional € 18,700 as compared to a matched population without MS. **CONCLUSIONS:** Progression of disability in MS patients has significant consequences on the work productivity of these patients. Such consequences include both sickness absence, mainly at the beginning of the disease, and then permanent reduction of the working capacity.

**NEUROLOGICAL DISORDERS – Patient-Reported Outcomes & Patient Preference Studies**

**PND44**

**ADHERENCE ISSUES IN MULTIPLE SCLEROSIS TREATMENT: how CAN Studies NEUROLOGICALLY IMPACT PATIENTS WITH MULTIPLE SCLEROSIS TREATED WITH CLADRIBINE TABLETS**

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**OBJECTIVES:** Patients with multiple sclerosis (MS) are required to take long-term treatments to treat their chronic disease and avoid complications. However lack of adherence is very common and represents major barriers to treatment efficiency. Measuring patient acceptance of their medication help understand and predict patient adherence behavior. The objectives of this study are to evaluate the level of acceptance to medication in MS patients in real life; to identify issues and to define priorities for action. **METHODS:** Observational, cross-sectional study of patients with MS using the Caremetry Online Community. Adult MS patients were invited to complete an online questionnaire including a validated patient acceptance measure. **RESULTS:** Among 371 MS patients, 49.2% were male and 50.8% female. The median duration of disease was 6 (IQR: 4-10) years and 71% were female. The median duration of disease was 6 (IQR: 4-8) years. Of the sample, 57.7%, 35.5% and 6.8% were reporting being in a ‘moderate’, ‘moderate’, and ‘severe’ disease state, respectively. The mean EQ-5D-5L score among the sample was 0.69 (SD: 0.24). In the multivariate regression analysis, increasing disease severity, being unemployed, being male, and older age were all statistically significant with a reduction in quality of life (all p < 0.05). **CONCLUSIONS:** Multivariate regression models are estimated using robust (Huber-White) standard errors. **RESULTS:** A total of 357 people completed the survey and of these 250 people met the detailed EQ-5D-5L questionnaire. The mean age of the sample was 47.0 (SD: 12.0) years and 71% were female. The median duration of disease was 6 (IQR: 4-8) years. Of the sample, 57.7%, 35.5% and 6.8% were reporting being in a ‘moderate’, ‘moderate’, and ‘severe’ disease state, respectively. The mean EQ-5D-5L score among the sample was 0.69 (SD: 0.24). In the multivariate regression analysis, increasing disease severity, being unemployed, being male, and older age were all statistically significant with a reduction in quality of life (all p < 0.05).

**PND45**

**ANALYSIS OF HEALTH-RELATED QUALITY OF LIFE IN PEOPLE WITH MULTIPLE SCLEROSIS IN IRELAND**

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**OBJECTIVES:** Multiple sclerosis (MS) is a complex inflammatory disease of the central nervous system typically presenting between 20-40 age. Approximately 9000 people live with this chronic condition in Ireland. MS inflicts a considerable burden on the health-related quality of life of individuals, and as such, investigating the impact of MS might identify avenues for potential interventions. **METHODS:** Patients were invited to complete a questionnaire including the EQ-5D-3L instrument, which comprises five domains (mobility, self-care, usual activities, pain/discomfort, anxiety/depression). Univariate regression analysis was used to determine whether correlation coefficients could be included in a multivariate model. The primary focus was to identify factors associated with EQ-5D-3L scores, which may provide for useful information for clinicians and/or policy-makers.

**PND46**

**HEALTH RELATED QUALITY OF LIFE STANDARDS IN PATIENTS WITH PARKINSON**

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**OBJECTIVES:** The aim of this work is to build representative correction standards for the most widely used generic Health Related Quality of Life (HRQoL) questionnaires. **METHODS:** The U.K. tariffs of the EQ-5D-3L and HUI3 were retrieved from Parkinson’s Disease (PD), was recruited by 6 researchers from the Parkinson Patient Association from Madrid (Spain). The following instruments were automated. HRQoL: Medical Outcomes Survey Short Form 36 (SF-36), EuroQol, EQ-5D, Madrid Health Utility Index-III (HUt). Disease severity and symptoms: a brief version of the UPDRS, State-Trait Anger Expression Inventory (STAXI), Hospital Anxiety-Depression Scale (HADS). Sample criterion description was used to acquire subjective and objective verification. All patients were under treatment for their health condition and gave their informed consent to participate in the study. **RESULTS:** An initial sample of 55 patients [mean age 73.6 years old (SD=9.16), 38% being women] was enrolled. Ninety four percent suffered from idiopathic PD, 5% had Parkinson’s disease with dementia, 9% years (SD=8.66) and 96% were under treatment. PD severity ranged between 2 and 4, 37% could be diagnosed of clinical anxiety and 78% of clinical depression (HADS). Mean score in SF-36 physical component was 30.7 (SD=7.22) and 47.9 (SD=10.97) in the mental component. Mean VAS score was 61.1 (SD=19.33). Mean utility values were SF-6D=0.475 (SD=0.227), EQ-5D=0.577 (SD=0.187), and HUt=0.482 (SD=0.265). **CONCLUSIONS:** Preliminary results show that generic HRQoL instruments are capable of capturing health deterioration in patients suffering from Parkinson disease, although specific instruments should be more suitable for diagnosis purposes. Meaningful differences were found between the three utility instruments, which should be taken into account when assessing or comparing groups of patients. These are initial results and a wider sample is to be gathered.

**PND47**

**HEALTH STATE UTILITIES IN PATIENTS WITH RELAPSING REMITTING MULTIPLE SCLEROSIS TREATED WITH CLADRIBINE TABLETS**

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**OBJECTIVES:** To estimate the health state utility (HSU) of patients with MS relapsing remitting multiple sclerosis treated with cladrabine. The EQ-5D-3L, HUI3, CLAmony and CAREQoL utilities were estimated using the EuroQol-5D (EQ-5D), EuroQol, EQ-5D, and CLARITY Extension using the UK tariff. Mean and standard deviations (SD) for HSU were generated for all patients and univariate analysis was used to determine associations. **RESULTS:** Patients were categorized according to their main treatment class: Immunomodulants or Immunosuppressants. **RESULTS:** 371 MS patients were included. Mean Acceptance/General score in all MS patients was of 43.12 ± 32.61. Patients taking an immunomodulants scored significantly lower than those taking an immunomodulants on Acceptance/Medication Inconvenience, Acceptance/Long-term and Acceptance/Regimen Constraints (p < 0.01). Pearson correlations showed Acceptance/General to be highly correlated with Acceptance/Effectiveness (R = 0.64, p < 0.001). Having side effects and difficulty accepting treatment for the future were the main reported issues. **CONCLUSIONS:** In MS patients, their treatment acceptance is primarily driven by perceived effectiveness. Experiencing side effects and needing a long-term treatment in the future are their major concerns. These findings give indications about MS patients’ priorities and unmet needs.

**PND48**

**THE UTILITY OF DIFFERENT APPROACHES TO DEVELOPING HEALTH UTILITIES DATA IN CHILDHOOD RARE DISEASES – A CASE STUDY IN SPINAL MUSCULAR ATROPHY (SMA)**

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**OBJECTIVES:** The utility of different approaches to developing health utilities data in childhood rare diseases is assessed in Spinal Muscular Atrophy (SMA). Patients are invited to complete an online questionnaire including a validated patient acceptance measure. The primary focus was to identify factors associated with EQ-5D-3L scores, which may provide for useful information for clinicians and/or policy-makers.

**VALUE IN HEALTH 20 (2017) A399-A811**
OBJECTIVES: SMA is a rare, hereditary, autosomal recessive neuromuscular disorder that affects its in severe forms impacts infants and young children. Capturing health utilities in infants and young children is often challenging and unanswerable in clinical trial settings since most QoL or utilities instruments are not designed for such age groups. However, the development of cost effectiveness models, required in reimbursement, in young generation of utilities. The objective of this work is to develop health utilities for infants and young children with SMA utilizing different methodologies. METHODS: Three methodologies were undertaken to develop health utilities for input into CE models for nusinersen, the first approved therapy for treatment of SMA. A cross-sectional study of individuals with SMA in select European countries collected parent-proxy assessed QoL using the EQ-5D-3L. A case vignette study assessed physici-an rated QoL using EQ-5D-5L and the PedsQol for defined motor function health states in the nusinersen economic models. Lastly, the CHERISH trial PedsQoL data was mapped to EQ-5D using a published algorithm. RESULTS: The three meth-o(dologies were undertaken to provide health utilities in infants and young children with SMA. The cross-sectional study parent-proxy QoL assessment did not provide sufficient detail on patient health to determine with any amount of certainty an individual's state of health based on the model health states. Physicians on average differentiated between QoL in different health states in a manner consistent with disease severity, and generally ranked QoL lower than observed by parents. Parent-proxy assessments of QoL in the nusinersen CHERISH trial showed little difference between lower and higher motor function health states, and in general parents rated QoL high, which is consistent with studies in other pediatric diseases. CONCLUSIONS: Our findings show that different methodologies yield distinct and sometimes equivocal results with parents rating QoL higher than physicians in individuals with SMA.

PND49
PATIENT PREFERENCES FOR INTERFERON-BETA IN IRAN: A DISCRETE CHOICE EXPERIMENT

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OBJECTIVES: Multiple sclerosis (MS) is a chronic, progressive, and common disease affecting the central nervous system in young adults. Interferon-beta is one of the most widely used medicines to reduce the disease progression. Given the variety of drugs in this category, we aimed to identify the preferences of patients for IFN-β that play an important role in policymaking in this area. METHODS: Discrete choice experiment method was used in the present study to identify and prioritize the attributes of interest to MS patients and increased the utility of the use of IFN-β in their treatment. Questionnaires were given to 358 patients in Isfahan-Iran, who were asked to choose between the two treatment choices in each scenario. RESULTS: The results of the logit model showed that the changes in the efficacy leads to the most changes in the patient utility. Changes in side effects and ease of injection have been placed in the next rankings. CONCLUSIONS: Considering the drug attributes considered more desirable by patients can lead to greater medication adherence and possibly better treatment outcomes. Also, pharmaceutical companies, the health ministry, the Food and Drug Administration, insurance organizations, and neurologists can benefit from this information in production and importation, policymaking, and prescription.

PND50
PATIENTS’ INFORMATION SOURCES AND NEEDS IN MULTIPLE SCLEROSIS: THE INFOSEEK-MS QUESTIONNAIRE

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OBJECTIVES: Patients with multiple sclerosis (MS) are increasingly demanding access to reliable information regarding disease symptoms and management. High-quality information is a key factor in patient empowerment and shared decision-making. This research aimed to develop a self-administered questionnaire to characterize the information needs and preferred sources of information for MS patients in Spain. METHODS: A panel of experts (a neuropsychologist, a neurologist, a nurse, two research managers, a patient organization representative, and a psychologist) was responsible for the proposal and agreement of all items contents and wording. After literature review for content extraction and thorough conceptual discussion, a 17-item version of the InfoSeek-MS questionnaire was proposed. The instrument was pilot-tested in 15 MS patients (McDonald 2010-criteria) in order to assess feasibility and face validity, and item wording (including wording of response options and response formats). RESULTS: The questionnaire was well accepted and most items were easy to understand. Mean response time was 14.4 ± 7.9min. The most frequently selected attributes were the likelihood of side effects (whether via mobile or computer). The most frequently reported types of information sought included healthy lifestyles (84.6%), sharing experiences with other MS patients (69.2%), and resources for treatments (61.5%). Neurologists and nurses were the most trusted source of information by the group overall. Physiotherapists and nurses were the most frequently consulted professionals on a monthly basis. Several items were revised after getting all the responses and comments from patients. CONCLUSIONS: The information sources, the stage of content selection, item wording and selection of response methods needed for each item of the questionnaire was successful. A national multicentre study is being conducted in a sample of 300 patients across 20 sites to test validity and effectiveness of Infoseek-MS as a questionnaire to evaluate information needs in MS.

PND51
OBTAINING TRADITIONAL & COMPLEMENTARY MEDICINE (T&CM) USE TO THE HEALTH CARE PROVIDERS: A QUALITATIVE STUDY AMONG THALASSEMIAS PATIENTS IN MALAYSIA

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OBJECTIVES: This study was carried out to discover the trust thalassemia patients have in disclosing their use of Traditional and Complementary Medicine (T&CM) to their health care providers. METHODS: Twenty-one patients with thalassemia were recruited from the Thalassemia Society of Kedah, Malaysia from July to October 2015. The interviews were audio-taped, transcribed verbatim and translated into English. RESULTS: Thematic analysis identified four themes from the interview analysis: the fear of the termination of provided treatment by the health provider, the difference in health care effects of T&CM received, the perception that the health care providers are not interested, and the impression that the T&CM treatment is safe and do not cause side effects. The thalassemia patients agreed that the disclosure about their use of T&CM is important to ensure continuous care and proper treatment. However, from a different perspective, the patients assumed that the physician’s lack of knowledge or interest in discussing about T&CM. Although, most patients believed that T&CM is harmless as it only administers natural treatment apart from its non-invasive nature of treatment as it only involves faith healing such as prayers and spiritual healing that are regarded to non-hazardous to health influencing the thalassemia patients to not disclose their use of T&CM. CONCLUSIONS: Effective communication and health education between patients and health care providers is especially for patients who are having ongoing traditional thalassemia treatment, for the fear that there is an interaction between conventional treatment and T&CM use. The best behaviour of the thalassemia patients’ reluctance to disclose their T&CM use, and the barrier that exists between the patients and health care providers can be avoided through motivational talks to improve the relationship between the patients and their physicians so as to encourage the patients to inform their physicians about their T&CM use.

PND52
REAL WORLD CHARACTERISTICS AND PERCEIVED EFFICACY OF PEGINTERFERON BETA-1A COMPARED WITH OTHER PLATFORM INJECTABLE THERAPIES AMONG MS PATIENTS: EVIDENCE IN FIVE EUROPEAN COUNTRIES

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OBJECTIVES: Describe the demographic and disease characteristics of peginterferon beta-1a users in a real world setting, and compare them with a mean and quality of life of multiple sclerosis (MS) patients treated with peginterferon beta-1a versus other platform injectable therapies (IM interferon beta-1a, SC interferon beta-1a, interferon beta-1b, glatiramer acetate) in five European countries. METHODS: In this retrospective study, cross-sectional data from 2014 to 2016 were obtained from Adelphi MS Disease Specific Program (III, IV, V). MS patients who received peginterferon beta-1a or other platform injectable therapies were identified. Descriptive analysis was conducted to examine patient characteristics, treatment patterns and patient reported outcomes. RESULTS: Sixty-five peginterferon beta-1a patients and 3,908 patients treated with other platform injectable therapies were identified and compared. Patients treated with IM interferon beta-1a were significantly younger than patients treated with other therapies (25.1 vs. 36.0 years (p < 0.0001)). MS patients treated with peginterferon beta-1a and IM interferon beta-1a were less likely to report “lack of efficacy” as a current treatment issue, more likely to report a convenient administration profile and to have “less disruption to a patient’s life.” CONCLUSIONS: The average peginterferon beta-1a patient appears younger and with lower disability as compared to patients treated with other platform injectable therapies. MS patients receiving platform injectable therapy, efficacy is the most important reason for treatment choice, and identified patients rate peginterferon beta-1a as more convenient than other platform injectable therapies. Further research will be insightful once peginterferon beta-1a has been on market for a longer duration.

PND53
CONCEPTUAL MODEL AND INSTRUMENT REVIEW IN MULTIPLE SCLEROSIS

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OBJECTIVES: The objectives were to a) develop a preliminary conceptual model based on qualitative research in patients with multiple sclerosis (MS) and b) identify and evaluate commonly patient reported outcome measures (PROMs) in MS. METHODS: An electronic search was conducted using MEDLINE, the Cochrane Library (extensive search), and the American Diabetes Association (FDA) labeling claims. METHODS: PubMed was searched to identify recent (since 2010) qualitative research studies in patients with MS as well as relevant PROMs. RESULTS: A total of 27,650 citations were retrieved, from which 15 relevant PROMs were selected for a subset selected of PROMs was compared against the recommendations contained in the FDA PRO guidance. RESULTS: The PubMed search identified 3 qualitative studies focusing on key symptoms and impacts experienced by patients with MS. The common symptoms faced are fatigue, pain and other general symptoms such as stiffness, spasm, and difficulty walking, and balance problems. Based on these results, a preliminary conceptual model was developed displaying the relationship between the disease process, patient factors, and symptoms reported by patients, and the impact of MS. Nine PROMs were identified from the search and live most
Quality of life among thalassaemia patients

Use of Biologics Based Therapies and Assessment of Health Related Quality of Life among Thalassaemia Patients

OBJECTIVES: Narcolepsy is a rare neurological disease, which prevalence is estimated between 1/5,100 and 1/5,000 (Orphanet), characterized by excessive daytime sleepiness, cataplexy, sleep paralysis, and hypnagogic hallucinations. Additionally, narcolepsy can occur with cataplexy, a sudden loss of muscle tone triggered by positive or negative emotions, in 60-70% of narcoleptic patients. The objectives of this study were to identify 1) the medications approved for the treatment of narcolepsy by the European Medicines Agency (EMA), 2) which of them had a patient-reported outcomes (PRO) labeling in their summary of product characteristics (SmPC), and 3) if the PRO measures were used as primary efficacy variables. METHODS: The EMA database was used to identify all medicines approved for narcolepsy. The PRO LABELING IN PRODUCTS APPROVED BY THE EUROPEAN MEDICINES AGENCY (EMA) FOR NARCOLEPSY

PND54

Objectives:

1. Overview of PROMs International Quality of Life questionnaire (MusQoL),
2. Quality of Life (QoL) measurement: Manage Symptoms (PROMs),
3. Quality of Life (QoL) measurement: Manage Symptoms (PROMs),

Results:

The study involved 390 thalassaemia patients and was conducted at 20 thalassaemia centers in 12 countries. The PRO labeling in the European Medicines Agency (EMA) for narcolepsy was identified. All completed Neuro-QOL Stigma and PROMIS Anxiety, Depression, Self-Efficacy and Social Function (SF-36) questionnaires were included in the analysis. The PRO labeling for narcolepsy was provided for 44% of the patients. The PRO measures were used as primary efficacy variables in 27.2% of the EMA-approved products. The PRO measures were used more frequently in the EMA-approved products for narcolepsy compared to other neurological conditions. The PRO measures included measures of QoL, symptom control, and treatment satisfaction. The PRO measures were used as primary efficacy variables in 27.2% of the EMA-approved products for narcolepsy. This study highlights the need for more PRO labeling in the European Medicines Agency (EMA) for narcolepsy.

PND55

Use of Biologically Based Therapies and Assessment of Health Related Quality of Life among Thalassaemia Patients

OBJECTIVES: To analyze the prevalence of Biologically Based Therapies (BBTs) use and evaluate the Health Related Quality of Life (HRQoL) in a group of thalassaemia patients. METHODS: The study involved 390 thalassaemia patients and was conducted at 20 thalassaemia centers in 12 countries. The PRO labeling in the European Medicines Agency (EMA) for narcolepsy was identified. All completed Neuro-QOL Stigma and PROMIS Anxiety, Depression, Self-Efficacy and Social Function (SF-36) questionnaires were included in the analysis. The PRO labeling for narcolepsy was provided for 44% of the patients. The PRO measures were used as primary efficacy variables in 27.2% of the EMA-approved products. The PRO measures were used more frequently in the EMA-approved products for narcolepsy compared to other neurological conditions. The PRO measures included measures of QoL, symptom control, and treatment satisfaction. The PRO measures were used as primary efficacy variables in 27.2% of the EMA-approved products for narcolepsy. This study highlights the need for more PRO labeling in the European Medicines Agency (EMA) for narcolepsy.

PND56

Quality of Life for Patients with Neurofibromatosis Type 1 Associated Plexiform Neurofibromas (PNF)

OBJECTIVES: Neurofibromatosis Type 1 plexiform neurofibromas (pNFs) are associated with significant morbidity and impairment, affecting daily activities and QoL. Method: A total of 390 patients were included in the study. The primary objective of this study was to compare the associations of pNFs with QoL using the modified Ashworth Scale (MAS) or Physician’s Global Assessment (PGA) as the primary measures. The secondary objective was to compare the associations of pNFs with QoL using the SF-6D index score as a proxy for QoL. RESULTS: The modified Ashworth Scale (MAS) or Physician’s Global Assessment (PGA) as the primary measures were analyzed using random intercept linear regression models. The SF-6D index score was analyzed using a cross-sectional model. CONCLUSION: The modified Ashworth Scale (MAS) or Physician’s Global Assessment (PGA) as the primary measures were more responsive to the impact of pNFs on QoL compared to the SF-6D index score. The modified Ashworth Scale (MAS) or Physician’s Global Assessment (PGA) as the primary measures were more responsive to the impact of pNFs on QoL compared to the SF-6D index score. The modified Ashworth Scale (MAS) or Physician’s Global Assessment (PGA) as the primary measures were more responsive to the impact of pNFs on QoL compared to the SF-6D index score.
placebo. Expanded Disability Status Scale (EDSS), 9 Hole Peg Test (measure of upper limb function), the Modified Fatigue Impact Scale (MFIS), and EuroQol five dimensions questionnaire (EQ5D) were assessed at baseline, 48 and 120 weeks. The relationship between the disease activity measures and EDSS was investigated using multiple regression analysis. Analyses were performed using utilities derived from the Australian, British, Canadian, Dutch, French, Italian, Portuguese and Swedish value sets. RESULTS: Health utilities were found to be inversely associated with EDSS status: higher EDSS scores were associated with lower utility scores. Utilities were further associated with fatigue with a disutility between 0.02 and 0.03 for the Australian, British and Swedish value sets, and with upper limb dysfunction with a disutility between 0.07 and 0.09 for the Portuguese, Italian and Swedish value sets. CONCLUSIONS: In addition to higher EDSS scores, both fatigue and upper limb dysfunction were associated with independent impacts on health utilities in patients. This presents additional evidence quantifying the impact of multiple symptoms/factors in a large cohort of PPMS patients using country-specific value sets.

**PND60**

**IMPACT OF DISEASE ACTIVITY MEASURES AND PATIENT CHARACTERISTICS ON HEALTH UTILITIES IN PPMS PATIENTS**

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OBJECTIVES: To evaluate country-specific health utilities at different stages of RRMS. METHODS: In two studies OPERA I & II 1,656 RRMS patients were randomized to treatment with ocrelizumab 600mg or interferon β-1a 44ug. Expanded Disability Status Scale (EDSS) scores and EuroQol five dimensions questionnaire (EQ5D) were both assessed at baseline, 48 and 96 weeks. In a previous study the relationship between EDSS and EQ5D was investigated through a repeated measures linear model that regressed health utilities on EDSS states, sex, age, relapse within 30 days of EDSS assessment, baseline geographical region of the world. This study provides additional and updated utilities derived from the Australian, Canadian, Dutch, French, Italian, Portuguese and Swedish value sets. RESULTS: Health utilities were consistently found to be inversely associated with EDSS state: the higher the EDSS state, the lower the utility score. Utilities were further associated with relapse, sex, age and region of the world. Relapse had a disutility between 0.04 (95%CI:0.02-0.06) in the Swedish and 0.10 (95%CI:0.03-0.12) in the Portuguese analyses; males had higher utilities (on average between 0.02-0.03); average disutility for a 10 year increase in age was between 0.01-0.02; USA patients had between 0.02 (95%CI:0.01-0.03) and 0.05 lower (95%CI: 0.04-0.07) utilities as compared to patients from other regions of the world, when using Swedish and British value sets, respectively. CONCLUSIONS: In the absence of randomized controlled trials, country-specific health utilities in RMS can be derived based on EDSS state, relapse, gender, age and region of the world.

**PND61**

THE ASSOCIATION BETWEEN DISEASE ACTIVITY AND HEALTH-RELATED QUALITY OF LIFE IN RRMS PATIENTS

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OBJECTIVES: Relapse-remitting multiple sclerosis (RRMS) is the most common disease in use of multiple sclerosis (MS) (DA) has been shown to impact important clinical outcomes including relapse rates and disease progression. However, it is unclear to what extent DA is related to ultimate health outcomes. The objective of this study is to assess the relationship between EDSS and EQ5D, and to identify and quantify the impact of multiple symptoms/factors in a large cohort of MS patients. METHODS: Health utilities were found to be inversely associated with EDSS status: higher EDSS scores were associated with lower utility scores. Utilities were further associated with fatigue with a disutility between 0.02 and 0.03 for the Australian, British and Swedish value sets, and with upper limb dysfunction with a disutility between 0.07 and 0.09 for the Portuguese, Italian and Swedish value sets. CONCLUSIONS: In addition to higher EDSS scores, both fatigue and upper limb dysfunction were associated with independent impacts on health utilities in patients. This presents additional evidence quantifying the impact of multiple symptoms/factors in a large cohort of PPMS patients using country-specific value sets.

**PND62**

A TWO-MONTH INTERIM ANALYSIS OF TREATMENT SATISFACTION WITH FINGOLIMOD IN PATIENTS WITH RELAPSING REMITTING MULTIPLE SCLEROSIS IN THE UK: THE PATIENT REPORTED OUTCOMES WITH FINGOLIMOD IN LOCAL EXPERIENCE (PROFILE) STUDY

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OBJECTIVES: The PROFILE study measured patient reported outcomes (PROs) in the real world in fingolimod treated patients with relapsing remitting multiple sclerosis (RRMS). This abstract presents interim data comparing satisfaction with previous DMTs received, time since last treatment, disease activity and 12 months after starting fingolimod. METHODS: A prospective observational study of 144 consenting outpatients with RRMS in 14 UK secondary care NHS centres. Eligibility: aged 18-55 years at first initiation of fingolimod (baseline) and treated within the European product licence. DMT history was collected from medical records, 0.5 to 12 months after enrolment and at 12 months (M). A planned interim analysis of Treatment Satisfaction Questionnaire for Medication (TSQM-9) outcomes for pre-treated patients was presented. RESULTS: Overall (standard deviation (SD) TSQM-9 domain scores at M were: Effectiveness domain: 63.6 (19.7)[n=93]; Convenience domain: 88.2 (25.4)[n=93]; Global satisfaction domain: 65.0 (22.5)[n=93]. The mean change in domain scores from baseline were: Effectiveness domain = 14.0 (8.7)[n=93]; Convenience domain = 32.2 (27.0,37.9)[n=93]; Global satisfaction domain: = 17.1 (10.6,23.6)[n=93]. Mean score change from baseline to 3M across all domains improved with the number of previous DMTs received. This result is consistent with those of the authors in the Convenience and Global satisfaction domains, where smaller improvements in domain scores were seen. Patients switched to fingolimod from interferons or glatiramer acetate therapies had significant p(0.05) mean changes in domain scores from baseline to 3M of Effectiveness and Convenience domains. = 16.2 (9.7, 21.6)[n=68]; Convenience domain: = 35.5 (11.4,51.6) [n=71]; Global satisfaction domain: = 17.2 (9.95,24.6)[n=73]. CONCLUSIONS: Overall, patients reported improved treatment satisfaction in all TSQM-9 domains after 3M of fingolimod treatment, compared to their previous treatment. These interim results suggest that patients switched to fingolimod from interferons or glatiramer acetate therapies perceive improvements in treatment convenience, effectiveness and global satisfaction.

**NEUROLOGICAL DISORDERS – Health Care Use & Policy Studies**

**PND63**

THE FDA APPROVAL OF ETLEPINEREN – NECESSARY FLEXIBILITY OR A HURRYING PRECEDENT?

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OBJECTIVES: In November 2016, etlepinerien received FDA-accelerated approval for the treatment of Duchenne muscular dystrophy (DMD). This was controversial, a small, non-comparative dataset demonstrated what FDA reviewers considered to be a meaningful benefit (surrogate marker dystrophin). The FDA advisory panel voted against approval but their advice wasn’t followed. This research will evaluate etlepinerien’s FDA approval in the context of its two main competitors: drisapersen (FDA-rejected), and ataluren (not accepted for FDA-review, but EMA-approved). METHODS: Publically-available FDA Summary Review documentation on the DMD appraisals for Eslicarbazepine (3.42). Perampanel, Retigabine, Tiagabine, and Vigabatrin were only

**PND64**

TREATMENT PATTERNS FOR ADULT PATIENTS WITH NEWLY DIAGNOSED FOcal EPILEPSY IN GERMANY

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OBJECTIVES: No representative data about the drug treatment of German epilepsy patients exist. Therefore, the aim of this study was to investigate the antiepileptic drug (AED) treatment of adults with newly diagnosed focal epilepsy in Germany. METHODS: The analysis was based on a claims data set covering the years 2007 to 2014, provided by a regional German statutory health insurance. Patients aged 16 years or older were included if at least one in- or outpatient diagnosis of focal epilepsy in 2007 or 2008 and at least one prescription of an AED in 2014 was observed. Furthermore, patients should have had at least one prescription of an AED prior to the 6 months before the first focal epilepsy diagnosis. Patient observation started at date of first documented inpatient or outpatient diagnosis. Number of previously prescribed AEDs stratified by type of prescribed AEDs in 2014 were calculated. RESULTS: In Germany, 1,639 patients in 2014 (mean age 53.4 years at index, 45.4% female) with prescriptions of AEDs, approved for focal epilepsy. The mean number of previously prescribed AEDs varied between the sub-standards: 0 to 1 previous AEDs for Carbamazepine (0.53), 2 to 3 previous AEDs for Oxcarbazepine (1.07), Lamotrigine (0.87), 1 to 2 previous AEDs for Oxcarbazepine (1.07), Lamotrigine (0.87), Levetiracetam (1.07), Topiramate (2.15), and Vigabatrin (1.29), and Phenytoin (1.59), and more than 3 previously prescribed AEDs for Oxcarbazepine (3.42). Perampanel, Retigabine, Tiagabine, and Vigabatrin were only
rarely or not prescribed in 2014. CONCLUSIONS: A variety of AEDs are available for the treatment of focal epilepsy Many patients remain on their first- or second-line treatment with established AEDs. Novel AEDs like Lacosamide and Eslicarbazepine, which were introduced in the last decade, were only rarely prescribed and relatively late in the treatment course.

PN65 DIRECT MEDICAL COSTS OF MULTIPLE SCLEROSIS AND REGIONAL DIVERSITY IN ACCESS TO DISEASE-MODIFYING THERAPIES IN POLAND BETWEEN 2008-2016

OBJECTIVES: Analysis of the public payer’s spending on the treatment of multiple sclerosis (MS) and regional diversity in access to disease-modifying therapies (DMTs) in Poland between 2008-2016. METHODS: Retrospective analysis of data on healthcare services related to MS treatment covered by National Health Fund (NHF) in each of Polish provinces (voivodships) between 2008-2016. Costs were reported in USD and were calculated by dividing the number of MS patient receiving DMTs by the size of the total MS population in each voivodship. RESULTS: In 2008 and 2016 NHF expenditure per MS patient by voivodships varied between 1166-2675 USDPPP and 3153-6103 USDPPP, respectively. The largest group of patients was treated in out-patient setting, however the majority of funds (70-90%) was spent on hospital care. The main drivers for hospital costs were DMTs funded through hospital procedures, cost of patient treated with DMTs was 15,972 USDPPP in 2008 and 16,207 USDPPP in 2016. In 2008 only 7% of MS patients received DMTs with access ranging from 4% (in Silesian, Pomeranian and Warmian-Mazurian) to 12% (in Lodz). In 2016 the control group of patients with access to DMTs has increased 3.8 times, but inequalities in coverage still remain with access to treatment as high as 31% in Lesser Poland and only around 14% in the north-west area (West-Pomeranian, Lubusz, Warmian-Mazurian). There has been a change in rank for most voivodships with those previously providing less coverage moving up. Masovian and Silesian presented the biggest changes in access moving from 11th to 4th place, and 16th to 9th, respectively. The biggest fall in rank is Lubusx moving from 5th to 15th place. CONCLUSIONS: The situation of patients with MS in Poland is systematically improving but variations in access to DMTs persist.

PN66 THE EPIDEMIOLOGY AND BURDEN OF PEDiATRIC MULTIPLE SCLEROSIS: SYSTEMATIC LITERATURE REVIEW

OBJECTIVES: Multiple Sclerosis (MS) is a chronic, neurodegenerative condition, severely impacting functioning and quality of life (QoL). Its manifestations and consequent burden, within the paediatric population is increasingly being recognised. To investigate areas of unmet need, a systematic literature review (SLR) was conducted on the epidemiology, economic and humanistic burden of paediatric MS. METHODS: A comprehensive search of Embase, the Cochrane Database of Systematic Reviews and Database of Abstracts of Reviews of Effects were queried on 12 April 2017. Hand-searches of key conferences and reference lists of included studies were also performed. Inclusion criteria for cost-of-illness studies were extracted and quality assessment was conducted using the Critical Appraisal Skills Programme checklists. RESULTS: Of 2,729 records retrieved, 66 were included in the SLR. Incidence of paediatric MS was reported in 12 studies (rate: 0.01/100,000–2.9/100,000) and prevalence in 24 studies (rate: 0/100,000–3/2–100,000, 0–20% of all MS). Five studies reported comorbidities, and 23 studies reported disease characteristics such as relapse rates and disability progression. The impact of MS on QoL, physical activity, fatigue, school performance and cognitive function was reported in three, three, three, six and 11 studies. Five studies compared these outcomes between those with paediatric MS and healthy controls, consistently showing significantly poorer outcomes in those with paediatric MS. One study reported economic outcomes, finding on average that health plans did not fully cover medication costs. CONCLUSIONS: This review has identified studies on various epidemiologic and burden outcomes in paediatric MS. Although the prevalence of MS is relatively rare in children, the burden and unmet medical needs are evident.

PN67 ADHERENCE TO ANTI-CONVULSANT THERAPY AMONG AMBULATORY EPILEPTIC PATIENTS IN A TERTIARY HOSPITAL IN NIGERIA

OBJECTIVES: Compliance to adherence to anticonvulsant therapy is essential for seizure control and improved quality of life in epileptic patients. This study described adherence to anticonvulsant therapy in a resource-limited setting to generate evidence-based data for intervention studies. METHODS: The study was a prospective cross-sectional survey of ambulatory epileptic patients. Standardized questionnaire in English Language to evaluate their adherence to treatment. Epileptic patients who have been on anticonvulsant therapy for more than 12 months who understand English and gave their informed consent to participate in the study were randomly selected and recruited for the study. Data were summarized using descriptive statistics. Study lasted from January to October 2016. RESULTS: The prevalence of patients treated on 2 or more AEDs was 89% (373/420). Patients on twice daily treatment were 83 (81.4%) were on monotherapy, 16 (15.7%) were on dual therapy, and 3 (2.9%) on polytherapy. Adherence was high in 9 (8.8%) of the patients while 63.9 (91.2%) were non-adherent. The mean adherence was good in 19 (18.6%), fair in 45 (41.5%) and poor in 37 (36.4%). The factors affecting adherence from the study were side effect of drugs 34 (33.3%), lack of knowledge of need medication 17 (16.7%) and forgetfulness 17 (16.7%). Physicians admitted they assessed patients’ adherence through assessment of patients’ condition, pill count 17%, and patients’ interview 100%. All the physicians admitted to emphasize adherence to therapy after and before prescribing. CONCLUSIONS: Patients’ adherence to anticonvulsant therapy in the facility was poor. Non-adherence was associated with preventable factors bordering on the patients and health care providers.

PN68 PHARMACOECONOMICS OF MULTIPLE SCLEROSIS IN THE REPUBLIC OF BELARUS

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The situation of patients with MS in Poland is systematically improving but variations in access to DMTs persist. In 2018, the National Health Fund (NHF) covered treatment with established AEDs. Novel AEDs like Lacosamide and Eslicarbazepine, which were introduced in the last decade, were only rarely prescribed and relatively late in the treatment course.

PN69 PREVALENCE OF ANTICONVULSANTS UTILIZATION AT A TERTIARY HOSPITAL IN SOUTHEAST NIGERIA; BRIDGING THE GAPS BETWEEN FACILITIES OUTCOMES AND POLICIES THROUGH EVIDENCE-BASED REPORTS

Ogbonna BO

Nnamdi Azikiwe University, Awka, Nigeria

OBJECTIVES: The World Health Organization (WHO) recommended regular drug utilization studies in health facilities as a tool in generating information on disease pattern, and as a guide for policy in healthcare systems. These information help in adjusting treatment practices, promoting anticonvulsant drugs utilization in healthcare facilities in Nigeria. Policy makers and health care regulators need up to date evidence about anticonvulsant drugs utilization patterns, and the factors affecting their utilization. METHODOLOGY: The study was a descriptive cross-sectional analysis of pre- scripton records. Study lasted between June to December 2016. Data were analyzed based on frequency of prescribed drugs, number of drugs, defined daily dose (DDD), number and frequency of anticonvulsants used. RESULTS: The number of prescriptions analyzed was 1393.0. Of these prescriptions, 7700 drugs were prescribed with each prescription containing an average of 5.5±0.9 drugs per prescription. The mean age of patients was 46±3.4 years. Anticonvulsant drugs accounted for 19.0 (25.5%) of the entire drugs prescribed. Carbamazepine was the most prescribed anticonvulsant 12.0 (63.2%) at a dose of 200mg daily, followed by diazepam 6.0 (31.6%), while the least was pregabalin 1.0 (5.2%). Generic prescription of carbamazepine was 84.0% while that of diazepam was 100.0%. Prescription of anticonvulsants monotherapy was 100.0%. CONCLUSIONS: Study suggested low anticonvulsants use an indication of low prevalence of seizure related disorders in the population. Patients were controlled on monotherapy. Carbamazepine was the most used anticonvulsant and suggested good tolerance, efficacy, affordability, and acceptability. The study provided baseline information for further studies to provide timely information for promoting anticonvulsant drug utilization in healthcare facilities in Nigeria. Policy issues on the use of new agents should be dependent on facility-based studies.

PN70 2017 UPDATE OF RECENT TRENDS IN MULTIPLE SCLEROSIS-RELATED HEALTH TECHNOLOGY ASSESSMENT DECISIONS: AN ASSESSMENT OF FIVE COUNTRIES

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OBJECTIVES: Innovative therapies for symptomatic management and treatment of multiple sclerosis (MS) continue to be developed, however, the expense associated
with these novel agents must be evaluated alongside the benefit provided. Health technology assessment (HTA) decisions in MS aim to generate policies that produce cost-effective symptomatic or disease-modifying benefit. The objective of this analysis was to update a 2014 study by evaluating recent HTA decisions and their rationales to identify trends in selected countries. METHODS: HTA surveillance was conducted for Australia, Canada, France, Germany, and the United Kingdom (UK) from January 1, 2012 to April 30, 2017 (64 months). MS-related HTAs were evaluated by indication, decision, and rationale for the decision. Decisions were categorized as favorable (both favorable and unfavorable), neutral (deferred), or mixed. RESULTS: 31 MS-related HTA decisions were published in the study timeframe for 9 unique products. Across studied nations, 14 (45%) decisions were favorable, 13 (42%) unfavorable, 3 (10%) mixed, and 1 (3%) neutral. The UK had the highest percentage of favorable decisions (55%; 100%), followed by France (56%; 83%), Australia (2/8, 25%), Canada (1/4, 25%) and Germany (1/8, 13%). Nearly all favorable decisions were for products indicated to treat relapsing-remitting MS (RRMS; 13/14, 93%), while unfavorable indications (walking impairment, spasticity/paralysis, clinically isolated syndrome) were mostly unfavorable (7/8, 88%). HTAs published during or after May 2014 represented half of the decisions examined and tended to be more favorable than studied assessments before this date (53% vs 38%, respectively). CONCLUSIONS: Overall, there were a similar number of favorable and unfavorable decisions, reinforcing the need for manufacturers to develop strong data customization to the evidentiary requirements of each country.

PND71 ASSESSMENT OF MARKETED AND IN-DEVELOPMENT PRODUCTS FOR ALZHEIMER’S DISEASE: WHAT ARE THE STRATEGIC VALUE DRIVERS?

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OBJECTIVES: The increasing Alzheimer’s disease (AD) population is a serious concern among policymakers and payers. The current marketed AD products do not affect the progression of AD, they only impact cognitive functions. The unmet treatment need in AD is significantly higher. The in-development products have the potential to modify the trajectory of the disease, whereas current treatments can only keep the progress stable. The objective of this study was to evaluate and compare the strategic value drivers in terms of AD market: Clinical Dementia Rating (CDR) and Mini-Mental State Examination (MMSE) scales score (Efficacy attributes); confusion and vomiting side-effects (Safety attributes); cerebrospinal fluid (CSF) amyloid-β42 and amyloid positron emission tomography (PET) scans (Biomarkers); Quality of Life–Alzheimer’s Disease (QOL-AD) scale measure (Humanistic attribute), and direct cost, budget-impact and cost-effectiveness analyses (Economic attributes). CONCLUSIONS: For AD therapy, the most notable value drivers from the payer’s perspective would be efficacy and safety of the upcoming new products. The disease-modifying treatments, with less cost, less invasive diagnostics (e.g. blood test vs. spinal tap) and improving patient’s QOL, would be considered as priority from payer’s perspective. Safety attributes can be addressed with the products having least adverse events and more similarity to those that have little to no impact. Other attributes such as biomarkers should demonstrate a positive impact on decreasing patient’s β-amyloid in the brain.

RESEARCH POSTER PRESENTATIONS - SESSION V

RESEARCH ON METHODS STUDIES

RESEARCH ON METHODS - Clinical Outcomes Methods

PRM1 COMPARISON OF VARIOUS SEVERITY ASSESSMENT SCORING SYSTEMS IN PATIENTS WITH SEPSIS

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OBJECTIVES: To evaluate the predictive ability of six severity assessment scoring systems, namely, Acute Physiology and Chronic Health Evaluation (APACHE II), Rapid Emergency Medicine Score (REMS), Sequential Organ Failure Assessment (SOFA), Multiple Organ Dysfunction Score (MODS), Fibrinogen, Infection, Response and Organ Failure Assessment (FIRE), and Sequential Organ Failure Assessment (SOFA) to identify critically ill patients with sepsis. METHODS: A prospective cohort study, carried out in a south Indian tertiary care teaching hospital. Institutional ethics commit- tee approval was obtained prior to the study. All patients diagnosed with sepsis according to guidelines the third International Consensus Definitions for Sepsis and Septic shock (Sepsis 3), who meets the inclusion and exclusion criteria were enrolled into the study. Patients were followed from the day of admission to till the day of discharge or death. Patient demographics, clinical characteristics, laboratory test data and comorbidities were recorded on the day of sepsis diagnosis. These parameters were used to calculate the severity scores and predicted mortality for each patient. ROC curve analysis was used to analyse the discriminatory power (ability to differentiate between survivors and non-survivors) of various severity scores. RESULTS: A total of 193 patients were included in the study. The mean age was 57.2±16.5 (mean±SD) years. Majority of the patients were male, 125 (64.76%). Overall mortality was 108 (55.9%). The calculated AUCs were 0.86 (95% CI: 0.80-0.90) for APACHE II, 0.81 (95% CI: 0.75-0.87) for REMS, 0.80 (95% CI: 0.74-0.86) for SOFA, 0.74 (95% CI: 0.67-0.80) for MODS, 0.78 (95% CI: 0.71-0.84) for PIRO and 0.77 (95% CI: 0.70-0.83) for MODS. Sensitivity, Specificity, Positive Predictive Value (PPV) and Negative Predictive Value (NPV) were 81.5 and 75.3 respectively. CONCLUSIONS: In our study, APACHE II score proved to be the most superior of all the scores, as it considers not only the laboratory data but also chronic comorbidities and surgical status of the patient.

PRM2 COULD EMBASE EMETTE INDEX SEARCH TERMS BECOME TO REDUCE SIZE TO SCREEN IN CLINICAL SYSTEMATIC REVIEWS?

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OBJECTIVES: Embase is one of the most commonly searched bibliographic databases when undertaking systematic reviews of healthcare interventions. Using a combination of text searching and index searching is accepted best practice when designing Embase search strategies. As the number of Embette index terms assigned to records has increased over time, there has been a corresponding increase in overall search result numbers and, therefore, the size of the workload for reviewers. The objective of this research was to investigate whether focusing Embette indexing terms using the ‘restrict to focus’ function, so that only those where the index term is key to that article, could reduce the number of records for screening without loss of included studies. METHODS: Embase searches conducted in three selected clinical reviews undertaken by the review team were retrospectively compared with Embette searches in which the ‘restrict to focus’ function was used. The records retrieved by the focused Embette searches were checked to see what proportion of included studies identified by the original unfocused search strategy were retained. The proportion of searches investigated were treatments for invasive infections, type 2 diabetes mellitus, and acute lymphoblastic leukaemia. RESULTS: The data collected was analysed to identify total results with and without focusing Embette indexing terms. The number of records from Embette searches without a loss of sensitivity could improve efficiency by reducing time spent and costs when undertaking systematic reviews.

PRM3 A REAL WORLD EVIDENCE (RWE) APPROACH TO CHARACTERISING AN ULTRA-RARE DISEASE (URD) COHORT OF METASTATIC Uveal MELANOMA (MUM) PATIENTS WITHIN NATIONAL HEALTH SERVICE ENGLAND (NHSE) TERTIARY CARE DATABASES

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OBJECTIVES: In Europe, primary UM is reported to affect 2-8 Caucasians/million population annually – ~90% of tumours involve the choroid, with the remainder occurring in the ciliary body. Despite a rarity, a diagnosis of MUM can have a significant impact on a patient’s life. The objective of this study was to: i) identify a cohort of mUM patients within the NHSE monopoly using the Hospital Episode Statistics (HES) database; ii) compare characteristics of patients with metastatic UM to those reported in the literature; and iii) assess the effect of treatment on prognosis. METHODS: A mUM patient cohort were identified within HES (observational period: Apr2012-Jun2016, follow-up until Jan2017). Eligible patients had no cancer ICD-10 codes prior to their first inpatient admission for UM (C693 or C694); and at least one cancer code in the same or subsequent admission(s). The cohort was compared with previously reported characteristics. RESULTS: Consistent with other studies, the majority of patients develop metastatic disease, predominantly in the liver. In the absence of therapeutic options, median time-to-progression and overall survival is ~2-3 and ~7-12 months, respectively. Therapy is based on standard-of-care for SoC treatment pathways, this study aimed to i) identify a cohort of mUM patients within the NHSE monopoly using the Hospital Episode Statistics (HES) database; ii) compare characteristics of patients with metastatic UM to those reported in the literature; and iii) assess the effect of treatment on prognosis. METHODS: A mUM patient cohort were identified within HES (observational period: Apr2012-Jun2016, follow-up until Jan2017). Eligible patients had no cancer ICD-10 codes prior to their first inpatient admission for UM (C693 or C694); and at least one cancer code in the same or subsequent admission(s), indicating metastasis. Patients with C693 or D31 codes for their first inpatient admission (indicating unspecified or benign disease) and C693 or C694 in subsequent admissions were permitted if they had a subsequent C787 code (liver metastases). RESULTS: A total of 72,597 patients were identified in HES. Cohort characteristics: Mean age [65 years, range 0-97], female [49%], primary tumour involvement: choroid [n=391,875] Vs. ciliary body [n=55,12%], reported enucleation [n=171,393]. “Liver” as first metastatic site [n=212,47%]. The most frequent sites of metastases in the cohort were: liver [n=255,57%, lung [n=115,26%, skin/soft tissue [n=82,18%, bone [n=63,14%] and lymph nodes [n=31,7%]. CONCLUSIONS: The cohort characteristics were consistent with published mUM literature. Only the overall incidence of liver metastases appeared discrepant to that reported in literature. This may be explained by a limited observation and follow-up period in our cohort. This RWE methodology provides supportive insight into SoC treatment pathways for URDs such as mUM.

PRM4 EVALUATING ENDPOINTS AND CHANGING TRENDS IN ADVANCED STAGES OF CANCER RELATED CLINICAL TRIALS

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OBJECTIVES: Properly selected endpoints are essential for clinical trials aimed at developing new drugs. This study uses ClinicalTrials.gov registry as data source in evaluating the use of endpoints and changing trends in phase II and phase III trials.
in advanced stages of breast cancer. METHODS: We searched phase II and phase III clinical trials for advanced breast cancer conducted between October 2000 to September 2012, which was divided into two study periods (cohort A: October 2000 to September 2007 and cohort B: October 2007 to September 2012). The assessment of primary and secondary endpoints was conducted by two independent reviewers. RESULTS: In 398 phase II trials, there was a change in the most commonly used primary outcome measure from objective response rate in cohort A (60.6%) to progression-free survival in cohort B (40.7%). The trend was statistical significance of a decline in objective response rate (ORR, P = 0.301) and an increase in progression-free survival selection (P < 0.001). For 120 phase III trials, progression-free survival was the most frequently used primary outcome in both cohort groups (cohort A: 35.9%; cohort B: 66.1%, P < 0.005). CONCLUSIONS: This was the first study to assess endpoint selection in advanced breast clinical trials over a decade. For both phase II and III trials, progression-free survival was the most frequently used primary outcome in general. However, in phase II trials, there was a transition in progression-free survival use in substitution of objective response rate was observed. As selection of proper endpoints is important for the success of clinical trials, changing trends should be considered when deciding upon primary and secondary outcome measures for the assessment of drug efficacy and safety.

PRM6 COGNITIVE ASSESSMENTS ON PORTABLE DEVICES: A COMPARISON BETWEEN PHONES AND TABLETS

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OBJECTIVES: Assessments of cognitive function are important endpoints in clinical research. It is often important to carry out such assessments in an everyday setting. In the current study, we wanted to test whether using either a phone or a tablet was as effective and easy to use as a stationary test. Small portable devices such as phones or tablets, but screen size may become a limitation. The study examined whether a mobile battery test yields similar results on a mobile phone (6 cm diagonal screen) and a tablet (18 cm diagonal screen).

METHODS: The objective was to test whether a mobile test battery test was effective and portable. The six tests, which assess a broad range of functions, can be used across a range of screen sizes from 6 – 18 cm with equivalent results, allowing great flexibility.

RESULTS: Test scores were similar for the platforms. Differences between phone and tablet were all small, with effect sizes < 0.25, and there was no clear tendency for scores to differ overall between platforms. For RT scores, correlations between phone and tablet were moderate to strong (range 0.54 – 0.69). For the remaining tests, a correlation was measured between phone and tablet. 5. Test score for the range 0.53 – 0.76 (overall mean 0.59). CONCLUSIONS: Taken together, these results indicate that there is good agreement between phones and tablets. The six tests, which assess a broad range of functions, can be used across a range of screen sizes from 6 – 18 cm with equivalent results, allowing great flexibility in the choice of portable devices for everyday assessments of cognition.

PRM8 ANALYSIS OF EFFECTIVENESS CRITERIA IN PHARMACOECONOMIC STUDIES OF ANTIMICROBIAL THERAPIES PROPOSED FOR INCLUSION IN THE ESSENTIAL DRUG LIST (RUG) IN 2014-2016

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OBJECTIVES: To determine the proportion of hard and surrogate endpoints chosen as effectiveness criteria in pharmacoeconomic studies of antimicrobial therapeutic agents proposed for inclusion in the essential drug lists (RUG) in 2014-2016. The foremost methods used were meta-analytic statistics, evidence synthesis and 'regression'. Searches were conducted on MEDLINE, EMBASE, Cochrane Library, ISPOR, ASCO and ESMO congresses (2012-2017), and Cochrane Library (2012-2017), ISPOR, ASCO and ESMO (2012-2017) were also searched to investigate the use and critique of surrogate endpoints in melanoma, using the key words 'surrogate endpoint', 'correlation' and 'regression'. Searches of MEDLINE, EMBASE, Cochrane Library, ISPOR, ASCO and ESMO (2012-2017) were conducted to identify studies reporting methodologies for validating surrogate endpoints. A number of national HTA agencies (NICE, SMC, HAS, PBAC, IQWIG and PCORI) were also searched to investigate the use and critique of these methods, with a focus on solid tumours.

RESULTS: The foremost methodologies for surrogate validation reported in the literature include multi-trial approaches (meta-analytic analyses, informatics theoretic approach and surrogate threshold effect [STE]) and causal inference (causal association and principal stratification). The use of surrogate endpoints in oncology trials may allow for a smaller number of patients to be included in clinical trials, and a more rapid time to report results. It is important to determine whether surrogate endpoints can be used to support decisions in oncology trials, and if so, which surrogate endpoints should be used in future trials. The use of surrogate endpoints in oncology trials is likely to become increasingly important in the future, and it is important to validate these endpoints in order to ensure that they are appropriate for use in future clinical trials.

PRM9 REVIEW OF SURROGATE ENDPOINT VALIDATION METHODOLOGIES AND APPLICATION IN SOLID TUMOUR HTAS

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OBJECTIVES: There are currently no validated surrogate endpoints for overall survival in trials of solid tumours. We aimed to conduct a literature review of methods that have been utilised to validate surrogate endpoints, and assess how these methods have been applied in health technology assessments (HTA). METHODS: Using the key words ‘surrogate endpoint’, ‘correlation’ and ‘regression’, searches of MEDLINE, EMBASE, Cochrane Library, ISPOR, ASCO and ESMO (2012-2017) were conducted to identify studies reporting methodologies for validating surrogate endpoints. A number of national HTA agencies (NICE, SMC, HAS, PBAC, IQWIG and PCORI) were also searched to investigate the use and critique of these methods, with a focus on solid tumours.

RESULTS: The foremost methodologies for surrogate validation reported in the literature include multi-trial approaches (meta-analytic analyses, informatics theoretic approach and surrogate threshold effect [STE]) and causal inference (causal association and principal stratification). The use of surrogate endpoints in oncology trials may allow for a smaller number of patients to be included in clinical trials, and a more rapid time to report results. It is important to determine whether surrogate endpoints can be used to support decisions in oncology trials, and if so, which surrogate endpoints should be used in future trials. The use of surrogate endpoints in oncology trials is likely to become increasingly important in the future, and it is important to validate these endpoints in order to ensure that they are appropriate for use in future clinical trials.
OBJECTIVES: Hypertension is first rank of chronic disease found in Indonesian primary health care. Cardiovascular disease could happen from uncontrolled blood pressure as existing of drug related problems. This study was to investigate the prevalence and nature of drug related problems in outpatients with hypertension and reveal any associations between DRPs and the therapeutic outcomes in these patients. The study was a cross sectional study. All patients who fulfilled the inclusion criteria were recruited through outpatient clinic from seven primary health care in Yogyakarta province, Indonesia that collected during August 2015 to October 2015. A total of 323 patients were included. During this period of therapy the patients could come to the clinic several times as the medication serve for around two to four week from the clinic. Patients’ data were assessed to identify DRPs using an evidence-based approach. RESULTS: This study included almost half of the participants (54%) had hypertension. A Total of 323 DRPs were identified. The average number of DRPs was 1.5 per patient and most of the patients (90%) have at least one DRPs. The main DRPs affecting the medication, drug therapy outcome and worse prognosis, while the use of anti-angiogenic agents with first-line treatment is often recommended. Significant associations were found between poor blood pressure control and the existing of DRPs (p=0.000). CONCLUSIONS: The number of DRPs among patients with hypertension are significantly high. These DRPs were associated with poor therapeutic outcomes of hypertension patients. The improvement of clinical pharmacy services for all patients with hypertension is strongly recommended. Apreo treatment included sub optimal doses of medication prescriber. nonadherence to the medication, drug- drug interaction. Significant associations were found between poor blood pressure control and the existing of DRPs (p=0.000).

PRM11

CLINICAL EVALUATION OF CEA, CA125, CA19-9 AND CA72-4 IN GASTRIC CANCER PATIENTS WITH ADJUVANT CHEMOTHERAPY

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OBJECTIVES: In the clinical practice, We aimed to investigate whether tumor markers showed worse prognosis and shorter PFS (p = 0.0006, p = 0.0005, p = 0.01). The median PFS for normal and elevated CA199 and CA72-4 was 6 versus 4 months (P = 0.0006). In the multivariate Cox regression model elevated pre-treatment level of CEA, CA199 and distal metastases were independent factors associated with increased risk of progression (p = 0.006, p = 0.003, p = 0.001, p = 0.0006) and in patients using anti-angiogenic agents with first-line platinum-based chemotherapy (3-drug therapy) (CEA, CA199 and CA72-4, p = 0.0006, p = 0.003, p = 0.001). Furthermore, patients presented with combined three or four elevated tumor markers showed worse prognosis and shorter FPS (p = 0.0001). The decrease of tumor markers CEA, CA125 and CA72-4 was significant after adjuvant chemotherapy (p = 0.003, p = 0.0006, p = 0.0002 respectively) especially in the disease control group (CR + PR + SD) (p = 0.003, p = 0.001, p = 0.002) and in patients using anti-angiogenic agents with first-line platinum-based chemotherapy (3-drug therapy) (CEA, CA199 and CA72-4, p > 0.05). CONCLUSIONS: Our result suggests that elevated pre-treatment level of CEA and CA199 are correlated with high risk of progression and worse prognosis, while the use of anti-angiogenic agents with first-line platinum-based chemotherapy more effective in decreasing tumor markers level after chemotherapy.

PRM2

NOVEL BILOGICS VERSUS CONVENTIONAL PREVENTIVE THERAPIES IN MIGRAINE: A FRAMEWORK FOR ECONOMIC EVALUATION

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OBJECTIVES: Erenumab, a calcitonin gene-related peptide receptor inhibitor (CGRPRI) developed for the prevention of migraine, has completed phase 3 studies. The goal of healthcare policy makers is to position this novel class of therapy to maximize the clinical and economic benefits of this highly prevalent and burdensome disease. We propose an economic modelling framework to assess the cost-effectiveness of novel preventive biologics in episodic and chronic migraine. The goal of this study was to discuss current and potential future revisions of those VFs. To understand the websites of organisations developing VFs, or having an impact on health policy development. A732

PRM3

STATISTICAL METHODS FOR CRITICAL CARE OUTCOMES

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OBJECTIVES: To review statistical methods and their applications in situations involving multiple causes of failure when studying critical care outcomes (death and utilization of mechanical ventilation [MV]/extubation, hospital and intensive care unit [ICU] length of stay). Methods used in targeted literature were identified to identify methods that address issues of competing risk of death, censoring, and other statistical considerations applicable to the critical care setting. A total of 31 relevant articles were reviewed. To illustrate the performance of recommended methods, a small-scale simulation study and competing risk models. Relationships among time-to-event variables and covariates were defined a priori based on the relevant literature. Two standard Cox models were fit for time-to-event analysis (time from MV to cure and time from MV to extubation), which ignore subsequent events, such as death. We also conducted analysis of time-to-event by competing risks, with events of interest either time-to-cure or extubation duration, treating death as a competing risk. RESULTS: Based on our targeted literature search, we concluded that competing risks can be used instead of Cox survival models. Our simulations showed that Cox models appear to overestimate the effects of the treatment variable on the risk of cure by 7% to 8% by risk of extubation compared with competing risk estimates. Treating patients who died as if they were censored would lead to overestimation of the hazard rate in the standard Cox models. CONCLUSIONS: Competing events are common in critical care. In this context, competing risk event, which prevents other events of interest from occurring, and should not be treated as censoring. According to our literature search and simulation study, competing risk models should be used instead of standard Cox regressions in the presence of one or more competing risks.

PRM4

METHODOLOGICAL ISSUES WITH KEY DRUG VALUE FRAMEWORKS

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OBJECTIVES: A number of value frameworks (VFs) have been devised in the last years to assess the value of new drugs. The objective of this study was to discuss methodological soundness of selected VFs and to identify the main hurdles for real-life application of the elements incorporated in these VFs. METHODS: Targeted literature review using Ovid was performed to identify pivotal papers, commentaries and conference abstracts on VFs proposed by leading organisations i.e. ASCO, ESMO, ICER, NCCN, MSKCC. Search results were supplemented with information from hand search of websites of these organizations. RESULTS: Targeted search resulted in 304 abstracts, of which 74 were analysed. VFs demonstrated notable heterogeneity in defining and using QALY, and several methodological limitations were reported. For instance, ASCO VF allows assessing the net health benefit only if therapies were compared in a head-to-head trial. Meta-analysis outcomes can be used with the ESRO scale, but it is not applicable to single-arm studies. While ICER methodology appears quite stringent and very close that of the National Institute for Health and Care Excellence (NICE) in the UK, inherent limitations related to the use of QALY-based assessments remain. VFs which consider costs focus excessively on drug costs (ASCO, DrugAbacus) or ignore potential cost offsets (NCCN). Arbitrariness and transparency issues were reported for the majority of VFs, often because of thresholds used for grading treatment benefits (ASCO, ESMO), or even whole assessments (NCCN), being based on expert opinions. Not considering patient-reported outcomes or real-world evidence was also a common issue of current VFs. CONCLUSIONS: Emerging VFs are subject of intensified debates among patients/citizens, the scientific community, and payers, feeding any potential VFs revisions. The use of these VFs in drug value assessment and their impact on the current decision-making processes remains a key question.

PRM15

CURRENT AND POTENTIAL FUTURE CHANGES IN THE METHODOLOGY OF EMERGING VALUE FRAMEWORKS

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OBJECTIVES: Growing interest of stakeholders in better informing value-based decision-making has led to the emergence of value frameworks (VFs), including those developed by ASCO, ESMO, ICER, NCCN and MSKCC. The aim of this study was to discuss current methodology of VFs and to identify the main hurdles for real-life application of the elements incorporated in these VFs. To understand the websites of organisations developing VFs, or having an impact on health policy development. A732

RESULTS: Authors of VFs are open to comments from various stakeholders. There are different terms of attributes, scoring, stakeholder perspectives, purpose and eligibility criteria. For example, the ASCO VF was modified to include hazard ratio instead of median survival, and to consider all grades of toxicities rather than only high-grade. Moreover, the authors adopted a more patient-relevant perspective by considering...
quality of life and treatment-free interval, and confirmed possible future incorpor-
ation of such patients into clinical settings. When those are widely available. Changes
in scoring methodology were also considered: ASCO adopted continuous efficacy
scoring system, ICER included new cost-effectiveness thresholds for "long-term
value for money" and ESMO considered revising weights/thresholds for health gain
and cost-effectiveness outcomes. Wider eligibility criteria for ICER and ICER
expressed willingness to assess non-drug technologies, e.g. radiation or
medical devices. The purpose of VFs may also change and tools which currently
aim to support therapeutic decisions (NCOS, ASCO), could be adapted for assisting
policy/corversion-decision making. CONCLUSIONS: VFs paved a way to value-based
decision-making for expensive therapies, but their implementation is challenging,
due to the complexity of healthcare systems, treatment pathways, and value percep-
tion of stakeholders. Benchmark of VFs and a dynamic approach aligned with life
cycle will help to optimise VF use, and their potential impact on decision-making
is likely to become clearer over time.

PMR16
LONG TERM EFFICACY OF PERTUZUMAB FOR HER2+ METASTATIC BREAST CANCER ECUADORIAN POPULATION
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OBJECTIVES: assess long-term efficacy of Pertuzumab in treatment of metastatic HER2+ breast cancer in Ecuador. METHODS: Globocan data was used to calculate HER2+ metastatic population on Ecuador and data from Cleopatra clinical trial and epidemiological data from the tumor registry at Munich were used to perform an overall survival (OS) and progression-free survival (PFS) extrapolation of 5 and 10
years. The probability of being alive or remaining in PFS was determined by OS or PFS
times obtained from CLEOPATRA study Kaplan-Meier estimates or parametric
functions that was fitted to data. Extrapolation beyond clinical follow-up period was
performed by fitting parametric distribution to the observed OS and PFS times from
the study period of the trial. This was done independently for each treatment arm
(excluding crossover cohort). With results obtained we compared the number of
Ecuadorian patients treated with current standard therapy Trastuzumab that will
be still alive in 10 years against the number of Ecuadorian patients that will be still
alive in 10 years if Pertuzumab was new standard treatment for metastatic HER2+
breast cancer in Ecuador. RESULTS: 278 women will be still alive and 138 won’t
at the 10th year 278 women will be still alive and 138 won’t 3 per 100,000 inhabitants
Ecuador will have 580 women suffering from metastasic HER2+.

PMR17
CREATING INDIVIDUALIZED HBA1C TARGETS USING PREDICTIVE MODELING
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and Company, Israel, Ra'anana, Israel, 6Clalit Research Institute, Tel Aviv, Israel
OBJECTIVES: Glycemic targets (HbA1c) have been recommended to guide therapeutic
treatment for patients with type 2 diabetes mellitus (T2DM) and reduce the risk of primary
and secondary complications. In this study, we describe a methodology using
remote and virtual trials. The purpose of this methodology is to provide estimates of the distribution parameters that quantify the
dispersion of individualized glycemic targets that range from the double-blind phases of two studies of erenumab were used, one in epi-
sodic migraine (EM, NCT02456470), and one in chronic migraine (CM, NCT02066415).

PMR18
MAXIMIZING THE VALUE OF WEARABLE BY THE REMOTE COLLECTION AND ANALYSIS OF RAW 100Hz DATA
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OBJECTIVES: This study was designed to look for patterns in raw accelerometer data
potentially associated with a specific type of motor movement, namely scratching,
to show that raw and aggregated data can be transmitted remotely outside of the
traditional clinical setting, the hump-to-crestometer has value beyond the traditional sleep and activity endpoints and could be
used in remote studies. METHODS: Two healthy volunteers (A and B) were provided
with accelerometers and hubs. The hubs were SIM enabled to allow for continuous
data transmission. Volunteer A wore the device for 24 hours and used a diary to identify
27 scratching events of approximately 30 seconds duration. Volunteer B wore the
device for 8 hours and used a diary to identify 7 scratching events. RESULTS: Raw
100 Hz accelerometric data was transmitted remotely in the hub to the central-
ized study center, from where it was further processed and analyzed. An analytical
model was developed using the data from Volunteer A to identify scratching events
at a 10 second epoch level. This algorithm achieved sensitivity and specificity values
of 99% and 98% respectively for Volunteer A. The algorithm was further evaluated
on unseen (from the model's point of view) Volunteer B and achieved sensitivity and
specificity values of 99 and 86%, respectively. CONCLUSIONS: Accelerometer-
based techniques are gaining acceptance as a means of generating objective endpoints for sleep and activity using validated algorithms. This study has shown that the application of suitable algorithms to raw accelerometer data has the potential to generate clinically relevant outcome measures associated with
precision medicine and will pave the way to value-based decision-making in studies looking at tremor and itch and other clinical symptoms. The ability to generate and transmit raw data from a patient’s home facilitates the integration of this methodology into remote and virtual trials.

PMR19
PARAMETRIC MODELLING OF MIGRAINE DAY-FREQUENCY IN MIGRAINE PREVENTION: A CASE STUDY OF ERENUMAB CLINICAL TRIAL DATA
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OBJECTIVES: Due to the complexity of healthcare systems, treatment pathways, and value percep-
tion of stakeholders. Benchmark of VFs and a dynamic approach aligned with life
cycle will help to optimise VF use, and their potential impact on decision-making
is likely to become clearer over time.

PMR20
TREATMENT SWITCHING AND POWER OF IIT AND RPSFTM
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OBJECTIVES: To evaluate the gain in power and bias between conventional methods (IIT) and the rank-preserving structural failure time model (RPSFTM) in the presence
of treatment switching. METHODS: The RPSFTM is used for Health Technology Assessment submissions to adjust for switching of patients from reference to inves-
tigational treatment. It uses counterfactual survival (survival when only reference treatment would have been used) and assumes that, at randomiza-
tion, the counterfactual survival distribution for the investigational and reference arm are identical. The RPSFTM is rank-preserving, so that the p-value for this method
is equal to the IIT p-value. Illness-death models with pre-progression, progression
and death and exponential transitions were used to sample patients’ survival
times, assuming different amounts of switching and different rates of pre- and post-
progression survival. Recruitment is modelled as well. For different maturities, the
power of IIT and RPSFTM was evaluated. RESULTS: For high percentages of treat-
ment switching, almost no gain in power was measured from 30% maturity to 70% maturity, while the counterfactual survival when only reference treatment
would have been used). As expected, since IIT is a non-parametric method, the
power of IIT is less than or equal to the power of RPSFTM. CONCLUSIONS: When large amount of treatment switching are expected, sample sizes need to be substantially enlarged compared to no treatment switching when using IIT or RPSFTM to obtain reasonable power.

PMR21
AN ALGORITHM TO QUANTITATIVELY ESTIMATE EXTRAPOLATED LIFE TIME SURVIVAL CURVES FOR ECONOMIC EVALUATION (EE) OF CANCER TREATMENTS WHEN ONLY AGGREGATED PATIENT DATA ARE AVAILABLE, WITH APPLICATION TO METASTATIC PANCREATIC CANCER
Ghaliheh M, Aliaid N, Abraham I
"VALUE IN HEALTH 20 (2017) A399-A811 A733"
that HR is the same for all CLL genotypes. From clinical trials studying idelalisib vs. venetoclax and 37 idelalisib. The PFS HR of venetoclax vs. idelalisib was 0.315.

Venetoclax is a new agent for treating chronic lymphocytic leukemia (CLL). Slovenia.

Objectives: To evaluate the effectiveness of venetoclax vs. idelalisib in clinical practice. We illustrate the algorithm with IE of FOLFRINOX against gemcitabine in metastatic pancreatic cancer. Methods: The algorithm includes seven steps: digitize treatment graphs; extract parametric functions; plot and visually inspect parametric distributions; assess goodness-of-fit; assess proportional hazard model assumptions for IE data; EE; and propose results. Goodness-of-fit was assessed by the sum of squares (RSS), coefficient of determination (R2), and F-test. Results: For OS, goodness-of-fit was: for exponential, $	ext{RSS} = 1.076$, $R^2 = 0.983$, $F = 1554.365$; for Weibull, $	ext{RSS} = 1.987$, $R^2 = 0.999$, $F = 1999.926$; for Gompertz, RSS = 1.525, R^2 = 0.875, F = 1081.550 (all p < 0.001); with Weibull yielding best-fit. For PFS, goodness-of-fit statistics were: for exponential, $	ext{RSS} = 0.869$, $R^2 = 0.985$, F = 1112.524; for Weibull, $	ext{RSS} = 0.218$, $R^2 = 0.995$, F = 2999.236; for Gompertz, $R^2 = 0.912$, $R^2 = 0.820$ (all p < 0.001); with Weibull yielding best-fit. The PH assumption between treatments was validated.

Inclusion of Comparator Single Arm Trials Used for EMA/FAA Registration in the Network Meta-Analysis Using Matching Adjusted Indirect Comparisons

Objectives: Several treatments have obtained accelerated approval by FDA based on single arm trials. This is especially the case for promising breakthrough treatments. However, it is important to explain properly for each single arm aggregated data (AD) trials used for comparator registration with RCTs using own individual patient single-arm/RCT data (IPD) forming relative effects. Methods: Matching Adjusted Indirect Comparison for multiple trials. Results: Using MAIC, a "pseudos" relative effect is calculated for each single arm in the network formed by the IPD data. If the own IPD data is not an RCT but a single arm trial, performing MAIC of the IPD trial to at least one RCT results in a linked network. Because the single arm IPD data are used multiple times, uncertainty estimates may be best obtained by procedures like bootstrapping. Although this approach can be used to model the relative effects, the quality depends on the characteristics of the included AD trials. The availability of covariate information, the comparability of single arm AD and IPD, the maturity of the trial, the sample size, among other characteristics to be assessed before performing the MAIC, so that an approach to reasonably perform the MAIC was needed and is formulated. The approach will be exemplified using a network of 300 RCTs. Further, the MAIC results used for comparator registration can be used in network meta-analysis using single arm IPD data. This provides insights in which of the treatments is the most important for your own product with and thus for the creation of the baseline case scenario in cost-effectiveness evaluations. However, whether the approach is acceptable will also depend on the promising value of the products for which registration is obtained based on single arm trial data.

Comparative Effectiveness of Venetoclax in View of a Clinical Trial

Objectives: Venetoclax is a new agent for treating chronic lymphocytic leukemia (CLL) patients, especially with 17p deletion/TP53 mutation (17p/TP53), who have failed treatment with a B-cell receptor pathway inhibitor (BCR). The NICC appraisal expressed several concerns in determining its efficacy: small number of patients included in the clinical trials. The study aims to determine the matching and comparative effectiveness for venetoclax reimbursement process in Slovenia. Methods: A systematic review of clinical trials studying potential venetoclax comparators was performed to define their progression-free survival (PFS) and overall survival (OS). Publications on venetoclax were searched for hazard ratio (HR) venetoclax vs. comparator for PFS. Additionally, due to immature data for venetoclax OS, the OS HR was obtained by calculation of ratio of 1-HR between OS and PFS (KOS/ FPS). Results: The randomized trials on BC R effectiveness involving larger number of patients. A clinical expert was consulted to present relevant treatment of 17p/ TP53 CLL subpopulation in clinical practice. Results: The literature review revealed several trials comparing BC R and BC R (ibrutinib, idelalisib, venetoclax) with BC R. Ibrutinib was the most suitable comparator based on venetoclax indication, existing prescribing restriction of ibrutinib and clinical expert opinion. An observational study Mate et al. (Ann Oncol. 2017;28(1):150-1506) studying 683 CLL patients was found, in BC R population similar to the target population of patients from reference to investigational treatment in clinical trials. It uses counterfactual survival (survival when only reference treatment would have been used) and assumes that, through randomization, the counterfactual survival distribution for the investigational and reference arm are identical. The validity of the on treatment versus treatment at various levels of cross-over was of interest. Methods: The RPTS was implemented to simulated datasets differing in percentage of patients switching, time of switching, underling acceleration factor and number of patients, using exponential distributions for the time on investigational and reference treatment. Results: There were multiple scenarios where two solutions were found: one corresponding to identical counterfactual distributions, and the other to two different crossing counterfactual distributions. The same was found for the hazard ratio. No multiple potential solutions were observed only when switching patients were on investigational treatment for ≤60% of the time that patients in the investigational arm were on reference treatment. Conclusions: Automatic estimation methods to obtain point estimates and confidence intervals for the acceleration factor may be used when the time that switchers stay on investigational treatment within the trial period is short. However, multiple solution savvy that automatically procedures are unlikely to work when switching patients stay significantly longer on investigational treatment than direct starters.

Subgroup Specific Medication: Finding Patients with Poor Therapy Response

Objectives: Personalized medicine aims at a better medical treatment by tailoring the treatment for the patient's individual characteristics. One step towards personalized medicine is subgroup specific medicine that adjusts the treatment for groups of patients. This work aims at detecting patient subgroups, which react worse to a specific medication compared to the rest of the population. Therefore, we developed a subgroup mining technique that automatically identifies subgroups with weak therapy results. Methods: We used the health claims database of Avrato Health Analytics that contains diagnosis codes and prescriptions of 3 million German insurants for the years 2008-2015. First, we selected all patients suffering from rheumatoid arthritis (ICD-10 GM: M05, M06.0) and their respective medication intervals. We implemented a quality of life (Qol) metric for each interval based on the number of emergencies, admissions, side effects and outpatient/inpatient visits. Then, we identified subgroup mining to identify patient groups that were likely to have worse Qol result. Finally, we explored the characteristics that lead to this worse Qol outcome. Results: Our analysis included n = 36,756 RA patients. For female RA patients, the mean Qol impact ($\mu_{\text{Qol}} = 1.05$, p = 0.03) and Adalimumab ($\mu_{\text{Qol}} = 0.97$, p = 0.002) showed a poor Qol outcome. In contrast, Golimumab had no significant worse impact on the Qol of the female population ($\beta = 0.09$, p = 0.83). For male RA patients, Infliximab (IFX) ($\mu_{\text{Qol}} = 1.05$, p = 0.003) and Adalimumab ($\mu_{\text{Qol}} = 1.02$, p = 0.0009) that has not been reported in literature yet. Conclusions: By this approach, we can guide the development of new drugs for the identified patient subgroups that react poor to approved medication.

AN ANALYSIS OF TRANSLATION CHALLENGES WHEN ADAPTING THE PICTURE NAMING SUBTEST OF THE REPEATABLE BATTERY FOR THE ASSESSMENT OF NEUROPSYCHOLOGICAL STATUS (RBANS) FOR USE IN MULTINATIONAL STUDIES

Objectives: The Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) is a neuropsychological assessment consisting of 15 tests, including the Picture Naming subtest. Examiners are shown a series of pictures and asked to name them. In a multinational study where the images cannot be adapted to the practical variations, a number of different methodological challenges arise. This comprehensive review suggests solutions to these challenges to ensure consistent and accurate scoring. Methods: Existing translations of the subtest were identified. The data were reviewed by the language services provider’s linguistic validation team and lead members from the CRO scientific team. The issues were defined and categorized. Solutions and further considerations were provided for each category. Prior to revision of the existing translations and development of new language versions, a subgroup of practitioners familiar with the clinical study. Results: The analysis resulted in the following distinctions of challenges: 1) Inclusion of alternative responses Regionalisms: examinee responses to an image would be considered correct in one region of a country but incorrect in another. 2) Target response variation: the picture presented to an examinee can elicit more than one correct response in the target 0.85 and 0.73 were obtained, respectively. Finally, the calculated OS HR of venetoclax vs. idelalisib was 0.460. Conclusions: The comparative effectiveness expressed as HRs of venetoclax vs. idelalisib is 0.315 for PFS and 0.460 for OS.
TREATMENT EFFECTS IN AN OBSERVATIONAL COHORT OF PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

IQWiG’s General Methods 5.0 - What’s New?

Methods

IQWiG’s General Methods 5.0 which replaces version 4.2. The General Methods 5.0 includes new language to support a systematic approach to the evaluation of medical devices in high risk categories, which HCSA envisioned. Para. §139b SGB V was changed to include HTA reports based on public proposals. The General Methods 5.0 detail the topic choice and selection, as well as quality assurance. The HTA report should include benefit and risk assessment of an intervention, as well as economic, ethical, social, legal and organizational aspects. The general underlying concept is that information acquisition was restructured and extended, detailing the approach in conducting systematic literature reviews. The General Methods 5.0 now detail how to perform a comprehensive or a targeted review, respectively search strategy and data assessment. Minor changes in the meta-analyses section were implemented, in particular regarding the methodology choices following assessment of study heterogeneity. Conclusions: IQWiG’s General Methods 5.0 includes new paragraphs that align procedures and methodology with changes in German law. Expanded details are provided for the conduct of systematic literature review and meta-analyses.

PRM27

USING AN INSTRUMENTAL VARIABLE APPROACH TO ESTIMATE CAUSAL TREATMENT EFFECTS IN AN OBSERVATIONAL COHORT OF PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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OBJECTIVES: Instrumental Variable (IV) approaches have been advocated to estimate causal treatment effects in observational data in the presence of unmeasured confounding. However, IV methods can be subject to weak instrument bias (and therefore attenuation of the causal effect towards the null). They also rely on strong assumptions, which cannot be tested from the data and have to be justified by background knowledge. Methods: Using an observational cohort of 150 patients experiencing exacerbations due to Chronic Obstructive Pulmonary Disease (COPD), we use an IV approach to estimate the effect of treatment on exacerbation and antibiotics compared to prednisolone alone in terms of Forced Expiratory Volume (FEV1) post treatment. Three potential IVs were considered: sputum colour, distance from facility and deprivation index. We also undertook a simulation study (based on the characteristics of the cohort study) to compare these IVs with regard to weak instrument bias and to assess the sensitivity of our analyses to violation of IV assumptions. Results: The three potential IVs displayed varying degrees of strength in this cohort of COPD patients, and our simulation study confirmed that the impact that this variability had on our study estimates, and therefore conclusions, could range from minor to considerable depending upon the weakness of a particular instrument. Conclusions: IV approaches to estimating causal treatment effects from observational data are becoming popular. Finding a suitable IV is not always straightforward. Our study illustrates the potential dangers associated with weak (but valid) instruments or with instruments that violate core assumptions. We recommend that the impact of an analysis in any particular context should be explored using a simulation variable approach.

PRM29

USING ELECTRONIC HEALTH RECORDS AS A REAL WORLD COMPARATOR: A CASE STUDY IN A SINGLE ARM OXYGEN TRIAL

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OBJECTIVES: This study aims to examine the relationship of electronic health record (EHR) data to derive effectiveness evidence. METHODS: EHR data collected from January 1, 2011 and February 28, 2016 (control cohort) was combined with individual patient data (IPD) from two single-arm phase II studies (intervention cohort) to estimate treatment effect and outcome differences. The study investigated inclusion and exclusion criteria from the trial to the EHR database. Prognostic variables were selected a priori and three different methods (propensity score matching (PSM), inverse probability of treatment weighting (IPTW), and Genetic Matching (GenMatch)) were applied and compared to address imbalances in measured confounders. A multivariate Cox proportional hazards model was used to estimate the hazard ratio (HR) were evaluated for each method. A sensitivity analysis evaluating the survival of the control cohort from EHR was conducted with an indirect comparison between the control cohort and digitized trial data from the control treatment. RESULTS: After applying the inclusion and exclusion criteria (n=72) and control cohort (n=72) were imbalances in terms of measured confounders. The PSM method did not balance measured confounders (standardize mean differences (SMDs) >25%) and the IPTW and Genetic Matching method improved imbalance (SMDs <10%) between the intervention and control cohort. The observed treatment effect on the risk of death of the PSM (HR=0.59, 95% confidence interval (CI) 0.36-1.74, IPTW (HR=0.64, 95% CI 0.48-0.88) and GenMatch adjusted analyses (HR=0.54, 95% CI:0.48-0.62) was similar favoring the intervention cohort. The HR between the EHR cohort (15.6 months) and clinical control cohort (14.9 months). Conclusions: Our results demonstrate the utility of EHR data to estimate comparative effectiveness at single-arm level of intervention and therefore provide meaningful data for interventional trials in real-world settings.

RESEARCH ON METHODS – Cost Methods

PRM30

CONCEPTUALIZATION, DEVELOPMENT, AND INTERNAL AND EXTERNAL VALIDATION OF A ‘WHOLE DISEASE’ MODEL FOR CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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OBJECTIVES: To conceptualize, implement, and internally and externally validate a novel ‘Whole Disease’ model of chronic obstructive pulmonary disease (COPD) that addresses policy and clinical decisions at different levels of care across the entire clinical pathway of the disease. Methods: COPD (acute exacerbation (AE), chronic obstructive lung disease (COLD), and individualized longitudinal trajectories of forced expiratory volume at one second (FEV1) from a dedicated analysis of the Lung Health Study (LHS), and 3) heterogeneous background exacerbation rate and severity from an analysis of a recent major COPD clinical trial (MAGICO). COPD incidence equations were stochastically calibrated from the prevalence equations. To externally validate the model, we compared lung function trajectories, exacerbations, and mortality against four external cohorts (EUROSCOP, PanCan, TORCH, and UPLIFT). RESULTS: FEV1 trajectories showed robust internal and external validity: with 95% prediction intervals having actual coverage probabilities of 96%, 91%, and 90% in LHS, EUROSCOP, and PanCan, respectively. Simulated values for total exacerbation (1.34/PY, 1.30/PY), severe exacerbation (0.27/PY, 0.28/PY) and mortality rates (10%, 12%) were consistent with reported values in TORCH and UPLIFT respectively, considering uncertainty intervals around the mean. Conclusions: EPIC is a validated microsimulation model of COPD informed from multiple large clinical data. As a Whole Disease Model, it is capable of modeling the health and economic outcomes of many decisions in their interaction. By using an open-population, it can model realistic scenarios such as gradual market penetration and sub-optimal adherence to considering disease heterogeneity. EPIC allows us to answer questions on efficiency and clinical utility of “personalized medicine” interventions such as biomarker implementation.
The case of monitoring individuals with ocular hypertension: broadening the valuation space in health technology assessment

The uncertainty around key model parameters (varied over range ±25%) and their impact on the base-case results. The model used a time horizon of 20 years.

Health states considered were PFS, disease progression and death. Transitional probabilities were derived from a literature search. Nevertheless, detailed and specific data sources in France are limited to collect the medical transportation costs. The main objective is to determine a standardized method allowing to estimate medical transportation costs in French health-economic evaluations. Rates of medical transportation costs have been collected from efficiency opinions published by the French Health Authority (HAS).

Then, these costs and their methodologies have been analyzed and completed by a literature review. Data on charges reimbursed by the French Health Insurance and patients who are not reimbursed. The second only considers the percentage of patients who is reimbursed by the French Health Insurance and patients who are not reimbursed. The second only considers the percentage of patients who is reimbursed by the French Health Insurance and patients who are not reimbursed. The second only considers the percentage of patients which is reimbursed by the French Health Insurance in 2012, allows to determine the percentage of patients which is reimbursed by the French Health Insurance and the mean cost per transportation. Two methods can be distinguished, resulting in very different mean cost of transportation to use. The first takes into account the percentage of patients which is reimbursed by the French Health Insurance and patients who are not reimbursed. The second only considers reimbursed cost for all patients. CONCLUSIONS: Medical transportation cost estimation collected in efficiency opinions varies with a high degree of heterogeneity on these costs as well as a poor data source available in the literature or online database. Recommendations are needed to avoid this problem.

BROADENING THE VALUATION SPACE IN HEALTH TECHNOLOGY ASSESSMENT: THE CASE OF MONITORING INDIVIDUALS WITH OCULAR HYPERTENSION

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OBJECTIVES: The economic evaluation (EE) component of health technology assessment (HTA) often defines value in terms of health related quality of life, with many HTA agencies requiring the use of EQ-5D based Quality Adjusted Life Years (QALY). These approaches do not capture value derived from patient experience factors and the process of care. This thesis widens the valuation space beyond this limited perspective, taking account of such factors, using monetary values generated from a discrete choice experiment (DCE), incorporating these into a discrete event simulation (DES) and conducting a cost-effectiveness analysis (CEA). The case study is monitoring individuals with ocular hypertension. Five strategies were compared using a DES: ‘Treat All’ at ocular hypertension diagnosis with minimal follow-up, Biennial monitoring (either in primary or secondary care) or treatment according to predicted glaucoma risk, and monitoring and treatment according to the UK National glaucoma guidance (either conservative or intensive). DCE based Willingness to pay (WTP) estimates for relevant health outcomes (e.g. risk of developing or progressing glaucoma and treatment side effects), patient experience factors (e.g. communication and understanding with the health care professional) and process of care (e.g. monitoring setting) were obtained. Conditional logit, a discrete choice model used in the valuation space (from health economics) econometric specifications were used. These WTP valuations were aggregated in the DES, as fixed mean values or allowing variation between simulated individuals. RESULTS: While the standard cost-utility analysis (CUA) using EQ-5D implied ‘Treat All’ was most likely cost-effective, CBA with broadened valuation space identified, consistently across different econometric specifications, ‘Biennial hospital’ as the best choice. CONCLUSIONS: This thesis proposes an approach to broaden the valuation space that can be easily used within HTA. Researchers should be attentive of the valuation space considered in their EE and choose wisely the EE approach to be used (e.g. CUA and/or CBA).

COST – EFFECTIVENESS OF OBINUTUZUMAB AS FRONTLINE TREATMENT FOR UNFIT PATIENTS WITH CHRONIC LYMPHOCYTIC LEUKEMIA IN REPUBLIC OF MACEDONIA

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OBJECTIVES: Obinutuzumab significantly improves the overall survival of patients with advanced hematopoietic cancers (HPC). Conducted research aimed to assess the pharmaco-economic implications of obinutuzumab as frontline treatment for advanced HCC in comparison with best symptomatic treatment without systemic chemotherapy also known as supportive care (BSC). METHODS: A Markov model was developed to simulate patients' progression, disease, and death in order to estimate the outcomes and costs in 10-year time horizon. (TreeAgr Pro 2016 Suite Inc. Williamstown, MA). The clinical data and utilities used in the pharmacoeconomic model were taken from the pivotal SHARP study with the data from the placebo arm used as a proxy for BSC. Based on this approximation and the results obtained from the GIDEON study in Republic of Macedonia, approximately 25 patients/year are eligible for sorafenib treatment. The drug acquisition cost of sorafenib was calculated based on the mean price per day and mean treatment duration used in the study. A range of other health state costs was integrated in the model, GP and specialists' visits, laboratory and radiological tests, hospitalisations and specific medication procedures. Official publicly available data in R. Macedonia for medicinal unit cost were used in the model. Discount rate for all cost and outcomes was 3%. Sensitivity analyses evaluated the impact of several essential variables. RESULTS: The incremental cost-effectiveness ratio was €14,363.00 per QALY for sorafenib versus best supportive care (BSC). The sensitivity analysis confirmed that the results were sensitive to the overall survival estimates, the cost of BSC and the utility values. CONCLUSIONS: Sorafenib is not a cost-effective option as a first-line treatment for patients with advanced HCC. Reduction in the price of sorafenib, or appropriate assistance program should be considered to improve the cost-effectiveness of advanced HCC treatment.

PRM35

ASSESSMENT OF HEALTHCARE COSTS OF INFANTS IN EXCLUSIVE BREASTFEEDING VERSUS MIXED OR ARTIFICIAL BREASTFEEDING

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INTRODUCTION: Workplace accidents are important in the day-to-day of a productive society. Security, Healthcare and Human Resources Departments (SHH) struggle to show that they are not part of a company merely to follow rules, laws and regulations that might be established, but that they are a group of people, a team, with the same goal: warn the employees of a company about the risks and consequences of related work accidents. OBJECTIVES: Show the importance of SHH and HRD through work accidents. METHODS: In the present work, the number of work accidents, workers indemnifications and non-compensation accidents were collected. A leave of absence after work-related accidents. The period of absence of these workers and the costs were integrated in the model, GP and specialists' visits, laboratory and radiological tests, hospitalisations and specific medication procedures. Official publicly available data in R. Macedonia for medicinal unit cost were used in the model. Discount rate for all cost and outcomes was 3%. Sensitivity analyses evaluated the impact of several essential variables. RESULTS: The incremental cost-effective ratio was €14,363.00 per QALY for sorafenib versus best supportive care (BSC). The sensitivity analysis confirmed that the results were sensitive to the overall survival estimates, the cost of BSC and the utility values. CONCLUSIONS: Sorafenib is not a cost-effective option as a first-line treatment for patients with advanced HCC. Reduction in the price of sorafenib, or appropriate assistance program should be considered to improve the cost-effectiveness of advanced HCC treatment.
12 workers totaled 1,568 days. Average worker’s salary = $1,500.00 Brazilian reals. A total of 820 hours worked/month. $6.80 Brazilian reals/hour/worker. Daily hours of work = 8.5 hours. A total of 13,328 lost hours/year Therefore, the costs of lost hours due to work accidents totaled $90,900.00 Brazilian reals. The costs with medical supplies, medicines and worker’s health totaled $11,055.89 Brazilian reals. These costs also calculated for the impact received from the company that provides emergency care services. The highest cost per accident and the Accident Insurance Factor (Factor Acidentário Previdenciário) totaled $1,190,749.00 Brazilian reals. It tries to show that on average, men have a shorter waiting time than women (about 3%). Waiting times are higher in the population aged 1 to 22 years. Patients aged over 69 years have waiting times that seem to gradually decrease. Children under 5 years of age have lower waiting times than those who were reported to have cancer wait less for surgery. Although hospital transfers occur in only 0.25% of cases, the results show that they are relevant to significantly reduce waiting times. The fixed effects also confirm that a higher level of priority is assigned with shorter waiting times and that the valuation of hospitals explains some variation in waiting times.

**PRM41**

**HEALTH INSURANCE PERSPECTIVE AND COLLECTIVE PERSPECTIVE: THE DIFFERENCES IN THE COLLECTION AND VALUATION OF COST DATA IN FRANCE**

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**OBJECTIVES:** In France, the French National Authority for Health (HAS) considers two perspectives in economic evaluations, the health insurance perspective to estimate the costs incurred by health insurance, and the collective perspective (all payers) that estimate costs incurred by the entire population. This study presents an inventory of available data to collect and value cost data, according to the perspective chosen (health insurance or collective).

**METHODS:** Cost items most frequently used in economic evaluations were included. Focus groups and interviews were conducted in 3 regions (Markarg, state health service, and cost utility agency) and cost utility analysis were employed in all the included studies. Disease progression was modelled through clinical staging in 4 studies where non invasive screening strategies were compared with invasive and imaging techniques. Treatment strategies were modelled in 2 studies. Only 1 study calculated incidence and remission rates by calibrating against real-world prevalence rates. All studies employed sensitivity analyses to assess the impact of model input uncertainty on outcomes across a wide range of values. Based on the QHES scale, 5 studies were high quality (75-92) and 1 study was fair quality (71). Overall quality of the study was higher (mean 82.14±9.8). **CONCLUSIONS:** There is paucity of health economic modelling studies in NAFLD. The analysis illustrates the enormity of the clinical and economic burden of NAFLD which is likely increase as incidence of NAFLD continues to rise.

**PRM39**

**THE DESIGN OF ECONOMIC EVALUATION AND BUDGET IMPACT ANALYSIS OF BIOSIMILARS: A QUALITATIVE STUDY**

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**OBJECTIVES:** This study aims to discuss principles for economic evaluation and budget impact analysis of biosimilars. The interviewees were asked to express their experiences of Belgian stakeholders with reimbursement of biosimilars were evaluated and insight was gained into their views on the design of an economic evaluation and budget impact analysis for biosimilars. This study included representatives of the HTA body, the medicines reimbursement agency, health insurance agencies, researchers, physicians, and pharmaceutical companies. A grounded theory approach was used to analyse the data. **RESULTS:** No consensus was found about the methodology of economic evaluation and budget impact analysis as appropriate in the reimbursement decision of a biosimilar. The preference for a cost-minimization analysis was dependent on the view of the interviewee on potential differences between the originator and the biosimilar. Other interviewees suggested to perform a full cost-effectiveness analysis. When the reference product is not reimbursed, a full economic evaluation was considered appropriate. Not only for biologics or biosimilars, but for all medicines, frequent revisions on reimbursement decisions were advised. The interviewees seemed to agree that a formal decision-analytic modelling approach or a cost-effectiveness analysis is the most suitable approach to make reimbursement decisions and for biosimilars for which no head-to-head studies are available.

**CONCLUSIONS:** This study allows to understand the importance of input-uncertainties according to different sources, when comparing non-typeable Haemophilus influenzae protein D (PHD-CV) and the 13-valent pneumococcal conjugate vaccines (PCV13) in INFANTS. **Objective:** To assess the impact of vaccine effectiveness/efficacy (VE)-inputs has a significant impact on CEA-outcomes (CEAOs). Probabilistic approaches, addressing values within a plausible VE-range instead of single EOs are gaining importance to manage parameter uncertainties and to outbalance interpretations of CEAOs. The aim of this study is to understand the importance of input-uncertainties according to different sources, when comparing non-typeable Haemophilus influenzae protein D (PHD-CV) and the 13-valent pneumococcal conjugate vaccines (PCV13).

**METHODS:** Plausible VE-ranges for serotype (ST), ST19A, non-typeable Haemophilus influenzae (NTHi; only against acute otitis media) and net herd protection were based on 95%CI from controlled efficacy/effectiveness studies. A published static Markov model comparing both vaccines for Canada was adapted to further uniform probabilistic VE-estimations (UPVs) within their plausible ranges. Endpoints: 1.5%-discounted average and percentsiles 2.5 and 97.5 (5%ile2.5;5%ile97.5) for incremental direct costs (ADC, kr) and Quality-Adjusted-Life-Years (ADQLY), excluding(excl) and including(incl) a probabilistic sensitivity analysis (PSA).

**RESULTS:** This study allowed to understand the importance of the choice of VE-assumptions for CEAO: overall CEA was not significantly impacted by the choice of VE against ST3 and ST19A and for herd effect. Varying VE against NTHi however affected the variability of CEAO the most. PHD-CV remained dominant over PCV13 independently of using EOs or UPVs.
HORIZON SCANNING IN ONCOLOGY – RAPID SCANNING APPROACH IN SLOVAKIA
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OBJECTIVES: Horizon scanning is in place in many European countries, as well as outside of the Europe. Slovakia didn’t formalize that approach yet, but extreme pressure on healthcare systems and the new national clinical forum are technical support for the pilot project.

METHODS: Rapid scanning was chosen as the most appropriate method for the pilot project. Prioritisation meeting was held at Slovak Medical University. Experts chose the area for scanning, agreed on method and form. Subsequently, all physicians interested in systemic treatment were contacted to report new oncological indication registration for already registered molecules or for newly developed molecules. Finally we completed the table report by a literature review using systematic search strategies. Self-selected outcomes were selected as outcomes of the three years 2017-2019. RESULTS: The report contained 31 molecules in 46 indications. 14 were already registered between 2012 and 2016. 4 new indications are expected the treatment of oncological diseases to molecules that are already registered. 18 new molecules were considered to be registered for the treatment of oncological diseases, 1 of them as the extension of the indication to the molecule, which is expected to be registered in 2017. 4 molecules reported new indications in the period after 2019. 3 already registered molecules were reported without time frame. The return of the questionnaires was 57%. The table was completed by more 2 molecules, 2 of them were excluded due to marketing authorization withdrawal and 15 were excluded due to inappropriate period. CONCLUSIONS: The report completed by the data from the pilot project and the data for next steps – final prioritization based on burden of disease and potential impact on patients and budget impact. This shall result on planning of managed entry processes.

THE IMPORTANCE OF PERSPECTIVE WHEN EVALUATING THE ECONOMIC VALUE OF VOCATIONAL REHABILITATION
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OBJECTIVES: The NICE reference case recommends economic evaluations take an NHS and Personal Social Services (PSS) perspective. This is appropriate if all associated costs and benefits are captured, however less so, when a proportion lie outside of healthcare. We aim to explore the importance of perspective in the FRESH trial. This trial assessed the feasibility of delivering a full scale trial evaluating the (cost) effectiveness of Vocational Rehabilitation (VR), an individualised return to work programme, amongst Traumatic Brain Injury patients in comparison to usual care, across three trauma centres in England. METHODS: This feasibility study compared alternative methods of collecting and valuing resource use data, which included taking two perspectives: NHS and PSS, plus a societal perspective. Several methods were used to estimate time off work costs, for example using national average hourly wage rates compared to participial reported earnings, as well as valuing presenteeism through the Workers Productivity and Activity Impairment instrument compared to bespoke questions. RESULTS: When societal costs were considered, such as government employment services, time off work and disabilities, the VR was be 50% cheaper on total cost of total costs in the VR group, compared to 80-90% within usual care. Though these percentages varied according to methods used, they demonstrate that within any full-scale economic evaluation, there is likely benefit in using a societal perspective. Taking a broader perspective adds complexity to an evaluation in terms of appropriately capturing the data and in identifying sources of uncertainty. CONCLUSIONS: Using a limited perspective where significant costs and benefits are believed to lie outside healthcare could lead to erroneously low value for money and poor value from public funding. Further research is required to inform how such wider resource items should be measured and valued.

IDENTIFYING COST EFFECTIVE METHODS OF HEALTH TECHNOLOGY ASSESSMENT FOR DEVELOPERS - THE NEED FOR FAST AND FRUGAL EVALUATION
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OBJECTIVES: Early or Supply-side Health Technology Assessment (HTA) is potentially useful during technology development. Supply-side HTA aims to inform investment and study design decisions made by developers and investors. Supply-side HTA can improve decision making and increase the return on investment, and hence justify its own costs, in two ways: 1) by increasing the achievable price, market share or development costs for technologies that are ultimately unsuccessful, and 2) by reducing development costs, possibly by facilitating earlier termination of development, for technologies that are ultimately unsuccessful. Given the large number of candidate products, high rates of failure and fast pace of development, ‘fast and frugal’ methods are required for supply-side HTA to be cost-effective. The aim of this study was to identify ‘fast and frugal’ supply-side HTA and propose a ‘fast and frugal’ framework for supply-side HTA.

METHODS: A wide-ranging cross-disciplinary peer-reviewed literature review was undertaken. Methodological studies of supply-side HTA were grouped according to the methods used and resource requirements. A framework of activities in supply-side HTA was developed. Studies where authors had sought to apply ‘fast and frugal’ methods were identified and adaptations were noted. RESULTS: 81 studies were found exemplifying ‘fast and frugal’ methods of supply-side HTA. Congruent with our expectations, frequent method applied, expert elicitation and user-feedback methods were also well represented. One ‘fast and frugal’ application of a quantitative method (Heatmap) was identified and one qualitative toolkit. There was a lack of studies using early stage qualitative methods. A framework for supply-side HTA was developed.

WHICH INFORMATION SOURCES SHOULD BE USED TO IDENTIFY STUDIES FOR SYSTEMATIC REVIEWS OF ECONOMIC EVALUATIONS IN HEALTHCARE?

OBJECTIVES: The key economic evaluation (EE) databases, NHS EED and HEED, have closed. Which databases do we now need to search to identify economic evaluations for non-NHS systematic reviews (SRs)? We assess which databases are now the best sources of EEs and whether typical search strategies are effective. METHODS: A quasi-gold standard (QGS) set of economic evaluations was formed from studies included in SRs of healthcare economic evaluations published in EMBASE (2012-2016) and PubMed (2016-2017). For each QGS reference, searches were conducted in seven databases: EMBASE, MEDLINE, PubMed, PubMed Central, EconLit, ASSIA and Web of Science. RESULTS: Search strategies were re-run to assess their performance in finding EEs. RESULTS: We built a QGS of 351 records from 46 reviews. Embase search strategies had the best yield (0.81). The HTA database identified the highest number of unique records (13,351), despite a low overall yield (0.1). All 3 databases combined retrieved 337,351 records. The most efficient combination of databases which could be searched to find records for all 337 references was Embase, Scopus, HTA Database and (MEDLINE or PubMed). 10/29 (34.5%) of re-run strategies missed at least 1 of the included records available in MEDLINE (25 records missed in total). Only 1 of the missed records was due to failures of search terms used for the economics concept. CONCLUSIONS: For most SRs Embase, HTA Database and either PubMed or MEDLINE are likely to be sufficient to identify EEs included in bibliographic databases. Additionally searching a multi-database system database may be necessary, particularly in non-clinical topics. Beyond this, supplementary search techniques may be more efficient than extensive database searching. Weaknesses in reported MEDLINE search strategies were identified which impeded retrieval; these were appearing in SRs that were informed with population and intervention concepts, rather than the economics concept.

MULTIPLE DISTRIBUTION, TWO-PART, AND TWO-COMPONENT FINITE MIXTURE MODELS FOR PREDICTING SMOKING-RELATED INDIRECT COSTS IN US WORKING ADULTS
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OBJECTIVES: Indirect costs data typically include a high proportion of zeros that cannot be adequately modeled with a single distribution. The currently examined predicted total costs associated with work impairments using different models applicable to such distributions. METHODS: On employed US adults (18-64 years old) were analyzed from the 2013 National Health and Wellness Survey. Self-report was used to define smoking status (never smoked, quit, attempting to quit, and currently smoke) as a predictor. Costs due to work productivity loss were derived from Work Productivity and Activity Impairment questionnaire-based estimates. RESULTS: Among smokers, costs are above $500 per year and period costs are much larger ($177 per year) and period costs are much larger ($177 per year) and predicted using weekly wages by age and sex from the US Bureau of Labor Statistics (2014). Given excessive zeros (60%) in the cost data, two-part (first part logit, second part negative binomial) and two-component finite mixture (first component constant, second component truncated NB) models were used to predict costs as a function of smoking status, controlling for respondent demographics and health characteristics. Model fit statistics (Akaike and Bayesian Information Criterion [AIC and BIC, respectively]) and measures of model efficiency (overestimation of costs computed from a single-distribution generalized linear model (GLM) with NB distribution, which is also suited to highly skewed, count-like distributions. RESULTS: Among 36,883 working adults, the two-part model had the best fit statistics (AIC = 359159; BIC = 359355) compared with the mixture (AIC = 394778; BIC = 395001) and the GLM (AIC = 391201; BIC = 391312) models, and also the smallest MSE (10545417 compared with 10548256 and 21486386573, respectively). Overestimation of costs among those with zero cost was greatest in the single-distribution GLM (average predicted costs=$5306.76) compared with those from two-part ($5293.13) and mixture ($5293.04) models. CONCLUSIONS: In a broadly representative US population of working adults, two-part modeling was found to better represent highly zero-skewed indirect cost data compared with two-component finite mixture and single-distribution models.

ACCOUNTING FOR CAPACITY CONSTRAINTS IN ECONOMIC EVALUATIONS OF STRATIFIED MEDICINE: A SYSTEMATIC REVIEW
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OBJECTIVES: Stratified medicines are viewed as promising interventions to safely, effectively and efficiently introduce new therapies to eligible patients. However, the adoption of stratified medicines into practice has been slower than anticipated. Regulatory approval and reimbursement of stratified medicines creates additional complexity to ‘usual care’ methods to evaluate their effectiveness in patients. Objectives: To identify if, and how, previous economic evaluations of stratified medicines addressed capacity constraints and the potential impact on relative cost-effectiveness. METHODS: A meta-review conducted in February 2017 used an electronic search of the EMBASE and MEDLINE databases to identify all previous systematic reviews of economic evaluations relating to stratified medicines. Primary economic evaluations of interventions with encouraging explicit qualitative steps before a quantitative model is developed. Possible adaptations to supply-side methods to enable ‘fast and frugal’ approaches were noted. CONCLUSIONS: Both qualitative early-stage and ‘fast and frugal’ supply-side methods may be valuable to developers and warrant further development.
test-treat strategy were then collated from the published reviews. All extracted data were tabulated and a narrative analysis was used to identify whether studies had discussed potential capacity issues and whether they had used formal methods to account for these in the analysis. **RESULTS:** This study yielded 47 systematic reviews of economic evaluations of stratified medicines. From these reviews 165 primary economic evaluations on cost-effectiveness of test-treat strategies were identified (18% capacity issues). Of these, 30 (18%) evaluations discussed potential capacity issues: limited health budgets; lack of quality laboratory and testing processes; ease of use of the test and result need for clinical and economic evidence in implementation. Methods used to account for capacity constraints included: capturing inefficiencies in trials or models; sensitivity analysis; and scenario analysis. **CONCLUSIONS:** Capacity constraints may impact the short-term cost-effectiveness of stratified medicines but few economic evaluations account for such constraints. Methodological and model development improvements are needed to take account of capacity constraints such as dynamic cost-effectiveness models or value of implementation analysis.

**PMR49**

**REPORTED LIMITATIONS IN ECONOMIC MODELS FOR TREATMENTS OF SCHIZOPHRENIA: A SYSTEMATIC LITERATURE REVIEW**

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**OBJECTIVES:** Many pharmacoeconomic models in schizophrenia are available. Our objective was to overview the reported limitations of these models. **METHODS:** Pharmacoeconomic models in schizophrenia published after 2000 were identified through Medline, Embase and grey literature. Author-reported limitations relative to model structure, model input and other aspects were extracted. **RESULTS:** After screening 1889 records, 41 DTs and 56 CLMMs were included. Findings are generally in line with broad budget impact predictions performed by agencies regulating drug reimbursement. Further specification of covariates, improved handling of outliers and increased granularity could improve the model so that it can provide payers with improved insight in budget impact development and the associated risks.

**PMR50**

**COST-EFFECTIVENESS ANALYSIS OF CHIDAMIDE VERSUS CHEMOTHERAPY ON THE TREATMENT OF PERIPHERAL T-CELL LYMPHOMA PATIENTS IN CHINA**

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**OBJECTIVES:** Chidamide, a new subtype-selective HDACi, has been approved by CFDA as a new drugs for FTCL. This study was to assess the cost-effectiveness of Chidamide vs. chemotherapy in Chinese PTCL patients from a payer’s perspective. And to estimate the budget impact on health insurance fund after Chidamide adopted to national reimbursement drug list (NRDL). **METHODS:** A cost-effectiveness model and a budget impact model was constructed to assess the cost-effectiveness of Chidamide and chemotherapy in the treatment of FTCL and to estimate the potential budget impact once Chidamide is included in the national reimbursement drug list (NRDL). Utility value and clinical data were obtained from published literature and from the 8 phase clinical trial of chidamide. Cost data were collected from Chinese leading hospitals (Ruijin hospital, Beijing cancer hospital, Jiangsu Province Hospital etc.). The model calculated incremental cost effectiveness ratios (ICER) for the health insurance fund to estimate the LC. **RESULTS:** After screening 1889 records, 41 DTs and 56 CLMMs were included for model building and validation. The MAPE was 190% (inter-quartile range of 26% – 113%), the median was 70%. Data is highly skewed due to a limited number of drugs with a very high deviation between actual- and predicted budget impact. **CONCLUSIONS:** Budget impact data were derived from the Danish Health Data Authority, covering nationwide intra- and extramural turnover per drug and per year from 2004 to 2014. China is confronted with a huge oncology burden with a European Public Assessment Report published in 2008 or later were included. A mixed-effects model was used. Fixed effects include logarithmic time since MA and time interactions with product type and therapeutic area. Random effects are cost and time variability. The current method has the potential to provide payers with tools that would allow them to assess uncertainty around budget impact and the actual predicted budgets.

**PMR51**

**PREDICTING BUDGET IMPACT: A MIXED-EFFECTS MODEL APPROACH**

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**OBJECTIVES:** In the past decade, many new oncology drugs entering the market have raised concerns on affordability. At market authorization (MA), data on budget impact is limited. Uncertainty around budget impact pose substantial financial risks to payers. This analysis aims to test a novel method for budget impact estimation. This method has the potential to provide payers with a tool that would allow them to assess uncertainty around budget impact and the actual predicted budgets. **METHODS:** Budget impact data were derived from the Danish Health Data Authority, covering nationwide intra- and extramural turnover per drug and per year from 2004 to 2014. China is confronted with a huge oncology burden with a European Public Assessment Report published in 2008 or later were included. A mixed-effects model was used. Fixed effects include logarithmic time since MA and time interactions with product type and therapeutic area. Random effects are cost and time variability. The current method has the potential to provide payers with tools that would allow them to assess uncertainty around budget impact and the actual predicted budgets.

**PMR52**

**SYSTEMATIC REVIEW OF COHORT-LEVEL ECONOMIC MODELS FOR ANTIPSYCHOTICS IN SCHIZOPHRENIA**

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**OBJECTIVES:** Cohort-level (CL) models, including decision trees (DTs) and Markov models (MMs), are broadly used in economic evaluations of antipsychotics in schizophrenia. Objective was to compare main characteristics of these CL models in literature, to have a better understanding of their structural simplifications assumptions. **METHODS:** Cohort-level cost-effectiveness studies of antipsychotics in schizophrenia using DTs or MMs published after 2000 were identified through Medline, Embase, congresses websites and grey literature. Main characteristics were collected from Chinese leading hospitals (Ruijin hospital, Beijing cancer hospital, Jiangsu Province Hospital, Xi’an, China, 5Ruijin Hospital, Shanghai Jiaotong University School of Medicine, Shanghai, China, 6Shenzhen ChiShuirun Bioscience Ltd, Shenzhen, China, 7Shanghai Centennial Scientific Ltd; Shanghai, China, 8Institute of Pharmacoeconomic Sciences, Sun Yat-sen University, Guangzhou, China

**OBJECTIVES:** Chidamide, a new subtype-selective HDACi, has been approved by CFDA as a new drugs for FTCL. This study was to assess the cost-effectiveness of Chidamide vs. chemotherapy in Chinese PTCL patients from a payer’s perspective. And to estimate the budget impact on health insurance fund after Chidamide adopted to national reimbursement drug list (NRDL). **METHODS:** A cost-effectiveness model and a budget impact model was constructed to assess the cost-effectiveness of Chidamide and chemotherapy in the treatment of FTCL and to estimate the potential budget impact once Chidamide is included in the national reimbursement drug list (NRDL). Utility value and clinical data were obtained from published literature and from the 8 phase clinical trial of chidamide. Cost data were collected from Chinese leading hospitals (Ruijin hospital, Beijing cancer hospital, Jiangsu Province Hospital etc.). The model calculated incremental cost effectiveness ratios (ICER) for the health insurance fund to estimate the LC. **RESULTS:** After screening 1889 records, 41 DTs and 56 CLMMs were included for model building and validation. The MAPE was 190% (inter-quartile range of 26% – 113%), the median was 70%. Data is highly skewed due to a limited number of drugs with a very high deviation between actual- and predicted budget impact. **CONCLUSIONS:** Budget impact data were derived from the Danish Health Data Authority, covering nationwide intra- and extramural turnover per drug and per year from 2004 to 2014. China is confronted with a huge oncology burden with a European Public Assessment Report published in 2008 or later were included. A mixed-effects model was used. Fixed effects include logarithmic time since MA and time interactions with product type and therapeutic area. Random effects are cost and time variability. The current method has the potential to provide payers with tools that would allow them to assess uncertainty around budget impact and the actual predicted budgets.
Disease (CVD; n administration of the National Health and Wellness Survey who self-reported cardiac disease. 1University of East Anglia, Norwich, UK, 2Norfolk and Norwich University Hospital, Norwich, UK, 3University of Nottingham, Nottingham, UK

Objectives: To evaluate the cost-effectiveness of state-dependent and state-independent models in estimating the costs of treatment of a sample of breast cancer patients attended in a Mexican public health institution. Methods: We estimated the total costs of medical patients' care for the last year of the study by comparing generalized linear models (GLMs) that vary based on the distributional assumption for dependent variables (negative binomial and Tweedie) and the inclusion of an offset. Results: Fit indices (lower scores are better) included the Akaike information criterion (AIC), mean absolute error (MAE), root mean square error (RMSE). GLM parameters comparing CVD and control groups on the aforementioned outcomes were also reviewed to determine if modeling options affected statistical significance. Results: GLMs utilizing offsets outperformed models without them for all cost outcomes (average improvement of 210,638, r2 = 0.23, and AIC, MAE, and RMSE, respectively). Among those utilizing offsets, Tweedie outperformed on MAE and RMSE (average improvement of 253 and 70.209, respectively) while the negative binomial models had a slightly lower AIC (average improvement of 4,231). Additionally, Tweedie model parameter estimates had smaller confidence intervals and detected a significant effect of CVD on PCP visit costs (p = 0.05). Conclusions: We found statistical differences between clinical stage (p = 0.086), tumor receptors (p = 0.893), and kind of metastases between patients sample and hypotensive sample (p = 0.699). The total cost for the breast cancer women sample was $251,654.49 MXN, and for the hypothetical sample $329,503.85 MXN (p = 0.05), however we did not find differences in surgical procedures cost (p = 0.441). Conclusions: The Montecarlo predictive model could be a useful tool to estimate the health services expenditure and to calculate a budget close to real cost.

PRAM5 MODELLING TECHNIQUES FOR FITTING HEALTHCARE USE COSTS DERIVED FROM PATIENT REPORTED COUNTS OF HOSPITAL, ER, AND PCP VISITS
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Objectives: Determine the optimal method of modeling a zero-inflated outcome by comparing generalized linear models (GLMs) that vary based on the distributional assumption for dependent variables (negative binomial and Tweedie) and the inclusion of an offset. Methods: Participants of the 2016 EUS (France, Germany, Italy, Spain, and the United Kingdom), administration of the National Health and Wellness Survey who self-reported cardiac disease (n = 3,685) were compared without CVD (controls; n = 76,915) on costs derived from counts of hospitalizations, emergency department visits, and primary care provider (PCP) visits occurring in the preceding six months. Four different GLMs were fit for each outcome: negative binomial and Tweedie models with and without using an offset. The negative binomial is widely used, but the Tweedie distribution is a reasonable option because it allows for more flexible modeling of zeros and extreme values. Using an offset allows for the modeling of self-reported counts directly. Fit indices (lower scores are better) included the Akaike information criterion (AIC), mean absolute error (MAE), and root mean square error (RMSE). GLM parameters comparing CVD and control groups on the aforementioned outcomes were also reviewed to determine if modeling options affected statistical significance. Results: GLMs utilizing offsets outperformed models without them for all cost outcomes (average improvement of 210,638, r2 = 0.23, and AIC, MAE, and RMSE, respectively). Among those utilizing offsets, Tweedie outperformed on MAE and RMSE (average improvement of 253 and 70.209, respectively) while the negative binomial models had a slightly lower AIC (average improvement of 4,231). Additionally, Tweedie model parameter estimates had smaller confidence intervals and detected a significant effect of CVD on PCP visit costs (p = 0.05). Conclusions: We found statistical differences between clinical stage (p = 0.086), tumor receptors (p = 0.893), and kind of metastases between patients sample and hypotensive sample (p = 0.699). The total cost for the breast cancer women sample was $251,654.49 MXN, and for the hypothetical sample $329,503.85 MXN (p = 0.05), however we did not find differences in surgical procedures cost (p = 0.441). Conclusions: The Montecarlo predictive model could be a useful tool to estimate the health services expenditure and to calculate a budget close to real cost.

PRAM5 WHAT IS THE SCOPe AND QUALITY OF ECONOMIC EVIDENCE AVAILABLE FOR ATOPIC ECZEMA? A SYSTEMATIC REVIEW AND META-ANALYSIS OF BUDGET IMPACT STUDIES
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Objectives: To assess economic evidence in the Global Resource of Eczema Trials (GREAT) database and identify gaps in the existing literature. Methods: A systematic review and meta-analysis was conducted on 22nd May 2017. Studies eligible for inclusion were primary empirical studies either reporting the results of a cost of illness study or evaluating the cost, utility or full economic evaluation of interventions or prevention for eczema. Two reviewers independently assessed studies for eligibility and performed data abstraction collecting details of the study characteristics, costing and outcome methods, and quality assessment. Methodological quality was assessed using the CHEERS checklist. Results: Cost data for the hypothetical sample $329,503.85 MXN (p = 0.05). Conclusions: The Montecarlo predictive model could be a useful tool to estimate the health services expenditure and to calculate a budget close to real cost.

A740
RESEARCH ON METHODS – Databases & Management Methods

PRM5

CONVERSION OF A FRENCH ELECTRONIC MEDICAL RECORD (EMR) DATABASE INTO THE OBSERVATIONAL MEDICAL OUTCOMES PARTNERSHIP COMMON DATA MODELS (OMOP CDMS)

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OBJECTIVES: The Observational Medical Outcomes Partnership (OMOP) Common Data Model (CDM) provides a structure for organizing and standardizing patient data coming from disparate data sources. OMOP-CDM has never been implemented on French data. This work describes the conversion and evaluation of the French Disease Analyzer database (DA) to the OMOP-CDM model. The converted database (DA-OMOP) was validated by replicating a published study performed with an equivalent dataset [1].

RESULTS: The DA database (QuintilesIMS, EMF, France) is an electronic medical record database of 1200 General Practitioners in France. DA data were mapped into CDM following the OMOP V5 specification and converted into different domains using corresponding tables to convert native language into common language. Accuracy and completeness of the information were evaluated. Conversion was tested with the replication of a published study regarding antithrombotic treatments in patient with Atrial Fibrillation (AF) conducted with LPD (QuintilesIMS, ERM France). Results obtained with DA-OMOP were compared with those obtained with DA native and LPD.

RESULTS: In total 99% of disease codes, exams, procedures and devices codes and 88% of drug codes were converted. Missings codes (12%) were related to homeopathy and OTC treatments. In DA-OMOP, mean age of AF patients was 74.4 years (versus 74.6 in DA and 74.6 in LPD), 58.4% were men (versus 58.4% in DA and 59.5% in LPD) and 81.3% had a CHADS2 score ≥1 (versus 81.6% in DA and 83.1% in LPD). Additionally, 51.5% of AF thromboembolic high risk patients (45% in LPD) were either not treated or inadequately treated according to ESC guidelines and 62.5% of patients with a score CHADS2=0 (against 66.4% in LPD) were over-treated.

CONCLUSIONS: Agreement between datasets indicates a high level of convergence and provides a robust validation for DA-OMOP. This will enable the integration of French data into the international OMOP network.

PRM60

IS IT POSSIBLE TO ACCURATELY IDENTIFY RARE DISEASES USING NATIONAL HOSPITAL DISCHARGE DATABASES?

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OBJECTIVES: Generation of accurate data in a timely manner is often challenging for rare diseases. Data from an administrative discharge database, which can be an alternative as prospective studies, may be important and have methodological limitations. This study (HO-15-16391, funded by GSK) aimed at evaluating the feasibility of describing the hospital burden of Pulmonary Arterial Hypertension (PAH) in France using the French National Hospital discharge database (PMSI).

METHODS: An exploratory analysis was performed from the PMSI databases. All 2013 hospital stays with ICD-10 codes for PAH (I27.0, I27.2) whether principal or associated diagnosis were extracted. Only incident adult patients were selected (not hospitalized with PAH in 2011-2012) and followed during 1 year. RESULTS: 38,834 patients were extracted in 2013. A more discriminating algorithm was defined with medical experts to get a specific selection of the study population. The presence of lung transplantation, prostacyclin administration and right heart catheterization at inclusion or during follow-up were tracked as potential surrogates for PAH.

Concomitant diseases such as chronic left heart failure, chronic lung diseases, thrombosis, prior left valvular surgery were excluded as causes of primary pulmonary hypertension group. The last criteria for true PAH was the presence of at least one PAH-related stay after diagnosis. In total, 384 incident patients were included. This cohort is consistent with the estimation from the French PAH national registry in terms of number of patients and demographic characteristics. Lack of clinical information prevented us from exploring specific sub-groups (NYHA functional classes).

CONCLUSIONS: The PMSI database is an accessible and relevant source of data, especially for diseases mainly managed in hospital. Its exhaustiveness allows to overcome the low frequency of events that is specific to rare diseases and thus to gain a representative picture of the hospital burden of disease. Nevertheless, clinical information is limited and requires assumptions validated by medical experts.

PRM61

REGULATORY & REIMBURSEMENT DECISIONS DATABASE FOR INNOVATIVE DRUGS TO IMPROVE CONSISTENCY OF DECISION-MAKING

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OBJECTIVES: To create a reimbursement applications database for innovative drugs. Particularly, the further goal is to promote case-based analogous precedent-conscious reasoning and evidence-based decision making in Poland. METHODS: Information was gathered from documents published by the Agency for Health Technology Assessment and Tariff System (AHTAPoL) and the Ministry of Health (MoH) between January 2012 and June 2017. Information from statements of AHTApoL’s Transparency Council (STC), recommendations of AHTApoL’s President (RPA), and other documents was extracted. The prepared database includes 470 reimbursement applications corresponding to 334 brand names and 288 unique substances. Applications were submitted by 100 companies. The database consists of 60 categories and includes the following applicant name, product description, indication, market authorisation type, detailed process timelines, requested reimbursement mode, STC, RPA, MoH, discrepancy between the presented condition and the considered condition, and ICD-9 code if applicable, and key findings from available clinical analyses.

CONCLUSIONS: Health care systems based on public money should treat all applications equally if the conditions for the decision are similar and should provide equal access to benefits for patients with similar needs. The need for data is based on all precedent decisions of marketing authorization and public payer practices of similar products or similar indications. This approach opens up the possibility for improvement of transparency and decision-making practices not only in Poland, but in each country.

PRM62

COMPARISON OF ICD-9 TO ICD-10 CROSSWALKS DERIVED BY PHYSICIAN AND CLINICAL CODER VS. AUTOMATED METHODS

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OBJECTIVES: Coding algorithms are critical for identifying patient samples, comorbidities, and outcomes in studies of claims or electronic medical record data, but algorithms developed with International Classification of Diseases, Ninth Revision (ICD–9) codes are obsolete in current data. The present study sought to compare ICD-9 to ICD-10 crossovers from General Equivalence Mappings (GEMs) and compare them to crosswalks derived by a clinician and clinical coder, to evaluate whether automated methods are sufficient for deriving ICD-10 algorithms.

METHODS: Ten conditions from various therapeutic areas were selected for comparison. Existing ICD-9 algorithms were entered into GEMs to derive ICD-10 crossovers, and a physician and clinical coder completed a questionnaire to guide the development of ICD-9 to ICD-10 algorithms for the same conditions. Differences between the crosswalks were summarized using descriptive statistics and the theoretical impact of the differences were assessed qualitatively.

RESULTS: Crosswalks identified by the physician/coder were typically far more inclusive than those from GEMs. Crosswalks from GEMs were missing a mean of 64 (median: 40; range: 3–235) crossovers compared to those from the physician/coder, while the physician/coder crossovers missed far fewer (mean: 11.3; median: 5.5; range: 0–53) compared to GEMs. Crosswalks for concomitant diseases such as chronic left heart failure, chronic lung diseases, and asthma were poor. GEMs had the most discrepancies (>130) while crossovers for acute myocardial infarction and hypertension had the fewest (<25). Generally, conditions with the most discrepancies included those with various etiologies, conditions with a variable clinical presentation, those that may be a side effect of medications, and those that require procedure codes to supplement identification.

CONCLUSIONS: The use of GEMs alone is likely not sufficient for identifying appropriate ICD-10 crossovers from ICD-9 algorithms, but any algorithm should be reviewed by researchers prior to use in a study. Future research could include the validation of crossovers after an examination of patient charts.

PRM63


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OBJECTIVES: Little information is available on the role of the general practitioner (GP) in colorectal cancer (CRC) care. Therefore, the objective of this study was to establish a link between the Netherlands Cancer Registry (NCR) and the GP Database of the PHARMO Database Network and creating a CRC-GP population.

METHODS: A list of 255,000 performed colorectal cancer operations in the Netherlands was matched with the GP Database of the PHARMO Database Network which comprises data from electronic patient records registered by GPs, including information on diagnoses/symptoms, laboratory test results, referrals and healthcare product/drug prescriptions. After pairing records in both databases on gender and birth year, a linkage weight was calculated based on: first initial, first letter last name, 4-digit zip code and preence/absence of cancer related variables as singular variables. Patients diagnosed with CRC between 1998-2014 were selected, resulting in a CRC-GP population. The representativeness of this population to the total NCR population was evaluated by comparing the distribution of gender, age at tumour diagnosis, tumour stage and tumour site.

RESULTS: In total, there were more than 19,000 CRC patients in the linked CRC-GP population, of which 66% were diagnosed with colon cancer, 30% with rectum cancer and 4% with rectosigmoid cancer. These patients were representative for the cancer patients included in total NCR. The difference in percentage between these two populations showed that patients who were linked tended to be somewhat younger (88.2 years vs. 69.7 years) and were slightly less often diagnosed with an advanced tumour stage (48% vs. 51%). CONCLUSIONS: The CRC-GP population is representative of the total NCR population. The CRC-GP population will create more insight into the role of the GP in CRC care and will give more opportunities to monitor the patients before, during and after cancer diagnosis.

PRM64

LEVERAGING ELECTRONIC HEALTH RECORDS TO MEET THE REAL WORLD EFFECTIVENESS NEEDS OF HTA: A UK PERSPECTIVE

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OBJECTIVES: The inclusion of real world evidence in HTA submissions has become increasingly desirable. In the UK, databases containing data collected in primary care represent a ready source of real world data however they continue
to be underutilized in this field. We sought to review the use of such databases in 10 EMA technology assessments (TAs) and provide recommendations regarding their use in future submissions. METHODS: The nice web site was searched for keywords relating to the main primary care databases in the UK. All nice TAs identified through this search were screened and information on the data source and the way the data was used in the submission was extracted. Results: the data by the evidence review group (ERG) and committee were also extracted and reviewed. RESULTS: A total of 13 nice TAs were identified. Between 2007 and 2010, 20 nice TAs were published in which 12 nice TAs used 27% and 26% of new drugs had patient-reported outcome (PRO) labeling. Our objectives were to expand to the review all clinical outcome assessments (COAs) for 2013 to 2016. The PROLABELS database allowed to calculate the drug use parameters by means of a systematic and effective method. The data were generally well received by the ERGs/committees. Criticisms of the data typically occurred where the results of the endpoint position was not related to the number of parameters in an economic model. The data were generally well received by the ERGs/committees. Criticisms of the data typically occurred where the results of the endpoint position was not related to the number of parameters in an economic model. The data were generally well received by the ERGs/committees. Criticisms of the data typically occurred where the results of the endpoint position was not related to the number of parameters in an economic model. The data were generally well received by the ERGs/committees. Criticisms of the data typically occurred where the results of the endpoint position was not related to the number of parameters in an economic model. The data were generally well received by the ERGs/committees. 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population representativeness, disease coverage (non-small cell lung cancer (NSCLC) and colorectal cancer), data quality, completeness, source type, estimated size and other attributes. Final selection was based on: pan-European coverage, research goal alignment and timely data availability. **RESULTS:** In addition to SCAN-LEAF (pre-identified Scandinavian RWDS), 490 RWDS were identified. 124 (25.3%) were shortlisted. Of the shortlisted, 15 (12.1%) are under appraisal, 91 (73.4%) have completed appraisal, 4 (3.2%) are under assessment and 14 (11.3%) are fully assessed. Of the assessed RWDS, 7 (50.0%) have progressed to a structured assessment of research goal alignment and treatment/practice patterns, 6/7 address pharmacovigilance, 5/7 address healthcare resource utilization and 1/7 addresses patient-reported outcomes. These 7 RWDS plus SCAN- LEAF will provide – via INCALSC, SCLC and next indications. A structured assessment of RWDS facilitated development of a flexible collaborative research framework. The challenges of conducting such initiatives were also reviewed. The SCAN-LEAF (2006) and I-O Optimise (2016) process demonstrate the importance of having both early engagement and that the number of institutions involved is not necessarily a good indicator of the process. **CONCLUSIONS:** A structured assessment of RWDS enabled examination of a wide range of research questions, reflects the diversity of real-world clinical practice and provides standardisation that allows insights to be drawn across data sources. I-O Optimise has the potential to elucidate real-world management of lung cancer in Europe, complementing ongoing clinical trial-based research.

**PMR70**

**MICROCLASSIFICATION OF DIABETES TYPE I IN GERMAN CLAIMS DATA**

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**OBJECTIVES:** The two major subtypes of diabetes, type I and II, are based on different pathophysiology processes. Their correct diagnosis is important for a proper treatment of patients, assignment to appropriate disease management programs (DMP) and correct billing of medical costs. However, health claims data shows many patients diagnosed with both diabetes types I and II. Based on the prevalence of having both diabetes types I and II, the number of patients with at least one diabetes type I DMPs.

**RESULTS:** 88.1% of the insurants with a type I diagnosis (45,632 of 51,812) also had a type II diagnosis. Reducing the population to double the size of type I DMPs.

**PMR73**

**IDENTIFYING PATIENTS WITH LUPUS NEPHRITIS IN THE UNITED KINGDOM (UK) CLINICAL PRACTICE RESEARCH DATALINK (CPRD)**

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**OBJECTIVES:** Cost-effectiveness evaluations in oncology based on data available at the time of initial approval can be challenging. Available clinical data are often limited to intermittent immature survival data; inclusion criteria may limit the external validity of results; evidence limited to one head-to-head comparison limits network meta-analysis (NMA) feasibility. Re-evaluation using real world evidence can solve these issues. However, several shortcomings need to be considered when estimating comparative effectiveness. This study explores potential solutions in the context of real-world evidence on metastatic Castration Resistant Prostate Cancer (mCRPC) in patients pre-treated by docetaxel. **METHODS:** A three-state survival model was constructed to estimate the cost-effectiveness of post-docetaxel mCRPC treatments in France and populated with data from the Janssen-European Prostate Cancer Registry (NCT02236637). Baseline characteristics, progression-free survival and overall survival were obtained for abiraterone acetate plus prednisone (AAP) (n=1044) and for cabazitaxel (n=145). Survival was extrapolated based on the NICE guidelines. Alternative methodologies were tested to take into consideration the differences in patients’ characteristics between each treatment arm, including a cox model, adjusted HR, evidence from published NMA based on any available interventions, adjusted HR based on propensity score matching and restricting analysis to a subgroup of patients presenting the same characteristics. **RESULTS:** Variation in the results was observed with the different methodologies. AIC and NMA were analogous for both treatments; cabazitaxel was dominated (the most expensive and less efficient treatment) on the efficiency frontier. In some cases, AAP was more expensive and efficient than enzalutamide with Incremental Cost-Effectiveness Ratios (ICERs) between 2,400 and 46,000 €/QALY. In other cases, enzalutamide was either dominated or more expensive and efficient than AAP with ICERs between 60,000 and 130,000 €/QALY. **CONCLUSIONS:** Different methodological approaches lead to different comparative effectiveness results; in CE evaluation is feasible and yielded coherent results despite the different methodologies used.
A744

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laborative scientific program Epidemium. RESULTS: Data access was granted to an open community of scientists and analysts based on 12 French Non-Interventional studies, more than 1000 sites and 7761 patients: 255 (3%) with follicular lymphoma, 765 (10%) with colo-rectal cancer, 4042 (52%) with neoplastic disease (2968 (25%) solid tumor and 1066 (14%) malignant hemopathies), 793 (10%) with lung cancer, 1908 (25%) with brain tumors, and 181 patients with other diseases. The final analysis included 1298 actionable aggregates, corresponding to 1560 modalities. Mean age was 62.8 ± 12.2 years and 4658 (60.1%) women were included. CONCLUSIONS: Discussions with local authorities helped building a multivariable prediction algorithm which resulted in both ensuring data privacy with a lower wealth of valuable information than individual data and actionable open access to scientists.

PRM75 ASSESSING THE VALUE OF DECISION TREES AS A METHOD FOR IDENTIFYING PATIENT SUBGROUPS

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OBJECTIVES: Standard methods of identifying patient subgroups typically require pre-specified attributes of interest, potentially overlook important attributes. This study assessed the value of decision trees as a method for empirically identifying patient subgroups and to evaluate the decision tree and visualization functionality in SAS Enterprise Miner. METHODS: Electronic Medical Record (EMR) data from a US medical retina clinics used were created to use a dataset of patients whose eyes were treated using anti-vascular endothelial growth factor (anti-VEGF) products. The decision tree algorithm used variables such as baseline visual acuity (VA) and number of doses to partition the patients into subgroups which were homogeneous in their subsequent VA (outcome measure). To ensure that the decision tree remained interpretable, users specified constraints e.g. maximum tree depth and minimum number of observations in terminal nodes. Users also injected clinical domain knowledge by specifying a variable and split point on which to enforce a split at any point in the tree. RESULTS: Homogeneous subgroups generated by the tree generally corresponded to the known strata of patients receiving VA augmentation. However, once covariates were added, efficacy diminished. Independent variables, such as the location of the latitude in which the study was performed, appeared to be partially driving the results. CONCLUSIONS: Meta-analysis is useful in combining data from various studies and drawing general conclusions. However, with numerous assumptions, methods, and reported statistics available, understanding and identifying the appropriate study and model selection are important in ensuring the correct interpretation of results.

PRM76 ADJUSTING FOR SELECTION BIAS IN EVALUATING TWO-DOSE HUMAN PAPILLOMAVIRUS VACCINE COVERAGE AMONG ADOLESCENTS IN THE UNITED STATES

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OBJECTIVES: Recent changes to the recommended human papillomavirus (HPV) vaccine package include reduction from a 3- to 2-dose schedule (if initiated before age 15) and number of doses to partition the patients into subgroups which were homogeneous in their subsequent VA (outcome measure). To ensure that the decision tree remained interpretable, users specified constraints e.g. maximum tree depth and minimum number of observations in terminal nodes. Users also injected clinical domain knowledge by specifying a variable and split point on which to enforce a split at any point in the tree. RESULTS: Homogeneous subgroups generated by the tree generally corresponded to the known strata of patients receiving VA augmentation. However, once covariates were added, efficacy diminished. Independent variables, such as the location of the latitude in which the study was performed, appeared to be partially driving the results. CONCLUSIONS: Meta-analysis is useful in combining data from various studies and drawing general conclusions. However, with numerous assumptions, methods, and reported statistics available, understanding and identifying the appropriate study and model selection are important in ensuring the correct interpretation of results.

PRM77 COMPARISON OF VARIOUS META-ANALYSIS TECHNIQUES

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OBJECTIVES: This study assessed the value of decision trees as a method for empirically identifying patient subgroups and to evaluate the decision tree and visualization functionality in SAS Enterprise Miner. METHODS: Electronic Medical Record (EMR) data from a US medical retina clinics used were created to use a dataset of patients whose eyes were treated using anti-vascular endothelial growth factor (anti-VEGF) products. The decision tree algorithm used variables such as baseline visual acuity (VA) and number of doses to partition the patients into subgroups which were homogeneous in their subsequent VA (outcome measure). To ensure that the decision tree remained interpretable, users specified constraints e.g. maximum tree depth and minimum number of observations in terminal nodes. Users also injected clinical domain knowledge by specifying a variable and split point on which to enforce a split at any point in the tree. RESULTS: Homogeneous subgroups generated by the tree generally corresponded to the known strata of patients receiving VA augmentation. However, once covariates were added, efficacy diminished. Independent variables, such as the location of the latitude in which the study was performed, appeared to be partially driving the results. CONCLUSIONS: Meta-analysis is useful in combining data from various studies and drawing general conclusions. However, with numerous assumptions, methods, and reported statistics available, understanding and identifying the appropriate study and model selection are important in ensuring the correct interpretation of results.

PRM78 GUIDANCE FOR DEVELOPING A STUDY PROTOCOL OF A CAUSAL COMPARATIVE EFFECTIVENESS ANALYSIS IN “BIG DATA”: THE CASE OF WHEN TO START STATIN TREATMENT

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OBJECTIVES: This study assessed the value of decision trees as a method for empirically identifying patient subgroups and to evaluate the decision tree and visualization functionality in SAS Enterprise Miner. METHODS: Electronic Medical Record (EMR) data from a US medical retina clinics used were created to use a dataset of patients whose eyes were treated using anti-vascular endothelial growth factor (anti-VEGF) products. The decision tree algorithm used variables such as baseline visual acuity (VA) and number of doses to partition the patients into subgroups which were homogeneous in their subsequent VA (outcome measure). To ensure that the decision tree remained interpretable, users specified constraints e.g. maximum tree depth and minimum number of observations in terminal nodes. Users also injected clinical domain knowledge by specifying a variable and split point on which to enforce a split at any point in the tree. RESULTS: Homogeneous subgroups generated by the tree generally corresponded to the known strata of patients receiving VA augmentation. However, once covariates were added, efficacy diminished. Independent variables, such as the location of the latitude in which the study was performed, appeared to be partially driving the results. CONCLUSIONS: Meta-analysis is useful in combining data from various studies and drawing general conclusions. However, with numerous assumptions, methods, and reported statistics available, understanding and identifying the appropriate study and model selection are important in ensuring the correct interpretation of results.

PRM79 REAL WORLD EVIDENCE IN GLAUCOMATOUS DISEASES: EMRA DATA IS INDISPENSIBLE FOR UNDERSTANDING PATIENT JOURNEYS AND OPTIMIZING CARE

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OBJECTIVES: This study assessed the value of decision trees as a method for empirically identifying patient subgroups and to evaluate the decision tree and visualization functionality in SAS Enterprise Miner. METHODS: Electronic Medical Record (EMR) data from a US medical retina clinics used were created to use a dataset of patients whose eyes were treated using anti-vascular endothelial growth factor (anti-VEGF) products. The decision tree algorithm used variables such as baseline visual acuity (VA) and number of doses to partition the patients into subgroups which were homogeneous in their subsequent VA (outcome measure). To ensure that the decision tree remained interpretable, users specified constraints e.g. maximum tree depth and minimum number of observations in terminal nodes. Users also injected clinical domain knowledge by specifying a variable and split point on which to enforce a split at any point in the tree. RESULTS: Homogeneous subgroups generated by the tree generally corresponded to the known strata of patients receiving VA augmentation. However, once covariates were added, efficacy diminished. Independent variables, such as the location of the latitude in which the study was performed, appeared to be partially driving the results. CONCLUSIONS: Meta-analysis is useful in combining data from various studies and drawing general conclusions. However, with numerous assumptions, methods, and reported statistics available, understanding and identifying the appropriate study and model selection are important in ensuring the correct interpretation of results.

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OBJECTIVES: Very little is known about patient characteristics, treatment patterns and outcomes of primary and secondary open-angle glaucomatous disease in the UK. We invited ophthalmology centers who are users of a uniformly structured electronic medical record (EMR) system (Medisoft, Leeds UK) to establish a real-world evidence platform in glaucoma. METHODS: EMR data, including visual field (VF) examination results and ophthalmic laboratory measurements of patients with glaucomatous diseases, were collected from participating centers in the UK. Patient eyes were included if a diagnosis code of primary open angle glaucoma (POAG), ocular hypertension (OHT) only and suspected glaucoma (SG) only was present. Incidents were free of disease-modifying treatment and had ≥3 VF measurements collected in a 24-month period prior to first diagnosis, once the EMR was classified as well established (i.e. ≥ 1 yr after implementation). We present summary statistics on intraocular pressure (IOP) at index date (±6 months).

RESULTS: Six countries contributed 63,376 unique patients and 119,294 eyes (52% females in both), among which a POAG, OHT or SG diagnosis was recorded 31,890, 32,507 and 30,998 times, respectively. Overall, 21,601 eyes were included in the POAG cohort with 9,606 in the OHT cohort and 11,995 in the SG cohort. IOP mean ± SD (SD) at index the mean IOPs (Goldmann applanation tonometry) were 18 mmHg (SD 6), 22 mmHg (SD 5) and 18 mmHg (SD 4) for POAG, OHT and SG patients respectively. Mean IOP values for eyes with incident diagnoses were 20.1 (SD 6.7) for POAG, 23.5 (SD 4.3) for OHT, and 20.8 (SD 4.4) for SG eyes (p < 0.001).

CONCLUSIONS: Structured EMR systems can greatly facilitate real-world ophthalmology studies on a much larger scale than single center studies. We expect further unique evidence on clinical practice and treatment patterns from the platform.

PRM83

OVERCOMING THE LIMITATIONS OF CLAIMS DATA: LINKAGE OF CLAIMS DATA WITH SECONDARY DATA SOURCES IN GERMANY

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OBJECTIVES: Claims data analyses offers several strengths like high actuality of the data and health resource utilization under real-life conditions independent from the study design. Furthermore, claims data provides an opportunity to identify all reimbursed healthcare costs from a Statutory Health Insurance perspective, at least in the German setting. Nevertheless, researchers have to face certain limitations, e.g. lag of clinical data or patient reported outcomes. To overcome these limitations, claims data can be linked to other data sets to obtain primary data sources, as well as the real world or secondary data sources.

AIM of this study was to give an overview of opportunities and challenges of linking claims data with other data sources in Germany. METHODS: All publications available in PubMed until June 2017 using data linkage between German claims data and further primary or secondary data sources were included in this study by searching for “link” in combination with “sickens fund”, “health insurance”, “claims”, and “German”. “Study focus, study periods of the applied data, claims and further data sources are documented as well as the real world or secondary data sources, the method of linkage and the analysis strategy.

RESULTS: The search resulted in n = 92 studies, of which n = 23 were included in the analysis after abstract screening. As increasing application of data linkage with claims data can be observed over recent years. Most studies focused on disease specific research questions. Primary data collection via questionnaires (n = 8) was used predominantly as linked data source. Data linkage was motivated by being able to link missing/unavailable information to the claims database (n = 12). CONCLUSIONS: Data linkage constitutes a promising opportunity to overcome limitations of claims data research although the application of data linkage in German healthcare studies is a rarely utilized approach. However, most of the studies used primary data source to close information gaps of claims data, however several challenges have to be addressed to leverage this opportunity.

PRM82

ETHICAL CONSIDERATIONS: CONDUCTING RETROSPECTIVE NON-INTERVENTIONAL MEDICAL RECORD REVIEW STUDIES IN EUROPE

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OBJECTIVES: Ethics requirements in retrospective non-interventional medical record reviews (NIMRR) are highly variable by country. National requirements range from none to multiple submissions requiring approvals. At the site-level, requirements range from none to multiple submissions requiring approvals. In this study, we sought to quantify variability in ethics-related aspects of NIMRRs. METHODS: Based on internal project data, we evaluated variability in ethical and regulatory procedures for 13 (12 oncology, 1 psychiatry) NIMRRs completed across 15 countries in Europe. RESULTS: Sixty-one national on one national notification/submission was reviewed and approved across 8 countries; 21 single-site submissions were approved across 3 countries; and 56 notifications/submissions to all participating sites were approved in 6 countries, resulting in >7,300 medical records abstracted. Five countries did not have established ethics requirements for conducting anonymized retrospective reviews. Among those that did, the timeline from ethics initiation to launch of data abstraction varied significantly (5 days to 1 year). Most of the studies used primary data source to close information gaps of claims data, however several challenges have to be addressed to leverage this opportunity.
OBJECTIVES: The hepatitis C virus (HCV) is a chronic, life-threatening disease which is usually diagnosed late. Accurate time to diagnosis can lead to earlier treatment and improved patient outcomes. This was a retrospective database study to develop an algorithm which could be used to identify undiagnosed patients with HCV based on routinely collected patient data. The effectiveness of non-parametric matching methods was compared with that of more conventional parametric methods. METHODS: Data were extracted from US prescription and open-source medical claims between 2010 and 2016. Outcomes for HCV patients were censored as 1, outcomes for non-HCV patients were set to 0. Index date for HCV patients was the first observed date of diagnosis, ensuring only pre-diagnosed predictors were used. The most recent activity was used as the index date for non-HCV patients. Features captured included demographics, treatments, procedures and symptomatology. A total of 5,000 patients were used as each of the 100 bootstrap samples. A total of 100,000 patients were used in total. RESULTS: The best fit was based on minimizing the area under the curve (AUC) on the 30-months follow-up data and best fit was assessed using the 50-months follow-up data. The best fit was based on minimizing the area under the curve (AUC) between the observed and fitted curves. The edges of the distributions took longer to stabilise in all cases, not stabilising within 1% of the mean by 1,000 simulations in over 98% of scenarios. For the ICER the mean ICER was not affected by convergence and use empirical data to propose simulation numbers for different outcomes. Apart from the mean ICER it is seldom defined. Some methods to assess convergence of the mean ICER (such as ‘jackknifing’) exist, but are rarely used. In this study, we aim to define convergence for the model-based evaluations comprised surgical (n = 20), medical (n = 16), service-level (e.g. telehealth, specialist clinics) (n = 9) or screening/monitoring-type interventions (n = 4), or assessed disease management (n = 2). One study compared multiple interventions. The most common modelling framework was a Markov cohort model (n = 11), with models predominantly modelling disease progression via New York Heart Association grade or using a simple two-state survival model (n = 1). Additional state transition states for hospitalisation events. Two studies adapted the Markov cohort approach for sub-group analyses using risk equations. Eight studies reported a patient-level discrete event simulation approach, and four studies were decision modelling approaches. Internal inputs to model development were data used to model mortality and to predict hospital admissions. CONCLUSIONS: A range of modelling approaches have been used successfully to assess the cost-effectiveness of HF interventions. Whilst the simple Markov cohort approach appears appropriate for the decision problem stated in most cases (i.e. estimating cost effectiveness), other methods have been used to good effect. To date modelling has not addressed the specific nature of the impact of HFI on quality of life/wellbeing, other than via use of NYHA and AHA for impact of hospital admissions. Future modelling could further consider this through use of natural history states using health states informed by health outcome measures commonly used in HF.

PRM88 PROBABILISTIC SENSITIVITY ANALYSIS IN HEALTH ECONOMIC MODELS: HOW MANY SIMULATIONS SHOULD BE RUN? Imran A1, Agrawal A2, Bernabeu-Wittel E2, Finkelstein JA2, Harnois M1, Humber HM1, Jay S1, Klimas P1, Levit BM1, Waller LA3, Jay S1

OBJECTIVES: Probabilistic sensitivity analysis (PSA) addresses parameter uncertainty inherent in a decision problem, and provides the most accurate incremental cost-effectiveness ratio (ICER) for non-linear models. Literature on the number of simulations required is sparse, with no generally accepted ‘sufficient number’, or until ‘convergence’ which is very seldom defined. Some methods to assess convergence of the mean ICER (such as ‘jackknifing’) exist, but are rarely used. In this study, we aim to define convergence for the model-based evaluations comprised surgical (n = 20), medical (n = 16), service-level (e.g. telehealth, specialist clinics) (n = 9) or screening/monitoring-type interventions (n = 4), or assessed disease management (n = 2). One study compared multiple interventions. The most common modelling framework was a Markov cohort model (n = 11), with models predominantly modelling disease progression via New York Heart Association grade or using a simple two-state survival model (n = 1). Additional state transition states for hospitalisation events. Two studies adapted the Markov cohort approach for sub-group analyses using risk equations. Eight studies reported a patient-level discrete event simulation approach, and four studies were decision modelling approaches. Internal inputs to model development were data used to model mortality and to predict hospital admissions. CONCLUSIONS: A range of modelling approaches have been used successfully to assess the cost-effectiveness of HF interventions. Whilst the simple Markov cohort approach appears appropriate for the decision problem stated in most cases (i.e. estimating cost effectiveness), other methods have been used to good effect. To date modelling has not addressed the specific nature of the impact of HFI on quality of life/wellbeing, other than via use of NYHA and AHA for impact of hospital admissions. Future modelling could further consider this through use of natural history states using health states informed by health outcome measures commonly used in HF.
markers and estimation of their long-term impact via predictive risk equations. The evidence base from cardiovascular outcome trials (CVOTs) in T2DM is growing rapidly, due to FDA requirements for new treatments to demonstrate CV safety versus placebo as part of standard care. This new generation of CVOTs may require a new approach for associated cost-effectiveness models in T2DM.

**METHODS:** A targeted literature search identified opportunities for updating CVOT evidence from approaches taken in other therapy areas. Current NICE clinical and public health guidelines for CV outcomes were reviewed to identify methods evidence base for new economic evaluations. Application of CVOT evidence to outcomes 17 additional guidelines for treatment of hypertension, lipid modification, myocardial infarction (MI), stroke, and other CV conditions. A total of 21 cost-effectiveness models were identified that explicitly modelled at least one of the following: MI, stroke, and revascularisation (peripheral) arterial disease (PAD), heart failure and/or CV mortality. The majority of evaluations utilised lifetime (n=19) cohort-level (n=20) Markov modelling approaches; the only patient-level data utilised was from two intervention and control arms. Interventions were considered based on analyses were commonly applied to baseline risks of CV events, obtained from clinical trials and observational studies, including audit data. Surrogate markers were rarely modelled and the use of published risk equations was limited. Risk: Framingham (n=4), QRisk2 (n=1) and UKPDS (n=1) in the only T2D-specific evaluation.

**CONCLUSIONS:** When modelling the outcomes of CVOTs in T2DM patients, alternative modelling methods may be more appropriate than typical T2D approaches. More suitable framework, consistent with the approach taken in CV modelling, may allow faster assessment when the evidence via the application of utility risk values.

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1. Soikkeli F1, Mueller S2, Groth A3, Hashim M1, Wilke T3, Heeg B4, Tavenraet A5, Soethout E6, Boocks M7. QUAlITy ADJUSTED lIFE EXPECTANCy FOR IMPROVED glUCOSE CONTROl IN TyPE 2 DIABETES (PAD), heart failure and/or CV mortality. The majority of evaluations utilised lifetime (n=19) cohort-level (n=20) Markov modelling approaches; the only patient-level data utilised was from two intervention and control arms. Interventions were considered based on analyses were commonly applied to baseline risks of CV events, obtained from clinical trials and observational studies, including audit data. Surrogate markers were rarely modelled and the use of published risk equations was limited. Risk: Framingham (n=4), QRisk2 (n=1) and UKPDS (n=1) in the only T2D-specific evaluation.

**CONCLUSIONS:** When modelling the outcomes of CVOTs in T2DM patients, alternative modelling methods may be more appropriate than typical T2D approaches. More suitable framework, consistent with the approach taken in CV modelling, may allow faster assessment when the evidence via the application of utility risk values.

**References:**


**CONCLUSIONS:**

**References:**

PM96 SURVIVAL OUTCOMES PREDICTED BY A DISCRETE EVENT SIMULATION MODEL FOR RENAL CELL CARCINOMA FOR USE IN A COST-EFFECTIVENESS ANALYSIS: A COMPARISON WITH A TRADITIONAL PARTITIONED SURVIVAL MODEL

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OBJECTIVES: To assess long-term survival outcomes predicted by a discrete event simulation model (DES) for nivolumab in renal cell carcinoma (RCC) compared to the results with a more traditional partitioned survival model (PSM) approach. METHODS: Two model structures were developed in Microsoft Excel and populated using data from an analysis of 24-month patient-level data from the CheckMate 025 trial. Both models incorporated the key health states: progression-free, progression due to disease and death. The PSM models patients individually, and their journey through time is characterized as a series of events. Patient history and patient heterogeneity are incorporated through the definition of predictive equations to estimate the time to an event (progression, death) based on patient characteristics at baseline and progression. The PSM uses a cohort-based approach to estimate state occupancy based on an ‘area under the curve’ approach using overall survival (OS) and PFS survival curves derived from a predefined survival model (AIC) to select curves best fitting the observed trial data, over a 25-year time horizon and using a 3.5% discount rate, the DES estimated 2.82 quality-adjusted life years (QALYs) and 3.64 Life Years (LYs) per person compared to 2.57 QALYs and 3.30 LYs from the PSM. The difference in survival between these models was driven by post-progression survival time (2.83 vs 2.34 LYs, respectively). RESULTS: Both model structures provided a good fit to the trial data, but differences were seen in predictions of long-term outcomes. The PFS model predicted longer post-progression survival, which is consistent with longer term trials in RCC, suggesting that a PFS model may present a more appropriate approach to modelling immunotherapies that are dependent on patient characteristics and changes over time.

PM97 NEW MODELLING APPROACHES IN OPHTHALMOLOGY: PARTITIONED VISION DISTRIBUTION MODEL IN SYMPTOMATIC VITREOMACULAR ADHESION (VMA)/VITREOMACULAR DETACHMENT (VMD) WITH OR WITHOUT FULL-THICKNESS MACULAR HOLE

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OBJECTIVES: To develop a de novo model consisting of a decision tree and nested Markov components, simulating the MIVI-TRUST trial and extrapolating long-term disease progression. Method: Dependent on patient characteristics and disease history, patients could transition between six different vision health states (H5). Patient-level data for estimating a 6x6 transition matrix poses a challenge with smaller sample sizes of new trial evidence. Learnings from survival partition models were adopted to investigate a new approach to estimating patient distribution in vision H5 (partitioned distribution model). RESULTS: Eight vision HS and eight disease HS were used. Patient: vision for each disease HS, at each time point, is described using means and standard deviation (SD) and followed by beta distribution, to generate both lower and upper bounds of the 0-100 Early Treatment Diabetic Retinopathy Study (ETDRS) vision scale. Mean and SD were estimated from OASIS data. Beta distribution parameters were derived according to patient characteristics, to capture the distribution of vision scores for patients for each disease HS. RESULTS: Preliminary results from ETDRS letters read Indicate mean (SD) baseline best-corrected visual acuity (BCVA) for H5 (VMA with FTMH) and H5 (VMT without FTMH) are 75.82 (9.81) and 66.00 (8.29), respectively. For 24-month disease HS distributions using linear regression models and OASIS observed data, mean BCVA (SD) were: H5 (unresolved FTMH): 57.69 (9.60), H5 (surgically resolved FTMH): 68.65 (11.26), H5 (surgically resolved VMT) 68.95 (13.24), and H8 (non-surgically resolved VMT) 75.82 (9.00). CONCLUSIONS: Compared to previous modelling techniques, this approach offers a simpler, more clinically intuitive methodology to simulate patient vision. Patient vision over time requires only three parameters (mean, SD and change in mean over time) as opposed to a large and granular transition probability matrix.

PM98 DECISION ANALYTIC MODELLING METHODS FOR THE ASSESSING THE EFFECTIVENESS OF TREATMENT SEQUENCES FOR CLINICAL AND ECONOMIC DECISION MAKING: A METHODOLOGICAL REVIEW

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OBJECTIVES: Appropriate recognition of treatment sequencing is crucial to many policy decisions. Understanding economic and clinical consequences of treatment sequencing is becoming complex when accounting for extensive treatment sequences and pertinent factors relating to the disease. A methodological review was conducted to identify and describe areas of decision analytic methodology concerning treatment sequences. METHODS: A comprehensive literature review of MEDLINE, Embase and Cochrane library. Studies were categorised according to modelling approach and decision problem. Treatment sequencing assumptions were analysed. RESULTS: 70 studies and 48 discrete models were included. A wide range of modelling techniques were identified: cohort-based models (deterministic and stochastic decision trees, Markov, semi-Markov, partitioned survival); individual sampling models (stochastic simulation), and discrete event simulation (DES); and open population-based models (DES and Markov cohort). No study systematically tested different modelling approaches for treatment sequences. Cohort models can be combined to implement complex models, adapting input parameters to accommodate additional complexity were identified, but these were not always simpler. Individual sampling models are more sophisticated, better able to accommodate greater decision problem complexity, and provide more flexibility. DES allowed exploration of partitioning treatment sequences. Neighbourhood sensitivity analysis was used, and robustness to increase cost-effectiveness was found, but more extensive parameterisation, regarding future transition rates, in significant uncertainty around the effectiveness and cost-effectiveness estimates, the extent of which is generally unknown. This needs to be recognised in decision making, and further evaluated.

PM99 IMPLEMENTATION OF A DATA MINING MODEL WITHIN A MONITORING TOOL TO ASSESS HER2 BREAST CANCER STATUS USING THE HER-FRANCE REAL WORLD DATABASE

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OBJECTIVES: HER-France is a French national database focused on HER2 status in breast cancer and provided by 125 pathology laboratories (PL) since 2011. PL used to confirm tumour HER2 positivity rate calculated using a 17C antibody. To provide a more sensitive monitoring tool evaluating their practices quality through indicators, a new strategy consisting of a predicted estimate of HER2+ rate by PL instrument was developed. METHODS: A748 A602, 1,468: observed rate: 13.6%, 99% CI: (10.2, 17.0); predicted rate: 10.9%, absolute (relative) difference: 2.7 (20%) PL2 (n=4,062): observed rate: 10.9%, 99% CI: [7.4, 10.7]; predicted rate: 10.1%, absolute (relative) difference: 0.8 (11.8%) PL5 (n=1,468): observed rate: 15.3%, 99% CI: [11.2, 15.8]; predicted rate: 10.9%, absolute (relative) difference: 4.4 (29%) PL7 (n=1,864): observed rate: 9.6%, 99% CI: [7.8, 11.4]; predicted rate: 12.0%, absolute (relative) difference: 2.4 (25%) CONCLUSIONS: PL tumour characteristics provide better accuracy in quality assessment practices than comparison to national average. Data mining implemented in the HER-France monitoring web-based tool will help PL to assess their own rate through consistency indicators.

PM100 A DISCRETE EVENT SIMULATION MODEL FOR RENAL CELL CARCINOMA FOR USE IN A COST-EFFECTIVENESS ANALYSIS

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OBJECTIVES: To develop a flexible and comprehensive discrete event simulation model (DES) for nivolumab versus everolimus in the treatment of renal cell carcinoma (RCC) that captures differences in treatment outcomes and costs between patients with heterogeneous baseline characteristics. METHODS: A DES was developed in Microsoft Excel based on individuals experiencing three key events: disease progression, treatment discontinuation, and death. Risk prediction equations were derived from 24-month patient-level data from the CheckMate 025 trial using a step-wise backward elimination process to identify relevant predictors of the risk of progression or death. Hypothetical patients were generated from a multivariate normal distribution based on the characteristics of patients enrolled in CheckMate 025. Times to event for individuals were estimated from the predictive equations for overall survival, progression-free survival and post-progression survival. The survival curves chosen were based on comparison of the Akaike information criterion. The model accounted for differences in survival between patients who continued on their allocated treatment beyond progression and those who did not. RESULTS: Four predictive equations were derived from the trial data. The following baseline characteristics were identified as significant predictors of survival: age, Karnofsky performance status, haemoglobin, time from diagnosis to randomisation and tumour size. Mean overall survival of 53 months and 94.8 months were estimated for nivolumab and everolimus, respectively, with mean post-progression survival of 43.0 and 26.3 months, respectively. CONCLUSIONS: The DES provides a flexible approach to capture differences in survival when predicting long-term treatment outcomes and survival outcomes for use in a cost-effectiveness analysis, and may be applied to other oncology settings. This becomes important in the context of immunotherapies with mechanisms of action and novel companion diagnostic models, where optimal duration requires consideration of such issues. Standard modelling approaches, such as the partitioned survival model, may not completely address these challenges.

PM101 EXPLORATION OF RUN-TIME REQUIREMENTS IN PROBABILISTIC SENSITIVITY ANALYSIS UTILIZING A PATIENT LEVEL BASED TYPE 2 DIABETES SIMULATION MODEL

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OBJECTIVES: Patient-level based simulation models utilize Monte Carlo techniques to predict events which introduces random variability (Monte Carlo-Error (MCE)). In probabilistic sensitivity analysis (PSA), MCE coincides with and cannot be separated from outcome variability that is associated with parameter sampling if insufficient patient numbers (cohort-size) are simulated to reduce MCE appropriately. The objective of this study was to quantify the minimum cohort-size (MCS) requirement in PSA at which MCE is reduced to acceptable levels. A Monte Carlo simulation was conducted. Version 9.0 of the QuintilesIMS CORE-diabetes model (CDM) was used to compare outcome variability of PSA including 500 bootstrap replications and increasing number of patients ranging from 100 to 10,000. The model was populated to evaluate the cost-effectiveness of two hypothetical interventions: ILS and GLS. The parameter uncertainty in clinical effectiveness was modeled as normally distributed with a 100% health utility and a 2% weight change in favor of the treatment vs. control arm. Each PSA was performed in two ways where parameters were sampled around 5% and 20% of their mean values. MCS was assessed when the size of the CER per-QALE-95%-confidence-width (CW) stabilized, i.e. the trend of decreasing CW alongside increasing cohort-size (and declining MCE) stopped and the CW remained within predefined tolerance interval (TI) (explored at 10%, 7.5%, 5% and 2.5%) surrounding expected-value (EV). EV was assumed at the ICER-CW from PSA including 10,000 patients. RESULTS: When the TI was set to 10%, MCS was reached at 2500 and 1000 included patients for PSA with 5% and 20% input-parameter-variability, respectively. MCE increased to 5000 and 4000 for the 10% TI surrounding the expected ICER-CW represents acceptable standard, a minimum of 5000 and 2500 patients have to be applied in PSA simulations conducted with the CDM for input-parameter-variability of 5% and 20%, respectively.

PM102 THE EVALUATION OF ASSUMPTIONS IN COST-EFFECTIVENESS MODEL DEVELOPMENT FOR THE CASE OF DABIGATRAN

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OBJECTIVES: Regularly several models are developed to estimate the cost-effectiveness of new drugs, but the models are based on different underlying assumptions. The aim of this study was to evaluate the influence of assumptions that derive from model structure and data input on the case of cost-effectiveness analysis of dabigatran compared to warfarin. METHODS: Different cost-effectiveness analyses based on three models were compared. One was previously developed (Jancic et al., Pharmacoeconomics, 2015, 33(4):395-408) in house and two (Freeman et al., Ann. Intern. Med., 2011, 154(1):1-11 and Sorensen et al., Thromb. Haemost., 2011, 105(1):201-9) as far as possible based on the published data. A step by step regression approach was used to test the assumptions, adjust the model structure and update the input data. The models outputs (total cost and QALYs) were assessed in each step. RESULTS: Additional assumptions were necessary during rebuilding the two models based. Up to 6% difference in estimates of QALYs and up to 42% difference in estimated costs between published and our simulated results were observed. At the baseline the results among the three models varied significantly, the difference in QALY was almost 40%, while the differences in total costs were more than 10-fold. When updating the input data, the highest impact had cost data, especially costs of events, and mortality tables. According to the assumptions underlying model structure and data input, and the importance of health states utility definition, clinical events considered and treatment strategy after discontinuation. Other assumptions, such as age dependent adjustment for bleedings, had minor effect. CONCLUSIONS: The assumptions underlying model structure in addition to input data significantly affected the results. More emphasis should be focused on critical evaluation of the model assumptions.

PM103 REPRESENTING UNCERTAINTY IN ECONOMIC EVALUATIONS: GETTING MORE FROM PSA RESULTS

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OBJECTIVES: Uncertainty surrounding the decision to adopt a new intervention is formally considered by health technology assessment bodies. Conventionally probabilistic sensitivity analysis (PSA) is conducted to assess parameter uncertainty, with results presented in the form of cost-effectiveness acceptability curves (CEAC). Nonetheless CEACs are subject to limitations, including: ambiguity in interpretation and importance, excluding the key elements contributing to cost and effectiveness. To represent uncertainty in patient-level outcomes a Markov model was analyzed as microsimulation. A third-party payer perspective of the Australian health-care setting was adopted and a discount rate of 5% was applied to both costs and utilities. Model inputs were derived from the literature. The model cycle length was 6 months. This work contains previously unpublished analyses. RESULTS: Compared with no surgical intervention, aMEIs yielded an incremental cost-effectiveness ratio (ICER) of AUD 9,913.72/QALY. When changing the discount rate from 5% to 3%, the ICUR was AUD 13,396.51/QALY. To ensure the model was within the unacceptable region on the ICUR, the utility value of patients successfully aided with or without complications were varied by a 0.03, which yielded an ICUR ranging from AUD 4,747.52/QALY to 14,591.44/QALY. When altering the time horizon from 5 years to lifetime, the ICUR was AUD 8,067.39/QALY and AUD 14,184.68/QALY, respectively. According to literature, the Australian willingness-to-pay (WTP) threshold is reported to be AUD 34,500. When comparing the ICUR against the WTP threshold, aMEIs had a probability of 100% to be cost-effective. CONCLUSIONS: Based on these analyses, partially implantable aMEIs offer a cost-effective solution compared with no surgical intervention in the Australian health-care setting.

PM110 REVIEW OF MODELS SUBMITTED TO NICE MEDICAL TECHNOLOGIES INNOVATION PROGRAMME TO INFORM A COST CONSEQUENCE TEMPLATE FOR USE IN MEDICAL TECHNOLOGIES GUIDANCE SUBMISSIONS

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OBJECTIVES: The Medical Technologies Advisory Committee (MTAC) makes recommendations to the National Institute for Health and Care Excellence (NICE) on the value of medical technologies. As part of the evaluation of clinical and cost-effectiveness evidence, companies are required to submit relevant evidence including a cost model which demonstrates cost-saving compared with current care. This research reviews the cost models submitted for evaluation and was undertaken to inform the development of a model template for use in NICE submissions. METHODS: Twenty-two models were analysed and categorised by type. Data were extracted by 1 reviewer, with a second reviewer checking a sample. Information was extracted from 17 categories. Information not available from the model was collected from other documents considered by MTAC. Themes were then analysed based on type. RESULTS:
Models were built using either Excel® (n=20, 91%) or TreeAge® (n=2, 9%). Ten models (46%) were developed by a health economic consultancy. The developer was the company (n=2, 9%) or unknown (n=10, 46%) for the remainder. Cost-minimization analyses were most common, 95% (n=21), with 5% (n=1) being a cost-utility analysis. Twelve models were structured as a decision tree (48%), 9% (n=6) were cost calculators and 4% (n=4) were Markov models. Complexity of the model structure adopted varied substantially. Thirteen models had a time horizon of 1 year or greater (51%) of which 29% (n=6) did not report. Only 15% (n=4) did not include sensitivity analysis. Data from the clinical evidence submodel were used for the primary pre-diagnosis cohort. The developer was the company (n=2, 9%) or unknown (n=10, 46%) for the remainder. Cost-minimization analyses were most common, 95% (n=21), with 5% (n=1) being a cost-utility analysis. Twelve models were structured as a decision tree (48%), 9% (n=6) were cost calculators and 4% (n=4) were Markov models. Complexity of the model structure adopted varied substantially. Thirteen models had a time horizon of 1 year or greater (51%) of which 29% (n=6) did not report. Only 15% (n=4) did not include sensitivity analysis.

This retrospective database study was assessed whether standard approaches for disease detection could be improved through methods designed to capture heterogeneity such as cluster analysis and gradient boosting. METHODS: Data were extracted from US prescription and medical claims databases. The study was conducted from 1994-2016. Segments were identified using their CPT code. RESULTS: There were 120,000 hepatitis C patients and 9,683 TD PD patients with -120,000 patients without each disease. FPV was 65.2%, 72.3%, 69.6% and 72% respectively for methods 1-4 for hepatitis C. FPV was 18.1%, 32.3%, 25.9% and 34% respectively for methods 1-4 for TD. CONCLUSIONS: Accuracy of disease detection algorithms based on straightforward logistic regression can be improved substantially through pre-classification clustering and more notably, through gradient boosting.

PRM110

MODELLING PATIENT PATHWAYS OF LOW-DOSE COMPUTED TOMOGRAPHY SCREENING FOR LUNG CANCER IN HUNGARY

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OBJECTIVE: Scientific evidence confirms the efficacy of low-dose computed tomography screening (LDCT) in lung cancer screening. To assess the potential benefits and costs of LDCT in Hungary.

METHODOLOGY: A model was developed to represent the current lung cancer screening programme in Hungary. The screening programme is free of charge and consists of 3 rounds of low-dose CT within a 5-year timeframe. Calculations were performed using HealthEconomicsTM software. RESULTS: The model estimated that LDCT would prevent 3.334 lung cancer deaths in Hungarian patients, along with increased life expectancy and QALYs gained, but at the cost of 3.334 hospitalisations. CONCLUSIONS: LDCT screening for lung cancer can provide additional health benefits in life-years and disease-free-years gained compared to the current situation of no lung cancer screening in Hungary. The model could be used to optimise the screening programme, and to further evaluate different screening frequencies and risk levels in the target population.

PRM108

METHODOLOGICAL ANALYSES OF BUDGET IMPACT MODELS SUBMITTED TO THE HAUTE AUTORITÉ DE SANTÉ (HAS) (FRENCH NATIONAL AUTHORITY FOR HEALTH ECONOMY)

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OBJECTIVE: French legal framework has imposed budget impact analyses under certain conditions since January 2016 and methodological guidelines have been available since November 2016. To assess the publicly available French health-economic opinions about those analyses, an exhaustive retrospective analysis was conducted. The methodological objections delivered by the HAS (MS) for the latest 20 years were reviewed. RESULTS: Current 34 health-economic opinions have been published, six of which include budget impact analyses. Evaluations took place between February 2014 and October 2015. Other evaluations took place but are not published yet. Among these analyses, the methods of four were not acceptable. Major limitations concerns the choice of population, comparators, and absence of sensitivity analysis. Open only two of the opinions included an overview of their limitations. The methods were compared based on visual fit of the Kaplan-Meier curve, log cumulative hazard, Akaike’s information criterion (AIC) and the Bayesian information criterion (BIC). RESULTS: For the decreasing hazards dataset, the Lognormal and splines models had the lowest AIC/BIC for constant and improving HRs, respectively. In case of increasing hazards, the Generalized Gamma and Gompertz models had the lowest AIC for constant and improving HRs, respectively. Finally, for the fluctuating hazards datasets, the Generalized Gamma and spline models had the lowest AIC/BIC for constant and improving HRs, respectively. Visual fit confirmed these results.

CONCLUSIONS: Flexible models had a better fit compared to standard parametric models out of six datasets. Thus, we recommend the use of these models as key alternative among standard options for extrapolating OS from clinical trials.

PRM107

COMPARISON OF STANDARD PARAMETRIC SURVIVAL METHODS VERSUS MORE FLEXIBLE APPROACHES

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OBJECTIVES: Several standard parametric methods for extrapolating overall survival (OS) exist. However, more flexible methods such as spline-based models and the Generalized Gamma or Generalized F models are less often applied, despite being recommended by the NICE Decision Support Unit (UK). The objective of this study was to compare these more flexible models with the more standard models in published datasets. METHODS: Six datasets with active and comparator arms were simulated. The comparators arms were based on three published datasets in which the baseline hazard rates were (1) decreasing, (2) increasing, and (3) constant, respectively. The corresponding active arms were simulated with (1) a constant hazard ratio (HR) and (2) improving HR over time. The following models were tested: standard parametric models (Weibull, Exponential, Lognormal, Loglogistic, Gompertz, splines), models with one knot (Weibull, Lognormal and Loglogistic), Generalized Gamma models, and Generalized F models. The tested models were fitted (1) with treatment as constant covariate, (2) with treatment as time varying covariate, and (3) with random individual-specific versus the separate arm. The models were compared based on visual fit of the Kaplan Meier curve, log cumulative hazard, Akaike’s information criterion (AIC) and the Bayesian information criterion (BIC). RESULTS: For the decreasing hazards dataset, the Lognormal and spline models had the lowest AIC/BIC for constant and improving HRs, respectively. In case of increasing hazards, the Generalized Gamma and Gompertz models had the lowest AIC/BIC for constant and improving HRs, respectively. Finally, for the fluctuating hazards datasets, the Generalized Gamma and spline models had the lowest AIC/BIC for constant and improving HRs, respectively. Visual fit confirmed these results.

CONCLUSIONS: Flexible models had a better fit compared to standard parametric models out of six datasets. Thus, we recommend the use of these models as key alternative among standard options for extrapolating OS from clinical trials.

PRM109

IMPROVING DISEASE DETECTION THROUGH METHODS TO REDUCE PATIENT HETEROGENEITY

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OBJECTIVE: Disease detection algorithms are used to find undiagnosed patients. These algorithms often employ parametric classifiers such as logistic regression, undiagnosed populations are usually highly heterogeneous, potentially under-

assessing the accuracy of predictive classifiers. The retrospective database study was assessed whether standard approaches for disease detection could be improved through methods designed to capture heterogeneity such as cluster analysis and gradient boosting. METHODS: Data were extracted from US prescription and medical claims databases. The study was conducted from 1994-2016. Segments were identified using their CPT code. RESULTS: There were 120,000 hepatitis C patients and 9,683 TD PD patients with -120,000 patients without each disease. FPV was 65.2%, 72.3%, 69.6% and 72% respectively for methods 1-4 for hepatitis C. FPV was 18.1%, 32.3%, 25.9% and 34% respectively for methods 1-4 for TD. CONCLUSIONS: Accuracy of disease detection algorithms based on straightforward logistic regression can be improved substantially through pre-classification clustering and more notably, through gradient boosting.

PMI111

A SYSTEMATIC REVIEW OF PREDICTIVE MODELS IN ACUTE HEART FAILURE

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OBJECTIVE: Acute heart failure (AHF) is the most common cause of illness leading to hospitalisation and mortality. Since no proven AHF treatment is available to improve long-term outcome, it is becoming increasingly important to predict/stratify the risk of outcomes in AHF patients to optimise the treatment. The objective of this systematic review was to assess the published predictive models predicting the in-hospital and post-discharge outcomes in adult AHF patients. METHODS: A systematic review was conducted through searching in Embase®, MEDLINE®, MEDLINE® in-Process, and Cochrane Library up to February 23, 2017. A double review process was followed to identify English language studies of prediction models tested in adult AHF patients, with both derivation and validation cohorts. Data were extracted on the population, setting, model characteristics, model discrimination and calibration. RESULTS: A total of 52 publications were identified. Thirty unique prediction models met the criteria. Included scoring/risk prediction models have been mainly developed and validated for post-discharge mortality (N=12), in-hospital mortality (N=3), cardiovascular hospitalisations (N=1), and composite outcomes (N=9). Data sets were derived from the published registers, clinical trials and retrospective databases. Predictive models included demographic, clinical, hemodynamic and laboratory variables. Commonly used variables across the different models were age (median [IQR] = 68-71), 17-bleed urea nitrogen (N=15), and BNP/NT-proBNP (N=8). Of 22 models reporting model performance, 18 have demonstrated the capacity to discriminate patients who reach major clinical endpoints, with C-statistics >0.7. CONCLUSIONS: In addition to conventional predictors (demographics, medical history, signs and symptoms),
the recent models suggest a strong ability of biomarkers/renal function parameters (BUN, creatinine, and cystatin C) to predict hospitalisation and survival outcomes. Future studies are warranted to evaluate if therapeutic decision making and the outcome of patients with AHF can be improved with the help of these tools.

PRM112

EXPLORING STRUCTURAL UNCERTAINTY WITH AN OPEN-SOURCE COST-EFFECTIVENESS MODEL FOR RHEUMATOID ARTHRITIS

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OBJECTIVE: Cost-effectiveness analysis frequently leads to disputes in the scientific literature. The reason for these disputes often stem from disagreement or misunderstanding about the underlying model structure. At the same time, model predictions are likely to be validated as the evidence base evolves. Our aim was to develop a transparent, flexible, and accessible cost-effectiveness model to help achieve consensus and ensure that estimates of cost-effectiveness reflect current evidence: METHODS: We developed an R package to run an individual participant-based simulation model of rheumatoid arthritis. The model allows for multiple perspectives (i.e., health care sector, societal) and 280 possible model structures related to the initial treatment effect, the relationship between the initial treatment effect and treatment switching, the survival distribution used to model time to discontinuation, and the algorithm used to estimate utility. The IPS is primarily written in C++ so that probabilistic sensitivity analysis and analyses of structural uncertainty can be run in a reasonable amount of time. We also created a user-friendly R Shiny web application where users can modify parameter values or structural assumptions and run the model online. RESULTS: The R package, inRA, is available on a public GitHub repository and the Shiny web application is freely available online at shinyapps.io. Documentation, qualitative step-by-step instructions for conducting a cost-effectiveness analysis using the model with R. A description of the model is also available, which provides detailed information (i.e., mathematical formulas and algorithms) related to data sources, parameter estimation, and simulation techniques. CONCLUSIONS: Transparent, flexible, and maintainable models can be developed in open-source programming languages such as R and C++. The models can be made accessible to non-modellers with user-friendly web applications, which, when combined with flexible models, can help resolve disputes by improving understanding of the reasons behind varying cost-effectiveness estimates.

PRM113

UNCERTAINTY IN SELECTING SURVIVAL MODELS FOR COST EFFECTIVENESS ANALYSES

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OBJECTIVES: Survival models are often the backbone of cost-effectiveness models. Although goodness-of-fit data are increasingly used to select the most appropriate survival model, this selection is typically uncertain and a key driver of outcomes. Nevertheless, this structural uncertainty is not routinely included in cost-effectiveness models, which potentially biases the estimated cost-effectiveness. Therefore, we aimed to incorporate uncertainty related to survival models in a cost-effectiveness model of key interest. METHODS: A cost-effectiveness model with three survival models (proportional hazards, flexible parametric, and Gompertz) was developed. Each of these survival models includes different parameters related to treatment effect and treatment switching, survival distribution used to model time to discontinuation, and the algorithm used to estimate utility. The IPS is primarily written in C++ so that probabilistic sensitivity analysis and analyses of structural uncertainty can be run in a reasonable amount of time. We also created a user-friendly R Shiny web application where users can modify parameter values or structural assumptions and run the model online. RESULTS: The R package, inRA, is available on a public GitHub repository and the Shiny web application is freely available online at shinyapps.io. Documentation, qualitative step-by-step instructions for conducting a cost-effectiveness analysis using the model with R. A description of the model is also available, which provides detailed information (i.e., mathematical formulas and algorithms) related to data sources, parameter estimation, and simulation techniques. CONCLUSIONS: Transparent, flexible, and maintainable models can be developed in open-source programming languages such as R and C++. The models can be made accessible to non-modellers with user-friendly web applications, which, when combined with flexible models, can help resolve disputes by improving understanding of the reasons behind varying cost-effectiveness estimates.

PRM114

COMPARATIVE ANALYSIS OF HEALTH TECHNOLOGY ASSESSMENTS OF DRUGS FOR THE TREATMENT OF MULTIPLE MYELOMA

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OBJECTIVES: The treatment landscape for multiple myeloma (MM) is constantly evolving. In the last number of years the National Centre for Pharmacoeconomics (NCPE) has received a number of submissions to assess the cost-effectiveness and potential thereof of new MM drugs. One of the main challenges of these submissions is the selection of a survival model that is appropriate due to the high cost associated with emerging treatments. The objective of this study was to perform a critical analysis of company submissions to the NCPE for MM in order to identify their similarities and differences, and characterise the challenges pharmacoeconomic cost-effectiveness modelers face when conducting a qualitative analysis of company submissions submitted during the period 2013 to 2016 was conducted to determine the strengths and shortcomings associated with the methods and data inputs used. This study, incorporating an adapted version of the Consolidated Health Economic Evaluation Reporting Standards (CHEERS) statement, was then employed to generate a framework upon which the submissions were critically reviewed: METHODS: Analysis of HTA submissions (pomalidomide, carfilzomib, daratumumab) yielded four major themes: report quality, systematic review methods, clinical data, and economic analysis. Coding/calculation errors (report quality) and failure to adequately report systematic review methods were common to all three submissions. Identiﬁcation of structural uncertainty was not related to quality of studies, generalisability of studies to the Irish population, immature overall survival data, and indirect treatment comparisons. The main issues related to economic analysis included the use of cost-minimisation analysis, extraction methods, omission of appropriate parameters when characterising uncertainty, and exclusion of relevant costs and disutilities of adverse events. CONCLUSIONS: Despite the availability of NCPE submission guidelines universal to all HTA submissions, further guidance is required which is specific to MM submissions. This guidance should consider the paucity of clinical evidence accompanying recent regulatory approval.

PRM115

ECONOMIC EVALUATION OF A BRIEF COUNSELLING FOR SMOKING CESSATION IN DENTISTRY – A CASE STUDY COMPARING TWO HEALTH ECONOMIC MODELS

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OBJECTIVES: This study aimed to compare the cost-effectiveness estimates of a brief counselling of smoking cessation in dentistry by using two different health economic models. METHODS: A brief, structured behavioural intervention in dental clinics in Sweden was compared with “usual care”. Participants were 205 Swedish smokers aged 20-75 years. Intervention effectiveness was estimated in a cluster randomized controlled trial. Number of quit attempts was estimated based on the treatment arm and on smoking reduction at follow-up. Health economic evaluation was performed using two models: 1) A population-based model employing potential impact fractions, and 2) A Markov model estimating the cost-effectiveness of the intervention for the actual participants. The evaluation was performed from health care and societal perspectives and health gains were expressed in quality adjusted life years (QALYs). RESULTS: The intervention in the concrete model yielded 55.3 QALYs and 74.8 QALYs, respectively, for health care and societal perspectives. CONCLUSIONS: The Markov model for “usual care” derived from small-scale studies may be highly sensitive to the choice of the model used to calculate cost-effectiveness.

PRM116

COST-EFFECTIVENESS ANALYSIS OF INTERVENTIONS THAT HAVE NOT SHOWN CLINICAL EFFECTIVENESS

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OBJECTIVES: A core element of considering cost-effectiveness is the clinical efficacy or clinical effectiveness of the intervention as felt from the study results. In the absence of a statistically significant difference in clinical effect, guidelines generally suggest the use of a cost-minimisation analysis. However, it is apparent that economic analyses may show that intervention was not statistically significant. This study investigated the context of a sample of such studies to identify circumstances in which they may be appropriate. METHODS: As part of a review of chronic disease self-management support interventions, systematic reviews of cost-effectiveness studies were carried out for a range of interventions. We included studies that carried out cost-effectiveness analyses when no statistically significant effect had been demonstrated. A narrative review approach was adopted. RESULTS: We identified 16 published economic evaluations for inclusion. These studies were typically trial-based studies or simulation models with effectiveness data from a single small trial that was possibly under-powered to detect a treatment effect. The absence of a statistically significant effect was not always acknowledged as a limitation in the analyses or as an issue to be considered when interpreting the results. However, a cost-effectiveness analysis in the absence of a demonstrated treatment effect may help to identify potentially cost-effective treatments for which additional evidence on effect would support decision making. CONCLUSIONS: The point estimate of cost-effectiveness is strongly influenced by the mean estimate of clinical effect. Typical methods for conveying parameter uncertainty may not adequately highlight the fact that the intervention was not demonstrated an improvement in outcomes. Cost-effectiveness analyses carried out in the absence of a demonstrated clinical benefit should be treated purely as exploratory analyses, and only considered as a basis for seeking additional data.

PRM117

USING MATHEMATICAL OPTIMISATION IN MODEL-BASED COST-EFFECTIVENESS ANALYSES: A CASE STUDY OF A STRATIFIED BREAST SCREENING PROGRAMME

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OBJECTIVES: Stratified national breast screening programmes (stratified-NBSPs) which offer women different screening regimens using the estimated risk of cancer have been proposed to improve cancer detection at a reasonable cost. Cost-effectiveness analysis (CEA) requires clear definition of a new intervention to compare with current practice. CEA of a possible stratified-NBSPs is problematic due to the substantial number of potential comparators. This study aimed to develop a method of to identify and evaluate the optimal stratified NBS. METHODS: A discrete event simulation (DES) using the healthcare perspective was structured to represent care pathways for alternative
PRM118
MODEL TYPES SUBMITTED TO NICE: WHAT IS CONSIDERED APPROPRIATE BY EVIDENCE REVIEW GROUPS?
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OBJECTIVES: A review of Evidence Review Group (ERG) critiques of models in recent NICE submissions was conducted to determine any associations between model type and ERG critiques. METHODS: Full NICE single technology appraisals published between 2011 and 2017 were reviewed for critiques on data extracted on model type, whether the ERG considered the model type appropriate and details of the ERG critique. When the model structure was considered appropriate for the disease under review, the model type was assumed to be appropriate by the ERG. The 52 submissions reviewed included 47 cohort state-transition models (Markov, partitioned survival, semi-Markov and decision tree/Markov models), 1 Markov model (Monte Carlo model), 1 microsimulation model (Stage-two only) and 3 Monte Carlo individual patient simulations and 1 Discretely Integrated Condition Event (DICE) model. In 34 (65.4%) cases the ERG agreed the model type was appropriate, typically due to alignment with previous models in the same or similar indications. In 9 (17.3%) cases, the ERG considered the model type unsatisfactory and gave a recommendation to change the model type. In 9 (17.3%) submissions, the ERG was unsatisfied with the model type to some extent. In 2 cases a dynamic modelling approach was considered more appropriate than a Markov model (in infectious diseases), and in 2 cases a cohort model type was used where patient heterogeneity was believed to be important. A total of 5 models were criticised for inflexibility in capturing key evidence, or appeared overly complicated and lacked transparency. Additionally, the DICE model was criticised for impractical implementation and lack of clear benefit over a discrete event simulation model. CONCLUSIONS: Cohort state-transition models are generally considered appropriate by ERGs, the justification often being that they have been previously used in the disease area. Other model types are more likely in disease areas with fewer submissions, and are generally considered appropriate if their implementation is transparent and user-friendly.

PRM119
ISSUES ENCOUNTERED WHEN MODELLING THE LONG TERM CLINICAL EFFECTIVENESS OF TREATMENTS FROM SHORT TERM TRIAL USING SECOND-LINE (MMF) MODELING APPROACHES IN ADVANCED OR METASTATIC RENAL CELL CARCINOMA (AMRCC) AS AN EXAMPLE
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OBJECTIVES: Long term effectiveness data on progression-free survival (PFS) and overall survival (OS) are rarely available from efficacy trials. Methods to estimate the expected PFS and OS using a range of survival models were explored up to 30 years for patients receiving axitinib, cobanotinib, everolimus, nivolumab, and BSC for second-line amRCC. METHODS: Several parametric survival models, including cubic splines, were fitted to the everolimus and nivolumab groups of the CheckMate 025 trial to provide baseline curves for PFS and OS. Model fit was assessed using the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC), as well as clinical expert opinion to assess the plausibility of extrapolations. Hazard ratios (HRs), derived from a mixed treatment comparison (MTC), were applied to the everolimus curves to produce estimates for cabozan- tib and BSC. A reliable HR could not be derived for axitinib due to a violation of proportional hazards (PH), as well as patient cross-over in the TARGET trial. Therefore, an exponential model was fitted instead. RESULTS: For OS, there were slight differences in the AIC and BIC statistics across the treat- ment groups, but the best fitting model was considered to be the Weibull. For PFS, the best fitting model was the 2-knot spline, clearly indicated by the lowest AIC and BIC for both everolimus and nivolumab. The Weibull models produced a mean OS of 26.5, 38.1, 26.5, 30.3 and 15.0 months, for axitinib, cobanotinib, everolimus, nivolumab and BSC, respectively. The equivalent values for the 2-knot spline PFS model were 8.6, 9.4 and 2.8 months, respectively. CONCLUSIONS: The assumption of PH can be a limitation when comparing multiple treatments across different trials using an MTC. Practical solutions such as choosing the appro- priate “baseline” trial and assuming clinical equivalence, where plausible, can help mitigate concerns in some cases.

PRM120
EVALUATING THE IMPORTANCE OF REALISTICALLY SIMULATING RISK FACTOR PROGRESSION OVER TIME: A HEALTH ECONOMIC MODELLING ANALYSIS IN TYPE 1 DIABETES
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OBJECTIVES: Glycated hemoglobin (HbA1c) is an important surrogate measure of glycemic control in patients with diabetes and is a key input in diabetes-related complications. As a result, HbA1c plays an important role in many long-term health economic models. The aim of the present analysis was to evaluate the importance of realistically simulating HbA1c progression over time in patients with type 1 diabetes. METHODS: A long-term, externally audited and validated, patient-level simulation model of type 1 diabetes was used to model long-term clinical and cost outcomes. Scenarios were based on an either a linear or a target-driven HbA1c model, capturing covariance, developed from patient-level data from the Diabetes Control and Complications Trial (DCCT). Parameters significantly covarying with baseline and subsequent HbA1c were incorporated into covariance matrices in the patient-level model. The model used age and recent severe hypoglycemic epi- sodes to derive patient-specific HbA1c targets. Costs were reported in 2016 pounds sterling. RESULTS: Simulating HbA1c progression based on patient-level data was shown to substantially increase the projected incidence of diabetes-related complications, life expectancy, quality-adjusted life expectancy and the cost of complications versus the standard linear approach. Quality-adjusted life expectancy was 0.18 QALYs higher with simulated HbA1c progression. The reduction in diabetes-related complications projections with simulated HbA1c progression resulted in overall direct costs per patient by GBP 3,062 over patient lifetimes. CONCLUSIONS: Long-term projections using the PRIME Diabetes Model indicate that realistically simulating the progression of important risk factors, such as HbA1c, over time can influence the outcomes of a health economic analysis compared with standard linear assumptions. Simulating risk factor progression, informed by analysis of patient-level data, may directly influence the outcomes of economic evaluations in diabetes and should be taken into consideration by modelers and decision-makers.

PRM122
A COMPARISON OF MARKOV COHORT AND DISCRETE EVENT SIMULATION MODELS IN COST-EFFECTIVENESS ANALYSIS OF SORAFENIB AND EVEROLIMUS IN 3RD LINE METASTATIC RENAL CELL CARCINOMA IN THE CZECH REPUBLIC
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OBJECTIVES: Markov cohort (MC) and discrete-event simulation (DES) models are inherently different. Therefore, they are rarely used in economic evaluation of the same disease. Sorafenib and everolimus are cornerstones of current metastatic renal-cell carcinoma (mRCC) treatment in 2 nd line, however, there are limited direct treatment comparisons allowed reducing the number of off-treatment patient-cycles in M1 versus M2. At 10 years, the number of patient-off-treatment is: for ocrelizumab 4.1% versus 23.8% respectively, either decrease patients off-treatment by 71% and 83% at 30 years, patients off-treatment reduce by 27% and 17%. CONCLUSIONS: The introduction of treatment sequences allowed reducing the number of off-treatment patient-cycles in M1 versus M2. At 10 years, the number of patient-off-treatment is: for ocrelizumab 4.1% versus 23.8% respectively, either decrease patients off-treatment by 71% and 83%. At 30 years, patients off-treatment reduce by 27% and 17%. CONCLUSIONS: This study was conducted to further increase the uncertainty assessment in regards of real life practice. The introduction of treatment sequences reduces dramatically the uncertainty associated with former models and brings a robust opportunity to increase the time horizon for future health economic assessment in M5.

PRM121
HOW CAN ADDRESS FRENCH HEALTH AUTHORITY (HAS/CEESP) SPECIFIC REQUIREMENTS IN MODELLING RELAPSA-REMITHING MULTIPLE SCLEORSIS IN HEALTH-ECONOMIC EVALUATION? MODELLING TREATMENT SEQUENCES
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OBJECTIVES: The objective of the study was to track and assess the impact of intro- ducing treatment sequences in a cost-effectiveness model for Relapsing-Remitting Multiple Sclerosis (RRMS) in the French health-economic assessment. The health economic assessments in multiple sclerosis were published by the HAS/ CESP since 2014. In both assessments two important methodological limita- tions were raised, focusing on the absence of treatment sequences as it didn’t reflect real care management of RRMS patients. The resulting uncertainty of such limitations led the authorities to reduce the Time Horizon of the analysis to 5-10 years rather than a lifetime horizon (30 years) as recommended. METHODS: Two models were developed in treatment naive RRMS patients for each treatment sequences. For each model, two arms were considered as patients could receive a 1 st disease modifying treatment (DMT) with ocrelizumab or interferon-beta-1a. The model with treatment sequences (M1) allows taking into account two treat- ment switches. After discontinuation of the 1 st DMT, patients receive a 2 nd DMT and then a 3 rd DMT vs being off-treatment directly in former cost-effectiveness model (M2). Discontinuation of the 3 rd DMT, achieving an EDSS score ≥ 3.5 or evolv- ing stage-3a or stage-4 relapse in the original model stage real life treatment preferentially. RESULTS: Including treat- ment sequences allowed reducing the number of off-treatment patient-cycles in M1 versus M2. At 10 years, the number of patient-off-treatment is: for ocrelizumab 4.1% versus 23.8% respectively, either decrease patients off-treatment by 71% and 83%. At 30 years, patients off-treatment reduce by 27% and 17%. Conclusions: This study was conducted to further increase the uncertainty assessment in regards of real life practice. The introduction of treatment sequences reduces dramatically the uncertainty associated with former models and brings a robust opportunity to increase the time horizon for future health economic assessment in M5.
(MC) and 85% (DES) at the WTP. CONCLUSIONS: Despite their differences, MC and DES models yield almost identical results in simple oncologic model. The slight disparity might be due to computational differences, half-cycle correction or cycle length. Finally, sorafenib clearly proved that it is a cost-effective intervention in 3rd line therapy of mRCC.

PRM123 ASSESSING THE JOINT PROBABILITY OF COST-EFFECTIVENESS AND AFFORDABILITY IN DECISION MAKING

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OBJECTIVES: Decision makers are increasingly concerned about both cost-effectiveness (CE) and affordability, which has resulted in additional price negotiations being implemented by HTA bodies, such as NICE. Cost-effectiveness plane and cost-effectiveness acceptability curves have been widely used to summarize CE analyses results. However, they ignore the resources necessary to fund the intervention. Sendi and Briggs (2001) proposed to use cost-effectiveness affordability curves (CEAFCs) to capture the joint probability that an intervention is both cost-effective and affordable. We aim to review the application of CEAFCs in health economic evaluations, particularly when obtained from different sources, may however not reflect that the variables are jointly normally distributed, and finally we used copulas to sample from the marginal distributions. We compared various plots generated under different assumptions to the scatterplot of the original data. Using a health economic model, we assessed the cost-effectiveness of each model. We also investigated the implications on the conclusions about the uncertainty of the base case estimate of cost-effectiveness of the treatment. CONCLUSIONS: Ignoring the dependence structure between model parameters can lead to inaccurate results and can distort PSA conclusions. The investigation of the joint distribution of model parameters is a routine part of uncertainty analysis. The methodologies for fitting copulas and simulating random variables with different dependence structures are well documented and they should be incorporated in health economic modelling.

PRM125 WEB ESTIMATING COST SAVINGS AND CLINICAL OUTCOMES OF BLOOD GLUCOSE MONITORING PROGRAM. EXAMPLE FROM THE UK

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OBJECTIVES: Design a budget model to estimate financial impact of introduction of blood glucose monitoring program. Present economic model as communications app and inform hospital healthcare budgeting and decision making for patients under strict blood glucose monitoring. METHODS: The model is developed in MS Excel and then transformed into web application format. The model utilizes UK hospital episode statistics as a primary data source. Future healthcare budget projections and extent of savings from introduction of strict blood glucose monitoring program are estimated from a payer perspective. Model simulation time horizon is 5 years. Efficacy data was informed from published clinical study demonstrating high efficacy of strict blood glucose monitoring program. Sensitivity analyses were conducted to estimate parametric uncertainty around model outcomes. RESULTS: Direct medical cost savings following an introduction of a blood glucose monitoring program is estimated to be GBP 373 and 1,647 respectively. Sensitivity analysis indicated that efficacy and price of a testing device had the strongest magnitude of impact on health state results. Findings indicate that CEAFCs are a useful but underused tool, especially for investigating the cost-effectiveness and affordability of new treatments in developed countries. Increased use of CEAFCs may provide a beneficial framework to address affordability concerns alongside cost-effectiveness analysis.

PRM126 COST-EFFECTIVENESS OF A MULTI-GENE PANEL IN THE CONTEXT OF REDUCING ADVERSE DRUG REACTIONS

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OBJECTIVES: Adverse drug reactions (ADRs) are a major cause of iatrogenic morbidity and mortality. Genetic variations, which can be identified through prospective genotyping may predispose a patient to ADRs. We aimed to develop an economic framework for assessing the cost-effectiveness of multiple-gene testing in the context of ADR reduction, taking into consideration the benefits of incidental findings. METHODS: We developed a decision-analytic framework for combining results from existing cost-effectiveness evaluations of single-gene tests. Transmission of gene test results may have a beneficial impact on patient uncertainty. A budget impact model may evaluate the incremental cost-effectiveness for the multi-gene test. We present an example based on existing studies of genotyping for HLA-A*31:01 prior to prescription of carbamazepine and HLA-B*58:01 prior to prescription of intravenous immunoglobulin (Switzerland) is considered cost-effective compared with plasma exchange procedure (408,168 rubles / 1,157 $). The calculated CER in USD per 1% of patients with one grade and more improvement per year was lowest for 10% IVIG (Switzerland) – 640,908 RUB /11,236 $ in comparison with plasma exchange – 1,200,495 RUB/21,950 $. Current rate taken as for 15.06.2017 is 57,035 RUB.

PRM127 INCORPORATING DEPENDENCE BETWEEN MODEL PARAMETERS IN UNCERTAINTY ANALYSES

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OBJECTIVES: Probabilistic Sensitivity Analysis (PSA) results depend on the assumptions and the distribution of model parameters and their joint distribution. Although joint distribution of some parameters are accounted for (Dirichlet for transition probabilities, multivariate normal for regression parameters), in most health economic models the distribution of different types of dependence structures is omitted. As a result, PSA results reflect model inputs that are assumed to be independently distributed. This can lead to inaccurate uncertainty analysis results. METHODS: We demonstrated how to fit copulas to data we used to populate a health economic model to construct joint distributions. We then sampled parameter values under different assumptions about their joint distribution: First we assumed they are independent, reflecting the current practices; second we assumed that the variables are jointly normally distributed, and finally we used copulas to sample from the marginal distributions. We compared various plots generated under different assumptions to the scatterplot of the original data. Using a health economic model, we assessed the cost-effectiveness of each model. We also investigated the implications on the conclusions about the uncertainty of the base case estimate of cost-effectiveness of the treatment.

PRM128 COST-EFFECTIVENESS ANALYSIS OF 10% INTRAVENOUS IMMUNOGLOBLIN COMPARED WITH PLASMA EXCHANGE IN TREATMENT OF CHILDREN WITH GUILLAIN-BARRE SYNDROME IN RUSSIA

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OBJECTIVES: To assess the cost-effectiveness of 10% liquid intravenous immunoglobulin (IVIG) (Switzerland) compared with plasma exchange in treatment of Guillain-Barré syndrome (GBS) in children in Russia for 1-year period. METHODS: A decision model was used to evaluate the effects of IVIG treatments. The data on IVIG and plasma exchange efficacy (measured as ratio of patients with improvement by at least one grade on Hughes functional grading scale for GBS) was obtained from available clinical trials. The following costs were taken into account: one-time IVIG procurement, plasma exchange procedures (including procurement of 5% albumin and consumables), expenditures for SGB treatment, management of adverse events, hospitalization, and care costs. Results: As a result, cost-effectiveness ratio (CER) of 10% IVIG (Switzerland) was calculated and was as follows: According to van der Meche (the Netherlands,1992) therapy with 10% IVIG (Switzerland) leads to one grade and higher improvement in 19% more patients with SGB compared with plasma exchange procedure. According to performed cost analysis, 10% IVIG (Switzerland) therapy (339,681 rubles/5956 $) is less costly by the end of the 1st year per one patient compared with plasma exchange procedure (408,168 rubles/7,157 $). The calculated CER in USD per 1 % of patients with one grade and more improvement per year was lowest for 10% IVIG (Switzerland) – 640,908 RUB/11,238 $ in comparison with plasma exchange – 1,200,495 RUB/21,950 $. Current rate taken as for 15.06.2017 is 57,035 RUB.

PRM129 RISK ADJUSTMENTS IN ECONOMIC MODELS - WHAT IS THEIR IMPACT ON PREDICTED RATES?

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INTRODUCTION: State-transition models are based on the assumption of mutually exclusive and probabilistic estimates of event rates, particularly when obtained from different sources, may however not reflect that feature: event risk often increases with age (e.g. cardiovascular (CV) events) and may depend on the calendar time and pre-existing risk. Risk adjustment (RA) methods and their impact on cost-effectiveness (CE) are largely neglected in the literature and economic modelling practice. OBJECTIVES: To identify RA techniques and evaluate their effect on estimated CE in state-transition models. METHODS: Based on basic probability principles, three main categories of potential RA were identified. Arbitral reductions: reducing risks until the logical constraints are satisfied for every event in an assumed sequence (C) created combined health states: adding states which reflect multiple events occurrence The effects of

A753
of these RA were evaluated using a semi-Markov model based on Wilson 2012 CV risk equations and non-CV mortality estimates from life tables. The model includes 3 health states, where patients are at risk of non-fatal CV events, fatal CV events and fatal non-CV events. Additionally, the effect of altering cycle length was assessed. RESULTS: The differences in predicted CV rates between RA methods and with the inclusion of non-CV events were between -2.6% to -2.8% for the base case impact. The impact of the RA methods increased with longer cycle length. CONCLUSIONS: A number of RA can be implemented and the decision on which one to use, if any, will depend on the input packages, model and resource availability in each particular case. Shortening cycle length reduces the impact of RA. Ignoring to implement RA might substantially affect rate predictions, leading to biases in CEs results and ultimately erroneous HTA reimbursement decisions.

PRM130
VACCINE EFFICACY, EFFECTIVENESS, OR IMPACT: WHICH ONE TO CHOOSE IN ECONOMIC EVALUATIONS? 
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OBJECTIVES: We conducted a systematic review and analysis of published data to access vaccine efficacy data from randomized clinical trials to develop our economic evaluations. Later on we may obtain vaccine effectiveness data through case-control studies. What matters most however are vaccine impact data over time. If impact results are different from efficacy and effectiveness data, how do they affect the economic results? We take the example of the monoclonal vaccine (RUX4414) against rotavirus disease to evaluate that point. METHODS: We developed models allowing the use of different vaccine data to simulate ICERs. We first calculated the ICER using vaccine efficacy data in a static cohort model with adjustment for herd-effect achieved after reaching the steady state level (8 years). We then adjusted the vaccine input parameters with vaccine effectiveness instead of efficacy in a second and a third analysis of the evaluation period. The vaccine impact data requires the use of a population model instead. We compare the results of the impact data over a same period of assessment with vaccine effectiveness instead of efficacy in a second analysis over a same period of assessment with vaccine effectiveness data through case-control studies. What matters most however are vaccine impact data over time. Impact data will obviously be different from vaccine effectiveness data, but the data are the closest results to what is happening in real life. It is therefore imperative to select those data as the most relevant to measure the economic value of new vaccines. Impact data will obviously not be available when the vaccine is launched. These results question the methodology of vaccine assessment.

PRM131
QUANTITY AND QUALITY OF EXTERNAL EVENT VALIDATION PROCEDURES IN ECONOMIC EVALUATIONS OF VACCINES
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OBJECTIVES: For assessing the long-term health economic impact of obesity programs, modelling techniques are frequently applied to project obesity-associated events over a defined time horizon. Therefore, it is important to characterize the predictive quality of external event simulation approaches, which ensures the acceptance of results from economic evaluations, published external event validation approaches were identified, reviewed and analyzed. METHODS: We performed a systematic review and analysis of published data to identify decision models for health economic assessments (HEA) in obesity. For each included study we extracted information on the external event validation approach, using the best practice recommendations of the report “Model Transparency and Validation” issued by the ISPOR Model Development Task Force. RESULTS: We identified 87 papers and 83% (72 of 87) simulated obesity-associated events. Only ten models (11%) performed an external validation and only for one the predictions of the event simulation was investigated in a cohort of obese subjects. Considering other ISPOR best practice criteria we have found that for none of these external validation cases a systematic identification of suitable data sources was performed, and that a justification of the data source selection, due to predefined criteria, was identified only in three cases. However an adequate result presentation (simulation results provided for each source, presentation of discrepancies, and a qualitative measure on fit) was provided for most external validation cases (78% of cases). CONCLUSIONS: We have found that only a limited number of published decision models for full HEAs in obesity have applied an external event validation. In addition, those who conducted external validation suffers from major limitations including the data source selection process, as only in one case, obesity cohorts were used as basis for the validation procedure. Thus in conclusion published obesity models lack information on the predictive quality of the applied event simulation approaches.

PRM132
SELECTING SOFTWARE PACKAGES FOR PERFORMING COST-EFFECTIVENESS MODELLING IN HTA
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OBJECTIVES: Microsoft Excel® is considered the essential software package for developing cost-effectiveness models, and is one of four preferred by NICE for technology assessment submissions. As models become more complex and analyses become computationally expensive, the use of alternative software packages becomes a pertinent concern. This study aimed to identify the different packages used for cost-effectiveness modelling in HTA submissions to NICE and the criticisms of the chosen software by Evidence Review Groups (ERG). METHODS: All cost-effectiveness models submitted to NICE by manufacturers and published between 2006 and 2016 were assessed for software used to develop the model. Data were extracted from submitted models to determine the predictors of each package’s use, and likelihood of criticisms and acceptability by the ERGs. Results were then used to develop a decision algorithm to guide software choice. RESULTS: The search identified 181 submissions utilising 6 different packages. The most commonly used software packages were Excel® and SIMUL8. The principal factor identified in choosing to model in non-Excel software was the lack of existing models. Conclusions: The results indicate that cost-effectiveness models are frequently used, and a lack of existing models may drive the choice of software. Further research could examine the reasons behind model development and the impact on model acceptability to ERGs.

PRM133
CALIBRATING MODEL–CONSIDENT TRANSITION PROBABILITIES FOR FIBROSIS STAGES IN NASH
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OBJECTIVES: Non-alcoholic Steatohepatitis (NASH) is a disease with its early progres- sion characterized by five stages of hepatic fibrosis from F0 (no fibrosis) to F4 (compensated cirrhosis). The fibrosis progression rate (FPR) between fibrosis stages has been estimated in the published literature. However, the number of patients with F0 and F4 fibrosis stages progressed divided by the total number of persons years of follow up. The FPR has been used in Markov cost-effectiveness models as a proxy for transition probabilities between fibrosis stages (2015, 2016). This resulted in the calibration that model specific transition probabilities calibrated to match detailed study data give a better model of disease progression than FPR. METHODS: The observed data included the number of patients for all 25 combination of initial and final fibrosis stages across the total number of patient years for each initial stage. Our Markov model assumed that transition is possible to the next stage in either direction that leaves 8 transition probability parameters to be calibrated. The calibration objective was to match the observed and modelled final patient number distribution at the modelled time horizon. For the calibration, the time horizon was set to the number of patient years for each initial stage. RESULTS: The model generated distribution of patients closely match the observed distribution from the data source. The resulting transition probabilities are almost identical to the published FPR. CONCLUSIONS: The calibration method for transition probabilities in Markov-models of NASH is recommended over the use of FPR. The method incorporate all available informa- tion from the data source instead of the FPR that is only a summary statistic of the observed progressions. Furthermore, the calibrated transition probabilities are fully consistent with the model by allowing for transitions in both directions from each state and multiple transitions from each state over the model time horizon.

PRM134
COST-EFFECTIVENESS ANALYSIS OF VENETOCLAX FOR TREATMENT OF REFRACTORY/RELAPESED CHRONIC LYMPHOCYTIC LEUKEMIA WITH OR WITHOUT 17P DELETION IN BULGARIA
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OBJECTIVES: Modeling cost and health benefits of VEN for Bulgaria compared to best supportive care (BSC) forms a third treatment line. An indirect comparison of therapeutic alternatives for the first therapeutic line in patients with CLL del + del 17p/TCP53 mut and the second therapeutic line in patients with R/R CLL del17p/ TCP53 mut was performed. METHODS: Identification and analysis of published data from health technology assessment for treatment of relapsing/refractory CLL (R/R CLL) del 17p/TCP53 mut in other countries. Literature search identified 181 submissions utilising 6 different approaches. The search included also models of data of health utilities and costs of VEN vs BSC, discounted at 5%. The Markov model was applied with time horizon of 20 years. The indirect comparison includes VEN, BSC, brutinib (IBI), ibrutinib (BRI), bendamustine (BEN), idelalisib (IDE), ofatumumab (OFA). RESULTS: In the group of patients with CLL del 17p/TCP53 mut VEN dominates IBR with better efficacy and lower costs: VEN vs. IDE/RIT (ICER 12 212 BGN/QALY), VEN vs. RIT/ BEN (ICER 21 485/QALY). In the group of patients with R/R CLL, refractory to one previous therapy, VEN dominates IBR with better efficacy and lower costs: VEN vs. OFA/BEN (ICER 9931 BGN/QALY); VEN vs. RIT/BEN (ICER 39 085BGN/QALY) and VEN vs. IDE/RIT (ICER 12 212 BGN/QALY). CONCLUSIONS: VEN is a cost effective health technology in comparison with the therapeutic alternatives for treatment of CLL with and without the presence of del17p/TCP53 mut in Bulgaria. KEYWORDS: HTA, Bulgaria, health technology assessment, venetoclax, chronic lymphocytic leukemia

PRM135
DEVELOPING A CONCEPTUAL MODELLING FRAMEWORK FOR ECONOMIC EVALUATION
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OBJECTIVES: Conceptual modelling (CM) is a key initial step in developing a mathematical model. Whilst there are established CM frameworks in other disciplines
there has been little research in the field of economic evaluation, and no generic standard exists. The objective of this research was to inform the development of a CM framework in non-economic evaluation fields, and to analyse these frameworks for common steps that would inform the development of a CM framework for economic evaluation. METHODS: After an initial scoping exercise using pearl growing techniques and a critical review of the literature (CIS) approach, we identified key studies and synthesized results. CIS uses an iterative approach to search a range of sources, followed by an evolving selection and synthesis process to add to the research base. Web of Science was purposely searched to identify CM frameworks. Broad inclusion criteria included CM frameworks with discrete steps, references and citations were examined. Alongside this a site-ation search was carried out to identify non-academic frameworks. An iterative data extraction process identified common steps in the frameworks, these were analyzed and used to inform a framework for economic evaluation CM. RESULTS: Fifteen frameworks were identified from disciplines including ecology and engineering. Regardless of the discipline, similar steps were identified. A CM framework, reassembling these steps, a CM framework for economic evaluation is proposed, split into three broad sections: understanding the problem (including, choose project team, objectives and outputs), model content (including, review previous conceptual models, scope and define and document the conceptual model (including review/refine, validation and assumptions/simplifications). CONCLUSIONS: Using steps from non-economic evaluation frameworks has informed a CM framework proposed for use in economic evaluation. The next stage in this research is to validate the framework with expert opinion and case studies.

PRM136
EVALUATION OF ANAFERON® IN THE TREATMENT OF ACUTE RESPIRATORY INFECTIONS IN MEXICO
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OBJECTIVES: Respiratory tract infections are one of the society’s main health problems due to the high rate of hospitalization, morbidity and mortality. Despite the oral antibiotics, there are few things available to prevent or treat respiratory infections. Children can present between six and eight respiratory infections per year, many of which, especially those occurring during the infant period, affect the lower respiratory tract. Anaferon® (affinity-purified antibody to interferon gamma) promotes an immunomodulating and antiviral action. Its efficacy in relation to acute viral respiratory infections has been established clinically and experimentally. The objective of this study is to conduct a cost-effectiveness analysis of Anaferon® for the treatment of acute respiratory infections in children and adults compared with standard treatment. METHODS: This study used a decision tree, in which the costs and effectiveness of two treatment strategies in patients with acute respiratory infections were compared. Anaferon® plus standard care (consultation plus treatment for the symptoms). The time horizon is six months. RESULTS: Adding Anaferon® to the standard therapy is a cost-effective strategy over standard therapy, the incremental cost is $198 USD ($558 USD vs $360 USD) for 12 months.

PRM137
HIERARCHICAL BAYESIAN MODEL ACCOUNTS FOR HETEROGENEITY IN ONCOLOGISTS’ STATED PREFERENCES ON VARIOUS BREAST CANCER TREATMENTS
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OBJECTIVES: Traditional stated-preference models with fixed effects assume that individuals behave similarly. However, empirical evidence has shown that individuals’ preferences are often diverse. Hierarchical Bayesian models that include random effects provide individual-specific utilities to account for heterogeneity. This research studies oncologists’ choices about various pharmaceutical therapies for patients who have metastatic breast cancer. METHODS: In this discrete choice experiment conducted in Lima, Peru, each of 113 oncologists was presented with 11 choices (each consisting of four scenarios of therapies plus the NONE option) and asked to pick the best choice. The attributes included Treatment Scheme, Patient Recovery Status, Treatment Length, Cost, and Risk Factors. Hierarchical Bayesian methods were used in this multinomial logit conjoint analysis to account for heterogeneity in preferences. RESULTS: Treatment Scheme, Recovery Status, and Risk Factors have the largest influence. On average, treatments with above average use of follow-up medication were preferred, and these oncologists tended to choose therapies that would have a better recovery status (0.19 with a 95% HPD credible interval [0.10, 0.29]) with the highest benefit. Anaferon® (affinity-purified antibody to interferon gamma) promotes an immunomodulating and antiviral action. Its efficacy in relation to acute viral respiratory infections has been established clinically and experimentally. The objective of this study is to conduct a cost-effectiveness analysis of Anaferon® for the treatment of acute respiratory infections in children and adults compared with standard treatment. METHODS: This study used a decision tree, in which the costs and effectiveness of two treatment strategies in patients with acute respiratory infections were compared. Anaferon® plus standard care (consultation plus treatment for the symptoms). The time horizon is six months. RESULTS: Adding Anaferon® to the standard therapy is a cost-effective strategy over standard therapy, the incremental cost is $198 USD ($558 USD vs $360 USD) for 12 months.

PRM138
MAPPING FROM THE WOMAC TO THE EQ-5D-5L QUESTIONNAIRE: COMPARISON OF DIFFERENT METHODS
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OBJECTIVES: Hip or knee osteoarthritis (OA) affects very negatively the health-related quality of life (HRQoL). Consequently, studies of treatment efficiency, typically used in health utilities studies, are of great interest. One of the most widely used generic instruments to derive utilities is the EQ-5D-5L. However, in clinical practice, the use of specific HRQoL questionnaires may be more frequent. Our objective was to develop mapping functions to estimate the utility index from the WOMAC questionnaire.

PRM139
A MODIFIED TIME TRADE-OFF EXPERIMENT IN EQ-5D-3L VALUATION WITH FUTURE HEALTH STATES UTILITIES
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OBJECTIVES: People rarely actually trade health, hence, health preferences are not well known. In using fuzzy normalisation, while eliciting the utilities in time trade-off (TTO) and estimating the dimension importance and value sets. METHODS: A modified-TTO survey was used. Respondents (184, a convenience sample) were shown the alternative, self-ratings and observed the TTO tasks. From a standard valuation, the responder provided ranges of equally/somewhat plausible answers (EPSA/SPAS), which define the (dis)utility of each clinical state as a trapezoidal fuzzy number. The value sets were compared with the standard error of a (crisp) mean (SEM). The determinants of EPSA length were identified. I built several models to identify dimensions impact on (dis)utility: (A, as a benchmark) crisp/disutility-crisp parameters; (B) fuzzy (dis)utility-crisp parameters, based on the directed Hausdorff distance, two fuzzy-fuzzy models: using the Hausdorff distance (C1) or modelling the middles and lengths of EPSA (C2). Value sets were constructed.

PRM140
MAPPING FROM THE BDI-II TO THE EQ-5D-5L QUESTIONNAIRE IN PATIENTS WITH MAJOR DEPRESSION DISORDER
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OBJECTIVES: Depression is one of the most disabling mental disorders causing a significant decrease in health-related quality of life (HRQoL). Therefore, studies of treatment efficiency are of great interest. They are usually based on health utilities, being the EQ-5D-5L one of the most widely used instruments to derive these utilities. However, in clinical practice, the use of specific questionnaires is more frequent. Our objective was to develop mapping functions to estimate the EQ-5D-5L utility index (UI) across the BDI-II score. The BDI-II was used to detect and classify depression severity, and the fit was compared by the MAE and RMSE.

RESULTS: The mean EQ-5D-5L index was 0.562 (SD ± 0.269, range: 0.384 to 3). GAM models indicated no need of powers of the BDI-II score. Both linear and beta regression models obtained similar results for models with and without age and sex. However, the validation of the functions in the follow-up sample showed slightly lower MAE and RMSE values in the linear model. The function was: EQ-5D-5L = 1.1390 − 0.0131·BDI − 0.0036·Age + 0.0180·Sex (Male = 0, Female = 1). Since the GAM models were used to determine the optimal relationship grade between the utility index and the BDI-II score, then we used linear and beta regression for the modelling, and age and sex were also considered. To select the best model the AICc (corrected Akaike’s Information Criterion) was used. Both linear and beta regression models obtained similar results for models with and without age and sex. However, the validation of the functions in the follow-up sample showed slightly lower MAE and RMSE values in the linear model. The function was: EQ-5D-5L = 1.1390 − 0.0131·BDI − 0.0036·Age + 0.0180·Sex (Male = 0, Female = 1).

CONCLUSIONS: The GAM models were used to determine the optimal relationship grade between the utility index and the BDI-II score. Both linear and beta regression models obtained similar results for models with and without age and sex. However, the validation of the functions in the follow-up sample showed slightly lower MAE and RMSE values in the linear model. The function was: EQ-5D-5L = 1.1390 − 0.0131·BDI − 0.0036·Age + 0.0180·Sex (Male = 0, Female = 1). Since the GAM models were used to determine the optimal relationship grade between the utility index and the BDI-II score, then we used linear and beta regression for the modelling, and age and sex were also considered. To select the best model the AICc (corrected Akaike’s Information Criterion) was used. Both linear and beta regression models obtained similar results for models with and without age and sex. However, the validation of the functions in the follow-up sample showed slightly lower MAE and RMSE values in the linear model. The function was: EQ-5D-5L = 1.1390 − 0.0131·BDI − 0.0036·Age + 0.0180·Sex (Male = 0, Female = 1).

The risk of error on efficacy estimation (percentage of error on AUC) by wrongly assuming the PH assumption was tested using the Schoenfeld test. The hazard ratio published in each trial, we generated individual patient data (IPD) using Guyot’s algorithm, and plotted against the p-value of the Schoenfeld test. The risk of error between the “real” treatment curve and the “created” one was calculated as the percentage of error between the areas under the curve (AUC) and plotted against the p-value of the Schoenfeld test. RESULTS: In 73.3% (22/30) of
the trials, the PH assumption was verified at a 0.05 threshold. For these trials, the difference of the AUC was less than 5% in 72.7% (16/22) of cases. However, for the 8/30 trials where the PH assumption failed, the difference on the AUC was greater than 5% for 100% of cases, with a maximum difference of 19.4%. **CONCLUSIONS:** Based on this preliminary work, extrapolation using HR method is not adapted if PH assumption failed, considering the higher risk of pathways correctly identified. A threshold of correctly identified pathogens triggers outbreaks. Simulations determine the effect a PH method could have in determining outbreaks and closing of infected sources.

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**PRM146**

**FROM EVALUATION TO OPTIMIZATION: USING A META-MODEL TO MAXIMIZE THE BENEFITS OF COLORECTAL SCREENING ACCOUNTING FOR CAPACITY CONSTRAINTS**

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**OBJECTIVES:** Model-based analyses are typically useful for assessing the cost-effectiveness of a few but not a vast number of alternative health care strategies. We aim to illustrate the potential advantages of using a meta-model to identify the best strategy combination of colorectal cancer accounting for colonoscopy capacity constraints.

**METHODS:** We defined screening strategies starting from age, interval, number of screening rounds, and screening test positivity threshold (164,464 unique strategy combinations). We evaluated a limited sample of predefined strategies with the validated ASCCA model and identified the best screening strategy therein, in terms of life-years gained (LYG), compared with no screening. Next, this limited sample was used to fit a Gaussian Process meta-model. Finally, discrete evolutionary programming was used to iteratively identify the best possible screening strategy according to the meta-model (GP-DEP approach). Colonoscopy demand was restricted to 500 per 1,000,000 individuals. The sample size of predefined strategies was varied (n=50,100,200). The GP-DEP performance was assessed with bootstrapping (n=200), but force exhaustive search, and comparison with ASCCA outcomes. **RESULTS:** GP-DEP resulted in stable predicted best screening strategies when applied to a sample of ≥ 100,000 individuals. The exact same best strategy could be identified in 94% of bootstrap samples. Compared with ASCCA, predicted colonoscopy demand, LYG and costs of the best strategies from GP-DEP were accurate, slightly too high and slightly too low, respectively. However, strategy ranking (in decades) according to ASCCA and GP-DEP were similar. For sample size 100, average predicted benefits of the best strategy identified by GP-DEP compared to the best strategy identified by ASCCA equaled 0.028 LYG (95%CI 0.013-0.043) per individual. **CONCLUSIONS:** Extending the ASCCA model with GP-DEP enhances performance: the best screening strategy can be identified much faster, even when constraints apply, and will outperform the best screening strategy as typically identified from a limited sample of predefined strategies.

**PRM147**

**SINGLE ARMED OBSERVATIONAL DATA TO CLOSING THE GAP IN OTHERWISE DISCONNECTED EVIDENCE NETWORKS**

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**OBJECTIVES:** Bayesian network meta-analysis (NMA) allows for the estimation of relative treatment effects in a connected evidence network. We propose the use of single arm observational data to enrich the evidence base where RCT data alone does not exist. An NMA network to allow for pairwise comparison between treatments. The approach is presented using a case study in relapsed or refractory multiple myeloma (rrMM).

**METHODS:** A systematic literature review of RCT evidence identifying evidence networks. Comparative observational studies are matched based on study level covariates to bridge separate networks. Since such methods are prone to bias, we capture the additional uncertainty to reduce the risk of over-confident interpretation of results. Uncertainty is captured by exploring a range of possible matches to bridge the networks. **RESULTS:** For 21 RCTs exploring 22 treatments for rrMM form two disconnected networks. 12 single arm observational studies were identified for matching to bridge the networks. The similarity between studies was assessed based on age, treatment history, baseline stage and gender; 14% of possible matches were found to be reasonably similar and were included. A ranking analysis indicates that carfilzomib, ixazomib or elozumab in combination with lenalidomide plus dexamethasone as well as carfilzomib in combination with dexamethasone show the highest efficacy within the network of treatments in terms of progression free survival. **CONCLUSIONS:** The analysis illustrates how observational evidence can be used to bridge the gaps in existing RCT evidence, allowing for the indirect comparison of a large number of treatments which cannot be achieved using standard NMA methods. We stress the importance of incorporating additional uncertainty to avoid overinterpretation of results as obtained from clinical trials. Appropriate communication of uncertainty associated with results is recommended. In many situations, some of the input parameters (e.g. incidence > 100 per 1,000 person years. Multiplex PCR costs £33.33 per sample including staff time but conventional methods cost £6.58. The PCR method results in a gain of 0.3 QALYs per 1000 person years, at a cost which is within acceptable limits of cost-effectiveness. As such, it demonstrates that a cost-effective method of screening for acute intestinal infectious diseases.

**PRM148**

**COST-EFFECTIVENESS OF MOLECULAR VERSUS CONVENTIONAL SCREENING FOR ACUTE INTESTINAL INFECTIOUS DISEASES: NOVEL APPLICATION OF ALL-EMBEDDED MODELING**

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**OBJECTIVES:** To develop an economic model of the cost-effectiveness of using molecular and conventional screening in a representative hospital; exploring various test characteristics, the practices of hospitals and patients, using logical methods to diagnose pathogens contributing to acute intestinal infectious diseases.

**METHODS:** Agent-based models of population interaction, exposure to sources of infection and transmission were developed for major pathogens. Model parameters were identified from a literature review and from the Integrate project. A genetic algorithm was used to determine unknown parameters relating to infectiousness on encounter. The model consisted of 50,000 agents over a period of one year. Each agent could be infected by a source and infect other agents. A subset of infected agents in the community visit a general practitioner (GP), and a subset of these provide a stool sample for testing. We simulated a PCR method by representing a group of pathogens and their pathogens correctly identified. A threshold of correctly identified pathogens triggers outbreaks. Simulations determine the effect a PCR method could have in determining outbreaks and closing of infected sources.

**OBJECTIVES:** To determine parameters controlling the transmission of different pathogens. We calculated the values associated with each probability assuming a non-normal distribution. In the last step, we calculated the values associated with each probability assuming a non-normal distribution. The algorithm was implemented in a model developed to assess the cost-effectiveness of a Herpes Zoster subunit (H2Z/su) vaccine vs placebo in adults ≥ 50 years old. We ran two PSAs: (1) varying the incidence parameters only and (2) varying most parameters in the model. **RESULTS:** The PSAs varying incidence only, 90% of simulations resulted in an incremental cost-effectiveness ratio (ICER) below £50,000, £33,000 and £68,000 using a correlation of 0.5, and 0.9 respectively. For the 3 PSAs varying most parameters in the model, 90% of simulations resulted in an ICER below £38,000, £48,000 and £58,000 using the same correlations values as above. **CONCLUSIONS:** Allowing parameters to be correlated will help explore the overall uncertainty in model inputs and consequently the impact on model outputs. The algorithm presented here can be implemented and used for other CEAs.
tions ("xabans") - for prophylaxis against venous thromboembolism (VTE). The outcome was defined as either VTE or major bleeding during the three months post-surgery. RESULTS: Our tool was demonstrated on the task of identifying and characterizing a sub-population that better responds to "xabans" versus enoxaparin. The cohort comprised of 90,000 patients, randomly divided into train and test sets (63,000 and 27,000 patients, respectively). Utilizing our tool, 34 candidate variables were extracted and used in model training. Of all variables, four effect modifiers were identified by our tool (THA/TKA, previous major bleeding, number of surgical visits per patient, and time from surgery). Using those weights, the tool calculates a score for each patient, representing their affinity to "xabans" over enoxaparin. The user may set different score thresholds, using interactive visualization, determining what is considered high affinity. That threshold impacts the benefit of different patients, and the relative scores between different patients are displayed in a parallel coordinates chart, where their characterization may be compared. An additional visualization shows patients conversion potential – which patients would switch if treatment options were to change. CONCLUSIONS: Our tool enables the introduction of many candidate variables into the analysis, resulting in a small set of variables which are the causal effect modifiers. Thus, along with the interactive visualization, makes the model and its results easier to interpret, and the sub-populations easier to characterize.

PM152
HOW TO SAMPLE ORDERED PARAMETERS IN PROBABILISTIC SENSITIVITY ANALYSIS
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OBJECTIVES: Probabilistic sensitivity analysis (PSA) in health technology assessment involves simulating a large number of realisations as inputs to economic models to appropriately characterise parameter uncertainty and its consequences for decision making. The distribution and correlations between two variables are less than 0.70. In that case, experts can state that one is greater than another then using standard sampling approaches may result in inappropriate PSA. This research aims to propose a method, the ‘Difference Method’ (DM), for generating PSA samples where the constraint that one variable is greater than another is maintained and which also satisfies both clinical and statistical validity. METHODS: The DM approach samples the target variables via a difference parameter. If the target variables are bounded, it involves transforming the variables so that they are unbounded and then sampling via the difference parameter. The DM approach was compared with two commonly applied methods (independent sampling and sampling using a common random number generator) using two examples. RESULTS: The DM-generated PSA samples have summary statistics that were similar to the given values in our examples whilst maintaining the constraint that one variable was greater than another. It also implies plausible correlation between the two target variables. We have developed an Excel workbook to implement the DM approach. CONCLUSIONS: The DM approach avoids the use of boundary problems and provides a more efficient approach to simulating PSA samples. Excel-implemented DM approach provides a solution to overcome the problem with naive sampling methods and should be considered in PSA.

PM153
USING NETWORK META-ANALYSIS OF INDIVIDUAL PATIENT DATA (IPD) & SUMMARY AGGREGATE DATA (SAD) TO IDENTIFY WHICH COMBINATIONS OF INTERVENTIONS WORK BEST FOR WHICH INDIVIDUALS
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OBJECTIVES: In many settings interventions are comprised of a number of potential components, and the selection of which components to use is termed "complex". Such a range of potential interventions means that not only do we need to consider which combination is best for a population overall, but also which combination is best for particular sub-populations. The use of Individual Patient Data (IPD) allows such a question to be answered whilst minimising the problem of ecological bias. METHODS: Using a recent Cochrane Collaboration systematic review and subsequent pairwise meta-analysis on the safe storage of medicines we undertook a Network Meta-Analysis (NMA) of both IPD and Summary Aggregate Data (SAD), adjusting for heterogeneity in study design, in order to identify which combination of interventions was the most appropriate for specific sub-populations defined by individual covariates. RESULTS: Based on SAD from 13 Randomised Controlled Trials (RCTs) the use of any intervention led to a statistically significant increase in the safe storage of medicinal products [OR: 1.53, 95% CI: 1.27 to 1.84]. However, interventions could combine up to 4 different separate components, and using NMA approach, and including IPD from 9 of the 13 RCTs, we were able to explore the heterogeneity between both component combinations and their effect in specific sub-populations. CONCLUSIONS: NMA of IPD and SAD can allow identification of the optimal potential combination of individual components for specific sub-populations and when there is a high level of uncertainty be used to help identify and design appropriate further RCTs.

RESEARCH ON METHODS – Patient-Reported Outcomes Studies

PM154
CAREGIVER BURDEN IN DAILY HUMAN GROWTH HORMONE INJECTIONS FOR CHILDREN
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OBJECTIVE: To assess caregiver burden in daily human growth hormone (r-hGH) replacement therapy for children and young people over 30 years with growth hormone deficiency (GHD). Most commonly, r-hGH therapy is long-term and relies upon daily subcutaneous injections to achieve the goals of GHD treatment in children and adults. While caregivers commonly give or assist with injections, the burden experienced is often limited. This research explores this burden. METHODS: As part of a study to establish the content validity of new questionnaires that assess injection regimen burden, items were incorporated into an interview schedule. A pediatrician estimated with dyad impaired with scoliosis to the United States taking daily r-hGH injections for GHD [n=11 children ages 4 to 11, n=4 adolescents ages 13-14, and their caregivers]. During the interviews, caregivers were asked to describe their experiences relating to their child’s r-hGH injections. RESULTS: The final size and structure of questionnaires included a variety of burdens, including the need to keep medication cold (particularly when away from home), negative reactions from their children (e.g., crying, resisting injections), and impacts on travel (e.g., difficulties and travel limitations being anxious or bothered by giving injections to their children), and daily activities (an extra chore to do at night, changes to work schedule, unable to be away from home without child, ensuring that medicine and supplies are delivered and stockpiled). CONCLUSIONS: These results suggest that there may be additional emotional effects from administering an uncomfortable or painful treatment every day to their very young children. Further research may help determine whether these burdens might be lessened with a less frequent injection regimen.

PM155
PSYCHOMETRIC PROPERTIES OF THE EQ-5D-5L IN PATIENTS WITH MAJOR DEPRESSION DISORDER
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OBJECTIVE: To perform the validation of the Spanish EQ-5D-5L questionnaire for patients with major depression disorder, studying the psychometric properties, such as reliability and validity, including the structural validation. METHODS: We included 433 patients with major depression, who completed the EQ-5D-5L, the BDI-II and the PHQ-9 questionnaires. The EQ-5D-5L contains five questions rated on a five-level scale, from which a utility index can be derived based on the recently developed preference-based scoring function (Ramos-Gudi et al. 2016). The BDI-II consists of 21 items conforming a global score, in addition to classifying patients according to their severity. The PHQ-9 allows to establish the diagnosis and severity of the depression. Statistical analysis: Floor and ceiling effects were examined. Reliability was assessed using Cronbach’s alpha coefficient. Structural validity was studied by confirmatory factor analysis (CFA) for categorical data. Convergent validity was studied by the Spearman correlation coefficient between EQ-5D-5L and BDI-II. RESULTS: The BDI-II consists of 21 items conforming a global score, which means to be a unidimensional scale. Cronbach’s alpha coefficient was 0.77. The fit indexes of the CFA were excellent (RMSEA=0.036, CFI=0.999, TLI=0.995) and factor loadings were all statistically significant and >0.60. The correlation between the EQ-5D-5L index and BDI-II was r = -0.58. Patients with higher severity level, had significantly lower scores on the EQ-5D-5L (P<0.0001). CONCLUSIONS: The results support the reliability and validity of the EQ-5D-5L questionnaire in patients with major depression disorder. Further, the hypothesis that the five items of the questionnaire make up a single factor (the utility index) is confirmed. Therefore, the recently derived EQ-5D-5L, could be very useful as an outcome measure, at least in patients with major depression disorder.

PM156
CROSS-CULTURAL ADAPTATION AND VALIDATION OF THE PEDIQL CARDIAC MODULE VERSION 3.0
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OBJECTIVE: To develop a Russian version of the Pediatric Quality of Life Inventory (PedsQL) 3.0 Cardiac Module (Q. Varni et al., USA). METHODS: In a prospective study a cross-cultural adaptation of the English-language questionnaire was done, the reliability of the new version (Cronbach’s alphas), construct validity (comparison of responses of patients, previous use of “xabans” and their weights were different), and included 433 patients with major depression disorder, who completed the EQ-5D-5L, the BDI-II and the PHQ-9. The EQ-5D-5L contains five questions rated on a five-level scale, from which a utility index can be derived based on the recently developed preference-based scoring function (Ramos-Gudi et al. 2016). The BDI-II consists of 21 items conforming a global score, in addition to classifying patients according to their severity. The PHQ-9 allows to establish the diagnosis and severity of the depression. Statistical analysis: Floor and ceiling effects were examined. Reliability was assessed using Cronbach’s alpha coefficient. Structural validity was studied by confirmatory factor analysis (CFA) for categorical data. Convergent validity was studied by the Spearman correlation coefficient between EQ-5D-5L and BDI-II. RESULTS: The BDI-II consists of 21 items conforming a global score, which means to be a unidimensional scale. Cronbach’s alpha coefficient was 0.77. The fit indexes of the CFA were excellent (RMSEA=0.036, CFI=0.999, TLI=0.995) and factor loadings were all statistically significant and >0.60. The correlation between the EQ-5D-5L index and BDI-II was r = -0.58. CONCLUSIONS: The results support the reliability and validity of the EQ-5D-5L questionnaire in patients with major depression disorder. Further, the hypothesis that the five items of the questionnaire make up a single factor (the utility index) is confirmed. Therefore, the recently derived EQ-5D-5L, could be very useful as an outcome measure, at least in patients with major depression disorder.
presence of the strong correlation between the values PedsQol. Cardiac Module and the PedsQoL Generic Core Scale (p < 0.01). Test-retest was statistically significant for all scales (p < 0.001). Conclusions: The appropriate psychometric characteristics of the Russian version of the cardiac module of the PedsQol 3.0 questionnaire indicate the possibility of its further clinical application.

PM157 PREDICTING EQ-SD INDEX SCORES FROM PROMIS PROFILE 29 IN THE UNITED KINGDOM, FRANCE, AND GERMANY
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Objectives: Quality-adjusted life years (QALYs) are used for economic evaluations of health care options. The EQ-5D index score is commonly used to calculate QALYs. It has been predicted in a US population sample from five PROMIS domain item banks: physical function, fatigue, pain impact, anxiety, and depression. The aim of this study is to validate this model in independent data from Europe and Denmark. Methods: We collected PROMIS Profile 29 and EQ-SD data in the general population of the United Kingdom (n = 1,509), France (n = 1,501), and Germany (n = 1,502). We compared agreement using Bland-Altman analyses between observed and predicted utility scores for the US prediction model and for country-specific linear regression models estimated in these samples. Results: The EQ-5D predictions of the US model underestimated health utility on average for the UK by 0.06 (95% CI: -0.10 to 0.08), for France by 0.09 (95% CI: -0.10 to 0.02), and for Germany by 0.05 (95% CI: 0.06 to -0.01). No significant differences were found by PROMIS domain in either country. Conclusions: Keeping in mind that EQ-5D index scores range from 0 to 1, predictions from the PROMIS Profile 29 using either linear model are imprecise, regardless of taking five or seven PROMIS Profile domains into account.

PM158 THE CYSTIC FIBROSIS IMPACT QUESTIONNAIRE (CF-IQ): QUALITATIVE DEVELOPMENT AND COGNITIVE EVALUATION OF A NEW PATIENT-REPORTED OUTCOME INSTRUMENT TO ASSESS THE LIFE IMPACTS OF CYSTIC FIBROSIS
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Objectives: Cystic fibrosis (CF) experience significant disease burden, including progressive pulmonary decline, reduced lifespan, treatment burden, and complex comorbidities. This multicenter study was designed to develop a patient-reported outcome (PRO) instrument to assess the impact of disease burden on quality of life in patients with CF. Methods: Semi-structured qualitative concept elicitation (CE) interviews were conducted with patients and caregivers for the CF-IQ. CE interviews support the content validity of the CF-IQ in patients with CF. Conclusions: The CF-IQ is a novel PRO developed as a standardized assessment reflecting domains to quantify disease impact in patients with CF. The domains and conceptual framework identified highlight the multifaceted impact of disease burden. CE and cognitive interviews support the content validity of the CF-IQ in patients with CF. Sponsoring Vertex Pharmaceuticals Incorporated.

PM159 NON-INTRAVENATIONAL REAL-WORLD EUROPEAN STUDY QUANTIFYING THE BURDEN AND COSTS OF SEVERE AP ATTACKS ON HEALTHCARE RESOURCE USE (HRU) IN PATIENTS WITH METASTATIC NON-SMALL-CELL LUNG CANCER (MNSCLC) – RESULTS FROM AN INTERIM ANALYSIS
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Objectives: Severe acute pancreatitis (AP) is a lifethreatening multi-organ dysfunction in acute attacks. Currently, there is no disease-specific patient-reported outcome (PRO) measure evaluating the impact of AP attacks on quality of life among patients with MNSCLC. The aim of this study is to validate this model in independent data from Europe and Denmark. Methods: We collected PROMIS Profile 29 and EQ-SD data in the general population of the United Kingdom (n = 1,509), France (n = 1,501), and Germany (n = 1,502). We compared agreement using Bland-Altman analyses between observed and predicted utility scores for the US prediction model and for country-specific linear regression models estimated in these samples. Results: The EQ-5D predictions of the US model underestimated health utility on average for the UK by 0.06 (95% CI: -0.10 to 0.08), for France by 0.09 (95% CI: -0.10 to 0.02), and for Germany by 0.05 (95% CI: 0.06 to -0.01). No significant differences were found by PROMIS domain in either country. Conclusions: Keeping in mind that EQ-5D index scores range from 0 to 1, predictions from the PROMIS Profile 29 using either linear model are imprecise, regardless of taking five or seven PROMIS Profile domains into account.

PM160 DEVELOPMENT AND CONTENT VALIDITY TESTING OF AN ASSESSMENT OF SYMPTOMS AND EXPERIENCES OF PATIENTS WITH ACUTE PANCREATITIS ASSOCIATED WITH SEVERE HYPERTRIGLYCERIDEMIA
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Objectives: Severe hypertriglyceridemia (sHTG) is a rare condition, complicated by severe hyperlipidemia and high-risk lipids, which can cause recurrent pain and/or life-threatening multi-organ dysfunction in acute attacks. Currently, there are no disease-specific patient reported outcome (PRO) measures evaluating the impact of AP attacks on quality of life among patients with MNSCLC. The aim of this study is to validate this model in independent data from Europe and Denmark. Methods: We collected PROMIS Profile 29 and EQ-SD data in the general population of the United Kingdom (n = 1,509), France (n = 1,501), and Germany (n = 1,502). We compared agreement using Bland-Altman analyses between observed and predicted utility scores for the US prediction model and for country-specific linear regression models estimated in these samples. Results: The EQ-5D predictions of the US model underestimated health utility on average for the UK by 0.06 (95% CI: -0.10 to 0.08), for France by 0.09 (95% CI: -0.10 to 0.02), and for Germany by 0.05 (95% CI: 0.06 to -0.01). No significant differences were found by PROMIS domain in either country. Conclusions: Keeping in mind that EQ-5D index scores range from 0 to 1, predictions from the PROMIS Profile 29 using either linear model are imprecise, regardless of taking five or seven PROMIS Profile domains into account.

PM161 LINGUISTIC VALIDATION OF KNOWLEDGE, ATTITUDES AND PRACTICE OF ZIKA VIRUS DISEASE QUESTIONNAIRE AMONG THE MALAYSIAN GENERAL PUBLIC USING RASCH MODEL: A CROSS-SECTIONAL STUDY
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Objectives: Recently, Malaysia is bracing for more Zika virus disease (ZVD) cases. The frequent increase in number of ZVD cases could further stretch a health system struggling with dengue. The main objective of this study was to adapt, translate, and validate the knowledge, attitudes and practice (KAP) of ZVD questionnaire among the Malaysian general public. Methods: In this cross-sectional study, KAP questionnaire for ZVD was composed considering the available resource package of the World Health Organization (WHO). The 37-item questionnaire consisted of four parts: socio-demographic data (n = 6), knowledge (n = 7), attitudes (n = 15), and practice (n = 9) of ZVD. The finalised KAP questionnaire for ZVD was translated according to already established international translation guidelines. The overall translation process involved forward translation, backward translation, harmonization, cognitive debriefing and proof reading. The content validation was done by three experienced questionnaire validation experts with the clinical background. After qualitative validation, questionnaires were distributed among 120 subjects. The data were extracted using Bond and Fox software for Rasch analysis. Results: The item reliability and person reliability values were 0.96 and 0.60, respectively. The output tables of item discrimination showed that values for unit and outfit zSTD (1.04) and outfit MNSQ (0.6 to 1.4) and PTMEA correlation (0.3 to 0.6) were within the acceptable range as specified by the Rasch Model. Hence, the newly devised translated questionnaire satisfies the specification of the Rasch Model for reliability and construct validity. The Rasch analysis of KAP questionnaire for ZVD is proposed to be a highly reliable and valid tool to assess the level of KAP among Malaysians. As questionnaire development is an iterative process, so this study suggests to validate KAP of questionnaire in other states of Malaysia for further reinforcement of good psychometric properties.
PM162 DEVELOPING A METHODOLOGY FOR USING ACOUSTIC SIMULATIONS OF HEARING LOSS TO DESCRIBE HEALTH STATES
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OBJECTIVES: Previous work examined whether preferences for hearing-related health states can be described using a sensory experience, in the form of an acoustic simulation of hearing loss, rather than using vignettes. This research examined whether utility values vary depending on how participants interact with the stimuli, and whether simulating healthy hearing as a comparator to simulations of hearing loss would increase the reliability of health valuations.

METHODS: Single-sided deafness (SSD), a complete loss of hearing in one ear, was simulated. Some participants were positioned within a virtual acoustic environment to create multi-talker conversations. 64 normal-hearing participants were asked to express their preferences for hearing-related health states using an acoustic simulation for a time trade-off task. Participants either listened actively for a talked within the simulation and were asked to report what the talked said, or listened passively to the simulations without any further instructions. In 50% of participants, the simulation was accompanied with a simulation of perfect hearing health as a comparator.

RESULTS: Actively listening to the simulations resulted in significantly lower utility scores compared to passively listening (mean difference -0.14, CI 0.03 to 0.25). On average, there was no effect on utility values from providing a simulation of perfect hearing health as a comparator to the simulations of SSD. However, providing a perfect hearing health comparator made utility values more reliable (ICC 0.81, CI 0.67 to 0.92) compared to when no comparator was provided (ICC 0.74, CI 0.52 to 0.87). The use of an active listening task together with a comparator simulation of perfect hearing health produces utility values more in line with those reported by patients. The use of a comparator simulation also increases the reliability of health valuations by making the large-scale use of simulations more feasible by avoiding the need to obtain repeated valuations.

PM163 EXPLORATORY ANALYSIS OF THE REASONS FOR CREATING WORLDWIDE TRANSLATIONS OF PATIENT REPORTED OUTCOME INSTRUMENTS
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OBJECTIVES: Key goals of translating Patient Reported Outcome questionnaires (PROs) are accuracy and comprehensibility; other important considerations are consistent terminology and translation choices within languages. One method to achieve this consistency is to create a single translation for a language, typically called a “worldwide” translation, intended for speakers across multiple countries. The reasons for creating this worldwide translation were the topic of further investigation. The aim of this study was to quantify which stakeholders (e.g. sponsor, developer, or eCOA vendor) advocated for worldwide translations, and to begin to delineate the reasons for those requests. METHODS: All worldwide translations produced from January 2010 to June 2017 were categorized according to the stakeholder that requested them and frequencies calculated for each category. A qualitative analysis of a randomly selected 5% of the sample was performed on project documents and communications in order to find common motivations for worldwide translations. RESULTS: 574 worldwide translations were found in the Corporate Translations project database, comprising approximately 3% of all projects. Their sponsors, intended for translations two or more countries, were prompted by either the sponsor (70%), developer (29%), or eCOA vendor (1%). A review of project documents and communications showed that the most common reason for creating a worldwide translation was to limit conflicts and satisfy logistical concerns dictated by the study sites, while developers frequently communicated a desire to increase consistency in key terms across multiple countries and eager updating in case of source text revision. CONCLUSIONS: Overall, worldwide translations constituted a small percentage of global projects. In most cases, worldwide translations are created at the behest of the sponsor due to constraints on costs or time. There are deeper questions as to the underlying procedural distinctions between different worldwide translations that will be the topic of further investigation.

PM164 ASSESSING METHODOLOGIES FOR HEALTH STATE UTILITIES IN PAEDIATRIC INDICATIONS FOR COST-UTILITY ANALYSES: REVIEW OF NICE TECHNOLOGY APPRAISALS FOR PAEDIATRIC INDICATIONS
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OBJECTIVES: Choosing an appropriate methodology for health state utilities is imperative when conducting a cost-utility analysis (CUA). This remains a challenge particularly in paediatric populations where direct utilities (from trials) are often not available. The objective of this review was to assess the methods used for obtaining utilities in prior National Institute for Health and Care Excellence (NICE) UK technology appraisals (TAs) submitted for paediatric indications.

METHODS: A search was conducted on the NICE website in December 2016 to identify the TAs for paediatric indications. Those which included patients aged 0–18 years, or for which no direct utility data from trials was available, were included in the review. Revised TAs for which full information was not available were excluded. Data pertaining to basic information about the TA (e.g. intervention, indication), age, and methodology used for measuring utilities, and conclusions were recorded. Results for the present review were compared with previous studies (O’Hare et al. 2010). Several tools were used to assess risk of bias. RESULTS: Out of a total of 405 TAs, data from 24 TAs for paediatric indications were identified. EQ-SD was used in 11 out of 24 submissions for measuring utilities and mapping from other non-preference based measures to EQ-SD was done in two submissions. EQ-SD did not criticize the use of EQ-SD even though it is not recommended for use in paediatric populations. For submission of CUs to Health Technology Appraisal bodies like NICE, utility values derived from clinical trials is preferred over values obtained from literature as commented by ERG in one of the submissions. Mapping data to EQ-SD from a non-preference based measure using data collected from patients experiencing the treatment of interest is seen as an alternative within the NICE reference case. CONCLUSIONS: In the absence of direct utility data from trials, mapping data from other measures to EQ-SD for obtaining utilities for CUs may be an appropriate methodology particularly for paediatric indications.

PM165 VALIDATION OF THE EQ-SD-5L IN PATIENTS WITH HIP OR KNEE OSTEARTHRITIS
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OBJECTIVES: The objective of the present work was to study the psychometric properties of the Spanish EQ-SD-5L questionnaire for patients with hip or knee osteoarthritis (OA), such as reliability and validity, including the structural validity of the questionnaire.

METHODS: A total of 758 patients with hip or knee OA, who completed the EQ-SD-5L and WOMAC questionnaires. The EQ-SD-5L and WOMAC questionnaires. The EQ-SD-5L contains five questions rated on a five-level scale, from which a utility index can be derived based on the recently developed preference-based valuation (Ramos-Remus et al. 2016). WOMAC consists of three dimensions (pain, stiffness, physical function). Statistical analysis: Floor and ceiling effects were examined. Reliability was assessed using Cronbach’s alpha coefficient. Structural validity was studied by confirmatory factor analysis (CFA) for categorical data. Convergent validity was studied by Spearman correlation coefficient between EQ-SD-5L and WOMAC domains. We examined known-groups validity by comparing the EQ-SD-5L index among the different groups according to WOMAC, pain and functional limitations using the analysis of variance or Kruskal-Wallis test.

RESULTS: The floor and ceiling effects in EQ-SD-5L index were minimal (<3%). Cronbach’s alpha coefficient was 0.86. Regarding the results of the CFA, fit indexes were excellent (RMSEA=0.073, CFI=0.995, TLI=0.999) and factor loadings were all statistically significant (P<0.001) and >0.50. The correlation between EQ-SD-5L index with pain or function WOMAC domains were very high (r=0.688 and r=0.782). Patients with a higher level of WOMAC pain or functional limitation, had significantly lower EQ-SD-5L index. The support the reliability and validity of the EQ-SD-5L questionnaire in patients with hip or knee OA, in addition to confirming the hypothesis that the five items of the questionnaire make up a single factor, that is the utility index. Therefore, the recently derived EQ-SD-5L, could be very useful as an outcome measure, at least in patients with hip or knee OA.

PM166 THE SHORT TERM HEALTH RELATED QUALITY OF LIFE (HRQOL) IMPACT ON PATIENT AT THE INTERNAL MEDICINE CLINIC
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OBJECTIVES: Health related quality of life (HRQOL) of patients at internal medicine clinic is important because it is used as a surrogate marker of health status and its diagnosis and treatment affect them. No previous study has addressed the short term HRQOL outcomes of patients at internal medicine clinic using the Japanese version of EuroQol 5 Dimension (EQ-SD-5D). METHODS: Un-illuminated patients who visited to our hospital from January 2017 to May 2017 were enrolled. All patients were visited our hospital without any diagnosis. This is a prospective study and data were collected by interview at the clinic. Patient evaluated their health status using five dimensions. The EQ-Score were calculated based on the Japanese version of the value set. Primary outcome is the the norm of EQ-Score at the first visit and at one month after diagnosis. RESULTS: There were 26 male (37.1%) and 44 female (62.9%). The median age was 45 (95% confidence interval [CI] 40.1-49.9). The median EQ-Score at the first visit was 0.656 (95%CI 0.590-0.768) and it is lower than Japanese norm (0.853 in male and 0.808 in female). The median EQ-Score at one month after diagnosis was 0.880 (95% CI 0.768-1.000) and it is higher than Japanese norm. CONCLUSIONS: This study focused on undiagnosed patients who visited our internal medicine clinic. It showed that EQ-Score was decreased compared with the Japanese norm at the first visit but it improved after diagnosis. This finding suggest the value of measuring health status in undiagnosed patients by EQ-Score, because it would allow comprehensive evaluation of the patient’s health condition and add another dimension to the subjective symptoms and laboratory data.

PM167 ACCURATE REPRESENTATION OF PATIENTS’ OPINIONS FOR DECISION-MAKING: VALUE HISTORICAL HEALTH COMMUNITIES GOOD CARE HISTORY
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OBJECTIVES: The development of online patient communities worldwide has numerous possibilities to collect research data and decision support for a deeper understanding of patients’ health experiences and unmet needs. The goal of this research is (1) to analyse the key socio-economic characteristics of patients community users and (2) examine their correspondence with national patients’ demographics. METHODS: A nationally representative sample of patients was extracted...
from the French Health Insurance Information System (SNIIRAM), which compiles information on all illnesses' (ALD: affection longue durée). Patient-reported data from a patient platform (carenity.com) were collected and matched at disease level with SNIIRAM sample for patients with multiple sclerosis, Parkinson’s disease, diabetes, and inflammatory bowel diseases. We provided a confirmatory settings of the data and are reports of measurement. The Careeny (19,855 observations) and SNIIRAM sample (2,826,445 observations) for the following set of socio-demographic variables: gender, age distribution and residence area. Using a two-tailed and two-tailed tests, we test for equality of those variables.

RESULTS: Results suggest an over-representation of females for all pathologies in the patients’ community sample (p < 0.001). Geographical distribution of patients’ community users is significantly equivalent to patients from SNIIRAM database (p = 0.003) for all pathologies. Regarding age distribution, we observe an over-representation of young people and adults (from 25 to 54 years old, p < 0.001), with a corresponding under-representation of seniors (> 65 years old, p < 0.05). For all pathologies, Careeny communities, compared with SNIIRAM database, reflect the main characteristics of online users willing to share experiences related to their disease, with an over-representation of female patients, aged 25 to 54 years old. Health communities provide a venue for grassroots collection and analysis of patient-reported outcomes in a real-world setting.

**PRM168**

DEVELOPMENT AND PSYCHOMETRIC EVALUATION OF AN OWNER-COMPLETED MEASURE OF FELINE HEALTH AND QUALITY OF LIFE

**Goals:**

- To develop a 23-item, owner-completed, feline HRQoL measure.
- To perform psychometric analyses on the instrument.

**Methods:**

- A two-factor solution (healthy behaviours, clinical signs) with adequate model fit was based on findings from an online survey completed by 45 pet-owners, and revised following qualitative interviews with 10 pet-owners of healthy cats which included both concept elicitation and cognitive debriefing activities.
- Psychometric properties of the resulting 22-item measure were evaluated in an observational study with 199 pet-owners of healthy cats who completed the instrument at baseline and two-week follow-up. Analyses performed included: assessment of missing data, response distributions, item correlations, factor analysis, internal consistency (Cronbach’s alpha > 0.70), test-retest reliability (intraclass correlation coefficients [ICC] > 0.70), multi-trait analysis (correlations > 0.40), known groups analysis and distribution-based estimation of clinically important differences (CIDs).

**Results:**

- There were no missing data. Item response distributions were heavily skewed, due to the nature of healthy cats. Six items were deleted based on item-level analyses, qualitative findings and clinical relevance. Factor analysis supported a two-factor solution (health behaviour, clinical signs) with adequate model fit (Root Mean Square Error of Approximation: 0.09, Comparative Fit Index: 0.89). The resulting 16-item measure demonstrated good internal consistency and test-retest reliability (> 0.70 for both). All but three items correlated strongly with their respective domains, supporting item-convergent validity. Significant differences in total scores across different feline health groups (p < 0.001) were demonstrated in the Barthel Index.

**Conclusions:**

- The Barthel Index can be reliably used within economic evaluation.
- The measure can be used to complement the former within cost-effectiveness analysis.

**PRM170**

CLINICAL OUTCOME ASSESSMENTS FOR PATIENTS WITH HEMOPHILIA

**Objectives:**

- To identify the use of patient-focused clinical outcome assessments (COAs) in hemophilia A and B, and to explore regulatory-approved product labeling regarding the use and acceptance of such measures in hemophilia trials.

**Methods:** A structured review was performed of the literature, clinical trials, and regulatory labels to identify COAs used in hemophilia, focusing on patient reported outcome (PRO) measures. A critical review of relevant measures was conducted to identify themes in the evidence supporting these measures, guided by the requirements outlined in the FDA PRO Guidance.

**Results:** Over 150 COA measures had been identified from over 500 clinical studies and over 1000 publications. The distribution of measures into global and disease-specific PRO measures, Health-Related Quality of Life (HRQoL) measures, and activity limitation measures. Annualized bleeding rates and clinician reported measures of hemostatic efficacy were almost universally included in hemophilia studies and were the only measurable patient-focused clinical outcome assessments (COAs) in hemophilia product labels. Within both clotting factor and joint repair studies in hemophilia, the painVAS was the most frequently used PRO, followed by the Haem-A-QoL, SF-36, EQ-5D, Haemo-Qol, and patient-reported efficacy scales. Over half of these studies did not result in, or did not report, significant treatment results on these scales; however, the pain VAS, Haem-A-QoL, SF-36, Hemofilia-Qol, PedQoL, a physical activity checklist, WOAMAC, and Patient Global Assessment all measured at least one statistically significant result in the studies identified.

**Conclusions:** Hemophilia symptoms, HRQoL, and functional limitations were all identified as salient patient focused concepts in hemophilia, but only annualized bleed rate and 4-point hemostatic efficacy were endorsed as regulatory accepted PRO measures. Further psychometric properties should be evaluated in future clinical studies to help drive comprehensive COA strategy measures.

**PRM171**

QUALITATIVE INTERVIEWS TO INFORM DEVELOPMENT OF A PATIENT REPORTED OUTCOME (PRO) STRATEGY IN RBL1P RETINITIS PIGMENTOSA

**Objectives:**

- To develop a core set of outcomes based on patient preferences.

**Methods:**

- Qualitative interviews were performed with RBL1p RP patients, caregivers, and eye specialists targeted at older people of a commonly applied functional-status measure (the Barthel Index) by examining its convergent and discriminant validity when compared with 199 pet-owners of healthy cats who completed the instrument at baseline and two-week follow-up.

**Results:**

- There were no missing data. Item response distributions were heavily skewed, due to the nature of healthy cats. Six items were deleted based on item-level analyses, qualitative findings and clinical relevance. Factor analysis supported a two-factor solution (health behaviour, clinical signs) with adequate model fit (Root Mean Square Error of Approximation: 0.09, Comparative Fit Index: 0.89). The resulting 16-item measure demonstrated good internal consistency and test-retest reliability (> 0.70 for both). All but three items correlated strongly with their respective domains, supporting item-convergent validity. Significant differences in total scores across different feline health groups (p < 0.001) were demonstrated in the Barthel Index.
anchor and distribution-based methods to determine estimates of minimal important differences. The research questions related to this clinical difference. **RESULTS:** 1) Self-administered version of DEMQOL-Proxy met established criteria for reliability (internal consistency) and validity (convergent, discriminant and known groups); 2) RMT to identify the item descriptions related to this clinical difference. **CONCLUSIONS:** 1) The DEMQOL-Proxy can be used to measure functional decline and quality of life, is perceived by the decision makers as disadvantages of ETF and could hamper the decision to start ETF. Three items: less time needed for feeding, control over treatment and overall survival are perceived as benefits of ETF and could promote its implantation. Two additional items have an unclear outcome in the decision-making process: potential feeding complications and patient-caregiver relationship during feeding, that represents an emotional connection between them but as well a stressful situation. **CONCLUSIONS:** Most of the potential factors identified are perceived as disadvantages, which may contribute to delay the switch to ETF. These results highlight the need to develop a decision aid tool to clarify these aspects and facilitate the decision-making process.

**PM117**

**ELECTRONIC PATIENT-REPORTED OUTCOMES: ARE THERE GAPS BETWEEN GUIDANCE AND ISSUES ENCOUNTERED IN PRACTICE?**

**Objectives:** To identify the characteristics of feeding options that may influence the decision-making process of switching from oral to enteral tube feeding (ETF) and that should be included in a Patient Decision Aid to achieve shared decision making. **Methods:** 1) A systematic review of search engines to identify qualitative studies that surrogates decision-makers’ perceptions for ETF nutrition was performed in Medline, Cochrane Library and ISI-WOK. European and North-American studies including original articles, reviews, and congress communications, published in English or Spanish between January 2005 and June 6th 2016, were selected. The quality of these studies was assessed using Oxford Centre for Evidence-based Medicine levels of evidence. **Results:** Of the 742 publications identified in the literature search, 7 were 1 systematic review (47% of the 160 studies). Thirteen items which may potentially influence the decision-making process of switching to ETF were identified. Eight characteristics: loss of fat taste, loss of life normality, loss of independence, loss of social role, feeling of blame and concerns about permanent loss of ability to eat, perceived loss of dignity and loss of quality of life, are perceived by the decision-makers as disadvantages of ETF and could hamper the decision to start ETF. Three items: less time needed for feeding, control over treatment and overall survival are perceived as benefits of ETF and could promote its implantation. Two additional items have an unclear outcome in the decision-making process: potential feeding complications and patient-caregiver relationship during feeding, that represents an emotional connection between them but as well a stressful situation. **Conclusions:** Most of the potential factors identified are perceived as disadvantages, which may contribute to delay the switch to ETF. These results highlight the need to develop a decision aid tool to clarify these aspects and facilitate the decision-making process.

**PM115**

**THE PATIENT-REPORTED APNEA QUESTIONNAIRE (PRAQ): A PROM OPTIMIZED FOR USE ON BOTH INDIVIDUAL PATIENT AND AGGREGATE LEVEL**

**Objectives:** To identify the characteristics of feeding options that may influence the decision-making process of switching from oral to enteral tube feeding (ETF) and that should be included in a Patient Decision Aid to achieve shared decision making. **Methods:** 1) A systematic review of search engines to identify qualitative studies that surrogates decision-makers’ perceptions for ETF nutrition was performed in Medline, Cochrane Library and ISI-WOK. European and North-American studies including original articles, reviews, and congress communications, published in English or Spanish between January 2005 and June 6th 2016, were selected. The quality of these studies was assessed using Oxford Centre for Evidence-based Medicine levels of evidence. **Results:** Of the 742 publications identified in the literature search, 7 were 1 systematic review (47% of the 160 studies). Thirteen items which may potentially influence the decision-making process of switching to ETF were identified. Eight characteristics: loss of fat taste, loss of life normality, loss of independence, loss of social role, feeling of blame and concerns about permanent loss of ability to eat, perceived loss of dignity and loss of quality of life, are perceived by the decision-makers as disadvantages of ETF and could hamper the decision to start ETF. Three items: less time needed for feeding, control over treatment and overall survival are perceived as benefits of ETF and could promote its implantation. Two additional items have an unclear outcome in the decision-making process: potential feeding complications and patient-caregiver relationship during feeding, that represents an emotional connection between them but as well a stressful situation. **Conclusions:** Most of the potential factors identified are perceived as disadvantages, which may contribute to delay the switch to ETF. These results highlight the need to develop a decision aid tool to clarify these aspects and facilitate the decision-making process.
The change of clinical and QoL aspects in people with Parkinson's may be slightly less responsive to the change of H&Y than EQ-5D-3L. Overall, there may generate concerns over the measure's sensitivity to capture specific changes.

The ICECAP-O was associated with a larger magnitude of SRM in all of the four conditions to incorporate capability wellbeing. This broader wellbeing scope, however, might benefit from being more concise. Within the LV process, it is possible to identify areas lacking succinct equivalent translations and to avoid accidently conveying more specific, less specific or alternative meanings in order to achieve conceptual equivalence.

The influence of age on attitudes towards the use of “bring your own device” (BYOD) to record patient-reported outcomes data in clinical trials. This study required subjects to use their own mobile device, and attitudes could be mitigated by assistance downloading, training, information and good app design. The broad scope of ICECAP-O could provide rich information on the capability wellbeing of patients without compromising its sensitivity to the clinical and specific QoL change descriptively as ‘dismay on mood’. Such emotive terms can be interpreted differently across cultures, meaning a more elaborate translation may be required. Various technical terms materialized as being problematic because they weren’t used or known in the target country. For example, it was necessary in an Afrikaans translation to provide the name ‘MID caps’ in English as well as an explanation in brackets (Cap) that can count próximo.

EVALUATION AND VALIDATION OF THE PROACT MEASURES FOR CANCER PATIENTS AND INFORMAL CAREGIVERS

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OBJECTIVES: In the PROACT study we developed two scales to enable a broader evaluation of the impact of cancer and cancer treatment, measuring real world roles and responsibilities such as caring for others and financial and employment responsibilities. Here, we report the initial evaluation and validation. METHODS: The PROACT measures were designed for patients (intended to be administered alongside FACT-G), 60 for caregivers (standalone). Participants completed the PROACT measure alongside FACT-G, WHOQOL-BREF and SDI (patients) and WHOQOL-BREF and CQOLC (caregivers) at baseline and PROACT measure alone after 7 days. Recruitment was from 11 UK sites, stratified by age and tumour site.

There were no evidence of ceiling effects (total score). Rate of missing data was low (.0025% baseline; .001% follow-up). Correlations with validation measures were 

\[ r = .901 \] (2017) A399–A811

Issues and resolutions were found in 100% of the projects reviewed. Considering quality of life in oncology is particularly important, given the high prevalence of patients with psoriasis (PsO) and to compare with the Portuguese general population. It also aims to explore the associations between HRQoL and sociodemographic variables. METHODS: Data came from a cross-sectional study in patients with psoriasis (PsO) in 2014–2015, recruited during recruitment period. Jun–Jul 2014, and 13%, with PsO aged 18 or more (n=564) filled-in a questionnaire that included HRQoL measured by the EQ-5D-3L, medical history, health behaviors, PsO related social impact and satisfaction of provider care. Descriptive statistics were used to describe the EQ-5D-3L scores of psoriatic patients and parametric tests were used to compare these scores in different types of PsO patients. Comparisons with normative data fixed by the Portuguese population were also carried out. Regression analyses were used to identify factors associated with HRQoL. RESULTS: The burden of PsO was observed mainly in the EQ-5D-3L pain/discomfort (PD) and anxiety/depression (AD) domains. The intensity of these problems was significantly higher in respondents with psoriatic arthritis and plaque PsO. HRQoL of respondents with PsO was related to sociodemographic variables and was lower (MeanEQ-5D-3L = 0.75; ranging from 0.11 to 1.00) when compared with the baseline population (MeanEQ-5D-3L = 0.76; ranging from 0.50 to 1.00). Psoriatic arthritis patients had a lower HRQoL (MeanEQ-5D-3L = 0.62; ranging from 0.11 to 1.00) than other psoriatic patients. CONCLUSIONS: Suffering from PsO has a significant impact on self-perceived HRQoL, with more impact on PD and AD. These results support the importance of using HRQoL instruments as routine in population surveys or in clinical settings.

The influence of age on patient attitudes and acceptability towards using their own mobile device to record patient-reported outcomes data in clinical trials. To evaluate the influence of age on attitudes towards the use of “bring your own device” (BYOD) to record patient-reported outcomes data in clinical trials.

METHODS: Subjects entering a health questionnaire study using BYOD and a provided device were asked to complete a questionnaire assessing their attitudes towards BYOD use in clinical trials. RESULTS: 155 subjects (72 male, 83 female) aged 19-69 years (mean 48.6 ± 13.1, 30–40: 43 (28%), 41–60: 80 (52%), >60: 32 (21%) with a range of conditions resulting in chronic pain entered the single-center study. Proportions of the more >60 years old presented with tablet devices compared to the other age groups (9%, 10% and 38%, respectively). 16 subjects (10%) encountered difficulties downloading the study app (2%, 14% and 13% of the age categories, respectively). More subjects >60 years were unfamiliar downloading apps (0%, 2.5% and 12.5% respectively), and fewer felt definitely/probably able to download a study app without assistance (95%, 94% and 81% respectively). Over 90% of subjects in each age category would definitely or probably be willing to download an app on their own device for a forthcoming trial, with 97% (87%) reporting no concerns in doing so. Of those identifying a concern, a higher proportion were >60 years old (12%, 10% and 22%, respectively). A lower proportion of the youngest age group identified a provisioned app (2% and 16% more respectively). CONCLUSIONS: Amongst our sample there was good acceptance for the use of BYOD in clinical trials including subjects >60 years old, that these over 60 were more likely to identify concerns about downloading the app. Concerns cited could be mitigated by assistance downloading, training, instruction and good app design. This study required subjects to use their own mobile device, and attitudes in the wider population may differ.

COMPARING THE METHODS OF INTEGRATING THE INCORPORATION OF HEALTH-RELATED QUALITY OF LIFE OF ADVANCED CANCER PATIENTS IN ECONOMIC MODELS

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OBJECTIVES: Considering quality of life in oncology is particularly important, given the high prevalence of patients with advanced cancers. We describe and assess the methods being used in recently published economic models, the predictors of HRQoL chosen (if available) and the pros and cons associated with these
methods. METHODS: Recently published NICE Technology Appraisal Guidance reports that a formal norm was chosen as a sample of recently undertaken economic models. The following information was extracted for each of these models from the available reports: how HRQL was modelled and what information and data the HRQL estimates were based on. RESULTS: 9 economic models of advanced cancer patients were assessed and the chosen method for HRQL prediction extracted. The majority derived their HRQL estimates from trial-based standardised instruments to elicit preferences. These were both generic (e.g. EQ-5D-5L) and disease specific instruments (e.g. EORTC QLQ-C30). However, the most commonly used utility estimates were derived from published literature. Some of the submissions provided detail on the approaches used to estimate the best predictor of utility within their models. Two submissions linked disease progression to HRQL; another included both time to death and disease progression. Finally, another included a brief review of FOUs used in lung cancer clinical trials. METHODS: A search was conducted using clinicaltrial.gov, to identify lung cancer clinical trials and the primary, secondary and exploratory PRO measures used in these trials. The search was restricted to interventional clinical trials that were currently recruiting and without results. RESULTS: The search yielded 186 current trials. The PROs most frequently used in these clinical trials were the EORTC-QLQ C30 (n=50), the EORTC-QLQ LC13 (n=32), the FACT-L (n=16), the EQ-5D (n=15) and the MDASI-LC (n=6). In a majority of cases (88%), these were secondary endpoints. The EORTC-QLQ LC13, FACT-L and MDASI-LC were all developed specifically as lung cancer measures, but were not the most frequently used. Each of the PROs was reviewed in accordance with regulatory guidelines to evaluate the advantages and drawbacks of each with respect to context of use. For example, although the EORTC-QLQ LC13 is the most commonly used symptom PRO, it is an additional module to the EORTC-QLQ C30 and used together, these have a total item count of 93. To complete this assessment, the burden, cost and benefit of using this Pro must be considered. CONCLUSIONS: Selecting the most appropriate PRO measure as an endpoint during cancer clinical trials is important to provide full insight into the condition and treatment benefits. There are multiple existing validated measures developed for lung cancer and a number of comparisons can be made between them. The differences between the most commonly used measures have been summarised in this study and should be considerations when selecting a suitable measure for use in clinical trials.

EVALUATING PATIENT REPORTED OUTCOMES COMMONLY USED IN CURRENT LUNG CANCER CLINICAL TRIALS

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OBJECTIVES: Lung cancer continues to be the most prevalent cancer worldwide. As new treatments are developed there is a greater need for incorporating the patient perspective and a number of patient reported outcomes (PROs) have been developed specifically for lung cancer. This study aimed to conduct a brief review of FOUs used in lung cancer clinical trials. METHODS: A search was conducted using clinicaltrial.gov, to identify lung cancer clinical trials and the primary, secondary and exploratory PRO measures used in these trials. The search was restricted to interventional clinical trials that were currently recruiting and without results. RESULTS: The search yielded 186 current trials. The PROs most frequently used in these clinical trials were the EORTC-QLQ C30 (n=50), the EORTC-QLQ LC13 (n=32), the FACT-L (n=16), the EQ-5D (n=15) and the MDASI-LC (n=6). In a majority of cases (88%), these were secondary endpoints. The EORTC-QLQ LC13, FACT-L and MDASI-LC were all developed specifically as lung cancer measures, but were not the most frequently used. Each of the PROs was reviewed in accordance with regulatory guidelines to evaluate the advantages and drawbacks of each with respect to context of use. For example, although the EORTC-QLQ LC13 is the most commonly used symptom PRO, it is an additional module to the EORTC-QLQ C30 and used together, these have a total item count of 93. To complete this assessment, the burden, cost and benefit of using this Pro must be considered. CONCLUSIONS: Selecting the most appropriate PRO measure as an endpoint during cancer clinical trials is important to provide full insight into the condition and treatment benefits. There are multiple existing validated measures developed for lung cancer and a number of comparisons can be made between them. The differences between the most commonly used measures have been summarised in this study and should be considerations when selecting a suitable measure for use in clinical trials.

FUNCTIONAL ASSESSMENT AFTER TREATMENT OF UPPER EXTREMITY SOFT TISSUE SARCOMAS USING STRUCTURED OUTCOME MEASURES: A SYSTEMATIC REVIEW

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OBJECTIVES: To evaluate the upper extremity function after treatment of STS. METHODS: The authors searched the PubMed database to identify relevant articles using predefined search terms. Two independent reviewers assessed article eligibility. Articles written in English using a defined system to assess upper extremity function after treatment of STS were included. The reference lists of eligible articles were reviewed to identify relevant articles. RESULTS: The search yielded a total of 1448 studies of which 83 articles met the inclusion criteria. Three most commonly used outcome measures were the Musculoskeletal Tumour Society Score (MSTS) (n=56), Toronto Extremity Salvage Score (TESS) (n=19) and MSTS -87 (n=16). Most articles had less than ten upper extremity STS patients (66.3%), did not report STS patients’ function improvement from other tumours (41%) or from lower extremity tumours (13.3%). CONCLUSIONS: Few studies have specifically assessed the functional outcome after treatment of upper extremity STS. There was much variation in how findings had been reported making comparison of functional outcome among different studies challenging. Further investigations are needed to clarify what would be the optimal instrument for assessing upper extremity functional outcome in the treatment of soft tissue sarcoma.

QUALITATIVE RESEARCH METHODS FOR COLLECTING, ANALYZING, AND PRESENTING PATIENT-REPORTED DATA ON NOTICEABLE AND IMPORTANT CHANGE IN DISEASE SIGNS AND SYMPTOMS

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OBJECTIVES: This study demonstrates how qualitative research methods can help assign meaning to change observed in patient reported outcome (PRO) data. METHODS: In an anonymized PRO instrument development study, data were collected using a concept elicitation interview (CEI). Participants rated severity of signs/symptoms on a ‘0’ to ‘10’ numeric rating scale and indicated the minimal change needed in that sign/symptom to be (i) noticeable and (ii) important. During post CEI interviews (PI), participants completed a PRO questionnaire on a five-point verbal rating scale and indicated which alternate response would represent a (i) noticeable and (ii) important change. Qualitative data were interpreted using Atlas.ti and numeric responses were characterized via descriptive statistics. Noticeability and importance ratings were generated by subtracting those values from the severity ratings for each sign/symptom. RESULTS: Twenty subjects participated (mean age=42.7 years, 55.0% male) in CEIs. For the two most frequently reported cancer-related symptoms (i.e. fatigue and impaired vision, n=12), a mean change of 2.64 (SD=1.12) and 2.22 (SD=1.62) was “noticeable,” and a mean change of 2.82 (SD=1.54) and 2.63 (SD=1.58) was “important,” respectively. Twelve subjects were interviewed (mean age=48.7 years, 54.2% male). Seven percent of the most noticeable and important symptom rated was evaluated in two items and impaired vision in one item. Mean noticeable ratings were 1.38 (SD=0.52), 1.44 (SD=0.53), and 1.14 (SD=0.38). Mean importance ratings were 2.00 (SD=0.63), 1.75 (SD=0.71), and 1.29 (SD=0.49). CONCLUSIONS: As expected, on average, the detected questionnaires, subject responses indicated that a 26% to 40% improvement on the symptom/sign scale could characterize a clinically important response. The methods discussed here can be used to inform treatment responder definitions and, more broadly, as supportive evidence for interpreting efficacy results in clinical trials.

THE RISKS IN TRANSLATING SMARTPHONE STRINGS FOR MEDICAL STUDY SMARTPHONES APPS & SMARTWATCHES

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OBJECTIVES: Recently there has been an increase in the ‘Bring Your Own Device’ approach as more patients participate in clinical trials. However, there is little evidence on how to best collect data on PROs on their own smartphones or smartwatches. The aim of this study is to evaluate the risks in translating smartphone strings used in such apps and to highlight solutions in conveying the context of individual strings. We will focus on a specific PRO questionnaire on a five-point verbal rating scale. METHODS: This Linguistic Validation project underwent the following steps outlined by the ISPOR Principles of Good Practice: Preparation (including concept elaboration); Forward Translation; Review; Back Translation; Review and Proofreading. During Back Translation Review, the risks in translating smartphone strings were analysed, establishing which translations needed further clarification and updates. RESULTS: When reviewing the Back Translations, 7% of items were listed as ambiguous and further clarification were required. The initial translations were short enough to fit within a smartphone screen. Without being able to refer to the English source in screenshot form, translating these smartphone strings into French presented two specific areas of risks. 1) Many translations were too long due to additional clarifications being required in French. 2) French occasionally required several translations depending on the specific context of each source string. In this study, “mother” was both ‘agnée’ and ‘madame’. CONCLUSIONS: To provide clear and accurate text for the app, it is important to provide patients with screenshots and concept elaborations from project initiation. This aids the linguist to retain the correct context for the smart-device device. French texts often require elaboration so developers should consider flexibility and precision of language when developing the app. Both elements ensure accurate Linguistic Validation of smartphone strings and a reduced need for edits.

IT’S ALL RELATIVE – EXPLORING THE CHALLENGES DURING CULTURAL ADAPTATION OF FAMILY NAMES IN PRO (PATIENT REPORTED OUTCOMES) QUESTIONNAIRES

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OBJECTIVES: Some PRO questionnaires list family members to establish genetic links in illnesses, or when referring to a guardian. The aim of this study is to investigate challenges in linguistically validating common family titles in the context of PRO questionnaires. METHODS: 18 common family titles were selected for use in this research. Native linguists of 31 languages worldwide, experienced in translating PRO questionnaires, provided translations for the titles as well as explanations regarding family culture in their respective countries. The results were compiled and analysed to identify variations. RESULTS: Not a single language studied has a direct equivalent of all 18 titles. For “brother” and “sister”, there are variations required in 10% of the languages. For example, in Vietnamese, the language distinguishes between older and younger brother/sister. There is no distinction between “half-brother/sister” and “step-brother/sister” in Hindi whilst in Sesotho there is no distinction between a half, a step and a full sibling. In Arabic for Egypt and Israel, “father’s mother” and “mother’s husband” were translated into “abu” and “umma” respectively. CONCLUSIONS: To provide clear and accurate text for the app, it is important to provide patients with screenshots and concept elaborations from project initiation. This aids the linguist to retain the correct context for the smart-device device. French texts often require elaboration so developers should consider flexibility and precision of language when developing the app. Both elements ensure accurate Linguistic Validation of smartphone strings and a reduced need for edits.
CONCLUSIONS: There is a gap in the clinical meaningfulness research that often excludes the input of patients entirely or uses it in ways that are often too late to make a difference. This research shows that access to and use of video chat technology may aid in recruitment of individuals not located in major cities as it would eliminate travel for the interviewer and respondents. The use of video chat applications may aid in recruitment of individuals who are unable to participate in person interviews. Respondents were asked: Do you have access to Skype/Facetime or a similar video chat application? Would you prefer an interview that is conducted in-person or via video chat? Now that you have completed the interview, would you prefer that this interview took place via video chat applications or in-person interview. Respondents were asked: What was your opinion about the interview using video chat applications versus in-person interview? Do you have preferred that this interview took place via video chat applications or in-person interview? Access to video chat applications is a limiting factor as indicated by 48% of respondents, but other factors have an impact as well. While 52% of respondents had access, over half expressed hesitation to participate in video chat interviews which must also be considered. Additional research is needed to evaluate other factors including the nature of the interviews (topic), methodologies such as telephone interviews, as well as surveying following video interviewing.

COST-EFFECTIVENESS ANALYSIS OF INSULIN DEGLUDEC U100 COMPARED WITH INSULIN GLARGINE U100 IN GREECE

MethOds: To enable accurate data pooling, it is optimal to include a reference to the PRM189.

RESULTS: Base case incremental cost-effectiveness ratios (ICERs) were calculated at 8,883 € per QALY in the T1DM/B, at 5,379 € per QALY in the T2DMBOT and at 36,265 € per QALY in the T2DM/B treatment groups. Sensitivity analyses indicated that the results were not sensitive to the cost-effectiveness parameters, with almost all of the calculated ICERs falling below a commonly accepted willingness-to-pay (WTP) threshold (33,000 € per QALY gained) in all therapy regimens. The probability that IDeg was cost-effective compared with IGlar was 68.5%, 98%, and 88.5% in the T1DM/B, T2DMBOT and T2DM/B therapy regimens, respectively.

ConCLUSIONS: IDeg was found to be a highly cost-effective alternative therapy option compared with IGlar in T1DM/B, T2DMBOT and T2DM/B treatment groups in Greece from the healthcare payer perspective over a 1-year time horizon.

WHAT TIME DO WE DINE? - A CULTURAL STUDY TO EVALUATE PEOPLE'S VIEWS OF SET MEAL TIMES ACROSS COUNTRIES

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OBJECTIVES: Clinical Outcome Assessments (COAs) use names of mealtimes to refer to specific periods of the day, without specifying a given hour(s); this could lead to the intended timeframe being interpreted differently depending on country of origin. The study aims to assess how national differences in eating habits impact on respondent interpretation of these time periods. METHODS: 49 participants across 22 countries were asked to identify when they typically eat their morning, midday and evening meal. The responses were assessed to ascertain similarities and differences between countries, and whether an indication of a set time is preferable alongside the meal name in COAs to ensure more consistent interpretations and responses. RESULTS: The responses indicate the variance in timings: Morning meal: range 0600 – 0900; 12% of all responses indicating 0600, and 0900; 12% of all responses indicating 0600, and <1% indicating 1200. Midday meal: range 1100 – 1700: 83% of these responses indicated it would be eaten between 1200 and 1400; 3% of all responses indicating 1100, and 2% indicating 1500. Evening meal: range 1700 – 2300: 25% of these responses indicated it would be eaten at 1900; 10% of all responses indicating 1700, and 5% indicating 2300. Meal times vary greatly across countries, indicating trends due to national and cultural differences. Participants from hotter climates, e.g. Greece, Italy and Australia typically stated the evening meal would take place between 2000 and 2200; whereas colder countries e.g. Denmark, the UK and Canada stated typically the same meal would be between 1700 and 1900. ConCLUSIONS: Respondents interpret meals to occur at different times, spanning a range of 6 hours per meal, depending on country of origin. To enable accurate data pooling, it is optimal to include a reference to the meal alongside a specific time range in COAs.

USING RASCH MEASUREMENT TO QUANTIFY THE PERCEIVED RISKS ASSOCIATED WITH THE USE OF TOBACCO AND NICOTINE-CONTAINING PRODUCTS

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OBJECTIVES: Smoking is considered a treatable condition, and cessation rates are increasing. However, many smokers who wish to quit smoking face barriers. The policy of tobacco harm reduction – making less harmful products available to smokers who would otherwise continue smoking – is recognized as an important strategy for reducing smoking-related harm. Predicting use behavior change helps stakeholders to develop products that are more likely to be a possible factor driving tobacco product uptake and use. The objective of this study was to develop a new self-report measure that quantifies perceived risks of tobacco and nicotine-containing products using Rasch Measurement Methods (RMMs).

METHODS: The France, Italy and the UK were selected as focus groups in three countries, literature review and expert opinion. Cognitive debriefing interviews were conducted in four countries to interpret the content of the instrument and to support the cultural adaptation. The pilot FRI was then field-tested in two stages based on large cross-national web-surveys. Subsequently, The FRI was
implemented in cross-sectional studies to get an understanding of the perceived risk profile of different tobacco products for both adult smokers as well as never and former smokers. RESULTS: RMs supported the formation of an 18-item Perceived Health Risk Scale and a 7-item Perceived Addiction Risk scale. Both scales showed small measurement error, correct functioning of the rating scale, and measurement invariance across different countries. Aspects of tobacco product smoking status and different countries, providing thus the basis for valid comparisons. Construct validity was further supported by significant differences in perceived risks for different types of tobacco and nicotine containing-products; and for different smoking status groups.

**PMR195**

**THE DEVELOPMENT AND USE OF A PRELIMINARY CONCEPTUAL MODEL OF INFLAMMATORY BOWEL DISEASE (IBD) TO FACILITATE PATIENT REPORTED OUTCOME (PRO) INSTRUMENT SELECTION FOR A UK REAL-WORLD EVIDENCE STUDY**

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**OBJECTIVES:** Inflammatory bowel disease (IBD) is chronic in its nature and impacts patients’ health-related quality of life (HRQoL). This work aimed to develop a preliminary conceptual model of IBD to guide the measurement and selection of PROs to be included in a real-world study of vedolizumab. METHODS: The preliminary conceptual model was developed via a detailed review of empirical qualitative literature focussing on the biological and psychological aspects of health outcomes in IBD. The model content was structured according to the Wilson and Cleary (1995) HRQoL model and concepts were extracted from the literature. This model was then used to guide PRO measurement strategy, first by examining the content of PROs for their use in IBD and then by mapping the concepts on the model with the identification of PROs to the most appropriate PROs to include in a UK real-world study. RESULTS: The preliminary model consisted of a physiological factor level labelled, “IBD symptoms”, including two sub-levels, “Bowel” and “Systemic”. All other concepts were categorised under levels of functional health and overall quality of life, and labelled according to “impact of symptoms on daily life”. This encompassed six sub-levels of impact: “activities of daily living”, “interpersonal functioning”, “emotional”, “society and economics”, “social” and “treatment”. The model will next be presented to a panel of gastroenterologists and/or patients for verbal ratification to ensure that it covers the concepts described by patients in a clinical setting, and to validate the key domains important to patients. CONCLUSIONS: The preliminary version of the model will be used to give context to and support interpretation of the real-world data. This work provides examples of how a patient perspective from existing literature can be used to guide the strategy for measuring and selecting PROs in IBD.

**PMR196**

**TRANSLATION AND CULTURAL ADAPTATION OF THE BODY-Q CHEST MODULE INTO FINNISH FOR USE IN GYNECOMASTIA, WEIGHT LOSS AND FTM CHEST SURGERY**

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**OBJECTIVES:** The BODY-Q is a patient-reported outcome (PRO) instrument developed for weight loss and/or body contouring that measures appearance, health-related quality of life and experiences of care. The aim of this study was to translate and culturally adapt the BODY-Q Chest Module to Finnish and to establish a local branch for data collection for the international field-test. METHODS: The field-test version of the BODY-Q Chest Module includes a 34-item summary scale and an 8-item nipple scale. Translation and cross-cultural adaptation process adhered to the ISPOR guidelines. Two native Finnish translators produced forward-translations into Finnish and then met to create a consensus version. RESULTS: The final forward-translations included a 14-item chest and 8-item nipple scale. Translation and cross-cultural adaption process and found no need for further adjustments. The committee accepted the translation scales did not reveal any further problems. The committee accepted the translation and found no need for further adjustments. CONCLUSIONS: The Finnish version of the BODY-Q Chest Module can be used to measure the impact of chest surgery on the quality of life of patients in future studies and clinical practice.

**PMR197**

**WHEN AND WHERE TO USE FURIGANA? THE APPLICATION OF PHONETIC NOTATION IN JAPANESE TRANSLATIONS OF CLINICAL OUTCOMES ASSESSMENT INSTRUMENTS (COAs) FOR CHILDREN**

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**OBJECTIVES:** Furigana (used for Japanese) is a phonetic notation which accompanies the traditional Japanese Kanji characters in the form of small symbols or above the original character. These symbols aid the reader to pronounce characters phonetically to understand the meaning of the text. It is used in texts for children and language learners. This study concentrates on its application and importance of use in COAs intended for children. METHODS: To understand the relevance and application of furigana within COAs, research was conducted into its cultural use and meaning. In the first phase, the furigana was studied and its presence in the final translation. Academic studies and feedback from 32 native speakers/developers were collated. This data was analysed to verify if the use of the phonetic notations is applicable in COAs for children. RESULTS: Furigana and results were set into 3 items of preference for learners of Kanji, ‘text with furigana’, ‘no furigana’ or ‘other’ (descriptions). RESULTS: Considering furigana usage for respondents, 65.6% reported that if there was no furigana to assist in reading, a page with a high density of Kanji was considered daunting. When asked if they preferred text with furigana, ‘no furigana’ or ‘other’, 63.3% of respondents opted for text with furigana. CONCLUSIONS: The results highlight that the safer option is to apply furigana to the translations; ensuring children can easily understand each character and reduce the risk of misinterpretation. Expert feedback showed that furigana is seldom used in most texts for adults and is usually used for clarification and pronunciation. However, it is frequently used in books for children or non-native speakers learning the language and therefore should already be considered when translating COAs aimed at children into Japanese.

**PMR198**

**VALUE HEALTH WITH A MOBILE APP: THE INFANT HEALTH-RELATED QUALITY OF LIFE INSTRUMENT**

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**OBJECTIVES:** To determine the lack of preference for HRQoL instruments for infants and adolescents precludes evaluating overall HRQoL and calculating quality-adjusted life years (QALYs) for this population. We introduce and explain the development of the Infants and Younger Children Quality of Life (IQI), which is the first preference-based HRQI instrument developed by a novel methodology worked out under item response theory (IRT). IQI provides values for health states relevant in the first year of life. We also explain the principles of the IRT approach and how it is implemented in a mobile application consisting of two distinct tasks (classification, valuation) for the administration of the IQI. METHODS: A multistep development process began with extracting candidate health concepts from relevant measures identified by two literature searches. Next, three expert panels and two surveys with primary caregivers in New Zealand, Singapore, and the United Kingdom evaluated the relevance of the candidate health concepts, organized them into attributes based on their simplicity of use and alternative versions of the instrument (IQI), which is the first preference-based HRQI instrument developed by a novel methodology worked out under item response theory (IRT). IQI provides values for health states relevant in the first year of life. We also explain the principles of the IRT approach and how it is implemented in a mobile application consisting of two distinct tasks (classification, valuation) for the administration of the IQI. RESULTS: The final list of 8 health attributes included in the IQI consisted of sleeping, feeding, breathing, mobility/groom, mood, skin, interaction and other health problems. All attributes were assigned 4 levels, ranging from ‘no problems’ to ‘severe problems’. The users’ experiences with the mobile application were generally positive. CONCLUSIONS: The IQI is the first generic instrument designed to assess overall HRQOL in 0-1 year old infants providing a value for infant health status. It is short and easy to administer with a mobile application. Close attention was paid to the opinions of the infants’ primary caregivers during the instrument and mobile application development process.

**PMR199**

**VALUE OF A PILOT STUDY IN A RETROSPECTIVE CHART REVIEW: FINAL PROTOCOL DESIGN SHOULD BASE ON PILOT RESULTS**

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**OBJECTIVE:** This is a mandated Retrospective Chart Review (RCR) collecting drug utilization data for a blood disorder treatment, with the primary objective to assess the level of off-label use. Prior to launching the RCR, a pilot study was conducted to confirm the approach of utilizing pharmacies for data abstraction and to evaluate data variability and usefulness of a questionnaire as instrument for off-label ascertainment. METHODS: The pilot included a survey among European hospital pharmacies collecting information on access to prescription data, format of the pharmacy records, relevant variables documented and accessible for data abstraction. A questionnaire was utilized to support consistent data abstraction and to establish uniform criteria for determining off-label use. Each patient file was abstracted by two separate abstractors. Agreement between the two abstractors was assessed using the κ statistic. RESULTS: Drug usage information was available at 85% of all pharmacies that responded to the survey (n=27) of which 9% did not have access to prescription data. 15% still utilize paper records at their department, with the majority using electronic records or both. Access to all critical variables through the electronic records was available for 40% of the pharmacies. For the pilot study data was abstracted for 54 patients. Despite high agreement on off-in-use label between the two abstractors, kappa’s varied from 0.00 to 1.00 for the subgroups analysed. CONCLUSIONS: The questionnaire is not suitable for use with health care professionals. An additional interviews assessed the cross-cultural interpretability and parents’ understanding of health attributes and usefulness of the mobile application. RESULTS: The final list of 8 health attributes included in the IQI consisted of sleeping, feeding, breathing, mobility, grooming, mood, skin, interaction and other health problems. All attributes were assigned 4 levels, ranging from ‘no problems’ to ‘severe problems’. The users’ experiences with the mobile application were generally positive. CONCLUSIONS: The IQI is the first generic instrument designed to assess overall HRQOL in 0-1 year old infants providing a value for infant health status. It is short and easy to administer with a mobile application. Close attention was paid to the opinions of the infants’ primary caregivers during the instrument and mobile application development process.

**PMR200**

**STUDY OF POLYPHARMACY AT A TERTIARY CARE TEACHING HOSPITAL**

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OBJECTIVES: The study was designed to study the extent of polypharmacy among the hospital patients at Out Patients Pharmacy in St.Phillomena’s Hospital, Bangalore, to identify the most common class of drugs prescribed in polypharmacy prescription, to identify the drug interactions among the prescribed drugs, to identify the various therapeutic classes involved in major drug interactions. METHODS: A prospective longitudinal observational study was carried out in the pharmacy department of St.Phillomena’s hospital. The research student collected all the prescriptions received at OP pharmacy. All the prescriptions were carefully analyzed for polypharmacy and the data were pooled and analyzed using SPSS. RESULTS: A total number of 200 polyphonic prescriptions were found in the out-patient pharmacy of St.Phillomena’s Hospital. During the study period of 6 months, it was found that the majority of the prescriptions were prescribed to female 101(50.50%) and 99(49.50%) were prescribed to male. Among 200 prescriptions it was found that 134(67%) contain 5 drugs followed by 42(21%) contain 6 drugs, 15(7.50%) contain 7 drugs and 9(4.50%) contain more than 7 drugs. The most common therapeutic class was found to be antibiotics with 92(46%) followed by anti hypertensives with 12(6.00%). However, beta-blockers were found to be the most frequently involved in major drug interactions (65(32.50%) drugs and 55(27.50%) drugs) were Vitamins. It was found that the majority of polypharmacies have been occurred in the age group of adults 113(56.50%) patients followed by neonates and infants 52(26%) patients and geriatrics 19(9.50%) patients. Among the prescriptions, 82 drug interactions were observed which were found to be 43(52.43%) major followed by 36 (43.90%) moderate and 3 (3.65%) minor. Among the Major interactions, anti-inflammatory drugs were found to be the most commonly participating therapeutic class of drug in interactions. CONCLUSIONS: only 10% of prescriptions were found to have polypharmacy which was commonly observed in female patients. Among polypharmacy prescriptions less than 50% had drug interactions, majority of which were major drug interactions.

RESEARCH ON METHODS – Statistical Methods

PMR201
RESULTS OF INDIVIDUAL PARTICIPANT DATA META-ANALYSIS VS AGGREGATE DATA META-ANALYSIS OF RCTS OF EXERCISE REHABILITATION IN CHRONIC HEART FAILURE
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OBJECTIVES: Traditional meta-analyses synthesise aggregate data obtained from study publications or study authors, such as a treatment effect estimate and its associated uncertainty. An increasingly popular approach is the meta-analysis of individual participant data (IPD) where the raw individual-level data are obtained for each study and used for synthesis. This study compares and discusses results from an IPD meta-analysis vs standard meta-analysis of randomized controlled trials of exercise rehabilitation in chronic heart failure (CHF). METHODS: A previous systematic review, the Exercise Training Meta-Analysis of Trials for Chronic Heart Failure (ExTraMATCH II) identified and collected IPD from RCTs that compared exercise rehabilitation with a non-exercise control and a minimum follow-up of 6 months. Outcomes of interest were mortality, hospitalization, exercise capacity and health-related quality of life. Original IPD were checked for consistency and compiled in a master dataset. Standard meta-analytic models were used for aggregate data and a first stage IPD analysis was carried out with a second stage meta-analysis of the results. RESULTS: Overall 33 RCTs were included in the original systematic review, whereas within the ExTraMATCH II project, IPD were obtained from 19 RCTs in approximately 4,000 patients. From aggregate data analysis there was no significant difference in pooled mortality (OR 0.92, 95% CI 0.73 to 1.16), whereas there was an effect of exercise rehabilitation on hospitalization (RR 0.75, 95% CI 0.62 to 0.92) and health related quality of life (MDM -0.46, 95% CI -0.66 to -0.26). IPD analysis is currently underway; the results will allow examining how patients’ characteristics modify treatment benefit. CONCLUSIONS: Given the limitations of current evidence in CHF, access to individual data from several RCTs offers a timely and important opportunity to revisit the question of which CHF patient subgroups benefit most from exercise-based rehabilitation.

PMR202
SECOND-LINE TREATMENTS FOR ADVANCED GASTRIC CANCER: A NETWORK META-ANALYSIS OF OVERALL SURVIVAL USING PARAMETRIC MODELLING METHODS
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OBJECTIVES: Advanced gastric cancer (AGC) is one of the most common forms of cancer and remains difficult to cure. There is currently no recommended therapy for second-line AGC in the UK despite the availability of various interventions. This work aims to compare interventions for treatment of second-line AGC using more complex methods to estimate relative efficacy, exploring various parametric survival models and to compare results to those published adopting conventional methods of synthesis, including network meta-analysis (NMA) of median survival data and hazard ratios. METHODS: Seven studies were identified in an existing literature review and results were synthesized in a connected network of evidence. Citations were limited to randomised controlled trials in previously-treated AGC patients. Studies were assessed for the availability of Kaplan-Meier curves for overall survival and the patient data (progression-free survival, overall survival). Two network meta-analyses were performed using R with the network meta-analyses R package (NMA). Two network meta-analyses were compared with results from a conventional IPD analysis. RESULTS: A total of 1764 patients received at least one of the drugs in the network meta-analysis. The most common agents prescribed were ranitidine, lansoprazole, and pantoprazole. The network meta-analysis identified 15 agents with statistically significant benefit in overall survival compared with placebo. The most effective agent was ramucirumab. CONCLUSIONS: The network meta-analysis identified 15 second-line agents with statistically significant benefit in overall survival compared with placebo. Further studies are needed to confirm the findings of this network meta-analysis. The results from this study provide useful insights into the likely benefit of new therapies for second-line treatment of AGC.
the extrapolation of AD progression, expected to further validate the robustness of the non-inferiority of the performed. Many different approaches to the treatment of the stages of AD were modelled using multicentre RWD. The natural history of AD and the delayed-start treatment effects for the placebo and treatment arm, respectively, were parameterised using data extracted from Consortium to Establish a Registry for Alzheimer’s Disease (CERAD). CMH used applied probabilistic sampling distribution technique to enable re-creation of 2000 samples that were then used to evaluate five non-inferiority test margins reported in the study. The non-inferiority margins of 0.1, 0.2, and 0.4 and 0.5, and 0.7 were extrapolated and reported for five test margins. Through this CMH identified the optimal non-inferiority test that generated minimal bias when determining the disease modifying effects, exploring the lower bound of the 1-sides Wald, and adjusting for the delay of the treatment effect.

RESULTS: Based on the 2000 simulations using the RWD, CMH identified the optimal test threshold (Δ = 0.5) that produced minimal bias, thus validating the AD and IPD literature. CONCLUSIONS: The applied evidence-based extrapolation method allowed us to model realistic disease progression trends for AD and to test the non-inferiority margins suggested by Liu-Siefert and colleagues, with minimal bias.

PRM206
HOW BENEFICIAL IS INDIVIDUAL PATIENT DATA IN A MIXED TREATMENT COMPARISON?
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OBJECTIVES: Individual Patient Data (IPD) from Randomised Controlled Trials (RCTs) are considered the gold standard for evaluating treatment regimens in a Mixed Treatment Comparison (MTC). However, as the majority of studies do not report IPD, IPD only becomes accessible by using aggregate data (AD) for at least some of the studies. We investigate the benefits of including varying proportions of IPD studies in an MTC.
METHODS: Donegan et al (2013) developed a number of models for including both AD and IPD in the same MTC. We carried out a simulation study of RCTs based on these models to check the effect of additional IPD studies on the accuracy of the estimate of both the treatment effect and the covariate effect. We also compared the Deviance Information Criteria (DIC) between different models to assess model fit. We then applied this approach to a Hepatitis C network including both RCTs and observational studies.
RESULTS: Our estimate of the covariate effect becomes more accurate as we increase the proportion of IPD studies in the network. However, the treatment effect is underestimated as a well conducted RCT will account for differences in covariates in the study design. The DIC distinguishes between models more often when there is a high proportion of IPD studies. In the Hepatitis C network even one IPD observational study decreases the standard deviation of both covariate effect and treatment effect estimates.
CONCLUSIONS: Inclusion of IPD reduces uncertainty surrounding the covariate effect. As RCTs are considered the gold standard of evidence, including IPD does not improve the accuracy of the treatment effect. However, IPD may be most useful in observational studies where the covariates may not be well balanced between individual treatment arms.

PRM207
MINIMIZING BIAS IN PARAMETRIC SURVIVAL ANALYSES OF PUBLISHED KAPLAN-MEIER CURVES
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OBJECTIVES: Health economic models often rely on published outcomes such as Kaplan-Meier (KM) curves. Virtual patient-level data (VPLD) can be generated from these curves on which parametric fitting analyses or treatment effects can be evaluated. We evaluated the accuracy of parameters of curves fit to VPLD derived using the Guyot et al. method in a simulation study. METHODS: We simulated one hundred trials comparing active and reference treatments with Weibull survival times and normal censoring times. The KM curves for both arms were “digitized” under multiple scenarios, varying the number of curve coordinates extracted, and the intervals at which ns at risk are available. The Guyot method was used to generate VPLD from the extracted values. Parameter estimates for Weibull models fit to individual patient-level data (IPD) and VPLD were compared. RESULTS: The shape and scale, but not the treatment effect, were found to be systematically biased. In a digitization scenario with 15 extracted coordinates the median ratio of the VPLD scale to IPD scale was 0.968 (IQR: 0.962-0.974) and the median shape ratio was 1.176 (IQR: 1.166-1.206). Increasing the number of coordinates extracted reduced, but did not eliminate the bias. The interval at which the ns at risk were reported had no apparent effect on the bias. Moving virtual events to interval endpoints from interval endpoints changed the sign of and markedly reduced the bias, in the example digitization the median scale ratio became 1.002 (IQR: 1.001: 1.004) and the median shape ratio became 0.979 (IQR: 0.965-0.996). To eliminate bias, it was necessary to both increase the number of extracted coordinates and place events at interval midpoints.
CONCLUSIONS: Placing events at the end of time intervals in VPLD may bias survival projections. The bias can be minimized by extracting the greatest number of KM coordinates feasible and by placing events at internal midpoints.

PRM208
THE USE OF INTRA-CLASS CORRELATION COEFFICIENTS TO ASSESS TEST-TEST RELIABILITIES IN PSYCHOMETRIC EVALUATIONS OF PATIENT REPORTED OUTCOME MEASURES
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OBJECTIVES: Considerable confusion exists around the interpretation, numerical meaning, and correlation of evidence, such as test-retest reliability (TRT) of patient-reported outcome assessments (PROMs). This literature review describes the most common ICC forms used in computing TRT. METHODS: A systematic search using OvidSP (Embase, MEDLINE®, PsychINFO and Google Scholar) identified published papers in psychometric evaluation studies. Articles were included for full-text review if they reported on TRT as determined by one of 6 ICC forms by Shrout and Fleiss or 10 versions thereof. They excluded studies that did not report data without TRT or ICC results. Full-text articles that met inclusion criteria were reviewed, and data (e.g., ICC type and rationale, study design/model) were extracted and summarized. RESULTS: A total of 216 abstracts from the initial literature search were reviewed, and eight published papers were selected for the full-text review. A total of 216 abstracts from the initial literature search were reviewed, and eight published papers were selected for the full-text review. CONCLUSIONS: Given that there are several forms of ICCs, psychometric evaluation studies should identify ICC type and justify its use in establishing TRT. A practice that has not been consistently implemented. This literature search aims to bridge that gap by focusing on the few recent articles that do provide rationales, helping inform specific ICC types for use in future studies.

PRM209
VALUE OF INFORMATION ANALYSIS USING GENERALIZED ADDITIVE MODEL REGRESSION: A CASE STUDY IN HEART FAILURE DISEASE MANAGEMENT
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OBJECTIVES: Recently, value of information (VOI) analysis is more popular in health economics to investigate the added value of conducting future research to reduce parameter uncertainty in decision-analytic models. Such analysis gener- ally calculate a bounded value (i.e., expected value of (partial) perfect informa- tion (EV(P)PI)) in a compute intensive way. We applied in this study an efficient approach to calculate EV(P)PI based on a previously conducted model-based eco- nomic evaluation on heart failure disease management. METHODS: The com- parison considered were a conventional strategy and an alternative strategy using a novel point-of-care testing device. A continuous-time three-state Markov model was developed to describe the disease progression with the uncertainty of the transition rate of the novel device arm being captured proba- bilistically from two cardiologists. The Markov model was simulated in five years. Generalized additive model (GAM) regression was used to model the incremental net conditional benefit (averaging between cardiologists) with the experts’ elicited transition rates. The EV(P)PI was then calculated based on the predicted value of the GAM. The base-case EV(P)PI was calculated with an <20,000 willingness-to-pay (WTP) threshold. The elicited transition rates were assumed to be independent in base case. We subsequently altered the WTP threshold and relaxed the assump- tion of independence to see how the results were influenced. RESULTS: In base case, the EVPI per patient was €401 and the EVPI for the elicited rate from the second expert was €340. The EVPI value ranges between €297 and €1131 when altering the WTP threshold from €1000 to €8000. Both values hardly changed when the independent assumption was relaxed. CONCLUSIONS: GAM can be successfully applied in our case to efficiently calculate EV(P)PI. There is a profound need for a consensus between the two cardiologists regarding the added value of conducting future research to reduce parameter uncertainty existed in the current decision-analytic model.

PRM210
DIFFERENCES IN LABOUR PARTICIPATION BETWEEN PEOPLE LIVING WITH HIV AND THE GENERAL POPULATION: RESULTS FROM SPAIN ALONG THE BUSINESS CYCLE
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OBJECTIVES: HIV/AIDS (Human Immunodeficiency virus/ Acquired immune defi- ciency syndrome) is a chronic disease with an impact on the health of the whole population but also affects the labour status of HIV-positive people. The primary aim of this paper is to compare the labour participation of people living with HIV (PLwHIV) with the labour participation of the general population along the last business cycle in Spain. METHODS: Data used are from the Household Survey on AIDS and the Labour Force Survey from 2001 to 2010. A statistical matching method was used to analyse the differences between the labour participation of PLwHIV and the general population. RESULTS: The gap between the employment rates for PLwHIV and the general population was 14% less likely during 2009-2010. We identified a convergence in labour participation across the period in the two populations considered. PLwHIV was 14% less likely during 2009-2010.

CONCLUSIONS: Recent findings have focused on the analysis of the impact of economic crises on the transition rates of PLwHIV. Although these results are important, they do not provide a complete picture of the labour market situation of HIV-infected people. This study provides a comprehensive overview of the employment and unemployment rates of HIV-infected people in Spain, and it shows that the employment rate of HIV-infected people has been declining over the past two decades.
in obstetrics a significant improvement in reporting and statistical quality was found.

**CONCLUSIONS:** The reporting and analysis of trial-based economic evaluations in gynaecology and obstetrics is generally poor. Poor reporting and analysis of trial-based economic evaluations can result in biased results, leading to incorrect conclusions, and inappropriate healthcare decisions. Therefore, there is an urgent need to improve the quality of these evaluations. Further research is needed to explore whether results from this review are generalizable to other medical disciplines and obstetrics and gynaecology.

**PRM214**

**COMPARATIVE EFFECTIVENESS STUDY OF A NEW BAYESIAN'S CAUSAL INFERENCE METHOD**

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**OBJECTIVES:** We present a Bayesian’s semi-parametric causal inference method using Gaussian Process (GP) Prior that is designed to evaluate the averaged causal treatment effect. The method is compared with other commonly used causal inference methods under simulation studies where the true functional form of the model is known. The case study applied the method to a comparative effectiveness research (CER) to evaluate the effectiveness of early initiation of biologic treatment for children with newly diagnosed juvenile idiopathic arthritis (JIA).

**METHODS:** The proposed Bayesian GP model can incorporate prior information about covariate matching, thus offers a natural way for Bayesian causal inference to address the treatment selection bias as part of the outcome modeling. Simulation studies compared the performances of different statistical causal inference methods, including propensity score matching, the treatment propensity weighting (TPW), the regression adjustment, Bayesian additive regression tree (BART) and the newly proposed Bayesian GP causal inference method. Finally, we applied the methods to a prospective inception cohort CER study that followed 96 children with JIA and treated on DMARDs at baseline. The study endpoint was Juvenile Arthritis Disease Activity Score (JADAS) at the 6 months of follow up visit.

**RESULTS:** Our simulation study demonstrated a statistically outperformed the existing methods in terms of bias, coverage rate and root mean square error, and is well calibrated in frequentist properties. Bayesian GP method find children treated with early aggressive biologic DMARDs show 3.8 points improvement (95% confidence interval of 0.4-7.3) in JADAS compared to those treated with simple biologic. Other causal inference methods suggested improved JADAS but varying in estimated average treatment effect and with wider confidence intervals. **CONCLUSIONS:** The proposed method offers more efficient and robust Bayesian’s approach to causal inference, and is particularly useful for CER with rare disease and/or small sample size.

**PRM215**

**MAXIMUM DIFFERENCE SCALING TO ENHANCE INSIGHT IN QUALITATIVE PAYER RESEARCH**

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**Objectives:** Multiple-Criteria Decision Analysis (MCDA) considers multiple criteria in complex decision-making environments, helping to understand needs and preferences in healthcare. Here we assess the benefits of MCDA vs Likert preference scaling, and applicability to different scenarios.

**Methods:** A literature search was performed in MEDLINE, NHS Economic Evaluation Database and the Cochrane Database of Systematic Reviews. We conducted a qualitative payer research study with 26 payers in the UK. The study comprised of two exercises: PSM+IPCW HR was 0.63 (95% CI 0.40-0.87).

**Results:** Both mean annualised total consumption and OOP payments demonstrated a downward trend during 2008-2014, albeit for out-of-pocket spending a 14% rise (from 51% to 66%) is recorded between 2008 and 2014. In the lowest expenditure quintile, although the share of OOP was reduced from 66% to 58%, an overall trend is recorded following 2012. Spending for medical products and inpatient care increased by 25.8% (from 248.60 to 312.85 €) and 48.4% (from 140.51 to 228.08 €) respectively, while for outpatient care it decreased by 57.80% (from 617.89 to 260.84 €). The poorest quintile devoted the chunk of their health spending to medical products across all years, and a 14% rise (from 51% to 66%) is recorded between 2008 and 2014. **Conclusions:** The recent reforms have shifted part of the Greek health system’s financing to health systems, and households are more dependent on pharmaceuticals and hospital care in particular. However, the increase in OOP inpatient spending is mainly driven by the higher socioeconomic strata. Promotion of the prescription and dispense of generic medicines may lessen the financial burden related to co-payments for poorer citizens.

**PRM212**

**IMPACT OF NON-RANDOMISED DROP-OUT ON TREATMENT SwitchING: ADJUSTMENT IN THE RELAXING-REMITTING MULTIPLE SCLEROSIS CLARITY TRIAL AND THE CLARITY EXTENSION STUDY**

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**OBJECTIVES:** The rank preserving structural failure time model (RPSFTM) can be used to adjust time-to-event efficacy estimates for treatment switching. The RPSFTM relies on two key assumptions: (1) common treatment effect (CTE) assumption, which assumes that the effect of treatment was equal regardless of when it was received and (2) randomisation assumption, which can be violated if non-randomised dropout occurs during follow-up. The aim of this analysis was to assess the sensitivity of the RPSFTM results to these assumptions when applied to time to 6-month confirmed disability progression in the CLARITY and CLARITY Extension studies.**Methods:** Exploratory regression analyses were performed to assess the association of trial-based economic evaluations in obstetrics and gynaecology published between January, 2008 and December, 2014. The inclusion criteria were: (i) studies adhered to less than 50% (n = 248.60 €) and OOP payments demonstrated a downward trend during 2008-2014, albeit for out-of-pocket spending a 14% rise (from 51% to 66%) is recorded between 2008 and 2014. In the lowest expenditure quintile, although the share of OOP was reduced from 66% to 58%, an overall trend is recorded following 2012. Spending for medical products and inpatient care increased by 25.8% (from 248.60 to 312.85 €) and 48.4% (from 140.51 to 228.08 €) respectively, while for outpatient care it decreased by 57.80% (from 617.89 to 260.84 €). The poorest quintile devoted the chunk of their health spending to medical products across all years, and a 14% rise (from 51% to 66%) is recorded between 2008 and 2014. **Conclusions:** The recent reforms have shifted part of the Greek health system’s financing to health systems, and households are more dependent on pharmaceuticals and hospital care in particular. However, the increase in OOP inpatient spending is mainly driven by the higher socioeconomic strata. Promotion of the prescription and dispense of generic medicines may lessen the financial burden related to co-payments for poorer citizens.
PRM217
AN ACCESSIBLE COMPARISON OF TRADITIONAL STATISTICAL AND MACHINE LEARNING APPROACHES TO ANALYSIS OF REAL WORLD DATA: WHICH, WHEN AND WHY?
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OBJECTIVES: Machine Learning (ML) is becoming an increasingly important approach for the analysis of real-world data and there is a lively debate about which approach is best among experts. However, for non-statisticians there is a general lack of guidance on how to apply machine learning in real-life situations. This work discusses the strengths and weakness of ML versus TSA in the context of evaluating clinical trial data.
METHODS: We used two approaches to the example of evaluating the potential benefits of a new drug in patients with heart failure. In the first approach, the probability of a treatment effect was determined by logistic regression. In the second approach, we used machine learning with the SHELF package. Both approaches were able to produce similar results.
RESULTS: Logistic regression was used for the TSA, the most important predictor of after-treatment HRs was 1.002 (IQR: 0.994-1.009). The bias can be avoided by extracting the greatest 25% of all values. IPD vs VPLD and IPD vs IPD Cox HRs were compared.
CONCLUSIONS: This work discusses the strengths and weakness of ML versus TSA and helps to clarify the similarities and potential use cases for each approach.

PRM218
MINIMIZING BIAS IN INDIRECT COMPARISONS UTILIZING VIRTUAL PATIENT LEVEL DATA
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OBJECTIVES: When individual patient-level (IPD) are not available, virtual patient-level data (VPLD) can be derived from patient-level data (PLD) for use in various analyses. A particular use-case is in MAIC or TSA, where VPLD for comparators are analyzed with IPD for an index treatment to derive adjusted effect estimates. The Virtual Patient Level Data generation technique can reduce sample size and is regarded as the most robust. We evaluated the accuracy of this method in the MAIC setting in a simulation study.
METHODS: We simulated one hundred populations each of index and comparator treatment patients using Weibull survival times and normal censoring times. The comparator KM curves were generated under multiple scenarios, varying the number of curve coordinates extracted, and the intervals at which ns at risk are available. The Guyot method was used to generate VPLD from the extracted values. IPD vs IPD and IPD vs VPLD Cox HRs were compared.
RESULTS: The median ratio between the IPD vs VPLD and IPD vs IPD of HRs was 1.08 (IQR: 1.097-1.117) under a digitization scenario with 15 extracted coordinates. Varying the spacing of the intervals at risk had no effect. Investigation attributed the bias to the placement of virtual events at the ends of time intervals defined by the extracted coordinates. Moving virtual events to the interval midpoints removed the bias: the median ratio between HRs was 1.002 (95% CI 0.994-1.009).
CONCLUSIONS: Placing events at the end of time intervals in VPLD may produce bias in HRs in analyses when few KM curve coordinates are extracted. The bias can be avoided by extracting the greatest number of coordinates feasible and by placing events in the middle of intervals.

PRM219
REPORTING QUALITY & TRANSPARENCY OF PUBLISHED NETWORK META-ANALYSIS: IS IT SATISFACTORY?
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OBJECTIVES: Network Meta-Analysis (NMA) is becoming more commonly used method in systematic reviews at the expense of traditional pairwise meta-analyses. However, the reporting quality and transparency of NMA are not always optimal. This is particularly true in the case of fractional polynomial NMA models, which are increasingly used to address the issue of non-linear relationships between outcomes and interventions. The purpose of this study was to evaluate the quality of reporting and transparency in published NMA studies.
METHODS: We searched PubMed for NMA studies published in 2017. The studies were included if they were published in peer-reviewed journals, based on randomized controlled trials, containing at least four treatments.
RESULTS: Of 594 studies screened, 349 were included in the analysis. The reporting quality and transparency of NMA studies were generally satisfactory, with a median score of 6 out of 7. However, there was significant variation in the quality of reporting across studies. For example, only 42% of studies reported the use of a specific statistical model, and only 34% reported the assumptions underlying the model. The quality of reporting was also influenced by the level of expertise in the field, with studies published in high-impact journals having higher reporting scores.
CONCLUSIONS: The reporting quality and transparency of NMA studies are generally satisfactory, but there is room for improvement. Future research should focus on developing guidelines for the reporting of NMA studies to ensure that the results are transparent and reproducible.
model robustness to different time windows selected for the corresponding hazards was assessed. Results: Simulation results showed a decreasing marginal benefit of adding further data points, whereas computation time increased exponentially and the local hazard rate estimation noise increased. Optimal number of points should be selected based on available running time and sample size of included trials. A sample of ten to twelve data points provided a good tradeoff between computation time, uncertainty reduction and local hazard rate estimations across most simulations. The model was robust to time window specification, which should be selected based on the need for sensitivity and robustness analysis and not across studies. Conclusions: In conclusion, the fractional polynomial NMA model has proven to be a valuable method allowing incorporation of a flexible fully time-dependent hazard function, addressing an important source of structural uncertainty in NMA for survival outcomes. This study provides an overview of the model behavior in real-life settings. Future additional research is needed to provide guidance on how to integrate such models into cost-effectiveness model.

PRM22
ASSESSING THE ROBUSTNESS OF DIRECT META-ANALYSIS IN THE PRESENCE OF HETEROGENEITY

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Objectives: Systematic reviews and meta-analyses are valuable tools when researchers require a synthesis of the results of different studies. However, between-study heterogeneity (e.g., differences in population, methodology, or results) can limit the reliability of results from meta-analyses. This study applied current analytical approaches which have been proposed to address the difficulties presented by heterogeneity. Our study's aim was to assess the robustness of meta-analytic findings. Methods: Recently published Cochrane systematic reviews that contained five or more trials investigating the effects of atypical antipsychotics in schizophrenia, where at least one trial was placebo-controlled, were included in this analysis. All randomized trials (RANST) total score endpoint data up to week 12 was extracted for seven direct
treatment comparisons (aripiprazole vs. clozapine, quetiapine, risperidone, olanzapine, haloperidol, and ziprasidone; risperidone vs. quetiapine or olanzapine). Relative efficacy was measured using mean difference (MD) in average PANSS total score. For each direct treatment comparison, the results from the original, conventional meta-analysis were compared to that for (1) the single most precise trial in the comparison, (2) in scenarios restricted to the largest trials, (3) a limit meta-analysis, and (4) a meta-analysis restricted to trials at a low risk of attrition bias, using the difference in mean difference (AMD). Results: Where considerable differences were observed, MD in PANSS total score was smaller in the conventional meta-analyses than that for three of the four analytic strategies. Such differences were notably small, with all ∆MD less than 4, which is unlikely to correspond to meta-analyses than that for three of the four analytic strategies. Such differences were noted in several studies. Conclusions: In conclusion, the real-world OS of that chemotherapy. Methods: Using claims data from a German sickness fund, we identified patients diagnosed with anNSCLC initiating a first-line chemotherapy treatment (aNSCLC-RCT). Overall survival (OS) was calculated using propensity score reweights with regard to the aggregated anNSCLC-RCT patient characteristics. Survival outcomes were finally compared using Cox proportional hazards regression. Results: 95 anNSCLC patients initiating first-line chemotherapy were identified in the real-world data set, median OS was 12.2 months (95% CI: 7.2-14.8). The RCT included 151 patients in the KMC group and 152 patients in the chemotherapy group, median OS was not reached after 18 months. Although an adjusted patient sample was used (adjustment for differences in age, gender, brain metastases, smoking status), median OS of observed patients decreased from 12.2 to 8.1 months (95% CI: 4.5-12.0). If this KMC is compared to the RCT-KMC, patients seemed to have a better survival prognosis in the RCT in comparison to the real-world (Hazard ratio: 1.89; 95% CI: 1.35-2.65). Conclusions: Our analysis confirms that the real-world OS of a treatment is likely to be worse than OS of that same treatment in RCTs, even if an adjustment for differences in patient characteristics is done. Whether this is related to any unobserved differences in patient characteristics or to differences in the diagnosis/treatment framework needs to be further investigated.

PRM220
CHOOSE PSM METHOD TO USE? ASSOCIATION BETWEEN CHOSEN PROPENSITY SCORING METHOD AND OUTCOMES OF RETROSPECTIVE REAL-WORLD TREATMENT COMPARISONS: EVALUATION OF 18 DIFFERENT PSM METHODS

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Objectives: Because different methods for propensity score (PS) matching (PSM) exist, the objective of this study was to assess whether different PSM methods differ in terms of matching quality or study results. Methods: We used an anonymized claims dataset of type-2-diabetes-mellitus patients, who were treated with Sulfonylureas (SU; n=904), or Metformin (MET; n=7,874). Associations between treatment assignment and macrovascular outcomes (MACs) and all-cause survival were analyzed. Three different sets of baseline variables were used for PS calculation (all available 10 variables, variables significantly associated with group exposition, age/gender/LC only). To these, we applied the optimal without replacement (0) and the nearest neighbor with replacement (NN) matching algorithm. Caliper widths were defined as fixed (0.001) or determined by PS (Q2 standard deviation of LOG(PS)). In a further scenario, PSM was done within 5-year-age/gender classes. Matching quality was assessed by comparing differences in (1) number of matched patients, (2) baseline characteristics similarity, (3) bias reduction and (4) differences in pneumonia/ arm fracture/back pain rates between groups. Results: In 18 different PSM calculations, between 726 and 904 matched pairs could be derived. Percentage of baseline variables with study-related examination criteria significantly matched was in between 95% and 98%. Sample sizes ranged from 0%-40%/0%-20%, depending on PSM method. Highest impact on matching quality showed caliper definition and whether matching was/ was not done within age/gender classes. Best matching quality was achieved by an approach with caliper 0.001 without matching within pre-defined age/gender classes. In only 10 out of the 18 comparisons, all-cause mortality showed a significant difference between SU/MET exposition (MAC: 4 out of 18 comparisons). Conclusions: Because different PSM methods exist, our results strongly and significantly affect the outcomes of retrospective comparative analyses, we recommend to (1) carefully choose the used PSM method, and (2) to apply different PSM methods in scenario analyses to test robustness of study results.
RESEARCH ON METHODS – Study Design

PM229

CLASSIFICATION OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) SEVERITY ACCORDING TO THE GLOBAL INITIATIVE FOR CHRONIC OBSTRUCTIVE PULMONARY DISEASE (GOLD) VARIANTS: THE DEFINITION OF GOLD GROUPS AND THEIR IMPACT ON STAGE ASSIGNMENT

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OBJECTIVES: The aim of this investigation was to examine the impact of (1) different criteria for definition of GOLD groups, and (2) use of information from different German data sources on GOLD classification of a COPD patient. METHODS: In this non-interventional data linkage study, primary data (PD) of COPD patients provided by treating physicians were linked to claims data (CD) of a German sickness fund (AOK Nordost). PD included all information relevant for GOLD classification (exacerbation frequency, exacerbation types, airflow (FEV1), COPD assessment test (CAT) and modified Medical Research Council (mMRC) scale). Additionally, exacerbation frequency was obtained from CD. Based on all available data, four different methods were simulated for assessment: (A) CD+Fever (FEV1), (B) mMRC+FEV1(exacerbations), (C) mMRC+FEV1(exacerbations) (PD), and (D) mMRC+FEV1(exacerbations). RESULTS: 497 patients (mean age: 58.23 years, female: 36.0%) were included in this post-hoc analysis. 270 patients (54.3%) were uniformly assigned to one of all 4 classification approaches. Generally, group assignment varied, ranging between 13.1-38.4% (A), 19.1-44.9% (B), 2-40.7% (C) and 23.7-42.5% (D). A higher proportion of patients were assigned to the groups A and C (low symptoms) whereas using mMRC instead of CAT (example: 14.4% (3) vs. 38.4% (3) in stage A). The difference due to deviation of information from different data sources turned out to be smaller, assigning slightly more patients to higher risk groups (C and D) when using instead of FEV1(exacerbation frequency (example: 2.7% (3) vs. 17.1% (3) vs. no stage C). CONCLUSIONS: GOLD classification can vary as a result of the used data sources (PD/CD) and especially, according to the method used to assess symptoms (CAT/mMRC). The influence may have a substantial impact on patients’ treatment as GOLD treatment is recommended in GOLD groups A and B.

PM230

TRENDS IN PRAGMATiC CLINICAL TRIALS

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OBJECTIVES: pragmatic clinical trials (PCTs) are gaining interest among decision-makers as transferability and generalisability of clinical trial results to real-world settings are increasingly scrutinised. The aim of this study was to identify how PCTs have been defined and developed over the years. METHODS: we searched clinicaltrials.gov. Trials were identified using the free search term “pragmatic” and study type “interventional studies”. PCT characteristics were assessed for all identified trials. RESULTS: From 1996 to 2017, a total of 420 PCTs were retrieved. The oldest trial reported in the database was from 1996; however, the number of PCTs was only 4 in 2000. The highest increase in the number of newly-launched PCTs was in 2015 (86%) and the number of newly-registered trials was highest in 2016 (108). Most PCTs were sponsored by universities (51.1%) and medical centres (21.1%). Industry sponsored only a minor proportion of the trials (3.6%). Cardiovascular, musculoskeletal and dermatological sources were most commonly included (10.5%). PCTs were mainly conducted for interventions classified as “other” (38.0%), “behavioural” (32.4%) and “drugs” (22.1%); 93% of PCTs were reported as randomised clinical trials (RCTs). Parallel assignment dominated (90%) in PCTs, but an increase in factorial assignment was observed. CONCLUSIONS: the use of open-label design, representing 54% of all trials. On average, PCTs enrolled 5,423 patients (range: 2-933,789). The average trial duration was 2.8 years (range: 0.2-14.8), albeit more recent trials tended to be shorter. CONCLUSIONS: Unlike that of academics, the transferability of research findings in PCTs has grown little, possibly reflecting the complexity of balancing internal and external validity in RCTs. Several initiatives are underway to assess, from a broad perspective, the challenges and potential solutions in introducing a greater extent of real-world evidence in the drug development process.

PM231

APPLICATION OF MIXED-METHOD STUDY DESIGNS IN HEALTH-ECONOMIC-RELATED STUDIES: A NARRATIVE REVIEW

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OBJECTIVES: Mixed method studies aim at combining qualitative and quantitative research methods and thereby trying to offer deeper insights into a study topic. The German Institute for Quality and Efficiency in Health Care (IQWiG) recommends to combine qualitative and quantitative data to generate a wider spectrum of information for evaluation of health care services. This review aims to give an overview of mixed method designs used in health care research studies published over the last five years. METHODS: A broad search on “GOLD VARIA” was conducted. According to pre-defined inclusion and exclusion criteria, titles and abstracts were screened regarding research question and mixed method designs and research methods. In a second step, full-text sources of included studies was used to extract details of methods. In total n=236 research papers were identified. For full text screening n=82 studies remained and were included in the analysis. 25% of the evaluated studies (n=21) came from the UK, only n=3 relevant studies were conducted in Germany. The three fields of health care were public health interventions (29.9%), CBT treatment effects, and 0.08 for antidepressant treatment effects. There exist different approaches how to design a CBT. However, little is known about how these options influence the outcomes of a DCE study. METHODS: A cross-sectional survey of 122 students at a German University was conducted, investigating preferences of students with regard to a DCE study on an individual level. RESULTS: Preferences were based on different criteria and non-equal distribution of options. Probabilities were based on a net-work meta-analysis and were correlated for each outcome. RESULTS: We compared number of samples required to estimate per-person EVPPI to a prespecified mean squared error. Compared with NMC, MLMC required 1.78 as many samples to estimate EVPPI for all probabilities (6 parameters), 1.75 for costs and utilities (6 parameters), 0.13 for treatment effect of CBT on relapse and recovery (2 parameters) and 0.78 for those of antidepressants (2 parameters). Compared with NMC, QMC required 0.37 as many samples for all probabilies, 0.39 for costs and utilities, 0.01 for CBT treatment effects, and 0.08 for antidepressant treatment effects. Similar computational reductions were found when the model was extended to 20 decision options. CONCLUSIONS: In some cases, NMC and QMC demonstrated substantial computational savings over NMC. MLMC performed best for smaller number of correlated parameters while QMC was consistently superior to both NMC and MLMC.
attribute, (M2) changing the order of the attributes on choice cards, (M3) adding an opt-out option in the final choice section to assess if some individuals were most interested in generalized multinomial logit model, were made: BD versus M1 (56 respondents), BD versus M2 (55), and BD versus M3 (43). RESULTS: Both the effect size and even the direction of the influence of the attributes on respondents’ utility varied between the design options. So, an important attribute which may have been important in BD design was the mandi- tooth cleaning (relative importance: 63%-69%), but the relative importance decreased to 38% when M2 was applied. Applying M1 and M3 changed the ranking of the importance of all other attributes, e.g. fitness club membership was rated as the second most important in the BD design, but the most unimportant attribute in M3. CONCLUSIONS: If DCES are used to inform health policy decision makers, it is crucial that presented results are valid and robust. Obviously, DCES design decisions may substantially influence empirical outcomes of the studies. We recommend to take this aspect into account when designing a DCES study.

PM235 WHAT’S THE REALITY OF REAL-WORLD EVIDENCE IN HEALTH TECHNOLOGY APPRAISAL?
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OBJECTIVES: How real-world evidence (RWE) can contribute to assessment of product- value is increasingly recognised. However, there is lack of formal guidance on using such data in health technology appraisal (HTA) for reimbursement. Against this background, we conducted two systematic literature reviews (SLRs) to explore expert opinion on using RWE in HTA (SLR 1) and on what forms of RWE could meet HTA requirements (SLR 2). METHODS: Following PRISMA guidelines, MEDLINE and Embase were searched for English-language publications on RWE between 2012 and 2017 to conduct the two SLRs, with supplementary searches of HTA-body websites without time limits. RESULTS: Limited HTA guidance was found, and the focus was on analytical methods for comparative individual-patient data from RWE. Of 200 references screened in SLR1, 20 were considered relevant. Most of these commented that, to date, RWE’s role in HTA has been to help address gaps in random- dominated by physicians and experts in an HTA panel to elicit patient preferences and to single-studies in conditions with poor prognostic). Of 300 references screened for SLR2, 40 were relevant. These publications focused on statistical techniques for control for selection bias and adjust for confounder effects in RWE (e.g., adjusted survival curves), propensity modelling, inverse probability of censoring weighted correction, and machine-learning techniques). Additionally, a few studies suggested RWE could offer advantages in network meta-analysis, through enabling connection of networks and increasing sample size and generalisability of results. Experts’ main concerns about using RWE related to selection of the most appropriate data sources, and the validity of exchangeability assumptions where RCT data and RWE are com- bined. CONCLUSIONS: While RCTs remain the cornerstone in assessing comparative efficacy of products in HTA, RWE is increasingly acknowledged as a valuable informa- tion source. Further decision and methodological frameworks are needed to offer clear guidance on when and how RWE should be incorporated into HTA submissions.

PM236 ELECTRONIC CAPTURE OF CLINICAL OUTCOME ASSESSMENT DATA: WHY IS IT NOT USED MORE IN CLINICAL STUDIES?
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OBJECTIVES: Electronic capture of data in clinical outcome assessments (i.e., eCOA) have many benefits over paper-based data collection, yet their uptake in studies is less than expected. The Patient-Reported Outcome (PRO) Consensus Group developed a questionnaire to elicit perceptions of and factors con- sidered by pharmaceutical companies when choosing a COA data collection mode. METHODS: The 12-item questionnaire assessed preferred COA data collection mode, rationale for selection, factors considered, barriers or rea- sons to support eCOA adoption, and respondent background. Pilot testing of the online questionnaire was conducted and a link to the revised, final questionnaire was sent to PRO Consortium member firm representatives (n = 26) for distribution within their respective firms. RESULTS: Respondents (n = 152) represented several functional areas, including medical/clinical scientists, operations, and outcomes research groups; 52.5% had 15 or more years of pharmaceutical industry experience across multiple therapeutic areas. Electronic data collection was preferred by 50.4%. Perceived barriers to adopting eCOA included set-up/lead time, fund- ing, regulatory concerns, site and patient recruitment/burdens, data integrity, device failure, internal resourcing and study team eCOA experience. A limitation of this study was that respondents were not a representative sample of pharmaceutical industry stakeholders, however, the sample included various functional areas participating in COA development and with eCOA adoption. CONCLUSIONS: Our findings support the need for further edu- cation of stakeholders, streamlining of eCOA services, and improving partnerships between sponsor and technology providers, all of which may improve eCOA uptake and may differ in surgical site infection (SSI) risk. This study aims to explore the potential value of an RCT comparing Wound dressings

PM237 EXPECTED VALUE OF INFORMATION ANALYSES TO EVALUATE THE POTENTIAL GAIN FROM AN RCT COMPARING WOUND DRESSINGS
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OBJECTIVES: A variety of wound dressings are available for general surgery, categorised as Simple, Advanced, Glue and no dressing (Exposed). These differ in costs and, if necessary, to inform the relative efficacy of the different dressing types. Expected Value of Sample Information (EVI) is computed to evaluate the value of reducing uncertainty by running an RCT. EVI represents a measure of the net meta- analysis to inform the relative efficacy of the different dressing types. Evoked population (EVI) is presented for 1.208m wounds over a 5-year time horizon. We compare the results with those from standard sample size calculations. RESULTS: There was considerable uncertainty as to which dressing type is the most cost- effective. EVI indicates that any RCT comparing dressings is likely to be of value and that designs that compare Simple Dressings vs Glue have much higher value than designs that do not make this comparison. Balanced designs comparing Simple Dressings or Glue to all other alternatives have EVI of £151.5m, £205m, and £150m for total sample sizes of 500, 2500, 5000 resp. Standard sample size calculations suggest a much larger sample (around 25,000). CONCLUSIONS: We discuss possible reasons for obtaining a smaller sample size with the value of the RCT compared to standard sample size calculations and impli- cations for trial design.

PM238 LISTENING TO THE “PATIENT VOICE” TO IMPROVE DESIGN AND INTERPRETATION OF SECONDARY ANALYSES: AN EXAMPLE IN ATRIAL FIBRILLATION
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OBJECTIVES: To assess the value of including patient perspectives and other stakeholders to improve validity and interpretation of administrative claims- based studies of AF. METHODS: Patient (n=5) and clinician (n=10) participants were recruited through community and clinical stakeholders. Themes and sub-themes were identifi- ed from 23 interviews of 1.7 hours. Findings are compared with existing stakeholder and patient perspectives and trajectories from AF diagnosis onwards. These were sub- sequently analyzed to provide considerations for cohort selection/assembly and relevant covariates and confounders associated with AF studies specifically. RESULTS: The patient participants included 3 women and 2 men with AF with a mean time since diagnosis of 3.5 years. The 10 clinicians comprised 2 from each discipline: nursing, cardiology, electrophysiology, family medicine, and pharmacy. Emerging themes revealed: (1) Challenges in obtaining AF due to the range of symptoms. This suggests that under-diagnosis is likely common and standard approaches used to identify patients with AF using ICD-9/10 codes may be insufficient. Sensitivity analy- ses to test other methods of identification may be needed; (2) Time gap between initial diagnosis and appointment with specialist suggests researchers may wish to begin follow up at the date of the patient’s first eligible prescription instead of diagnosis date in order to avoid immortal time bias when evaluating treatment effects; (3) Specialist’s heightened perception of stroke risk compared to primary care providers, indicating stratification by provider may be important in analyzing antico- agulant prescribing. CONCLUSIONS: Identified themes can inform methodological approaches that could improve the validity of observational research in AF using administrative claims data. Careful consideration and integration of patient and stakeholder experiences can inform better study designs and improve inter- pretation of research findings.

PM239 THE IMPACT OF TRIAL DESIGN ON NETWORK META-ANALYSIS AND DECISION-MAKING: A WORKING EXAMPLE IN ULCERATIVE COLITIS
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OBJECTIVES: Network meta-analysis (NMA) in commonly used in health tech- nology assessment (HTA), however sometimes this approach may be unsuitable because of differences in trial design. The objective of this study is to assess the impact of trial design on NMA results using NICE appraisal (TA342) consider- ing vedolizumab in ulcerative colitis (UC). METHODS: The RCT data consid- ered were extracted and assessed alongside structural elements of each trial. Impact of trial design on the NMA and its contribution to the NMA result was then assessed. RESULTS: The NMA inclusion criteria considered trials assessing moderate to severely active UC. There were differences between trials in duration, previous treatment with tumour necrosis factor (TNF) inhibitors and randomisation after the induction phase. Trial duration differed, 6–8 weeks during induction and 52–54 weeks during maintenance. Two trials included patients who had previ- ously received (and in one trial failed) TNF inhibitors; the other trials did not. Two trials randomised patients based on response criteria following induction therapy, whereas the other trials provided a fixed induction and maintenance line. Substantial Trial heterogeneity was identified as an issue in this HTA, and caveats were discussed in detail. NICE highlighted that a random effects model would have been more appropriate, however the impact of effect NMA was not assessed as part of the overall evidence considered. NICE recommended vedolizumab, however this was largely based on tolerability and patient QOL considerations related to corticosteroids and invasive surgery, rather than the comparability of vedolizumab to TNF inhibitors, other alternatives for patients in this patient group. CONCLUSIONS: Whilst NMA is important for HTA purposes it assumes no significant trial heterogeneity. Where trial designs differ, this may have an important influence on NMA results, and therefore should be given careful consideration alongside other factors such as tolerability during decision-making.
PubMed, 251 were SLRs on disease burden. Over 80% of SLRs reported clinical burden.

Methods: A systematic review was conducted in New York, USA. Using nominal group technique (NGT), groups were tasked to identify and prioritise cancer therapy attributes. Qualitative thematic analysis of transcripts was conducted where differences across stakeholders were identified. The focus was on identifying what beyond a primary consideration of the health gains of the therapy (efficacy and toxicity), priorities varied. Long-term adverse effects (sequela), alternative treatment options, quality of evidence, how well established the treatment is and remaining spectrum of unmet needs were prioritised by patients (n = 8) whilst the nurses (n = 10) focused on mode of administration, quality of life, communication and treatment innovation. The physicians (n = 6) prioritised the burden and inconveniences of treatments (to patients and carers), functional outcomes, the financial toxicity to patients, and the societal costs and consequences of the treatment with reference to the disease burden to be addressed. From the thematic analysis a conceptual framework was developed whereby attributes assigned across health-related, cost-related and non-health-related categories.

Conclusions: Whilst cancer therapy health-gains are prioritised, value frameworks should include considerations beyond health gains and potentially incorporate differences across stakeholders that reflect the relative importance of attributes varies across stakeholder groups. Results of this study are currently informing the development of a discrete choice experiment (DCE) to elicit specific weightings of preferences across stakeholders.

PMR241 Evaluating RobotReviewer for Automated Risk of Bias Assessment in a Systematic Review: A Case Study

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Objective: Risk of bias (RoB) assessment is an important part of a systematic review and hence the production of health technology assessment. However, it is a time consuming, subjective and labour intensive process, and disagreements on a time consuming, subjective and labour intensive process, and disagreements on a machine learning system that aims to automate RoB assessments of randomised controlled trials (RCTs). RobotReviewer has been tested internally by its developers where it performed well, but to date we have not identified any published independent evaluations. We compared and evaluated RobotReviewer against the current standard for RoB assessment, defined as double, independent, human researcher assessment with disagreements resolved by a third reviewer. METHODS: A case study has been undertaken where RobotReviewer was tested on a subset of RCT papers that had been previously assessed by two independent human researchers as part of a systematic review. The results of the automated (i.e. RobotReviewer) assessment were then compared with the manual, human reviewer assessments for similarity at each RoB domain in accordance with the Cochrane Risk of Bias Tool. RESULTS: 35 papers reporting an RCT were assessed for RoB by two independent reviewers and RobotReviewer. The results of manual (i.e. human reviewer) and automated (i.e. RobotReviewer) RoB assessments were compared. The mean level of agreement between RobotReviewer and double, independent, human researcher assessment was 72% across all papers. 25% agreement was achieved across the three papers. 50% agreement was achieved across eight papers, 75% agreement was achieved across 14 papers, and 100% agreement was observed across 10 papers. CONCLUSIONS: This study has provided practical insight into the current effectiveness of employing a machine learning tool to support RoB assessment in a systematic review, as part of a health technology assessment.
implementation for gamification is a non-negligible aspect as some of them may be more effective mediums for delivering health interventions. Limitations will be reviewed and we will provide suggestions so that future initiatives may avoid known pitfalls. CONCLUSIONS: Gamification is growing on a fertile soil with the widespread of digital platform in the population (e.g., smartphones, tablets, and computers) and current healthcare system in medical care focused on prevention and monitoring (e.g., online questionnaires, wearable devices). Current applications in e-Health have been proved to provide short-term engagement through extrinsic rewards, but the long-term potential of gamification remains to be explored. Solutions must be sought from existing psychology theories and game design experience.

PRM246
MAPPING THE SYSTEMATIC REVIEW TOOLBOX
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OBJECTIVES: The objectives of the current initiative is to develop a range of tools to support the systematic review process. The toolbox has been well-received by the systematic review community and is a Cochrane Collaboration recommended source of review production software. To ensure the toolbox resources remain current and useful to researchers, a literature mapping exercise was undertaken to develop a search strategy to regularly horizon scan for review production tools. METHODS: Research publications on tools to support the systematic review process were analysed using two tools to enable the mapping of the literature: Yale MeSH Analyser and VOS viewer text-mining software. Data was extracted on 1) MeSH subject headings and other keywords 2) free-text terms relating to systematic review tools. This data was used to develop a search strategy that would automatically identify a number of sources at regular intervals, including MEDLINE ensuring new tools are identified and indexed in the toolbox efficiently. RESULTS: 82 publications were analysed. MeSH headings, keywords, and free-text terms were collated and informed the development of the search strategy. The search strategy was designed and tested on the MEDLINE database (via Ovid) and set to automatically run at regular intervals. New publications identified by the search are assessed using the same keywords and are added to the toolbox. CONCLUSIONS: The mapping exercise enabled the development of an efficient search strategy to identify new tools to support the systematic review process. Future plans are to translate the search strategy to search a range of information sources in health care research.

PRM247
REAL WORLD DATA IN FRANCE – STATE OF THE ART
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OBJECTIVES: So far, the use of real world data (RWD) in France is limited. The aim of the study was to map the inventory of RWD in a way they are used by the different stakeholders of the health care system in France (hospitals, pharmaceutical companies, public health agencies, doctors….). We want to compare the existing RWD in France and the new "SNDS" (Système national des données de santé) and investigate the limitations within the use of RWD in France and how the creation of the SNDS could enable a better use of the RWD. METHODS: We collected various forms of RWD by searching in the medicines recommendations made by the HAS (Haute Autorité de Santé), the database of the ATHI (technical agency on hospitalisation information) and of the French national health insurance. RESULTS: We built a table that summarized this information and that contained six columns: Type of RWD, compartment, content, cost and an example. For each type of RWD, we created: the first one represents the various existing types of RWD (register, observational study, PMSI, SNIIR-AM) study and the second one shows the new perspectives opened by the SNDS. We also developed a new kind of RWD that could be incorporated in the future into real world studies (health application, connected devices) and we listed new potential stakeholders that could enter the domain of RWD (Google, phone operators, startups…). CONCLUSION: The objectives of the SNDS helped us to conceptualize and synthesize what the RWD are in France and how they should evolve in the next few years. RWD are growing and should increase even more with the opening of the SNDS. The SNDS have an important potential and may help to go over the limitations that the French system is facing so far with RWD.

PRM248
A CONCEPTUAL MODEL OF THE ECONOMICS OF VISUALIZATION IN DIAGNOSTIC IMAGING
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OBJECTIVES: In recent years, there have been many important advances in medical devices designed to provide diagnostic and surgical imaging and visualization. This project has been an important health economics and outcomes research challenge: how can we quantify the economic value of incremental improvements in imaging and visualization? This project was focused on developing a conceptual economic framework to describe the basic structure of economic evaluations of visualization. METHODS: The project itself consisted of conducting interviews with two groups of key opinion leaders: (1) medical devices product leaders in industry, and (2) physicians who use the devices. Industry experts were asked about design attributes and the engineering technologies that support improvements in visualization, while physicians were asked about clinical utility. Second, we conducted a comprehensive review of the literature on the economics of diagnostics and the clinical utility associated with visualization. Third, we used the interviews and the literature to construct a conceptual framework to guide the economic analysis. RESULTS: The primary goal of the conceptual framework was to: (1) develop an understanding of the clinical utility associated with visualization devices, and to identify measures that quantify clinical utility; (2) identify economic outcomes associated with clinical utility; and (3) develop a template framework to which most “economics of visualization” problems could be applied. The conceptual model takes into account some general issues pertaining to economic evaluation of diagnostics, critical elements for health technology assessment agencies, and practical issues concerning measurement of outcomes. The conceptual model consists of a decision tree framework and a narrative description of the variables, pathways, and logic. CONCLUSION: As engineering and scientific technical development in visualization and monitoring continues, novel and innovative assessment tools that weigh the costs and benefits of improvements in visualization and the relationship with diagnostic accuracy and surgical visualization.

PRM249
DISEASE BURDEN MAPPING IN RARE DISEASES: AN EXAMPLE OF HYPOPHOSPHATASIA
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OBJECTIVE: Rare diseases are often characterised by complex pathophysiology, a diversity of symptoms, and a poorly understood course. OBJECTIVES: The authors sought to develop a new approach to describe the relationship between disease pathophysiology and patient outcomes, so as to maximise the value of sparse disease data and to visually communicate complex disease burden information. PLAN OF RESEARCH: Hypophosphatasia is a disease applied using hypophosphatasia (HPP) as an example. METHODOLOGY: A literature review was conducted to identify all consequences of the disease. A disease burden map was created which visually linked specific manifestations with the impact on patients. Disease elements were categorised according to the proximity of the manifestations to the underlying pathophysiology (organs and systems affected, primary symptomology, morbidity, mortality and Health Related Quality of Life (HRQoL)). Frequency and severity of disease manifestations were represented visually through proportional area boxes. Clinical expert opinion was used along with published evidence to inform the structure of the map and the relative importance of the elements. PRACTICAL IMPLICATIONS: CONCLUSION: Three different maps were developed for HPP according to the onset: infantile, juvenile and adult. A structured qualitative and semi-quantitative process was undertaken to elicit input from five clinical experts. In juvenile HPP, the disease manifestations was functional and exhaustion with the highest impact, mainly from bone and muscle pathologies and associated with significant morbidity and reduced HRQoL. In infantile HPP, where patients rarely survive into late childhood, mortality represented the largest component of disease burden. The burden of disease was used as a tool to support strategic priorities. The conceptual model takes into account some general issues pertaining to economic evaluation of diagnostics, critical elements for health technology assessment agencies, and practical issues concerning measurement of outcomes. The conceptual model consists of a decision tree framework and a narrative description of the variables, pathways, and logic. CONCLUSION: Despite inherent issues of subjectivity, this approach has proved a useful tool in building consensus among clinical experts on the nature of disease manifestations and for communicating burden to non-specialist audiences.

PRM250
THE USE OF THE EORTC ITEM LIBRARY TO SUPPLEMENT EORTC QUALITY OF LIFE INSTRUMENTS
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The European Organisation for Research and Treatment of Cancer (EORTC) Quality of Life (QOL) instruments are freely available on its initiative in the EORTC QLG. The Item Library is already fully accessible to academic and pharmaceutical industry users. It is also undergoing further validation in order to answer all questions arising from the end users. Through multiple search options (symptoms, keywords, related items), users can identify items and scales that best address the side-effects to be measured. Selected items can then be added to a new questionnaire, including the corresponding conditional items, instructions, response scales and time frames. The finalised custom item list is subsequently reviewed by the Item Library's content manager, to ensure that the questionnaire is composed correctly and contains all the necessary elements and information. The approved custom questionnaires become available for all other users to browse through, export or adapt for use in their trials, creating an invaluable resource for research and broadening the portfolio of available instruments.

PRM251
ASSESSMENT OF ECONOMIC MODEL STABILITY BY REPEATED ONE-WAY SENSITIVITY ANALYSIS
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OBJECTIVES: One-way sensitivity analysis (OWSA) is used to assess parameter uncertainty in health economic modeling by increasing and decreasing the base case value of each parameter and plotting the impact on the outcome in a tornado chart. OWSA provides useful information regarding which parameters are the most influential. However, in cost-effectiveness analyses, where the outcome is an incremental cost-effectiveness ratio, OWSA may be challenging to interpret when the sign of the numerator or denominator changes and does not clearly display where these inflection points occur. We present a method to conduct repeated OWSA.
in order to better characterize the relationship between parameters and results across studies and to identify when these differences occur.

PRM252

EXPECTED VALUE OF SAMPLE INFORMATION FOR INDIVIDUAL LEVEL SIMULATION MODELS TO INFORM STOP/GO DECISION MAKING BY PUBLIC RESEARCH FUNDERS: A METHODOLOGY FOR THE DAFNEPLUS DIABETES EDUCATION CLUSTER RCT

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OBJECTIVES: This paper presents a conceptual methodology for calculating the expected value of sample information (EVI) to inform the decision making of a UK public research funding body (NHSBT) about whether to proceed to the second stage of the DAFNEPlus programme, led by the Sheffield Diabetes Research Group.

The first phase of DAFNEPlus programme involves redeveloping, piloting and refining DAFNE structured education courses for adults with type 1 diabetes (T1D). The objective of the EVSI framework is to test effectiveness and cost-effectiveness of the revised course (DAFNEPlus) versus a standard DAFNE course in a cluster randomised controlled trial (RCT).

METHODS: To generate prior estimates of effectiveness of DAFNEPlus compared to DAFNE and the uncertainty around them, an expert elicitation exercise will be conducted using the Sheffield Elicitation Framework to estimate likely incremental changes at 12 months follow-up in: HbA1c; rate of severe glycaemic excursions and rate of diabetic ketoacidosis. Five experts will include: medical educators, diabetes educators, psychologists, and potentially patient representatives. Summary statistics from the first phase of DAFNEPlus will be presented to the experts. EVSI of the proposed trial will be calculated by conducting a cost-effectiveness analysis of DAFNEPlus versus DAFNE using an existing individual level simulation model (OMOP data from Diabetes Education and Research in Children: DERC) and elicited distributions and Sheffield Accelerated Value of Information Tool (SAVI) by Strong et al. The EVSI will compared to the cost of the RCT.

CONCLUSIONS: Elicitation of likely effectiveness clinical endpoints and their uncertainty together with individual level simulation modelling and SAVI, makes it feasible to include health economic criteria in stop/go decisions by public funders. To generalise this approach to other diseases and settings, analysts will need to consider: how to synthesise prior evidence, the balance between existing prior data and eliciting expert judgement; the roles and biases of experts to elicit from; and wider decision making criteria of the research funder.

PRM253

A ROBUST, REPRODUCTION METHOD FOR EVALUATING THE SUITABILITY OF DISPARATE OBSERVATIONAL DATABASES FOR POOLED ANALYSIS, USING THE OMOP COMMON DATA MODEL

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BACKGROUND: Data pooling – integration of patient-level data from different databases -- is used to increase sample size where individual databases are too small. Differences in data format and content, along with population heterogeneity, require careful evaluation to identify differences that may interfere with interpretation of results of subsequent pooled analyses. Evaluation for pooling can be difficult, time-consuming, and is not reproducible across databases. Use of a Common Data Model (CDM) provides opportunities for development of efficient, reproducible methods to evaluate appropriateness of pooling across a wide variety of databases.

METHODS: We developed a method, utilizing the Observational Medical Outcomes Partnership (OMOP) CDM to efficiently assess format, content, and appropriateness of disparate databases for pooling. It takes advantage of existing OMOP data transformation processes, documentation and programs available in the public domain through the Observational Health Data Sciences and Informatics (OHDSI) Collaborative. Method summary: MAPPING: map databases into OMOP format, ensuring mapping is feasible through OHDSI. TRANSFORMATION: transform databases into OMOP format using existing OHDSI utilities or developing de-novo. ANALYSIS: OHDSI ACHIEVES reports enable interpretation of similarities and differences in data characteristics for any OMOP-formatted database. EVALUATION: review by clinical experts to identify differences that may interfere with pooled results interpretation.

PRACTICAL IMPLICATIONS: By design, CDM format allows for aggregation of datasets, translating into benefits for OHDSI.

CONCLUSIONS: Investigation of individual datasets for pooled analyses. This is especially useful for pooling data from different countries, where coding systems and practice patterns may be disparate. This approach may be particularly useful in cases where there are small differences in costs or effectiveness, resulting in ICER volatility in fixed OWA.

PRM254

COMPARISON OF WEIGHTING METHODS USED IN THE CONSTRUCTION OF MULTIPLE-CRITERIA DECISION ANALYSIS TOOLS FOR REPEATED USE IN LOWER INCOME COUNTRIES

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OBJECTIVES: In multiple-criteria decision analysis (MCDA) practice, the criteria taken into account regularly differ in relevance, therefore it is necessary to assign importance weights to them. The objective of this study was to compare the most common criteria weighting methods in the process of developing MCDA tools for repeated use in lower income countries in terms of level of detaillessness, real world feasibility, and ability to fulfil the axioms of preference ordering.

METHODS: The most widely used OWSAs of determining importance weights of various criteria in decision making were reviewed and evaluated. With the construction of hypothetical decision problems, the number of questions required to be answered by decision-makers in order to assess criteria weights were estimated. RESULTS: An inverse relationship between the detailedness of the methods and their simplicity was identified. A hypothetical decision problem was solved by criteria experts (10 experts) using the best MCDA tool (SMAART) method with swing weighting approach, and 15 questions in case of the ‘Analytic Hierarchy Process’ (AHP). With ‘Discrete Choice Experiments’ (DCEs), applying full factorial design would result in an unmanageable number of questions; however, different techniques (e.g., orthogonal arrays) exist for reducing this number. The total number of questions using the ‘Potentially All Pairwise Ranks’ of all possible Alternatives’ (PAPRIKA) methodology is generally between 45 and 60, assuming 4 possible performance levels according to each criterion. Although the same number of questions (45) is used in the ‘Analytic Hierarchy Process’ (AHP), the advantage of the PAPRIKA methodology is that its hierarchy structure assists the decision-makers to answer the questions in a systematic manner.

CONCLUSIONS: The above-mentioned methods (SMAART, AHP, PAPRIKA) are considered to be of high detailedness and feasibility in real-world situations, but their simplicity varies widely. methodology. The best method may be identified in the construction of a MCDA tool by considering the requirements of the decision-making group and the conditions of the lower income country.

PRM255

REVISING INDIRECT HEALTH PREFERENCE ELICITATION AS A BASE CASE DISHET, B; BEUSCHL M.
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In the context of constrained health budgets, cost-effectiveness of health technologies has become an important concern. The strengths of this approach include its ability to elicit model assumptions of what policy makers value when making a decision, to contextualize decisions in terms of absolute versus relative effects, and to use results to inform efficient use of research resources. A key aspect of many cost-effectiveness models is the quality adjusted life year (QALY), which allows investigators to capture the value that patients and the public place on quality of life simultaneously. Measurement of QALYs requires the determination of a quality weight which is bound to negative infinity (indicating death or health states worse than death) and one (indicating perfect health). While these weights can be elicited directly from patients through a standard gamble or time trade off, most national bodies recommend that preference for health states be determined by the general public. This recommendation comes despite the empirical evidence that these methods lead to health state values which often differ in magnitude, and possibly in direction, to those directly elicited from patients. In this abstract, we assume that the purpose of cost-effectiveness analysis is to maximize population health and argue against direct preference elicitation and in favor of indirect methods to make the goal impossible to achieve. We use examples from the published literature to create two scenarios which illustrate how indirect preferences may be preferred for questions of policy, but may lead to unjust and inefficient resource allocation that will meaningfully decrease population health when employing interventions to improve the cure of a disease. We argue that methods guidelines for cost-effectiveness analysis of health technologies ought to recommend that the source of health preferences match the population that will be most directly affected by the decision problem.
The authors discuss the importance of vaccine recommendations and public health decision making. They argue that evidence-based approaches, such as network meta-analyses (NMAs), can be applied to indirectly compare vaccines, although issues related to patient populations, concomitant medications, and studies with conflicting outcomes must be addressed. The authors highlight the need for a broader evaluation of vaccines that goes beyond medical outcomes and cost-effectiveness, considering factors such as rapport and convenience.

The authors also emphasize the need for value assessments beyond the traditional model of health technology assessment (HTA) and patient and regulatory needs. They propose a framework with three levels of value, including productive, adaptive, and enabling value, which can help identify gaps and opportunities for health solutions with benefits beyond medical outcomes.

The authors conclude by highlighting the importance of engaging patients and caregivers in research, particularly those with terminal illness, to ensure that the research is patient-centered and effective. They also stress the need for adequate translation and cultural considerations to ensure that the research is conducted ethically and effectively.
Although patient engagement in health research is commonly recognized as a pri-

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VALUE IN HEALTH 20 (2017) A39–A811
study indicates the use of first line HAART therapy was higher in HIV/AIDS patients. **OBJECTIVES:** Current study is aimed to explore and to observe the use of HAART therapy and the combinations of antiretroviral drugs among HIV/AIDS patients. **METHODS:** An observational retrospective study of all patients diagnosed of HIV infection and on HAART therapy from Jan 2007 to Dec 2012 was conducted at infectious disease department of Hospital Pulau Pinang, Malaysia. Patient socio-demographic characteristics, the type of combination of antiretroviral drugs used and associated ADRs were recorded. Data was descriptively analyzed by using statistical package for social sciences (SPSS 20). **RESULTS:** Out of 792 patients that underwent HAART therapy, 607 (76.6%) were male and 185 (23.3%) were female patients. Different regimens of the HAART therapy were used in the current study. Overall First line therapy of HAART was used 769 (97.1%) times in HIV patients while 110 (13.9%) times 2nd line therapy was used. Combination of AZT+3TC+EFV of first line antiretroviral drugs was used 331 (41.8%) times followed by TDF+FTC+EFV combination which was administered 271 (34.2%) times and D4T+3TC+NVP used 177 (22.3%) times. AZT and D4T in the First line drug combinations were changed many due to associated ADRs such as anemia and lipodystrophy. Combination of AZT+3TC+LOP-RITO of Second line drugs of HAART were prescribed in 48 (6.1%) patients followed by TDF+FTC+LOP-RITO (5.9%). **CONCLUSIONS:** The study indicates the use of first line HAART therapy was higher in HIV/AIDS patients. The use of combinations of antiretroviral drugs such as AZT, D4T and TDF were in the initial stages of HIV infection, though the therapy was changed either to different combinations or to 2nd line HAART therapy when the condition become worse. However, a multicenter study with a large sample size may provide us with better understanding of the use of HAART therapy.

**PIN3 ASSESSMENT OF ISONIAZID PHYLAXIS THERAPY INITIATION APPROPRIATENESS, ADVERSE DRUG REACTION AND ADHERENCE AMONG HIV PATIENTS IN UNIVERSITY OF GONDAR REFERRAL HOSPITAL, NORTHWEST ETHIOPIA**

**BACKGROUND:** Treatment for latent TB infection (LTBI) is an important strategy to reduce socioeconomic burden of HIV/TB co-infection by providing effective prophylaxis therapy (IPT) for people living with HIV (PLWHIV). Appropriate initiation and good patient adherence are crucial to achieve this. **OBJECTIVES:** The aim of this study was to assess level of IPT initiation appropriateness, ADR and patient adherence in HIV patients on IPT follow up during in University of Gondar referral hospital. **METHODS:** A facility based cross sectional study design was conducted and simple random sampling technique was used for selected populations. A structured questionnaire was used for data collection. WHO guideline, patient adherence was evaluated according to Morisky adherence scale and self reported ADR was also assessed. Data was analyzed using SPSS version 21. For all statistical tests, level of significance was set at P < 0.05. **RESULTS:** The obtained appropriateness level of IPT initiation was 116 (77.9%). According to Morisky adherence scale 121(81.2%) HIV patients were having good adherence with 95% CI (77.8-84.6). IPT adherence had statistically significant association with number of lifetime pregnancy, current smoking, current alcohol consumption and contraception history. Out of a total of 52 patients who took IPT and experienced ADR, 31(59.62%) took IPT longer than three months. The most common ADR encountered was constipation (30.8%). **CONCLUSIONS:** The level of adherence to IPT was generally high in respect to initiation. ADR to IPT and ADR reported seeks the attention of health care providers and researches for optimum clinical outcomes.

**PIN4 COMPARATIVE EFFICACY AND SAFETY OF REGIMENS FOR TREATING PLASMODIUM FALCIPARUM MALARIA: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS**

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**OBJECTIVES:** To review available scientific evidence on incidence of herpes zoster (HZ) in the general population and in specific sub-populations in Spain. **METHODS:** A systematic review of the literature (up to October 31, 2016) was carried out, using the electronic databases (PubMed and Embase). Search terms: “herpes zoster”, “diabetes mellitus”, “chronic obstructive pulmonary disease”, “chronic heart failure”, “mental disorders” and “immunocompromised”. Supplements for local scientific congresses, non-indexed Spanish journals and official regional epidemiological reports, potentially HZ-related, were also manually searched. Inclusion criteria were: reporting incidence of HZ in the Spanish general population and/or specific sub-populations, English or Spanish language. No restrictions were applied on study design or population age. **RESULTS:** Among 264 references retrieved (48 PubMed, 138 Embase and 68 manual searching), 30 were finally included. Incidence rate of HZ in the general population was reported in 9 studies. Available scientific evidence on incidence of HZ in specific sub-populations. HZ incidence ranged from 9.0 to 15.0/1,000 patients with diabetes mellitus (DM), from 11.0 to 27.0/1,000 population with rheumatic diseases. Only 3 studies performed comparison with general population, reporting an increased risk of HZ for DM (24%), COPD (39%) and COPD patients receiving inhaled corticosteroids (61%). **CONCLUSIONS:** Available studies in Spain are heterogeneous, but suggest that HZ incidence is higher in specific sub-populations (immunocompromised, cardiovascular diseases, COPD and DM) versus general population. More evidence is required for reliable identification of risk conditions for HZ occurrence.

**PIN5 IMPACT OF COMORBIDITIES ON THE RISK AND COST OF HOSPITALIZATION IN HIV-INFECTED PATIENTS: REAL WORLD DATA FROM THE ABRUZO REGION**

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**OBJECTIVES:** Due to the success of highly active antiretroviral therapy, HIV-infection has been transformed into a lifelong condition. Therefore, HIV-infected patients present with an increasing number of associated comorbidities. Little is known about the impact of the comorbidities on the risk of hospitalization and related costs in HIV patients. Our aim was to quantify the risk of hospitalization and costs for these patients with HIV infection and its associated comorbidities. **METHODS:** A cohort was identified using medical records of patients included in the HIV/AIDS database from the Abruzzo’s hospital discharge database during the years 2004-2013. Patients were then followed up in the years 2014-2015 and all admissions were recorded. Patients’ comorbidity risk index (CRI) was calculated using Elixhauser’s 29 CMs and the hospital discharge abstracts. Poisson regression was used to compare the Incidence Rate Ratios (IRRs) of acute hospital admissions in patients with and without each comorbidity class. A gamma distribution was used to estimate adjusted mean hospital costs. IRRs with 95% confidence interval were calculated using robust standard errors. **RESULTS:** A total of 13,013 patients, from 5.0 to 240.0/1,000 transplanted patients and from 11.0 to 27.0/1,000 population with rheumatic diseases. Only 3 studies performed comparisons with general population, reporting an increased risk of HZ for DM (24%), COPD (39%) and COPD patients receiving inhaled corticosteroids (61%). **CONCLUSIONS:** Available studies in Spain are heterogeneous, but suggest that HZ incidence is higher in specific sub-populations (immunocompromised, cardiovascular diseases, COPD and DM) versus general population. More evidence is required for reliable identification of risk conditions for HZ occurrence.

**PIN6 SAFETY OF A SPECIFIC FIRST LINE ANTIRETROVIRAL REGIMEN: A REVIEW**

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**OBJECTIVES:** To study the efficacy and safety of a specific first line antiretroviral (ART) regimen composed of tenofovir (TDF), lamivudine (3TC) and efavirenz (EFV), which was used until recently as the preferred first line treatment for adults in Brazil and is still amongst the recommended by the World Health Organization. **METHODS:** In April, 2010 we conducted a systematic search of the literature in MEDLINE via Pubmed, Cochrane CENTRAL, EMBASE and Lilacs for cohorts that reported on toxicity or CD4 lymphocyte count or viral load among HIV-1 infected adults on first line treatment. Cochrane CENTRAL and EMBASE were searched for systematic review or meta analyses. **RESULTS:** Our search yielded 441 abstracts, of which 36 registries were read in full, resulting in 5 papers that met all eligibility criterion. The cohorts included comprised 725 patients mostly from African countries due to the unacceptably high risk of toxicity and loss of efficacy. Nonetheless, efavirenz is still widely used. It is difficult to study the efficacy and safety of one regimen specifically, however, it is of importance in order to optimize therapy.
interval (CI) were adjusted for age, gender and the other comorbidities. Costs were derived from the updated DRG-based reimbursements. RESULTS: Among 1026 HIV patients identified (mean age 47 years), 30% experienced at least one comorbidity and 14.5% needed acute hospital admission during the follow-up period. The risk of acute hospitalization significantly increased among patients with renal (adjusted IRR 2.10; 95% CI: 1.45-3.06) and for cardiovascular (CCI ≥ 2, respectively. comorbidities, to minimize the risk of acute events during the chronic management of HIV infection.

PIN8
ROAVIRUS VACCINATION MAY REDUCE ACOUTE GASTROENTERITIS RATES ACROSS ALL AGE GROUPS IN ENGLAND
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OBJECTIVES: Rotavirus is the main cause of severe acute gastroenteritis (AGE) in children under 5 but has not been considered an important cause of AGE in older age groups. England introduced rotavirus universal vaccination for infants in July 2013. This study aims to evaluate the impact of rotavirus vaccination on all cause AGE episodes in England across all age groups using the Clinical Practice Research Datalink (CPRD) and Hospital Episode Statistics (HES) database. METHODS: We included patients in CPRD between 1 July 2013 and 30 June 2016. Cut-off date to define pre- and post-vaccination periods was 1 July 2013. AGE general practitioner (GP) episodes and hospitalizations were defined using AGE-related ICD-10 codes with a 14 day disease free period. We calculated crude episode rates of AGE, overall and stratified per age group, health care setting and calendar time. RESULTS: There were 28 AGE GP episodes per 1,000 person-years in the pre-vaccine compared to 23 per 1,000 person-years in the post-vaccine (95% CI: 17.5-18.6) reduction. The largest decrease was observed in children < 5 years: 26.6% (95% CI: 25.5-27.6) reduction. A significant decrease was also observed among age groups not vaccinated, particularly among 65 to 74 year olds: 16.9% (95% CI: 15.3-18.6) reduction. Impact on AGE hospitalizations was minimal overall (2%, 95%CI: 0.3-3.1), but with reductions of 29% (95%CI: 26-32) < 5 years, and 6% (95%CI: 2.3-9.6) in 85+ years. CONCLUSIONS: This ecological analysis suggests that the introduction of rotavirus vaccination in England may have resulted in a significant impact on all cause AGE episodes across all age groups, similar to what has been seen following the introduction of pneumococcal vaccination among infants. Although trends before vaccination suggested a stable background rate, we cannot rule out a coincidental decrease of AGE unrelated to rotavirus vaccination.

PIN9
REAL WORLD EFFECTIVENESS OF TREATMENT WITH OVB/PTV/r ± DSV IN HCV PATIENTS WITH CIRRHOSIS IN POLAND
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BACKGROUND: In chronic hepatitis C virus-infected patients cirrhosis is associated with less effective IFN-based treatment and higher risk of complications. New IFN-free direct-acting antiviral therapies have greatly improved sustained virologic response rates. However, patients with cirrhosis are often excluded from trials or treated less frequently than in patients without cirrhosis. OBJECTIVES: To assess the real world effectiveness of treatment with OVB/PTV/r ± DSV in patients with HCV infection and compensated cirrhosis participating in Polish public drug program “National Registry that reflects on treatment response and side effects of OVB/PTV/r ± DSV, who entered the drug program from Oct 1 2015 to Jan 31 2016 in seven non-randomly selected centers (N=265). Data on genotype, comorbidities, past treatment, end of treatment (EOT) response, SVR24 and reasons for early treatment cessation (including AE) was collected retrospectively. RESULTS: From 265 patients with cirrhosis receiving treatment (ITT population) 263 completed treatment (2 fatalities) and 256 had SVR24 assessed (4 lost to follow up and 3 fatalities) (FP population). Analysed group comprised 50% male, 54% treatment-experienced, prevalent comorbidities were hypertension (38%) and diabetes (16%). 260 patients achieved SVR24 – 94% in ITT population, 98% in FP population. Results are consistent with the efficacy in noncirrhotic patients from the same registry, from 238 patients with liver fibrosis stages F1-F3 (ITT) SVR24 was assessed in 225 patients (99) and 222 achieved SVR24 (93% in ITT population, 99% in FP population). CONCLUSIONS: Real world data from Poland regarding OVB/PTV/r ± DSV in patients with cirrhosis confirms the high effectiveness of this regimen. Presented results are further reinforced by RWE study performed by Flisik et al. (2017), where 90 patients with cirrhosis reached SVR24 (72% in ITT and 99% in FP population). It indicates the effectiveness of Polish drug program.

PIN10
ZOSTER VACCINE EFFECTIVENESS AGAINST INCIDENT HERPES ZOSTER AND POST-HERPETIC NEURALGIA IN ELDERLY IN THE UK
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OBJECTIVES: Herpes zoster (HZ) is a painful skin rash that occurs most frequently in older adults and is caused by reactivation of latent varicella zoster virus (VZV). Its most common complication is post-herpetic neuralgia (PHN). The UK introduced zoster vaccine in the national immunization program in 2013. This vaccine was routinely offered to 70-year-olds and, as part of the catch-up, to 79-year-olds. This study assessed the vaccine effectiveness (VE) against HZ and PHN in elderly within the two populations. METHODS: This retrospective cohort study included subjects from birth cohorts 1943-1946 (routine) and 1934-1937 (catch-up) in the UK Clinical Practice Research Datalink (CPRD). Vaccinated subjects were compared to unvaccinated subjects using piecewise Cox regression model. HZ outcomes in community setting were analyzed, including HZ, PHN and other HZ complications (i.e. neurological but not PHN, ocular, disseminated and other). RESULTS: For the routine birth cohorts (97274 subjects), we found a VE for HZ of 75.4% (95% CI: 72.8-77.4) and for PHN of 80.9% (95% CI: 79.3-82.2) for the first year of vaccination. For the subsequent 2 years, the VE estimates of HZ was 55.1% (95% CI: 29.2%-72.7%). For the catch-up cohorts (48193 subjects), the VE estimates for PHN was 56.0% (95% CI: 42.8%-71.0%). CONCLUSIONS: Within the total population, the HZ vaccine provided protection against HZ and PHN, but its protection declined over time. Immunocompromised conditions need to be taken into account.

PIN11
EPIDEMIOLOGY AND OUTCOMES OF DIFFERENT TREATMENT STRATEGIES IN PATIENTS WITH PNEUMOCOCCAL RESISTANT ACINETOBACTER BAUMANNII IN MEDICAL INTENSIVE CARE UNITS
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OBJECTIVES: The prevalence of carbapenem-resistant Acinetobacter baumannii (CRAB) is emerging in the intensive care units (ICUs) in Taiwan. Pneumonia is a common site of CRAB infection and associated with high mortality in critically ill patients. The aims of this study were to study the epidemiology and treatment outcomes associated with different treatment strategies of CRAB pneumonia. METHODS: We conducted a multicenter retrospective study on adults (≥ 20 years) patients with CRAB pneumonia in the medical ICUs of three hospitals, including two regional hospitals in Southern Taiwan during 2010-2015. The data were collected for patient characteristics, prescribing patterns, drug resistant patterns, and treatment outcomes. RESULTS: A baumannii accounted for about 13% CRAB isolates over the 5 years: 26.6% in ICUs. CRAB infection was significantly more common in the elderly patients (p = 0.04). CONCLUSIONS: CRAB was emerging in the ICUs in Taiwan. Tigecycline was the most common antibiotic prescribed for CRAB pneumonia patients; however, tigecycline monotherapy was associated with significantly higher mortality rate than colistin monotherapy.

PIN12
VACCINES FOR HERPES ZOSTER: A SYSTEMATIC REVIEW OF RANDOMIZED CONTROLLED TRIALS IN ADULTS ≥ 50 YEARS OF AGE
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OBJECTIVES: The objectives of this study were to assess trends in the median HIV ARV drug prices per DDD in the US in the period 1987-2015 and to compare
of the AWF and the NADAC for HIV ARV METHODS: A retrospective analysis of the burden of cytomegalovirus disease in Healthy Medical Care (HMC) recipients from the United States. The World Health Organization (WHO) website was used for the AWP and the NADAC for HIV ARV drug market prices. The United States Pharmacopeia (USP) website was used for the NADAC database to collect defined daily dose (DDD) for each HIV ARV drug. We used the USP to collect the AWP and the NADAC for HIV ARV drug market prices. The USP website was used to collect the AWP and the NADAC for HIV ARV drug market prices.

METHODS: A retrospective analysis of the burden of cytomegalovirus disease in Healthy Medical Care (HMC) recipients from the United States. The World Health Organization (WHO) website was used for the AWP and the NADAC for HIV ARV drug market prices. The United States Pharmacopeia (USP) website was used for the NADAC database to collect defined daily dose (DDD) for each HIV ARV drug. We used the USP to collect the AWP and the NADAC for HIV ARV drug market prices. The USP website was used to collect the AWP and the NADAC for HIV ARV drug market prices.

RESULTS: In the period 1987–2015, the FDA had listed 39 ARV drugs with different dosages approved for use in the US. The market entry-inflation-adjusted AWP per DDD was $28.59 for zidovudine, the first HIV ARV that was approved in 1987. The lowest market entry-inflation-adjusted AWP per DDD was $5.13 for lopinavir/ritonavir in 2000 and the highest was $101.90 for ritonavir (MMF/200–900–900 mg). The median AWP per DDD was $288.95 (IQR=230–370) for HIV ARVs approved in the 1990s, $13.80 (IQR=11–17) in the 2000s and $29.58 (IQR=23–39) in the 2010–2015 period. The NADAC represented an average of 75.2% of the AWP, with a range from 64.5% (ritonavir, 100 mg) to 95.9% (efavirenz/tenofovir disoproxil fumarate, tab, 600 mg-200 mg-300 mg). CONCLUSIONS: The prices of new HIV ARV drugs at market entry increased over time. The prices of existing drugs increased faster than the inflation rate. The high prices of HIV ARV drugs may impact affordability and accessibility to critical medications for both insured and uninsured population groups.

PIN14 GENDER INEQUALITY IN ACUTE GASTRO-ENTERITIS RATES IN ENGLAND

Objective: To examine sex differences in acute gastroenteritis (AGE) across all age groups. As part of a wider study on the causes of AGE in England, we hypothesised that AGE rates would differ in men and women due to differences in risk factors at the individual and societal level.

Methods: Episode data from the 2011 sample of the General Practice Research Database (GPRD) were used. The GPRD is a large, general practice based UK cohort database with excellent population coverage. Episodes were defined based on International Classification of Disease (ICD) codes. Episodes were defined as either GP or Hospital based. The sex-specific rates of episodes were compared using a Poisson regression model.

Results: Of 210,673 GP episodes, 32,991 (15.7%) were in males and 177,682 (84.3%) were in females. For hospital episodes, 67,309 (46.5%) were in males and 73,000 (53.5%) were in females. Males were significantly more likely to present with a hospital episode compared to females (OR 1.63, 95% CI 1.57–1.70). Males were also more likely to present with AGE for childhood hospital episodes compared to females (OR 1.33, 95% CI 1.24–1.42). Age-specific analyses revealed that the sex difference in hospital episodes for children was largest at ages under 5 years (OR 1.66, 95% CI 1.46–1.89).

Conclusions: Males had higher rates of acute gastroenteritis compared to females. Further research is needed to understand the reasons for the sex difference in hospital presentations for acute gastroenteritis.

PIN15 RETROSPECTIVE ANALYSIS OF THE BURDEN OF CYTOMEGALOVIRUS DISEASE IN IMMUNOSUPPRESSED PATIENTS AFTER HEMATOPOIETIC CELL TRANSPLANTATION IN ENGLAND

Objectives: To estimate the burden of cytomegalovirus (CMV) disease in hematopoietic cell transplantation (HCT) recipients in England using the Hospital Episodes Statistics database. METHODS: The incidence of CMV disease was calculated using the total number of episodes of CMV disease in HCT recipients per 100,000 person-years. The age-standardised incidence rate was also calculated. RESULTS: In the period from January 2000 to December 2015, 21,230 episodes of CMV disease were recorded in HCT recipients. The overall incidence rate of CMV disease was 71.1 per 100,000 person-years (95% CI: 69.4–72.9). CONCLUSIONS: The burden of CMV disease in HCT recipients is substantial and should be a priority for healthcare resource allocation.

PIN16 INCREASED INCIDENCE RATE OF MEDICALLY-ATTENDED ACUTE GASTROENTERITIS IN DIABETICS IN ENGLAND

Objectives: To investigate the incidence of gastroenteritis in diabetes in England. METHODS: Incidence rates of gastroenteritis were calculated from the Hospital Episode Statistics database for England using ICD-10 codes. RESULTS: In the period from 2000 to 2015, 20,946,973 episodes of gastroenteritis were recorded in England. The incidence rate of gastroenteritis in diabetes was 61.7 per 100,000 person-years (95% CI: 61.0–62.3). CONCLUSIONS: The incidence of gastroenteritis in diabetes is significantly higher than in the general population. Further research is needed to understand the underlying mechanisms.

PIN17 INCIDENCE OF RESPIRATORY SYNCTIAL VIRUS RELATED HEALTHCARE UTILIZATION IN THE UNITED STATES

Objectives: To assess the burden of respiratory syncytial virus (RSV) related healthcare utilization in the United States. METHODS: Healthcare utilization was assessed using the Truven Health MarketScan Commercial Claims and Encounters database. RESULTS: In the period from 2006 to 2015, 4.7 million episodes of RSV related healthcare utilization were recorded in the US. CONCLUSIONS: RSV related healthcare utilization is a significant burden in the United States. Further research is needed to understand the underlying mechanisms.

PIN18 PULMONARY TUBERCULOSIS TRENDS AND TREATMENT OUTCOMES IN THE COMOA WEST DISTRICT, GHANA

Objectives: To assess the trends and outcomes of pulmonary tuberculosis in the Comoa West district of Ghana. METHODS: A retrospective analysis of patient records from the district tuberculosis register was conducted. RESULTS: In the period from 2000 to 2015, 983 cases of pulmonary tuberculosis were recorded. The treatment success rate was 84.5% (95% CI: 82.6–86.4). CONCLUSIONS: The treatment success rate of pulmonary tuberculosis in the Comoa West district is high, but further research is needed to understand the underlying mechanisms.

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of treatment outcomes. It is imperative to enhance pulmonary tuberculosis edu-
cation and surveillance in the Apam sub-district to reduce incidence of cases.

INFECTION – Cost Studies

PIN15
STRATEGIES TO EFFECTIVELY PREVENT SURGICAL SITE INFECTIONS IN ITALIAN HOSPITALS: ECONOMIC BENEFITS
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OBJECTIVES: Surgical site infections (SSI) represent one of the most frequent hospi-
tal acquired infections, and are associated with patient morbidity, excess mortality, longer hospital stays, and increased costs. Skin preparation with 2% chlorhexidine gluconate (w/v) in 70% isopropyl alcohol in a single use applicator, has been found to lead to a statistically significant reduction in SSI rates compared with other antiseptics. An economic analysis has been developed on the basis of these clinical results.

METHODS: An economic model was developed to compare the costs of 2% chlorhexidine gluconate (w/v) in 70% isopropyl alcohol in a single use applicator with povidone iodine (aqueous and alcoholic) in a generic cohort of 1,000 patients undergoing surgery per year. Costs and rates of SSI were retrieved from the wider literature. The robustness of the results were tested with univariate sensitivity analysis. RESULTS: Over a cohort of 1,000 patients, 2% chlorhexidine gluconate in IPA alone will cost 1,802 € and isopropyl alcohol in IPA alone would cost 5,552 €. In a single use applicator, the sensitivity analysis of the rate of SSI compared with isopropyl alcohol (IPA) alone. An economic analysis has been developed to assess the economic impact of CHG-IPA for CABG-BIMA surgery in the perspective of an Italian hospital.

CONCLUSIONS: The choice of the most effective agent for skin prepara-
tion, together with the implementation of a cost-effective strategy against SSIs, can lead hospitals to reduce the clinical and economic burden of infections.

PIN20
INFECTION PREVENTION IN HEART SURGERY IN GERMANY: AN ECONOMIC ANALYSIS
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OBJECTIVES: Patients undergoing coronary artery bypass grafting (CABG) using bilateral mammarian arteries (BIMA) are at high risk for surgical site infections (SSI). In these patients, the use of 2% chlorhexidine gluconate (w/v) in 70% isopropyl alcohol (IPA) alone in a single use applicator has been found to lead to a statistically significant reduction in SSI rates compared with isopropyl iodine alcoholic and 66 SSIs compared with povidone iodine aqueous. This equates to savings of €120 and €318 per patient respectively in hospitals and a total saving of €120,000 and €318,000 per year for the full cohort. The sensitivity analysis demonstrates that the rate of SSI is the key driver of the analysis.

CONCLUSIONS: The choice of the most effective agent for skin prepara-
tion, together with the implementation of a cost-effective strategy against SSIs, can lead hospitals to reduce the clinical and economic burden of infections.

PIN21
ASSESSING THE ECONOMIC IMPACT OF THE INTRODUCTION OF DACLATASVIR IN COMBINATION WITH ASUNAPREVIR FOR THE TREATMENT OF CHRONIC HEPATITIS C IN CHINA
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OBJECTIVES: In China, an estimated 9,795,000 people are chronically infected with hepatitis C virus (HCV), which can lead to life-threatening and resource-intensive complications. Current standard of care has suboptimal efficacy and safety; however, novel direct-acting antiviral (DAA) regimens have improved rates of sustained virologic response (SVR) and tolerability. This study aimed to assess the health-economic outcomes of daclatasvir+asunaprevir (DUAL), the first DAA to be approved in China.

METHODS: A decision tree model has been developed to compare the costs of daclatasvir+asunaprevir (DUAL), the first DAA to be approved in China, with univariate sensitivity analysis. RESULTS: Daclatasvir+asunaprevir (DUAL) is expected to result in a 0.85 and 1.40 per patient, versus SVR: 43.0%, discontinuation: 19.0%, regimen cost: ¥45,016RMB). A budget impact analysis was performed to test the robustness of the results. RESULTS: Compared with IPA alone, CHG-IPA with single use applicator was associated with estimated to carry a marginal increase in the hospital budget. The total cost per treated patient, prior to CAZ-AVI introduction, was estimated to be €12,102 (€4,309 (UTT), €15,208 (CAI), €17,975 (HAP/VAP)) and €12,168 (€4,360 (UTT), €15,282 (CAI), €18,051 (HAP/VAP)).

CONCLUSIONS: Tedizolid is a cost saving alternative to linezolid for the treatment of complicated skin and soft tissue infections in a Russian multi-field hospital. Tedizolid is a cost saving alternative to linezolid for the treatment of complicated skin and soft tissue infections in a Russian multi-field hospital. Tedizolid is a cost saving alternative to linezolid for the treatment of complicated skin and soft tissue infections in a Russian multi-field hospital.

PIN22
BUDGET IMPACT ANALYSIS OF INTRODUCING TEOFENOCILLIN IN A TANZANIAN HOSPITAL
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OBJECTIVES: The historical trend of imipenem-resistant Pseudomonas in Iran is increasing, and the potential to establish a resistance is high. There is a need for second-generation carbapenem. Tedizolid is a cost saving alternative to linezolid for the treatment of complicated skin and soft tissue infections in a Russian multi-field hospital.
was detected by systematic review and pooled analysis of reporting articles. It was
assumed that a 10% increase of implement market share after its launch and this market share will increase linearly into 30% within 5 years. A budget impact model was developed in MS Excel adjusting the diminishing consumption of imipenem in Define Daily Doses (DDD)/capita with the prevalence of imipenem-resistant Pseudomonas. Copper(II) ions were released after treatment with imipenem-resistant Pseudomonas were forecasted in a five year time horizon. Cost items included hospital and ICU stay, drug costs and ADR costs. RESULTS: A reduction of about 8% in imipenem consumption resulted in approximately 8% decrease in prevalence of resistant Pseudomonas. Due to much higher daily cost of ticemycin comparing to generic imipenem in Iran, the total drug cost was about 30.5 million € in 5 years. Meanwhile, the reduction of imipenem resistance will lead to saving about 5 million € per healthcare system. The discounted value of saved life years adjusted with QoL would result in incremental cost per averted DALY of about 7,877 €. CONCLUSIONS: Introducing ticemycin as a carbapenem-sparing agent in Iran would be a cost-effective strategy with a cost-efficiency threshold of more than one GDP/capita in Iran with a reasonable increase in health care costs.

PIN25 A BUDGET-IMPACT ANALYSIS (BIA) OF IMMUNIZING ADULTS WITH COPD WITH THE 13-VALENT VACCINE (PCV13) AGAINST COMMUNITY-ACQUIRED PNEUMONIA AND PNEUMOCOCCAL DISEASE

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OBJECTIVES: Streptococcus pneumoniae is the leading cause of community-acquired pneumonia (CAP). The incidence of pneumococcal pneumonia (PP) is greatest at the ages of 65 and above. In Austria, 32,307 hospitalized CAPs were documented in adults; 31% (10,015) with S.Pneumoniae and 65% (6,510) of it corresponds PCV1-serotypes. 44% (2,864) and 30% (921) are attributable to COPD patients. In order to develop an incremental cost-utility analysis, the aim of the BI is to quantify the macroeconomic impact of an increased proportion of PCV13 vaccinated person’s in the different risk groups (GOLD I+ and GOLD II+) in different age groups. METHODS: A multi-center decision analytic model simulation-based model was developed over a 5-year time horizon, which includes the following states: hospitalized and outpatient CAPs, invasive-pneumococcal-diseases (IPDS), exacerbations and mortality. Patients without immunization are considered for PCV13 vaccination according to the selected risk group. Vaccination is considered. The model includes a severity shift over time. Results show, within which risk-groups savings could be achieved (treatment costs avoided offset vaccine acquisition costs) and within which risk-groups additional health expenditure were generated from the payer’s perspective. RESULTS: Among-risk groups with COPD GOLD III+ vaccination leads in all age-groups (≥ 18, ≥ 50, ≥ 65) to cost savings over 5-years (from 16.3 million € [≥ 18] to 23 million € [≥ 65]). Calculations are based on the present pharmacy selling price, which is paid off-put of-pocket. Between 1,923,1,075 CAPs and 110-116 IDPs could be avoided over 5-years. Among-risk groups with COPD GOLD III+ reimbursement would increase health expenditure between 15.2 million € (≥ 18) and 3.9 million € (≥ 65); between 2,747,1,565 CAPs and 135-229 IDPs could be avoided. In GOLD I+ age groups a PCV13 reimbursement (break-even) price between 53-66 would result in a 0 effect to health-care budgets. CONCLUSIONS: An increase of immunized persons – due to the incentive of reimbursement – would reduce disease burden significantly and lead among high-risk patients to huge savings.

PIN26 CALCULATING THE RETURN ON INVESTMENT FOR IFN-FREE DAAs: THE CASE OF GREECE

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Calculating the Return-on-Investment for IFN-free DAAs: The case of Greece Konstantinos Drakos, Kakourou Michael, Efthymiou Xenofon, Anastasou Dimitrios ABSTRACT: The present study investigates the HCV infected Greek population for a 20-year horizon covering the period 2016-2036. The second objective of the analysis focuses on LoD and conducts an economic analysis designed to investigate the macroeconomic payoff of adopting an IFN-free DAAs treatment option across all fibrosis stages. The main objectives are to conduct a Return-on-Investment analysis as well as considering broader macroeconomic costs due to HCV. METHODS: The first part of the analysis builds a health-state transition (Markov Chain) model where all cohorts are tracked sequentially over annual cycles to evaluate five alternative screening and treatment strategies with respect to their clinical outcomes and healthcare costs among the Greek population with HCV over a 20-year horizon (2016-2036). The second part of the analysis focuses on LoD and conducts an economic analysis designed to investigate the macroeconomic payoff of adopting an IFN-free DAAs treatment option across all fibrosis stages. RESULTS: Our results show that comprehensive treatment with IFN-free DAAs at stages F0-F4 exhibits by far the highest return on investment in terms of LoD gained in SVR12 per 10,000 euros invested. It as regards the macroeconomic payoff, we find that for every euro spent on IFN-free DAAs full treatment costs, 20 cents are gained in the form of GDP loss averted. In the alternative screening and treatment strategy combination, the incremental cost of an IFN-free DAAs treatment averted compared to IFN therapy was estimated to be €505,000 for the group treated with IFN and €265,000 for SCHBIG group. Treatment expenditure was driven by the product cost for HBG. After switching from the intravenous to the subcutaneous route, the dosage of HBG could be reduced to 23% of the original dose while keeping protective HBG trough levels in the blood stream. Therefore, even though the price per unit is higher for SCHBIG, the total costs would be significantly lower. Additionally, the possibility of self-administration led to savings as transportation and infusion in the day care hospital were avoided. CONCLUSIONS: The result of the budget impact model shows that the use of SCHBIG leads to cost savings from a public payer perspective when compared with IFN. Thus, the switch from IFN to SCHBIG can be recommended from a cost-effectiveness point of view.

PIN27 INDICATIVE BUDGET IMPACT OF POSACONAZOLE VERSUS ITRAFONAZOLE IN INVASIVE FUNGAL INFECTION PROPHYLAXIS IN ADULT PATIENTS WITH AML/ MDS

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OBJECTIVES: Haematologic malignancies are at high risk of breakthrough invasive fungal infections (bIFIs), which are associated with high morbidity and mortality. Anti-mould prophylaxis and treatments have been introduced which have improved patient outcomes. This analysis estimates the budget impact of posaconazole and itraconazole, two prophylactic agents that prevent bIFIs in patients with acute myeloid leukaemia (AML) and myelodysplastic syndromes (MDS). METHODS: We developed a budget impact model looking at the costs of a hypothetical cohort of 100 patients in a posaconazole primary prophylaxis pathway versus an itraconazole primary prophylaxis pathway. The key cost and efficiency drivers considered are: drug acquisition cost, diagnostic and laboratory test and hospitalization costs associated with a bIFI. Key data on the costs of an infection come from a peer-reviewed published observational study in the UK. Differences in bIFI rates between posaconazole and itraconazole were demonstrated in multi-centre Phase 3 randomised controlled trials. RESULTS: For 100 patients, posaconazole has higher drug acquisition costs versus itraconazole (€216,398 versus €42,149 for a 28-day course). However, posaconazole is associated with less subsequent antifungal costs (€11,275 versus €2,533), and non-adherence drug costs (€80,150 versus €340,000 in AML and €126,514 versus €632,570 in MDS). Send home antifungal costs were €843 in the posaconazole pathway versus €21,640 in the itraconazole pathway. Overall, the indicative total costs for posaconazole is €296,748 versus itraconazole €461,320 in AML, which increases to €355,262 for the posaconazole pathway versus £753,892 for the itraconazole pathway in patients with MDS. CONCLUSIONS: Looking across the continuum of care, posaconazole is associated with lower overall costs versus itraconazole. It is important to note that switching drugs will incur initial reductions in drug expenditure; however it has the potential to increase the overall NHS activity and therefore cost. The impact on patient outcomes, financial stewardship and operational efficiency is aligned to the principles of medicines optimisation.
for the fluconazole pathway in patients with MDS. CONCLUSIONS: Looking across the
continuum of care, posaconazole is associated with lower overall costs versus
fluconazole. It is important to note that switching drugs will incur initial reduc-
tions in drug expenditure; however, it has the potential to increase the overall NHS
activity and therefore cost. The impact on patient outcomes, financial stewardship
and operational efficiency is aligned to the principles of medicines optimisation.

PIN30
PREDICTION OF COSTS ON ANTITREVIRAL THERAPY IN THE REPUBLIC OF BELARUS
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OBJECTIVES: The purpose of the pharmaceutical economic research was to
determine ways to increase efficiency and accessibility of antiretroviral therapy (ART) in
Belarus. METHODS: We have used the following methods: “naive” approach, trend analysis
pharmaceutical economic forecasting, Markov modeling method. All models have been
built on the basis of the results of medicines clinical trials, cohort studies, epidemi-
ological statistics on HIV infection in Belarus in 2012-2017. Nine antiretroviral therapy
(ART) regimens have included a combination of 3 antiretroviral drugs of reverse transcriptase,
non-nucleoside inhibitors and protease inhibitors. RESULTS: 54 models have been
obtained for nine ART regimens depending on the level of CD4+ cells/μl of blood
(>500, 500-350, 350-200, 200-100, 100-50, 50-0). For each model we have defined a
hypothetical number of years necessary to achieve a normal level of CD4+ cells of
blood. We have calculated an average annual cost of therapy for one patient includ-
ing: death, ART cessation, increase in CD4+ cells, constant level of CD4+ cells after
ART initiation. Scheme 8 Zidovudine + Lamivudine + Nevirapine has the lowest cost of
therapy: $183.19 for CD4+ > 500 cells/μl, $193.95 for >350, $235.77 for <350. 7400
people with different levels of CD4+ received ART at the beginning of treatment in
2016 which was divided into two groups: effective therapy: $4135078.49, non-effective
therapy: 3212000.81. RAL+RAL+TDF+ETR+LAM ($4144888.49 ± 66497.97).
CONCLUSIONS: We have determined the most effective and least expensive ART regimen. To reduce the cost of ART it is advisable to start the
treatment process at the level of CD4+ > 500 cells/μl. The saved money will allow to
increase availability of ART in Belarus.

PIN31
COST PER LIFE SAVED OF ADJUNCTIVE IgM-ENRIChED IMMUNOglobulin TREATMENT OF SEPSIS IN GERMANY
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OBJECTIVES: To determine the effect of adjunctive IgM-enriched immunoglobulins,
compared to standard treatment versus fen flute-reactive, transcrisptranscriptase
non-nucleoside inhibitors and protease inhibitors. RESULTS: 54 models have been
obtained for nine ART regimens depending on the level of CD4+ cells/μl of blood
(>500, 500-350, 350-200, 200-100, 100-50, 50-0). For each model we have defined a
hypothetical number of years necessary to achieve a normal level of CD4+ cells of
blood. We have calculated an average annual cost of therapy for one patient includ-
ing: death, ART cessation, increase in CD4+ cells, constant level of CD4+ cells after
ART initiation. Scheme 8 Zidovudine + Lamivudine + Nevirapine has the lowest cost of
therapy: $183.19 for CD4+ > 500 cells/μl, $193.95 for >350, $235.77 for <350. 7400
people with different levels of CD4+ received ART at the beginning of treatment in
2016 which was divided into two groups: effective therapy: $4135078.49, non-effective
therapy: 3212000.81. RAL+RAL+TDF+ETR+LAM ($4144888.49 ± 66497.97).
CONCLUSIONS: We have determined the most effective and least expensive ART regimen. To reduce the cost of ART it is advisable to start the
treatment process at the level of CD4+ > 500 cells/μl. The saved money will allow to
increase availability of ART in Belarus.

PIN32
COST-UTILITY ANALYSIS OF DARUNAVIR-BASED REGIMENS FOR TREATMENT-EXPERIENCED PATIENTS WITH MULTIDRUG-RESISTANT HIV-1 INFECTION IN THAILAND
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OBJECTIVES: HIV drug resistance (HIVDR) has significantly increased in Thailand.
In patients who treatment failure on first- and second-line antiretroviral therapy (ART),
the next regimen is to use at least two new active antiretroviral agents (ARVs).
Nevertheless, new ARVs have not yet been included in the National List of Essential Medicines (NLEM) in Thailand. These are high-cost drugs, economic evalu-
atation and budget impact analysis are needed to support NLEM decision making. This study aims to assess 1) The cost-utility analysis of raltegravir (RAL), etravirine (ETR)
and maraviroc (MVC) plus darunavir (DRV)-based regimen. 2) Budget impact analysis
of RAL, ETR and MVC for treatment-experienced patients with HIV drug
resistance in Thailand. METHODS: A Markov model, which monitored a cohort of
adults with HIV, was developed. Details of the model have been presented elsewhere.
A Markov model was developed with a 12-month time-horizon, comprising six health
states. The cohort is followed for up to three lines of therapy. Vancomycin and
metronidazole are the assumed second- and third-line treatments in both children and
adults. Rescue therapy is assumed to provide 100% clinical cure and 0% risk of recur-
cence. Data for the intervention and comparators were derived from clinical trials
and the NLEM. Cost and utility data were sourced from the literature; costs were inflated to 2016 values where required. Cost-effectiveness versus
vancomycin and metronidazolo was assessed in the base-case analysis and in the
following subgroups: non-severe or severe CDI, primary CDI episode, first recurrence,
age (≥75 years), and use of concomitant antibiotics. RESULTS: First-line fidaxomicin
therapy was associated with cost savings (+$650.44 and +$330.30) and gains in quality-adjusted life years (0.008 and 0.013) for all patients, versus vancomycin
and metronidazole, respectively. Fidaxomicin dominated vancomycin across all
subgroups except in the severe CDI subgroup, and metronidazole dominated van-
comycin in all comparisons. CONCLUSIONS: Fidaxomicin dominated metronidazole
and vancomycin in all comparisons, except in the severe CDI subgroup comparison with
vancomycin, where fidaxomicin was cost-effective. Excluding patients with severe
CDI and metronidazole rescue therapy, in all sensitivity analyses, supporting the
base-case results. Outcomes were driven by the reduced recurrence rate with fidaxomicin
therapy.

PIN34
PUBLIC HEALTH AND ECONOMIC BENEFITS OF QUADRIVALENT INFLUENZA VACCINE IN MEXICO
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OBJECTIVES: To estimate the public health and economic burden in Mexico that
would have been avoided, over the last 6 influenza seasons (from 2010-2011 to 2015-
2016), if QIV had been used instead of TIV. METHODS: A static model published by
Reed et al. in 2012 estimating the public health impact of QIV compared to TIV over 10
seasons in the United States was adapted to Mexico for the influenza seasons
from 2010-2011 to 2015-2016. B-lineage cross-protection was included as well as
public health and economic impact based on published sources. Data was obtained
from inpatients and outpatients of the Mexico Emerging Infectious Diseases Clinical
Research Network cohort study. The analysis was stratified by age ( ≤59, 5- ≤17 years, 18-
< 49 years, 50-59 years, 60 years and older) to account for heterogeneity
of data, and focused on vaccination recommendations. RESULTS: During those 6
seasons, QIV would have additionally averted more than 321,000 influenza cases, 121,
500 GP consultations, 3,800 hospitalizations and 350 deaths compared to TIV in this
case (societal perspective cost reduction near to 13 million$. Most
benefits would have been observed for the 6-59 years group (44% of all cases
avoided societal cost offsets of more than 4.6 million euros) and the elderly (22% of
hospitalisation and 90% of death avoided). In adults 18-59 years, loss avoid was
estimated in 1.2 million euros. CONCLUSIONS: The introduction of QIV instead of
TIV would prevent a significant amount of influenza-related burden in years with
high influenza activity such as the 2015-16 season in Mexico. However, more robust
local data are needed to estimate accurately the impact of QIV. Herd effect and co-
morbidities were not taken into account that could underestimate the potential
impact of QIV in the recommended population.

PIN35
THE ECONOMIC BURDEN OF CONGENITAL CYTOMEGALOVIRUS-RELATED HOSPITALIZATIONS IN THE UNITED STATES
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OBJECTIVES: Cytomegalovirus (CMV) infection occurs in approximately 60% of people
in the United States (US). CMV can be transmitted from a pregnant woman to

SAVINng DUE TO hPV9 PRIMARy PREVENTION

The cost of illness for invasive meningococcal B disease in Germany

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OBJECTIVES: The burden of meningococcal B (MenB) is characterized by a high case-fatality rate, serious effects of sequelae on the patients’ everyday life and the corresponding economic burden in Germany and the rest of Europe. This study is the first published analysis of the economic burden of MenB-related invasive meningococcal disease (IMD) cases in Germany. METHODS: A cost-of-illness study has been conducted from third-party payer and societal perspectives for 18 age groups. Direct costs for the acute IMD phase included inpatient, rehabilitation and public health responses-related costs. Probabilities for sequelae (hearing loss, limb amputation, seizures, scarring, renal disease, blindness, neurological and psychological impairments like attention deficit hyperactivity disorder [ADHD]) were based on a literature review and related costs were collected for the first and subsequent years, respectively. Indirect costs included future productivity losses of patients due to IMD-mortality and sequelae as well as productivity losses of patients and parents during the acute IMD phase. Differences were calculated and bootstrapped (n = 1,000). RESULTS: The average total cost per case including sequelae was €51,367 / US$ 58,381 and 195,926 / US$ 222,876 taking into account the human-capital approach. Direct costs account for 21,126€ and are highest for the age-group <1 year (23,594€) but decrease over age to 10,410€ for patients >80 years. Seizures and renal disease have the highest sequelae cost with 593€ and 132,709€ per sequelae case and ADHS/anxiety and neurological disabilities cause the highest cost per IMD survivor with 4,238€ and 3,572€ respectively. CONCLUSIONS: Despite the rare occurrence of MenB-related IMD of 343.25 cases per year between 2001 and 2016, costs per-age cohort sum up to 17,631,752€. The avoidance of IMD cases and outbreaks not only reduces the disease burden but also the economic burden for the German healthcare system and society.

PIN36 THE COST OF ILLNESS FOR INVASIVE Meningococcal B DISEASE IN GERMANY

PIN38 INVESTIGATING THE ECONOMIC IMPACT OF HPV-ASSOCIATED RENAL AND SOME CO-MORBIDITIES IN CHILDREN USING UK EPIDEMIOLOGICAL METHODS: A COST-Benefit ANALYSIS

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METHODS: The total direct costs (expressed in 2017 Euro) associated with the incidence and costs of invasive cervical cancer, cervical dysplasia, cancer of the vulva, vagina, anus, penis, head and neck, salivary glands, and recurrent respiratory papillomatosis from the Italian National Health System Perspective. For each of the nine conditions, we used available Italian secondary data to estimate the lifetime cost per case, the number of incident cases of each disease, the total economic burden, and the relative prevalence of HPV types 6, 11, 16, 18, 31, 33, 45, 52, 58 in order to extrapolate the number of incident cases from the prevalence data to HPV infection. RESULTS: The total direct costs (expressed in 2017 Euro) associated with the annual incident cases of the nine HPV-related conditions included in the analyses were €651.9 million, corresponding to an estimated 220,000 of 5% higher antibiotic resistance. Any intervention preventing HZ could contribute to avoid considerable costs in Spain.

PIN39 ECONOMIC BURDEN OF HERPES ZOSTER IN SPAIN

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OBJECTIVES: Herpes zoster (HZ) and its complications, including post-herpetic neuralgia (PHN), is a severe and painful disease, mainly observed in people ≥50 years of age. Objective of this work was to estimate the burden of HZ in Spain by sex and age, as well as in case of 5% higher antibiotic resistance. HZ cases in adults ≥50 were recruited, stratified by age group, through primary care centers. Both payers and societal perspectives were considered in the costs calculated during the 3 months following HZ rash onset or up to 9 months for PHN. Unit costs were taken from regional healthcare services tariffs and medication costs from public pharmacists’ retail prices. The costs associated with working days lost were evaluated by multiplying number of days lost by the daily average daily wage obtained from National Statistics Institute 2014. RESULTS: 545 HZ cases were included and 25 patients developing PHN were evaluated. HZ cases had on average 1.7 primary care visits per episode, 7 patients (17%) had emergency room visits and 11 (27%) were hospitalized. Regarding medical care, 85% patients were prescribed antivirals for systemic use and 55% were prescribed analgesics. 16 patients (3%), all aged 50–64 years, lost on average 9.9 days of work per HZ episode. Overall costs were €240 (payer perspective) and €296 (HZ episode costs - societal perspective). Costs were higher in the 70–79-year-old age group (€331–€349) due to higher proportion of subjects hospitalized. For PHN patients, overall costs were €571 and €712/HZ episode from the payer and societal perspectives respectively. CONCLUSIONS: HZ and PHN have an important economic burden for payers and society in general. Any intervention preventing HZ could contribute to avoid considerable costs in Spain.

PIN40 THE ECONOMIC BURDEN OF ACUTE BACTERIAL RHINOSEPTITIS AND ACUTE OTITIS MEDIA IN TURKEY: AN EPIDEMIOLOGY BASED COST OF ILLNESS STUDY WITH RESPECT TO CLINICAL PRACTICE AND AVAILABLE GUIDELINES

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OBJECTIVES: To estimate economic burden of acute bacterial rhinosinusitis (ABRS) and acute otitis media (AOM) in Turkey via an epidemiology-based cost of illness study with respect to clinical practice and available guidelines. METHODS: Tree age pro model was used for this analysis. Probability of each health condition in clinical practice and availability of guideline recommendations was used to estimate the costs associated with ABRS and AOM was also determined. Average per patient direct cost in primary, secondary and tertiary-care management of ABRS and AOM was calculated based on respective data from the literature and the average daily wage obtained from National Statistics Institute 2014. RESULTS: 545 HZ cases were included and 25 patients developing PHN were evaluated. HZ cases had on average 1.7 primary care visits per episode, 7 patients (17%) had emergency room visits and 11 (27%) were hospitalized. Regarding medical care, 85% patients were prescribed antivirals for systemic use and 55% were prescribed analgesics. 16 patients (3%), all aged 50–64 years, lost on average 9.9 days of work per HZ episode. Overall costs were €240 (payer perspective) and €296 (HZ episode costs - societal perspective). Costs were higher in the 70–79-year-old age group (€331–€349) due to higher proportion of subjects hospitalized. For PHN patients, overall costs were €571 and €712/HZ episode from the payer and societal perspectives respectively. CONCLUSIONS: HZ and PHN have an important economic burden for payers and society in general. Any intervention preventing HZ could contribute to avoid considerable costs in Spain.

PIN44 VALUE IN HEALTH 20 (2017) A399-A811

her fetus (i.e., congenital CMV [cCMV]). Roughly 20% of children with cCMV may develop a range of long-term sequelae including hearing loss, developmental disabilities. While the epidemiology of cCMV has been documented, limited real-world evidence exists to quantify the associated economic burden. This study describes changes in cCMV-related hospitalizations and associated resource use (i.e., cost; length of stay [LOS]) in the US during 2004 to 17/18/2010/2013 for infants <1 year old. RESULTS: The number of cCMV-related hospitalizations (ICD-9-CM diagnosis code 771.1) for infants from the 2004 through 2013 HICUP Nationwide Inpatient Samples (NIS) were analyzed. Annual cCMV-related hospitalizations increased from 100,000 cases in 2004 to 2015 US populations were estimated using NIS sampling weights and US Census data. Additionally, per-hospitalization costs (in 2016 US dollars) and LOS were assessed. RESULTS: cCMV-related hospitalization rates among infants in the US fell 15%, from 20.9/10,000 in 2004 to 17/8/10,000 in 2013. However, during this period, mean (standard deviation [SD]) LOS increased, from 28.7 (36.2) days in 2004 to 36.7 (52.4) days in 2009, before falling to 29.1 (39.2) days in 2013. Mean (SD) costs increased from €93,683 (€138,604) in 2004 to €132,709 (€183,739) in 2013, peaking in 2009. Finally, the total burden of cCMV-related hospitalizations (i.e., aggregate costs across all cCMV-related hospitalizations) increased slightly, from €73M in 2004 to €77M in 2013, but did increase to >80M in 2009, 2011, and 2012. CONCLUSIONS: cCMV-related hospitalizations increased during the early 2000s, but the economic burden of cCMV in this population varied appreciably during this period. Further research to understand factors which may influence the observed variability in cCMV-related hospitalization rates and costs is warranted. Such research may help plan optimal resource allocation.
OBJECTIVES: Chronic HCV infection is associated with a significant health burden. Recent advancements are the developments of liver cirrhosis and hepatocellular carcinoma. The introduction of direct-acting antivirals (DAAs) has dramatically changed hepatitis C treatment and sustained virologic response rates (SVR) of >90% were observed in clinical trials. Especially interferon-free regimens allow a shorter treatment duration and are expected to be available at a lower price than conventional interferon-based regimens. Thus, new treatment options were accompanied with higher pharmaceutical costs. The aim of the current study was to analyze outcomes and treatment costs in a real-world setting.

METHODS: Data were derived from the German Hepatitis C Registry (DHC-R). The DHC-R is a prospective, multicenter real-world registry study comprising approximately 10,500 patients. Patients are treated at the discretion of the physician. This analysis included all patients with HCV genotype (GT) 1 and 3 who initiated treatment between 02/2014 and 02/2017 and were documented in the pharmacoeconomic substudy.

RESULTS: A total of 2,673 patients receiving antiviral treatment were analyzed; 88.0% had GT-1 and 12.0% GT-3 infection. Mean age was 54.6 years, 52.3% were male. Estimated mean duration of infection was 20.6 years. About half of the population (48.1%) was treatment-naïve and 30.2% had liver cirrhosis. 93.5% of all patients achieved SVR (GT-1: 94.0%, GT-3: 89.1%). Average total treatment costs were €76,972 (€76,131) pharmaceutical costs, €824 ambulatory care, quality-adjusted life-year (QALY), total costs, and incremental cost-effectiveness ratio of DAAs versus no treatment. One-way and probabilistic sensitivity analyses were conducted. OBJECTIVES: The models indicated that, compared with no treatment, the use of generic DAAs in Kazakh HCV patients would increase the life expectancy from 18.4 years, increase the QALY by 0.35 quality-adjusted life-years. The lifetime healthcare costs will be €2,102 per-100 person treated. For the treatment-naïve group, the cost of drug treatment of severe and moderate-to-severe influenza in adult patients is limited by their exceptionally high pricing, up to USD23,000 per 12-week course in Kazakhstan. The high price of DAAs has restricted their use in Kazakhstan. This study examined whether generic DAAs could be cost-saving and how long it would take for the treatment to become cost-saving.

METHODS: We conducted Markov models to compare the outcomes of no treatment versus treatment with DAAs for the HCV-infected population in Kazakhstan. Model parameters were estimated from a systematic review of HCV treatment access and cost. The effectiveness of HCV treatment using available DAAs was calculated, from a Kazakh payer perspective, assuming 3% annual discounting. The main outcome of the models was cost per quality-adjusted life-year (QALY), total costs, and incremental cost-effectiveness ratio of DAAs versus no treatment.

CONCLUSIONS: Treatment with generic DAAs available in Kazakhstan will be cost-saving, and a systematic review of HCV treatment access and cost. The effectiveness of HCV treatment using available DAAs was calculated, from a Kazakh payer perspective, assuming 3% annual discounting. The main outcome of the models was cost per quality-adjusted life-year (QALY), total costs, and incremental cost-effectiveness ratio of DAAs versus no treatment.

OBJECTIVE: The cost of treating severe influenza is cost-saving.

METHODS: The cost of treating severe influenza is cost-saving.

RESULTS: The cost of treating severe influenza is cost-saving.
and moderate-to-severe influenza calculated based on expert treatment recommendations is much higher than defined in Russian MMIs.

PIN46  
HCV NETWORK OF SICILIAN REGION: A BEST PRACTICE TO MONITOR COST AND EFFECTIVENESS OF TREATMENTS  
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OBJECTIVES: The availability of new direct-acting antivirals (DAAs) has radically changed the hepatitis C care scenario, leading to major efficacy results but creating a sustainability issue. Epidemiological studies report that in Sicily there are about 30,000 citizens with a diagnosis of chronic hepatitis due to HCV. The need to guaran-
tee diagnostic and therapeutic appropriateness uniformly in the territory, in accord-
ance with the AIFA recommendations, and to achieve efficacy results, lead to the creation of a Sicilian Network for the management of HCV. METHODS: The HCV Network in Sicily consists of a web-based platform, which allows to man-
age the prescriptions and the delivery of DAA drugs for all resident HCV patients. The platform was designed to improve the management of treatment, birchosis and HCV post-
transplant relapse and also allows to plan the clinical control of patients who do not have the criteria for treatment with DAAs. The network consists of 41 centers and 84 gastroenterologists or infectious doctors connected to each other through the web-based platform. The Sicily HCV Network database analysis allowed an assess-
ment of treatment cost for each therapeutic regime. Furthermore, the correlation between the therapies administered, the results obtained, and the related adverse events is evaluated. RESULTS: From May 2015 to December 2016, 11,517 patients have been recorded in the web platform and 5,931 patients started the treatment. The analysis showed that the HCV Network improves therapy management and allows a better assessment of clinical benefit. The data obtained from the Network also provided information on HCV epidemiology in Sicily and estimated the cost of treatments administered to patients. In addition, it showed antiviral therapy short-term tolerability and efficacy data in the first 6 months of treatment. CONCLUSIONS: The Sicily HCV Network is an excellent monitoring system of patients with hepatitis C and an important tool to evaluate cost and consequence of treatment with DAAs.

PIN47  
THE ECONOMIC IMPACT OF PROVIDING DENGUE VACCINATION IN THE WORKPLACE IN BRAZIL  
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OBJECTIVES: To estimate the economic value of implementing a workplace dengue vaccination program, from an employer perspective. METHODS: Using a cost-ben-
efit analysis, the cost of the vaccination program was compared with the costs in benefits in terms of reduced absenteeism and presenteeism in companies based in Brazil. Input data were obtained from published literature and national databases in order to create ‘typical’ companies per key sector: energy, retail and services. We assumed a cohort of 10,000 employees in each company. Time horizon is 5 years after vaccination start, including a 2-year vaccination program. Sensitivity analyses were performed to evaluate the impact of key parameters’ uncertainty. RESULTS: Based on past epidemiology, 846 cases were simulated among the employees in the companies, 122 in the cohort with vaccination and 724 in the cohort without vaccination. In the vaccinated cohort, the impact on absenteeism was 2.0 days per 1,000 employees, and a saving of US$21.14 to US$31.14. Results were most sensitive to the level of co-payment, and, in some cases, a cost-saving option for employers.

PIN48  
COST-BENEFIT ANALYSIS OF SEASONAL INFLUENZA VACCINES: A PERSPECTIVE STUDY  
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OBJECTIVES: To study how economic evaluations (EE) on seasonal influenza vaccines include Adverse Drug Reactions (ADRs) and what the impact of its inclusion on the health economic outcomes would be. METHODS: We searched MEDLINE, EMBASE and The Cochrane Library to identify full-text published studies in peer-reviewed journals. Full-text articles were selected according to the criteria of the study with no vaccination (34 articles). Analyses on children were most frequent (18), from the societal perspective. Mainly the EEs were comparing influenza vaccina-
tion with no vaccination (34 articles). Analyses on children were most frequent (18), followed by analyses over elderly (10), pregnant/postpartum woman and infants (7), and other groups of adults (risk groups, workforce). Data on the costs and health impacts of ADRs were derived from public databases (costs), population-based studies and surveys (utilities/QALYs) and clinical trials (frequencies). CONCLUSIONS: Seemingly, the majority of influenza vaccine EEs do not include potential ADRs of the influenza vaccine. Of those studies that allow such estimation, costs of ADRs are included in most of the economic studies.

PINF  
ECONOMIC EVALUATION OF ALTERNATIVE MEASLES-MUMPS-RUBELLA (MMR) CHILDCARE VACCINATION SCHEDULES IN DENMARK  
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OBJECTIVES: A Danish register-
based study of the average cost per any infectious disease hospitalization in Danish children. METHODS: A Danish register-
based study of the average cost per any infectious disease hospitalization in Danish children. RESULTS: A Danish register-
based study of the average cost per any infectious disease hospitalization in Danish children. CONCLUSIONS: A Danish register-
based study of the average cost per any infectious disease hospitalization in Danish children.

PINS  
INCLUSION OF SAFETY/ADR-RELATED OUTCOMES IN ECONOMIC EVALUATIONS FOR SEASONAL INFLUENZA VACCINES: A PERSPECTIVE STUDY  
TosT van Maanen BM, de Roer PT, van Puijenbroek EP, Postma MJ  
University of Groningen, Groningen, The Netherlands  
OBJECTIVES: To study how economic evaluations (EE) on seasonal influenza vaccines include Adverse Drug Reactions (ADRs) and what the impact of its inclusion on the health economic outcomes would be. METHODS: We searched MEDLINE, EMBASE and The Cochrane Library to identify full-text published studies in peer-reviewed journals. Full-text articles were selected according to the criteria of the study with no vaccination (34 articles). Analyses on children were most frequent (18), followed by analyses over elderly (10), pregnant/postpartum woman and infants (7), and other groups of adults (risk groups, workforce). Data on the costs and health impacts of ADRs were derived from public databases (costs), population-based studies and surveys (utilities/QALYs) and clinical trials (frequencies). CONCLUSIONS: Seemingly, the majority of influenza vaccine EEs do not include potential ADRs of the influenza vaccine. Of those studies that allow such estimation, costs of ADRs are included in most of the economic studies.

PIN51  
COST-EFFECTIVENESS ANALYSIS OF DCV/SONOSUBV (DCV/SOF) FOR THE TREATMENT OF HCV PATIENTS WHO FAILED AFTER FIRST LINE TREATMENT WITH SECOND GENERATION OF DAA IN ITALY  
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OBJECTIVES: We performed a cost-effic-
easiness analysis of the DCV/SOF combination for the treatment of patients who failed to achieve SVR12 after a first DAA treatment from the Italian healthcare system perspective, based on data from the Platform for the Study of Therapies for Viral Hepatitis (PITER) cohort. METHODS: We conducted a retrospective cohort study with no vaccination (34 articles). Analyses on children were most frequent (18), followed by analyses over elderly (10), pregnant/postpartum woman and infants (7), and other groups of adults (risk groups, workforce). Data on the costs and health impacts of ADRs were derived from public databases (costs), population-based studies and surveys (utilities/QALYs) and clinical trials (frequencies). CONCLUSIONS: Seemingly, the majority of influenza vaccine EEs do not include potential ADRs of the influenza vaccine. Of those studies that allow such estimation, costs of ADRs are included in most of the economic studies.

OBJECTIVES: We performed a cost-effic-
easiness analysis of the DCV/SOF combination for the treatment of patients who failed to achieve SVR12 after a first DAA treatment from the Italian healthcare system perspective, based on data from the Platform for the Study of Therapies for Viral Hepatitis (PITER) cohort. METHODS: We conducted a retrospective cohort study with no vaccination (34 articles). Analyses on children were most frequent (18), followed by analyses over elderly (10), pregnant/postpartum woman and infants (7), and other groups of adults (risk groups, workforce). Data on the costs and health impacts of ADRs were derived from public databases (costs), population-based studies and surveys (utilities/QALYs) and clinical trials (frequencies). CONCLUSIONS: Seemingly, the majority of influenza vaccine EEs do not include potential ADRs of the influenza vaccine. Of those studies that allow such estimation, costs of ADRs are included in most of the economic studies.
develop two scenarios: 1) DCV+SOF versus LDV+SOF in Gen 1 and Gen 4 HCW patients; 2) DCV+SOF versus no retreatment option in Gen 1, 2017 (A399–A811). The cohort consisted of 60-year-old subjects over lifetime from the year 2017. The analysis assumed no incremental mortality benefit due to better virologic response among patients receiving DTG was 0.84 versus 0.73 for DRV/r and LYs), incremental cost per QALY ratio (ICER) and incremental cost per responder in infections and drug-related adverse effects, and mortality costs. Utility values and such as routine care, costs of treating cardiovascular conditions, opportunistic infections and drug-related adverse effects, and mortality costs. Utility values and mortality rates were obtained from published literature. A 48 week analysis was conducted using the societal perspective. Outcomes included QALYs, life-years (LYs), incremental cost per QALY ratio (ICER) and incremental cost per responder (ICPR). The analysis assumed no incremental mortality benefit due to better virologic response in the base case. The year of analysis was 2017. RESULTS: The rate of response among patients receiving DTG was 0.84 versus 0.73 for DRV/r and 0.80 for RAL. Total costs for treatment with DTG were €162,066/RUB, compared with €233,195/RUB for treatment with DRV/r and no treatment respectively. The PSA showed robust results, ICERs remain below 95% and 99% simulations in Scenarios 1 and 2, respectively. CONCLUSIONS: The results show that DCV+SOF is a cost effectiveness option in HCV patients who failed to reach SVR12 after first line DAA treatment.

PINS2 COST-EFFECTIVENESS OF DOULTEGRAVIR IN HIV-1 TREATMENT-NAIVE PATIENTS IN RUSSIA

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OBJECTIVES: To evaluate the cost-effectiveness of dolutegravir (DTG) when compared to raltegravir (RAL) and ronivir boosted darunavir (DRV/r) in treatment-naive HIV-1-infected patients in Russia. METHODS: The assessment of cost-effectiveness was conducted on a decision tree analysis. Response rates defined by the proportion of patients with viral load <400 copies/mL at 48 weeks were estimated based on pooled data from DTG phase 3 clinical trials (SINGLE-1, SINGLE-2, VIRAMUNE-2 and FLAMINGO). Costs obtained from Russian data included antiretroviral drug costs, treatment costs such as laboratory tests, costs of treating cardiovascular conditions, opportunistic infections and drug-related adverse effects, and mortality costs. Utility values and mortality rates were obtained from published literature. A 48 week analysis was conducted using the societal perspective. Outcomes included QALYs, life-years (LYs), incremental cost per QALY ratio (ICER) and incremental cost per responder (ICPR). The analysis assumed no incremental mortality benefit due to better virologic response in the base case. The year of analysis was 2017. RESULTS: The rate of response among patients receiving DTG was 0.84 versus 0.73 for DRV/r and 0.80 for RAL. Total costs for treatment with DTG were €162,066/RUB, compared with €233,195/RUB for treatment with DRV/r and no treatment respectively. The PSA showed robust results, ICERs remain below 95% and 99% simulations in Scenarios 1 and 2, respectively. CONCLUSIONS: The results show that DCV+SOF is a cost effectiveness option in HCV patients who failed to reach SVR12 after first line DAA treatment.

PINS3 COST-EFFECTIVENESS ASSESSMENT OF HERPES ZOSTER VACCINATION IN GERMANY

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OBJECTIVES: With over 306,000 cases every year, leading to an annual bill of €182M to society, Herpes Zoster (HZ) and its complications have a significant burden on the German health-care system. This health economic analysis was designed to support an informed decision-making for a potential HZ vaccination recommendation in the German population aged ≥60 years. We compared two HZ vaccines, a two-dose candidate HZ adjuvanted subunit vaccine (HZ/su) and Zostavax LIVE-attenuated (ZVL). METHODS: The Zoster econometric Analysis (ZONA) model is a static, multi-cohort Markov model that followed ≥60-year-old subjects over lifetime from the year of vaccination. Both HZ/su and ZVL introduction were compared to no vaccination. Model inputs included demographics, epidemiology, vaccine characteristics, utility, and costs. Costs and outcomes were presented over the lifetime of individuals, both discounted at 3% per year. The incremental cost-effectiveness ratio (ICER) was calculated based on the societal perspective. We assumed 40% coverage for both vaccines, with a second dose compliance of 70% for HZ/su. Model uncertainty will be addressed by performing sensitivity and scenario analyses. RESULTS: The cohort consisted of 22.5M people aged ≥60 years. Vaccinating with HZ/su results in 1M HZ and 197K weeks, with a 33% cure rate, costs an additional £3,597.41 and results in a QALY loss of 0.04 due to greater numbers developed advanced liver disease. Shortening treatment to four weeks reduces the cure rate to 70%, costs the manufacturer £3,597.41 and in a QALY loss of 0.61. CONCLUSIONS: Treating patients for eight weeks is the dominant strategy, generating considerable cost-savings with no effect on QALYs. The results are sensitive to patient heterogeneity, namely patient's baseline viral load. Future research should identify patients for whom shortened treatment duration is likely to be effective.

PINS5 COST-EFFECTIVENESS ANALYSIS OF VANCOMYCIN AND LINEZOLID: A SYSTEMATIC LITERATURE REVIEW

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OBJECTIVES: Vancomycin and linezolid are the first-line treatments for Methicillin-resistant Staphylococcus aureus (MRSA) recommended in IDSA guideline. Linezolid has shown an easier dosing regimen but a higher acquisition cost in the US compared to vancomycin. This review is to evaluate if linezolid is a cost-effective treatment for MRSA. METHODS: We conducted a systematic literature review of cost-effectiveness studies of linezolid and vancomycin. We searched PubMed and Embase with the keywords: “cost-effectiveness”, “vancomycin”, “linezolid”, and “MRSA”. We excluded non-human studies, studies conducted in countries other than the US, and literature reviews from this review. RESULTS: Seven studies met the inclusion criteria and were included in this review. In these studies, linezolid and vancomycin were indicated for nosocomial pneumonia, surgical site infection, or complicated skin and soft tissue infection (cSSTI). Five out of seven studies used a decision tree model structure. Treatment duration of linezolid or vancomycin ranged from three days to 21 days, and time horizon of the model ranged from 35 days to two years. Six studies used number of patients cured as their effectiveness measure while one used number of lives saved. All seven studies included drug acquisition cost and drug-related adverse effects. Four out of seven studies were funded by the manufacturer of linezolid. Four out of seven studies showed linezolid dominated vancomycin, two showed linezolid was cost-effective, and one showed linezolid was not cost-effective. CONCLUSIONS: The results of this review indicated that linezolid is likely a cost-effective treatment for MRSA in nosocomial pneumonia and cSSTI. Evidence from published cost-effectiveness studies need to be interpreted carefully for potential bias.

PINS7 A COST EFFECTIVENESS ANALYSIS OF SEASONAL QUADRIVALENT INFLUENZA VACCINE IN ITALY USING A STATIC MODEL

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OBJECTIVES: Currently in South Korea, National Immunization Program (NIP) recommends 15-valent pneumococcal conjugate vaccine (PCV13) for children aged 24-59 months. The objective of this study was to evaluate the cost-effectiveness of PCV13 vaccination in children from 24-59 months of age. METHODS: We performed a Markov model to calculate the cost and effectiveness of PCV13 and PCV23. We used the Markov model with age-stratified life expectancy, age-stratified age-specific transmission rates and age-stratified costs. The base-case analysis considered the following: 1) DCV+SOF versus LDV+SOF in Gen 1 and Gen 4 HCW patients; 2) DCV+SOF versus no retreatment option in Gen 1, 2017 (A399–A811). The cohort consisted of 60-year-old subjects over lifetime from the year 2017. The analysis assumed no incremental mortality benefit due to better virologic response among patients receiving DTG was 0.84 versus 0.73 for DRV/r and LYs), incremental cost per QALY ratio (ICER) and incremental cost per responder in infections and drug-related adverse effects, and mortality costs. Utility values and such as routine care, costs of treating cardiovascular conditions, opportunistic infections and drug-related adverse effects, and mortality costs. Utility values and mortality rates were obtained from published literature. A 48 week analysis was conducted using the societal perspective. Outcomes included QALYs, life-years (LYs), incremental cost per QALY ratio (ICER) and incremental cost per responder (ICPR). The analysis assumed no incremental mortality benefit due to better virologic response in the base case. The year of analysis was 2017. RESULTS: The rate of response among patients receiving DTG was 0.84 versus 0.73 for DRV/r and 0.80 for RAL. Total costs for treatment with DTG were €162,066/RUB, compared with €233,195/RUB for treatment with DRV/r and no treatment respectively. The PSA showed robust results, ICERs remain below 95% and 99% simulations in Scenarios 1 and 2, respectively. CONCLUSIONS: The results show that DCV+SOF is a cost effectiveness option in HCV patients who failed to reach SVR12 after first line DAA treatment.
IMIPENEM/CILASTATIN OR PIPERACILLIN/TAZOBACTAM IN THE TREATMENT OF
When considering the switch to QIV for individuals ≥ 65 years old, we included the vaccination from 2016/2017 season. However, the burden of influenza is still high. The goal of this study is to estimate the effectiveness of replacing the vaccine with quadrivalent vaccine to increase the matching rate. Furthermore, this study aims to measure cost effectiveness of adjuvant vaccine in the elderly. METHODS: Cost-effectiveness analysis was conducted from societal perspective. We extracted the rates of incidence, duration, and severity of influenza-related illnesses, the costs of influenza-related illnesses, and the costs of influenza vaccines from Italian sources. Economic analysis was performed from payer and societal perspectives; discount rates for costs and outcomes were 3.0%. Univariate and probabilistic sensitivity analyses were performed. RESULTS: Over a mean influenza season, QIV is expected to avoid an additional 3,469 QALYs, 446 hospital admissions and 133 deaths related to influenza. This translated into savings of €1.6 million from avoided hospitalizations and approximately 2 million due to indirect costs linked to lost productivity. The incremental cost-effectiveness ratio (ICER) was €32,272 per QALY from a payer perspective and €21,096 per QALY from a societal perspective. When considering the switch to QIV for individuals ≥ 65 years of age, the ICER was €19,170 per QALY. Probabilistic sensitivity analysis showed that switching to QIV would be cost-effective in >95% of simulations with a willingness-to-pay threshold of >8,000/QALY. CONCLUSIONS: Despite simulations didn’t account for herd protection, the model showed that the switch from TIV to QIV in Italy is expected to be a cost effective intervention.

PIN58

COST-EFFECTIVENESS ANALYSIS OF TIGECYCLINE IN COMPARISON WITH IMIPENEM/CILASTATIN IN THE TREATMENT OF COMPLICATED INTRA-ABDOMINAL INFECTIONS: A PERSPECTIVE OF IRANIAN HEALTH SYSTEMS

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OBJECTIVES: Complicated intra-abdominal infections (cIAIs) are a public health issue in Iran with high disease burden and mortality. Also, increasing rates of resistance and therapeutic failure made cIAIs as one of the major causes of morbidity and mortality worldwide. This study was aimed to develop an economic model to evaluate the cost-effectiveness of tigecycline (TG), a broad-spectrum glycycline, in comparison with Imipenem/Cilastatin (Im-Cl) and Piperacillin/Tazobactam (Pi-Tz) for the treatment of adults with cIAIs based on the perspective of Iranian health system.

METHODS: Utilizing a decision-tree model, all patients received TG 100mg/ day, Im-Cl or Pi-Tz for 14 days as initial antibiotic therapy considering a maximum time horizon of 30 days. The measure for effectiveness was length of stay (LOS) estimated using published data on pathogen prevalence, in-vitro eradication rates, clinical success rates, and mortality rates. Information on direct medical costs were derived from literature, hospital records, and official databases. The model estimated the cost per patient and incremental cost-effectiveness ratios (ICER). Both deterministic and probabilistic sensitivity analysis were conducted to show the robustness of the model over the uncertainty of key parameters. The model estimated the median LOS was shorter with TG rather than Im-Cl and Pi-Tz (15.1, 16.4 and 15.8 days, respectively). However, the cost per patient in TG groups was higher than in Im-Cl and Pi-Tz groups (107,087,997 IRR, 102,078,797 IRR, and 100,253,667 IRR, respectively). The Monte-Carlo simulation showed that TG would be cost-effective in more than 50% of cases at the willingness to pay threshold of 3,500,000 and 9,500,000 IRR per each hospitalization day avoided versus Im-Cl and Pi-Tz, respectively.

CONCLUSIONS: The cost-effectiveness analysis showed that TG would lead to less hospitalization days and more cost in the treatment of cIAIs in Iran with the ICER of 3,853,231 versus Im-Cl and 9,763,329 IRR versus Pi-Tz and could be considered as a treatment option specially in case of bacterial resistance.

PIN59

COST-EFFECTIVENESS EVALUATION OF PHID-CV Versus PCV-13 IN SLOVAKIA

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OBJECTIVES: The 10-valent pneumococcal non-typeable Haemophilus influenzae protein D conjugate vaccine (PHID-CV) and the 13-valent pneumococcal vaccine (PCV-13) have been successfully used in the Slovak national universal mass vaccination program (UMV) to protect against invasive pneumococcal diseases (IPD), pneumonia and acute otitis media (AOM) since 2011. The impact of the one-dose PHID-CV compared to PCV-13 and full reimbursement of both vaccines, the cost-saving increased to €2.272,727. Probabilistic sensitivity analysis (PSA) was performed. In the dominant quadrant. CONCLUSIONS: PHID-CV is estimated to provide both additional health benefits and cost savings compared to PCV-13, at price parity. From the public payer perspective, a substantial budget saving is estimated using PHID-CV compared to PCV13 in paediatric UMV in Slovakia.

PIN60

COST-EFFECTIVENESS OF QUADRIVALENT INFLUENZA VACCINE FOR NATIONAL IMMUNIZATION PROGRAM IN SOUTH KOREA

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OBJECTIVES: We estimated the cost of the elderly. The objective of this study is to evaluate the cost effectiveness of quadrivalent influenza vaccine for the elderly people aged 65 or above, and children under 6 were included in the vaccination from 2016/2017 season. Moreover, the burden of influenza is still high. The goal of this study is to estimate the effectiveness of replacing the vaccine with quadrivalent vaccine to increase the matching rate. Furthermore, this study aims to measure cost effectiveness of adjuvant vaccine in the elderly. METHODS: Cost-effectiveness analysis was conducted from societal perspective. We extracted the rates of incidence, duration, and severity of influenza-related illnesses, the costs of influenza-related illnesses, and the costs of influenza vaccines from Italian sources. Economic analysis was performed from payer and societal perspectives; discount rates for costs and outcomes were 3.0%. Univariate and probabilistic sensitivity analyses were performed. RESULTS: Over a mean influenza season, QIV is expected to avoid an additional 3,469 QALYs, 446 hospital admissions and 133 deaths related to influenza. This translated into savings of €1.6 million from avoided hospitalizations and approximately 2 million due to indirect costs linked to lost productivity. The incremental cost-effectiveness ratio (ICER) was €32,272 per QALY from a payer perspective and €21,096 per QALY from a societal perspective. When considering the switch to QIV for individuals ≥ 65 years of age, the ICER was €19,170 per QALY. Probabilistic sensitivity analysis showed that switching to QIV would be cost-effective in >95% of simulations with a willingness-to-pay threshold of >8,000/QALY. CONCLUSIONS: Despite simulations didn’t account for herd protection, the model showed that the switch from TIV to QIV in Italy is expected to be a cost effective intervention.

PIN61

COMPARING THE ESTIMATED HEALTH AND ECONOMIC BENEFITS OF HERPES ZOSTER (HZ) VACCINES IN THE UK

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OBJECTIVES: The one-dose live-attenuated HZ vaccine was introduced into the UK vaccination programme for the elderly in September 2013. An alternative investigational two-dose HZ vaccine is currently in development. To investigate the overall health and economic benefits of the two-dose investigational HZ vaccine compared to the current marketed HZ vaccine, we conducted a cost-utility analysis comparing the estimated health and economic benefits of the investigational two-dose vaccine in the UK programme. METHODS: A Markov model was developed to compare the economic impact and cost burden of HZ and postherpetic neuralgia (PHN) for different vaccine types of vaccines for the UK for adults aged 70 to 79 years old. Vaccine effectiveness assumptions were taken from a recent observational study from Kaiser Permanente Northern California for the one-dose vaccine, while assumptions for the investigational vaccine were taken from the clinical trial publications. However, a key limitation is the lack of data on the investigational vaccine’s first dose efficacy and duration. Hence, a first dose efficacy range of 25% - 65% and duration of one year were modelled. Different series completion rates were applied for the two-dose vaccine varying from 45% - 75% based on compliance rates reported for hepatitis vaccines in adults. The waning of the investigational HZ vaccine after 2 doses was assumed to be either 15 years or 20 years. RESULTS: For 1000 vaccinated individuals, the one-dose HZ vaccine prevented more cases of HZ and PHN than the two-dose investigational HZ vaccine when the two-dose completion rate was at 45% and the efficacy for the first-dose was 25%. CONCLUSIONS: The one-dose HZ vaccine could lead to better health and economic benefits if the two-dose investigational HZ vaccine cannot achieve very high series completion rate in a real world situation. Given the uncertainties about one-dose efficacy and duration of effect, further analyses are needed to determine the likely overall impact of the two-dose vaccine in the UK.

PIN62

COST-EFFECTIVENESS OF A SOCIETAL COST-EFFECTIVE MODEL OF A SWISS CANTON SCHOOL VACCINATION CAMPAIGN THROUGH A HOSPITAL PHARMACY LOGISTICS PLATFORM

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OBJECTIVES: The Public Health Service of canton of Vaudois (PHSCV) is increasingly using a hospital pharmacy logistics platform (HPLP) to manage the vaccine supply distribution as it is an efficient way to avoid vaccination coverage breakdown, all vaccination recommendations (i.e. DT, DT-IPV, DTaP, dTpa-IPV, HB, HPV and MMR) were supplied by the hospital pharmacy logistics unit (HPLP). The aim was to establish if this supply model is cost-effective compared to traditional supply model. METHODS: All costs of different transport systems were taken into account (2014-2015 vs 2015-2016). Incidence and costs of disease management were included to highlight the dominant strategy. A failure model and event analysis (FMEA) on the two transport systems (i.e. good distribution practice (GDP) supplier VS free of charge post system) as well as on the school
and pharmacoeconomic dominance of the vaccination strategy.

**BORRELIOSIS AND TICK-BORNE ENCEPHALITIS IN SLOVENIA**

**INFECTION IN THE UNITED KINGDOM**

**PlACeBO + SOC FOR THE PREVENTION OF RECURRENT ClOSTRIDIUM DIFFICIlE***

Example of cost-effectiveness assessment prior market authorisation. Although cine might be a cost-effective option in Slovenia. This analysis represents a rare setting in Slovenia.

**Ahir HB1, Jiang Y2, Marcella S3, Tierney P4**

*3xGDP/capita* $ = $ 47,500 (HPLU costs). The HPLU avoided new cases of recorded diptheria (12 cases at $ 70,000 / case), hepatitis B (153 cases at $ 99,900 / case) and measles (16 cases at $ 84,000 / case). The model avoided 92,700 new cases from imported risk even though the fridges (83.6%) are not of pharmacological quality. **CONCLUSIONS:** A HPLU circumspects supply shortage by reserving the doses of vaccine and thus guarantees the school vaccination coverage through a cost effective model. Given this, it has been decided to continue and to sign a convention between the FSHC’s and the Hospital Service of Pharmacy.

**PIN63**

**ESTIMATING LIFE YEARS AND QUALITY-ADJUSTED LIFE YEARS IN HEAVILY TREATMENT-EXPERIENCED (HTE) PATIENTS**

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**OBJECTIVES:** Modelling HIV is complicated by the requirement for individualised care. In highly treated experienced (HTE) subjects, therapeutic options are limited. The study objectives were to develop and validate a de novo disease progression and cost-effectiveness model and estimate the value of achieving viral suppression in terms of life years and quality-adjusted years (QALYs) in HIV+ adults. **METHODS:** Following a review of the published literature, a lifetime Markov state transition model was developed using Microsoft Excel, with health states representing different viral load and ART parameters, costs and utilities. Estimates of the cost and effectiveness of HAART were sourced from published literature and external validation to published cost-effectiveness studies in treatment-experienced cohorts was conducted. Pools of HAART, TLOVR and TLOV in patients with a mean age of 43.0 years, 32% female and a mean CD4 count of 200 cells/µL under two scenarios: [1] viral load suppression, indicative of successful treatment; and [2] increasing viral load, indicative of failing or no treatment. Health benefits were discounted at 3.5%. **RESULTS:** The model was validated to five published studies providing an overall R2 of 0.90, a root mean square percent error of 9.5% and a mean absolute percentage error of 7.6%. For scenario [1], predicted LLYs and QALYs for patients were 16.99 and 26.26, respectively [27.68 and 22.02 undiscounted]; for scenario [2], predicted LLYs and QALYs were 9.35 and 7.11, respectively (12.19 and 9.27 undiscounted). Consequently, viral suppression was associated with incremental discounted gains in LLYs and QALYs of 7.94 and 6.15, respectively. **CONCLUSIONS:** The de novo model developed and validated in this study is a realistic estimate of the health benefits associated with effective HAART in HTE individuals.

**OBJECTIVES:** To evaluate adherence to treatment, healthcare resource use and costs in "single" and "multi" de novo models comparing Fenvi + dual NRTI backbone (BB). **METHODS:** Preliminary analysis from an observational retrospective study was performed through the administrative and laboratory databases of two out three Infectious Diseases Departments participating to the study (ASST Valle Olona, Busto Arsizio, Italy). **OBJECTIVES:** To evaluate adherence to treatment, healthcare resource use and costs in "single" and "multi" de novo models comparing Fenvi + dual NRTI backbone (BB). **METHODS:** Preliminary analysis from an observational retrospective study was performed through the administrative and laboratory databases of two out three Infectious Diseases Departments participating to the study (ASST Valle Olona, Busto Arsizio and IRCCS San Raffaele, Milan, Italy). The cost per RSV hospitalization (N = 219) was estimated taking into account a case of poliomyelitis or human papillomavirus, the model included 12,959 patients with a first clinical diagnosis of RSV and at least one year of follow-up. Follow-up was: 48 weeks; all analyses were stratified according to treatment arm. **OBJECTIVES:** To evaluate adherence to treatment, healthcare resource use and costs in "single" and "multi" de novo models comparing Fenvi + dual NRTI backbone (BB). **METHODS:** Preliminary analysis from an observational retrospective study was performed through the administrative and laboratory databases of two out three Infectious Diseases Departments participating to the study (ASST Valle Olona, Busto Arsizio and IRCCS San Raffaele, Milan, Italy). The cost per RSV hospitalization (N = 219) was estimated taking into account a case of poliomyelitis or human papillomavirus, the model included 12,959 patients with a first clinical diagnosis of RSV and at least one year of follow-up. Follow-up was: 48 weeks; all analyses were stratified according to treatment arm. **RESULTS:** 666 patients (198 ECTDF, 428 PI+BB and 40 INI+BB) were included. The average age was 41.7±10.0, 45.1±9.8 and 44.8±13.4 years (p < 0.001); male 88%, 80%, 90% (p < 0.019); treatment experienced 47%, 50%, 12% (p < 0.015), previous AIDS 2%, 8%, 11% (p < 0.05); previous hospitalizations 5%, 6%, 14% (p < 0.387); baseline CD4 ≥ 200, 88%, 19%, 48% (p < 0.001); VL ≤ 50 at baseline was 100% for naïve patients. For experienced was 29% and 62% for ECTDF/TDF vs INI+BB and PI+BB respectively (p < 0.001). Non-adherence to treatment for ECTDF was 7.7%, PI+BB 33% and INI+BB 17.3% and 30.8% respectively (p = 0.035). Definitions of adhering (Treatment backbone (BB)). The model predicted that treating patients with bezlotoxumab in combination with SoC has the potential to reduce the disease burden associated with CDI in a cost-effective manner, by reducing the incidence of CDI.

**PIN66**

**ADHERENCE TO TREATMENT, HEALTHCARE RESOURCE USE AND COSTS RELATED TO HIV PATIENTS WITH TREATED WITH**

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**OBJECTIVES:** To evaluate adherence to treatment, healthcare resource use and costs in "single" and "multi" de novo models comparing Fenvi + dual NRTI backbone (BB). **METHODS:** Preliminary analysis from an observational retrospective study was performed through the administrative and laboratory databases of two out three Infectious Diseases Departments participating to the study (ASST Valle Olona, Busto Arsizio and IRCCS San Raffaele, Milan, Italy). The average age was 41.7±10.0, 45.1±9.8 and 44.8±13.4 years (p < 0.001); male 88%, 80%, 90% (p < 0.019); treatment experienced 47%, 50%, 12% (p < 0.015), previous AIDS 2%, 8%, 11% (p < 0.05); previous hospitalizations 5%, 6%, 14% (p < 0.387); baseline CD4 ≥ 200, 88%, 19%, 48% (p < 0.001); VL ≤ 50 at baseline was 100% for naïve patients. For experienced was 29% and 62% for ECTDF/TDF vs INI+BB and PI+BB respectively (p < 0.001). Non-adherence to treatment for ECTDF was 7.7%, PI+BB 33% and INI+BB 17.3% and 30.8% respectively (p = 0.035). Definitions of adhering (Treatment backbone (BB)). The model predicted that treating patients with bezlotoxumab in combination with SoC has the potential to reduce the disease burden associated with CDI in a cost-effective manner, by reducing the incidence of CDI.

**PIN67**

**EVALUATION OF RESOURCE UTILIZATION AMONG INFANTS, YOUNG CHILDREN AND ELDERLY PATIENTS DIAGNOSED WITH RSV INFECTION IN THE UNITED STATES**

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**OBJECTIVES:** We described health resource utilization (HRU) among infants, young children and the elderly in a large clinical database. **METHODS:** Using de-identified Osimtum integrated claims and electronic medical records, we included patients experiencing their first RSV infection (ICD-9 diagnosis codes 480.0/1, 486.1/2, and ICD-10 codes J12.2/9.7/21.0/21.0) between 01January 2008 and 31March 2015. We evaluated HRU attributable to RSV in terms of hospital cost (USD 2015), length of stay, and number of RHU. We also evaluated hospitalisations in the infectious disease ≥ 30 days after discharge of hospitalization with RSV (RAR≤30). **RESULTS:** We included 12,659 patients with a first clinical diagnosis of RSV and at least one year of follow-up. (90.5%) were non-adherent to treatment. Compliance assessment at the point market authorization. Although some key parameters were unknown, our model sets up a tool to analyse pharmacoeconomic criteria that can help development of a cost-effective health technology.
infants/young children WPPM, pre-term infants/young children and elderly, respectively. Median LOS in ICU was 2 days (IQR: 1-9) for infants/young children WPPM, 3 days (IQR: 2-5) for pre-term infants/young children and 6 for elderly (IQR: 4-13). The elderly had the highest frequency of RAR≥30 of 21 (9.6%) among RSV admissions. Median LOS for these respiratory admissions was 11 days (IQR: 6-35) and cost was $5067 and $9750 for viral and non-viral comorbidities respectively. Hospitalization is associated with substantial hospital HRU in infants/young children, but there is also substantial hospital HRU in the elderly.

**PIN69**

**SYSTEMATIC LITERATURE REVIEW OF ECONOMIC EVALUATIONS AND HEALTHCARE RESOURCE UTILISATION STUDIES IN THE TREATMENT OF CLOSTRIDIUM DIFFICILE INFECTION**

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**OBJECTIVES:** The aim of this systematic literature review (SLR) was to identify and summarise all available evidence for Clostridium difficile infection (CDI), with regards to: health economic models that evaluate and compare alternative treatment, HRU studies that evaluate the economic burden of CDI and its treatment, in terms of healthcare resource utilisation (HCRU). **METHODS:** A systematic search was conducted in December 2016, focused on capturing existing economic models and HCRU studies. Databases searched included: MEDLINE®, Embase®, Cinahl, National Health Service Economic Evaluation Database (NHS-EED), Database of Abstracts of Reviews of Effects, and Health Technology Assessments (HTA). A comprehensive hand-search of conference abstracts, HTA body websites and the NICE U&A registry were undertaken. Scanning of abstracts and full-texts were performed by two independent researchers with consensus being facilitated through a third-party. Data extraction was carried out by a single researcher and validated by a second researcher. **RESULTS:** Overall, 95 full text articles and 62 conference abstracts were included, of which 39 were health economic modelling studies and 62 HCRU studies. The economic studies were classified into five categories: (a) cost analysis; (b) cost-effectiveness; (c) cost-utility analyses (CUAs) based on decision analysis; (d) economic evaluation of purchasing similar treatment regimens including faldaxamin, vancomycin, metronidazole, and fecal microbiota transplant. The majority of models focused on treating initial CDI populations (69%), while the remainder focused on CDI recurrence. The HCRU studies were mostly prospective studies conducted in general/hospitalised patient populations. The majority of these studies were conducted in initial CDI populations (84%) and 16% in CDI recurrence. **CONCLUSIONS:** The results of this SLR provides a comprehensive summary of all published evidence available for treatment of CDI and can be used to support the development of and inputs required for global adaptations of health economic models. There is a lack of HCRU evidence for recurrent CDI populations, which identifies an area of possible future research.

**PIN70**

**HEALTH CARE RESOURCE UTILIZATION AND COSTS ASSOCIATED WITH HIV-POSITIVE PATIENTS WITH COMORBIDITY VERSUS HIV-NEGATIVE PATIENTS WITH COMORBIDITY**

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**OBJECTIVES:** The success of antiretroviral therapy (ART) has led to human immunodeficiency virus (HIV) being considered a treatable chronic condition. However, the related long life expectancy in HIV-positive populations presents a number of challenges including long-term renal, cardiovascular (CV) and bone toxicities. The study objective was to evaluate the impact of HIV on health care resource utilization and costs among patients with major comorbidities, using the Quebec public drug plan database (RAMQ). **METHODS:** HIV-positive patients who had received ART for at least 6 months from January 2006 to June 2012 were selected and categorized in 4 groups: 1) patients with CV, bone or renal comorbidity, 2) patients with CV comorbidity, 3) patients with bone comorbidity and 4) patients with renal comorbidity. Three controls of HIV-negative patients with the same comorbidities were matched for age groups and gender to each HIV-positive case. Comorbidity date was defined as the date of the first medication diagnosis or medical procedure related to comorbidities. Health care resource utilization and costs were measured in the 2 years following comorbidity date. **RESULTS:** A total of 1,983 HIV-positive patients with comorbidity were identified, in which 1,498 had CV comorbidity, 915 had bone comorbidity and 191 had renal comorbidity. The mean total health care cost per year was higher in HIV-positive than in HIV-negative patients with comorbidity (CAN$2,037, SD = 16,935 vs. CAN$3,620, SD = 7,418, p < 0.01). For patients with CV and bone comorbidity, similar results were obtained. For patients with renal comorbidity, the mean total health care cost per year was higher for HIV-positive than for HIV-negative patients (CAN$29,759, SD = 17,656 vs. CAN$19,133, SD = 24,827, p < 0.01) and costs in both groups were higher than groups with other comorbidities. **CONCLUSIONS:** HIV-positive patients with renal, bone or CV comorbidities had increased health care costs when compared to HIV-negative patients with the same comorbidities. Renal comorbidity had the highest health care costs.

**INFECTION – Patient-Reported Outcomes & Patient Preference Studies**

**PIN71**

**REAL-WORLD EVIDENCE OF DIRECT-ACTING ANTIVIRAL PERSISTENCE ON PLANNED HEPATITIS C TREATMENT**


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**OBJECTIVES:** The objective of this study is to evaluate the persistence on treatment of patients on direct-acting antivirals (DAA) therapy for hepatitis C in a Portuguese University Hospital (CHUC). **METHODS:** This was an observational study where hospitalised patients treated as second line of treatment for hepatitis C were included. **RESULTS:** A total of 626 patients were included: mean(SD) age 49(10.9) and 74.4% male. Genotype 1(72.4%) was the most frequent, 67.4% of patients were treatment-naïve and 32.6% were metavir F4. An estimated 8.9% (95% CI = [0.61%:11.7%]) and 16.1% (95% CI = [10.6%:22.0%]) of patients entered treatment before 12 and 24 weeks planned treatment duration, respectively. **CONCLUSIONS:** Real-world data confirms very high persistence and adherence rates to DAA for the treatment of hepatitis C.

**PIN72**

**HEPATITIS A AND HEPATITIS B RECOMBINANT VACCINE ADHERENCE IN THE UNITED STATES**

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**OBJECTIVES:** Estimate the completion and adherence of the HepA/Hepl recombinant vaccine three-dose schedule in the US. **METHODS:** We conducted a retrospective database study of claims from the 2008-2015 MarketScan Commercial Claims and Encounters (CCEA), Medicare Supplemental, and Medicaid databases. Completion of 2 and 3 doses of Twinrix and adherence with the 3-dose recommended schedules were measured. Individuals aged 19 at first dose were included if they had 6 months of continuous health plan enrollment prior to the first dose. Individuals who were on the accelerated 4-dose schedule were excluded. Median time to completion, the proportion of patients who completed 2 and 3 doses, and adherence to the recommended schedule within specific time periods of the first dose were estimated using Kaplan-Meier survival curves. **RESULTS:** 178,031 individuals initiated the series. Average age at initiation was 45.02 years, and 88.6% (938,361) individuals received a second dose within the recommended 1 month; this ranged from 22.7% in the Medicaid sample to 41.3% in the CCEA sample. Adherence to the recommended spacing for the second dose was highest in individuals aged 60-64 at initiation (45.5%) and lowest in individuals aged 15-19 (37.3%). The KM-estimated median time to the second dose was 6 months. Only 18% of initiators received a third dose within the recommended 6 months of the second dose, and 32% received a third dose within 30 months of the first dose of those who received a second dose. The median time to the third dose was 16 months. **CONCLUSIONS:** Adherence to the recombinant HepA/Hepl vaccine regimen is suboptimal. Only 18% received the third dose within the recommended schedule. Research is needed to fully understand the factors associated with completion and adherence to multiple vaccines in order to improve vaccination rates.

**PIN73**

**INFLUENZA-RELATED ATTITUDES OF HEALTHCARE WORKERS AT INSTITUTIONS FOR ACUTE AND CHRONIC DISEASES**


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OBJECTIVES: The objective of our study was to learn the vaccination coverage against pneumococcal, nasopharyngeal, and influenza vaccine, and the relationship with age, sex, and education. METHODS: A prospective, cross-sectional, hospital-based study was conducted in the Endocrinology and Metabolism Unit of the University Hospital of Kastoria (UHK), Greece, from January 1st to December 31st, 2016. A total of 352,780 respondents were included. RESULTS: Of 352,780 respondents, 299 and 2,111 met criteria for CDI and the IC status, respectively. This resulted in 2,410 IC and IC-free individuals aged ≥50 years of age (n ≥50). CONCLUSIONS: This study suggested that vaccination characteristics of CDI are associated with the Charlson index and the infection rate to be higher in IC individuals. The study also found that vaccination characteristics may be associated with a lower rate of infection and a lower rate of CDI recurrence.

PIK9
QUALITY OF LIFE AND UTILITY DECREMENT ASSOCIATED WITH CLOSTRIDIUM DIFFICILE INFECTION IN FRENCH HOSPITAL WORKERS

OBJECTIVES: To estimate the impact on quality of life and the QALY decrement associated with Clostridium difficile infection (CDI) in the hospital setting. METHODS: An observational prospective study was performed in 7 French acute-care facilities in 2016 where patients presenting with a bacteriologically-confirmed CDI were randomized and validated. The EQ-5D was used to quantify HRQoL and utility. A multivariate analysis of variance of the utility decrement according to CDI and patients and infection characteristics was performed. RESULTS: 80 patients were enrolled and had evaluable data. The median age was 71 years (min/ max: 30/98) and 45% were male. The utility scores were negative in 14 patients (18%) at baseline and in 43 patients (54%) during the CDI episode. The utility scores dropped from baseline to 0.58 (p < 0.001) during the CDI episode. CONCLUSIONS: The CDI is associated with a significant decrease in quality of life and QALY decrement compared to patients with no CDI.

A792
VALUE IN HEALTH 20 (2017) A39-A81

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and depression/chronic anxiety. The comparative analysis showed a statistical significance between the two factors, which were identified to be non-AIDS-related factors that are important to patients with HIV. Self-administered questionnaires and medical charts were used to collect data from patients.

For all comorbidities, the rate of concordant answers was greater than 93% (except for hypercholesterolemia: 87.8%) and the Kappa concordance coefficient showed a moderate level of agreement. The methodology also depicted a general good and very good concordance (except for hepatitis C which showed a moderate concordance), with a statistical significant Kappa concordance at a higher rate of concordant answers. Lipid lowering agents, antihypertensives and antidepressants/anxiolytics were the most frequent co-medications. Results of healthcare resources showed a moderate and good correlation in comparison of self-reported versus medical charts data. CONCLUSIONS: Data on medical charts and patient-reported knowledge is highly concordant both in terms of comorbidities as co-medication.

OBJECTIVES: Chronic hepatitis B (CHB) is an incurable viral infection of the liver that affects millions of people worldwide. This study aimed to understand patients’ experiences of CHB from pre-diagnosis through to treatment and beyond, including any differences according to nationality orcoinfection status. METHODS: Qualitative data were sourced from a literature review (MEDLINE, Embase, PsycINFO, conference proceedings, and books), and interviews with patients and clinicians from Italy, Japan, Spain and USA. Publications and interview transcripts were analysed using a thematic synthesis approach facilitated by ATLAS.ti v7.5. RESULTS: Across 921 publications and 30 interviews, a conceptual model for CHB and a ‘patient journey map’ were developed. A ‘patient journey map’ was developed to portray overarching themes throughout time, in addition to a conceptual model highlighting specific symptoms, impacts and treatment side effects. Many patients with CHB were asymptomatic - a significant barrier to diagnosis - but initial symptoms included tiredness, appetite loss, nausea or vomiting, the frequency and severity of these increased with increasing disease progression. Diagnosis was often accompanied by pain and uncertainty about the future. Throughout life, CHB significantly impacted emotional and psychological wellbeing including perceived stigmatization, and was associated with numerous lifestyle limitations and work-related impacts. Patients described ‘never feeling free’ from the illness. Treatment side effects were especially prominent in patients receiving interferon-based therapies, further impacting their lives. Whilst the symptoms and impacts of CHB on patients’ lives were ubiquitous across country and co-infection status, differences in transmission route, treatment decision-making and disease understanding were apparent. CONCLUSIONS: Experience of CHB varies, but fatigue and impacts on psychological and emotional wellbeing are prominent. Experiences varied throughout time in response to key events such as shock and uncertainty at diagnosis, living with symptoms, treatment effects, amid stigma and perceived stigmatization. The findings of this research can inform the content of patient-reported outcome measures for CHB patients.

QUALITY OF LIFE IN PATIENTS WITH LYMDEE DISEASE IN SLOVAK REPUBLIC

OBJECTIVES: The incidence of Lyme disease (LD) in Slovak Republic is assumed 2000·3000 cases per year with about 100 cases of encephalitis as its complication. No study was published about the impact of LD on quality of life (QoL) and work ability (WA) in Slovak Republic. METHODS: The sample consisted of 50 patients, 32 women and 18 men, with average age being 55,8 years. 11 patients were classificated in the category of neuropsychiatry, 21 - with arthritis and 10 - with fatigue syndrome, 2 - LD with heart syndrome. The average duration of disease was 4 years. Primary method used for the analysis of QoL was a combined questionnaire: A. Demography, B. Clinical part: C. Quality of life, D. Socio-economic part. QoL and WA were evaluated on numeric scales from 0 - the worst to 10 - the best. Standard statistical tests were used in results evaluation. RESULTS: Significant statistical differences (p less than 0,05) in QoL were found: in the time of best health – 9,0, without LD – 8,1, in the time of diagnosis – 4,4, current (observed, treated when necessary) – 5,2. The results gained in WA were: 9,2 vs 8,3 vs 5,2 vs 4,7. The results from QoL and WA were in strong correlation. The myo-arthropathic pain was the same in the time of diagnosis - 4,40 as by the treatment - 3,64, the fatigue was similar - 4,5 vs 4,7 vs 4,5, as symptoms of heart failure: 5,3 vs 6,3 vs 5,9. patients with LD with heart syndrome - 7,8 vs 7,1 vs 7,3. The results of LD without LD was 75,0 monthly by average monthly income 420,0 €. CONCLUSIONS: LD has a significant impact on patients’ QoL and WA. There are significant differences in both areas in duration of LD. There is a significant negative impact on QoL and WA. Longer time of LD duration had worse QoL and WA.

SYSTEMATIC LITERATURE REVIEW OF HEALTH-RELATED QUALITY OF LIFE IN CLOSTRIDIUM DIFFICILE INFECTION

OBJECTIVES: Clostridium difficile infection (CDI) is a well-recognised cause of significant morbidity, mortality, and healthcare burden. The impact of CDI on health-related quality of life (HRQL) is understudied. The aim of this review was to characterise the impact of CDI on HRQL, and to synthesise all available evidence for CDI, with regards to health-related quality of life (HRQL). METHODS: A systematic search was conducted in December 2016, focused on identifying utility and HRQL studies. Databases searched included: MEDLINE, Embase®, EconLit, National Health Service Economic Evaluation Database (NHS-EEED), Database of Abstracts of Reviews of Effects (DARE), and Health Technology Database (HTD). A comprehensive search of conference abstracts, HTA body websites and the ‘The CEGA registry’ was undertaken. Scoring of abstracts and full-texts were performed by two independent researchers with consensus being facilitated through a third party. Data extraction was carried out by a single researcher and second researcher. RESULTS: The search identified 1,232 records. Overall, 3 full text articles and 1 conference abstract were included. The HRQL studies identified varied with regard to CDI diagnosis and severity, with eligible papers including abstracts published in 36 or 52 journals (from 1987 to 2016), EuroQol-5D-3L questionnaire (EQ5D), and time trade-off methods to elicit preferences for various health states. Only a single study by Shupu et al. reported utility values for CDI-related QoL based on EQ5D-3L. The main limitation of this analysis was how to weight CDI-related utility values for CDs in the UK as well as time trade-off methods (valued in a representative sample of the UK population). Utility values reported by this study were described by the authors as being systematically low for patients with CDI. CONCLUSIONS: The lack of utility weights available to represent CDI-related health states is underlined by the fact that cost-utility analyses in CDI refer to utility studies conducted in alternative populations. Alternative methods such as discrete choice experiments should be explored for this patient population.
Infection – Health Care Use & Policy Studies

PIN56 A MULTICENTER, OBSERVATIONAL STUDY TO EVALUATE COMORBIDITIES IN PATIENTS ABOVE 50 YEARS OF AGE – AGING POSITIVE: CHARACTERIZATION OF THE HEALTHCARE RESOURCE USE (HCURU) AMONG PATIENTS ABOVE 50 YEARS OF AGE, ATTEMPT TO CURTAIL UNNECESSARY ANTIBIOTIC USE

Objective: The primary objective of AGING POSITIVE is to characterize non-AIDS-related comorbidities of interest among HIV-infected patients ≥ 50 years old. This study focuses on the results of a secondary objective: to describe healthcare resource use (hospitalizations and medical appointments) in the previous 12 months.

Methods: Multicenter, cross-sectional study conducted in seven Portuguese centers specialized in the treatment of HIV/AIDS. Data was collected from hospital medical records and through a patient self-administered questionnaire. The analysis involved 401 patients aged ≥ 50 years, recruited between November 2015 and June 2016. The mean age was 59.3 years (SD), the mean duration of ART was approximately 10 (SD 6.0) years. According to the medical records all patients had medical appointments at hospital-specialist at the GP or other hospital-specialist. The median number of medical appointments at the HIV-specialist was 3 irrespective of patients having >1 or >3 medical appointments at the GP or other hospital-specialist. The number of medical appointments was statistically associated with the number of medical appointments at other hospital-specialist (p=0.2112, p=0.0032). Results of healthcare resources showed a moderate linear trend in comparison to self-reported versus medical charts data.

Conclusions: HIV infection poses a new paradigm for the medical community in terms of comorbidities and co-morbidity burden of aging patients. HIV-specialist appointments and hospitalisations are according to the expectations. There is some heterogeneity on the utilization of GP and other hospital-specialists appointments.

PIN97 DOES THE REIMBURSEMENT OF IN-PATIENT HOSPITAL SERVICES ADEQUATELY COVER NOVEL ANTIBIOTIC PHARMACEUTICALS IN THE U.S., EU AND AND DISCUSSION OF CURRENT MECHANISMS IN PLACE

Objective: The primary objective of this study is to characterize the reimbursement landscape for novel antibiotics in Europe and the United States. The secondary objective is to discuss the current reimbursement mechanisms in place.

Methods: A literature search identified 827 articles. Inclusion/exclusion criteria were applied for each antibiotic. Data was collected on reimbursement mechanisms and reimbursement codes. The focus was on reimbursement codes that were used for novel antibiotics in the U.S., EU, and France. The findings were compared to the current reimbursement codes for traditional antibiotics.

Results: A total of 145 articles providing 308 quotations in 4 categories: epidemiology, clinical effectiveness, quality of life, and economics. From this, 47 statements were developed and modified Delphi methodology was used to achieve consensus. The results were disseminated via a literature review and a Delphi methodology to achieve a consensus on evidence-based statements generated from a literature review and an efficient and robust methodology for resolving uncertainty regarding the management of clinical conditions.

Conclusions: The consensus document developed from this approach can help to address areas of uncertainty in the management of chronic wounds. The findings support the role of infection care professionals and the benefits for both patients and the healthcare system. The panel explored the Delphi methodology, which was an efficient way of arriving at consensus for a large and varied group. Using a Delphi methodology and achieve a consensus on evidence-based statements generated from a literature review is an efficient and robust methodology for resolving uncertainty regarding the management of clinical conditions.

PIN89 BURDEN OF RESPIRATORY SYNCYTIAL VIRUS (RSV) DISEASE IN ADULTS: FINAL ANALYSIS FROM A RETROSPECTIVE CHART REVIEW

Objective: To estimate the burden of respiratory syncytial virus (RSV) disease in adults, using a retrospective chart review of adults with RSV infection.

Methods: A retrospective review of patient cases (Oct 2014–Oct 2016, USA) was conducted. Data for adults ≥18 years with confirmed RSV diagnosis were collected. Each hospital physician submitted up to three randomly selected patient cases via an online survey. Data collected included treatments received during hospital stay, treatment and burden after hospital stay was included for patients on home care network (56%). Results: In 479 patients, collected in 4 groups: 3 with identified risk factors: underlying chronic lung disease (33%, Group A), immunocompromised (24%, Group B), elderly (≥65 years, Group C), 1 group without these risk factors (14%, Group D). Baseline characteristics for Groups A–D, were respectively: median age 62.5, 56.4, 50/41.0 years, male 54/58/60/60%, Caucasian 56/60/60/55%, asthma 25/8/8/5%, coronary artery disease 13/28/33/11%, and retinopathy 25/8/6/13%. Mean length of hospital stay was 7.6/4.7/4.1/6.4 days by group, with 28/36/23/26% admitted to the intensive care unit (ICU) and 2.6/4/8/2/4/3% all-cause mortality within 60 days of hospitalisation. Hospital support referral policies for Groups A–D, were respectively 7/12/13/13%, 6/10/12/11%, 2/6/15/10% and 2/6/10/8%. In patients in Group D, ≥15% required follow-up visits with 6/7/9/2% requiring skilled nursing, either at home or in long-term care. Conclusions: Hospitalised adults with RSV place a large burden on healthcare resources, due in part to long hospital stays, required concomitant treatments and follow-up care. Burden of RSV could potentially be reduced by effective vaccination and antiviral treatments. In addition, specific RSV virologic diagnosis may also help to curtail unnecessary antibiotic use.

PIN90 ANTIMICROBIAL PRESCRIBING PATTERN IN AcUTE UPPER RESPIRATORY TRACT INFECTIONS IN DUBAI

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Objectives: NICE clinical guidelines recommend no or delayed use of antibiotics in upper respiratory tract infections (URI), while immediate use is only recommended for more severe cases. The objective of this study was to study the resource use during acute episodes of URI.

Methods: A retrospective database analysis was performed using Dubai Claims Database. All outpatient claims between Jan 2014 to Mar 2017 with a diagnosis for an URI, specifically acute otitis media, pharyngitis/tonsillitis and common cold, were extracted. All episodes of URI were identified as a 15-day period from the date of index URI diagnosis. The index URI diagnosis date for each episode was identified such that there were no claims for an URI during prior 15 days. The unit of analyses was the number of URI episodes. Results: A total of 2,286,563 URI episodes were identified, of which majority were for pharyngitis (92.2%) followed by common cold (32.2%), tonsillitis (19.7%) and acute otitis media (5.9%). Overall antibiotic was not used in 44.3% of the episodes, with highest for common cold (58.7%) and lowest for tonsillitis (29.9%). Of the remaining 55.7% of episodes where an antibiotic was prescribed, delayed prescribing (days 1–15 from diagnosis) was observed in 6.7% episodes. The average time to antibiotic from diagnosis was 1.7 days (SD 2.2, median 1.0). Use of multiple antibiotics was observed in 30% episodes. Conclusions: No use of antibiotics was observed in less than half of the acute URI episodes. Episodes where antibiotics were prescribed, delaying its use was less common.

PIN91 A FRESH LOOK AT THE PREDICTORS OF THE NUMBER OF HIV CASES IN TURKEY

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Objectives: National health authorities in Turkey have emphasized that the country’s aim to fight against communicable diseases has surpassed the Millennium Development Goals. However, the reemergence of HIV/AIDS needs to be revisited. Our study explores HIV case variation in Turkey from 1985 to 2013 and uses accessibility to health care and education, as well as well-being and poverty measures to determine predictors of HIV cases.

Methods: Data from the Turkish Public Health Institution–Ministry of Communicable Diseases and the Turkish
The aim of this study was to review existing barriers to access for rotavirus vaccines (RV) in 5 European countries (EU): Spain, Italy, France, Germany and the United Kingdom (UK).

**Methods:** A structured literature search using online electronic databases was conducted to identify primary literature and national IUA. Research strategies were similar in all countries. The key terms included the name of the vaccine, country, and keywords indicating vaccination barriers. First, we reviewed the available literature and identified potential barriers for each country. Three key factors were identified as existing barriers to vaccine access. Firstly, national policy recommendations around how rotavirus vaccines were introduced. In Italy, rotavirus is not considered an essential vaccine and recommendations are provided on whether vaccination is indicated and how to avoid unnecessary costs in various situations. Second, cultural factors include vaccination hesitancy. Finally, lack of public awareness may lead to a lack of effective health communication and decreased trust in the policies-makers’ perception of disease burden.

**Conclusions:** In the long run, this study may help policy makers to improve vaccine access and uptake. More studies may also restrict access due to the reliance on the policy-makers’ perception of disease burden. Finally, the occurrence of vaccine hesitancy (acceptability or refusal) may affect public awareness and insufficient communication on the benefits of vaccines to lead to refusal and negative perceptions from the general public. One study which conducts a confidence in immunization survey, 41% of the French respondents considered vaccines unsafe compared to 12% of respondents in other countries. **Conclusions:** Variations in vaccine recommendations systems along with potentially false perceptions on their necessity from the general public and policy makers can constitute as barriers to access and uptake of vaccines in EU. Vaccine coverage across the EU may be improved by common guidelines and schedules for vaccination between countries, along with greater public engagement and improved education on vaccine benefits.
Determinants of Herpes Zoster Vaccine Acceptability among Older People in the UK

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OBJECTIVES: Barriers to adult immunisation persist as rates for Herpes Zoster (HZ) vaccine among eligible individuals in the UK have decreased. The aim was to identify factors associated with HZ vaccine uptake, to determine the reasons for non-adherence to vaccination uptake. METHODS: In this non-interventional multicentre, primary healthcare-based study, cases and controls were individuals who were the last cohort (79 years old) eligible for the HZ vaccine campaign in 2014-2015 to eradicate the risk of influenzal future HZ vaccine recommendations. Data were collected using an unannounced self-administered questionnaire completed by responders. The Health Belief Model (HBM) provided the theoretical framework for the development of the questionnaire, which included psychosocial factors, characteristics, health status, knowledge, influences, experiences and attitudes to HZ and the HZ vaccine. Multivariable logistic regression was used to identify factors associated with participants’ decision to receive the HZ vaccine. RESULTS: Among the 2,530 eligible individuals contacted, 536 (21.2%) responded to the questionnaire. HZ vaccination uptake was 64.2%. Overall, 44% of variance in behaviour was accounted for by the model including all factors, 32% by the model using HBM constructs by scale, and only 16% was accounted for by demographics and socio-economic factors. Perceived barrier (OR=0.7, p-value=0.034), perceived control of disease (OR=0.7, p-value=0.004), and HZ history (OR=0.2, p-value=0.001) significantly decreased likelihood of vaccination. CONCLUSIONS: Longitudinally, HZ vaccination improvement was associated with improved vaccine efficiency. Vaccination campaigns and communication interventions with in-depth understanding of psychosocial factors that drive or hinder vaccination.

Pattern of Anti-Infective Drugs Use in a Tertiary Healthcare Facility in Nigeria

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OBJECTIVES: Given the increasing need to promote rational use of drugs, the World Health Organization (WHO) encourages regular drug utilization evaluation (DUE) in healthcare facilities to provide insight into patterns, quality, and determinants of drug use. This study profiled anti-infectives to understand their extent of use. METHODS: The study was a cross-sectional retrospective analysis of patients prescription records from June to December 2016, based on WHO’s recommended drug use indicators. Data were analyzed using descriptive statistics. RESULTS: Of the 6,641 patients, 2,260 were above 60 years of age. 1,152 (40.5%) of the drugs prescribed were from anti-infectives, with the mean age of 42.0±6.4 years while the mean number of drugs per prescription was 2.9±4.6 against the reference value of 1.6 ± 1.8. Out of 1833.0 drugs prescribed, 646.0 (32.2%) were anti-infectives. The number of drugs prescribed by gender was 975.0 (53.2%) against the 100.0% benchmark recommended by WHO. This comprised of antibacterial drugs 475.0 (73.5%) against a standard reference of 20.0 ± 26.8, antiviral 4.0 (6.6%), antifungal drugs 16.2 (2.5%), antiprotozoal 120.8 (18.6%), and antimalarials 1.8 (0.3%). Of the anti-infectives prescribed, quinolones were the most commonly prescribed, with 213.0 (44.8%) followed by amoxicillin-clavulanic acid 52.0 (11.0%). The most prescribed quinolone was ciprofloxacin 146.0 (30.7%) followed by ofloxacin 65.0 (13.7%). The most prescribed antiprotozoal agent was metronidazole 41.0 (75.8%). The anti-infectives prescribed as injectables were 188.0 (29.1%). CONCLUSIONS: The high use of anti-infectives was an indication of high prevalence of infections and irrational use of drugs. Other indications for irrationality in drug use include poor general response to treatment, drug-drug interactions, and patient non-compliance. The study recommends further investigations to the prescribing patterns of anti-infective drugs. Future studies in promoting the rational use of anti-infectives in Nigeria.

A retrospective study on the antiretroviral drug dispensing and adherence of the Hungarian HIV infected population

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BACKGROUND: The HEARTS (HIV Epidemiology and Anti Retroviral Treatment Study) is a non-interventional retrospective claims database study of patients receiving healthcare services for their HIV infection between 2005 and 2015 in Hungary (n=1,772), who were identified from the National Health Insurance Fund Administration databases based on multiple criteria including Imported and International Classification of Diseases and International Classification of Procedures in Medicine codes, and medication purchase data. The first results about the epidemiology of HIV/HIV-1 patients were published earlier. During this period, 1,517 (85.4%) of the prevalent patients received antiretroviral (ART) treatment. OBJECTIVES: In this part of the study, our aim was to investigate the changes of ARV drug dispensing and adherence over time at active substance and drug class level, to determine the therapeutic persistence of DRV was the highest. Assuming 60-day gaps, the 1-year and 5-year persistence was 87% and 51%, respectively, and the median was 1851 days. CONCLUSIONS: Due to the development of ARV therapies and understanding their mechanism of action and properties, the perception of drug resistance has changed. Further research and simplification of treatment administration could be major aspects of treatment success in real-world settings.

Prescribing pattern of antibiotics for acinetobacter infection in a tertiary care hospital

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OBJECTIVES: The objective of this study was to assess the resistance pattern and drug use indicators. The objective of this study was to assess the resistance pattern and drug dispensing and adherence of prevalent population for Acinetobacter baumannii infection. METHODS: A cross sectional, observational, retrospective study, done over a period of 6 months. The data collected was analysed to understand the pattern with respect to patient demographics, prescription patterns, comorbidities as risk factors to infection, and resistances. RESULTS: The study showed that male patients were at a greater risk of A baumannii infections within age distribution of 41-60 years and 61-80 years. Bacteria was found to be resistant to almost all categories of drugs. The length of stay of a patient with A baumannii infection was 23.5±7.9 days. Empirical antibiotic therapy was prescribed to most patients and drugs tigecycline and cefazime were used in 47(9.9%) patients. The least prescribed antibiotic was Piperacillin – Tazobactam in 25 (42.3%) patients. Cefoperazone-sulbactam was also found to be the baseline drug. This study concluded that male patients were at a greater risk of A baumannii infections. Tigecycline and Cefazime were the most prominently used antibiotics. The study was repeated with the same concept Cefoperazone-Sulbactam which had activity in 57.14% of the samples tested.

Economic burden of vaccine preventable infectious diseases among elderly patients in Dutch hospitals

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OBJECTIVES: Our immune system becomes less responsive to infections with age and the treatable diseases in transmissible diseases is observed infection in 6% to 10% people aged 60+. These infections may trigger the manifestation of a real underlying chronic disease such as cardiovascular or respiratory that may often lead to hospitalization of long duration with a high cost. Our study aimed to investigate the economic cost of primary and secondary care. This study is causating hospital admissions in patients of 60 years and older in the Netherlands, to understand the magnitude of potential cost savings. METHODS: The Dutch Hospital Dataset was used to retrieve the number of diagnoses and hospitalisations over the most updated period (2009-2014). Expenditures were derived from government websites, and costs were based on references prices commonly used in the Netherlands. RESULTS: Vaccine-preventable infections account for 4% of total hospital admissions among people aged 60+. Primary diagnosis accounts for 40%, however, 50% is through secondary diagnosis. A high increase in hospitalizations is observed over time among secondary diagnoses (120%), coupled to an increase in number of bed days (116%). Hospital stay days are up from 1 day in 2005 to 44% in 2014. This could argue that care is becoming either more effective, or less extensive. The number of beds available is slightly reduced as well (-4%), which is alarming as the demographic projections of the elderly population show increases of 6% in the age category of 65 years plus during the coming decades, potentially leading to a higher stress of the healthcare infrastructure, and a subsequent increase of costs. CONCLUSIONS: The number of hospitalisations and associated costs of primary and secondary care of vaccine preventable diseases are increasing, and could potentially increase more due to the impending ‘double ageing’. Decision makers should consider using already available vaccines to prevent some of these costs.

Healthcare resource use and economic burden attributable to respiratory syncytial virus in the United States

Amao MO1, Geng S2, Kafker A1, Knott M1

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OBJECTIVES: Despite several studies that have estimated economic impact of Respiratory Syncytial Virus (RSV), limited data are available on healthcare costs attributable to RSV. The aim of this study was to quantify age specific RSV related costs on the US healthcare system. METHODS: This retrospective case-control study identified RSV patients in the Truven Health MarketScan® Commercial Claims and Encounters database from August 31st 2012 to August 1st 2013, using the primary diagnosis for RSV specific ICD 9 codes (079.6, 466.13 or 480.1). RSV patients (cases) were defined as patients, and controls (controls) were matched 1:1 for age, gender, region, healthcare plan and index date. Stratified analyses were conducted by age groups. RSV related costs were assessed based on incremental differences in resource use and costs over matched controls. The adjusted average costs attributable to RSV were higher in elderly than in adults and children: elderly: US$15,050 to US$26,151 and children & adults: US$1,727 to US$8,796. Among children, unadjusted costs attributable to RSV were higher in children aged 5-17 years (US$8,796). RSV patients had higher hospital care use than matched controls (31% RSV visits, ambulatory visits (outpatient visits) than controls (non-RSV patients) in all age groups (all P<0.01), particularly in the elderly age groups (0.4 to 0.5 more ER/UC visits, 0.7 to 2.7 more ambulatory visits, 12.1 to 18.6 more outpatient visits and 9.5 to 14.6 more prescriptions than elderly in the control groups). CONCLUSIONS: Our findings showed a...
ADAPTING THE UNITED STATES’ ANTIMICROBIAL STEWARDSHIP PROGRAMME

New drug regimens could be considered a cost-effective strategy. To provide clinicians and policy makers a consistent economic forecast to allocate resources, an economic model framework is necessary (that means an increase of costs of 0.33%), recovered within 24 months and survey responses.

A three-year budget impact analysis (BIA) was developed, taking into consideration the National Healthcare Service score of view, considering the overall HCV and HIV/HCV population. Patients’ previous medical history, degree of liver fibrosis, genotypes, achievement of sustained virological response (SVR) and direct healthcare costs were the model input vari-

OBJECTIVES: To assess the impact of seasonal infections on overcrowding in a pediatric department in Marseille, France.

METHODOLOGY: This study was a retrospective analysis using electronic records provided by a French hospital (Hôpital Nord, Marseille). All admissions of children aged 0 to 16 years admitted to the hospital over a period of 4 years: January 2012 and December 2016 were analysed. The paediatric department was considered overcrowded in a given week if the bed occupancy rate exceed 85%, threshold derived from the literature. Children admitted for bronchitis or gastroenteritis were included in the department were calculated during overcrowding periods.

RESULTS: The paediatric department recorded 1021-1321 admissions per year, 30% to 50% of which were cases of gastroenteritis (8.3% [2012] to 17.2% [2016]) or bronchiolitis (22.3% [2013] to 32.7% [2016]). Over the 5 years, there were 20 weeks of overcrowding (1 to 7 weeks per year), 18 of which occurred during periods from October to April (predominantly December and January). Bronchiolitis and gastroenteritis were associated with 52.7% and 10.6% of admissions respectively during overcrowding periods. During overcrowding weeks, the proportion of bronchiolitis and gastroenteritis patients transferred to the pediatric surgical department increased from 2.5% to 16.0%.

During winter, the paediatric department of the studied hospital handled a large influx of patients with bronchiolitis and gastro-enteritis, leading to overcrowding situations that can cause disruption and degradation of the quality of care.

BUDGET IMPACT ANALYSIS OF TREATMENTS FOR HEPATITIS C VIRUS: WHAT’S NEXT?

PIN104

OBJECTIVES: To explore the determinants and causes of influenza vaccination among pregnant women. The odds of receiving influenza vaccination between women who received flu shot before/during pregnancy and those who did not. All analyses were adjusted for complex survey designs and sample weights using SAS 9.4 (SAS Institute, Cary, NC).

RESULTS: Among an estimated 4.8 million pregnant women, an average of 35% women received influenza vaccination before/during pregnancy. The odds of receiving influenza vaccination was lowest among non-Caucasian ethnicity groups (odds ratio (OR) [95% confidence interval (CI)], African American, 0.777 [0.550-1.098]; others, 0.636 [0.429-0.942]). Pregnant women without usual source of health care (OR, 0.647 [0.442-0.951]), and women with heavy alcohol consumption (OR, 0.601 [0.403-0.894]) were less likely to receive influenza vaccination.

CONCLUSIONS: Few social health care, poverty, lower education level and alcohol drinking behavior appeared to be negatively associated with influenza vaccination during pregnancy. Policy makers may consider developing interventions to improve the vaccination rate among these subgroups.

KNOWLEDGE OF LEPTOSPIROSIS AMONG MALAYSIAN WET MARKET SELLERS

OBJECTIVES: To assess the knowledge level of leptospirosis among Malaysian wet market sellers among the different socio-demographic, medical and source of knowledge (n = 11 items), and knowledge (n = 26 items) of leptospirosis covering causes, signs, symptoms, complications, treatment, prevention and risk factors of leptospirosis (“correct”, “incorrect” or “don’t know” answers scored “2”, “0”, and “1” mark(s), respectively). The collected data from January until March 2015 were statistically analysed using SPSS version 20.

RESULTS: A total of 140 wet market sellers were recruited in this study. The mean (SD) age of the respondents was 36.37 years old. The mean (SD) number of years working at wet market was 8.72 (6.94) years. Majority of the respondents had moderate knowledge with percentage score of 51.4 (moderate: score < 72 %). There were statistical significant differences in the mean scores of the knowledge of leptospirosis with gender, marital status, ethnicity, highest completed level of education, type of occupation, and whether they had ever heard of leptospirosis (independent samples t-test and ANOVA). There were significant associations between knowledge and highest completed level of education, occupation, and ever heard of leptospirosis (chi-square test for independence). Two predictors that made statistically significant contribution to knowledge score were the highest completed level of education and development calibration of knowledge score while the other had positive relationship (multiple linear regressions).

CONCLUSIONS: Malaysian wet market sellers possessed moderate understanding level of leptospirosis, with significant differences and relationship with independent study variables, hence warrant leptospirosis education programme.

MATERIAL SCREENING AND TREATMENT FOR GROUP B STREPTOCOCCUS (GBS)

ARE ASSOCIATED WITH NON-ADHERENCE TO GUIDELINES, FALSE-NEGATIVE RESULTS AND HIGH MANAGEMENT COSTS IN THE UNITED KINGDOM, ITALY, FRANCE, SPAIN AND GERMANY

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substantial annual healthcare costs and resource use due to RSV in the US. These data can be used in cost effective analyses and are useful for policy maker to guide future RSV vaccination programs and other effective interventions and therapies.
MENINGOCOCCAL VACCINATION IN RUSSIA

**OBJECTIVES:** Since 2006 vaccines against rotavirus-induced gastroenteritis are available in Europe and all European countries offer these vaccines to their infant population. In the Netherlands, the implementation of rotavirus (RV) vaccination is still under discussion due to various reasons and is currently under consideration in the Children’s Health Council for Assessments (KinderGevallen en BegeleidingenKamer Vakken [KBV]). The BKV combines the assessments of both the Dutch Health Council and Care Institute. For the BKV, cost-effectiveness presents one aspect of consideration. This study aimed to provide a cost-effectiveness analysis of the pentavalent vaccine based on the Dutch infant population, which seems to offer these vaccines to their infant population. The Netherlands. In the model, the implementation of rotavirus (RV) vaccination is still under discussion due to various reasons and is currently under consideration in the Children’s Health Council for Assessments (KinderGevallen en BegeleidingenKamer Vakken [KBV]). The BKV combines the assessments of both the Dutch Health Council and Care Institute. For the BKV, cost-effectiveness presents one aspect of consideration. This study aimed to provide a cost-effectiveness analysis of the pentavalent vaccine based on the Dutch infant population, which seems to offer these vaccines to their infant population. The Netherlands.

**METHODOLOGY:** A literature review was conducted in Medline, Embase, PsycINFO, EconLit, and EMB Reviews (2006–2016), using key search terms for treatment, management, and associated burdens. **RESULTS:** The BKV assessed the vaccine against rotavirus (RV) as a strategy for reducing GBS incidence and associated costs. **CONCLUSIONS:** Maternal GBS screening and IAP remains inadequate across Europe in both non-adherence to guidelines and treatment, which is concerning given the costs associated with this strategy. An alternative approach, such as vaccination, could reduce GBS incidence and associated costs.

**PID109 DECIDING ON UNIVERSAL ROTAVIRUS VACCINATION IN THE NETHERLANDS - AGAIN**

**OBJECTIVES:** Since 2006 vaccines against rotavirus-induced gastroenteritis are available in Europe and all European countries offer these vaccines to their infant population. In the Netherlands, the implementation of rotavirus (RV) vaccination is still under discussion due to various reasons and is currently under consideration in the Children’s Health Council for Assessments (KinderGevallen en BegeleidingenKamer Vakken [KBV]). The BKV combines the assessments of both the Dutch Health Council and Care Institute. For the BKV, cost-effectiveness presents one aspect of consideration. This study aimed to provide a cost-effectiveness analysis of the pentavalent vaccine based on the Dutch infant population, which seems to offer these vaccines to their infant population. The Netherlands.

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**PID110 DIFFICULTIES IN VACCINE INTRODUCTION IN A LARGE-AREA COUNTRY: MENINGOCOCCAL VACCINATION IN RUSSIA**

**OBJECTIVES:** Country experts’ opinions have a huge impact on the identification of the strategy of the health economics analysis, which is crucial before the introduction of the vaccination. The determination of a unique strategy seems to be very challenging in a large area country where the epidemiology differs a lot and the disease does not have a huge burden but leads to the severe outcome. The objective of the study is to determine the importance of the introduction of the vaccination against meningococcal infection into the National Immunization Program (NIP) in Russia. **METHODOLOGY:** 18 regional vaccine experts from 14 Russian areas were interviewed. The on-line survey created in google forms was used to obtain information about the meningococcal infection and the determination of meningococcal infection in their region by ranking it from 1 (not needed) to 5 (most needed), the type of the vaccine to be used and the optimal age group for introduction. **RESULTS:** The model showed GBS vaccination was introduced. **CONCLUSIONS:** We conclude that universal and targeted vaccination are both effective and cost-effective strategies for reducing rotavirus incidence in the Netherlands within the context of a national program.

**PID111 EVALUATION OF MEASLES VACCINATION COVERAGE IN AUSTRIA**

**OBJECTIVES:** Monitoring the measles vaccination coverage is important towards the WHO goal to eradicate measles until 2020. In Austria, small outbreaks still occur occasionally which aim is a continuous and increasing awareness about the importance of measles vaccination. 18 regional experts were interviewed. The model shows that meningococcal vaccination were diverse and distributed between not needed (3 experts) to most needed (2 experts). More than half of experts (55.6%) opted for the introduction of two vaccines (conjugated-ACWY, recombinant MenB vaccine) simultaneously. **METHODS:** A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z. **RESULTS:** 1. WHO.Global tuberculos report 2014
born 1997 and later. In 2015, more than 95% of 6 year olds are vaccinated once. However, 2-5 year olds only have a coverage of 92%. The coverage for two doses was 85% and 82% respectively. Additionally, it turns out that a third of young adults born before 1997 are missing a second dose. CONCLUSIONS: The model is able to give insights into the situation on measles coverage in Austria and to inform decision makers about the most important issues. Coverage for all children can be presented in a high quality while coverage for teenagers and young adults underlie a greater uncertainty due to immigrants on measles vaccination status and vaccination

...intrapersonal level. Data on state-specific vaccination facilitators/barriers were searched in 1,122 references after duplicates removal. Subsequent filtration excluded 447 of

...other countries, it shows an increasing trend according to the estimations of occurrence and climate (tropical, subtropical, desert, cold, temperate and other parasitic, dermatomycoses and other infestations), as well as the geographical area of SSTIs presented in a high quality while coverage for teenagers and young adults underlie a greater uncertainty due to immigrants on measles vaccination status and vaccination...
A800

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difference between procedures in the change from baseline while the remaining outcomes were reported as the mean difference between procedures. The meta-analysis was performed using STATA and included random and fixed effects models for each outcome. Where possible, the LenSx Pre-SoftFit and LenSx SoftFit systems were considered separately as SoftFit is a newer system. RESULTS: Seven studies reported comparison of LenSx Pre-SoftFit with lower injection energy versus LenSx SoftFit with higher injection energy versus PCS (3.72, 95% CI [5.01, -2.43]). EFT was statistically significantly lower for LenSx SoftFit compared to PCS (-2.59, 95% CI [-3.11, -2.08]). At one week post-surgery, change in CCT was lower with LenSx versus PCS (-1.62, 95% CI [-3.12, -0.11]). Phacoemulsification time was lower with LenSx versus PCS, but was not found to be statistically significantly different, though could be considered clinically relevant as the CI has minimal overlap with 0. High heterogeneity among studies, as evidenced by I squared statistics, and variation in surgical techniques limited the ability to draw conclusions across remaining outcomes. CONCLUSIONS: The results suggest that LenSx performs better than PCS for outcomes including phacoemulsification energy, change in CCT, and time. This analysis highlights the need for consistent reporting across future FLACS studies.

PS2E A NETWORK META-ANALYSIS TO EVALUATE THE EFFICACY OF BRODALUMAB IN THE TREATMENT OF MODERATE-TO-SEVERE PSORIASIS
Lever L1, Fotheringham F1, Wright E1, Bermingham S1, Gibbons C1, Mäurer AH1, Marques R2
1 Symmetry Ltd, Elstree, UK, 2 Symmetry Ltd, Toronto, ON, Canada, 3 LEA Pharma A/S, Ballerup, Denmark, 4 LEO Farmaceuticos Ltda, Lisbon, Portugal
OBJECTIVES: To compare the clinical efficacy of brodalumab, an anti-IL-17RA human monoclonal antibody, with approved biologic therapies and apremilast for the treatment of moderate-to-severe psoriasis. METHODS: A PRISMA-compliant systematic literature review identified RCTs reporting induction phase Psoriasis Area Severity Index (PASI) 75, 90 and 100 responses or similar outcomes at the time of PASI change in RCTs reporting maintenance phase PASI endpoints. Primary outcomes were PASI 75, 90 and 100 responses using a random effects Bayesian multinomial likelihood model. Sensitivity analysis was performed for all outcomes. A second analysis assessed the number of patients with Physician Global Assessment (PGA) scores of 0 or 1. Effects of alternative inclusion criteria, such as including unlicensed therapies and introducing restrictions based on disease severity, were also examined as a series of sensitivity analyses. The main results were compared with those from a NICE Decision Support Unit recommended methods. RESULTS: A total of 41 studies reporting PASI outcomes were included in the base case NMA. All active therapies were found to be significantly more efficacious than placebo at achieving all levels of PASI response. Based on PASI 100 response (complete clearance), the most efficacious therapies in the network were brodalumab and ixekizumab, followed by infliximab and secukinumab. Brodalumab was significantly more efficacious than adalimumab, apremilast, etanercept and ustekinumab. This ranking was consistent for PASI 75, 90 and 90 outcomes, as well as the PGA response analysis and all sensitivity analyses. CONCLUSIONS: Results of the NMA reflect the results from recent pivotal trials which found that high levels of complete clearance can be achieved with brodalumab. Based on currently available evidence, the induction-phase efficacy of brodalumab is similar to ixekizumab, secukinumab and infliximab and superior to other approved therapies, including adalimumab, apremilast, etanercept and ustekinumab. The results suggest that further research is needed to understand the comparative efficacy biological therapies beyond induction.

PS3S ASSESSING THE LONGER-TERM EFFICACY OF BIOTHERAPEUTIC THERAPIES AND APREMILAST FOR PATIENTS WITH MODERATE-TO-SEVERE PSORIASIS: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS
Lever L1, Fotheringham F1, Cormic L1, Vassnen N2, Jencox G2, Levin L1, Hansen JB3, Gibbons C1, Mäurer AH1, Marques R2
1 Symmetry Ltd, Elstree, UK, 2 Rösskilde Hospital, Roskilde, Denmark, 3 Linköping University, Linköping, Sweden, 4 LEA Pharma A/S, Ballerup, Denmark, 5 LEO Farmaceuticos Ltda, Lisbon, Portugal
OBJECTIVES: Patients with moderate-to-severe psoriasis require long-term treatment, yet few clinical trials compare outcomes beyond a short-term induction period. To our knowledge, no network meta-analysis (NMA) of longer-term data has been performed. This NMA aimed to compare longer-term outcomes of currently approved biologic therapies and apremilast.

METHODS: A systematic review (2000 to August 2016) identified studies reporting Psoriasis Area Severity Index (PASI) 75, 90 and 100 responses. Feasibility of an NMA on maintenance phase PASI endpoints was assessed and sources of heterogeneity considered. Data appropriate for analysis were included in a series of sensitivity analyses. Analysis of biologically active comparison was needed to understand the comparative efficacy biological therapies beyond induction.

PS3S THE PRESCRIPTION PATTERN AND PREVALENCE OF PSORIASIS IN A TERTIARY CARE HOSPITAL
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1 ACADEMY OF PHARMACEUTICAL SCIENCES, KANNUR, India, 2 crescent college of pharmacy, kannur, India
OBJECTIVES: The aim of the study was to analyses the prescription pattern and prevalence of psoriasis in a tertiary care hospital. METHODS: A prospective, observational, single centre study was carried out in the dermatology department for six months duration. Results of the study observed was shown in the study after obtaining written informed consent from the patient. RESULTS: 79 patients with complaints of psoriasis were examined. Males 57(72%) were more commonly affected than females 22(28%). In our study, it was estimated(20.2) that 49% of adults had an ear piercing, 7% a piercing on their torso, and 4% a facial piercing other than an ear piercing. We are not currently aware of any equivalent study in France based on robust methodology. METHODS: A national, cross-sectional study in France was conducted on a general population of 5,000 French individuals older than 15 years chosen by the method of quotas. RESULTS: Nearly 12% of the French participants reported at least one or BP (8.4% of men (M)) and 19.4% of women (W)). Of these, 49.8% had only one BP. The most common body parts for piercings were the external ear(42%), the nose(11%), among intimate piercings, 5.8% of M had a piercing on the genitalia, with 4.4% reporting a testicle piercing, and 2% of women declared that they had piercings on the clitoris. Notably, 41.5% of French persons with a single BP had an ear piercing. The most commonly reported motivations included disembowelment of the body(53.1%) and individuality(31.1%). Erotic motivations and sexuality were more commonly cited by M(48.8%) than by W(4.2%), p<0.05, and the same was true for body reappropriation(55.3% vs39.4%, p<0.05). 40.8% of persons with BP had skin problems with at least one of their BP. These problems resolved in 30.4% of cases, and only 25.2% reported at least 8% or more of the respondents, and 21% thought that they had 2% of their friends would do the same. Of them, the complications included infection(44%), scarring(37%), irritation(29%), and itching(15%). CONCLUSIONS: To the best of our knowledge, this is the largest epidemiological study on BP in France to date. The practice of BP appears stable, and itching(15%).
Chronic plaque shows maximum frequency and topical steroids and Antihistamines were broadly prescribed medications.

**PSS7**

**ACNE VULGARIS: PREVALENCE, CLINICAL FORMS AND ITS MANAGEMENT IN PHARMACY STUDENTS FROM BAHAWALPUR, PAKISTAN**

**METHOds:** Total 465 pharmacy students were involved in the current study. Both self-reported and dermatological examination were performed in the study. Students were questioned about their use of acne medications, and any knowledge of the disease.

**OBJECTIVES:** The objective of the study was to determine acne prevalence among students of pharmacy at Islamia University of Bahawalpur, Pakistan.

**RESULTS:** The prevalence of acne was 72.7%. Of this percentage, 56% were males and 44% were females. The predominant type of acne was Chronic plaque (38%) followed by Papulopustular (35%). Acne was more prevalent in females than males (77.4% vs 68.7%). Acne was commonly found in the face (61.3%), back (61.3%), and chest (56.5%). A total of 92.9% of the participants were aware of the causes of acne. The treatment preferences among the participants were: topical application (44.7%), consultation with a dermatologist (38.7%), and use of over the counter medications (22%).

**CONCLUSION:** The prevalence of acne among the students of pharmacy at Islamia University of Bahawalpur, Pakistan is high, with Chronic plaque being the most common type. The findings highlight the need for education and awareness programs to address acne management and prevention.

**PSS10**

**THE IMPACT OF THE RADS ASSESSMENT: CAN FEWER INJECTIONS WITH INTRAVITREAL AFBIRCEPT TRANSLATE TO LOWER OVERALL TREATMENT BURDEN AND COSTS IN WAMD WHEN COMPARED WITH INTRAVITREAL RANIBIZUMAB?**

**METHOds:** A literature review identified relevant publications. The current treatment of partial-thickness burns includes the wound irrigation and débridement. The most relevant outcome measures were the rate of healing, the number of delayed operations for continued healing or infected healing, and the length of hospital stay. The present study indicates that the introduction of Enstilar®, thanks to its incremental efficacy and shorter therapy cycle compared to other topical agents (4 weeks with Enstilar® compared to 8 weeks with Dovobet® Gel), generates savings for the Italian NHS equal to 4,926,537 €, 5,076,094 € and 4,665,717 € respectively in year 1, 2 and 3 over the use of Dovobet® Gel.

**CONCLUSION:** The study shows that the introduction of Enstilar® improves the adherence to the therapy thanks to its rapid onset of action and the potential of significant savings for the Italian NHS. Indeed, because of its incremental efficacy, Enstilar may reduce or delay the use - sometimes inappropriate – of systemic therapies.
intravitreal anti-VEGF compounds. In such cases, therapeutic options include a switch to longer-acting fluocinolone acetonide (FAc) implant or the shorter-acting dexamethasone implant. A systematic literature review (SLR) was conducted to assess the effectiveness of treatments after initiation of anti-VEGF treatment and also to assess their associated costs. METHODS: A systematic literature review (SLR) of randomized controlled trials (RCTs) was performed using Embase and Medline. A short term cost–cost model was built in M$ Excel with a 3 year time horizon, which enabled the comparison of DME treatment across different regions. A total of 204 RCTs were identified. A decision Tree model was developed to evaluate the clinical pathways of the ABSSSI patients in hospital. The SOC scenario was compared with a scenario using dalbavancin where patients have the possibility of being early discharged from hospital. The epidemiological and cost parameter were extrapolated from national administrative databases (hospital information system) and systematic literature review related to each country. Drug, hospitalization, specialist service, administration and adverse effect costs of were considered. Probandic Sensitivity Analysis and One-Way sensitivity Analysis were performed RESULTS: The model estimated a total annual number of patients with ABSSSI of 48,000 in Italy, Romania and Spain. The intravenous dalbavancin could reduce the incidence of early discharges (ED) by a factor of 1.44-3.75 times more for ER visits (all p<0.001). This effect could increase drug costs about +34.7%, and decrease other costs of -35.1%. Overall, dalbavancin reduced the total DME treatment costs for Germany were: €17,540, ranibizumab; €15,894, AFAI; and, €12,363, dexamethasone implant. For all treatment regimen drugs cost was the predominant component, followed by injection costs (with variations dependent on the specific drug) and then OCT costs. Uni- and multivariate sensitivity analyses revealed costs were robust to changes of REGIMENS drug costs were the predominant cost component, followed by injection costs were the predominant cost component, followed by injection costs (with variations dependent on the specific drug) and then OCT costs. Uni- and multivariate sensitivity analyses revealed costs were robust to changes of REGIMENS drug costs were the predominant cost component, followed by injection costs were the predominant cost component, followed by injection costs (with variations dependent on the specific drug) and then OCT costs. 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OBJECTIVE: A single injection of the FAc implant (LUVENI(n)) continuously releases FAc. FAc is indicated for the treatment of chronic DMO that is insufficiently responsive to available therapies, and NICE restricted its use in the UK to pseudophakic eyes. In order to assess the cost-effectiveness in patients with a phakic lens and a cataract, a new model was developed.

METHODOLOGY: A Markov model was developed for over 15 years in patients treated with FAc implant, compared to usual care, consisting of laser photocoagulation and anti-VEGFs. The model captured changes in best-corrected visual acuity level over 8 years. Transition probabilities were obtained from non-mimimal models estimated from the FAME protocol. The present study indicates that Enstilar® is more cost-effective than Placebo in patients with chronic DMO irrespective of lens status.

CONCLUSIONS: The FAc implant is cost-effective in patients with chronic DMO irrespective of lens status.
Sensory Systems Disorders – Patient-Reported Outcomes & Patient Preference Studies

PSS24 TREATMENT PERSISTENCE IN PSORIASIS PATIENTS INITIATING ON APREMILAST, ORAL BILOGIC OR LOCAL THERAPIES
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OBJECTIVES: Previous studies have shown a positive association between treatment satisfaction and persistence. There is a paucity of real-world data regarding persistence associated with the use of apremilast, conventional systemic therapies and biologics in the treatment of psoriasis. The objective of this study was to compare treatment persistence among psoriasis (PsO) patients initiating apremilast, conventional systemic therapies or subcutaneous biologic therapy in US claims data using MarketScan Commercial and Medicare Supplemental Databases (2013-2016). Adults with ≥2 diagnosis codes for psoriasis (ICD-9:696.1, ICD-10:40.0) who initiated apremilast, other oral therapy, or biologic therapy were selected. The first prescription date was defined as the index date and patients were required to be continuously enrolled for ≥12 months pre- and ≥12 months post-index. Persistence was measured as the time from initiation to discontinuation, defined as the end of days’ supply prior to at least a 60-day gap without medication. At 12 months post-index, the percentage of patients persisting on drug was assessed. RESULTS: In total, 972 patients initiating apremilast, 2,934 patients initiating other oral therapy, and 2,303 initiating biologic therapy met the inclusion criteria and had similar baseline characteristics and mean enrollment follow-up time. The total study period was 499 days for apremilast, 591 days for other oral therapy, and 590 for biologic therapy. At 12 months post-index, persistence to initiated drug was 37.3% for apremilast, 20.4% for other oral therapy (p=0.0005 vs apremilast), and 38.2% for biologic therapy (p=0.600 vs apremilast). Further sub-analyses showed a statistically significant, higher persistence for patients on apremilast compared to etanercept, (apremilast: 37.3% vs etanercept: 31.9%, p=0.009) and significantly lower persistence rates for patients on apremilast and adalimumab were similar (adalimumab: 40.2% vs apremilast: 37.3%, p=0.123). CONCLUSIONS: Patient persistence on apremilast therapy is significantly higher compared to conventional systemic therapies and not significantly different compared to biologic therapies.

PSS25 SUN PROTECTION KNOWLEDGE AND BEHAVIOUR AMONG UNIVERSITY SYSTEMS STUDENTS IN HUNGARY
Németh N1, Roncs1, Endré D, Bánský Pérez B, Horváth Kivész Z, Pusztafalvi University of Pécs, Pécs, Hungary

OBJECTIVES: The aim of the study was to measure the knowledge about melanoma and other forms of skin cancer and the determined behaviour among university students. METHODS: We conducted a quantitative, cross-sectional study among students of five faculties at the University of Pécs by using non-random sampling (n=291). The self-structured questionnaire contained the following question groups: socio-demographic data, skin type, the number of previous sunburns, sunbathing habits, usage of solarium, usage of sunscreens, self-checking, knowledge about UV-protection and melanoma. Descriptive statistics and Chi-square test were used with 95% probability level (p<0.05). We used the Statistical Package for Social Science. RESULTS: 61.9% of the students have had sunburns more than three times in their lives. Significantly more people belonging to the skin types I-II use physical protection (p=0.007). 27.1% of the sample use sunscreens regularly (whilst sunbathing). The mean amount of sunscreens was 0.8±0.001 (mean±SEM) people have reached sunburns in the last 12 months. Differences (p=0.045) of the students of the Medical School (p=0.016) use sunscreens with a sun protection factor 16 or higher. 90.4% of the students do not know the risks of skin cancer on their skin. 34.1% do not know in which cases they need to visit a doctor. On the other hand, 50.1% of the patients worried about a birthmark, primarily women (p=0.004), medical students (p=0.002), and students at third-fourth grades (p=0.019). They referred to commercial as their main sources of information (76.3%). CONCLUSIONS: Physical and chemical sun protection among university students in Pécs is desired to the desired extent. Students’ knowledge is insufficient especially of the ones studying at lower grades and at non-medical faculties. Evincing the pieces of information regular public education would be as important as forming the appropriate habits within the educational frameworks.

PSS26 A PATH ANALYSIS OF EFFECTS OF PATIENTS’ UNDERLYING CONDITIONS, TREATMENT SATISFACTION AND ADHERENCE ON QUALITY OF LIFE AMONG KOREA GLAUCOMA PATIENTS: RESULTS FROM KOREA GLAUCOMA OUTCOMES RESEARCH
Park EH1, Kim CY2, Cha J1, Kim Y3, Lee J3, Choi J1
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OBJECTIVES: This aim of this study was to identify factors that presumtively contribute to quality of life and assess total, direct, and indirect effects that exist between the determinants of quality of life among glaucoma patients living in Korea. METHODS: A path analysis was derived from Korea Glaucoma outcome research, a cross-sectional, observational study where a total of 1,050 glaucoma outpatients with ≥2-year of eye-drop use were recruited at 15 eye-clinics from March to November,2013. Among the total, 213 patients were excluded due to missing data for path analysis. Including factors and their hypothetical pathways to quality of life were based on literature review and consultation with specialists in ophthalmology. In this model, age, gender, co-morbidity, visual acuity, and timeliness of consultation with specialists in ophthalmology were included in the analysis. The objective of this study was to examine relationships between factors and QOL. The analysis was defined by daily number of instillation of prescribed eye-drops. Treatment satisfaction and adherence were estimated using Treatment Satisfaction Questionnaire for Medication (in the form of global satisfaction: satisfaction, agreement, satisfaction, global satisfaction) and pill count, respectively. Quality of life was assessed by EQ-5D and EQ-VAS. AMOS was used to perform path analysis. RESULTS: For EQ-5D, the model showed total effects (β=0.102, P=0.005) in direct (β=0.076, P=0.009) and indirect effect (β=0.025, P=0.002) which was mediated by side effect satisfaction and global satisfaction. Also, higher education (β=0.197, P=0.0020), global satisfaction (β=0.075, P=0.0414) and side effect satisfaction (β=0.0076, P=0.030) were found to be directly associated with EQ-5D. For EQ-VAS, higher education had significant total effects (β=0.153, P=0.0020) accounting for direct effect (β=0.131, P=0.0030) and indirect effects (β=0.023, P=0.053). Conclusions: This study showed that education, global satisfaction and side effect satisfaction were the important factors that influence quality of life among glaucoma patients. Future research should target factors that influence quality of life among glaucoma patients.

ClEARANCE OVER TIME – ANAlySES FROM BRODAlUMab TRIAl DATASETS

Eichenfield LF6, Wyrwich KW7, Paik J7, DeLozier AM7

OBJECTIVES: We analysed the DLQI and PASI scores from the pivotal active-compar-

ator brodalumab studies AMAGINE-2 and AMAGINE-3, in order to better understand the
difference in relationship of quality of life (QoL) and complete psoriasis clearance
(defined as 100% reduction in PASI score or PASI 100) over time. METHODS: Pooling

data from the two identically-designed pivotal trials, we defined two groups of
subjects: achievement of PASI 100 (complete clearance) and DLQI score 0 or 1 (no impact of
disease on QoL) was described throughout this period, and their time to first attainment was calculated and com-
mposed. RESULTS: The achievement of complete clearance as well as DLQI 0/1 compared to ustekinumab.

Patient DLQI score improved with biologic treatment

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Hochschule Neubrandenburg, Neubrandenburg, Germany

Mühlbacher AC, Juhnke C, Sadler A, Kaczynski A

Objectives: adults and adolescents with

chronic pruritus (CP) and its impact on health-related quality of

life (HRQoL).

The study analyzed patients’ pref-
derences in the treatment of pruritis.

The study analyzed patients’ pref-
derences in the treatment of pruritis.

DeLozier AM

PSS29

VALIDITY AND INTERPRETATION OF A SKIN PAIN NUMERIC RATING SCALE

Among Adults and Adolescents with Atopic Dermatitis

Gibbons CJ1, Hansen JB2, Merrall EL2

OBJECTIVES: To explore the relevance of itch to adults and adolescents with

chronic pruritus (CP) and its impact on health-related quality of

life (HRQoL).

The study analyzed patients’ pref-
derences in the treatment of pruritis.

DeLozier AM

PSS30

Patient Preferences in the Treatment of Periodontal Disease: Multi-Dimensionality and Validity

Humphrey L1, Symonds T2, Gable J3, Abetz-Webb L4, Silverberg JI5, Griffiths P1, Eichenfield LF6, Wyrwich KW7, Paik J7, DeLozier AM7

OBJECTIVES: Paranoidophobia refers to all inflammatory diseases of the tooth

retaining apparatus. Various treatments are available for therapy. So far, it is unclear

which patient-relevant endpoints determine the benefit of treatments. The aim of
this study was to identify which patient-relevant endpoints emerged from

clinical trials. In addition, it will be examined to what extent changing decision

criteria influence the validity of Discrete Choice Experiments (DCEs).

METHODS: Two randomized online-supported DCEs with different decision

models were performed. For each model, six patient-relevant endpoints were

considered as attributes for morbidity and side effects of the therapy. “Tooth loos-
ening/tooth loss” was presented as a multi-dimensional attribute with varying
serviceability and the number of teeth concerned. The data were analyzed by Random

Parameter Logit (RPL) model and Latent Class (LC) model. RESULTS: Data from N=627 participants (Model1 N=309, Model2 N=318) were evaluated. The results of the RPL model showed that DCEs that depended significantly on “tooth loosening/tooth loss” (Model 1: Ι = 0.827; Model 2: Ι = 0.885). In the two questionnaire versions, the attributes “tooth loosening/tooth loss”, “gum bleed-
ing”, “pain everyday life” and “pain by the therapy” occupied the front and influenced the participants most (Significant p-values). A large subset of adults and adolescents with CP experienced skin pain.

The study analyzed patients’ pref-
derences in the treatment of pruritis.

DeLozier AM

PSS31

Mixed Methods Evaluation of an ICH Numeric Rating Scale Among Adults and Adolescents with Atopic Dermatitis

Humphrey L1, Symonds T2, Gable J3, Abetz-Webb L4, Silverberg JF5, Griffiths P1, Eichenfield LF6, Wyrwich KW7, Paik J7, DeLozier AM7

OBJECTIVES: To explore the relevance of itch to adults and adolescents with

atopic dermatitis (AD) and assess validity of the Skin Pain Numerical Rating Scale
(SP-NRS).

Quantitative data demonstrated good reliability over time (intraclass correlation

coefficient [ICC] > 0.70) and good concurrent validity with other AD validators (ICC = 0.57 to

0.90). Notable floor effects (21.0% – 40.5%) were observed, suggesting qualitative
findings that skin pain is intermittent and the value of these assessments for this

quality. Qualitative and quantitative results were consistent between age catego-

ries.

Conclusions: A large subset of adults and adolescents with AD experienced

skin pain. AD patients noted that the SP-NRS was easy to understand and relevant to their

AD experiences, including patients not experiencing skin pain during the study.

The SP-NRS was a valid and reliable measure of skin pain across age categories.

PSS32

Development of a Patient-Reported Questionnaire in Patients with Chronic Pruritus

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3Pierre Fabre, Boulogne-Billancourt, France, 4Bordeaux Population Health research centre, INSERM US1219, Université de Bordeaux, Bordeaux, France, 5Analytica LASER, Oviedo, Spain, 6Pierre Fabre Medicament, Boulogne-Billancourt, France, 7Pierre Fabre Dermos Cosmétique, Laval, France,

2CHU BREST, Brest, France

OBJECTIVES: To develop a patient-reported questionnaire, measuring the

severity of Chronic Pruritus (CP) and its impact on health-related quality of life (HRQoL).

METHODS: A three-step approach was followed: (i) A Conceptual Framework (CF) was developed using a systematic literature review and experts’ interviews, to reveal the relevant domains for severity and HRQoL; (ii) The CF was updated following Focus Groups with 19 patients suffering from CP (underlying skin condition: psoriasis, atopic dermatitis, scalp seborrheic dermatitis, urticaria or skin problems in elderly people); participants’ verbatim were textually reported into transcripts, which were analyzed using qualitative content analyses to under-

stand how patients suffering from Chronic Pruritus perceived the severity of CP

and its impact on health-related quality of life (HRQoL); (iii) A pool of items was generated for each domain of interest, and their comprehensibility was tested during cognitive debriefing with patients (semi-structured interviews; n=21 addi-
tional patients).

RESULTS: 155 articles were reviewed to develop the preliminary CF. A total of 7 CF domains were identified and validated by 2 medical experts. Patients’ verbatim showed some relevant differences on severity, between clinical and patients’ perspectives in terms of (i) intensity of itch (ii) impact on function; 7 items (iii) disease activity and sub-dimension of impact on HRQoL were rated; 7 items (iv) quality of life and sub-dimension of impact on HRQoL were rated; 7 items (v) sleep and fatigue and sub-dimension of impact on HRQoL were rated; 7 items (vi) social and emotional well-being and sub-dimension of impact on HRQoL were rated; 7 items (vii) frequency and sub-dimension of impact on HRQoL were rated; 7 items (viii) other domains and sub-dimension of impact on HRQoL were rated. The final version includes 50 items.

CONCLUSIONS: A first version of this patient-reported questionnaire was developed following international guidelines and namely, using patients’ inter-
views. This questionnaire will measure the severity of CP and its impact on HRQoL in a comprehensive and clinically sound manner.
patients (n=102), analyses were performed on itch (assessed by a 0-10 numeric rating scale (NRS)), Patient-Oriented Scoring Area (PO-SCORAD VAS score 0-30), and HRQoL (assessed by the Dermatology Life Quality Index (DLQI), score range 0–30). Treatment comparisons were made using an ANCOVA model with missing values imputed by last observation carried forward. **RESULTS:** Patients treated with IXE had significantly better reductions in PO-SCORAD VAS at week 12 (Q2W -5.8, Q4W -5.6, ETN -4.5, PBO -1.3; all p-values vs. B0 < 0.001). At week 12, patients showed significant improvements in DLQI (Q2W -3 rate were receiving a prescribed treatment at the time of the survey. **OBJECTIVES:** To understand evolving trends in social media on dry eye disease (DED) and generate valuable insights on patients’ perceptions of disease burden, diagnosis, treatment, unmet needs and quality of life (QoL). **METHODS:** Data for the time period (Dec 2016 – Feb 2017) was downloaded through social media data aggregate platforms based on predefined search criteria. Social media discussions specific to DED on channels such as Twitter, Blogs, Forums and Newswires were evaluated to identify discussion themes, stakeholders and sentiment. Posts, comments, and the hashtags used were analyzed and mapped using text algorithms and manual curation was used to identify discussion themes, stakeholders and sentiment. The analysis provided key insights into patients’ experiences, patient journey and unmet needs. While the study suggests a need to increase awareness about DED among Brazilian patients helping to address some medical needs in daily practice.

**PS33** GENERATING PATIENT INSIGHTS IN DRY EYE DISEASE WITH A SOCIAL MEDIA LISTENING STUDY

**OBJECTIVES:** To understand evolving trends in social media on dry eye disease (DED) and generate valuable insights on patients’ perceptions of disease burden, diagnosis, treatment, unmet needs and quality of life (QoL). **METHODS:** Data for the time period (Dec 2016 – Feb 2017) was downloaded through social media data aggregate platforms based on predefined search criteria. Social media discussions specific to DED on channels such as Twitter, Blogs, Forums and Newswires were evaluated to identify discussion themes, stakeholders and sentiment. Posts, comments, and the hashtags used were analyzed and mapped using text algorithms and manual curation was used to identify discussion themes, stakeholders and sentiment. The analysis provided key insights into patients’ experiences, patient journey and unmet needs. While the study suggests a need to increase awareness about DED among Brazilian patients helping to address some medical needs in daily practice.

**RESULTS:** A total of 2,641 posts were considered relevant and map psychological aspects expressed by stakeholders to understand impact on patients’ QoL and state-of-mind. **CONCLUSIONS:** A total of 2,641 posts were considered relevant and map psychological aspects expressed by stakeholders to understand impact on patients’ QoL and state-of-mind. **RESULTS:** A total of 2,641 posts were considered relevant and map psychological aspects expressed by stakeholders to understand impact on patients’ QoL and state-of-mind. **CONCLUSIONS:**

**PS34** DRY EYE DISEASE AMONG PATIENTS IN LATE STAGE RHEUMATOID ARTHRITIS ON TUMOR NECROSIS FACTOR INHIBITORS: A REAL-WORLD INTERNATIONAL STUDY

**OBJECTIVES:** To describe psoriasis (PsO) patients’ profile and to evaluate the impact of the disease on patients’ quality of life and work productivity in a real-life setting in Brazil

**METHOds:** This analysis used data from the GfK Disease Atlas multina-
tional, retrospective, cross-sectional syndicated survey. The study sample consisted of Brazilian patients who have or have ever had moderate to severe PsO and who were receiving a prescribed treatment at the time of the survey. **RESULTS:** The overall sample included 497 Brazilian patients; 50% were male, mean age of 45.4 ± 8.1.

**CONCLUSIONS:** The total sample, 22% had moderate to severe psoriasis (Psoriasis Area Severity Index (PASI) > 10 or Body Surface Area (BSA) ≥ 3 or Dermatology Life Quality Index (DLQI) > 10) with mean disease duration of 7.7 years. Psoriatic arthritis (18%), anxiety or depression (18%) and cardiovascular diseases, obesity or type II diabetes (13%) were the most prevalent comorbidities among PsO patients. Despite treatment, 18% of patients reported currently disease exacerbating and 77% exacerbated in the past 12 months. At the moment of survey, 11% were being treated with biologic/biologic+other agents only, 4% with biologic and conventional systemic, 4% biologic and topical, 2% a combination of biologic, conventional systemic and topical agents. These patients had significant burden in terms of quality of life and work productivity, DLQI (mean score ± SD 36.9 ± 12) and 11% were on AT in the past 3 months. When symptom onset and diagnosis highlight a significant gap in the identification and diagnosis of PsA in Canada. With current treatments available, PsA patients are able to achieve some degree of improvement in disease severity. **OBJECTIVES:** To describe psoriasis (PsO) patients’ profile and to evaluate the impact of the disease on patients’ quality of life and work productivity in a real-life setting in Brazil. **RESULTS:** The analysis used data from the GfK Disease Atlas multina-
neovascular age-related macular degeneration (nAMD) or diabetic macular edema (DME). As an additional section, validated questionnaires were administered after general information was collected from all participants. The number of patients diagnosed with nAMD for DME for more than a year. The interview questionnaire was designed by the investigators, based on their own knowledge, data available in the literature, and advice from patients. Overall, 18 validated questionnaires pertaining to 4 categories (reading & writing, independent living, navigation & orientation, social interactions & occupation) were investigated. RESULTS: A total of 46 patients were interviewed; 26 with nAMD and 20 with DME. The average age was 72 ± 9 years. Patients with nAMD had an average BCVA of 74 letters, while the majority were still working. A majority of patients (74%) reported impairment ≥1 day due to their eye condition. Isolated cases reported impairment in up to 12 activities. Driving, adjusting to darkness, relationships (private and on-screen), doing hobbies such as playing cards or creating artwork, and working with hands were difficult for the greatest number of patients. Of these, driving, reading, and doing hobbies were rated as being the most important. CONCLUSIONS: Patients who maintain good BCVA with nAMD and DME are capable of performing important activities in their daily lives (ie, driving, reading, and doing hobbies). This study suggests that endpoints other than BCVA may be needed to assess impairment from the patient’s perspective in the early stages of these diseases.

PSS40

ATOPIC DERMATITIS IS ASSOCIATED WITH POOR QUALITY OF LIFE IN ADULT PATIENTS

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OBJECTIVES: To examine a self-administered questionnaire was designed to examine a self-administered questionnaire was designed to determine the effects of atopic dermatitis (AD) on Quality of Life (QoL) in adults. METHODS: A self-administered questionnaire was designed and administered to adults with AD. Patients were diagnosed with nAD or DME for more than a year. The interview questionnaire was designed by the investigators, based on their own knowledge, data available in the literature, and advice from patients. Overall, 18 validated questionnaires pertaining to 4 categories (reading & writing, independent living, navigation & orientation, social interactions & occupation) were investigated. RESULTS: A total of 46 patients were interviewed; 26 with nAMD and 20 with DME. The average age was 72 ± 9 years. Patients with nAMD had an average BCVA of 74 letters, while the majority were still working. A majority of patients (74%) reported impairment ≥1 day due to their eye condition. Isolated cases reported impairment in up to 12 activities. Driving, adjusting to darkness, relationships (private and on-screen), doing hobbies such as playing cards or creating artwork, and working with hands were difficult for the greatest number of patients. Of these, driving, reading, and doing hobbies were rated as being the most important. CONCLUSIONS: Patients who maintain good BCVA with nAMD and DME are capable of performing important activities in their daily lives (ie, driving, reading, and doing hobbies). This study suggests that endpoints other than BCVA may be needed to assess impairment from the patient’s perspective in the early stages of these diseases.

PSS41

PATIENT CHARACTERISTICS AND DISEASE BURDEN OF PSORIASIS IN MEXICO: A REAl-wORlD PhySICIAN AND PATIENT SURVEY

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OBJECTIVES: The purpose of this study is to describe Pso patients’ characteristics and determine the burden of Pso in Mexico. METHODS: Data came from the multinational, cross-sectional GiRe Disease Atlas real-world evidence program, collected between September 1, 2018 and January 31, 2019. Effective patients v were selected if they had experienced moderate-to-severe psoriasis, as determined by the dermatologist, and were treated with prescription. Disease severity (Psoriasis Area Severity Index [PASI] and Body Surface Area [BSA]) was assessed by the dermatologist. Patients self-reported their quality of life from the Short-form 12 SF-12, EuroQol five dimensions (EQ-5D), and Dermatology Life Quality Index (DLQI) questionnaires, and their work productivity and activity impairment from the Work Productivity Activity Impairment (WPAI) Questionnaire. RESULTS: The Mexican sample included 40 dermatologists and 248 Pso patients; 55% of patients were male and 83% had plaque Pso. The BSA percentage ≥40 was 75% and 33% had ≥40% involvement. Approximately 3% of the patients had ≥40% involvement. Furthermore, 23% had a concomitant diagnosis of either cardiovascular disease, psoriatic arthritis, obesity, and/or Type II Diabetes. Almost half (48%) of patients reported scale and venous skin symptoms. Only 5% (n=12) reported currently exacerbating, and 17% reported exacerbating in the last year. Almost half (52%; n=128) used topical agents only, and very few patients (7%; n=17) were on biologic/biosimilar agents only. Approximately 20% were received conventional and topical agents. SF-12 physical and mental component summary scores were 48.0 ± 10.0 and 50.1 ± 10.0, respectively. The SF-12 and EQ-5D scores were 7.1 and 0.9, respectively. From the WPAI, 9.4% of patients reported absenteeism, 28.7% presenteeism, and 31% activity impairment. CONCLUSIONS: Results from this real-world survey show that despite current treatment, there remains a high disease burden with Pso in Mexico.

PSS42

PREFERENCES OF THE GENERAL POPULATION TO AVOID ORAL HEALTH OUTCOMES: RESULTS OF A BAYESIAN DISCRETE CHOICE EXPERIMENT

Lempertz J1, Singh J2, Oyamada C3, Lord J1

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OBJECTIVES: Paucity of data on quality of life associated with oral health conditions and concerns over using generic measures has led to alternative approaches being used to value prevention of oral health problems. The purpose of this study was to obtain willingness-to-pay (WTP) values for preventing oral ill-health to inform economic modelling, using a discrete choice experiment (DCE). METHODS: The first stage of the DCE was to identify attributes and levels associated with specific oral health problems (tooth decay and gum problems). The second stage of the DCE selected attributes to estimate respondents’ WTP to avoid specific oral health problems. A Bayesian D-efficient design was employed using estimates from first survey as informative priors in the final statistical design. RESULTS: Attributes were defined according to the level of tooth affected (molar, anterior, posterior). The levels within tooth attributes were: no problem, decay without pain, decay with pain and tooth requiring removal. Coefficients and standard errors from the first survey were used to inform the second survey (N=1047). Conditional logit model reflecting repeated observations from the same individuals was fitted to the
data. The model was statistically significant. Avoiding problems in anterior teeth was most highly valued followed by premolar and molar teeth. Avoiding decay with pain in an anterior tooth generated the highest WTP (£245; 95% CI £216 to £272) followed by removal of permanent tooth (mean £417; 95% CI £373 to £465) and attributes levels were: no problem, decay without pain, decay with pain and tooth requiring removal. Coefficients and standard errors from the first survey (N=257), were used to inform the second survey (N=1058). Conditional logit model was fitted to the data. Avoiding problems in permanent teeth was valued much higher than baby teeth by the parents. They were willing to pay more to prevent tooth decay in baby teeth than avoiding baby tooth loss. Avoiding pain in the child when tooth decay is identified and the highest WTP (mean £147; 95% CI £137 to £165) followed by removal of permanent tooth (mean £415; £373 to £459). Avoiding decay with pain in baby tooth obtained a WTP of £107 (95% CI £70 to £141). RESULTS: Results demonstrate that parents have stronger preferences to avoid problems with permanent compared to baby teeth.

SENSORY SYSTEMS DISORDERS – Health Care Use & Policy Studies

PSS45
PREFERENCES OF PARENTS TO AVOID ORAL HEALTH OUTCOMES IN CHILDREN: RESULTS OF A DISCRETE CHOICE EXPERIMENT

Langworth J, Singh J, Onanmode O, Lord J

OBJECTIVES: Economic evaluation of oral health interventions requires a valuation of potential health outcomes. This is challenging for interventions targeted at children. The aim of this study was to label produs of measures on oral health outcomes of children. We propose direct elicitation of oral health states by parents of children. We aim to obtain willingness-to-pay (WTP) values for preventing oral ill-health in children to inform economic modelling, using a discrete choice experiment (DCE).

METHODS: We chose parents of children using type of tooth and severity in incidence. This was informed by economic model planning, clinical advice and a focussed literature review. Pretesting was conducted, followed by two surveys administered online to UK general population panel. The DCE study included a cost attribute to estimate respondents’ WTP to avoid specific oral health problems. A Bayesian D-efficient design was employed using estimates from the first survey as informative priors in the final statistical design. RESULTS: Attributes were defined by type of tooth affected (permanent and baby) and severity levels: no problem, decay without pain, decay with pain and tooth requiring removal. Coefficients and standard errors from the first survey (N=257), were used to inform the second survey (N=1058). Conditional logit model was fitted to the data. Avoiding problems in permanent teeth was valued much higher than baby teeth by the parents. They were willing to pay more to prevent tooth decay in baby teeth than avoiding baby tooth loss. Avoiding pain in the child when tooth decay is identified and the highest WTP (mean £147; 95% CI £137 to £165) followed by removal of permanent tooth (mean £415; £373 to £459). Avoiding decay with pain in baby tooth obtained a WTP of £107 (95% CI £70 to £141). Results demonstrate that parents have stronger preferences to avoid problems with permanent compared to baby teeth.

PS54
DOSE INCREASE BEYOND LABELLED DOSE OF BIOLOGIC TREATMENTS IN PSORIASIS PATIENTS: A REAL-WORLD STUDY IN SWEDEN

Geale K1, Costa-Scharlau M, Aneli B, Sharma A, Dahlborn A, Tian H1

OBJECTIVES: Previous research shows dose increase beyond labelled dose (DIBLD) of biologic treatments is commonly observed in psoriasis. However, this has not been studied in other countries. This study examined the occurrence of DIBLD of biologic treatments including anti-TNFs (adalimumab, etanercept) and ustekinumab in patients with moderate to severe psoriasis in Sweden. METHODS: The study included adult patients receiving biologic treatments for psoriasis between 1 January 2013 and 31 December 2015 who received a dose increase beyond the labelled dose. Results: A total of 462 patients were included in the study. DIBLD was recorded in 322 patients (70%). Of these, 30% received increases in dose due to worsening of disease severity, 18% due to inadequate response to the treatment, 12% due to the occurrence of side effects, and 11% due to patient request. CONCLUSIONS: DIBLD is a common phenomenon in real-world practice and should be considered when monitoring treatment outcomes.

PS54
BURN CARE OUTSIDE BURN CENTERS IN GERMANY: RESULTS FROM AN ANALYSIS OF HOSPITAL QUALITY REPORTS

Wahler S1, Müller A1

OBJECTIVES: The German associations for burn care publish precise data on an annual basis about the care situation in the 26 German burn centers. However, it is unclear what happens outside these centers. We therefore analyzed the data from all hospitals receiving sub-optimal levels of care. The new mandatory quality reporting system for German hospitals may provide some insight; in particular, how many and how severely burned patients are treated outside burn centers. METHODS: The quality reports for all German hospitals for 2013 and 2014 were analyzed for burn patients, the degree of burns, location, age, and coverage materials. The data for burn centers and non-burn centers were compared. RESULTS: In 2013, 1,007 German hospitals reported the treatment of 13,464 cases of burned patients either second or third degree. 600 hospitals had less than 10 and 38 more than 100 cases. The burn centers treated 44% of all higher degree burns. Coverage with temporary skin substituting materials was performed 7,638 times in 231 hospitals and in 77% of all cases in a center. Relative xenograft use was 33% in centers and 67% in non-centers; allogenic coverage 44% in centers and 56% in non-centers, alloplastic (Suprathel) 36% in centers and 34% in non-centers. The coverage with a 30% ABD threshold resulted in 41% (55%), 49% (63%), and 40% (50%) of patients with DIBLD in the same cohorts. The percentage of patients with DIBLD increased as follow-up increased from 3-12 months. CONCLUSIONS: Dose increase beyond labelled dose is common in Swedish patients with moderate to severe psoriasis for those treated with adalimumab, etanercept and ustekinumab. Future research should investigate the reason for this increase and corresponding patient outcomes.

PS54
PS54
COMPARATIVE ANALYSIS OF Lists OF ANTIFUNGAL PREPARATIONS FOR TREATMENT OF Onychomycosis

Danylo Radzynski L, Ochowska K, Szymanski P

OBJECTIVES: The study aimed to compare the frequency and the percentage of fungal nail disease (onychomycosis) cases treated with antifungal drug preparations. The research aim was to compare antifungal drug use in the UK with other countries in Europe. METHODS: The objective of the study was to evaluate the frequency of use of antifungal drug preparations. The evaluation was performed by comparing the results of the surveys conducted in the UK with those conducted in other European countries. The results were analyzed and compared to determine the frequency of use of antifungal drug preparations. RESULTS: The study revealed that the frequency of use of antifungal drug preparations in the UK was significantly lower than that in other European countries. This was particularly evident for the use of ciclosporin in the treatment of severe fungal nail disease (onychomycosis). The frequency of use of ciclosporin in the UK was significantly lower than in other European countries. This was particularly evident for severe fungal nail disease (onychomycosis) cases. The study provided evidence for the need for further research to determine the reasons for the low frequency of use of antifungal drug preparations in the UK.
and tannic acids. CONCLUSIONS: The obtained results revealed that topical anti-fungals represent the first-line treatment for nails as it is not included in UNF, whereas NBF does recommend them. There is a need for review of topical anti-fungal preparations and inclusion of lacquers/paints into UNF for good treatment.

PPSS1 ANALYSIS OF THE INDIVIDUAL ECONOMIC BURDEN (BORNE-COST BY THE PATIENTS) IN ADULT PATIENTS WITH ATOPIC DERMATITIS

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1Epidemiology (Epidemiologie in Dermatologie et Evaluation des Therapeutiques),cretel, France, 2Clinique Dermatologique, Reims, France, 3CHU Bordeaux, Hospital St Andre, Bordeaux, France, 4Assistance Francaise de l’Eclatene, Reunion, France, 5University of Brest, Brest, France, 6Pierre et Marie Curie – Paris, France, 7Pierre et Marie Curie – Paris, France

OBJECTIVES: Atopic dermatitis (AD) is a chronic skin inflammatory disorder with potential impact on the patients’ Qol. Few studies analyzed the burden of the disease in patients with AD. The aim of the present study was to analyze the economic burden of AD disease classified as moderate[AD-M] or severe [AD-S] according of this same score. Specific questions related to the medical and non-medical resources consumed by the patients over the past 12 months were proposed. RESULTS: A total of 3,042 subjects responded, 67.7% were professionally active. The BCP was 462.15 € and the CBP 162.01 €. Finally, the proportion of patients purchasing AD-related hygiene products was: AD-S:85%,CBP:53.3%, and AD-M: 51%,CBP:48%. CONCLUSIONS: These results show that the BCP of adults suffering from AD is significantly higher for patients with severe AD than for patients with moderate AD. While emollients represent the most significant category of expenditure, the expenses generated by clothing (requirement cotton quality ‘High’, necessity to changing clothes frequently in part due to frequent applications of emollients and topical-treatments) are significant. Our study results on a large sample show that the economic burden of AD is significant, which should be taken into account to improve patients’ care. Larger studies focused specifically on the BCP should be conducted in a next future.

PPSS2 EPIDEMIOLOGY OF PSORIASIS IN COLOMBIA: A GOVERNMENTAL DATABASE ANALYSIS

Hernández F1, Gil-Rojas Y1, Lasalvia P1, Leonardy Reyes F1, Papadimitropoulos M1, Castañeda-Cardona C2, Roselli D1

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OBJECTIVES: There is lack of epidemiological information regarding psoriasis in Colombia. We performed an epidemiological analysis of the disease in Colombia based on Health Benefits Information System (RIPS) data, which is a healthcare governmental database, estimating geographical distribution, health insurance providers, gender, age and overall prevalence for years 2010-2015. METHODS: We extracted patient data from RIPS database regarding the diagnosis with ICD-10 codes L400, L401, L404, L408 and L409. The extracted information allowed us to identify the patients with the diagnosis who used healthcare provider services in Colombia during the six-year period 2010 to 2015 considering both the presumptive and confirmed diagnosis in order to obtain useful information for the characterization of this population. RESULTS: We found that 19,735 people were diagnosed with psoriasis during the years 2010 to 2015, which would make an average prevalence in this period of 4.2 cases per 10,000 people per year. The age group with the highest prevalence of psoriasis was people older than 60 years with a prevalence of 13.0 cases per 10,000 people per year. CONCLUSIONS: There seems to be an important underreporting of epidemiological information on RIPS database regarding psoriasis. Prevalence figures found in our study are significantly lower than those published in other studies around the world. However, the information generated is useful in our local context in order to create and implement health-related policies.

PPSS3 SENSITIVE SKIN IN FRANCE: UPDATED EPIDEMIOLOGICAL DATA

Taieb C1, Misery L2

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OBJECTIVES: The past 12 months were proposed. RESULTS: Of the patients without any interventions decreased, with POAG and PACG determination in Korea and have merit in order to assess the quality of care for glaucoma patients. The Tenth Revision of International Classification of Diseases. Hospital records for primary angle-closure glaucoma (PACG) patients, identified using the codes for primary angle-closure glaucoma (PACG) patients, identified using the codes for

PPSS4 HTA & MCA IN THE TREATMENT OF MACULAR EDEMA

Ferrario L1, Foglia E2, Bandello F2, Ferringi F2, Frainzoni M, Gambard G2, Inturrii U2, Stauunghi G2, Tabini D2, Zupponi T2, Tesserai S2, Scapa G2, Urban F2, Beltraminii S2, Tadini P2, Zuppini T5, Tessari R5, Scarpa G6, Urban F6, Beltraminii S6, Beltramini S7, Staurenghi G4, Tadini P2, Zuppini T5, Tessari R5, Scarpa G6, Urban F6, Beltraminii S6, Beltramini S7, 1San Martino Hospital, Genova, Italy, 2Sicilian University San Raffaele, Milano, Italy, 3Valladole Hospital Como, Como, Italy, 4Hospital Authority L. Sacco, Milano, Italy, 5Sicilian University San Giovanni Battista, Palermo, Italy, 6Asl Toscana Centro - Empoli, Empoli, Italy, 7Polinolica Santa Maria alle Scotte, Siena, Italy

OBJECTIVES: The present study aimed at elucidating the implications related to the implementation of a multi-dimensional approach for the study of alternative technological solutions (Ranibizumab, Dexamethasone and Aflibercept), for treating diabetic macular edema, in 4 Italian Regional settings: Lombardia, Liguria, Toscana and Veneto. HTA region containing the highest percentage of patients with severe-AD than for patients with moderate-AD. While emollients represent the most significant category of expenditure, the expenses generated by clothing (requirement cotton quality ‘High’, necessity to changing clothes frequently in part due to frequent applications of emollients and topical-treatments) are significant. Our study results on a large sample show that the economic burden of AD is significant, which should be taken into account to improve patients’ care. Larger studies focused specifically on the BCP should be conducted in a next future.

RESULTS: We found that 19,735 people were diagnosed with psoriasis during the years 2010 to 2015, which would make an average prevalence in this period of 4.2 cases per 10,000 people per year. The age group with the highest prevalence of psoriasis was people older than 60 years with a prevalence of 13.0 cases per 10,000 people per year. CONCLUSIONS: There seems to be an important underreporting of epidemiological information on RIPS database regarding psoriasis. Prevalence figures found in our study are significantly lower than those published in other studies around the world. However, the information generated is useful in our local context in order to create and implement health-related policies.

PPSS5 PRIMARY TREATMENT PATTERNS AMONG GLAUCOMA PATIENTS IN KOREA FROM 2002 TO 2013 USING THE NATIONAL HEALTH INSURANCE SYSTEM CLAIMS DATA

Choi S1, Park SM1, Jee D2

1Seoul National University, Seoul, Korea, Republic of (South) 2Seoul National University, Seoul, Korea, Republic of (South)

OBJECTIVES: Due to the rapidly increasing life expectancy and changes in lifestyle behaviors in Korea, the prevalence of glaucoma has increased steadily in recent years. Evaluations in primary treatment strategy patterns for glaucoma are lacking in Korea and have merit in order to assess the quality of care for glaucoma patients. METHODS: The health claims data from the Korean National Health Insurance Service was used to identify glaucoma patients from 2002 to 2013. Glaucoma patients were divided into primary open angle glaucoma (POAG) and primary angle-closure glaucoma (PACG) patients, identified using the codes for the Tenth Revision of International Classification of Diseases. Hospital records for drug prescriptions, admissions, and surgical interventions were used to identify different treatment strategies included medical, laser, and surgical. The proportions of primary treatment strategies for each year and according to glaucoma subtypes were assessed. RESULTS: Among POAG patients, 56.2% of the patients did not receive any type of treatment, and 43.5% were managed by medications only. Among PACG patients, 52.0% did not receive any type of treatment while 16.6% were managed by medications in 2002. With each passing year, the proportion of patients without any interventions decreased, with POAG and PACG patients receiving medications in increasing to 7.5% and 5.5% in 2013, respectively. While 8.0% of PACG patients received glaucoma-related surgery, only 1.0% of POAG patients received glaucoma-related surgery.
patients received surgery in 2013. Among newly diagnosed PACG patients in 2008 who received surgery, the majority of patients (7.8% out of 8.0%) received surgery within the first year of diagnosis. CONCLUSIONS: The primary treatment strategy shifted from no intervention to medication and surgery between 2002 and 2013. Surgery was more prevalent for PACG patients compared to POAG patients, and most newly diagnosed PACG patients who received surgery did so within the first year.

A LONGITUDINAL PATTERN OF CARE FOR PROSTAGLANDIN PRESCRIPTION FOR GLAUCOMA IN KOREA
Jee D, Choi S, Park SM
Seoul National University, Seoul, Korea, Republic of (South)

OBJECTIVES: While the prevalence of glaucoma has increased in recent years in Korea, evaluations in management patterns for glaucoma are lacking. We investigated prostaglandin prescription patterns in order to assess the quality of care for glaucoma patients. METHODS: Glaucoma patients were identified using the health claims data from the Korean National Health Insurance Service from 2002 to 2013. Using the Tenth Revision of International Classification of Diseases, glaucoma patients were divided into primary open angle glaucoma (POAG) and primary angle-closure glaucoma (PACG). Outpatient and hospitalization prescription records were used to identify and categorize prostaglandin drugs into latanprost, travoprost, bimatoprost, and tafloprost. The proportions of each subtype of prostaglandin drug prescribed for each year and according to glaucoma subtypes were assessed. RESULTS: When all four types of prostaglandin drugs were first available in 2010, the proportions of prostaglandin drugs among POAG patients were 80.0% for latanprost, 13.5% for travoprost, 3.0% for bimatoprost, and 3.5% for tafloprost. The proportions for PACG patients were 92.4%, 17.9%, 2.7%, and 6.0% for latanprost, travoprost, bimatoprost, and tafloprost, respectively. In 2013, the proportion of latanprost decreased to 63.4% while the proportion of tafloprost increased to 18.6% for POAG patients. Among PACG patients, the proportion of latanprost decreased to 57.6% and the proportion of tafloprost increased to 14.4%. CONCLUSIONS: While the primary prostaglandin drug for both POAG and PACG remained unchanged in latanprost from 2010 to 2013, the proportion of latanprost decreased steadily during the 4-year period. On the other hand, the proportion of tafloprost increased rapidly for both POAG and PACG patients from 2010 to 2013.
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ABSTRACTS

BREAKOUT SESSION

P1: CANCER STUDIES

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COMPARATIVE ASSESSMENT OF LATINO AMERICAN HTA APPRAISALS FOR ONCOLOGY

Arvin Bered C1, Benjamin N2, Martel M2
1Konda Switzerland GmbH, Bern, Switzerland, 2Konda, LLC, Palm Harbor, FL, USA

OBJECTIVES: In the last decade, Health Technology Assessment (HTA) organisations in Latin America have continued to evolve as key stakeholders in the healthcare decision-making process. This study aimed to understand recent decisions and recommendations for novel oncology medications by HTA agencies in Latin America and compare important characteristics with corresponding appraisals issued in Canada and the UK.

METHODS: Publicly available HTA appraisals from Latin American oncology medications published since January 2012 were reviewed (original language) and summarized by decision, date, reimbursement criteria/covered population, supporting data and rationale. HTA reports and most comprehensive information available were analyzed. Brazil, Columbia and Uruguay were these reviewed for this assessment. Matching HTA appraisals from Canada (pCODR) and UK (NICE) for the same medicines were reviewed for extraction and analysis.

RESULTS: Within the 5-year timeframe observed, 22 HTA appraisals were identified for 10 oncology treatments (1-4 indications/medications). Limited parallel assessments (similar medications and indications reviewed concurrently by different HTAs) were found. Nearly half (45%) of the HTA decisions were negative due to limited clinical evidence or uncertainty around cost-effectiveness. Overall timelines for HTA processes were variable and often unclear. While manufacturers may also submit sequentially to different countries, the availability of decisions varied significantly between continents, with Latin American HTA decisions rendered on average 25 and 50 months after pCODR and NICE, respectively.

CONCLUSIONS: Significant differences in the timing of HTA decisions, nuances in the indications chosen for submission, along with challenging success rates and reimbursement criteria, highlight the growing importance of the HTA hurdle for oncology medications in Latin America.

CA2

THE MULTI-CRITERIA DECISION ANALYSIS IN THE PRIORITY SETTING OF EMERGING MEDICINES

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OBJECTIVES: To describe an approach to set priority of emerging medicines for Horizon Scanning in the Brazilian National Health System (SUS, in Portuguese). METHODS: The priority setting consisted in obtaining the preferences of eight stakeholders (physicians and pharmacists) members of a National Committee, related to three medicines: carfilzomib for relapsed multiple myeloma; nirivolumab for unresectable metastatic melanoma, and pabociclib for advanced breast cancer with estrogen receptor positive and human epidermal growth factor receptor 2 negative (HER2). The Interactive Multi-Criteria Decision Making method (TODIM, in Portuguese) was applied to reveal the individual preferences and the fuzzy aggregation functions to obtain the group preferences. The stakeholders received, in advance, a summary of the available trials outcomes of each medicine and the description of the seven previously defined priority criteria to be used in the priority setting process. A special form was created to record the preferences of the alternatives per criteria. A bespoke software was applied to calculate the preferences.

RESULTS: The group’s rank order was: nirivolumab, pabociclib and carfilzomib. The most relevant criteria was safety, taking in account the weakness of evidence about efficacy and the percentages of adverse events reported by the clinical trials for nirivolumab (9,0%; 34,0 % e 43,5%), palbociclib (58,6%) and carfilzomib (58,6% e 83,7%), respectively.

CONCLUSIONS: This approach allowed to ensure transparency, participation of different stakeholders and consistency in the decision process.

CA3

ANALYTICAL HIERARCHICAL PROCESS FOR EVALUATION OF FIRST LINE TREATMENT OF METASTATIC HER2 OVEREXPRESSED BREAST CANCER FROM BRAZILIAN HEALTH SYSTEM PERSPECTIVE

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OBJECTIVES: The main objective of this study was to evaluate the first line treatment of metastatic HER2 overexpressed breast cancer, from Brazilian health system, using multicriteria decision analysis. METHODS: The method chosen was the analytical hierarchical process and consists of the joint trial to evaluate the importance of the established criteria and performance of the alternatives selected for evaluation. 35 oncologists that work in the care of patients with overexpressed HER-2 metastatic breast cancer were the main focus of questionnaire. They compared the relevance of 6 predefined criteria, which were overall survival, response to treatment, adverse events, quality of life, cost-effectiveness and budgetary impact.

CONCLUSIONS: The therapeutic scheme considered more appropriate by the model was pertuzumab in combination with trastuzumab and docetaxel, b) trastuzumab in combination with docetaxel. The most sensitive criteria of the model were adverse events, cost-effectiveness, and budgetary impact, which suggests that the final classification of the technologies has a close relationship with the oncologists participating in the questionnaire.

CA4

COMPARISON OF THE ASSESSMENTS AND RECOMMENDATIONS ISSUED BY BRAZIL’S CONITEC AND CANADA’S CADTH FOR SELECT ONCOLOGY DRUGS

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OBJECTIVES: To assess and compare CONITEC and CADTH evaluations of select oncology treatments, and the corresponding recommendations issued.

METHODS: Non-systematic review of publically available reports from HTA bodies and peer review journals. Recommendations for oncology treatments were thoroughly analyzed from the CONITEC online database of evaluated technologies, and from the CADTH database of reports; three drugs were identified that matched the selection criteria for comparative analysis.

RESULTS: The three oncology drugs identified for comparison were: everolimus (indicated in advanced HR+/HER2- breast cancer in postmenopausal women), bevacizumab (in persistent, recurrent or metastatic cervix cancer) and cetuximab (in metastatic colorectal cancer). The evidence base reviewed by both agencies was fairly consistent for the three treatments, yet the CADTH more often took into account the input of external advisory and patient advocacy groups. For everolimus, CONITEC did not recommend treatment incorporation into SUS considering the small PFS improvement and lack of OS benefit, as well as the high expected budget impact. Conversely, CADTH was satisfied with the overall benefit and recommended funding everolimus conditional on an improved cost-effectiveness. In the case of bevacizumab, CONITEC did not recommend the treatment since the economic data showed an ICER overestimation and incremental benefit costs higher than those estimated by CONITEC, while CADTH recommended funding bevacizumab conditional on cost-effectiveness being improved. Regarding cetuximab, both agencies decided not to recommend the treatment based on the same arguments, uncertain clinical benefit and economic evidence.

CONCLUSIONS: Although CONITEC and CADTH pursued a fairly consistent approach in their technical assessment of oncology drugs, differences were observed with regards to their interpretation of the relevance of clinical benefits and economic impact of treatments, as well as the incorporation of input from external advisory and patient groups. Manufacturers should further factor in these specific considerations when submitting treatments for evaluation by each agency.
Avanços do Monitoramento do Horizonte Tecnológico no Brasil

O Monitoramento do Horizonte Tecnológico (MHT) é uma etapa que permite a antecipação de demandas e a sinalização de possíveis oseloscências no sistema de saúde. A partir de 2012, iniciou-se a publicação sistemática do estudo comparativo, que esteve diretamente relacionada com a produção em MHT. O MHT é um importante aliado no processo de incorporação de tecnologias, pois permite a antecipação de demandas e a sinalização de possíveis oseloscências no sistema de saúde.

HT4

DEVELOPING AND PILOTING A FRAMEWORK AND TOOL TO INFORM THE “EVIDENCE-TO-DECISION-MAKING” PROCESS

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OBJETIVOS: Para um estudo retrospectivo descritivo no qual os dados foram obtidos a partir de análises de registros de saúde pública. Dados obtidos da criação do departamento em 2012, apenas em 2014 iniciou-se a publicação sistemática em MHT, no âmbito do CONITEC. Este período foi necessário para que se estabelecesse uma equipe técnica treinada. Em 2016 foram publicados mais documentos que são importantes para a implementação eficaz e eficiente.

P3: COST-EFFECTIVENESS STUDIES

CE1

COST-UTILITY ANALYSIS (CUA) OF TARGETED INTRAOPERATIVE RADIOTHERAPY ALONE (TARGIT-A) IN THE BRAZILIAN EARLY BREAST CANCER PATIENTS

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OBJETIVOS: Breast cancer is the most prevalent cause of cancer mortality. Recent data from the randomized controlled trial of targeted intraoperative radiotherapy-pelvic node dissection (TARGIT-A) has confirmed that, in women with early breast cancer, the technique of intra-operative radiotherapy (IORT) using the TARGIT technique is safe and as effective as conventional external beam radiotherapy (EBRT). We sought to conduct an economic evaluation of the IORT to inform reimbursement policy and its implementation in usual practice in Brazil.

MÉTODOS: A state transition Markov model was developed using decision analysis software TreeAge Pro Healthcare 2015 to capture the costs and outcomes of the TARGIT-A compared with EBRT. Evidence from the TARGIT-A trial was used to inform the model structure and incorporated disease progression as various model health states. Model outputs were represented in terms of quality adjusted life years (QALYs), cost and incremental cost-effectiveness ratio. The outcomes were simulated for competing strategies for a time horizon of 10 years. Analysis was conducted in accordance with the published international and Brazilian pharmacoeconomic guidelines and Brazilian health care payer’s perspective was adopted. To address the uncertainty about the clinical effects of treatment, one way sensitivity analysis and probabilistic sensitivity analysis (PSA) were performed. RESULTADOS: Discounted EBRT and IORT costs for the time horizon of 10 years were $5,138 and $6,867 respectively. IORT gained 0.16 incremental QALY as the discounted QALYs gained by IORT were 6.91 and by IORT were 7.08. The ICER calculated was $1,107 per QALY. Model results were robust to parameter uncertainty. CONCLUSIONS: TARGIT-A is a cost-effective strategy to treat breast cancer patients in Brazil. Implementation of this one-off radiation treatment could improve quality of life by sparing patients from the protracted course of EBRT, improve compliance and save valuable health care resources.

CE2

EVALUACIÓN DE LA COSTO-EFECTIVIDAD DE LA PRUEBA DE SECUENCIA COMPLETA DEL GEN CFTOR POR TÉCNICA SANGER PARA PORTADORES ASINTOMÁTICOS EN POBLACIÓN COLOMBIANA DE PRIMER, SEGUNDO Y TERCER GRADO DE CONSONGÜENCIAD CON HISTORIA FAMILIAR DE FIBROSIS QUÍSTICA

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RESUMEN: En los últimos años, se han publicado más documentos que son importantes para la implementación eficaz y eficiente.
**OBJECTIVES:** Determine the ratio of cost-effectiveness of the study of the genetic factor of FVR for patients with asymptomatic mutations in edad fértil. Familiar en primer, segundo y tercero grado de consanguinidad al caso índice con diagnóstico de fibrosis quística en Colombia. **METHODS:** Se realizó una búsqueda sistemática en bases de datos, literatura gris y panel de expertos, evaluando características operacionales de la prueba genética de screening portadoras asintomáticas con presencia de mutaciones de fibrosis quística, y los diferentes modelos de árboles de decisiones en estudios de costo-efectividad. Se aplicó Qauadra 2 modificada y QHES para pruebas de diagnóstico y estudios económicos. Se adaptó un modelo de árboles de decisiones teniendo como unidad de análisis la prevención de futuras concepciones mediante la prueba con asesoría genética y la razón de costo-efectividad. Los costos de la primera consulta o test fueron obtenidos de la literatura. Los resultados del análisis se presentaron como ICER para los diferentes modelos de árboles de decisiones, considerando 2 ciclos de screening. Se evaluaron solamente los costos directos del screening, diagnóstico y tratamiento en la población incluida. Los costos se calcularon a partir del Nomenclador del Hospital Público de Gestión Integrada (HIGI), Bogotá, Colombia. **RESULTS:** La prueba genética de detección de portadora para fibrosis quística es costo efectiva dependiendo del umbral de disponibilidad a pagar para familiares de primer grado de consanguinidad. Se encontró un ICER de $65.546.360 y $189.099.579 pesos. Se evidenció que al aplicar la prueba con asesoría genética y la razón de costo-efectividad incremental. Los costos se calcularon a partir del Nomenclador del Hospital Público de Gestión Integrada (HIGI), Bogotá, Colombia. **CONCLUSIONS:** La prueba genética de detección de portadora para fibrosis quística es costo efectiva dependiendo del umbral de disponibilidad a pagar para familiares de primer grado de consanguinidad.
uno costos importantes al sistema de salud y lograr su control adecuado genera menor impacto al sistema de salud.

**RESULTS:**

- **Objective:** To evaluate the cost of antibiotic therapy in Brazilian hospitals. The study was conducted from January 2015 to December 2016.
- **Methods:** A retrospective analysis of medical records of patients treated with antibiotics was performed. The cost of antibiotics was calculated according to the Brazilian Hierarchical Classification of Medical Procedures, 6th Edition. The cost of each antibiotic was also calculated according to the Brazilian Drug Price List.
- **Results:** The total cost of antibiotic therapy in the study period was BRL 7,487,760.2. The most common antibiotic used was amoxicillin, followed by ceftriaxone and ceftazidime.
- **Conclusions:** The cost of antibiotic therapy in Brazilian hospitals is significant and requires further investigation and control measures.

**BREAKOUT SESSION**

**P5: INFECTIOUS DISEASE STUDIES**

**IN1:** Force of infection of Helicobacter pylori in Mexico: evidence from a national survey.

**Methods:** A national seroepidemiological study was conducted in Mexico from 2014 to 2015. Serological samples were collected from 4,560 participants across 12 states. The prevalence of H. pylori infection was estimated using Bayesian hierarchical models.

**Results:** The estimated prevalence of H. pylori infection was 11.3% in men and 8.7% in women, with a peak in the age group of 10-19 years. The force of infection was highest at birth (0.080 [95% CR: 0.079-0.081]) and decreased with age.

**Conclusions:** This study provides evidence of the high prevalence of H. pylori infection in Mexico and highlights the need for public health interventions to reduce its transmission.

**IN2:** Predicting dengue fever outbursts in Brazil: an empirical model based on climatic parameters.

**Methods:** A predictive model based on climatic parameters was developed using logistic regression and regression trees. The model was validated using data from previous outbreaks.

**Results:** The model accurately predicted dengue fever outbreaks with an accuracy of 78%. The most significant climatic predictors were temperature and precipitation.

**Conclusions:** The model can be used to predict dengue fever outbreaks in Brazil, providing valuable information for public health planning.

**IN3:** Determinantes de la calidad de vida relacionada con la salud en pacientes con VIH/SIDA en una asesoradora en salud en Colombia.

**Methods:** A questionnaire was administered to 100 patients with HIV/AIDS in a healthcare center in Colombia. The quality of life was assessed using the EQ-5D-5L questionnaire.

**Results:** The EQ-5D-5L scores were significantly lower among patients with a history of hospitalization, those with comorbidities, and those with lower educational attainment.

**Conclusions:** The quality of life of patients with HIV/AIDS is significantly affected by various factors, and targeted interventions are necessary to improve their quality of life.

**IN4:** Cost assessment of acquired resistant bacterial infection in a hospital in the Dominican Republic.

**Methods:** A retrospective analysis of medical records of patients treated for bacterial infections in a hospital in the Dominican Republic was conducted. The cost of infections was calculated based on hospitalization days and antibiotic usage.

**Results:** The total cost of acquired resistant bacterial infection was USD 143,555.95. The most common resistant bacteria were Klebsiella pneumoniae, Enterococcus faecalis, and Pseudomonas aeruginosa.

**Conclusions:** The cost of acquired resistant bacterial infections is significant and highlights the need for antimicrobial stewardship programs.

**BREAKOUT SESSION**

**P6: RESEARCH ON METHODS STUDIES**

**RM1:** Decision making clinical scenarios as a tool in HTA processes.

**Methods:** A series of clinical scenarios were developed to evaluate the effectiveness of different decision-making strategies. The scenarios were tested in a simulated decision-making environment.

**Results:** The scenarios accurately reflected real-world decision-making processes and were effective in training healthcare professionals.

**Conclusions:** Clinical scenarios can be used as a tool in HTA processes to improve decision-making skills.
OBJECTIVES: The objective of this study is to present a method to support decisions during the process of modeling, which suggests a combination of social, cultural, moral, ethical, epidemiological, technical and clinical factors, through the stakeholders’ point of view. The advent of clinical scenarios allows the use of multiple factors that impact clinical outcome, under the reliability of situations that mimic real world dilemmas. We call this model Decision Making Clinical Scenarios (DMCS). METHODS: This model of research is based in a cross exploratory research, through a DMCS questionnaire involving HTA dilemmas. The scenarios introduce value judgments, preferences and structuring choices, under specific circumstances. The scenarios are based in trade-offs that are related to health technology assessment, such as budget impact, sources of funding, eligibility of patients, technology characteristics and disease epidemiology. The DMCS are applied to HTA stakeholders. Payers, sellers, prescribers, developers, researchers, regulators, patients, government and society opinions can be analysed and considered. RESULTS: The scenarios have been shown understandable for all groups. When testing the model with hypothetical dilemmas through clinical scenarios, the results were strongly influenced by each presented trade-off. Although, we can observe specific trends when analysing groups separately, and it is clear different motivations in their choices. The results are always evaluated and validated through statistical analysis. CONCLUSIONS: The presented model helps decision makers to better understand the impact of their decisions. The model can be used in further researches, using flexible criteria for each scenario, through real world situations. It can be a model to guide strategies, including budget allocation, public health care policies, and patient shared decision making.

RM2

LACK OF STANDARDIZED METHODS FOR HANDLING MULTIPLE SOURCES FOR MODEL PARAMETERS: A SYSTEMATIC REVIEW

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OBJECTIVES: Guidelines for cost-effectiveness models (CEM) usually recommend performing systematic review and meta-analysis for the treatment effectiveness estimation. However, CEMs are populated with many parameters, and guidelines do not usually provide guidance regarding how the review should be conducted. There is also no consensus for the optimal approach when multiple parameter sources (MPS) are encountered, particularly regarding pooling of results. METHODS: Systematic review of published CEM from 2013-2014 by pairs of two independent reviewers. We evaluated MPS frequency, summarization and use in sensitivity analysis. RESULTS: 69 articles were included. Most common areas were oncology (25%), infectology (12%) and cardiology (10%). In 61% of the articles, it was clear that MPS were used for model parameter so the treatment effectiveness, in most cases for estimating probability to issue recommendations on cost-effectiveness studies might justify the requisition of higher prices for the pharmaceutical companies in health technology assessment studies, recommend inefficient technologies for funding and lead to increasing health spending.

RM3

COST-EFFECTIVENESS THRESHOLDS: REVIEW OF CASES AROUND THE WORLD

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OBJECTIVES: This study aims to report the position of some countries in relation to the cost-effectiveness threshold. METHODS: An electronic search on Medline, Lilacs and Science-Direct was conducted and complemented by references of included studies, Google Scholar and conference abstracts. RESULTS: In most places evaluated, an explicit cost-effectiveness threshold has never been formally adopted, but an implicit one could be determined by research in some countries. WHO-CO suggested, in 2005, that therapeutic alternatives add that less than three times the GDP per capita/DALY should be considered cost-effective. There is a resilience of benchmark values of 50,000 to 100,000 USD/DALY in USA-based studies. In the UK, NICE adopts thresholds of 20,000 to 30,000 GBP/QALY, which could be extended to 50,000 GBP/QALY for end-of-life care. In Canada, CADTH has no explicit threshold for cost-effectiveness studies, but the benchmark value of 50,000 CAD/QALY is often used. Currently, the combination of health technology assessment recommended that the threshold should not be higher than 1.2 Gross National Income per capita/QALY. In Finland, a general threshold of three GPD per capita/DALY is used. CONCLUSIONS: The gender variable, in turn, indicates that women reported lower health status (the probability of the individual evaluating himself with very good or good health is 5.1% lower). The probability of self-assessment with better health is 3.1% lower when the individual is 60 years of age or older. In addition, obesity decreases the chances of positive self-assessment of health by 2%. These variables were also important to educational policies and actions that stimulate healthy habits and focused in public health care policies, and patient shared decision making.

RM4

DETERMINING THE BRAZILIAN POPULATION HEALTH STATUS: ESTIMATE OF HEALTH PRODUCTION FUNCTION

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OBJECTIVES: To elaborate health production functions for Brazil based on Grossman’s theoretical model. METHODS: Descriptive and analytical research with 12,748 observations developed with the information about Pesquisa Nacional de Saúde (PNS) of 2013. The empirical approach used was the Probit, focusing on the estimation of two models: The first investigating factors that affect the health of the Brazilian population, and the second, an extension of this analysis, restricted to chronic diabetes disease. RESULTS: The ages declared by survey participants range from 18 to 95. Considering the first model, in the increase in the educational level, rises in 11.6% the probability of the individual evaluating himself with very good or good health. The gender variable, in turn, indicates that women reported lower health status (the probability of the individual evaluating herself as very good or good health is 5.1% lower). The probability of self-assessment with better health is 3.1% lower when the individual is 60 years of age or older. In addition, obesity decreases the chances of positive self-assessment of health by 2%. These variables were also important to educational policies and actions that stimulate healthy habits and focused in public health care policies, and patient shared decision making.

BREAKOUT SESSION

P7: HEALTH SERVICES RESEARCH STUDIES

HS1

CARACTERIZACIÓN DEL RIESGO CARDIOVASCULAR POR FACTORES ASOCIADOS: ANÁLISIS DE BASE DE DATOS DE UNA ASEGURADORA COLOMBIANA

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OBJECTIVE: To determine the presentation of events cardiovascular in the population affiliated to an entity promoters of health in Colombia and its possible relationship with factors of risk. METHODS: Descriptive and analytical research with 12,748 observations developed with the information about Pesquisa Nacional de Saúde (PNS) of 2013. RESULTS: It is observed that sex was not significant to explain the prevalence of this disease. Finally, being old and not being obese are associated with less probability of the person being diagnosed with diabetes (reduce, by 0.5%, 4.8% and 1.4%, respectively, this probability). It is noted that sex was not significant to explain the prevalence of this disease. Finally, being old and not being obese are associated with less probability of the person being diagnosed with diabetes (reduce, by 0.5%, 4.8% and 1.4%, respectively, this probability).
recordatorios [call center] e interconsulta anual programada con Oftalmólogo. All costs were reported in 2015 USD currency. Work effectiveness was measured on a 100-point Likert scale where 100 was described as completely effective and 0 as not effective at all. Direct cost included costs from antiviral medication use and all medical services used to treat HZ. Indirect cost was based on forgone earnings from patients due to work loss and presenteeism, and work loss by family caretakers. All costs were reported in 2015 USD currency. The expected increase in pcHE was between 7.8% and 10.5% (low and high prediction intervals respectively) for each one-year increase in LE (an achievement that did not typically attain statistical significance). In order not to have additional work load beyond the health plan, all the new interventions has added one year of life to population LE, the pcHE will have increased at a ratio (“r”) which can be quantified as: r = 1 + CET/pchE (LE-1), assuming that the mean cost-effectiveness of new interventions is equal to CET. This allows the definition of CETs based on a target increase in expenditures. The expected rate of increase in pcHE, according to countries’ LE and income level, was estimated using WorldBank data to extrapolate the demands for incorporation of technologies in health services in Latin America. /cOnclusiones/ El estudio ajustado para la población y las características sociodemográficas demostró que la combinación de educación y cambios en el sistema de control/gestión de pacientes, mejora efectivamente la calidad de atención brindada a personas con DT2 y FRCV asociados. Estos resultados demuestran que la combinación de educación y cambios en el sistema de control/gestión de pacientes, mejora efectivamente la calidad de atención brindada a personas con DT2 y FRCV asociados.

**FOOTNOTES**

1. Brazilian Ministry of Health, Brasilia, Brazil.
2. Department of Management and Incorporation of Technologies in Health, National Committee for Health Technology Incorporation (CONTEC), Ministry of Health, Brasilia, Brazil.

**OBJECTIVOS**: Identificar las tecnologías en salud incorporadas al SUS después de la Comisión Nacional de Incorporación de Tecnologías en el SUS (CONTEC) rever las recomendaciones de la etapa de incorporación (previa a la recomendación final de MINSA). Los criterios de selección fueron: todas las tecnologías desarrolladas por la MINSA (1994-2017) cuya recomendación final no era favorable.

**MÉTODOS**: Para la identificación y análisis de las tecnologías, un protocolo participativo se aplicó a expertos del MINSA.

**RESULTADOS**: En total se identificaron 19 artículos, de los cuales se extrajeron 10 que realizaron estudios de incorporación que aplicaron el protocolo participativo. Además, se identificaron 9 tecnologías que no estaban contenidas en los estudios mencionados, pero que cumplían con los criterios establecidos.

**CONCLUSIONES**: Se concluye que el protocolo participativo tiene un potencial para ser utilizado como herramienta de tenencia tecnológica en el contexto del SUS. Se recomienda que el MINSA continúe utilizando este enfoque en el futuro para mejorar la incorporación de tecnologías en salud.

**RESUMEN**: Se identificaron 19 artículos de revisión que cumplen con los criterios establecidos para la incorporación de tecnologías en salud. Se concluye que el protocolo participativo tiene un potencial para ser utilizado como herramienta de tenencia tecnológica en el contexto del SUS. Se recomienda que el MINSA continúe utilizando este enfoque en el futuro para mejorar la incorporación de tecnologías en salud.
metodologías de EES que consideren los últimos hallazgos de la literatura respecto
de la definición de los beneficios que se estiman y comparan en este tipo de análisis,
y si estos realmente representan las preferencias de la población.

**PR4**
**IMPACT OF USING EXTERNAL REFERENCE PRICING (ERP) AND HEALTH TECHNOLOGY ASSESSMENT (HTA) AS PART OF COST-CONTAINMENT POLICIES: COMPARISON OF PRICES IN LATIN AMERICA**

**Objective:** Several Latin American countries have adopted ERP as a tool to bring the cost of medicines down. Brazil and Mexico are ERP users since 2004 and Colombia since 2011. In addition, Brazil has implemented HTA in the process of determining drug launch prices. This study explored the impact of ERP, HTA (when used) and other cost-containment policies in pricing determination in Brazil, Mexico, Colombia and Argentina.愛

**Method:** The authors examined 2744 registered interventions and the primary sponsor by examining the registered record in CTGov from the database (24%, Table 2). 81% of trials were funded exclusively by the top DALY-producing conditions according to IHME’s GBD, out of 2744 registered trials. 116 (38%) adverse drug reactions was the leading DTP encountered. The high severity and potentially inappropriate medications were 56 (18.2%). Unnecessary drug was the least DTP encountered. The high severity and potentially inappropriate medications were 56 (18.2%). Unnecessary drug was the least DTP encountered. The high severity and potentially inappropriate medications were 56 (18.2%). Unnecessary drug was the least DTP encountered.

**Results:** In the case of an out-of-pocket drug. CONCLUSIONS: The use of ERP as a successful cost-containment policy is immediately observed when comparing the prices in ERP and non-ERP countries in Argentina. The low prices in Brazil further reflect the impact of using a mix of ERP and HTA methodologies in price determination, which is also currently being adopted by Colombia and should bring drug prices further down in this country. Finally, Colombia achieves further reductions by using stricter ERP controls if there is public interest.

**Researcher Posteras Presentation – Session I**

**RESEARCH ON METHODS STUDIES**

**Research on Methods – Clinical Outcomes Methods**

**PM3**
**ECONOMIC BURDEN ON FAMILIES OF CHILDREN RECEIVING INPATIENT CARE**

**Objective:** The economic burden of inpatient care is widely recognized. However, data is lacking about the economic burden for caregivers to evaluate the feasibility of capturing a wide range of economic impacts on families of children receiving inpatient care and the magnitude of this burden. METHODS: Surveys aimed to capture four categories of family economic burden: (1) healthcare out of pocket (OOP) costs (surgery-related, other inpatient, outpatient, PK, medication, caretaker and other OOP costs to the patient’s family), (2) non-healthcare OOP costs (transportation, lost wages, caregiver costs, food, accommodation, and other), (3) non-monetary burden (work and activity impairment for caregivers and lost school days), and (4) HRQoL (EQ-5D-3) of the primary caregiver. The survey was tested and mailed to primary caregivers of children receiving surgery at Boston Children’s Hospital. RESULTS: Response rate was 60.3% resulting in 44 complete surveys. Total healthcare OOP costs were $185, mostly driven by the copays and deductibles for surgery (84%) and outpatient care (64%). Non-healthcare OOP costs were $166, mostly driven by lost wages among primary caregivers and other family members ($65), accommodation ($50) and transportation costs ($33). Non-monetary burden included 38% work impairment, 26% activity impairment, and 1 missed school day. The magnitude of this burden. METHODS: Surveys aimed to capture four categories of family economic burden: (1) healthcare out of pocket (OOP) costs (surgery-related, other inpatient, outpatient, PK, medication, caretaker and other OOP costs to the patient’s family), (2) non-healthcare OOP costs (transportation, lost wages, caregiver costs, food, accommodation, and other), (3) non-monetary burden (work and activity impairment for caregivers and lost school days), and (4) HRQoL (EQ-5D-3) of the primary caregiver. The survey was tested and mailed to primary caregivers of children receiving surgery at Boston Children’s Hospital.

**PM3**
**ECONOMIC BURDEN ON FAMILIES OF CHILDREN RECEIVING INPATIENT CARE**

**Objective:** Survey aimed to capture four categories of family economic burden: (1) healthcare out of pocket (OOP) costs (surgery-related, other inpatient, outpatient, PK, medication, caretaker and other OOP costs to the patient’s family), (2) non-healthcare OOP costs (transportation, lost wages, caregiver costs, food, accommodation, and other), (3) non-monetary burden (work and activity impairment for caregivers and lost school days), and (4) HRQoL (EQ-5D-3) of the primary caregiver. The survey was tested and mailed to primary caregivers of children receiving surgery at Boston Children’s Hospital.

**Results:** Response rate was 60.3% resulting in 44 complete surveys. Total healthcare OOP costs were $185, mostly driven by the copays and deductibles for surgery (84%) and outpatient care (64%). Non-healthcare OOP costs were $166, mostly driven by lost wages among primary caregivers and other family members ($65), accommodation ($50) and transportation costs ($33). Non-monetary burden included 38% work impairment, 26% activity impairment, and 1 missed school day. The magnitude of this burden.

**PM4**
**ECONOMIC BURDEN ON FAMILIES OF CHILDREN RECEIVING INPATIENT CARE**

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**PM5**
**COST-EFFECTIVENESS THRESHOLD IN BRAZIL THROUGH A LEAGUE-TABLE APPROACH: SYSTEMATIC REVIEW**

**Objective:** The use of ERP as a successful cost-containment policy is immediately observed when comparing the prices in ERP and non-ERP countries in Argentina. The low prices in Brazil further reflect the impact of using a mix of ERP and HTA methodologies in price determination, which is also currently being adopted by Colombia and should bring drug prices further down in this country. Finally, Colombia achieves further reductions by using stricter ERP controls if there is public interest.

**Researcher Posteras Presentation – Session I**

**Research on Methods – Clinical Outcomes Methods**

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CONCLUSIONS: When the threshold was set above 3 times the GDP per capita, the percentage of strategies evaluated that were more cost-effective than the comparator increased. For thresholds between 3 and 10 times the GDP per capita, it was more common to find strategies that were more cost-effective. The percentage of strategies evaluated that were more cost-effective was lower when the threshold was set between 10 and 20 times the GDP per capita. For thresholds above 20 times the GDP per capita, it was more common to find strategies that were less cost-effective. The results were similar when the threshold was set above 3, 6, or 10 times the GDP per capita, with a decrease in the percentage of strategies evaluated that were more cost-effective as the threshold increased.

PM86 COST-EFFECTIVENESS THRESHOLDS: REVIEW OF METHODS

The authors conducted a systematic review of the literature and CONITEC (the Brazilian drug regulatory body) dossiers to evaluate the use of cost-effectiveness thresholds in health technology assessment. They included studies that provided cost-effectiveness ratios (ICERs) for technologies, which were compared to thresholds set by health systems.

RESULTS: The authors found that different methodologies were used to set thresholds, such as using league tables and the "bookshelf model" as representatives. The displacement of technologies might be unfeasible in practice for political and practical reasons, but might give the "first-best threshold" that can maximize the utility of the population. Decisions are taken in a social, political, economic and cultural environment. The new theories can enlighten decision makers about questions other than simply the fact of being cost-effective, implying an idea of cost-efficiency in healthcare spending.

PM88 FACTORS ASSOCIATED WITH THE PREVALENCE OF TIME IN FRONT OF TV BETWEEN BRAZILIAN SCHOOLERS (2012 AND 2015)

The authors conducted a longitudinal study using the PeNSE 2012 and 2015 surveys, using the logit econometric model. The Log-Likelihood Ratio (LR) test was used to verify if there is any difference between estimates for men and women. The results confirmed that there were differences between the estimates, which allowed the analysis to be performed separately. To facilitate the interpretation of the estimated values, odds ratio (OR) was used.

RESULTS: Considering the three estimated models (overall with both sexes, men and women), the consumption of unhealthy foods increases the probability of watching more than two hours daily of TV. Having dependence variables (sex, race, age, income index, private or public school) and family composition (place of residence and schooling of the mother) in the model increases the likelihood of watching more than two hours daily of TV.

CONCLUSIONS: The prevalence of time in front of TV in adolescents was above 9 times the Brazilian GDP per capita. Establishment of a willingness-to-pay threshold in Brazil through review of past incorporation decisions seems a weak process, and other strategies should be pursued.

PM69 EVALUATION OF THE COST EFFECTIVENESS OF THE TREATMENT OF MILD AND MODERATE ALZHEIMER’S DISEASE

The authors conducted a systematic review of the published literature and CONITEC (the Brazilian drug regulatory body) dossiers to evaluate the use of cost-effectiveness thresholds in health technology assessment.

RESULTS: The result of the study indicates that donepezil is dominant when the threshold is set at 3 times the GDP per capita, rivastigmine is non-inferior when the threshold is set at 6 times the GDP per capita, and galantamine is non-inferior when the threshold is set at 10 times the GDP per capita.

CONCLUSIONS: The prevalence of time in front of TV in adolescents was above 9 times the Brazilian GDP per capita. Establishment of a willingness-to-pay threshold in Brazil through review of past incorporation decisions seems a weak process, and other strategies should be pursued.

RESEARCH ON METHODS – Databases & Management Methods

PM10 SELEÇÃO SISTÉMICA DE COORTES EM BASES DE DADOS ASSISTENCIAIS

The authors conducted a systematic review of the published literature and CONITEC (the Brazilian drug regulatory body) dossiers to evaluate the use of cost-effectiveness thresholds in health technology assessment.

RESULTS: The result of the study indicates that donepezil is dominant when the threshold is set at 3 times the GDP per capita, rivastigmine is non-inferior when the threshold is set at 6 times the GDP per capita, and galantamine is non-inferior when the threshold is set at 10 times the GDP per capita.

CONCLUSIONS: The prevalence of time in front of TV in adolescents was above 9 times the Brazilian GDP per capita. Establishment of a willingness-to-pay threshold in Brazil through review of past incorporation decisions seems a weak process, and other strategies should be pursued.
**PRM1**

**ANÁLISE DE SIGNIFICÂNCIA DO BANCO DE DADOS DA SAÚDE SUPLEMENTAR – SS NO BRASIL, SOB AS PERSPECTIVAS DOS ATENDIMENTOS EM HOSPITAIS E DEMAIS PRESTADORES PARTICULARES**

Rodrigues SR, Paiva EC, Palma ED, Rocha MJ, Neto LA

1Universidade Federal de São Paulo, São Paulo, Brazil, 2Hospital de Base de São Paulo, São Paulo, Brazil

**INTRODUCTION:** A constant evolution of the new technologies available on the market of the data to evidence a necessity of to analyze the viability of the incorporation of these techniques, mainly in public policies, as a proactive initiative. In the context, the bases of data privado surgem as a new alternative on the provision of services and informations in relation to the costs, benefícios and efficiency. In context, the bases of data privado surgem as a new alternative on the provision of services and informations in relation to the costs, benefícios and efficiency.

**OBJECTIVES:** Evaluate the representativeness and compete on the information médico that the Orizon, in relation to the Saúde Supplementary – SS in the Brazil. **METHODOLOGY:** Analysis of original articles was conducted using the Web of Science database, with the search strategy in the Web of Science database. The term “biosimilar”. **RESULTS:** BIOSimilar indicators were investigated by analyzing annual research output, languages, countries, journals, authors, institutions, citations, and funding agencies. **RESULTS:** Bibliographic research retrieved 507 papers for the period 2015 to 2020.

**PRM4**

**WORLDWIDE RESEARCH PRODUCTIVITY ON BIOSIMILARS: A BIBLIOMETRIC ANALYSIS**

Hernández-Vázquez A1, Díaz-Seijas D1

1Universidad Privada del Norte, Lima, Peru, 2Instituto Nacional Cardiovascular-INCOR-ESalud, Lima, Peru

**OBJECTIVES:** Evaluation of worldwide scientific output on biosimilars has not been explored. Therefore, the objective of this study was to perform a bibliometric overview of global research productivity on biosimilars. **METHODOLOGY:** An electronic search for the Web of Science database with the term “biosimilar”. Bibliometric indicators were investigated by analyzing annual research output, languages, countries, journals, authors, institutions, citations, and funding agencies. **RESULTS:** Bibliographic research retrieved 507 papers for the period 2015 to 2020.
**RESEARCH ON METHODS – Modeling Methods**

**PRM17**

**SYSTEMATIC REVIEW OF MARKOV MODEL-BASED ECONOMIC EVALUATION STUDIES FOR CERVICAL CANCER SCREENING STRATEGIES: LATIN AMERICA COUNTRIES PANORAMA**

**Vascundi YE, Faustino GIG, Campolongo AG, De Soárez PC**

1 Universidad de Sao Paulo, Sao Paulo, Brazil, 2 Cancer Institute of the State of Sao Paulo, Sao Paulo, Brazil

**OBJECTIVES:** To compare Latin America (LA) with other countries economic evaluation studies of screening strategies for cervical cancer prevention that used a Markov model to simulate the natural history of disease. **METHODS:** A systematic review was conducted through searching in Medline (via PubMed), NHS EED (via CRD), Embase and Web of Science databases to identify Markov model-based economic evaluation of cervical cancer prevention strategies. This review included articles that were complete research papers, fulfilled the screening criteria of cervical cancer screening strategies and published until August 2015. The methodology for the quality reporting was assessed using some items of the Phillips 2006 and Ramos 2015 15 checklists. Two independent reviewers selected studies, extracted data, and assessed the quality reporting. Disagreements were resolved by consensus or arbitrage. We investigated the differences between studies conducted in LA and other countries in the eight study cycles originated. A series of five were conducted in LA countries. The quality reporting appraisal, in general, shows that LA studies reported less checklists’ items than the other studies, where the maximum was 53% versus 72%. The same happened with the analysis by model’s structure (78% versus 89%) and data issues (56% versus 67%). The 100% of model’s consistency was satisfied by only one LA study. **CONCLUSIONS:** This systematic review shows that there is great variability in the methodology adopted for the Markov models. The quality appraisal identified that the model’s structure and the underpinning assumptions are not always clearly presented, mainly for LA countries studies.

**PRM18**

**CRISIS ECONÓMICAS Y SEUS IMPACTOS NO SISTEMA DE SAÚDE DO BRASIL**

Ramires Y1, Ferreira VL1, Sousa FM1, Klingelhout BL1, Oliveira K2, Gajardo PD2

1 Universidade Federal do Paraná, Curitiba, Brazil, 2 Universidade Federal do Paraná, Curitiba, Brazil

**OBJECTIVES:** Fornecer insígnias sobre como modelos de previsão auxiliam a identificação de tendências relacionadas a inflação e a saúde privada. **METHODS:** Aplicou-se o modelo ARIMA para previsão das séries temporais referentes a índices financeiros, as empresas reduzem custos através do cancelamento dos planos de saúde coletivos, sendo mais afetados pelas crises financeiras que os planos de saúde individuais. A redução do PIB indica perda de riqueza que influencia o sistema de saúde de seus empregados. O aumento do PIB de 4,8% em 2007 impulsionou a economia, e os planos de saúde acompanharam o cenário com um aumento de 2,73% de beneficiários nos planos individuais e 6,75% nos coletivos. O modelo econômico de previsão indicou melhora nos índices financeiros a partir do ano de 2018, e os planos de saúde se beneficiaram de um crescimento de 1,5% de 2016 para 2020. **RESULTS:** O modelo contra bases similares se encontrou um erro máximo de sobreestimación del 8.38%. **CONCLUSIONS:** Es posible contar con un modelo de estimación de gasto farmacéutico para una aseguradora colombiana que logra estimar posibles primas por medio de la interacción de variables sociodemográficas y epidemiológicas. Los alcances de este modelo se pueden aplicar en las aseguradoras colombianas en la construcción de presupuestos que busquen optimizar y trastadar el riesgo financiero de un nivel general a un nivel más específico.

**RESEARCH ON METHODS – Statistical Methods**

**PRM20**

**USO DE LOS ÍNDICES DE SHANNON EN LA EVALUACIÓN DEL PODER DISCRIMINANTE DEL EQ-5D Y EL EQ-SF-5L EN UNA MUESTRA DE PACIENTES CON VIH/SIDA EN COLOMBIA**

Ramírez YE1, Díaz JA2, Micari NN2, Arevalo HO2, Hoyos-Beltrán FJ2, Moreno JA1

1 Salud Total EPS, Bogotá D.C., Colombia, 2 Universidad Nacional de Colombia, Bogotá D.C., Colombia

El índice discriminante tradicionalmente se ha evaluado en los cuestionarios de medición de resultados informados por el paciente, mediante el uso de la distribución de frecuencias, específicamente efecto suelo y techo. Los índices de Shannon se ha planteado para la teoría de la información en términos de representativity con el objetivo de se han usado para medir la diversidad y riqueza de las especies en estudios ecológicos, sin embargo se ha planteado también como una alternativa útil en la evaluación del poder discriminante. **OBJECTIVES:** Evaluar el poder discriminante del EQ-5D y el EQ-SF-5L, en términos de informatividad absoluta y relativa en una muestra de pacientes con VIH/SIDA, usando los índices de Shannon. **METHODS:** Se aplicó el EQ-5D y el EQ-SF-5L a una muestra de 109 pacientes adultos con diagnóstico de infección por VIH/SIDA afiliados a una aseguradora en salud. Se evaluó la distribución de frecuencias (efecto techo y piso) y se calcularon los índices de Shannon y los índices de paridad de Shannon para evaluar la informatividad absoluta y relativa por dominio de la herramienta. Los cálculos se realizaron en Microsoft Excel 2013. **RESULTS:** El efecto techo fue similar en las dos herramientas, la reducción absoluta y relativa de la respuesta “no hay problema” de forma global fue del 2% y 3,45%, respectivamente. El dominio con mayor reducción fue Dolor/malestar. El EQ-5D-SL registró mayor informatividad absoluta en todos los dominios de la herramienta en comparación con el EQ-5D, con un promedio de diferencia de 0,26. La informatividad relativa del EQ-5D-5L en comparación con el EQ-5D fue ligeramente menor en todos los dominios excepto en ansiedad/depresión. **CONCLUSIONS:** El EQ-5D-SL registra mayor capacidad para discriminar. Análisis de datos – evaluación de los domínios: por sus propiedades psicométricas estos instrumentos son útiles para la evaluación del bienestar del paciente.

**A862**

**VALUE IN HEALTH 20 (2017) A853–A943**

**USD (exchange rate adjusted to 17 December 2014).** **CONCLUSIONS:** Despite public databases limitations, AMI was identify us a main budget agent for 2014, given a reported health expenditure for Colombia in 2014 of 7.2% of GDP, (54.54 billions), the AMI probably contributed with 0.03% of it, with an projected increase in 2017 to $17,683,161,956. There is expected that population aging, risk of cardiovascular disease, and the high level of diabetic and cancer, obesity, smoking, etc. associated costs of ambulatory and disability therapies, would increase this expenditure. To overcome limitations of this study, observational prospective design studies must be done.

**Objetivos:** El objetivo de este trabajo fue realizar una revisión sistemática que permita estimar el gasto farmacéutico en una aseguradora colombiana por medio del uso de variables sociodemográficas y epidemiológicas. **MÉTODO:** Para realizar un análisis de costos, a partir de una base de datos de 1.066.221 registros que incluyeron a 315.042 afiliados con VIH/SIDA afiliados a una aseguradora en salud. Se evaluó la distribución de frecuencias, específicamente efecto suelo y techo. Los índices de Shannon se ha planteado para la teoría de la información en términos de representativity con el objetivo de se han usado para medir la diversidad y riqueza de las especies en estudios ecológicos, sin embargo se ha planteado también como una alternativa útil en la evaluación del poder discriminante. **Objetivos:** Evaluar el poder discriminante del EQ-5D y el EQ-SF-5L, en términos de informatividad absoluta y relativa en una muestra de pacientes con VIH/SIDA, usando los índices de Shannon. **Métodos:** Se aplicó el EQ-5D y el EQ-SF-5L a una muestra de 109 pacientes adultos con diagnóstico de infección por VIH/SIDA afiliados a una aseguradora en salud. Se evaluó la distribución de frecuencias (efecto techo y piso) y se calcularon los índices de Shannon y los índices de paridad de Shannon para evaluar la informatividad absoluta y relativa por dominio de la herramienta. Los cálculos se realizaron en Microsoft Excel 2013. **Resultados:** El efecto techo fue similar en las dos herramientas, la reducción absoluta y relativa de la respuesta “no hay problema” de forma global fue del 2% y 3,45%, respectivamente. El dominio con mayor reducción fue Dolor/malestar. El EQ-5D-SL registró mayor informatividad absoluta en todos los dominios de la herramienta en comparación con el EQ-5D, con un promedio de diferencia de 0,26. La informatividad relativa del EQ-5D-5L en comparación con el EQ-5D fue ligeramente menor en todos los dominios excepto en ansiedad/depresión. **Conclusões:** El EQ-5D-SL registra mayor poder capacidade para discriminar. Análisis de dados – avaliação dos domínios: por suas propriedades psicométricas estes instrumentos são úteis para a avaliação do bem estar do paciente.
CHARACTERIZATION OF WORLDWIDE PUBLICATIONS ON NETWORK META-
ANALYSIS: A SYSTEMATIC REVIEW

Tonin FS1, Barba IH2, Steinbach LM1, Mendes AM1, Fernandez-Limoso F1, Pontarolo R3
1Federal University of Parana, Curitiba, Brazil, 2University of Lisboa, Lisboa, Portugal

OBJECTIVES: There is an evident increase of publications of systematic reviews with network meta-analyses (NMA) to compare several medical interventions. However, since this recent technique still poses some challenges, its characteristics should be better investigated. We aimed to characterize the worldwide NMA publications on drug interventions. METHODS: A systematic review of NMAs comparing any pharmaceutical intervention was performed. Searches in Medline and Scopus along with manual search were conducted. The main characteristics were collected: authors/year/country of publication, evaluated medical conditions, evaluated drugs, and statistical analyses performed. RESULTS: We identified 365 NMAs conducted in more than 30 different countries (2003-2016) and published by 1Sense Company, São Paulo, Brazil, 2Sense Company, Rio de Janeiro, Brazil, and 3University of Lisboa, Lisboa, Portugal. Most of the NMAs (73%) focused on infectious diseases, accounting for 15 NMA each; 9 NMA each were analyzed for chronic obstructive pulmonary disease, rheumatoid arthritis, and inflammatory bowel disease; 5 NMA each were for respiratory disorders, mainly chronic obstructive pulmonary disease. Other NMAs accounted for musculoskeletal disorders, pain, skin/cancer, and Alzheimer’s disease. CONCLUSIONS: The map of the published NMAs emphasizes the potential of this tool and highlights the gaps on literature of healthcare evidence synthesis. The conduction and report of NMA should reflect transparency and reproducibility.

RESEARCH ON METHODS – Conceptual Papers

PM24 CHARACTERIZATION OF WORLDWIDE PUBLICATIONS ON NETWORK META-
ANALYSIS: A SYSTEMATIC REVIEW

Tonin FS1, Barba IH2, Steinbach LM1, Mendes AM1, Fernandez-Limoso F1, Pontarolo R3
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PM24 OVERALL SURVIVAL (OS) VERSUS PROGRESSION-FREE SURVIVAL (PFS): IS THERE A RATIONAL FOR REPLACING ONE OUTCOME FOR THE OTHER?

Lopes E2, Pontin I1, Nadal P1
1Vanderbilt University, Nashville, Tennessee, USA
2University of Sao Paulo, Sao Paulo, Brazil

OBJECTIVE: We identified 365 NMAs conducted in more than 30 different countries (2003-2016) and published by 1Sense Company, São Paulo, Brazil, 2Sense Company, Rio de Janeiro, Brazil, and 3University of Lisboa, Lisboa, Portugal. Most of the NMAs (73%) focused on infectious diseases, accounting for 15 NMA each; 9 NMA each were analyzed for chronic obstructive pulmonary disease, rheumatoid arthritis, and inflammatory bowel disease; 5 NMA each were for respiratory disorders, mainly chronic obstructive pulmonary disease. Other NMAs accounted for musculoskeletal disorders, pain, skin/cancer, and Alzheimer’s disease. CONCLUSIONS: The map of the published NMAs emphasizes the potential of this tool and highlights the gaps on literature of healthcare evidence synthesis. The conduction and report of NMA should reflect transparency and reproducibility.

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SELECTED HEALTH CARE TREATMENT STUDIES

MEDICAL DEVICE/DIAGNOSTICS – Clinical Outcomes Studies

PM01 MULTIPATHOGEN DETECTION METHODS FOR L. MONOCYTOGENES IN FOOD SAMPLE: A SYSTEMATIC REVIEW

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1University of Sao Paulo, Sao Paulo, Brazil, 2University of Sao Paulo, Sao Paulo, Brazil

OBJECTIVES: The construction of models of care allow the achievement of processes of health care of superior value and improve and optimize care processes and clinical outcomes of patients requiring hospital care. MATERIAL AND METHODS: Through the systematic review of literature on hospital nutritional care models, the construction of a nutritional care model was carried out. Model that was consulted, validated and feedback with 10 hospital institutions, during the year 2016. RESULTS: A model of standardized hospitalized patient care was constructed, according to the patient care cycle, which includes four strategic lines: identification and risk, intervention and follow-up, exchange doors, and culture and education. CONCLUSIONS: The construction of these models of care allow the achievement of processes of health care of superior value in order to bring hospital nutrition to sites of relevance previously not considered.

PM02 BUDGET IMPACT ANALYSIS OF VACCINES: WHAT ARE THE METHODOLOGICAL ISSUES?

Soarze PC1, Sartori AM2, Leonadro RB3, Silva DR3, Soarze D3, Campolina AG2, Hovanes FM1
1Universidade de Sao Paulo, Sao Paulo, Brazil, 2Sao Paulo University, Sao Paulo, Brazil, 3University of Sao Paulo, Sao Paulo, Brazil

OBJECTIVES: To analyze the Brazilian Budget Impact Analysis (BIA) guideline and to propose a specific guideline for conducting BIA of vaccines to support national decision-making process. METHODS: We systematically reviewed domestic and international BIA guidelines, and published BIA of vaccines to identify and discuss specific methodological issues of vaccines that are still the subject of debate in the scientific community. We critically reviewed each analytic framework element in order to propose the vaccine BIA guideline. CONCLUSION: In order to help decision-makers formulate appropriate recommendations, these methodological issues need to be adequately addressed when vaccines are assessed.

PM02 MODEL ATTENTION IMPROVE THE HOSPITAL NUTRITION PROCESS UNDER THE CENTER OF EXCELLENCE CONCEPT

Sampaio IF1, Cunha MO2, Oliaro L3, Cintra M4, Lopes GC5, Mendieta EN1, Maves JH1, Fernandes GM2, LD2, NC5, Iwersen S6, Silva M1,1, Nascimento PM1,2, Pontarolo R1
1Federal University of Parana, Curitiba, Brazil, 2Universidade Federal do Parana, Curitiba, Brazil, 3University of Sao Paulo, Sao Paulo, Brazil
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OBJECTIVES: The construction of models of care allow the achievement of processes of health care of superior value in order to bring hospital nutrition to sites of relevance previously not considered.

PM02 MODEL ATTENTION IMPROVE THE HOSPITAL NUTRITION PROCESS UNDER THE CENTER OF EXCELLENCE CONCEPT

Sampaio IF1, Cunha MO2, Oliaro L3, Cintra M4, Lopes GC5, Mendieta EN1, Maves JH1, Fernandes GM2, LD2, NC5, Iwersen S6, Silva M1,1, Nascimento PM1,2, Pontarolo R1
1Federal University of Parana, Curitiba, Brazil, 2Universidade Federal do Parana, Curitiba, Brazil, 3University of Sao Paulo, Sao Paulo, Brazil
OBJECTIVES: The construction of models of care allow the achievement of processes of health care of superior value in order to bring hospital nutrition to sites of relevance previously not considered.

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1Federal University of Parana, Curitiba, Brazil, 2Universidade Federal do Parana, Curitiba, Brazil, 3University of Sao Paulo, Sao Paulo, Brazil
OBJECTIVES: The construction of models of care allow the achievement of processes of health care of superior value in order to bring hospital nutrition to sites of relevance previously not considered.
E. coli. Despite the high number of studies, sensitivity and specificity calculations were derived from 16 studies only, since they had official method. Sensitivity and specificity values were close to 100% for both detection type of methods. However, it was verified that single detection methods exhibited less heterogeneity regarding sensitivity than the multipathogen ones. CONCLUSIONS: The heterogeneity observed about the L. monocytogenes detection is probably related to the contribution of these two improvements and, therefore, to listeriosis control.

PMD2 ECOCARDIOGRAFIA SOB ESTRESSE COM DOBUTAMINA: ALTERNATIVA ECONÔMICA E EFEITUÍVEL NA AVALIAÇÃO DE RISCO CARDIOVASCULAR PRÉ-TRANSPLANTE RENAL
Points SC1, Golchi FP, Rabaiah A2, Castor Jr J1, Colares VS1, Ferreira GF1
1Universidade Federal de Juiz de Fora and Santa Casa de Misericordia de Juiz de Fora, Juiz de Fora, Brazil, 2Santa Casa de Misericordia de Juiz de Fora, Juiz de Fora, Brazil

OBJECTIVES: To study the transplanted renal treatment of escolha for doença renal terminal, with a reduction of the mortality global. A prevalence of disease cardiovascular is significative and is a study in the operatório is fundamental. Our esratafication roteirina consists in consultedcardiologia and elecrodcardiography. Patients of baixo baixo, in geral, na necessitate investigations adicional. Pacientes of more than 40 years, not candidates to a transplant renal, estratificados as is co cirúrgico moderated.

METHODS: Estudo transversal, de caráter descriutivo, incluindo 82 pacientes pré-transplante de risco cardiovascular moderado, submetidos ao ecocardiograma sob estresse com dobutamina (EED), para avaliação dos possíveis efeitos e custos. O ecocardiograma foi conduzido usando uma esfera de dobutamina (14 mg/kg/minuto) e o eletrocardiograma (EKG) foi monitorizado durante e após o tratamento com dobutamina.

RESULTS: Nas pacientes pré-transplantadas, o ecocardiograma sob esforço demonstrou efeitos positivos na diminuição da frequência cardíaca (em 14,4% dos casos) e na melhora da função sistólica (em 84% dos pacientes). O eletrocardiograma, após a administração de dobutamina, mostrou a presença de ondas Q e R, indicando uma melhora da função ventricular. Os resultados obtidos foram comparados com os valores pré-transplantados, demonstrando um significativo aumento na função sistólica e uma melhora na qualidade de vida dos pacientes.

CONCLUSIONS: O ecocardiograma sob estresse com dobutamina é uma alternativa eficaz e econômica para a avaliação do risco cardiovascular pré-transplante renal.

PMD3 DEEP BRAIN STIMULATION FOR PARKINSON’S DISEASE: COMPARISON BETWEEN UNILATERAL AND BILATERAL IMPLANTATION
Bustorff-Silva JM, Psaltikidis EM, Militão L, Resende MR, Passeri LA
University of Campinas, Campinas – SP, Brazil

OBJECTIVES: To investigate the transplanted renal treatment of escolha for doença renal terminal, with a reduction of the mortality global. A prevalence of disease cardiovascular is significative and is a study in the operatório is fundamental. Our esratafication roteirina consists in consultedcardiologia and elecrodcardiography. Patients of baixo baixo, in geral, na necessitate investigations adicional. Pacientes of more than 40 years, not candidates to a transplant renal, estratificados as is co cirúrgico moderated.

METHODS: Estudo transversal, de caráter descriutivo, incluindo 82 pacientes pré-transplante de risco cardiovascular moderado, submetidos ao ecocardiograma sob estresse com dobutamina (EED), para avaliação dos possíveis efeitos e custos. O ecocardiograma foi conduzido usando uma esfera de dobutamina (14 mg/kg/minuto) e o eletrocardiograma (EKG) foi monitorizado durante e após o tratamento com dobutamina.

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CONCLUSIONS: O ecocardiograma sob estresse com dobutamina é uma alternativa eficaz e econômica para a avaliação do risco cardiovascular pré-transplante renal.

PMD4 DRY-WEIGHT ASSESSMENT AMONG HEMODIALYSIS PATIENTS USING BODY COMPOSITION MONITOR
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OBJECTIVES: The current practice to achieve euvolemic state in multivariate analysis, vascular access other than arteriovenous fistula (AVF) (OR=0.65, p-value= 0.003), cardiocirculatory disease (OR=0.314, p-value= 0.016) had statistically significant negative association with achieving euvolemic state at 30 minutes of BCM procedure.

CONCLUSIONS: The cumulative percentage of euvolumic patients increased from 46.4% to 66.4% when assessed at 45 minutes post-dialysis. Monitoring patient’s hydration status at 45 minutes post-dialysis is therefore suggested.

PMD5 ECONOMIC BENEFITS OF SFT1/PLGF TESTING FOR PREECLAMPSIA IN COLOMBIA: A FIVE YEAR BUDGET IMPACT ANALYSIS
Ovina AS, Rosim RP, Ballalai Ferraz AP1, Cachoeira CM, Mojica IL2
1QuintilesIMS, São Paulo, Brazil, 2Roche Brazil, São Paulo, Brazil, 3Roche Colombia, Bogota, Colombia

OBJECTIVES: To assess the five-year budget impact of SFT-1/PLGF testing women with suspected preeclampsia in the Colombian public healthcare setting.

METHODS: Demographic data from the Colombian statistics bureau and the World Health Organization was used in the installed equipment base neces- sary for testing and with health insurance coverage data in order to calculate the number of women with suspected preeclampsia who are within geographic reach of those covered by the Colombin public healthcare system. The numbers was then fed into a budget impact model based on three stages of women with suspected preeclampsia management: low-intensity, intermediate-intensity and high-intensity. Both base case (taking into account standard diagnosis methods) and SFT-1/PLGF testing scenarios were modelled with the same management assump- tions, diverging only in the proportion of women per management scheme. Costs were extracted from a Colombian public healthcare system reference list and were attributed to exams, in-patient care, antihypertensive therapy and medical appoint- ments. RESULTS: It is expected that from 2017 to 2021 up to 215,696 women will present a suspicion of preeclampsia in the Colombian public healthcare system. In the base case scenario a total cost of COL 352 billion was associated with the management of these patients, in contrast to a total cost of COL 284 billion in the SFT-1/PLGF testing scenario, resulting in a five-year resource economy of COL 74 billion, or COL 182,841 per patient. This economy is driven by a reduction in the amount of hospitalizations: in base case scenario, 36% of all women were hospi- talized against 16% in the SFT-1/PLGF scenario, a 59% reduction. CONCLUSIONS: Even though SFT-1/PLGF testing increases the costs associated with diagnosing preeclampsia, incremental costs are offset by a reduction in the number of unneces- sary hospitalizations, generating economy to the Colombian public health system.
from public data and costs published in United States Dollar were converted to 2016 Brazilian Real (BRL) cost model considered population covered by the Mexican Institute of Social Security (IMSS), in this sense the target population (base case scenario) was chosen based on the SoC and 11% on the hemodynamic evaluation and recanalization. We took into the account the mean cost per patient (medical 14% and 11% on the diagnosis costs when moving from centralized test to point-of-care test. CONCLUSIONS: An organized management- point-of-care test, for patients under warfarin therapy, could lead to important savings for a Brazilian public healthcare provider due to the potential reduction of complications occurrence, such as thrombosis and hemorrhage, through increasing the number of patients within the Target Therapeutic Range (TTR) for anticoagulation.

PMD9
ANALISIS DE IMPACTO PRESUPUESTARIO COMPARANDO 2 MÉTODOS DE SCREENING DE CÁNCER DE CUELLO UTERINO EN EL SECTOR PÚBLICO DE ARGENTINA
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OBJECTIVES: Comparar el impacto presupuestario del screening primario de cáncer de cuello uterino mediante test de HPV con genotipificación (cobas® HPV) con un intervalo de tiempo de 5 años versus el uso de Citología con tinción Papanicolaou con regularidad anual. METHODS: Se analizó el impacto de ambas estrategias en el grupo de mujeres de 30-65 años, sin cobertura de seguros en Argentina, desde la perspectiva del financiador. Se utilizó una metodología basada en un árbol de decisiones, considerando 2 ciclos de screening. Se evaluaron solamente los costos directos del screening, diagnóstico y tratamiento en la población incluida. Los costos se calcularon a partir del Nomenclador del Hospital Público de Gestión Descentralizada, así como la disposición a pagar del Programa Nacional de Prevención del Cáncer cérvico-uterino. RESULTS: La población cribada ascendió a 1.194.868 mujeres, durante 2 ciclos de screening, con cobas® HPV se calculó un coste total de screening de 57,7%, 57,7% y 53,2%, respectivamente), así como menor incidencia y mortalidad anual que al utilizar Citología con tinción Papanicolaou como método de screening primario. CONCLUSIONS: El coste anual del screening con test de HPV con genotipificación para el sector público en Argentina es menor que el que genera realizarlo mediante Citología con tinción Papanicolaou. Los mejores resultados clínicos permitirían estimar que la estrategia de cribado con cobas® HPV es más costo-efectiva, teniendo en cuenta el impacto de la muerte prematura en la productividad del país y, más aún, siendo el propio Estado el sector involucrado en el presente análisis.

PMD10
SENSOR-AUGMENTED PUMP VS MULTIPLE DAILY INJECTIONS IN VERY UNCONTROLLED DIABETES PATIENTS: COST MODEL FOR HYPOGLYCEMIC EVENTS, IMSS PERSPECTIVE
Cervera D1, Gauca R1, Valenzuela J1
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OBJECTIVES: Estimate the impact of a new and of insulin pens and reusable pen needles, respectively (which means a total costs that oscillate between $1.5 million and $670k dollars) CONCLUSIONS: The savings due to inter-vention (SAF) were described between $5.4 to 6.2 million of dollars. The analysis just took into account for those avoided acute events, we did not simulate those mid-term or long-term effects. We executed sensitivity analysis effect size and costs savings due to SAF therapy on very uncontrolled DT1 patients.

PMD13
ECONOMIC ASSESSMENT OF NT-proBNP TEST FOR ACUTE HEART FAILURE AT BRAZILIAN PRIVATE PAYER PERSPECTIVE
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OBJECTIVES: This study purpose to evaluate the economic impact NT-proBNP test to support the Heart Failure diagnosis and management of patients presenting dyspnea in the Emergency Department at Brazilian private payer perspective. METHODS: An economic tool was developed based on peer-reviewed published data to compare the standard clinical assessment versus the clinical assessment guided by NT-proBNP test, the time horizon considered was 60 days. The direct medical costs were based on the CBHPM 2016 list (Classificação Brasileira Hierarquizada de Procedimentos Médicos). The one-way sensitivity analysis was performed with a variation of 20%, in which the best case scenario was developed with a reduction of 20% in the total cost of hospitalization and the worst case scenario with 20% increase on them. RESULTS: The economic model suggests that the inclusion of NT-proBNP test at Emergency Department in base case scenario could save 1,301.06 BRL per patient, attributable to the reduction in the amount of echocardiography tests performed and in the average hospitalization length. Additionally, the economic model suggests a saving of 832.68 BRL and 1,873.53 BRL at the best and the worst case scenario, respectively. Also the one-way sensitivity analysis demonstrated that the results achieved were robust. CONCLUSIONS: The current analysis suggests that the use of NT-proBNP test could improve the management of patients with acute Heart Failure at the Emergency Department which may result in improved therapeutic decisions and savings for Brazilian private healthcare system.
OBJECTIVES: The authors performed a healthcare utilization and cost comparison of RF and balloon Expandable valve procedures for AF patients in the Brazilian private healthcare system. METHODS: Data were analyzed from the Orizon database. The study population consisted of 165 consecutive patients who underwent RF ablation procedures for AF. Healthcare utilization and costs were measured from 2 years before to 2 years after the procedure. That is the preliminary results from the 50 first patients analyzed. RESULTS: Considering a total of AF patients who underwent catheter ablation, 45 had at least 3 months follow-up prior the ablation and 45 had at least 3 months follow-up post-ablation. There was no difference in the 2-year estimated number of outpatient visits prior and after ablation (4.8 visits (± 4.3) vs. 3.9 visits (± 4.4); p = 0.29), but the outpatient’s costs (including appointments and exams) were lower after ablation procedure ($2,732.17 (± 3,299) vs. $1,642.05 (± 1,366); p = 0.0009). The 2-year estimated hospital care visits and costs were lower after ablation procedure (2.02 visits (± 2.23) vs. 0.96 visits (± 1.98); p = 0.0006) and ($3,781.03 (± 5,784) vs. $499.90 (± 1,489); p = 0.0003), respectively. Patients before ablation had a higher risk of overall complications and arrhythmia in the ER visits (OR 4.5– CI 95% 1.8 – 11.1 – p = 0.0009) and (OR 17.2 – CI 95% 3.7 to 79.8 – p = 0.0001), respectively. There was no difference regarding stroke and angina pectoris in the ER visits (p=0.49 and p=0.73), respectively. CONCLUSIONS: Catheter ablation in AF patients reduce patients costs, emergency room utilization and costs and the risk of overall complications and arrhythmia ER related visits, but doesn’t reduce the risk of stroke and angina pectoris ER related visits.

PM15
ESTIMATIONS OF RESOURCE USE, COSTS, CLINICAL AND EPIDEMIOLOGICAL OUTCOMES OF CONTINUOUS AND INTERMITTENT RENAL REPLACEMENT THERAPIES
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OBJECTIVES: To compare the resource use, costs and epidemiological outcomes associated to the treatment of Acute Kidney Injury (AKI) at Intensive Care Unit (ICU) with Continuous or Intermittent Renal Replacement Therapies (CRRT or IRRT) in Argentina to feed a Cost-Effectiveness (CE) model that compares long-term economic and health outcomes of AKI treated in long-term透析 units, and assumptions with local experts, a list of parameters where defined. The perspective was stated as the insurance for the elderly (PAMI) and health outcomes.

RESULTS: Costs of daily CRRT, IRRT, Dialysis Dependance (DD) and Independence (DI) were estimated using a macro-costing approach, in ARS 2017. Clinical and epidemiological parameters were obtained from a review of studies indexed in PubMed, Cochrane Library, EMBASE, LILACS and recent grey literature. Epidemiological parameters were survival rates at days 0, 60 and 180 and for DD and DI at 90 and 180 respectively. Quality-of-life weights and costs were estimated reflecting the AKI patients’ quality of life. Costs of CRRT and DD were estimated adding the costs of the AKI stage to the costs of the DD stage, as this stage is expected to be the predominant in the AKI patients’ life. Conclusions: AKI patients with DD will require a high proportion of resources. There was no difference in the cost per patient between AKI and DD, which could be attributed to DD’s higher mortality.

CONCLUSIONS: A higher mortality and morbidity are associated with DD. Cost effectiveness of CRRT could be achieved in the near future by reducing the AKI stages with AKI therapies. It could be attributed with the clinical complications, which should be tested in future economic and clinical data.

PM16
COST ASSOCIATED WITH BALLOON-EXPANDABLE VALVE VS SELF-EXPANDABLE VALVES IN PATIENTS UNDERGOING TRANSCATHETER AORTIC VALVE REPLACEMENT
Ferreira CN1, Palomino E2, Rodrigues SB2, Brunet WA2
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OBJECTIVES: Transcatheter aortic valve implantation (TAVI) is an effective alternative to surgical valve replacement for inoperable patients with aortic stenosis (AS). This analysis assessed the cost per length of stay whether the balloon-expandable (BE) valve and self-expandable (SE) valve. METHODS: An administrative claims database containing over 18 million lives (ORIZON, Brazilian Private Health Care, Fee-for-service) was assessed (from jan/2015 until dec/2016), of patients who underwent a BE valve replacement (n=30) and SE valve replacement (n=54). After group identification, the average length of stay (LOS), cost, and median differences between groups were assessed thru Kruskal-Wallis method. A significance level of 5% was adopted. RESULTS: The average cost per length of stay the day was BRL 7,553.9, and 10,064.4 for BE and SE valve respectively. The cost per patient was BRL 220,384 (95%CI BRL 152,464- 288,308) and BRL 238,410 (95%CI BRL 202,031 – BRL 274,789) for BE and SE valve respectively (include of cost with valve). The treatment with BE valve represented 32% of economic saving comparing with SE valve, which was statistically significant (p = 0.0001). When analyzed by patient with high vs low risk of mortality and inoperable patients undergoing TAVI, the use of a balloon-expandable valve should save value than use of a self-expandable valve. It could be attributed with the clinical complications, which should be tested in future economic and clinical data.

PM17
BURDEN DISEASE OF AORTIC STENOSIS ASSOCIATED IN PATIENTS UNDERGOING TRANSCATHETER AORTIC VALVE REPLACEMENT
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OBJECTIVES: To estimate the cost and length of stay (LOS) of aortic stenosis (AS) with transcatheter aortic valve replacement (TAVR). METHODS: An administrative claims database containing over 18 million lives (ORIZON, Brazilian Private Health Care, Fee-for-service) was assessed (from jan/2015 until dec/2016), of patients who underwent a transcatheter aortic valve replacement (n=84). Records showed expenditure with material, tax, procedures, medication and diagnostics. The average and median with confidence interval of 95% was adopted. RESULTS: 84 patients made use of TAVI and had an average of 14.2 days (12.8 to 15.7) in ICU post-TAVR. This was significantly higher for inoperable and high-risk patients). The average cost per patient was BRL 231,972 (include the valve and complications), the cost per day was BRL 9,896 (IC5% 5,579 14,213), and the median LOS was 16 days. Almost 55% of cost were related with other expenses (tax, procedure, others materials and medications. CONCLUSIONS: Most of the treatment cost were not related with Device for this reason the avoidance clinical complications should improve the LOS and cost treatment of TAVR for high-risk and inoperable patients.
costs for 0.69%, and capital costs for 0.47%. CONCLUSIONS: National public reimbursement from the psychiatric hospital district in psychiatric patients with direct costs of 3.9% of the hospital budget. After the intervention, the majority of the hospital costs were funded by the State. The median number of diary per patient was 3.5. Then, the majority of hospital costs was funded by the State. CONCLUSIONS: The present study identified portable coagulometers as the dominant alternative for the monitoring of INR in patients under oral anticoagulation treatment (Warfarin). This is due to the fact that portacollagulators, compared with hospital care, significantly reduces the costs of monitoring, thrombotic events and disability. While 6 minor hemorrhages and 12 thrombotic events are avoided per 100 patients treated with the present study identified portable coagulometers, the cost-effectiveness of 5% medicated patch compared with placebo for the treatment of CRRT or IRRT when compared with CRRT can be considered a dominant therapy, that is, it offers better outcomes and lower total treatment costs, under the perspective of the private healthcare system in Brazil.

PMD2

COST-EFFECTIVENESS STUDY OF THE USE OF PORTABLE COAGULOMETERS FOR THE INR CONTROL, IN COMPARISON WITH HOSPITAL CARE, IN PATIENTS WITH COAGULATION DISORDERS, UNDER THE CONTEXT OF THE MEXICAN PUBLIC HEALTH SETTING

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OBJECTIVES: To evaluate the cost-effectiveness of 5% medicated patches compared with pregabalin or gabapentin in patients with post-herpetic neuralgia (PHN) and diabetic polyneuropathy (DPN) in Colombia. METHODOLOGY: A Markov model was constructed for clinical outcomes, quality of life, and total costs; the analysis was generated a tornado diagram, and a two-way deterministic one considering the two key uncertainty parameters in the model. A sensitivity analysis was performed: a one-way, which...
performed from the third-party payer perspective, with a time horizon of 6 months, including patient and society perspective. The data was inferred in Brazilian pesos (BRL) in 2016 using official sources. The measure of effectiveness was estimated by QALYs. Univariate sensitivity analysis, changing 6 key parameters, was performed. RESULTS: In the baseline scenario, monotherapy and combination therapy showed similar clinical advantages with an ICER of R$3,103.66 per QALY gained. These results are similar in the case of DPN management, where the highest ICER was R$4,988 per QALY gained. When the univariate sensitivity analysis was performed applying variations to the time horizon, number of patients, utilities, and cost items, the results appeared to be consistent, given that in the range of scenario presented a low-potential present a higher ICER than those considered in the previous scenario. The results of the probabilistic sensitivity analysis, in 1000 iterations, showed an ICER of R$3,763.11 per major event avoided. The incremental cost of the Knee implants standardization model was R$3,013.66 the main drive of cost reduction from a Renal Therapy Services (RTS) internal registries, meta-analysis and a large retrospective cohort study to the fitted CRRT estimates in order to determine the proportion of dialysis dependence among CRRT and IRRT survivors. Local costs were estimated from internal RTS sources. We conducted one way deterministic sensitivity analysis based on a range of differences for daily implementation cost between CRRT and IRRT and range of risk ratios for dialysis dependence for CRRT as compared with IRRT. RESULTS: CRRT was associated with QALY gaining compared with IRRT (1.052 versus 1.037). Despite higher upfront costs for CRRT in the ICU ($1,900,000 for CRRT versus $1,680,000 for IRRT), the 5-year total cost including the cost of dialysis dependence was lower for CRRT ($17,500,000 for CRRT versus $16,200,000 for IRRT on average). The base case incremental cost-effectiveness analysis showed that CRRT dominated IRRT. This dominance was confirmed by extensive sensitivity analysis. CONCLUSIONS: Initial CRRT is cost-effective compared with initial IRRT by reducing the rate of long-term dialysis dependence among critically ill AKI survivors.
OBJETIVOS: determinar el índice beneficio-riesgo para líquidos dializantes (LD) en pacientes en hemodiálisis en Perú. \textbf{MÉTODOS:} desarrollamos un análisis multicéntrico en base a los beneficios y riesgos de dos LD: con buffer citrato (LC-D) y con buffer acetato (LA-D) en pacientes diálisis. Los beneficios del uso de LC-D incluían: reducción en la incidencia de hipotensión, 

RESULTADOS: los valores p para los LD fueron 0.02 para LC-D y 0.10 para LA-D. \textbf{CONCLUSIONS:} este estudio sugiere que el uso de LC-D es seguro y eficaz.

\section*{MEDICAL DEVICE/DIAGNOSTICS – Health Care Use & Policy Studies}

\textbf{PMD35} \textbf{SPIROMETRY OF LUNG FUNCTION EVALUATION IN STONE CRUSHING WORKERS, QUETTA, PAKISTAN}


University of Balochistan, Quetta, Pakistan, 2Bolan Medical Complex Hospital, Quetta, Pakistan

\textbf{OBJETIVOS:} determinar el índice beneficio-riesgo para líquidos dializantes (LD) en pacientes en hemodiálisis en Perú. \textbf{MÉTODOS:} desarrollamos un análisis multicéntrico en base a los beneficios y riesgos de dos LD: con buffer citrato (LC-D) y con buffer acetato (LA-D) en pacientes diálisis. Los beneficios del uso de LC-D incluían: reducción en la incidencia de hipotensión, 

RESULTADOS: los valores p para los LD fueron 0.02 para LC-D y 0.10 para LA-D. \textbf{CONCLUSIONS:} este estudio sugiere que el uso de LC-D es seguro y eficaz.

\section*{MEDICAL DEVICE/DIAGNOSTICS – Health Care Use & Policy Studies}

\textbf{PMD36} \textbf{OUTCOMES IN CONTACT FORCE TECHNOLOGY USE FOR CARDIAC ABLATION – ROLE OF PROCEDURE VOLUME}


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\textbf{OBJETIVOS:} examinar el efecto del hospital de ThermoCool SmartTouch® Catheter en pacientes con arritmia fibrilatoria (AF) undergoing ablation using this device. \textbf{MÉTODOS:} un estudio de cohorte retrospectivo de pacientes de 18 años de edad con un diagnóstico de AF durante el periodo de enero de 2014 a junio de 2016. Se utilizó para el análisis de los datos un modelo de supervivencia de Breslow. Se usó el modelo de regresión de Cox para el análisis de los resultados. Todos los análisis se realizaron para comparar la eficacia del tratamiento con ThermoCool SmartTouch® Catheter en comparación con el tratamiento convencional. Se calcularon las tasas de recurrencia y las tasas de mortalidad en función del volumen de procedimiento. 

RESULTADOS: el modelo de regresión de Cox demostró que el volumen de procedimiento no tenía un efecto significativo en la tasa de recurrencia o en la tasa de mortalidad. Se puede concluir que el uso de ThermoCool SmartTouch® Catheter para el tratamiento de AF es seguro y eficaz. \textbf{CONCLUSIONES:} este estudio confirma la eficacia y seguridad del uso de ThermoCool SmartTouch® Catheter para el tratamiento de AF. El volumen de procedimiento no tiene un efecto significativo en la tasa de recurrencia o en la tasa de mortalidad. Se puede concluir que el uso de ThermoCool SmartTouch® Catheter para el tratamiento de AF es seguro y eficaz.
ongoing strategy and the way it is affected by the entrance of new inmates over 40 years of age. The model also allows to simulate the implementation of an entry point screening strategy and the treatment of the detected cases. The model includes seven compartments or disease stages: susceptible, incubation, primary, secondary, latent, and tertiary, and immunity period. The individuals transit from susceptible to infected and subsequently to symptomatic cases with a transmission rate and the number of sexual partners, and then continues the natural history of disease according to the duration of the different stages, the detection rate and the treatment effectiveness. The parameters used are obtained from systematic searches of indexed and gray literature and field observation.

RESULTS: In the current situation, with no established program for the search of the infection (only upon spontaneous consultation or as a unexpected finding), less than 30% of the cases are detected and treated once in the latent stage, the prevalence of symptomatic cases is about 5%. On the other hand, the implementation of an entry screening program using point-of-care rapid test, assuming 90% coverage, would reduce the prevalence to near 1%.

CONCLUSIONS: The present study shows the potential impact of implementing an entry screening program (hysteroscopy in the primary stage and radical pelvic lymphadenectomy in the secondary stage) on the reduced risk population with limited access to health care, such as prisoners. Considering the low cost and simple application of rapid test, a following step should be to assess the cost effectiveness of strategies based on these tests in a hard to reach population.

OBJECTIVES: This study aims to describe the clinical advantages of using ultrasonic technology versus conventional electrosurgery. There was an oncology procedure, required to perform peroperative and postoperative complications in surgical staging, including lymphadenectomy. METHODS: An Ovarian Embryo/Medline, Scopus and PubMed search were conducted using keywords such as harmonic, ultrasonic, ultracision, surgical stabilization, meta-analysis, and other publications related to gynecologic surgery, genital neoplasms (female), hysterecomy, myomecytoma, adenoma, cervix, carcinoma, neoplasm, tumor and malignancy. Results were limited to publications of human subject studies, in English from January 2006 to October 2016. Studies comparing ultrasonic technology to conventional electrosurgery for GYN oncology were selected. All abstracts were filtered, including meta-analysis, RCTs, retrospective observational studies. Case studies and review articles were excluded. RESULTS: We found nine studies (one prospective and three retrospective cohort reviews) were identified from France, Italy, Czech Republic and Qatar for para-aortic lymphadenectomy or surgical staging as part of concomitant laparoscopic hysterectomy (harmonic scalpel). No comparative studies with harmonic ultrasound were found. All studies describing ultrasonic technology demonstrate significant benefits over conventional technologies in gynecologic oncology surgery. Intra-operative peritoneal leaks are reduced by 76% (from 14% to 3%, p=0.006), blood loss during surgery is reduced to 54% (from 75.4 cm3 to 34.7 cm3, p<0.01), operative time for tissue excision is up to 18% less (from 142 min to 117 min, p<0.05), at most 32% additional lymph nodes are harvested (from 13.7 to 18.1, p<0.001) and up to 100% reduction in lymphocele leaks post-operative that require treatment (from 7 to 0, p=0.03).

CONCLUSIONS: Although a limited number of clinical studies evaluating ultrasonic technology for GYN oncology exist, current studies show that ultrasonic technology demonstrates significant patient benefits compared to conventional electrosurgery techniques. Benefits, however, need to be confirmed in prospective randomized trials.
DISEASE: SPECIFIC STUDIES, CANCER – Clinical Outcomes Studies

PCN1

ADDING RAMUCIRUMAB TO SECOND- LINE IRINOTECAN, 5-FUOROURACIL AND FOLINIC ACID (FOLFIRI) TREATMENT FOR METASTATIC COLORECTAL CARCINOMA (mCRC): RESOURCE UTILIZATION DATA FROM RAISE, A GLOBAL, RANDOMIZED, PLACBO- CONTROLLED, MULTICENTER STUDY

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**Objectives:** To present secondary resource utilization data from the RAISE study for patients with mCRC treated with ramucirumab + FOLFIRI vs placebo + FOLFIRI. **Methods:** Resource utilization data were collected at each cycle until 30 days after treatment discontinuation. **Results:** A total of 1,072 patients were eligible for safety and resource utilization analyses. There were 31.5% vs 32.2% patients with grade 3-4 adverse events (AEs) and grade 3-4 AEs such as febrile neutropenia or hypertension, in ramucirumab + FOLFIRI vs placebo + FOLFIRI. **Conclusions:** When compared to placebo + FOLFIRI, ramucirumab + FOLFIRI was associated with fewer grade 3-4 AEs, shorter hospital stay, lower cost, and need for noninvasive ventilation after extubation.

**Disclosure:** This is a company-sponsored trial.}

PCN2

EFFICACY AND COST-EFFECTIVENESS OF SECOND- LINE CHEMOTHERAPY IN ELDERLY PATIENTS WITH ADVANCED GaSTRIC CANCER

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**Objectives:** Second-line chemotherapy has been shown to benefit patients with advanced gastric cancer (AGC). This study aimed to assess the efficacy and cost-effectiveness of second-line treatment for elderly patients with AGC. **Methods:** Medical records and follow-up information of elderly patients (≥70 years) with AGC who received second-line chemotherapy were collected. A Markov model comprising three health states (FOLFIRI, palliative chemotherapy, and death) was developed to simulate the process of AGC. Cost was calculated from the perspective of the Chinese society. Sensitivity analyses were applied to explore the impact of essential variables. **Results:** Forty-three elderly patients with AGC receiving second-line chemotherapy were included in our study. The median OS was 6.0 months, median PFS was 3.1 months, and median OS was 3.1 months. Treatment with second-line chemotherapy was initially associated with increased costs by $1,980.82 compared with best supportive care (BSC), but there was no quality adjusted life year (QALY) gain. Thus, the incremental cost-effectiveness ratio was $29,231.21/QALY for second-line chemotherapy versus BSC, which was below the threshold of $36k per capita GDP of China, $23,970.00. The Utility score for QALY state and FD state were the most influential factors to the cost-effectiveness of second-line chemotherapy as a strategy for elderly AGC patients in China from the efficacy and cost-effectiveness perspective.

**Disclosure:** This study was supported by grants from the Natural Science Foundation of China (81773254).}

PCN3

INTRACORPOREAL VERSUS EXTRAOFICAL ANASTOMOSIS IN LAPAROSCOPIC RIGHT HEMICOLOCTOMY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Objectives:** The objective of this study was to compare the intracorporeal anastomosis (IA) and the extracorporeal anastomosis (EC) in the right laparoscopic hemicolectomy. **Methods:** A systematic review was performed in Pubmed, Embase, Scopus and Web of Science, identifying studies comparing the outcomes between IA and EC in laparoscopic right hemicolectomy. **Results:** A total of 143 records were included. **Conclusions:** IA was associated with lower length of stay, shorter time to recovery, lower blood loss, shorter hospital stay, faster intestinal function recovery and lower blood loss, although there was no difference in the overall morbidity.

**Disclosure:** This study was supported by grants from the Fundação de Amparo à Pesquisa do Estado do Rio Grande do Sul (FAPERGS) and Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (Capes).}

PCN4

ANALISSE DA QUALIDADE DA EVIDÊNCIA CIENTÍFICA ENTRE XELOX E FOLFOX NO TRATAMENTO DO CÂNCER COLORRETAL

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**Objectives:** To assess the quality of evidence from clinical trials comparing XELOX and FOLFOX in patients with advanced colorectal cancer (ACC). **Methods:** A systematic review and meta-analysis were performed in Medline, Embase and Web of Science, between January 1995 and December 2015. Two independent reviewers extracted data from all published studies. The risk of bias was assessed according to the Cochrane Collaboration tool, and the quality of evidence was evaluated according to the Grades of Recommendation, Assessment, Development and Evaluation (GRADE) approach. **Results:** A total of 19 studies with 1,787 patients were included. The overall quality of evidence was low. XELOX was associated with a higher rate of grade 3-4 febrile neutropenia (38.4% vs 23.3% [p < 0.0001]) and hypertension (10.8% vs 5.6% [p < 0.0001]). The analysis of cost-effectiveness was not performed due to the low quality of evidence. **Conclusions:** XELOX is associated with higher rates of grade 3-4 febrile neutropenia and hypertension compared to FOLFOX. Further studies with a higher quality of evidence are needed to improve the quality of evidence and assess the cost-effectiveness of XELOX.

**Disclosure:** This study was supported by the Portuguese Society of Medical Oncology - SPOMO and European School of Medical Oncology - ESMO.}

PCN7

CETUXIMAB IN THE TREATMENT OF mCRC LIVER LIMITED DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Objectives:** The combination of cetuximab and chemotherapy or radiation therapy has been studied in liver-limited disease. This study aimed to evaluate the efficacy and safety of cetuximab in the treatment of colorectal cancer with liver metastases. **Methods:** A systematic review and meta-analysis were performed in Medline, Embase and Web of Science, between January 2006 and December 2015. **Results:** A total of 18 studies with 942 patients were included. Cetuximab increased the overall survival (OS) and progression-free survival (PFS) compared to chemotherapy alone (HR = 0.69, 95% CI: 0.51-0.95; HR = 0.63, 95% CI: 0.46-0.87, respectively). The incidence of grade 3-4 adverse events was higher in the cetuximab group compared to the chemotherapy group (HR = 1.95, 95% CI: 1.29-2.95). **Conclusions:** Cetuximab in combination with chemotherapy is an effective and safe treatment option for patients with mCRC liver limited disease. Further studies are needed to evaluate the long-term outcomes and cost-effectiveness of cetuximab in this setting.

**Disclosure:** This study was supported by grants from the Brazilian National Council for Scientific and Technological Development (CNPq) and the Brazilian Ministry of Health (MS).
of cetuximab plus FOFLIX/FOLOX as conversion therapy for RAS wild type (wt) patients with mCRC, liver-limited disease. METHODS: A systematic review was conducted until December 2016 through Cochrane Central Register of Controlled Trials, The Cochrane Library, MEDLINE, LILACS and CRD. Two investigators independently selected and reviewed meta-analyses, systematic reviews, clinical trials and economic evaluations involving patients with RASwt mCRC with liver-limited disease in the first-line treatment with cetuximab. RESULTS: Three studies met the eligibility criteria. All of them reported that patients treated with cetuximab + chemotherapy presented a higher OS compared to chemotherapy alone. Conversion rates for resection of hepatic metastases were 40% ± 19.2% for the cetuximab + group with a median time to progression was 14.1 months (CI 95%: 1.3-30.8 months). CONCLUSIONS: The three articles included in this systematic review provide additional evidence indicating that the use of cetuximab with cytotoxic chemotherapy plus FOFLIX/FOLOX causes early tumor reduction, being a potential predictor of survival outcomes in patients with RASwt mCRC with liver-limited disease.

PCN6 EVALUATING ACCESS TO TREATMENT: A COMPARISON OF THE EXPECTED NUMBER OF PATIENTS WITH METASTATIC COLORECTAL CANCER (mCRC) TO THOSE EFFECTIVELY TREATED IN THE BRAZILIAN PUBLIC HEALTHCARE SYSTEM

Kam HS, Fakham I.

OBJECTIVES: Access to cancer treatment is of great importance in potentially serious conditions such as cancer. Therefore, identifying access gaps in the Brazilian public healthcare system (SUS) could lead to the understanding of where and why they are occurring, potentially increasing the number of treated patients. The objective of this study was to compare the expected number of treated cancer patients with colorectal cancer (mCRC) patients in SUS to the effectively treated, and to measure where the major differences were occurring and how those discrepancies varied through time. RESULTS: A systematic review was conducted using the Observatório do Câncer (OBC) in 2016 to identify the number of effectively treated patients who underwent first line treatment (1L) of mCRC were collected from Datasus from 2008 to 2016. It was assumed that the patients received treatment for less than a year, considering the median progression free survival from the chemotherapy arm of clinical trials, which resulted in the total number of patients not being cumulative through the years. Expected number of patients was calculated through an epidemiological approach, starting from the projected Brazilian population (2008-2016) all the way to the eligible population, applying the incidence of CRC, mCRC rate and patients who have access to the SUS. Results were evaluated to the whole country and states to identify where the major gaps were occurring. RESULTS: Number of patients being treated by SUS increased in more than 166% from 2008 to 2016 (4,700 to 12,252, respectively), while the number of expected patients, based on the patient flow, increased 30% (10,097 to 13,116, 2008 and 2016, respectively). Overall, the gap between potential and expected patients is decreasing steadily, from 53% potentially not treated, in 2008, to just 5% in 2016. States showing major gaps in 2016 were São Paulo state and presented 86.21% (80.12% - 92.29). Hospitalization for patients ≥60 years old represented 86.21% (80.12% - 92.29). Hospitalization for patients ≥60 years old, a fact that marks a significant burden. CONCLUSIONS: There are two publicly available claim database systems in Brazil for reporting health assistance-related resource utilization in SUS: the Hospital Information System (SIA) and the Brazilian National Cancer Institute (INCA). There is no deterministic record key for linking these databases, therefore a record linkage methodology was performed to link data from both systems and identify women who underwent ovarian cancer cession and had a tumor recurrence in another site within a one-year period. The timeframe of the analysis stands between the beginning of 2014 until the end of 2016. RESULTS: Out of 2,629 patients identified who underwent ovarian cancer cession in 2014, 175 (6.7%) had a recurrence in another site within one year after the surgery. Among those recurrent women, 49 (22.3%) has no report of the site recurrence. Out of the 136 women of whom the site recurrence information is available, 3 had the recurrence in multiple sites. The most frequent reported site was the rectus (52.0% of women), followed by other gynecological sites (22.3%) and peritoneal and pericolic sites (9.1%). In the 100% of LNH recurrent/refractory, the most frequent sites reported including kidney (3.7%), gallbladder (2.9%) and rectosigmoid junction (2.9%). CONCLUSIONS: It is possible to identify the most likely sites of cancer recurrence through Datasus databases. Most of ovarian cancer relapses, besides those occurring in the ovary itself, occur in the rectus in women who undergo tumor recension in the Brazilian public healthcare system.

PCN10 PATIENT AND TUMOR PROFILES IN THE BRASILIAN PRIVATE SETTING: DATA FROM THE AUDITRON CLAIMS DATABASE

Chen HH, Fakham I.

OBJECTIVES: Cancer is an essential factor in decision-making, they remain scarce in Brazil. Several real world databases are available in the entry, most of them from the public setting. Conversely, few databases from the private setting are currently available, hampering the development of real world studies in the private scenario, which represents more than 47 million people. The aim of this study is to describe cancer profile in the Auditron database, an auditing claims database of the private setting. METHODS: We reviewed all cancer-related (chemotherapy and supportive treatment) prescriptions in the Auditron claims data from October 2011 to February 2017. Descriptive analyses were performed for the main characteristics of the patients and tumors. RESULTS: We identified 39,224 cancer-related prescriptions in 13,780 patients in the whole period. Most of the patients were women (59.6%) aged >60 years with mean ± SD weight and height 69.7±16.6 Kg and 1.63±0.15 m, respectively. The majority of patients were treated in São Paulo state and presented stage IV cancer (26.5%), followed by stage III (16.6%), II (13.7%) and I (10.5%). Most common types of cancer were breast cancer (30.1%, n=4,148), prostate cancer (10.8%, n=1,077) and lung cancer (6.3%, n=606). Regarding treatment intention, 31.4% were palliative, 5.8% were curative and 26.1% were adjuvant. CONCLUSIONS: This study describes the profile of oncologic patient in Auditron database, few studies described prostate cancer profile in Brazil also the most prevalent, corroborating data from the Brazilian National Cancer Institute (INCA). Therefore, to comprehend the patient profile in the private setting it is important to plan health policies and healthcare use that are specific in some kinds of tumors.

PCN11 ANALYZING OVARIAN CANCER RECURRENCE AFTER TUMOR RESSECTION IN OTHER SITES THROUGH THE BRAZILIAN PUBLIC HEALTHCARE CLAIM DATABASES (DATASUS)

Rosim RF, Campos DF, Duva AS, Hirsh WA, Balallai Ferraz AF

OBJECTIVES: It is known that 60% to 85% cases of ovarian cancer are expected to occur after treatment. The goal of this study is to analyze the frequency of ovarian cancer recurrence in other sites besides the uterus in women who underwent surgery in the Brazilian public health care system in the last 10 years. METHODS: There are two publicly available claim database systems in Brazil for reporting health assistance-related resource utilization in SUS: the Hospital Information System (SIA) and the Brazilian National Cancer Institute (INCA). There is no deterministic record key for linking these databases, therefore a record linkage methodology was performed to link data from both systems and identify patients who underwent ovarian cancer cession and had a tumor recurrence in another site within a one-year period. RESULTS: Out of 2,629 patients identified who underwent ovarian cancer cession in 2014, 175 (6.7%) had a recurrence in another site within one year after the surgery. Among those recurrent women, 49 (22.3%) has no report of the site recurrence. Out of the 136 women of whom the site recurrence information is available, 3 had the recurrence in multiple sites. The most frequent reported site was the rectus (52.0% of women), followed by other gynecological sites (22.3%) and peritoneal and pericolic sites (9.1%). In the 100% of LNH recurrent/refractory, the most frequent sites reported including kidney (3.7%), gallbladder (2.9%) and rectosigmoid junction (2.9%). CONCLUSIONS: It is possible to identify the most likely sites of cancer recurrence through Datasus databases. Most of ovarian cancer relapses, besides those occurring in the ovary itself, occur in the rectus in women who undergo tumor recension in the Brazilian public healthcare system.
**PCN14**
**ANÁLISE DE IMPACTO ORÇAMENTÁRIO DO CRIZOTINIBE NO TRATAMENTO DO CÂNCER DE PULMÃO NÃO PEQUENAS CÉLULAS AVANÇADO ALK-POSITIVO A SOBRE A PERSPECTIVA DE SISTEMA PRIVADO DE SAÚDE BRASILEIRO**

**OBJETIVOS:** Avaliar o impacto orçamentário do crizotinibe no tratamento do câncer de pulmão não pequenas células avançado ALK-positivo (CPCRm). Nos últimos anos, a incorporação do crizotinibe na prática clínica brasileira tem apresentado resultados promissores.

**MÉTODOS:** Foi realizado um estudo de caso-controle longitudinal, comparando pacientes que receberam o crizotinibe versus os que receberam outras opções terapêuticas. A análise considerou o impacto orçamentário, incluindo custos diretos com medicamentos e custos indiretos. A estimativa foi feita considerando um horizonte de tempo de três anos.

**RESULTADOS:** O custo médio por paciente para o crizotinibe foi de R$ 19.053,71. Aplicando o mesmo cenário para o axitinibe, o custo de R$ 505.120,55, que considerando um cenário de uso, do crizotinibe, um custo de R$ 501.186.794,00, enquanto os custos em R$ 510.389.071,00, R$ 516.682.129,00, R$ 522.877.978,00 e R$ 528.897.808,00, respectivamente. As estimativas de pacientes com CPCRm foram de 4.051, 4.088 e 4.125, enquanto as estimativas de pacientes com CRPM foram de 5.607, 5.646, 5.684, 5.721 e 5.756, respectivamente.

**CONCLUSÕES:** A incorporação do crizotinibe no tratamento do câncer de pulmão avançado ALK-positivo tem mostrado resultados promissores em termos de impacto orçamentário. No entanto, é importante considerar os custos a longo prazo e explorar alternativas terapêuticas.

**PCN17**
**ECONOMICAL EVALUATION OF THE CHANGE FROM AN OPPORTUNISTIC CYTOLOGICAL SCREENING PROGRAM TO AN ORGANIZED SCREENING IN CATALONIA, SPAIN**

**MÉTODOS:** Realizar uma análise de crizotinibe no tratamento do câncer de pulmão avançado ALK-positivo (CPCRm). Nos últimos anos, a incorporação do crizotinibe na prática clínica brasileira tem apresentado resultados promissores.

**RESULTADOS:** O custo médio por paciente para o crizotinibe foi de R$ 19.053,71. Aplicando o mesmo cenário para o axitinibe, o custo de R$ 505.120,55, que considerando um cenário de uso, do crizotinibe, um custo de R$ 501.186.794,00, enquanto os custos em R$ 510.389.071,00, R$ 516.682.129,00, R$ 522.877.978,00 e R$ 528.897.808,00, respectivamente. As estimativas de pacientes com CPCRm foram de 4.051, 4.088 e 4.125, enquanto as estimativas de pacientes com CRPM foram de 5.607, 5.646, 5.684, 5.721 e 5.756, respectivamente.

**CONCLUSÕES:** A incorporação do crizotinibe no tratamento do câncer de pulmão avançado ALK-positivo tem mostrado resultados promissores em termos de impacto orçamentário. No entanto, é importante considerar os custos a longo prazo e explorar alternativas terapêuticas.

**PCN18**
**QUIMIODIÁSTÉRÓPICOS ORAIS NO TRATAMENTO DE SEGUNDA LINHA DO CÂNCER DE CÉLULAS RENAISS: COMPARAÇÃO DE CUSTOS E PERFIL DE REAÇÕES ADVERSAS**

**OBJETIVOS:** Comparar os custos e eventos adversos (EA) do erlotinibe, sorafenibe e axitinibe no tratamento de segunda linha de pacientes com câncer de mama em estádio avançado.

**MÉTODOS:** Foram utilizados dados de base de dados de casos públicos e privados, com foco em combinar os custos diretos e indiretos. A análise considerou custos médios por paciente, utilizando custos de medicamentos, custos de cuidados de saúde e custos de hospitalização.

**RESULTADOS:** Os custos médios por paciente foram semelhantes entre os três fármacos, com valores de R$ 12.035,61, R$ 12.084,57 e R$ 12.107,49, respectivamente. A prevalência de eventos adversos foi semelhante entre os três fármacos, com valores de 3%, 4% e 5%, respectivamente.

**CONCLUSÕES:** Os quimiodiásterópicos orais são uma opção efetiva e segura de tratamento para câncer de mama em second-line. No entanto, é importante monitorar os custos e eventos adversos para gerenciar efetivamente o gasto e melhorar a qualidade de vida dos pacientes.
resultando em uma diferença de R$ 159.830,34 quando comparado ao everolimo. Como consequência, a custo incremental foi de R$ 23.382,00. Dados da literatura que compararam axitinibe e sorafenib quanto aos custos diretos de tratamento, a síndrome mão-pé, 6% versus 17% e maior chance de desenvolver hipertensão, 17% versus 12% (Motzer et al, 2013). Para a síndrome versus placebo, a principal preocupação com EAs grau 3, demonstrou que os pacientes que usaram o primeiro tem menor chance de desenvolver. A síndrome mão-pé, 6% versus 17% e maior chance de desenvolver hipertensão, 17% versus 12% (Motzer et al, 2013). Para a síndrome versus placebo, a principal preocupação com EAs grau 3, demonstrou que os pacientes que usaram o primeiro tem menor chance de desenvolver.

ANÁLISIS COMPARATIVO DE COSTOS ENTRE TRASTUZUMAB PARA PCN20

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OBJECTIVES: Estimar os custos diretos do tratamento de pacientes com câncer de mama sob a perspectiva de uma operadora de planos de saúde (OPS) de Fortaleza, referente à adição de pertuzumabe com R$ 1.578.994,71 e paclitaxel c/ R$ 1.280.698,16. A radioterapia foi utilizada por 206 pacientes gerando um custo médio de aproximadamente R$ 159.830,34.

PCN23

RESOURCE UTILIZATION AND TREATMENT OF PATIENT WITH HEPATOCELLULAR CARCINOMA – A MICROCOSTING ANALYSIS

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OBJECTIVES: The main objective of this study is to verify the total cost of health care to the patient with hepatocellular carcinoma. METHODS: A prospective cohort study was conducted to evaluate all the patients with hepatocellular carcinoma, attended at The Cancer Institute of Sao Paulo and Clinics Hospital of Sao Paulo School of Medicine, from January 2012 to December 2013. The resource utilization was summed and multiplied by each unit cost, resulting in a total cost of R$ 411,491.17 and represented 30.19% of total spending in this study.

Of these, 54 were male patients (67.5%) and 26 were female patients (32.5%). The average age was 58 ± 9.5 years and a follow-up time of 337.9 ± 211.9 days. The total cost of health care with hepatocellular carcinoma was R$ 1,280,698,16. Outpatient costs were $ 411,491.17 and represented 30.19% of total spending in this study. The cost of hospitalization amounted to US$ 920,700,17 and represented 69.11% of the total cost for patients with hepatocellular carcinoma. The mean cost per patient was US$ 16,246.24±13,349.19. The hospitalization costs were US$ 12,967,612±13,737,14 and the outpatient costs was US$ 5,018,184,391.97. The highest costs were related to procedures such as Radio-Frequency Ablation (RFA) (US$ 6,959,396±6,015,66), Trans-Arterial Chemo Embolization (TACE) (US$ 2,455,855±660,60), and medicines (US$ 8,876,974±9,926,22), human resources (US$ 5,589,48±9,330.33), image exams (US$ 2,679,77±3,176,22) and blood components reposition (US$ 2,472,34±9,595,53).

CONCLUSIONS: The cost of the patient with hepatocellular carcinoma on the waiting list for liver transplantation is high and increases according to the use of costly procedures and hospitalization. Procedures related to the treatment of the patient with hepatocellular carcinoma, the use of blood components and main hospitalizations increases the costs of patient care in the list.

PCN24

The burden of urothelial carcinoma for the Brazilian public health system: a national retrospective analysis from 2013 to 2016

Chabrol Haas L, Peixoto RB, Coutinho MB, Serra FB

OBJECTIVES: According to data from the National Cancer Institute of Brazil, there were 9,670 new cases of bladder cancer in 2016 (7,200 men and 2,470 women), that corresponds about 6% of all the new cancers. The objective of this study is to evaluate the burden of potential hospitalizations by urothelial carcinoma that could result in substantial costs in Brazil, from the public healthcare perspective (Unified Health System – SUS).

METHODS: A retrospective analysis of Brazil public hospital admission was carried out to the urrothelial carcinoma was developed according to ICD-10 classification (C67 to C68) in all states, as reported in Brazilian Hospital Information System (SIH/DATASUS) database from January 2013 to December 2016. RESULTS: Hospital admissions by urothelial cancer were 13,666, 14,833, 15,725 and 13,510 in 2013, 2014, 2015 and 2016, respectively, an increase of 19% from 2013 to 2016. In the entire period evaluated, admissions of elderly (older than 60 years) were the most frequent, with 74% of the total. In addition, men were the majority, with 2.38 times more admissions for men than women. There were 4,311 deaths for the period. The total admissions cost was 120,108,156 BRL. There has also been an annual growth trend in total costs with hospital admissions. Mean cost per admission was 1,990 BRL over the years.

CONCLUSIONS: The total cost of urothelial carcinoma has increased significantly since 2013, due to the aging population and increasing demand for treatment. The perspective was the health service.

RESULTS: It was obtained all the costs of
82 patients followed by 24 months. The highest cost was found in the patients with MELD >20; MELD = 10-15 (54.9%); MELD >15 (20.5%); while the MELD ≤ 10 was 17.4%. Results were sensitive to changes in percentage complication and length of stay.

**Conclusions:** The cost was based on drug acquisition and adverse events cost. Drug acquisition cost was the product of total cost of treatment multiplied by the NNT. The study aimed to provide incremental cost-effectiveness ratios (ICER) were reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effectiveness ratio (ICER) was reported as BRL per quality-adjusted life year (QALY) and to estimate the cost-effective
PCN3
INHIBITORS OF Tirosin Kinase in Chronic Mieloid Leukemia: Cost-Effectiveness Analysis
1Universidad de Concepcion, Concepcion, Chile, 2Facultad de Farmacia, Universidad de Concepcion, Concepcion, Chile
OBJECTIVES: The Chilean national health service does not have an official recommendation regarding the initiation of pharmacological treatment in patients with Chronic Myeloid Leukemia (CML). First and second-generation tyrosine kinase inhibitors (TKIs) are used indistinctly with a high associated cost for the public health care system. The aim of this study is to establish the most cost-effective option in these patients. METHODS: Markov models were designed based on information obtained from clinical trials. Initial treatments of CML with first-generation TKI (imatinib) were treated for 5 and 10 years simulations. We suggest that second-line drugs be reserved for when the patient does not respond appropriately to the first-generation drug.

RESULTS: Neither of the second-generation drugs (dasatinib and nilotinib) were cost-effective compared to the first-generation drug (imatinib) at time horizons of both 5 and 10 years. The incremental cost-effectiveness ratio (ICER) at 10 years in the deterministic simulation was CLP $370,770,521 / QALY (dasatinib versus imatinib) and CLP $85,543,684 / QALY (nilotinib versus imatinib). Both options are clearly dominated by the first-generation drug.

CONCLUSIONS: Both dasatinib and nilotinib are not cost-effective compared to imatinib in 5 and 10 years simulations. We suggest that second-line drugs be reserved for when the patient does not respond appropriately to the first-generation drug.

PCN3
ACCUMULATED TREATMENT COST OF NEW THERAPIES IN MULTIPLE MYELOMA: COMPARING THE COMBINATION OF DARATUMUMAB, BORTEZOMIB AND DEXAMETHASONE WITH CARFILZOMIB AND DEXAMETHASONE FOR PATIENTS WHO HAVE HAD AT LEAST ONE PRIOR THERAPY IN BRAZIL
Del Rey C, Asano K
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OBJECTIVES: The aim of this study is to determine treatment costs at 1 to 2 years of treatment with first- or second-line Multiple Myeloma patients treated with novel agents combinations: DVd (Daratumumab+Velcade+DEXMETHASONE) vs K2d (Carfilzomib+b-dexamethasone). METHODS: The deterministic model compares accumulated cost parameters based on posology detailed in daratumumab and carfilzomib labels in combinations (DVd and K2d) for treatment of relapsed/refractory Multiple Myeloma for a maximum period of 2 years. Only pharmaceutical acquisition costs (official list price) were considered in the analysis. Costs were calculated in two scenarios: a basecase considering standard evaluation (per vial) and an alternative scenario (per milligram (considering no waste of substance, using price/milligram). One-way deterministic sensitivity analysis was conducted to assess the robustness of the results. RESULTS: Due to the difference in posology, DVd accumulated cost curve starts higher than K2d but it eventually becomes lower after 30 to 32 weeks, as disclosed in results found onbase case (standard evaluation per vial), that from week 30 and on K2d becomes more expensive than DVd, and on alternative scenario (per milligram) at some time of is on week 9. After one year of treatment, in our basecase scenario DVd costs reached R$ 596,355 while K2d reached R$ 829,416. In the alternative scenario the costs were R$33,873 for DVd vs R$ 665,530 for K2d. In two years of analyses, the difference is even higher (total costs 65% to 89% higherfor K2d compared with DVd): R$ 885,300 (DVd) vs R$1,669,598 (K2d) and R$ 812,864 (DVd) vs R$ 1,342,208 (K2d) in the basecase and alternative scenario respectively. This difference in the Esquema is significant and in the second year, week 30, when compared in K2d in the treatment of relapsed/refractory multiple myeloma. Reducing wastage of pharmaceuticals seems to reduce the difference, though it will still range between R$ 131,657 to R$ 29,344 at 1 and 2 years, respectively.

PCN3
TREATMENT SEQUENCING FOR PATIENTS WITH MULTIPLE MYELOMA WITH AT LEAST ONE PRIOR LINE: COMPARING PROGRESSION-FREE SURVIVAL AND COSTS UNDER A PRIvATE PAyER PERSPECTIVE
Asano K, Maisolin A, Martina E
Janssen, Sao Paulo, Brazil, UFF, Rio de Janeiro, Brazil
OBJECTIVES: Daratumumab and carfilzomib are important options recently approved in the treatment of multiple myeloma. The objective of this study is to compare progression-free survival (PFS) and treatment costs of two treatment sequences: daratumumab+bortezomib+DEXMETHASONE (DVd) followed by carfilzomib+dexamethasone (K2d) and the opposite (K2d followed by DVd) under a private payer perspective. METHODS: A deterministic model was developed to estimate PFS and survival and treatment costs of two treatment sequences after front-line failure: DVd followed by K2d, and K2d followed by DVd. Transition probabilities and efficacy data of patients with 1 prior line and ≥ 2 prior lines of the combinations DVd and K2d were drawn from the clinical studies. Cost parameters included drug acquisition costs based on the official list price. PFS of patients with ≥ 2 prior line (F5S1) and progressing 2 prior lines (F5S2) were estimated. One and 2-year probabilities and efficacy data of patients with 1 prior line and progressing 2 prior lines (F5S1) and progressing 2 prior lines (F5S2) were estimated. One and 2-year probabilities and efficacy data of patients with 1 prior line (PFS1) and progressing 2 prior lines (PFS2) were estimated. One and 2-year OS was estimated from the study. The Chilean national health service does not have an official list price) were considered in the analysis. Costs were calculated in two scenarios: a basecase considering standard evaluation (per vial) and an alternative scenario (per milligram (considering no waste of substance, using price/milligram). One-way deterministic sensitivity analysis was conducted to assess the robustness of the results. RESULTS: The estimated direct medical cost of DTC-RAI was COP $ 575,512 in ambulatory patients. The standard cost of the disease progression was COP $ 2,481,336 in outpatient and COP $ 10,958 in inpatient. The probability of non-response in patients on BSC is 0.45 for Best Supportive Care (BSC). The monthly costs of treatments were COP $ 20,510,821 and COP $ 9,138,752 for BSC and Sorafenib, respectively. Treatment with sorafenib resulted in additional gains in terms of effectiveness compared to the BSC option. (0.67 QALYs more than treatment with BSC which reported gains of 1.74 QALYs). Moreover, sorafenib results in cost savings for early pregnancy in COP $ 1,295,596 compared to BSC. CONCLUSIONS: Sorafenib is a treatment that delays disease progression. Also, given its cost savings results, is a potentially cost effective treatment option in patients with DTC-RAI in Colombia.

PCN5
ESTUDIO DE COSTO-EFECTIVIDAD E IMPACTO PRESUPUESTAL DE DENOSUMAB VS. ACIDO ZOLEDRONICO PARA EL MANEJO DE METASTASIS ÓSEAS EN PACIENTES CON CÁNCER DE PROSTATA EN COLOMBIA
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OBJECTIVES: The patients with metastasis óseas (MO) de tumores sólidos con tratamiento de segunda línea en Colombia consideran Denosumab (DR) una opción terapéutica que comparan denosumab vs. ácido zoledrónico para el tratamiento de las MO en pacientes con Cáncer de Próstata, desde la perspectiva del sistema de salud colombiano. METHODS: A model of Markov was utilized, with three states (in treatment, sin tratamiento y muerte), en un horizonte temporal de toda la vida del paciente. Los inputs de eficacia y seguridad se obtuvieron de los estudios clínicos que comparan denosumab vs. ácido zoledrónico para el tratamiento de las MO en pacientes con Cáncer de Próstata. Los costos incluyeron tratamiento, medicamentos, análisis, consultas de enfermería y cirugía. Se realizó un análisis de sensibilidad para las variables más importantes (±30%). RESULTS: Teniendo en cuenta un umbral de 3 PIB per cápita, los resultados para el caso base sugieren que denosumab es una alternativa “altamente costo-efectiva” para la prevención de la osteoporosis en pacientes con cáncer de próstata en Colombia. Denosumab ocasionó una “costo columna” de COP $ 117,970 CO. Los resultados del impacto presupuestal a 5 años, sugieren que denosumab es una alternativa que generaría ahorros al Sistema de Salud Colombiano (Ahorro $159,431,756 COP). CONCLUSIONS: Denosumab es una alternativa “altamente costo-efectiva” para la prevención de Complicaciones Óseas Relacionadas con el esqueleto en pacientes con cáncer de próstata, y es una alternativa que podría generar ahorros al Sistema de Salud Colombiano.

PCN6
COST- EFFECTIVENESS AND IMPACT ON THE BUDGET OF PATIENTS WITH METASTATIC PROSTATE CANCER IN COLOMBIA
Aguirre A1, Guerrero E2
1Colpa SA, Bogota, Colombia, 2Janssen Colombia, Bogota, Colombia
OBJECTIVES: To calculate costs per monthly median overall survival (OS) in chemotherapy-naive patients with metastatic castration-resistant prostate cancer (mCPRC) treated with abiraterone acetate plus prednisone (AA+P) or enzalutamide with prednisone (E+P) in Phase III clinical trials and prescribing information were used to calculate costs per monthly median OS based on ex-factory price (EPF) for patients with mCPRC treated with abiraterone acetate plus prednisone (AA+P) or enzalutamide with prednisone (E+P). The results demonstrated that AA+P has a lower cost per monthly median OS than enzalutamide ($846.00 vs. 1,573.00; 46% reduction), based on the following assumptions: exchange rate USD 1 = COP 2967, median treatment duration of 16 months for AA+P and 18 months for enzalutamide, median OS of 34.7 months for AA+P and 35.3 months followed by K2d had lower treatment costs and higher FFS at both 1 and 2 years when compared to the opposite sequence in the treatment of multiple myeloma, under a private payer perspective.
EN UNMSM, Lima, Peru, 2SPEAS, Lima, Peru

muy importante. De tratamiento "trastuzumab+pertuzumab" se tendría un impacto presupuestal al año 2015, cuenta con un Presupuesto Institucional Modificado (PIM) de 692'423,278 soles con tratamiento trastuzumab+pertuzumab. La RCEI para el año 2015, cuenta con un Presupuesto Institucional Modificado (PIM) de 692'423,278 soles con tratamiento trastuzumab+pertuzumab. La RCEI para el tratamiento con trastuzumab fue de 665,150 USD/QALY resultó ser la intervención costo-efectiva con respecto a tratamiento "trastuzumab+pertuzumab". El impacto presupuestal, desde el año 2007, el país viene implementando una manera diferente de gestionar la asignación de recursos en el Sector Público, a través de Programas Presupuestales. Estos programas se denominan Programa Presupuestal de Prevención y Control de Cáncer (PP PC Cáncer) que se inicia al año 2011 (29), este programa presupuestal tiene 52 productos (intervenciones) que tiene como objetivo final el disminuir la morbilidad y mortalidad de cáncer en el país. El PP PC Cáncer, para el año 2015, cuenta con un Presupuesto Institucional Modificado (PIM) de 692'423,278 soles, bajo toda fuente de financiamiento y toda genérica de gasto. Dentro de los productos que tiene el PP PC Cáncer los relacionados a cáncer de mama representa una anual de 84,123,300 soles, consideramos solo el costo de tratamiento "trastuzumab+pertuzumab" se tendría un impacto presupuestal muy importante. CONCLUSIONs: el tratamiento con "trastuzumab+pertuzumab" no resultó ser costo efectiva.

CANCER – Patient-Reported Outcomes & Patient Preference Studies

PCN38
ONCOLOGIC PAIN ATTITUDES, INTENSITY AND TREATMENT IN BRAZIL
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1 Oncologia, São Paulo, Brazil, 2 Evidencias - Kantor Health, São Paulo, Brazil

OBJECTIVES: Patient reported outcomes (PRO) data are essential to decision-making process, especially in medical signs, like pain. In oncology, pain is highly prevalent, affecting more than 50% of the oncology patients. Therefore, the aim of this study was to evaluate pain profile and perceptions in oncology patients in Brazil.

METHODS: From July 2015 to July 2016, 423 respondents answered an internet-based survey related to pain in oncology from Oncologia Institute, an independent nonprofit cancer advocacy institution. Patients reported pain according to a numerical scale range 0-3 mild, 4-6 moderate and 7-10 severe. RESULTS: Of the 423 respondents, 87.5% were women, 56.9% aged from 40 to 59 years, 44.7% covered exclusively by the private setting, 45.1% exclusively by the public setting, and 13.8% by both. Breast cancer accounted for 48.9% of the respondents, while colorectal cancer, cervix cancer and other cancers corresponded to 5.9%, 7.7% and 39.5% of the answers, respectively. Respondents reported mild, moderate and severe pain in 15%, 40.2% and 44.7%, respectively. The majority of the patients (82.7%) discussed their pain with the oncologist and 69% talked to other health-care professionals. In 52.6% of the cases, pain was responsible for another health issue, most commonly anxiety. Of all respondents, 84.6% were taking at least one pain medication, with 38.3% of them using more than one drug. The most common pain medications were paracetamol (21.3%), anti-inflammatories (17.7%), tramadol (13.9%) and others (40.0%). CONCLUSIONS: In line with other studies in this area, our results showed that there is still space for improvement in the treatment of oncologic pain, mainly regarding access to pain medications, pain education and educational intervention would be a good strategy to overcome the barriers in oncologic pain treatment.

PCN39
IMAGEM CORPORAL EM MULHERES SUBMETIDAS AO TRATAMENTO DO CÂNCER DE MAMA
Guerra SL1, De Camargo Cancela A2, Dantas de Oliveira NP3, Martins Holanda A1, Albuquerque Pereira Al2, Patrocínio da Silva C1, Moreira Ed2
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OBJECTIVES: To verify a prevalence of dissatisfaction with the image corporeal and its factors associated in women survivors of breast cancer. METHODS: 103 women resident in the municipality of Natal-RN, diagnosed with breast cancer in the Centro de Saúde do Camará, during the interval from 01 to 31 October 2016, using the application programming interface; each tweet was classified as an original or a retweet. Also, the Brazilian National Cancer Institute (INCA) and Ministry of Health (MOH) websites were reviewed to evaluate data on BC and BCAC. RESULTS: We found 50 breast cancer groups from Brazil on Facebook containing a total of 12,686 members. Regarding Twitter, we found approximately 911 tweets on breast cancer by the assessed period. Communication both in Facebook and in Twitter focused more on wearing pink, fundraising and self-exam. CONCLUSIONS: Communication is an important tool for BC education and awareness, and social media is gaining increasing prominence in this medium; however, it still emphasizes fundraising and self-exam, not promoting any specific preventive behavior.

PCN41
SUPPORTING INDIVIDUAL REFLECTION AND PATIENT-CLINICIAN SHARED DECISION-MAKING ON GEP-NET MANAGEMENT OPTIONS USING REFLECTIVE MULTI-CRITERIA DECISION ANALYSIS
Wagner M1, Samaha D2, O’Neil B3, Khoury H3, Bennetts L3, Badgley D1, Gabriel M1, Berthan A2, Dinet J1, Dolan J, Kulpke MPH, Goetghebeur MM7
1 Analytica LASER, Montreal, QC, Canada, 2 LASER Analytics, London, UK, 3 LASER Analytics, Montreal, QC, Canada, 4 Ipsen Pharma SAS, Boulogne-Billancourt, France, 5 University of Rochester, Rochester, NY, USA, 6 Dana-Farber Cancer Institute, Boston, MA, USA, 7 Analytica LASER and School of Public Health, University of Montreal, Montreal, QC, Canada

OBJECTIVES: Patients with slowly-growing, unresectable, well- or moderately-differentiated, non-functioning GEP-NETs may have to decide between somatostatin analog (SSA) treatment to delay progression, or watchful waiting (WW). We searched Evidencias - Kantor Health, São Paulo, Brazil

OBJECTIVES: To verify a prevalence of dissatisfaction with the image corporeal and its factors associated in women survivors of breast cancer. METHODS: We searched Evidencias - Kantor Health, São Paulo, Brazil

OBJECTIVES: Estimar el costo-utility de los bloqueadores HER2 contra el cáncer de mama en mujeres peruanas. METHODS: Se realizó una evaluación económica de tipo costo-utility. La población de estudio fue una cohorte hipotética de mujeres peruanas. Los costos se estimaron desde la perspectiva del financiador. Se utilizó una tasa de descuento de 3% con base en estos costos y los años de vida ajusta-
dos por calidad (QALY) como medidas de resultado de cada una de las interven-
eniones evaluadas. Se calculó la razón de costo-efectividad incremental (RCII) y el aná-
álisis de sensibilidad. CONCLUSIONs: El costo anual del tratamiento contra el cáncer de mama con trastuzumab y pertuzumab se tendría un impacto presupuesta-
al en el año 2015, cuenta con un Presupuesto Institucional Modificado (PIM) de 692'423,278 soles con tratamiento trastuzumab+pertuzumab. La RCEI para el tratamiento con trastuzumab fue de 665,150 USD/QALY resultó ser la intervención costo-efectiva con respecto a tratamiento "trastuzumab+pertuzumab". El impacto presupuesto, desde el año 2007, el país viene implementando una manera diferente de gestionar la asignación de recursos en el Sector Público, a través de Programas Presupuestales. Estos programas se denominan Programa Presupuestal de Prevención y Control de Cáncer (PP PC Cáncer) que se inicia al año 2011 (29), este programa presupuestal tiene 52 productos (intervenciones) que tiene como objetivo final el disminuir la morbilidad y mortalidad de cáncer en el país. El PP PC Cáncer, para el año 2015, cuenta con un Presupuesto Institucional Modificado (PIM) de 692'423,278 soles, bajo toda fuente de financiamiento y toda genérica de gasto. Dentro de los productos que tiene el PP PC Cáncer los relacionados a cáncer de mama representa una anual de 84,123,300 soles, consideramos solo el costo de tratamiento "trastuzumab+pertuzumab" se tendría un impacto presupuestal muy importante. CONCLUSIONs: el tratamiento con "trastuzumab+pertuzumab" no resultó ser costo efectiva.

CANCER – Health Care Use & Policy Studies

PCN40
PINK OCTOBER IN THE SOCIAL MEDIA: ARE WE STILL MISGUIDING THE PUBLIC?
Bueno CC1, Almeida PR, Clark LG2
1University - Kantor Health, Campinas, Brazil

OBJECTIVES: Pink October, the breast cancer awareness campaign (BCAC), occurs annually in Brazil since 2002 aiming to share information about breast cancer (BC) and raise awareness on the importance of early detection. However, information from social media is often incomplete and even out of date, which may misguide the public in several aspects. Traditional mass media coverage has been enhanced by social media in cancer treatment decision making and care support. Yet, there is a dearth of literature on how patients use these technologies during the treatment decision process and even less is known about whether online communication influences patient appraisals of decision making. The objective of this study is to assess social media campaigns during Pink October regarding information and education on breast cancer awareness. METHODS: We used Facebook using the term breast cancer. Analysis was restricted to groups related to breast cancer, operated in English or Portuguese, and publicly available. We collected breast cancer-related tweets from 01 to 31 October 2016, using Twitter’s application programming interface; each tweet was classified as an original or a retweet. Also, the Brazilian National Cancer Institute (INCA) and Ministry of Health (MOH) websites were reviewed to evaluate data on BC and BCAC. RESULTS: We found 50 breast cancer groups from Brazil on Facebook containing a total of 12,686 members. Regarding Twitter, we found approximately 911 tweets on breast cancer by the assessed period. Communication both in Facebook and in Twitter focused more on wearing pink, fundraising and self-exam. CONCLUSIONS: Communication is an important tool for BC education and awareness, and social media is gaining increasing prominence in this medium; however, it still emphasizes fundraising and self-exam, not promoting any specific preventive behavior.
Progression-free survival (score 4 vs 1.2), Type of benefit (3 vs 1.7). Quality of evidence (2.9±1.8). Disease severity (2.5±2.7) favored treatment. Costs (to patient) 2.8±1.8. To healthcare system -2.2±1.8 favored WIV (scenario 1). For scenario 2, most criteria did not favor either option. Participants' feedback highlighted the usefulness of the approach for clarifying the complexity of decision-making and supporting communication on treatment-related decision-making. This study is limited by its single-center aspects. The MCD framework structured this complexity, supported individual reflection, and provided a common platform to share perspectives.

PCN42 BREAST CANCER DIAGNOSIS PROCESS: AN INTEGRATIVE EVALUATION OF FIVE COMPONENTS

Katherine L. de Lourdes Oliveira, Fabiola de Farias, Mariana M. de Almeida, Celina H. de Lima, Ana Carolina H. dos Santos

METHODOLOGY: This retrospective analysis of collected data from Evidencias - Kantar Health claims database (Auditor, which covers 3.5 million lives, ~7% of Brazilian private sector) between March/2013-March/2016 on demographic, disease-related and treatment-related parameters regarding patients diagnosed with HL. Data were analyzed and summarized using statistical software SPSS 17.0. The rate of patients, receiving RF at least 3 lines of treatment. The rate of patients treated with BV increased, as the lines of therapy advanced and 10.2% received the drug at some point in treatment.

CONCLUSIONS: BV administration in HL was feasible and patients could benefit from it. It is necessary to further research with bigger samples to fully understand the impact of BV on the treatment of HL.

PCN46 ANTIANEUPLÁSICOS DE MAIOR IMPACTO FINANCEIRO NO INSTITUTO NACIONAL DE CANCER DO BRASIL

Mairesse H1, Osorio-de-Castro CG2, Caetano R1

METHODOLOGY: The costs for the nineteen drugs were converted into Brazilian Real (R$) and prices were converted into dollars American (US$) using the exchange rate at the date of acquisition. The analysis of the spending in R$ was done with the Gross Domestic Product (GDP) in 2012 as a reference year. The mean price paid per R$1000 was calculated and the data were expressed as the equivalent price per R$. The cost of the anticancer drugs was obtained from the information of the INCA. The expenditure was calculated using the method of weighted means. The minimum and maximum values were used when the number of patients was less than 10. The drug was considered cost-effective if the cost per QALY was equal or lower than the minimum cost-effectiveness threshold of R$55,250 and cost-effective if the cost per QALY was equal or lower than the maximum cost-effectiveness threshold of R$100,500. The study was approved by the National Ethics Committee of the University of São Paulo.

CONCLUSIONS: This study presented the most expensive drugs in Brazil.

PCN45 ANALYSIS OF METASTATIC BREAST CANCER POLICIES TO ADVANCE ACCESS TO TREATMENT IN LATIN AMERICA: RESEARCH METHODOLOGY AND APPROACHES USED TO SURVEY THE CURRENT POLICY ENVIRONMENT

Bharsa S1, Thirlby P2,3

METHODOLOGY: The oncology policy landscape in Latin America is rapidly evolving, evidenced by the increased awareness, development, prioritization of National Cancer Control policies. The characterization of countries strives to improve mBC policy implementation through the application of the findings to countries not included in the original analysis. RESULTS: Findings reveal striking country discrepancies in mBC policy implementation and healthcare access, as well as, select best practices already in place. OBJECTIVES: To evaluate the current policy environment across the mBC care continuum, a comprehensive analysis of existing NCCPs and public health policies/programs was conducted in three countries in the Latin America region: Brazil, Mexico and Chile. To identify key needs and best practices in mBC treatment and care policy, specific standardized criteria were evaluated at each stage of the mBC patient care continuum: diagnostic, treatment, and supportive care. These data are based on the level of health services and the regional stakeholder insights. Countries were then segmented based on government engagement, policy development, and NGO activity across the care continuum. This characterization of countries strives to improve mBC policy implementation and healthcare access, as well as, select best practices already in place. OBJECTIVES: This retrospective analysis collected data from Evidencias - Kantar Health claims database (Auditor, which covers 3.5 million lives, ~7% of Brazilian private sector) between March/2013-March/2016 on demographic, disease-related and treatment-related parameters regarding patients diagnosed with HL. Data were analyzed and summarized using statistical software SPSS 17.0. The rate of patients, receiving RF at least 3 lines of treatment. The rate of patients treated with BV increased, as the lines of therapy advanced and 10.2% received the drug at some point in treatment.

CONCLUSIONS: BV administration in HL was feasible and patients could benefit from it. It is necessary to further research with bigger samples to fully understand the impact of BV on the treatment of HL.

PCN46 ANTIANEUPLÁSICOS DE MAIOR IMPACTO FINANCEIRO NO INSTITUTO NACIONAL DE CANCER DO BRASIL

Moraes EL1, Osorio-de-Castro CG2, Caetano R3

METHODOLOGY: This retrospective analysis collected data from Evidencias - Kantar Health claims database (Auditor, which covers 3.5 million lives, ~7% of Brazilian private sector) between March/2013-March/2016 on demographic, disease-related and treatment-related parameters regarding patients diagnosed with HL. Data were analyzed and summarized using statistical software SPSS 17.0. The rate of patients, receiving RF at least 3 lines of treatment. The rate of patients treated with BV increased, as the lines of therapy advanced and 10.2% received the drug at some point in treatment.

CONCLUSIONS: BV administration in HL was feasible and patients could benefit from it. It is necessary to further research with bigger samples to fully understand the impact of BV on the treatment of HL.
BETWEEN THE PUBLIC AND PRIVATE SETTINGS
HIGH-COST ONCOLOGY DRUGS IN BRAZIL AND MEXICO: ACCESS DIFFERENCES

Objectives: Assess the purchases of medicinal products realized by the Instituto Nacional de Seguro Social (INSS) and by private insurers, through processes without licensing, by disease. METHODS: Study exploratory and quantitatively of the purchases of medicinal products realized by INSS without licensing between January 2007 and December 2014, the private system, and the ANVISA (Brazilian Health Surveillance Agency) database. RESULTS: In 2014, 26,688,094.70 US dollars were spent without licensing in both public and private systems, and 38% of the total were for pharmaceuticals. In the public system, the majority of these purchases were for oncology drugs, mainly chemotherapeutics. In the private sector, the purchases were more distributed across different therapeutic areas. CONCLUSIONS: The lack of competition in the pharmaceutical market is a major concern, as it results in higher prices for patients. The study also highlights the need for more transparency in the drug purchasing process, particularly in the public health system. The results found are limited by the uncertainty in data input.

PCN49 HIGH-COST ONCOLOGY DRUGS IN BRAZIL AND MEXICO: ACCESS DIFFERENCES BETWEEN THE PUBLIC AND PRIVATE SETTINGS

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OBJECTIVES: In Mexico oncology drugs for use in the public setting are acquired by different public institutions, while in Brazil, the Public Health System reimburses for most of these treatments that are provided. Coverage in the private setting is determined by the contracted plans and, in Brazil, a minimum coverage is established by law. Here, we analyze how different policies influence access to treatments for different oncology diseases across the public and private settings. METHODS: Approximately 200 oncologists involved in the treatment of colorectal, prostate, breast and non-small cell lung cancer were surveyed regarding access to oncology therapies on their countries between 2016-2017. Additionally, 12% pay more than 20% of costs and 5% were not receiving treatment. As a result, a higher percentage of patients not receiving treatment or access to timely treatment was due to lack of access to medicines. RESULTS: In Mexico, the use of Hematopoietic stem cell transplantation (HCT) has been shown to be beneficial in improving health levels and increasing access to these procedures in Mexico. CONCLUSIONS: Although the use of HCT is beneficial in improving health levels and increasing access to these procedures in Mexico, there is a need for more research on the effectiveness and cost-effectiveness of these procedures in the public sector in Brazil.
obtained from the registry of health care providers and searched for spatial coordinates. Data for patients transplanted were obtained from the High-Cost Disease Office (Fondo Colombiano de Enfermedades de Alto Costo) and located by their municipality of residence. RESULTS: In the observed data 7 of 14 HCT Colombian centers had data between January 2, 2014, to January 1st, 2015. There was a pop- ulation of 16,779 patients, with hematological malignancies. Of these patients, 395 received an HCT among those seven facilities. For these patients, the median distance to a treatment center was 142 km and spent an average of 172 minutes to arrive at their HCT center. The median distance was 132 km for patients with private insurance and 267 km for patients with subsidized insurance. Approximately 50% of patients who live in a municipality without an HCT Center have access within a travel time of 248 minutes and 75% within 484 minutes. CONCLUSIONS: Distance and type are important determinants of access to healthcare systems. It is the first study to assess these variables as they relate to access to HCT in Colombia. We found that travel time and distance can be linked to the patients’ residence zone. Additionally, in the last five most populated regions, the distance and travel time were the lowest, while the populations with smaller populations had the highest travel times and distances.

PCN53
EVALUATION OF HEALTH CARE REFORM IMPACT ON CANCER PATIENTS’ TOTAL OUT OF POCKET: A PILOT-CENTER EXPERIENCE IN ISLAMIC REPUBLIC OF IRAN

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OBJECTIVES: In Islamic Republic of Iran, due to increasing incidence of cancer and its high economic cost, health sector policy makers tried to design and implement a supportive healthcare plan. Therefore Iran’s healthcare reform has been implemented since May, 2014. One of the most important objectives of this reform is to reduce hospitals’ out-of-pocket (OOP). This study was designed to evaluate the performance in one of the pilot referral centers which is Imam Khomeini governmental hospital, Sari, Mazandaran.

METHODS: In this retrospective study, study population included all cancer patients (7 cancer groups) who were admitted in this referral center in the first half of 2013 and 2014. Total and case specific patients’ costs were analyzed and interpreted in various subgroups. Data analysis was done by Excel 2013, SPSS 21st version software. RESULTS: Around 778 and 707 cases were enrolled for study in 2013 and 2014, respectively. In terms of total treatment cost was reduced significantly in 2014 after healthcare reform implementation which was approximately 12.7% and 3.02% in 2013 and 2014, respectively. On average 11.5% health subsidized was obtained for each patient through healthcare reform. CONCLUSION: In conclusion with other developing countries, cancer patients’ OOP is still a huge amount in Iran. Regarding to these patients’ high treatment costs, paying attention to prevention is useful to reduce treatment expenditures. Screening programs are needed to be covered in health system reform plan. As a result, to reduce patient’s costs, there is still room for revision in the field of healthcare. According to Ministry of Labor’s basic wage announcement, this patient OOP includes more than half of their annual income. Future research is needed to evaluate whether these amount of OOP is catastrophic or not.

PCN54
QUIMIOTERAPIA DO CÂNCER NAS ÚLTIMAS SEMANAS DE VIDA: ESTUDO RETROSPECTIVO EM BENEFICIÁRIOS DE UM PLANO DE SAÚDE PRIVADO NO BRASIL

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A propósito da quimioterapia do câncer nas últimas semanas de vida tem sido discutida com frequência, pois muitos tratamentos podem trazer mais danos que benefícios, e os cuidados paliativos, poderiam ser a melhor opção. OBJECTIVES: Avaliar a utilização de quimioterapia nas últimas semanas de vida em pacientes submetidos a tratamento coberto pelo plano de saúde. METHODS: Análise retrospectiva de 145 indivíduos falecidos entre janeiro/2015 e dezembro/2016, que apresentavam o CID de neoplasia (C00-C75, C81-C96), destes 73 (50,3%) preencheram os critérios de inclusão. O desempenho daquela população foi avaliado após o ano de diagnóstico. Em 2010, os tumores de próstata representaram 39% (IC95% 34,1-43,8), para os anos de 2011 e 2012 aumentou esse percentual para 46% e 47,3% respectivamente. Tumores de mama foram predominantemente associados às mulheres (91,7%), com um aumento de 8,7% para o total das mulheres. Ocorre aumento de casas em mulheres para o período total, já para os homens essa proporção foi de 11,3%. O número de visitas à emergência nos últimos 30 dias de vida (p = 0,05).

PCN56
IMPACTO DO ENCAMINHAMENTO PRECOCE PARA CUIDADOS PALIATIVOS NA UTILIZAÇÃO DE ATENDIMENTOS DE EMERGÊNCIA POR PACIENTES COM CÂNCER NA ESTRUTURA DE OUT OF POCKET: A PILOT-CENTER EXPERIENCE IN ISLAMIC REPUBLIC OF IRAN

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OBJECTIVES: Descrever as principais neoplasias malignas com tratamentos complexos (cirurgia, quimioterapia e radioterapia combinados) em homens e mulheres, seguros de saúde hospitalar público. METHODS: Foram incluídos pacientes acima de 18 anos, com ou sem diagnóstico prévio, mas sem tratamento, atendidos na instituição durante o período de 2008-2012, obtidos a partir das informações do Registro Hospitalar de Emergência (RHE). Precisaram de intervenções com 95% de confiança (IC95%) foram calculados por sexo e ano de diagnóstico estratificado para as seguintes neoplasias malignas: mama, próstata, cabeça e pescoço, gastro-intestinal, cólon e reto, tireoide e pulmão. RESULTS: O peso das neoplasias com tratamentos complexos é diferente entre homens e mulheres. Tumores de mama são mais prevalentes entre os homens, enquanto que para mulheres o valor de é de 2,7 (2,4-3,0), observando-se aumento deste crescendo no ano de 2012. Tumores de cólon e reto representam 9% dos casos em homens para o período total, já para os homens essa proporcão foi de 8,6%. O câncer de mama representou uma variação positiva de 34% entre 2011 e 2012 para as mulheres, por outro lado, em homens a variação foi negativa de 1,1% a proporção de casos para o mesmo período. Tumores de tireoide são mais frequentes em mulheres, representando entre 5,4% a 8,5% do total. CONCLUSIONS: Informações fornecidas por Registros Hospitalares de Câncer são utilizadas para a gestão e administração dos recursos. Conhecer o perfil dos pacientes e as mudanças dos diagnósticos estabelecidos permite alocar recursos conforme a necessidade de tratamentos complexos.
prevalência de realização das condutas preventivas. Correlação entre escolaridade e mortalidade pelo câncer de mama foi observada. Mulheres com um maior número de escolaridade tendem a ser mais ativas na procura por informação e por atendimento, possuindo maior facilidade em entender e em se fazer entender, tendo, portanto, maiores chances de receber um diagnóstico precoce e consequentemente obter uma cura.

PCN58 BEVACIZUMAB FOR BREAST CANCER: SCIENTIFIC EVIDENCE VERSUS REAL WORLD DATA (RWD) IN BRAZIL
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OBJECTIVES: Scientific publications have failed to demonstrate that bevacizumab has a positive impact in overall survival or quality of life in patients with advanced breast cancer (ABC). Our goal was to assess with RWD if oncologists continue to prescribe ABC despite the lack of evidence. We described the regimens cost for health care providers in the Private Health Care System (PHS) in Brazil.
METHODS: Anonymized data from 2012-2016 were retrieved from Auditron®, the proprietary Evidencias-Kantar Health database of claims which cover 20% of insured population in Brazil. We retrieved data of 3.5 million live covers by 34 providers around the country. Chemotherapy regimens including bevacizumab for the treatment of ABC were identified and the direct cost of drugs was calculated for each one (US$ = R$ 3.3). RESULTS: We retrieved 133 prescriptions including bevacizumab for patients with ABC. Bevacizumab was added to nine chemotherapy regimens: paclitaxel (110 requests), capecitabine (8), docetaxel (4), paclitaxel + carboplatin (4), gemcitabine (2), cisplatin + gemcitabine (2), nab-paclitaxel (1) and Herceptin (1). Also, bevacizumab was requested as monotherapy for one patient. Of all these regimens, only paclitaxel plus bevacizumab and capecitabine plus bevacizumab were supported by phase III studies. Although 90% of these had progression-free survival and not overall survival as endpoints, Direct cost of all other unsupported regimens was R$ 12,741,503.03 (US$ 3,861,061.55) for the health care providers on the PHS.
CONCLUSIONS: Almost 1 in 5 (17.2%) of all requests including bevacizumab for the treatment of ABC lack scientific evidence to support them. Nevertheless, oncologists from all Brazilian regions still prescribe the drug in combination with other chemotherapy medications, generating a negative economic impact in an already overburdened PHS.

PCN59 DENIED ONCOLOGY TREATMENT CLAIMS: HOW MUCH DO THEY COST AND HOW CAN WE PUT THE RESOURCE WASTE TO BETTER USE?
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OBJECTIVES: most health care providers from the Private Health Care System (PHS) in Brazil use the so-called oncotherapy regimens (OT) must comply with the best available literature and regulatory issues before being authorized. Our goal was to assess which OT were denied approval and the economic impact they would have had for PHS in Brazil.
METHODS: anonymized demographic and clinical data were retrieved from Auditron® (Evidencias-Kantar Health proprietary database of claims covering 34 insurance companies) regarding OT requests during 2016. Reasons for denial were defined as scientific (when OT was unsupported by the literature) or regulatory (not compliant with PHS’ requests). We used SIMPRO values to calculate direct costs of denied OT. US$ = R$ 3.3.
RESULTS: we retrieved 803 denied OT claims regarding 675 patients (346 males and 457 females) with mean age of 58 years. The most requested claims were breast cancer (n =172; 21.4%), lung neoplasms (78; 9.71%), prostate (78; 9.71%), colon (75; 9.33%), pancreas (31; 3.8%) and ovary tumors (29; 3.61%). Denied requests came from all Brazilian regions. Of the 803 denied claims, 139 (17.3%) and 664 (82.7%) had ECOG and PS at the time of diagnosis was PS ≤ 2 in 25.1% and PS ≥ 3 in 74.9%. Denial of first-line chemotherapy was described using Kaplan-Meier survival estimates. The mean age of the patients at NSCLC diagnosis was 59.3 (RD: 3.8), and 74.9% were male.
ECOG performance status (PS) at the time of diagnosis was PS = 0 in 4.6%, PS = 1 in 73.6%, PS = 2 in 16.8%, and PS = 3 in 2.2%. Of the 175 patients, 32.6% (n = 57) progressed to second-line treatment. Seventeen and 20 different regimens were used as first-line and second-line treatments, respectively. Carboplatin+paclitaxel (44.0%, n = 77), bevacizumab+carboplatin+paclitaxel (7.4%, n = 13) and cisplatin+gemcitabine (7.4%, n = 13) were used most frequently to treat advanced stages of NSCLC. We retrieved 121 patients, 81 (66.6%) patients had been previously treated with one regimen and 40 patients had been treated with 2 different regimens.
CONCLUSIONS: Almost 1 in 5 (17.2%) of all requests including bevacizumab for the treatment of ABC lack scientific evidence to support them. Nevertheless, oncologists from all Brazilian regions still prescribe the drug in combination with other chemotherapy medications, generating a negative economic impact in an already overburdened PHS.

PCN60 NEWEST TARGET THERAPY AND IMMUNOTHERAPY FOR THE TREATMENT OF ADVANCED MELANOMA: PATTERNS OF ADOPTION BY THE PRIVATE HEALTH CARE SECTOR IN BRAZIL
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OBJECTIVES: We aimed to assess which new treatments for advanced melanoma (AM) are adopted by the Brazilian Private Health Care Sector (PHCS) and describe the profile of patients receiving those therapies.
METHODS: Anonymized, clinical data were retrieved from Auditron® (Evidências-Kantar Health) database of claims (Auditron® - Evidências-Kantar Health) encompassing 20% of people covered by PHS in Brazil. Evaluated drugs had at least ten months of registry in the National Authority of Medicines, biologicals and medical devices (ANVISA) were evaluated: vemurafenib, nivolumab, ipilimumab, dabrafenib, trametinib and cobimetinib. Volume of disease was defined as high (visible or bone lesions, > one site) or low (single visceral lesion or soft tissue lesions only).
RESULTS: Eighty-four patients were included for analysis. Ipilimumab was prescribed in 45% in first-line, 4% in second-line and 11% in third-line treatments. Among these patients, 6% had HVD and 10% had controlled CNS lesions. BRAF status was informed for only 50% of cases. Patients received vemurafenib (73% in 1st line and 27% 2nd line), all had HVD. We retrieved one prescription of cobimetinib for 2nd line in a BRAF+ patient progressing after vemurafenib. No prescriptions for dabrafenib or trametinib were retrieved.
CONCLUSIONS: Older therapies, like ipilimumab and vemurafenib, are already adopted to treat advanced melanoma patients in Brazil. Prescriptions for more recently approved therapies remain scarce maybe because some are oral medications still unlisted in the regulatory organs' directory or because they have very specific indications.

PCN61 REAL-WORLD TREATMENT PATTERNS IN STAGE IV NON-SQUAMOUS NON-SMALL CELL LUNG CANCER IN ARGENTINA
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OBJECTIVES: To describe real-world data on patient characteristics and treatment patterns for patients with stage IV non-squamous non-small cell lung cancer (NSCLC) in Argentina.
METHODS: Data were taken from the Institute of Medical Specialties SA (IEMSA) electronic claims database in Argentina. This study included patients (n = 172) who were ≥ 18 years old, diagnosed with stage IV non-squamous NSCLC between November 2007 and August 2016, and had received first-line or second-line treatments. Data were summarized using descriptive statistics. Time to death from date of NSCLC diagnosis was described using Kaplan-Meier survival estimates.
RESULTS: The mean age of the patients at NSCLC diagnosis was 59.3 (RD: 9.8), and 74.9% were male. ECOG performance status (PS) at the time of diagnosis was PS = 0 in 4.6%, PS = 1 in 73.6%, PS = 2 in 19.5%, and PS = 3 in 2.5%. Of the 175 patients, 32.6% (n = 57) progressed to second-line treatment. Seventeen and 20 different regimens were used as first-line and second-line treatments, respectively. Carboplatin+paclitaxel (44.0%, n = 77), bevacizumab+carboplatin+paclitaxel (7.4%, n = 13) and cisplatin+gemcitabine (7.4%, n = 13) were used most frequently to treat advanced stages of NSCLC.
CONCLUSIONS: Almost 1 in five (17.2%) of all requests including bevacizumab for the treatment of ABC lack scientific evidence to support them. Nevertheless, oncologists from all Brazilian regions still prescribe the drug in combination with other chemotherapy medications, generating a negative economic impact in an already overburdened PHS.

PCN62 REAL WORLD TREATMENT PATTERNS IN METASTATIC AND/OR UNRESECTABLE GASTRIC CANCER PATIENTS: PRELIMINARY RESULTS FROM COLOMBIA
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OBJECTIVES: Little evidence is available on the management of patients with Advanced Gastric Cancer (AGC) in the South American regions. Little evidence is available on the management of patients with stage IV non-squamous non-small cell lung cancer (NSCLC) in Colombia.
METHODS: This preliminary report includes 36 patients. Mean age was 61.4 (SD 10.2) years and 36% of patients were male; 55.6% and 16.7% progressed to second and third-line treatments respectively. A total of 14 different regimens were first-line or second-line treatments in Argentina.
CONCLUSIONS: The results of this study may contribute to the development of new strategies and guidelines for NSCLC management in Argentina.
GASTROINTESTINAL DISORDERS – Clinical Outcomes Studies

PG1
SYSTEMATIC REVIEW OF OBSERVATIONAL STUDIES OF INTERFERON-FREE TREATMENTS FOR CHRONIC HEPATITIS C

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OBJECTIVE: To evaluate the effectiveness and the safety profile of the interferon-free (IFN-free) therapies for hepatitis C. METHODS: A systematic review of observational studies was performed following PRISMA and Cochrane recommendations. Cohorts studies comprising patients with a second generation DAAs treatment were included. The results were defined using the IFN-free schemes, were included. The electronic search was conducted in Pubmed, Scopus, Cochrane library, International Pharmaceutical Abstracts and Web of Science. Data on baseline characteristics and effectiveness of drugs were collected. The primary outcome was sustained virological response 12 weeks after treatment end (SVR 12) and was analyzed in an overall evaluation and by treatment group. RESULTS: Fifty-one studies were included (332,712 patients). Most of the patients had chronic hepatitis C (HCV) genotype 1, and were treated for 12 weeks. Overall, 90% of patients from all cohorts reached SVR12. Rates per treatment were: sofosbuvir + ledipasvir + ribavirin (SVR93%); paritaprevir/ritonavir + dasabuvir + ribavirin (SVR92%); sofosbuvir + daclatasvir + ribavirin (SVR81%); daclatasvir + asunaprevir (98%); sofosbuvir + simeprevir + ribavirin (SVR87%); and sofosbuvir + ribavirin (SVR80%). Post-treatment analysis will be performed considering patient characteristics (e.g. liver transplant, cirrhosis, fibrosis stage, HCV genotype, and age), which will be analyzed using the software Comprehensive Meta-Analysis. CONCLUSIONS: This systematic review included a substantial number of treatments. All IFN-free therapies for chronic hepatitis C presented favorable results for the evaluated effectiveness outcome. Therefore, second generation DAAs agents seem to be a good treatment option for chronic hepatitis C. The subanalysis that will be performed will allow further conclusions.

PG2
BOCPEREVIR AND TELAPEVIR EFFECTIVENESS AND SAFETY IN A BRAZILIAN COHORT OF CHRONIC HEPATITIS C GENOTYPE 1 PATIENTS: A MULTICENTRIC LONGITUDINAL STUDY

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OBJECTIVES: Safety and efficacy of protease inhibitors for chronic hepatitis C (CHC) treatment were shown previously, however, the Brazilian population has been poorly represented in these investigations. Therefore, this study aimed to describe the effectiveness in terms of rapid virological response (RVR) and sustained virological response (SVR) of boceprevir and telaprevir-based regimens as well as safety of these two drugs in Brazil. METHODS: A prospective longitudinal cohort study was conducted in five public centers in the State of Paraná, South of Brazil. Data were collected from medical charts of patients with CHC genotype 1 (boceprevir or telaprevir group). Of the completers, RVR was achieved by 25.0% and 86.4% in boceprevir and telaprevir groups (p < 0.001), respectively, and SVR by 75.0% and 81.4% in boceprevir and telaprevir groups (p = 0.04). Multivariate analysis had identified factors with RVR; older age, 148 different adverse events were reported. Nausea was the most frequent adverse event with boceprevir (73.7%) and pruritus with telaprevir (80.2%). Regarding tolerability, 93.9% of patients had the treatment suspended in boceprevir group and 42.9% in telaprevir group. CONCLUSIONS: SVR was more likely with telaprevir-based regimen than with boceprevir. Both protease inhibitors permitted several adverse events, highlighting the need of measures to improve treatment compliance, particularly in countries where the first-generation DAAs are the only treatment option for CHC patients.

GASTROINTESTINAL DISORDERS – Cost Studies

PG6
HOW DOES HIGH MELD SCORE INCREASE TOTAL EXPENDITURE ON HEALTH SYSTEM? A MICRO-COSTING PROSPECTIVE COHORT STUDY

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OBJECTIVE: To determine the prevalence and antimicrobial susceptibility of Salmonella isolates from lactating cows, Debre-Zeit, ETHIOPIA

Yemane GHA
Dilla University, Dilla, Ethiopia

OBJECTIVE: To determine the prevalence and antimicrobial susceptibility of Salmonella from lactating cows, Debre-Zeit, Ethiopia. METHODS: Samples were collected from 200 dairy farms. A total of 300 milk samples were processed to isolate Salmonella by selective enrichment with tetrazolium and Rapport-Vaslilids broths. Isolation and identification was made by inoculating the selectively enriched sample onto Xylose Lysine Deoxycholate agar followed by confirmation of presumptive colonies using different biochemical tests and by polymerase chain reaction. The Kirby Bauer disk diffusion method was used for antimicrobial sensitivity testing. RESULTS: From the total cows 8.16% were shaded Salmonella. Even though all isolates were 100% susceptible to amikacin, amoxicillin/clavulanic acid, ampicillin, amoxicillin, cefazolin, cephalosporin and gentamicin, co-trimoxazole and streptomycin were the only effective antimicrobials against Salmonella. CONCLUSIONS: These results might be an indication for the development of a considerable risk in the treatment of clinical cases. They indicate that the practice of mixing antimicrobials in feed should not be used.
OBJECTIVES: To evaluate the main factors related to high cost to the patient on the waiting list for liver transplant. METHODS: A microcosting based study in a cohort of 482 cirrhotic patients registered on waiting list for liver transplantation followed by 24 months was performed. All the amount of each resource and procedures used were acquired and the unitary cost of each component used was calculated and thus the cost of each patient was obtained. RESULTS: After 24 months of cohort, 132 patients had MELD=17 (27.39%), 122 had MELD=18-24 (31.31%), 113 patients had MELD 25-30 (23.44%) and 115 patients had MELD>30 (23.86%). The total expenditure of the 492 patients followed by 24 months on the waiting list for liver transplant was US$ 6,064,986.51 and of these total, (US$ 1,065,905 52) 32.4% cost in outpatient care and (US$ 4,099,940.99) 67.60% cost in hospitalizations. The total cost of patients on the waiting list for liver transplantation was higher in those with MELD 25-30 between 1.17 times and 1.18 times the cost of patients with MELD below 17 (US$ 15703,22 ± 9318.67). CONCLUSIONS: The cirrhotic patient on waiting list increase as increase the MELD score. Some high-cost patient total expenditure more expensive than the cost of liver transplant. The main cost drivers for this treatment were hospitalizations, blood reposi- tion, and hepatocellular carcinoma treatment.

GASTROINTESTINAL DISORDERS – Patient-Reported Outcomes & Patient Preference Studies

PG10
A CONCEPTUAL MODEL FOR PEDIATRIC GASTROESOPHAGEAL REFUX
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OBJECTIVES: Gastroesophageal reflux (GER) is a common condition characterized by the passage of gastric contents into the esophagus, with or without regurgitation. Gastroesophageal reflux disease (GERD) is defined as GER with troublesome symptoms and / or complications with a prevalence of 24% in infants aged 0-23 months. Given the absence of language in very young pediatric populations, observer-reported outcome measures (ObsROs) are required to determine the impact of GERD and its treatment on patients. The aim of this study was to develop a conceptual model of all relevant signs and impacts of pediatric GERD on both the infant and caregiver. METHODS: A targeted search of electronic bibliographic databases was performed to identify qualitative literature, detailing the signs and impacts of pediatric GERD from the caregiver perspective. The search was restricted to English language, human subjects, articles published in the last 10 years, and infant-age <2 years. This was supplemented with a targeted search of online parent/caregiver forums and blogs. Concept elicitation interviews were conducted with 20 parents / caregivers of infants with signs of GERD and four expert clini- cians (in Europe). Thematic analysis of verbatim transcripts was performed using Atlas.ti. RESULTS: The searches identified 36 articles and 10 online forums. The average age of caregivers interviewed was 31 (range: 21-42 years). Caregivers and clini- cians described a number of signs/behaviours indicating GER/D, the most common of which were vomiting/regurgitation, back arching and crying. Impacts on both the infant and caregiver were also identified. The conceptual model developed compr- ised three broad domains: signs (gastrointestinal, respiratory, physical behaviors); impacts on infants (sleep, body hygiene/care, physical and social development); and impacts on parents/caregivers (emotional/psychological, social functioning, daily activities). CONCLUSIONS: A comprehensive conceptual model was developed for pediatric GERD, enabling the critical evaluation of ObsROs for potential inclusion in clinical trials to support endpoints in pediatric GERD.

MENTAL HEALTH – Clinical Outcomes Studies

PMH1
METANÁLISE DE SEGURANÇA DO TRAITEMENTO MEDICAMENTOSO DE PACIENTES COM TRANSTORNO DO DÉFICIT DA ATENÇÃO COM HIPERatividade e ANSIEdade
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OBJECTIVES: To perform a cost-effectiveness analysis comparing the regimens peginterferon plus ribavirin (pegIFN/RBV), boceprevir (BOC) plus pegIFN/RBV, tel- aprevir (TVR) plus pegIFN/RBV, and no treatment for chronic hepatitis C (CHC) adopting the perspective of the Brazilian public health system. METHODS: A state-transition Markov model was developed simulating the natural history of CHC in patients infected with hepatitis C virus genotype 1. The long-term outcomes included remaining life expectancy in life years (LYs), quality-adjusted life years (QALYs),和社会 well-being in utilities. The long-term outcome was patient state, and the utility is equal to 1.0 (full health). The analysis was performed for distinct threshold values of willingness-to-pay (WTP) from different perspectives (costs and QALYs). The results of TVR+pegIFN/RBV compared to pegIFN/RBV. RESULTS: For both short- and long-term scenarios, the BOC+pegIFN/ RBV was dominated by TVR+pegIFN/RBV, which was more effective than pegIFN/ RBV (75.0% vs. 40.4% SRV rate, 13.79 vs. 13.19 LYs and 10.2 vs. 9.40 QALYs, respec- tively), and was also more expensive (US$ 14,481.98 vs. US$ 4856.61). The corre- sponding ICERs were US$ 27,813.21/SVR, US$ 16,163/LY, and US$ 9,482/QALY for TVR+pegIFN/RBV compared to pegIFN/RBV. CONCLUSIONS: Based on our analysis, triple therapy with telaprevir is more effective than the other evaluated regimens and can be considered cost-effective for the Brazilian health system. Despite a lack of robust Brazilian data, we incorporated as many applicable parameters as possible, and this model should be suitable for further cost-effectiveness analyses, when new data are available.

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A883
TRANSTORNO DE DéFICIT DA ATENção COm HIPERATIvIDADE
ESQUIzOfRENIA, TRATADOS COm PALmITATO DE PALIPERIDONA

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METHODOLOGIA

A avaliação da eficácia e segurança da atomoxetina em pacientes adultos com TDAH sem comorbidades associadas foi realizada considerando o método estatístico Standardized Mean Difference (SMD), sendo (AISRS) de atomoxetina versus placebo. As análises estatísticas foram conduzidas com desfechos de eficácia pela escala Adult ADHD Investigator Symptom Rating scale (ADIS) e Adult Symptom Rating Scale (ASRS). Colaboração Cochrane auxiliou de forma relevante a identificação de vieses e falhas metodológicas. Atomoxetina quando comparada ao placebo está mais associada a eventos adversos, como náusea e apetite diminuído.

PMH2

AVALIAçãO DA REDUçãO DE REHOSPITALIZACAO DOS PACIENTES COM ESQUIZOFRENIA, TRATADOS COM PALMITATO DE PALIPERIDONA

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OBJECTIVES: Avaliar a eficácia e segurança do Palmídio de Paliperidona (PP) quanto à redução de rehospitalizações, de pacientes com esquizofrenia. 


Conclusão: Cochrane auxiliou de forma relevante a identificação de vieses e falhas metodológicas. Atomoxetina quando comparada ao placebo está mais associada a eventos adversos, como náusea e apetite diminuído.

PMH3

META-ANÁLISE DE EFICÁCIA DA ATOMOXETINA EM ADULTOS COM TRANSTORNO DE DéFICIT DA ATENçãO COM HIPERATIVIDADE

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METHODS: Foram realizadas buscas de revisões sistemáticas com meta-análise, ensaios clínicos randomizados e estudos duplo-cego. Foram incluídos ensaios clínicos randomizados, duplo-cego, paralelos, que compararam desfechos de eficácia pela escala Adult ADHD Investigator Symptom Rating scale (ADIS) de atimoxetina versus placebo. As análises estatísticas foram conduzidas com auxílio do software Review Manager, versão 5.3. Os desfechos contínuos foram analisados considerando o método estatístico Standardized Mean Difference (SMD), sendo estatisticamente significativo se p < 0.05. Foram consideradas as recomendações do Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) e Cochrane Handbook for Systematic Reviews of Interventions, The Cochrane Collaboration. 

RESULTS: Inicialmente 7497 artigos foram identificados e 86 foram incluídos na fase de seleção. Destes, 2 (n = 459) foram incluídos nas met-analises. Os artigos foram publicados entre os anos 2009 e 2011. A atomoxetina foi comparada com placebo e com outros medicação para o tratamento de transtorno de déficit da atenção. 

Conclusão: Cochrane auxiliou de forma relevante a identificação de vieses e falhas metodológicas. Atomoxetina quando comparada ao placebo está mais associada a eventos adversos, como náusea e apetite diminuído.

PMH4

ALCOHOL USE AND RELATED HEALTH PROBLEMS AMONG ETHIOPIAN ADULTS IN GONDAR: A CROSS-SECTIONAL STUDY

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1University of Gondar-College of Medicine and Health Sciences, Gondar, Ethiopia, 2Gondar-College of Medicine and Health Sciences, Gondar, Ethiopia

METHODOLOGIA: 

Os resultados das análises percentuais e das análises de variância entre grupos foram testados usando o teste para média de dois grupos (t-test) e análise de variância de dois grupos. A análise estatística foi realizada com o uso do software SPSS versão 20.0. Os valores de p < 0,05 foram considerados como significativos. A prevalência dos problemas de saúde relacionados ao uso do álcool foi calculada utilizando o cálculo da prevalência binomial. 

CONCLUSÕES: A prevalência do consumo de álcool na população adulta guinense foi significativamente alta. A maioria dos adultos guinenses era regularmente consumidores de álcool. A prevalência do consumo de álcool foi maior em homens em comparação com mulheres. 

PMH5

BURNTOUT SYNDROME AMONG HEALTHCARE PROFESSIONALS WORKING IN GONDAR UNIVERSITY HOSPITAL, NORTHWEST ETHIOPIA: A CROSS-SECTIONAL STUDY

Juowe Dale G

University of Colorado, Denver, CO, USA

METHODOLOGIA: 

Os resultados das análises percentuais e das análises de variância entre grupos foram testados usando o teste para média de dois grupos (t-test) e análise de variância de dois grupos. A análise estatística foi realizada com o uso do software SPSS versão 20.0. Os valores de p < 0,05 foram considerados como significativos. A prevalência dos problemas de saúde relacionados ao uso do álcool foi calculada utilizando o cálculo da prevalência binomial. 

CONCLUSÕES: A prevalência do consumo de álcool na população adulta guinense foi significativamente alta. A maioria dos adultos guinenses era regularmente consumidores de álcool. A prevalência do consumo de álcool foi maior em homens em comparação com mulheres. 

MENTAL HEALTH – Cost Studies

PMH6

ANÁLISE DE CUSTO-COMPARAÇÃO ENTRE OS PROGRAMAS PARA PESSOAS COM DEFIÇENCIA INTELECTUAL E DO DESENVOLVIMENTO COGNITIVO: SUPORTE INDIVIDUALIZADO E INSTITUIÇÕES DE SAÚDE MENTAL

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OBJECTIVES: Comparação do custo entre dois programas de longo prazo para indivíduos com deficiência intelectual e cognitiva (IDD) no Medicaid dos Estados Unidos: suporte individualizado e instituições de saúde mental. O programa de suporte individualizado prioriza a decisão de indivíduos com IDD de escolher onde e com quem vivem e a propriedade do imóvel não é do Estado. Instituições de saúde mental são hospitais psiquiátricos com 16 leitos ou mais financiados pelo Estado. 

METHODS: Foram realizada uma análise seprestesiva de dados financeiros e uma revisão sistemática nas bases: PubMed, revisiones Cochrane, MEDLINE, EMBASE e PSYCINFO. A integração do indivíduo na comunidade, treinamento de funcionários e as características da residência influenciam os custos do programa. Equipes treinadas reduziram hospitalização, encerramento e alta de taxa de estadia com terapia psicovisiva. A aparência interna e externa do lar e o local da residência influenciam os custos. 

CONCLUSÕES: A prevalência de buurrnout nos hospitais psiquiátricos foi significativa. 

INDIvIDUALIZADO E INSTITUIçõES DE SAúDE MENTAL
**PMH7**

**RESOURCE ALLOCATION FOR TREATING ALCOHOL AND DRUG MISUSE IN PSYCHOSOCIAL CARE CENTER IN BRAZIL: IS CURRENT NATIONAL FUNDING ENOUGH FOR COVERING ITS TOTAL COSTS?**

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The Psychosocial Care Center for treating alcohol and drug misuse (CAPS-ad II) is a Brazilian community mental health service addressed for caring people with substance-related disorders. Financial resources are partially funded by the National government. However, CAPS’s total costs are not available for economic evaluation studies and for planning services. Despite systematic claims by CAPS’s managers for increasing reimbursement by the National Government, there is no data available showing how reimbursement covers CAPS’s total costs or objectives.

To estimate the total costs of CAPS-ad II in a small city in the State of Sao Paulo, and to verify the proportion of CAPS’s total costs due to National reimbursements.

**METHODS:** The study was performed from 2012 to 2016 by collecting data from Takiwasi patients. The treatment lasts an average of 9 months and it is held in different stages: 1) evaluation of motivation of patients, their clinical and psychological condition; 2) physical and mental detoxification; 3) psycho-emotional and existential restructuring (7 months); 4) reintegration (2 months); 5) follow-up. The personnel directly involved in the patient’s care is composed by psychologists, medical doctors and traditional healers. Clinical and economic evaluation is in progress. **CONCLUSIONS:** Ayahuasca treatment is scientifically well documented, with an increasing number of clinical literature especially in recent years. This study represents the first economic assessment on SUD treatment based on Ayahuasca therapy. [1] Triulzi I et al, Economic impact of drug addiction interventions in adult population: The Peruvian case. VALUE IN HEALTH, 2016; 19:1.

**PMH10**

**AVAILAÇÃO DOS CUSTOS POR TIPO DE INTERNAÇÃO EM UMA OPERADORA DE PLANOS DE SAÚDE: UMA ANÁLISE DE DADOS DO MUNDO REAL**

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**OBJECTIVES:** The aim of this research is to estimate the costs of inpatient visits at health facilities (hospitalizations in Brazil) by type of treatment and by health provider’s perspective. Costs data were extracted from service database for a 180 days period, from March 1st to August 30th, 2015. Total costs included the following component of costs: human resources, support services, capital costs, and overhead. Medication costs were not included. Unit costs were estimated using top down approach. **RESULTS:** CAPS-ad II total cost for a 180 days period was BRL 308,167,14. Human resources accounted for 70.3% (BRL 216,918,66) of total costs; support services for 14.2% (BRL 43,863,92), capital costs for 2.2% (BRL 6,628,68), and overhead for 13.1% (BRL 40,537,88). In 2015, National reimbursement for CAPS-ad II was 77.4% (BRL 238 680,00) of the CAPS-ad II total costs for a 180 days period. **CONCLUSIONS:** Considering the fact that many small cities depend exclusively on the National Government funding, our results showed that reimbursement policy has not been sufficient for covering CAPS-ad II full total costs.

**PMH8**

**ESTIMATION OF THE COST OF RELAPSE IN SCHIZOPHRENIA: A COMPARISON BETWEEN COLOMBIA, PANAMA AND MEXICO**

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**OBJECTIVES:** Schizophrenia is a chronic, severe, and disabling mental disorder that significantly affects a person’s thinking process and emotional responsiveness. This analysis aims to calculate and compare the direct costs of relapses in schizophrenia in Colombia, Panama and Mexico. **METHODS:** A bottom-up approach was adopted to quantify the economic burden; that is, the costs incurred by all people living with schizophrenia who experienced at least one relapse during 2015. A mixed approach was used to quantify costs: top-down and bottom-up, depending on available data. When only aggregate data was available, top-down approach was used. For the following component of costs: human resources, support services, capital costs, and overhead for a 180 days period, from March 1st to August 30th, 2015. Total costs included the following component of costs: human resources, support services, capital costs, and overhead. Medication costs were not included. Unit costs were estimated using top down approach. **RESULTS:** CAPS-ad II total cost for a 180 days period was BRL 308,167,14. Human resources accounted for 70.3% (BRL 216,918,66) of total costs; support services for 14.2% (BRL 43,863,92), capital costs for 2.2% (BRL 6,628,68), and overhead for 13.1% (BRL 40,537,88). In 2015, National reimbursement for CAPS-ad II was 77.4% (BRL 238 680,00) of the CAPS-ad II total costs for a 180 days period. **CONCLUSIONS:** Considering the fact that many small cities depend exclusively on the National Government funding, our results showed that reimbursement policy has not been sufficient for covering CAPS-ad II full total costs.

**PMH9**

**RESULTS:** SCZ patients on PP1M experienced a 180 days period, from March 1st to August 30th, 2015. Total costs included the following component of costs: human resources, support services, capital costs, and overhead. Medication costs were not included. Unit costs were estimated using top down approach. **RESULTS:** CAPS-ad II total cost for a 180 days period was BRL 308,167,14. Human resources accounted for 70.3% (BRL 216,918,66) of total costs; support services for 14.2% (BRL 43,863,92), capital costs for 2.2% (BRL 6,628,68), and overhead for 13.1% (BRL 40,537,88). In 2015, National reimbursement for CAPS-ad II was 77.4% (BRL 238 680,00) of the CAPS-ad II total costs for a 180 days period. **CONCLUSIONS:** Considering the fact that many small cities depend exclusively on the National Government funding, our results showed that reimbursement policy has not been sufficient for covering CAPS-ad II full total costs.

**PMH11**

**ECONOMIC EVALUATION OF AYAHUASCA TREATMENT FOR SUBSTANCE USE DISORDER (SUD) PATIENTS IN A PERUVIAN CENTRE**

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**INTRODUCTION:** The Takiwasi Centre is a Therapeutic Community (TC) recognized by the Peruvian National Healthcare System where modern medicine is integrated with Amazonian traditional treatments for SUD (substance use disorder) based on the use of medicinal plants such as Ayahuasca. Previous analysis shows the direct healthcare cost of the treatment is about 16,000 PEN (4900$[1]). **OBJECTIVES:** To assess the direct and indirect costs of the SUD treatment performed in Takiwasi Centre using a cross-sectional observational study performed from 2012 to 2016 by collecting data from Takiwasi Centre about hospital, patients employment status and resource utilization, alcohol and drugs use, legal status, family and social relationships, and psychiatric area. Data were obtained also from the ASI (Addiction Severity Index) questionnaire. Direct costs include pharmacological and non-pharmacological medications, hospitalization costs, outpatient costs, travel costs, laboratory tests, psychiatric fees, while indirect costs refer to the lost of productivity of patients and caregivers. **RESULTS:** The number of patients enrolled was 165 with an average age of 29.64 from Latin America (61% of which 47.8% Peru), Europe 23.6%, USA 4.8%, Canada 1.8% and Asia 0.6%. The treatment lasts an average of 9.05 months and it is held in different stages: 1) evaluation of motivation of patients, their clinical and psychological condition; 2) physical and mental detoxification; 3) psycho-emotional and existential restructuring (7 months); 4) reintegration (2 months); 5) follow-up. The personnel directly involved in the patient’s care is composed by psychologists, medical doctors and traditional healers. Clinical and economic evaluation is in progress. **CONCLUSIONS:** Ayahuasca treatment is scientifically well documented, with an increasing number of clinical literature especially in recent years. This study represents the first economic assessment on SUD treatment based on Ayahuasca therapy. [1] Triulzi I et al, Economic impact of drug addiction interventions in adult population: The Peruvian case. VALUE IN HEALTH, 2016; 19:1.

**MENTAL HEALTH – Health Care Use & Policy Studies**

**PMH13**

**COMMUNITY PHARMACISTS’ INTEREST IN AND ATTITUDE TO PHARMACY PRACTICE RESEARCH IN ETHIOPIA: A CROSS-SECTIONAL STUDY**

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**OBJECTIVES:** We aimed to assess the community pharmacists’ interest and attitude towards pharmacy practice-research in Ethiopia. **METHODS:** A cross-sectional study conducted among community pharmacists in eight major towns in Ethiopia. A validated 25-item self-administered questionnaire covering interest and attitude related to pharmacy practice-research was distributed. Responses were analyzed using descriptive and inferential statistics. **RESULTS:** A total of 389 community pharmacists responded to the survey (response rate 88.4%). Most
of community pharmacists showed a high level of interest in being involved in all aspects of research and practice. Sixty-seven percent of the respondents thought identified 'research advances within pharmacy field' and more than sixty percent showed interest towards 'generating research ideas' (64%), 'interpreting the research findings' (62%), 'reviewing scientific literatures' and 'giving an oral presentation' (60%). The median score for interest was 38 (IQR 20-40) (range possible 11-50). More than half of the respondents showed positive attitude towards pharmacy practice-research with a median overall score of 30 (IQR 18-39), range possible 10-61. Sixty-seven percent of the respondents thought about being involved in research, felt research is important for their career (57.6%), confident to conduct the research (56.2%), and agreed that research is a part of pharmacy practice (48.5%). However, only forty-six percent agreed that they underwent research training. The median score for attitudes towards pharmacy practice-research was 36 (IQR 25-46) (range possible 10-60). This study found that gender differences had significantly more importance towards research than males [AOR: 1.50, 95% CI: 0.99-2.27; p<0.05].

CONCLUSIONS: Community pharmacists showed high interest in being involved in all aspects of research and practice.

NEUROLOGICAL DISORDERS – Clinical Outcomes Studies

PND1
OSTEOPATHIC MANIPULATIVE THERAPY IN PATIENTS WITH HEADACHE: SYSTEMATIC LITERATURE REVIEW

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OBJECTIVES: Headaches disorders are one of the most common neurological problems. Osteopathic manipulative therapy (OMT) is known by OMT practitioners to be useful for headache management, but there is limited scientific evidence regarding the effectiveness. This study aims to provide a systematic literature review on the effectiveness of OMT in patients with headache. METHODS: Electronic searches were conducted in Cochrane, Embase, LILACS, Cochrane Library, OSTMED DR and PEDro databases until December 2016. Searches were conducted using the following terms: “Manipulation, Osteopathic” and “Headache”. No language limits were applied. Two independent reviewers extracted trial information and scored trials for methodological quality. A consensus method was used to resolve disagreements related to the assessment of studies methodological quality. RESULTS: The systematic literature review resulted in 51 bibliographic references from PUBMED, 7 from LILACS, 295 from Embase, 28 from Cochrane Library, 11 from PEDRO and 219 from OSTMED DR. After reading the titles and abstracts, 597 references that did not meet the eligibility criteria and were duplicated, were excluded. A total of 249 references were selected for more detailed analysis. Then, five studies were considered in this review. All studies were randomized clinical trials and were assessed as having low risk of bias according to the Cochrane Collaboration criteria. Although there was heterogeneity in the outcome measures and control interventions. The number of OMTs performed in the studies was from 3 to 8 treatments, and the follow-up time ranged from 6 weeks to 6 months. All studies reported improvements with OMTs compared to the sham therapy or standard care only, showing significant improvements in migraine, tension-type headache, medication use, pain, and functional disability. CONCLUSIONS: This study found that the effectiveness of OMTs may be beneficial in the treatment of patients with headache. However, caution is required in the interpretation of these findings due to the limited number of studies available and the small sample sizes.

PND2
EFFECTIVENESS OF LACOSAMIDE FOR THE TREATMENT OF NON-CONTROLLED FOCAL EPILEPSY

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OBJECTIVES: To identify evidence in the literature of seizure reduction, adverse events, and costs related to the use of lacosamide in patients with uncontrolled focal epilepsy seen by the perspective of the Brazilian healthcare system (Sistema Único de Saúde). METHODS: We searched articles published in the last 5 years, as well as the pivotal studies of lacosamide, in PubMed, Embase, Bireme – BV Salud (includes Lilacs). Cochrane, websites of agencies that evaluate healthcare technology, protocols of clinical trials, and manually searched unpublished studies. Studies were selected based on the analysis of the title, abstract, full text, and evaluation of the quality of evidence. RESULTS: A total of 17 studies, 16 were included in this report. Of these, 17, six were systematic reviews with meta-analyses, two were systematic reviews, three were controlled-randomized studies, two were studies derived from the pivotal trials, and four were economical evaluations. RESULTS: The results of the ALBERT (Lacosamide) study showed that lacosamide was well tolerated, and the majority of adverse effects reported being considered mild to moderate and dose dependent. Dizziness was the most frequent adverse event reported. The economical evaluation concludes that the economic impact of the incorporation of lacosamide could be absorbed by the Brazilian healthcare system considering its efficacy and tolerability in the treatment of epilepsy. CONCLUSIONS: Lacosamide is a good option as an adjunctive therapy for the treatment of patients with focal epilepsies considering the severity of uncontrolled seizures, the risk of drug interaction, and the need of other therapeutic options in the presence of comorbidities.
incluía la discinesia como estado absortente del modelo fueron en la misma vía del caso base. CONCLUSION: El uso de la rasagilina como monoterapia en EP inicial no es una estrategia costo efectiva para el sistema de salud colombiano. Esta conclusión no se ve alterada con disposiciones a pagar superiores. Los resultados solo fueron sensibles a cambios en el precio por miligramo de la rasagilina, lo que supondría reducir su valor actual aproximadamente seis veces.

**NEUROLOGICAL DISORDERS – Patient-Reported Outcomes & Patient Preference Studies**

**PN6**

**RELAPSING-REMITTING MULTIPLE SCLEROSIS PATIENTS ON DIMETHYL FUMARATE REPORTED LESS PHYSICAL AND PSYCHOLOGICAL DISEASE IMPACT IN THE REAL WORLD COMPARED WITH PATIENTS ON PLATFORM THERAPIES**

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1Biogen, Cambridge, MA, USA, 2Adelphi Real World, Cheshire, UK, 3UCSF, San Francisco, CA, USA, 4Adelphi Real World, Manchester, UK

**OBJECTIVES:** To compare physical and psychological impact due to relapsing-remitting multiple sclerosis (RRMS) in patients initiated on dimethyl fumarate (DMF) and platform treatments including interferon β-1a/b and glatiramer acetate (ABC/REP).

**METHODS:** Data were identified from the Adelphi MS Disease Specific Program, a cross-sectional study of MS patients in the US in 2016. The analysis included RRMS patients on treatments for at least 12 months. The MS Impact Scale (MSIS-29) was used to evaluate patients’ physical and psychological impact due to MS. Inverse-probability-weighted regression adjustment was used to estimate average treatment effects (ATEs) across DMF and platform therapy cohorts, utilizing a propensity score based on age, gender, Expanded Disability Status Scale (EDSS) score at current treatment initiation, body mass index (BMI), duration of current treatment, line of therapy, time since MS diagnosis, and number of comorbid conditions.

**RESULTS:** MSIS-29 scores were collected for 155 RRMS patients. Patients on DMF had a mean age of 37 years (n=129, 71% female). Mean time since initial MS diagnosis was 5.72 and 5.37 years, and mean time on current treatment was 1.72 and 3.60 years (p<0.001), respectively. EDSS scores at treatment initiation were 1.33 and 3.17 (p=0.001), respectively. Mean physical impact scores were 14.29 and 33.56 (p=0.002), respectively. Psychological impact scores were 16.1 and 41.73 (p=0.001), respectively. After matching, DMF patients had significantly less physical and psychological impact vs. patients on platform therapies (physical: ATE = -22.44, 95% CI [-29.09, -.15], p=0.001; psychological: ATE = -32.06, 95% CI [-39.99, -14.13], p<0.001).

**CONCLUSIONS:** Patients on DMF reported significantly less physical and psychological impact due to MS, as measured by the MSIS-29, versus patients on platform therapies.

**NEUROLOGICAL DISORDERS – Health Care Use & Policy Studies**

**PN7**

**PIPELINE ASSESSMENT OF BETA-SECRETASE INHIBITORS FOR ALZHEIMER’S DISEASE: HOPES OR GLOOM FOR A TRILLION DOLLAR MARKET**

Gautam B

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**OBJECTIVES:** The aim is to understand the current status of AD pipeline assessment. This pipeline assessment review the current status and commercial feasibility of BACEi for AD. **METHODS:** Desk research was performed to review the data from clinicaltrials.gov, PubMed, expert’s reviews, analyst’s reports, AD forums and societies, companies’ websites, investor’s presentations, featured press releases from companies, and news to track the most recent updates. Data were analyzed to draw insights. **RESULTS:** This analysis revealed 31 total and 20 active BACEi (small-molecules: 13, immunotherapies: 7) across different clinical development stages (Phase-I: 8, Phase-II: 7, Phase-III: 5). Most promising BACEi with potential to breach AD market are verubecestat (MK8931/Merck), AZD3293 (AstraZeneca–Eli Lilly), elenbecestat (E2609/Eisai–Biogen), aducanumab (BIIB037/Biogen), and cenzexumab (Roche). Verubecestat is leading the clinical development, with US approval awaited in 2018. AZD3293, elenbecestat and aducanumab have received FDA Fast-Track designation for priority review, with approvals anticipated in 2020-2022. Cenzexumab is lagging slightly and approval expected in 2023. **CONCLUSIONS:** The total worldwide cost of AD and other dementias is estimated to rise substantially (2015: $818 billion, 2030: $2 trillion). Consequently, a tremendous commercial opportunity exists for pharmaceutical/biotech companies developing BACEi. Given the high failure of pipeline AD drugs: >99.6% during 2002-2012 and the very recent failure of Eli Lilly’s solanezumab in late-stage Phase-III trial, it is entirely possible that none of the five BACEi mentioned above will make it to market.

**PN8**

**ANTICONVULSANT DRUGS USE EVALUATION SURVEY AMONG AMBULATORY EPILEPTIC PATIENTS IN A TERTIARY TEACHING HOSPITAL IN SOUTHEAST NIGERIA**

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**OBJECTIVES:** A regular audit of drug use and prescribing behaviors in health facilities is essential to understand existing gaps and providing interventions to improve rational use of medicines and the treatment outcomes. This study examined anti-convulsant drugs utilization and generated data to generate data for study, aimed at improving drug use. **METHODS:** The study was a retrospective cross sectional study of prescribing and facility indicators using outliers’ prescriptions and facility records. Patients prescriptions and facility records from January 2011 to December 2015 were extracted and sorted. The prescriptions and facility records were randomly selected systematically. The study lasted from January 2016 to February 2017. Data was analyzed for patient characteristics, average number of drug per encounter, percentage of drugs prescribed by generic names, availability of copy of essential drugs list or formulary and availability of key drugs. **RESULTS:** The mean age was 32.45 ± 12.61 years. Prescriptions numbering 102 were sorted and analyzed. Anticonvulsants were the highest prescribed medications 253 (49.6%) followed by neuromusculars 187 (37.6%), while antimicrobials were prescribed 129 (25.6%); Carbamazepine was the most prescribed anticonvulant 74(72.6%). Twice daily was the highest dosage regimen 73.5%. The average number of drugs per encounter was 5 ± 0.2 while the percentage of drugs prescribed by generic name was 71(33.3%) against the recommended 100%. The percentage of injections prescribed was 152(94%), while that of antibiotics was 11.5%. The percentage of drugs prescribed from essential drug list was 409 (79.9%) while the percentage of key drugs available at the facility was 34.6%. A copy of essential drug list was available at the facility. **CONCLUSIONS:** The study showed inappropriate prescribing and facility indicators, an indication of irrational use of anti convulsants and poor patient’s practices. It underscored the need for intervention studies towards improved drug use process in our health facilities.

**PN9**

**OBSTRUCTIVE SLEEP APNEA TREATMENT GUIDELINES – IMPLEMENTATION STATUS IN OECD-COUNTRIES**

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**OBJECTIVES:** Obstructive Sleep Apnea (OSA) is a highly prevalent disease with significant impact on quality of life and healthcare expenditures. OSA treatment include use of continuous positive airway pressure (CPAP) or oral appliance therapy. Other complications include an increased risk for cardiovascular diseases, metabolic and neurological disorders and an increased exposure to traffic and occupational accidents. Objective of this study was to evaluate implementation status of OSA guidelines in 42 OECD countries. The current status and use of electronic systematic literature search was conducted using PubMed, Google Scholar and search of existing grey literature. Identified guidelines were assessed for currentness and update schedule. Correlation between implementation status and healthcare expenditures as well as population size was estimated using Pearson’s coefficient. **RESULTS:** Guidelines for OSA have been implemented in 42.8% of OECD countries. Mean age of the recommendations is 5-21 years with an update schedule ranging from 3 years. A positive correlation between implementation status and healthcare expenditures could be detected (r=0.47, p=0.004). Correlation between implementation status and population size was low (r=0.22, p=0.190). **CONCLUSIONS:** Consequences of untreated OSA, like cardiovascular comorbidities and traffic or occupational accidents occur on an individual level, but can also have significant socioeconomic impact. To realize evidence based treatment of patients with OSA and to ensure sufficient allocation of resources for treatments, providers should devote more time to implement treatment guidelines. Though the OECD countries are considered developed with advanced health care systems, not even half has implemented guidelines. The rapid development of evidence, update schedules more than 3 years seem to be too long to ensure patients receiving treatment per recent state of science. Our findings show, that OSA is still not in the focus in many health care systems, especially in countries with lower health care expenditures. Considering the array of complications arising from OSA, providers and the healthcare payers the current status should prioritize implementation and updating of treatment guidelines for OSA.

**RESPIRATORY-RELATED DISORDERS – Clinical Outcomes Studies**

**PRS1**

**EFFECT OF HEPESERIN IN BLEOMYCIN-INDUCED PULMONARY FIBROSIS IN RATS: CRITICAL ROLE OF NRf-2, TNF-A, AND IL-1B**

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**OBJECTIVES:** Idiopathic pulmonary fibrosis (IPF) is a chronic progressive multifactorial disease with limited successful treatment. Hesperidin possesses potent anti-inflammatory and anti-oxidant property. Hence, the objective of present investigation was to evaluate the effect of hesperidin against bleomycin (BLM) induced pulmonary fibrosis by assessing various behavioral, biochemical, molecular and ultrastructural changes in the laboratory rats. **METHODS:** Wistar male rats were divided into five groups (n=10) each. The rats were injected with BLM (25, 50 and 100 mg/kg, p.o.) or Methylprednisolone (10 mg/kg, p.o) treatment for 26 days. Sham control rats received saline instead of BLM. The lung function test, histopathological, immunohistochemical and ultrastructural changes were evaluated. Hesperidin (200mg/kg, p.o) was given orally for 28 days. Sham control rats received saline instead of BLM. The lung function test, histopathological, immunohistochemical and ultrastructural changes were evaluated.

**RESULTS:** Treatment with hesperidin significantly reduced lung barrier thickness (p < 0.05) the BLM-induced alteration in body weight, lung index, histopathological and ultrastructural changes in lung tissue. Hesperidin (200mg/kg, p.o) was given orally for 28 days. Sham control rats received saline instead of BLM. The lung function test, histopathological, immunohistochemical and ultrastructural changes were evaluated.

**REFERENCES:** A887
potential anti-fibrotic efficacy through induction of Nrf2 which in turn modulated anti-inflammatory molecules to reduce pathogenesis of BLM-induced pulmonary fibrosis.

**PRS2**

**DRUG-SAFETY PROGRAM IMPACT IN HOSPITALIZATION PERSISTENT SEVERE ASTHMA PATIENTS**

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**INTRODUCTION:** persistent severe asthma represent a high cost to health system. Among patients with asthma, represent more than 50% of health’s care spend. This outcome is mainly due to high frequency at use of hospitalizations and urgencies. In one year, the patient’s proportion that use those services could be more than 52%.

**OBJECTIVES:** Determine the impact generated by a drug-safety program on the hospitalization of the target population.

**METHODS:** Paireds samples study (1 year before and after). Recruitment period was between May 2013 and June 2015 in Antioquia, Valle, Atlántico and Cundinamarca. Population was diagnosed with persistent severe asthma; they started pharmacological treatment with Omalzumab and education every month by a pharmacist from a drug-safety program (post-test). Education was focus on medication correct use and pharmacological adherence importance. Dependent variables were hospitalization proportion and hospitalization rate. Absolute and relative frequencies were used, summary measure (central tendency, scatter and position). Normality test were performed (Kolmogorov-Smirnov) and association test ($\chi^2$-Wilcoxon y McNemer). Confidence interval 95% and standard error 5% were used.

**RESULTS:** The evaluated population (n=237) comprised for being adherent (85%), use correctly medication (80%), women gender (70%), adults (36 [IR 19-54] years), workers (37%) or students (27%), with low schooling level (77% < high school) and low socio-economic level (85% < 3). When the urban area (85%) from Antioquia department (91%). 14.8% presented at least 1 hospitalization before and 8% after (P-value: 0.008). Hospitalizations number per each 100 patients was 21 before and 12 after (P-value: 0.012).

**CONCLUSIONS:** Ensuring the correct usage and sufficient adherence of Omalzumab contributed to decrease of hospitalization frequency and rate.

**PRS3**

**DRUG-SAFETY PROGRAM IMPACT IN THE EMERGENCY FREQUENCY AT PATIENTS WITH PERSISTENT SEVERE ASTHMA**

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**OBJECTIVES:** Determining the impact generated by a drug-safety program on the emergency frequency of the target population.

**METHODS:** A paireds samples study was conducted (1 year before and after). The recruitment period was between May 2013 and June 2015 in Antioquia, Valle, Atlántico and Cundinamarca. The population was diagnosed with persistent severe asthma. They started a pharmacological treatment with Omalzumab and education every month from a pharmacist of the drug-safety program (post-test). This Education was focused at proper medication usage and the importance of pharmacological adherence. Dependent variables were emergency proportion and emergency rate (number activities per each 100 patients).

Absolute and relative frequencies were used, summary measure (central tendency, scatter and position). Normality test were performed (Kolmogorov-Smirnov) and association test ($\chi^2$-Wilcoxon y McNemer). Confidence interval 95% and standard error 5% were used.

**RESULTS:** The evaluated population (n=237) comprised for being adherent (85%), use correctly medication (90%), women gender (70%), adults (36 [IR 19-54] years), workers (37%) or students (27%), with low schooling level (77% < high school) and low socio-economic level (85% < 3). When the urban area (85%) from Antioquia department (91%). 21% of patients had at least 1 emergency before and 14% after (P-value: 0.004). Emergencies number per each 100 patients was 21 before and 12 after (P-value: 0.012).

**CONCLUSIONS:** Ensuring the correct usage and sufficient adherence of Omalzumab contributed to decrease hospitalization proportion and emergencies rate of asthma patients that assisted to emergencies service by asthma associated causes.

**RESPIRATORY-RELATED DISORDERS - Cost Studies**

**PRS5**

**ESTIMATING THE FINANCIAL IMPACT OF INTRODUCING GLICOPYRRONIUM BROMIDE IN THE TREATMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) FROM THE PERSPECTIVE OF PUBLIC PAYER OF SÃO PAULO (SP) – BRAZIL**

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**OBJECTIVES:** To evaluate the financial impact of including glycopyrronium bromide for the treatment of COPD patients from the perspective of the Public Pharmaceutical Assistance Program of SP State, over five years.

**METHODS:** An Excel-based model was developed to estimate the investment required for the introduction of glycopyrronium, as an additional alternative of long-acting anticholinergic (LAMA) therapy in SP, by comparing two scenarios: “without-glycopyrronium” and “with-glycopyrronium”. The introduction of glycopyrronium could generate savings of $15,072,064,821, which produce a total cumulative budget impact of $3,81,567,467 (3,8% of the scenario without indacaterol/glycopyrronium) given by 389 pneumonia events avoided. Exacerbation costs are reduced in $3,287,567,467 (3,8% of the scenario without indacaterol/glycopyrronium).

**RESULTS:** QOL savings of $15,072,064,821, which produce a total cumulative budget impact of $3,81,567,467 (3,8% of the scenario without indacaterol/glycopyrronium) given by 389 pneumonia events avoided. Exacerbation costs are reduced in $3,287,567,467 (3,8% of the scenario without indacaterol/glycopyrronium).

**CONCLUSIONS:** Inclusion of indacaterol/glycopyrronium in the benefit’s plan results in 389 prevented pneumonia events and 3,287,567,467 avoided exacerbation costs and pneumonia in the context of the Colombian healthcare system which represents a better quality of life for COPD patients, and a continuous improvement in health results regarding COPD.

**PRS6**

**BUDGET IMPACT ANALYSIS OF INDACATEROL/GLICOPYRRONIUM IN THE TREATMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) IN COLOMBIA**

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**OBJECTIVES:** To conduct an analysis of the budget impact switching Chronic Obstructive Pulmonary Disease (COPD) patients from indacaterol/glycopyrronium to indacaterol/glycopyrronium.

**METHODS:** A budget impact model was developed to compare costs with and without the introduction of indacaterol/glycopyrronium to the Health Benefit Plan for treatment of COPD patients. This analysis was developed from the adaptation of the results of a cost-effectiveness model for indacaterol/glycopyrronium.

**RESULTS:** The impact of indacaterol/glycopyrronium was estimated for a time horizon of five years of inclusion in the benefits plan. **RESULTS:** Total cumulative budget impact in pesos (COP) when including indacaterol/glycopyrronium within the benefits plan for treatment of COPD patients generates savings of COP $15,072,064,821, which represents savings of 0.04% on 2017 CPC (Capitation Payment Code). On the other hand, the use of indacaterol/glycopyrronium reduces costs of exacerbations and pneumonia in the context of the Colombian healthcare system which represents a better quality of life for COPD patients, and a continuous improvement in health results regarding COPD.

**GOMES M1, Nunes AA2, Sarti RM2, Ruffino Neto A2**

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**OBJECTIVES:** Conduct a cost-utility analysis of COPD treatment (COPD) in Brazil. **METHODS:** Indacaterol/glycopyrronium was compared with glycopyrronium in COPD. The base case results showed a potential savings which can reach BRL24.7 million in 5 years or BRL4 million per year. In all scenarios tested in the sensitivity analysis, the introduction of glycopyrronium into the public health system of SP generated cumulative savings of at least BRL10.1 million in 5 years or BRL2 million annually.

**RESULTS:** A total of 10,252 additional patients could be treated with glycopyrronium in 5 years.

**GOMES M1, Nunes AA2, Sarti RM2, Ruffino Neto A2**

1Faculdade de Medicina de Ribeirão Preto, Ribeirão Preto, Brazil, 2University of São Paulo, Ribeirão Preto, Brazil, 3University of São Paulo, São Paulo, Brazil

**OBJECTIVES:** Conduct a cost-utility analysis of COPD treatment (COPD) in Brazil. **METHODS:** Indacaterol/glycopyrronium was compared with glycopyrronium in COPD. The base case results showed a potential savings which can reach BRL24.7 million in 5 years or BRL4 million per year. In all scenarios tested in the sensitivity analysis, the introduction of glycopyrronium into the public health system of SP generated cumulative savings of at least BRL10.1 million in 5 years or BRL2 million annually.

**RESULTS:** A total of 10,252 additional patients could be treated with glycopyrronium in 5 years.
de coleta de dados em prontuários de amostra de 92 pacientes e entrevistas com profissionais de saúde do Programa de Controle de Tuberculose no Centro de Saúde da Faculdade de Medicina de Ribeirão Preto da Universidade de São Paulo, seguida de análise custo-efetividade baseada em inquérito aplicado na forma de entrevistas a 92 pacientes nos cinco distritos sanitários de saúde de Ribeirão Preto (SP). Validez: A revisão em 2015 em Antioquia (91%). 69% de pacientes melhoraram o HRQOL aumentando um valor médio de 3,3 (IC 95%). E desde que a idade e média de 13,13. A maioria vive em urbanos (95%) de áreas com média escolar (77%).

RESULTS: The evaluated population (n: 237) predominated de menores costos a los precios del sistema de salud colombiano del 2016.

RESPIRATORY-RELATED DISORDERS – Patient-Reported Outcomes & Patient Preference Studies

PRS9 ANÁLISES DE COSTO EFICACIA DEL USO DE Budesonida/Formoterol frente a Salmeterol/Fluticasona en pacientes con asma moderada y severa en colombia

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OBJECTIVES: desarrollar un modelo de costo efectividad del uso de Budesonida/Formoterol con terapia SMART frente a Salmeterol/Fluticasona en dosis fijas para el tratamiento de pacientes con asma en el sistema de salud colombiano. METHODS: Se realizó un modelo Markov previamente desarrollado para comparar el coste y el impacto en la calidad de vida del individual con la enfermedad. Los resultados de los análisis presentan una evidencia de coste-efectividad de los dos tratamientos comparables con el sistema de salud colombiano. EL RESULTADO: Se obtuvo una evolución superior del tratamiento con Budesonida/Formoterol comparado con Salmeterol/Fluticasona en términos de QoL y costos. El modelo permitió un seguimiento más global de los pacientes.

PRS13 AVALIAÇÃO DA QUALIDADE DE VIDA EM CRIANÇAS E ADOLESCENTES COM ASMA

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OBJECTIVES: A asma é uma doença crônica mais prevalente na idade pediátrica afe- tando 11-12% dos jovens portugueses e produzindo limitações consideráveis na qualidade de vida dos doentes. Considerando o seu caráter crónico, a avaliação da qualidade de vida é fundamental para o ajuste dos regimes terapêuticos. O objectivo do estudo foi observar o impacto que ela produz na qualidade de vida do indivíduo afetado. O presente estudo pretendia-se caracterizar a QVRS da população pediátrica que é seguida na consulta de pneumologia e confrontar os resultados com a literatura científica. MÉTHODS: for being adherent (85%), use correctly medication (90%), women (70%), adults (36% [IR 19-54] years old), workers (37%) or students (27%), with low school level (77%), in high school and low socio-economic level (73%), 3, of urban areas (95%) of Antioquia (91%). 70% of patients improved their health care perception. 57% categorized as uncontrolled-asthma at baseline were switched to well controlled-asthma and 21% to fully controlled-asthma. RESULTS: The evaluated population (n: 237) predominated for being adherent (85%), used correctly medication (90%), women (70%), adults (36% [IR 19-54] years old), workers (37%) or students (27%), with low school level (77%), in high school and low socio-economic level (73%). The confidence interval was 95% and standard error 5%. Additionally a World health organization quality of life survey (WHOQOL-BREF) was performed to describe the real-life evidence in patients with asthma. RESULTS: Se actualizó un modelo de Markov previamente desarrollado por contar con nueva información. Los parámetros clínicos fueron tomados de estudios previos. Los usos y costos relacionados con la enfermedad en la población colombiana. RESULATOS: Los resultados obtenidos indican un incremento en los costos en la tecnología, hospitalizaciones y eventos adversos. 

SysteMATIC ReVIEW AND Meta-ANALYSIS ofvery safety of AMPHITREMINE And MAZINDOL As a MONOTHERAPY for THE treatment of OBSESE or OVERWEIGHT patients

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OBJECTIVES: To evaluate efficacy and safety of amphetamine, fenproporex and mazindol as a monotherapy for the treatment of obese or overweight patients. METHODS: A systematic review of primary studies was conducted, followed by a direct meta-analysis (random effect) and mixed treatment comparison. Medline and other databases were searched. Heterogeneity was explored through I² associated with a p-value. RESULTS: Of 739 identified publications, 25 were included in the meta-analysis. The global evaluation of Cochran resulted in 19 studies with a high level of bias and six with unclear risk. Due to the lack of information in primary studies, direct meta-analysis were conducted only for amphetamine and mazindol. Compared to placebo, amphetamine resulted in higher weight loss in the short-term (<180 days; mean difference (MD) - 2.81 kg; p < 0.05; I²: 0%; p = 0.039) and long-term (≥180 days; MD - 7.21 kg; p < 0.05; I²: 0%).
II: 0.9%; p = 0.388). However, metabolic outcomes were poorly described, prevent-
ing a meta-analysis. A mixed-treatment comparison corroborated the direct meta-
analysis.

CONCLUSIONS: Considering the high level of risk of bias and the absence of
important published outcomes for anti-obesity therapy assessments, this study
found that the evaluated drugs showed poor evidence of efficacy in the treatment of
overweight and obese patients. Robust safety data were not identified to suggest
changes in their regulatory status.

PSY3
MEDICAL TREATMENTS FOR AECOMEGALY: SYSTEMATIC REVIEW AND
NETWORK META-ANALYSIS
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OBJECTIVES: To evaluate the safety and efficacy of medical treatments used in aec-
romegaly. METHODS: A systematic search was conducted in the electronic databases
PubMed, Lilacs, and Scielo for new or after publication of randomized con-

trolled trials (RCTs) in acromegalic patients were included. Data regarding baseline characteristics, the outcomes insulin-like growth factor 1 (IGF-1) and/or growth hormone (GH) control and adverse events were extracted. The meta-
analyses were performed using the software Addis 1.16.8. RESULTS: 30 studies were
included in this review. The records involved the drugs Pegvisomant, Lanreotide Autogel, Lanreotide SR, Octreotide, Octreotide LAR, Pasireotide, Bromocriptine, and placebo. A network meta-analysis was performed for the outcome patients with
IGF-1 control. Pegvisomant and Lanreotide Autogel showed statistically significant
superiority compared to placebo (Odds Ratio with 95% credible interval of 0.06
[0.00-0.55] and 0.09 [0.01-0.88], respectively). No other statistical differences were
observed between the drugs. Kim et al. suggested that Pasireotide should be more
investigated.

PSY3
USE OF THALIDOMIDE IN ERYTHEMATOUS LUPUS TREATMENT
Teixeira DH, Galdino-Pitta MR, Nunes TP, Viana DC, Araujo BC, Zanghellini FPH,
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OBJECTIVES: Thalidomide is listed in the National List of Essential Medicines in Brazil (RENAME 2014) for the treatment of Hansen’s disease, multiple myeloma and systemic erythematosus lupus (LES). This study aimed to evaluate the thera-
pic indication of thalidomide in the treatment of systemic erythematosus lupus patients.

METHODS: The research was carried out on March 16, 2015

on the literature on Best Practice (BMJ), Dynamed and UpToDate, being used the
DeCS and MeSH index terms: “Lupus Erythematosus, Cutaneous” and “Thalidomide”. RESULTS: According to the evidence on the BMJ, Thalidomide is indicated as a third-line treatment in systemic erythematous lupus (LES) patients in the following situations: all patients for cutaneous erythematous lupus (LEC) when other drugs do not respond to it; patients with systemic lupus erythematosus (SLE) with skin lesions, when one or more of first line agents is not successful, more aggressive therapy to reduce remission of the disease should be considered. Still, thalidomide is highly efficacious for LEC, but has potential for serious adverse effects, including terva-
genotoxicity and a relatively high risk of peripheral neuropathy. Thalidomide can have a rapid onset of action, usually with response within the first month of treatment. This should be initiated at 50mg to 100mg daily doses, and reduced to the mini-
mal dose that is effective and tolerated.

CONCLUSIONS: Thalidomide can be used for the treatment of patients with LES, especially refractory and who did not respond to first-line treatments. Potential adverse effects of thalidomide make it more useful as short-term remission induction agent and as maintenance treat-
ment of patients with other systemic medications or other systemic medicinal products for the refractory LEC.

PSY6
TREATMENT PATTERNS AND IMPACT OF NOT ACHIEVING SKIN CLEARANCE
FOR PSORIASIS PATIENTS IN LATIN AMERICA
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OBJECTIVES: To describe psoriasis treatments in Latin America and the impact of for skin clearance. METHODS: A meta-analysis of forty-four dermatologists and 941 of their psoriasis patients from Brazil, Colombia, Argentina and Mexico participated in the Adelphi Latin America Disease Specific Programme, answering questions about current disease severity, treatment, satis-
faction and adherence to treatment. The Physician’s Global Assessment (PGA) identified patients with clear or skin or substantial skin covering remaining; EQ-DL (EQ-5D) questionnaire captured quality of life (QoL); Work Productivity and Activity Impairment (WPAI) questionnaire assessed work productivity. RESULTS: Current psoriasis treatments for the 941 biologic agents were included (38.4%), conventional systemic treatment (45.4%) or combination of both (13.9%); 38% patients were receiving a steroid and 11% phototherapy. Of those treated with biologics, conventional systemic treatment or combination of both, 45.7% and 45.8% were assessed by the
dermatologist to be in remission. Among patients with clear to nearly clear skin
PGA 0-1, n = 343) 86.3% patients currently treated with a biologic were in remission compared with 79.1% treated with a conventional systemic treatment. Compared to patients with substantial skin coverage (PGA 2-5; n = 597), patients in the clear or
nearly clear skin group had fewer areas of the body affected in difficult to treat areas such as scalp (19.2% vs 51.9%), groin/genitals (0.6% vs 17.7%) and palm-plantar regions (11.4% vs 26.6%). Better scores of QoL (2.5% vs 33%), greater satisfaction (96.5% vs 53.7%); better mean (SD) EQ-DL (0.87 [0.2] vs 0.77 [0.2]) and mean total WPAI (6.5 [13.7] vs 18 [0.26]). CONCLUSIONS: Latin American patients had a high level of disease severity but were treated with a biologic at a higher rate than their European counterparts. A large proportion of the treated patients were in remission than conventional systemic-treated patients. Better skin clearance was assessed with improved QoL and work productivity, reflecting the need of treatments providing higher skin clearance.

PSY7
CHARACTERISTICS OF LATINO AMERICAN PATIENTS WITH RHEUMATOID ARTHRITIS RECEIVING ADVANCED THERAPIES
Irabin A1, Xavier R2, Goncalves L3, Lucas J4, Hernandez P5, Gaich CL6, Alegre, Brazil, 3Eli Lilly and Company, São Paulo, Brazil, 4Adelphi Real World, Bollington, UK, 7Eli Lilly and Company, Sydney, Australia, 8Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, 9Eli Lilly and Company, São Paulo, Brazil, 10Adelphi Real World, Bollington, UK

OBJECTIVES: To present demographics and characteristics of Latin American patients with rheumatoid arthritis (RA). METHODS: Data was collected in 2015 for the Adelphi RA Latin America Disease Specific Programme, a cross-sectional survey of rheumatologists and their RA patients. Rheumatologists (N = 188) from Brazil (n = 47), Argentina (n = 42), Colombia (n = 13), Mexico (n = 41) and Venezuela (n = 25) provided demographics and clinical characteristics for patients >18 years currently prescribed a biologic DMARD (bDMARD) or JAK inhibitor with/without a conventional
DMARD. RESULTS: Approximately 54% rheumatologists were female and on average, saw 107 patients/day-week. The analysis included 801 patients from Brazil (n = 246), Argentina (n = 239), Colombia (n = 137), Mexico (n = 82) and Venezuela (n = 97). Majority of patients (62.8%) were aged over 50 years; the mean (SD) disease duration 11.1 (6.9) years. At the time of survey 31.8% patients were clas-
sified as moderate-severe based on rheumatologist’s judgement despite 98.5% cur-
rently receiving a bDMARD or JAK inhibitor. The mean (SD) number of joints affected was 7 (2.2), wrists [98 (3%), MCP joints (85.4%) and knees (62.7%) were most prevalent. According to the rheumatologist, 14.1% patients were flaring at time of survey (defined as temporary worsening of symptoms), and 79.4% were not in remission (defined as DAS 28 <2.6) irrespective of treatment. The mean (n, SD) EQ-DL V5.0 utility and EQ-SD VAS scores were 0.7 (509.2) and 70.7

A890
VALUE IN HEALTH 20 (2017) A853-A943
OBJECTIVES: To describe treatment use, switching and satisfaction in Latin American patients diagnosed with psoriasis, and those recently prescribed advanced therapy. METHODS: AIMS: This study was conducted to understand treatment for psoriasis and the determinants of treatment use and switching in Latin American patients. The results showed that the majority of patients were treated with biologics and systemic therapy, with secukinumab being the most commonly prescribed. AntitNF therapy was the most common treatment used in patients with moderate-severe psoriasis, while adalimumab and infliximab were the most commonly prescribed in patients with mild-to-moderate psoriasis. The results also showed that patients on biologic therapy were less likely to experience flare compared to those on systemic therapy. The most common reasons for treatment failure were lack of efficacy and adverse effects. Overall, the study provided valuable insights into the treatment patterns and satisfaction of patients with psoriasis in Latin America, which can be useful for healthcare providers and researchers.
strong opioids for cancer pain by the fifth year of the analysis is 16,350, of which 4,088 are expected to be using oxycodone. The calculated impact is $117,703; $103,921; $103,921 (EHL) while median quarterly FVIII expenditures were $92,682; $84,116; $85,492; $59,918 (SHL) and $186,325; $128,643; $188,362; $158,341 (FVIII) by intravenous infusion. The recent introduction of an extended half-life (EHL) FVIII product has enabled comparison of health care expenditure and volumes of factor dispensed for hemophilia A patients switching from a standard half-life (SHL) to EHL FVIII product. METHODS: The Truven Health Marketscan® Databases (Jan 2010- Jul 2016) were used to identify medication prescription claims and health care (HCP) expenditures for patients with claims data for at least 3 months and up to one year before and after switching from an SHL to an EHL product. Total healthcare expenditure included FVIII replacement and hemophilia-related in-patient and out-patient expenditure. Data were analyzed 12 months prior to and after switch in FVIII product. RESULTS: 21 patients (1-52 years old) had data in the quarter immediately before and after the switch. Total healthcare expenditure was higher after switching from SHL to EHL. FVIII expenditure accounted for 84%-100% of quarterly total healthcare expenditure. Median quarterly FVIII care expenditures were $92,682; $84,116; $85,492; $59,918 (SHL) and $186,325; $128,643; $188,362; $158,341 (FVIII) by intravenous infusion. To estimate the direct costs associated with cystic fibrosis (CF) is an autosomal recessive disease, caused by a gene mutation, with the inability to transport chloride in epithelial cells, mainly affecting lungs, pancreas and intestine. It is a chronic orpan disease, progressive and high costs health care. Cystic fibrosis care is more frequently required in early to middle life. Median quarterly care expenditures were $78,285; $84,116; $85,492; $57,418 (SHL) and $185,287; $171,703; $103,921; $103,921 post switch (EHL) in the 12-10, 9-6, 4-3, 1-3, 4-6, 7-9, 10-12 months pre- and post-switch, respectively. Median quarterly FVIII international units (IU) dispensed were 66,048; 64,515; 64,148; 42,975 (SHL) and 73,923; 64,512; 54,894; and 59,814 (EHL) respectively in these periods.

CONCLUSIONS: This analysis suggests that switching from an SHL to an EHL product is associated with more frequent required high costs health care. Median annual cost for patient was US $ 58,164 associated with assisted ventilation, hospitalizations, and emergency room visits. CONCLUSIONS: Nine articles in indexed journals and 8 posters in specialized medical congresses were identified. The evidence included population registers up to 2011. The median of the main comorbidities was: 30.6% for pulmonary infections, 32% for coronary diseases and 25.3% for cardiovascular problems. Functional deterioration and loss on quality of life resulted in a high use of healthcare services such as referrals to specialists, emergency consultations and hospitalization. The median annual cost for patient was US $ 58,164 associated with assisted ventilation, hospitalizations, and emergency room visits.

PSY15
BURDEN OF DISEASE FOR RHEUMATOID ARTHRITIS IN ARGENTINA, BRAZIL, COLOMBIA, MEXICO AND VENEZUELA

Psoriatic Arthritis (PsA) is an autoimmune disease which when left untreated, may result in the destruction of multiple joints. The condition also can damage a wide variety of body systems, including the skin, eyes, lungs, heart and blood vessels. The objective of this study is to conduct a systematic review on direct disease and healthcare cost of PsA in Latin America, specifically in Argentina, Brazil, Colombia, Mexico and Venezuela. METHODS: PubMed/Medline, Embase, Web of Science and grey literature databases (BASE, Scielo and PDF Search Engine) were searched for publications in English, Spanish or Portuguese at November 10th 2016. Additionally, regional journals and professional and patient association web pages were consulted. The AMSTAR quality criteria were taken into account. RESULTS: A total of 1585 records were obtained. The Global Burden of Disease from 2015 estimated that RA accounted for 0.26% of World Disability Adjusted Life Years (DALY’s). For Latin America, these figures were higher: Argentina 0.63%, Brazil 0.33%, Colombia 0.51%, Mexico 0.71% and Venezuela 0.51%. The estimated prevalence of RA for these countries ranged from 0.04% (Brazil) to 0.09% (Argentina). The estimated impact on physical, mental and emotional wellbeing. Compared to healthy subjects, or patients with osteoarthritis or diabetes mellitus, RA patients had more impaired SF 36 physical and health scores ranging from 42 (Argentina) and from 44 (Argentina, Colombia) to 47 (Brazil, Mexico), respectively. The estimated annual medical costs in Colombia were US$1,689, $8,105 and $23,441 for mild, moderate and severe RA, respectively. Data from other countries were similarly high. The impact of the disease in Latin American countries.

PSY16
IDIOPATHIC PULMONARY FIBROSIS: WHERE THE FUNCTIONAL DETERIORATION AND THE HIGHER ECONOMIC IMPACT ARE INSEPARABLE.

CHALLENGES IN A LATIN AMERICAN COUNTRY

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OBJECTIVE: To identify the main cost drivers associated with Idiopathic Pulmonary Fibrosis-IPF in the international context to make evident the healthcare attention challenges in Colombia. METHODS: The comprehensive review of the literature in the following databases: Medline, EMBASE, Cochrane and Health Technology Assessment databases (grey literature) was conducted from January 1990 and February 2017, was conducted. The inclusion criteria were: IPF and its association with comorbidities, use of healthcare services and direct costs from the patients’ perspective. An analysis was performed using measures of central tendency. Finally, the identified evidence was used as reference to make recommendations regarding the management of IPF in Colombia. RESULTS: Nine articles in indexed journals and 8 posters in specialized medical congresses were identified. The evidence included population registers up to 2011. The median of the main comorbidities was: 30.6% for pulmonary infections, 32% for coronary diseases and 25.3% for cardiovascular problems. Functional deterioration and loss on quality of life resulted in a high use of healthcare services such as referrals to specialists, emergency consultations and hospitalization. The median annual cost for patient was US $58,164 associated with assisted ventilation, hospitalizations, and emergency room visits. CONCLUSIONS: Nine articles in indexed journals and 8 posters in specialized medical congresses were identified. The evidence included population registers up to 2011. The median of the main comorbidities was: 30.6% for pulmonary infections, 32% for coronary diseases and 25.3% for cardiovascular problems. Functional deterioration and loss on quality of life resulted in a high use of healthcare services such as referrals to specialists, emergency consultations and hospitalization. The median annual cost for patient was US $58,164 associated with assisted ventilation, hospitalizations, and emergency room visits. CONCLUSIONS: Nine articles in indexed journals and 8 posters in specialized medical congresses were identified. The evidence included population registers up to 2011. The median of the main comorbidities was: 30.6% for pulmonary infections, 32% for coronary diseases and 25.3% for cardiovascular problems. Functional deterioration and loss on quality of life resulted in a high use of healthcare services such as referrals to specialists, emergency consultations and hospitalization. The median annual cost for patient was US $58,164 associated with assisted ventilation, hospitalizations, and emergency room visits.
OBJECTIVE: To perform a treatment cost comparison of pirfenidone versus nintedanib on the basis of the clinical perspective (fiscal year 2013) for chronic idiopathic pulmonary fibrosis (IPF) under the Brazilian private healthcare system perspective. METHODS: Both treatment’s ex-factory prices were obtained from official published lists, by the Brazilian Ministry of Health, considering the incidence of taxes (ICMS 18%). Annual treatment cost was calculated based on the dosage of pirfenidone (303 mg) and nintedanib (150 mg BID) obtained from their respective Brazilian labels. A year was assumed to be 12 months with 30 days each. Results were shown for 2 scenarios: first year (including initial dose ramp up for pirfenidone) and maintenance phases. RESULTS: Pirfenidone and nintedanib unitary costs were BRL 9,144 (BRL 33.87 per 267 mg tablet) and BRL 19,416 (BRL 248.60 per 150 mg tablet), respectively, according to their list prices. Pirfenidone showed an annual treatment cost of BRL 107,591 and BRL 109,724 on the first year and consequent years of treatments respectively. Nintedanib assures an annual cost of BRL 178,988 independent of year of treatment. Those results led to savings of approximately BRL 70,000 per patient treated with pirfenidone compared to nintedanib (p<0.001). Pirfenidone’s dose ramp up, on the first year of treatment, did not decrease significantly the treatment cost, implying on a reduction of just 2% when compared to subsequent years. CONCLUSIONS: Pirfenidone was lower than the cost of nintedanib.
OBJECTIVES: To perform a cost-effectiveness analysis of pifirfenidone (PFN) versus morphine for the treatment of idiopathic pulmonary fibrosis (IPF) with the Brazilian private health care system perspective. METHODS: Model results were expressed in a lifetime time horizon. Outcomes were quality-adjusted life years (QALY), progression-free survival (PFS) and life years (LY) gained. Treatment’s ex-ante costs were obtained from published lists in the Ministry of Health, considering the incidence of ICMS (18%). Costs related to disease management, lung transplantation and end-of-life were calculated throughout the entire model horizon. A probabilistic sensitivity analysis (WSel). No discount was applied from PFN consistently with the treatment response (ITC), whose calculated treatment effects were used to estimate NDB efficacy outcomes. A probabilistic sensitivity analysis (PSA) was validated to perform model results. RESULTS: PFN and NDB unitary costs were BRL 9,144 (BRL 33.87 per 267 mg tablet) and BRL 14,916 (BRL 248.60 per 150 mg tablet), respectively, according to their list prices. PFN and NDB showed a total cost of BRL 311,158 and BRL 508,203 (PFN-DB = BRL 197,045), respectively, on a lifetime time horizon. PFN outperformed NDB on all outcomes, showing incremental results of 0.47 QALY, 0.81 LY and 0.40 PFS gained when compared to NDB. Overall, PFN was dominant in all outcomes when compared to NDB. The majority of the simulations (77%) on the PSA were located on the 4th quadrant corroborating base case results. CONCLUSIONS: PFN is dominant and can potentially reduce treatment costs associated with the treatment of IPF when compared to NDB.

PS25

COSTO-EFECTIVIDAD DE LA CIRUGÍA BARIÁTRICA EN COLOMBIA
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OBJECTIVES: The obesity has a high cost of the disease, mainly for multiple factors of cardiovascular risk. We estimate that 16.5% of the population of the adult Costa Rican presents obesity (IMC>30). These treatments include interventional nutrition, promotion of physical activity, treatment of comorbidities and surgery bariatric, which has shown to be the best option for obesity móbile, with better results compared to medical treatment. To estimate the cost-effectiveness of the surgery bariatric compared to treatments of medical-phytosurgical, obesity patients in the public healthcare system (SUS). METHODS: We employed the model of Markov of states: alive or dead. The probability of death is determined by the baseline Chileno (pdFVII-CL) in patients diagnosed with Hemophilia A since the perspective of the healthcare system public chileno. METHODS: We employed the model of Markov of states: alive or dead. The probability of death is determined by the baseline Chileno (pdFVII-CL) in patients diagnosed with Hemophilia A.

Conclusions: The analysis and evaluation of the alternative biologic could potentially reduce treatment costs associated with the treatment of IPF when compared to morphine and nintedanib (NDB). In the base case, all patients had dose escalation when experiencing secondary loss of response to infliximab or adalimumab. Two scenario analyses were conducted for action to secondary loss of response: 1) all patients switched biological and 2) patients had either dose escalation or biological switch. Direct costs were estimated based on public prices and no discount rate was applied; drug wastage impact was analyzed. An indifference point analysis was conducted by varying patient weight (base case: 77kg). RESULTS: Adalimumab showed savings of 7,017 MXN, 7,462 MXN and 21,113 MXN per patient for the base case and scenarios 1 and 2, respectively, and of 1,105,996 MXN, 1,141,423 MXN and 35,503 MXN, respectively, when considering no drug wastage. The results were sensitive to patient weight, acquisition costs, and drug wastage. The cost indifference point was 71 kg. CONCLUSIONS: The model demonstrated that adalimumab is a cost-minimization option when used compared to infliximab for patients refractory to conventional therapy.

PS27

COST-EFFECTIVENESS OF MORPHINE FROM THE BRAZILIAN PUBLIC HEALTH SYSTEM: A COMPARATIVE ANALYSIS AND HEALTH TECHNOLOGY ASSESSMENT
Diamante S, Velmot V

OBJECTIVES: The aim of this study was to conduct a systematic review of published data from health technology assessments conducted in other countries. We conducted a systematic review of published data from health technology assessments conducted in other countries. METHODS: We conducted a systematic review of published data from health technology assessments conducted in other countries. RESULTS: We used the following databases: MEDLINE, EMBASE, Web of science, Cochrane Library. Publications searched covered the period January 2000 to May 2015. RESULTS: The adapted economic model in Brazil showed that SEC is cost-effective therapy, compared to all other biologic drug alternatives for treatment of PF - secukinumab is superior to ustekinumab, secukinumab vs. infliximab, secukinumab vs. adalimumab, secukinumab vs. certolizumab pegol, secukinumab vs. etanercept (ICER 17 BGN/QALY), if we consider a cost-effectiveness threshold of three times GDP per capita in Bulgaria (WTPh 36 221 BGN, 2015). CONCLUSIONS: The analysis and evaluation of the alternative biologic could potentially reduce treatment costs associated with the treatment of IPF when compared to morphine and nintedanib (NDB). In the base case, all patients had dose escalation when experiencing secondary loss of response to infliximab or adalimumab. Two scenario analyses were conducted for action to secondary loss of response: 1) all patients switched biological and 2) patients had either dose escalation or biological switch. Direct costs were estimated based on public prices and no discount rate was applied; drug wastage impact was analyzed. An indifference point analysis was conducted by varying patient weight (base case: 77kg). RESULTS: Adalimumab showed savings of 7,017 MXN, 7,462 MXN and 21,113 MXN per patient for the base case and scenarios 1 and 2, respectively, and of 1,105,996 MXN, 1,141,423 MXN and 35,503 MXN, respectively, when considering no drug wastage. The results were sensitive to patient weight, acquisition costs, and drug wastage. The cost indifference point was 71 kg. CONCLUSIONS: The model demonstrated that adalimumab is a cost-minimization option when used compared to infliximab for patients refractory to conventional therapy.

PS28

COST-MINIMIZATION OF ADALIMUMAB AND INFLIXIMAB IN PATIENTS WITH MODERATE TO SEVERE ULTERCULAR COLITIS REFRATORY TO CONVENTIONAL THERAPY
Jutras R1, Rivera Hurtado R2, Ruett E3, Chaves L1, Izquierdo C4, Monroy Cruz B5, Gay Molina I6, Gonzalez Godinez I7
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OBJECTIVES: Given the similar profiles of efficacy and safety between adalimumab and infliximab, this study aimed to conduct a cost-minimization analysis comparing them for moderate to severe ulcerative colitis (UC) refractory to conventional therapy, from a payer perspective in Mexico. METHODS: A decision tree was constructed to assess the incremental cost of adalimumab versus infliximab over a 1-year period. Efficacy and safety data were obtained through a systematic literature review of 5 meta-analysis published between 2006-2016. Treatment was divided into induction and maintenance phases. All patients were assumed to complete induction; patients were then treated in the maintenance phase according to initial treatment response: 1) Primary treatment failure, resulting in surgery, 2) Controlled UC with medical action following secondary loss of response, or 3) Controlled UC on initial dose and 3) Controlled UC with medical action following secondary loss of response. Medical action was defined as dose escalation or biologic switch (infliximab/adalimumab). In the base case, all patients had dose escalation when experiencing secondary loss of response to infliximab or adalimumab. Two scenario analyses were conducted for action to secondary loss of response: 1) all patients switched biological and 2) patients had either dose escalation or biological switch. Direct costs were estimated based on public prices and no discount rate was applied; drug wastage impact was analyzed. An indifference point analysis was conducted by varying patient weight (base case: 77kg). RESULTS: Adalimumab showed savings of 7,017 MXN, 7,462 MXN and 21,113 MXN per patient for the base case and scenarios 1 and 2, respectively, and of 1,105,996 MXN, 1,141,423 MXN and 35,503 MXN, respectively, when considering no drug wastage. The results were sensitive to patient weight, acquisition costs, and drug wastage. The cost indifference point was 71 kg. CONCLUSIONS: The model demonstrated that adalimumab is a cost-minimization option when used compared to infliximab for patients refractory to conventional therapy.
versus pdVIII-prof. Su elevado costo resulta en un ICER sobre el umbral sugerido. Sin embargo, el beneficio incremental de la profilaxis versus pdVIII-CL es muy importante traduciendo en un menor ICER.

PSY30
COST-UTILITY ANALYSIS OF TAPENTADOL PROLONGED RELEASE VERSUS OXYCODEONE CONTROLLED RELEASE IN THE FIRST-LINE TREATMENT OF MODERATE TO SEVERE CHRONIC PAIN UNDER THE PERSPECTIVE OF THE COLOMBIAN SUBSIDIZED PUBLIC HEALTHCARE SYSTEM METHOds: The study population was defined as patients 18 years and older who presented the characteristics of moderate to severe chronic pain in the Colombian National Health Coverage for prevention and monitoring of chronic non-communicable diseases (CNC-NS), including cardiovascular Diseases (CVD) and diabetes mellitus (DM) requiring ambulatory care for at least 3 years. Patients were excluded if they had a history of substance abuse, were pregnant, or had a BMI >35 kg/m². The study was conducted in four subgroups: patients with CVD, patients with DM, patients with both conditions, and the overall population. The primary outcome was the cost of care per patient per year, which was calculated using a retrospective cohort design. The costs included medical care, medication, and hospitalization charges. The study was approved by the Institutional Review Board and was conducted in accordance with the principles of the Declaration of Helsinki.

CONCLUSIONS: The study provides valuable insights into the costs of care for patients with moderate to severe chronic pain under the CNC-NS in Colombia. The findings emphasize the importance of developing strategies to optimize resource utilization and improve the quality of care for this population. Additionally, the study highlights the need for further research to better understand the factors affecting the costs of care for patients with chronic pain in Colombia.
impacto económico del tratamiento con los Agentes Estimuladores de Eritropoyesis (AES), DA y ERK, teniendo en cuenta el nivel de Hb alcanzado y los costos de los eventos clínicos (Hospitalizaciones por complicaciones cardiovasculares e infecciones y transfusión de sangre). La efectividad se midió por “Paciente en control” definido como paciente vioye y no hospitalizado ni transfundido durante un año. Los costos clínicos se hicieron por los costos dependiendo sólo de los niveles de Hb objetivo a 10 (± 1) g/dl y 11 (± 1) g/dl y se extraerán de la literatura, del manual ISSS30 y de SISMED-2016, posteriormente se valoraron mediante un panel Delphi con expertos. Se realizó un análisis de sensibilidad determinístico para las variables más importantes (±/ 50%). RESULTADOS: Darbepoetina alfa demostró ahorró vs. Epoetina beta en los costos del tratamiento anual y en los costos por paciente controlado. Darbepoetina alfa en el nivel de Hb objetivo a 10 (± 1) g/dl generó un ahorro de $2 850 COP por paciente con HD/año controlado, y un ahorro de $2 125 310 COP por paciente con DF/AC. Para el nivel de Hb 11 (± 1) g/dl DA generó un ahorro de $3 513 649 COP por paciente con HD/AC, y un ahorro de $2 654 049 COP por paciente con DF/AC. En la perspectiva del paciente, con menor costos, en Hemodialisis o Diálisis Peritoneal, para los niveles de Hb objetivo. Los costos totales por paciente en control se ven afectados principalmente por el costo de transfusiones y de las hospitalizaciones. 

PUK7 THE EQUALITY BETWEEN THE MALAY AND U.S. ENGLISH VERSIONS OF RAND 36-ITEM HEALTH SURVEY 1.0

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OBJECTIVES: To evaluate the measurement equivalence of the U.S. English and Malay versions of the RAND 36-item Health Survey 1.0 (SF-36v1). METHODS: A cross-sectional study design was utilized where health-related quality of life (HRQL) was measured using the SF-36v1 instrument. All the Malay and English versions of the instrument were administered to 315 bilingual (Malay and English speakers) Malaysian CKD patients, 156 Malay and 159 English patients. Reliability, test-retest and equivalent forms reliability tests were done for the eight scales of each of the two versions. To further assess equivalence, the mean scores of eight scales of the two versions were calculated and compared. RESULTS: Of the 315 consenting participants, 162 (51.7%) were males. The mean age of the respondents was 65.8 ± 9.4 years. Majority (72.7%) of participants were Chinese, followed by Malay (21.9%) and Indian participants (5.4%). The results supported the equivalence of the two versions through both item and scales comparison. Cronbach’s alpha for the Malay and U.S. English version was quiet similar with values around or slightly exceeding 0.7 in multiple measurements. Wilcoxon tests showed non-significant differences between the mean scores obtained from the two versions for each of its eight scales. CONCLUSIONS: The U.S. English- and Malay-language versions of the RAND 36-item Health Survey 1.0 (SF-36v1) demonstrated equivalence in bilingual Malaysian CKD patients. Our results suggest that the Malay and U.S. English versions can be used interchangeably in further studies for patients who speak one of the two languages.

PUK8 LOW HEMOGLOBIN (HB) LEVELS NEGATIVELY IMPACT QUALITY OF LIFE (QOL) AMONG PERITONEAL DIALYSIS (PD) PATIENTS: RESULTS FROM A NATIONAL REPRESENTATIVE COHORT STUDY IN BRAZIL (BRAZPD)

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OBJECTIVES: To verify the association between HB and QoL among incident PD patients in a representative Brazilian cohort. METHODS: This cross-sectional study included 3,407 incident PD patients from BZAPD who had at least one completed QoL assessment and concurrent monthly measurement of hemoglobin. QoL was measured using the Portuguese version of the SF-36 v1. Linear regression was used to assess the association between HB as defined by the current treatment recommendation thresholds (< 10 g/dl, 10-11.5, and > 11.5 g/dl) and QoL scales, adjusting for age, sex, BMI, diabetes, hypertension, previous HD, pre-dialysis care, Davies score, and use of any erythropoietin (EPO) and Iron. QoL was measured on a 0-100 scale with higher values indicating better QoL. 5-point difference in subscales and a 3-point difference in summary scales is clinically significant. RESULTS: The sample was on average 59 years old, 48% male, 44% diabetic, and 77% hypertensive. 80% of the sample was prescribed EPO and 46% were prescribed iron therapy during the month evaluated. Average HB was 11.4±2.1 (25% < 10 g/dl (vs. > 11.5 g/dl) had significantly lower scores across all measures (p<0.001). Clinically meaningful differences were seen in the Physical Component Summary (5.5 pts.), Role Physical (6.6 pts.), and Role Emotional (7.4 pts.) scales. Although less striking, significant differences were also observed for the HB 10-11.5 group (vs. > 11.5 g/dl) in the Social functioning and Vitality. Physical Well-being (1.8 pts., <0.001), Energy/Fatigue (1.9 pts., p<0.006), and Physical Component Summary scales (0.8 pts., p<0.001). CONCLUSIONS: Our results reinforce the negative impact of low HB (<10 g/dl) on major aspects of QoL, and support the recommendation of keeping the current thresholds for clinical practice.
de Usuarios de los Servicios de Salud (ENSUSALUD 2015). El muestreo fue probabilístico estratificado, se tomó como unidades primarias las boticas y farmacias, y como unidades secundarias de muestreo a los usuarios que acudieron a estos establecimientos. Se definí automedicación como la compra de medicamentos sin receta médica. La información se recogió inmediatamente después de la consulta de farmacéuticos de las unidades de ENSUSALUD por razones de prevalencia (RP) con sus intervalos de confianza (IC) al 95% para muestreo complejo. RESULTOS: Se analizaron 2 637 participantes; la edad media fue de 40,9 años (IC95%: 39,6-41,9) y la prevalencia de automedicación fue de 75,0% (71,7-78,5). Se asociaron con automedicación en el análisis ajustado: ser varón (RP: 1,05; IC95%: 1,02-1,09), no contar con seguro médico (RP: 1,06; IC95%: 1,02-1,10), la falta de pedido de receta durante la venta de medicamentos (RP: 2,89; IC95%: 2,37-3,51) y el gasto promedio en medicamentos que compró (RP: 0,92; IC95%: 0,89-0,95). El 68,0% de los participantes se automedicaron con fármacos que requerían receta médica para su venta, siendo principalmente: AINES (23,5%), antihipertensivos (22,0%) y anfetaminas (12,5%). CONCLUSIONS: Se hallaron factores sociodemográficos asociados a la práctica de automedicación. Se sugiere utilizar la información para implementar políticas sanitarias con la finalidad de reducir la práctica de forma irresponsable de la automedicación.

HEALTH CARE USE & POLICY STUDIES – Diagnosis Related Group

PHP3 CAMBIO EN LA CARGA DE ENFERMEDAD AJUSTADA POR RIESGO PARA UNA POBLACIÓN AFILIADA A UNA ASISTENCIA ENFERMEDAD COLONIANA

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OBJECTIVES: Monitorizar los cambios en la carga de enfermedad ajustada por riesgo de la población afiliada a una aseguradora colombiana que permita evaluar de manera indirecta el desempeño del sistema de salud. METODO: Mediante la aplicación de una metodología de diagnóstico por riesgo que caracteriza cada persona en uno de los 60 grupos de riesgo excluyentes entre sí en función de características sociodemográficas y epidemiológicas se comparó población asegurada en dos períodos de tiempo separados por un año completo. Durante este último periodo los servicios de atención primaria y secundaria se desarrollaron agrupando en tres categorías: pacientes en ausencia de enfermedades crónicas, pacientes con una enfermedad crónica y con múltiples enfermedades crónicas. La significancia estadística de las diferencias fue evaluada a partir de una prueba estadística t. RESULTOS: Se calculó un incremento global en la carga de enfermedad de 1,96%, con base en una población de 3.073.327 afiliados para diciembre 2015 y 2.862.853 para diciembre 2016, a pesar de un decrecimiento poblacional del -6,85%. Para el 2015 el 85,13% de los pacientes no presentó enfermedad de 1,96% en comparación con el 83,18% del 2016. Un 10% al analizar los afiliados coincidentes en los dos períodos, se encontró que el incremento fue debido a enfermedad cardiovascular y/o diabetes con incrementos cercanos al 10%. Al analizar los afiliados coincidentes en los dos períodos, se encontró que el incremento fue debido a enfermedad cardiovascular y/o diabetes con incrementos cercanos al 10%.

RESEARCH POSTER PRESENTATIONS – SESSION II

HEALTH CARE USE & POLICY STUDIES – Consumer Role in Health Care

PHP1 FACTORES ASOCIADOS A LA AUTOMEDICACIÓN EN USUARIOS DE BOTICAS Y FARMACIAS EN PERÚ: ANÁLISIS DE LA ENCUESTA DE SATISFACCIÓN DE LOS SERVICIOS DE SALUD (ENSUSALUD) 2015

Urrunaga-Pastor D a, Benites-Zapata VA a, Arriaza-Valverde F a, Pacheco-Valverde F a, Camacho-Vasquez, Raúl a, Pacheco, Verde l a, Pacheco, Verde l a, Universidad de San Martín de Porres, Lima, Perú, Universidad de San Martín de Porres, Lima, Perú, Universidad de San Martín de Porres, Lima, Perú

OBJECTIVES: Determinar la prevalencia de automedicación y sus factores asociados en usuarios de boticas y farmacias en Perú. METHODS: Se realizó un análisis secundario de datos del cuestionario 4 de la Encuesta Nacional de Satisfacción
HEALTH CARE USE & POLICY STUDIES – Disease Management

**PHPS**

**IMPACTO ECONÓMICO EN LAS PATOLOGÍAS DE SALUD MENTAL, NEUROLÓGICAS Y DEMÉNCIAS EN COLOMBIA**

Bermellones Prada ME1, Cabra HA2, Salas M3, Quintero GT4, Leguizamo R5, Magaña Mérea M6, Célia S7

**OBJECTIVES:** Estimar el impacto económico que tienen las patologías de salud mental, neurológicas y demenciales para el sistema de salud colombiano. **METHODS:** Se realizó un estudio retrospectivo de los pacientes con diagnóstico confirmado de patologías de salud mental, neurológicas y/o demenciales durante un año corrido. Los pacientes fueron identificados a partir de los diagnósticos registrados en atención ambulatoria y/o hospitalaria y los costos según los registros de la aseguradora de salud. Se evaluaron 874 pacientes durante el año 2019. Se clasificaron por categorías y subcategorías y comparados con la población general afiliada a una EPS colombiana. **RESULTS:** Se identificó un total de 69,985 usuarios con las patologías de estudio equivalentes al 2.3% del total de la población analizada. El costo medio por paciente anual fue de COP$6,719,226, de los cuales el 71% corresponde a costos de salud mental y neurológica. El 60% de la población es mayor de 50 años. **CONCLUSIONS:** Las patologías de salud mental, neurológicas y demenciales en salud mental y neurológica son importantes no solo por su connotación etológica, sino por su impacto económico, debido a que consumen 5.96 veces el costo total en un año de la población de la aseguradora; dentro de los cuales el 85% corresponde al 12% del costo medio por paciente anual fue de COP$3,719,226, de los cuales el 71% corresponde a costos de salud mental y neurológica. El 60% de la población es mayor de 50 años y consume el 67% del total de las personas con este tipo de enfermedades.

**PHPS**

**HYDROGEN PEROXIDE AS A SUSTAINABLE ALTERNATIVE FOR STERILIZATION**

Oliveira FM1, Junqueira Junior SM1, Luque A1, Oliveira D1, Cabra HA2

**OBJECTIVES:** In this study, we evaluate how far the essential drugs are accessed. We applied mixed methods of qualitative and quantitative studies. A semi-structured questionnaire was prepared for survey based cross-sectional study. A sample of 440 students of 4th and final year was selected conveniently from four institutes, two medical colleges and two universities of Southern Punjab, Pakistan. **RESULTS:** The response rate of 100% was achieved, all the participants responded well. It was evaluated that medical students (n = 107, 80.9%) have more knowledge about CNS stimulants then non-medical students (n = 25, 11.4%) and (n = 25, 11.4%) have more knowledge about CNS stimulants than non-medical students who exclusively used private services, when compared to those who exclusively used public services. The weight of economic accessibility showed to be about 30% higher for citizens who used the private sector compared to those who used public services. **CONCLUSIONS:** The study highlights the role of polifarmacia which will allow to evaluate economic efficiency of public policies. It enables to perform comparisons between policy models that enable access through the private, public or public-private management and decision-making on health investments in Pharmaceutical Care field.

**PHPS**

**EVALUATING THE USE OF CENTRAL NERVOUS SYSTEM STIMULANTS AMONG MEDICAL AND NON-MEDICAL STUDENTS**

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The Islamia University of Bahawalpur, Bahawalpur, Pakistan

**OBJECTIVE:** This study has been performed to evaluate the use of CNS stimulants among the undergraduate students of medical or non-medical field. **METHODS:** A semi-structured questionnaire was prepared for survey based cross-sectional study. A sample of 440 students of 4th and final year was selected conveniently from four institutes, two medical colleges and two universities of Southern Punjab, Pakistan. **RESULTS:** The response rate of 100% was achieved, all the participants responded well. It was evaluated that medical students (n = 107, 80.9%) have more knowledge about CNS stimulants than non-medical students (n = 102, 46.4%). So there is significant difference in knowledge about prescription CNS stimulants but insignificantly different is present in several features like withdrawal symptoms associated with the use of the Prescription CNS stimulant in medical and non-medical students. This study revealed that (n = 25, 11.4%) and (n = 33, 15%) of the medical students respectively stated to be the diagnosed ADHD patients. Total 77.7% and 70.5% medical and non-medical students respectively use non-prescription CNS stimulants (Nicotine, Caffeine, Cocaine, Energy drinks, alcohol, energy drinks and shisha smoking) for various purposes i.e. to improve attention, reduce anxiety, and difficulty of measuring access, studies involving synthesis of multiple indicators to the access dimensions. For this measurement it was used a Likert scale in previously formulated questions about access to medicines. Data collection was done in 2016 with citizens who used private and/or public health services. The weighted average of private access was calculated by the ratio between the assigned weight and the sum of all of them together. The estimated was stratified by the place the medicine was obtained (public and/or private). **RESULTS:** All mean weights attributed to each of the dimensions were higher among individuals who exclusively used private services, when compared to those who exclusively used public services. The weight of economic accessibility showed to be about 30% higher for citizens who used the private sector compared to those who used public services. **CONCLUSIONS:** The study highlights the role of polifarmacia which will allow to evaluate economic efficiency of public policies. It enables to perform comparisons between policy models that enable access through the private, public or public-private management and decision-making on health investments in Pharmaceutical Care field.

**PHPS**

**LUCRATIVE USE OF THE NATIONAL DRUG FORMULARY AND ELECTRONIC CATALOG FOR THE INDIAN HEALTH SERVICE**

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**OBJECTIVES:** To propose a unique indicator capable of synthesizing the dimensions of access to medicines. **METHODS:** The synthesis indicator was calculated by measuring the weight of the importance and satisfaction given by the citizens (n = 580) to the access dimensions. For this measurement it was used a Likert scale in previously formulated questions about access to medicines. Data collection was done in 2016 with citizens who used private and/or public health services. The weighted average of private access was calculated by the ratio between the assigned weight and the sum of all of them together. The estimated was stratified by the place the medicine was obtained (public and/or private). **RESULTS:** All mean weights attributed to each of the dimensions were higher among individuals who exclusively used private services, when compared to those who exclusively used public services. The weight of economic accessibility showed to be about 30% higher for citizens who used the private sector compared to those who used public services. **CONCLUSIONS:** The study highlights the role of polifarmacia which will allow to evaluate economic efficiency of public policies. It enables to perform comparisons between policy models that enable access through the private, public or public-private management and decision-making on health investments in Pharmaceutical Care field.
the appropriate use and risk association, problem encounter in concentrating things according status of the user and the reason behind their use is less awareness increased educational burden and lack of parental guidance.

**PHP10**

**INTERRUPTED TIME SERIES ANALYSIS EVALUATING THE IMPACT OF A PRO-GENERIC POLICY ON DRUG PRICING AND UTILIZATION IN ARGENTINA**

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**OBJECTIVES:** In response to a 2001 economic depression, Argentina imposed a pro-generic law to enable providers to prescribe generics, enable pharmacists to substitute generics, and allow consumers choice. We evaluate the impact of the generic policy on drug pricing and utilization in Argentina. **METHODS:** A quasi-experimental, longitudinal interrupted time series analysis of quarterly real price, and drug use data from the Access to Informational Drug Price Data Bank provided by the Ministry of Health, 1995-2013, using IMS health data. Included variables total real and unit price in pesos, drug name, dose, quantity, originator brand, branded generic, manufacturer generic, true generic, and time. A random effects regression analysis using panel data assessed price and utilization trends before and after policy implementation and estimated the policy effect on drug pricing and utilization.

**Results:** The decrease in unit prices and increased utilization allowed more access to drugs. The highest, with policy decreasing unit price of branded generics and true generics. Responding increases over time in real drug use. Brand drug prices continued as the most downward effect in unit price per quarter on branded generics, (-0.17%, p < 0.01). The pro-generic policy on drug pricing and utilization in Argentina. The interaction between policy and time showed the policy changed the unit price trend over time significantly downward (-0.002%, p < 0.01). The immediate policy effect was to significantly increase real drug use per quarter by 0.21% (p < 0.01), and drug use continued to increase slightly overall time by 0.004%. The originator brand had highest unit prices, then branded generics, manufacturer generics, with true generics with lowest unit prices. The policy had the most immediate effect in unit price per quarter on branded generics, (-0.17% per quarter) and true generics (-0.13%, p < 0.01). **Conclusions:** The pro-generic policy produced the intended effect to decrease overall unit prices per quarter with corresponding increases over time in real drug use and utilization. The policy continuously decreased highest, with policy decreasing unit price of branded generics and true generics. The decrease in unit prices and increased utilization allowed more access to drugs.

**HEALTH CARE USE & POLICY STUDIES – Equity and Access**

**PHP11**

**HOW FAR EQUITY HAS BEEN ACHIEVED IN THE INDOONESIAN UNIVERSAL HEALTH COVERAGE?**

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**OBJECTIVES:** Indonesia has been using social health insurance scheme since 1968 limited to civil servants and then to small portion of private employees since 1993. In January 2014, the expansion to cover all people by establishing a single payer, the National Health Insurance Corporation, was started. By March 2017, the universal health coverage (UHC) covers 174 million people, making it the UHC the largest single payer in the World. In addition, it is also the largest scheme applying capitalization payment to primary health care and diagnosis related groups for outpatients and inpatients care nationwide. The main goal of the UHC is to ensure equitable access to medical necessary care. **METHODS:** To evaluate whether the UHC achieved its goal we used the National Social Economy Survey of 2013 and 2016 consisting of roughly 1.1 million respondents. We conducted logistic regression to assess differences in access among economic groups and across various provinces.

**Results:** The increase in access to hospital care hospital care higher among lower income groups and in rural provinces compared to the access of high income and urban province. Over all the national, the concentration index (CI) decreased from 0.77 to 0.22 after three-year expansion of the UHC. We also assessed different concentration indices of various hospital types. The changes of CI were above level of public hospital (0.03) in private hospital (0.03). **Conclusions:** The UHC is proven to improve equity in access to public and provide hospitals across provinces.

**HEALTH CARE USE & POLICY STUDIES – Diagnosis Related Group**

**PHP4**

**THE ANALYSIS OF THE NUMBER OF SAME-DAY SURGERY CASES IN 2015 IN HUNGARIAN HOSPITALS**

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**OBJECTIVES:** Over the past few years one day surgery has become more specific in healthcare systems throughout the world. This study analyzed the available same-day surgical procedures in the Hungarian health care system in the year 2015. **METHODS:** Data were derived from the financial database of National Institute of Health Care. We applied the usual performance indicators by comparing the actual number of same-day surgical interventions to the theoretical number of same-day surgical intervention which could have been performed by the hospitals among ideal circumstances. The main aim of the study was to establish the rate of same-day procedures. Hungarian hospitals were classified into the following groups: university clinical centers, county hospitals, city hospitals, specialized hospitals, Budapest’s hospitals, children’s hospitals and national health care institutes. **Results:** 61.26% of the achievable same-day surgery cases was achieved by the government funded institutes in Hungary in 2015. We found that the rate of the above interventions was the highest in specialized hospitals (98.82%). The rate of the achievable same-day surgery’s case number was 60.03% in university clinical centers, which is lower than that in county hospitals (61.38%) and the city hospitals (66.90%), on the other hand, it is higher than the rate of Budapest’s hospitals (55.49%), children’s hospitals (50.66%), and national health care institutes (28.23%). **Conclusions:** We assumed that the specialized hospitals performed the most, while the national health care institutes performed the least case numbers regarding same-day surgeries in Hungary.

**PHP5**

**FUNDING NEW TECHNOLOGIES IN GERMAN INPATIENT CARE - DOES IT WORK?**

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**OBJECTIVES:** Due to disincentives inherent in systems of diagnosis-related groups (DRGs), additional payments for newly approved technologies complement these provision-setting systems, so-called innovation payments are negotiated between individual hospitals and health insurances. Thus, hospitals may not have the same chance of being reimbursed for new, more expensive technologies. This study aims at investigating this temporary reimbursement mecha-nism. We examine factors that might be associated with agreeing innovation payments. **METHODS:** Based on a data set of the Scientific Institute of the AOK (including agreement data of the yearly budget negotiations between each German hospital and representatives of the health insurances) and data of the German Federal Statistical Office on state level, multilevel logistic regression was estimated to examine factors at hospital and state level. All German acute hospitals and innovation payments on all diagnoses are thus included in the study. **Dependent variables** was whether or not a hospital had successfully negotiated innovation payments in 2013 (n = 1,358). **Results:** In total, 32.9 per cent of the hospitals successfully negotiated innovation payments in 2013 (31.3 per cent of non-university hospitals, 39.3 per cent of university hospitals). The share of hospitals that successfully negotiated innovation payments varied considerably among the states. The chance of negotiating innovation payments increased for large and private-for-profit hospitals and decreased for hospitals with a low degree of competition – such as rural areas – had a lower chance of negotiating innovation payments. **Conclusions:** The study indicates that policy making generally compensates disincentives of the DRG system by additional innovation payments. Further safety is insured by favoring university hospitals and large hospitals to use new technologies. However, the innovation payments may impede patient access in rural areas since hospitals in regions with low competition have a smaller chance to receive innovation payments.

**HEALTH CARE USE & POLICY STUDIES – Disease Management**

**PHP6**

**MULTIPLE CHRONIC CONDITIONS IN OLDER PEOPLE AND THEIR EFFECTS ON HEALTH CARE UTILIZATION: A NETWORK ANALYSIS APPROACH USING SHARE DATA**

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**OBJECTIVES:** The presence of multiple coexisting chronic diseases in individuals and the expected rise in chronic diseases are major public health challenges of modern societies. With multiple conditions are presumed to have greater health needs, more risk of complications, and more difficulty to manage treatment regiments. In our article we model the presence of multiple diseases in older people using network analysis and explore the influence of the presence of multiple diseases on the utilization of health care utilisation. **METHODS:** We use SHARE dataset of Wave 5, including data on 14 European countries and Israel for the people aged 65+. We model the presence of multiple coexisting diseases as a two-mode network analysis problem (the individuals are connected in a network through their diseases). This has special scientific relevance as network analysis has not been used so far to study this problem and very seldom before in the analysis using SHARE data. To appropriately model the presence of multiple chronic diseases we use modularity and blockmodelling techniques for two-mode networks. To verify the effects of multiple diseases on the rates of health care utilization we also use microeconomic models from causal inference (controlling for endogeneity). **Results:** We show the presence of consistent clusters of diseases across the analyzed countries and confirm particular influence of the groups/clusters encompassing mental diseases (including dementia), arthritis (including osteoarthritis) and different types of ulcers with slight variation by welfare regimes. In particular, there is a high influence of those clusters on the usage of drugs and hospitalizations. **Conclusions:** In the article, we develop a new method to study multiple diseases and their influence on health care utilization of older people, having wide application for health economic and medicine sciences in future. In conclusions, we also provide reflection of the research and policy relevance of the study.

**PHP7**

**THE PRACTICAL APPLICATION OF A DIGITAL THERAPEUTIC EDUCATION PLATFORM FOR CARDIOVASCULAR REHABILITATION**

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**OBJECTIVES:** Describe the patient population of patients enrolled in the AtoutCoeur® platform - Evaluate the patient education activity in the cardiac rehabilitation setting - Assess AtoutCoeur®’s performance in terms of helping patients to achieve objectives. **METHODS:** The platform will be evaluated retrospectively based on real life data. To determine AtoutCoeur®’s performance, the patients’ scores for each of their objectives was considered. This score is determined based on an algorithm that takes into account their medical profile.
PHP8 EVALUATION FRAMEWORK FOR DIGITAL MEDICINES IN EUROPE

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OBJECTIVES: The emergence of digital medicine (DM) like smart pills, implantable drug delivery or digital therapeutics as a potential tool for efficient and sustained patient monitoring has created a fast-growing product stream offering a new facet of personalized medicine. The drug/device combination brings the involvement of the biopharmaceutical much closer to the tailored technologies to digitize real-time monitoring of patient data with respect to drug adherence and behavioural indicators. However, there is little knowledge about the evaluation of new digital medicines in Europe. The study objective is to determine the development criteria with which payers will make reimbursement decisions for DM in the U.K., France and Germany.

METHODS: A systematic literature review was conducted on open access databases, conference proceedings and Market Access and Health Policy and SpringerLink. Due to a small number of initial results, review was expanded to include non-academic grey literature. The review focussed on determining the key payer preferences for an evaluation framework.

RESULTS: Currently, there is no established framework for DM in the three countries. In the U.K., NICE will start assessing digital applications as part of NHS’s Improving Access to Psychological Therapies programme. DM access is localised and restricted to pilot studies that include point-specific funding decisions. In France, accreditation from the government’s Agency for Digital Health is required to work with patient data. In Germany, DM funding comes from the €300 million annual Innovation Fund. Currently, cost-effectiveness (UK) and clinical outcomes (France and Germany) receive highest weightage in reimbursement decision-making for DM. CONCLUSIONS: The need for a robust evaluation system for DM is increasing as the number of innovative technologies brought to market rise. Currently, evidence requirements lean heavily on establishing DM on par with traditional drugs and ethics.

PHP9 ARE PHARMACEUTICAL COMPANIES PRIORITIZING MULTI-INDICATION DRUGS? 

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OBJECTIVES: To evaluate whether medicines were approved for more therapeutic indications in 2016 than they were in 2006. This would suggest a prioritization of multiple indications for one therapy from drug companies. METHODS: We reviewed all U.S. Food and Drug Administration (FDA) approvals from 2006 to 2016 in 54 indications. We selected updates that related to changes in therapeutic indications (n = 577). We then controlled for multiple updates of the same medicine by using only the latest update of a medicine (n = 378). We evaluated the average number of relevant therapeutic updates in these years. We then counted the number of indications for each of these therapeutic areas, considering indications to be separate when they were in different disease areas. RESULTS: In 2006, there were 21 updates; in 2016, there were 49 updates; and the average across these years was 34.5 updates. We found that in 2006, the average number of therapeutic indications was 1.72, and in 2016 it was 2.0. Between these years, it varied from 1.3 to 1.72, with a very slight upward trend. CONCLUSIONS: Based on this data, pharmaceutical companies are not currently prioritizing multi-indication drugs more often than they did in the past. There is the possibility that the newer data, from 2006 to 2016, may not have had enough time to gain approval for secondary indications.

PHP10 RACIAL DISPARITIES IN TREATMENT OF PREGNANT WOMEN WITH DRUG USE, ABUSE AND DEPENDENCE

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OBJECTIVES: Tobacco, alcohol, and other illicit drugs can cross the placenta increasing the risk of low birthweight, doubling the risk of stillbirth, producing congenital deformities and dependence in the newborn. The aim of this study is to determine racial disparities in receipt of treatment among pregnant women with drug use, abuse and dependence across states. METHODS: A cross-sectional study was conducted to identify pregnant women who self-reported being pregnant and who had ever used illicit substances within the past 12 months. Survey data was obtained from the National Survey on Drug Use and Health (NSDUH 2005-2014). A summary of pregnant drug users’ individual characteristics, drug use status and treatment utilization was prepared. Logistic regression was used to examine predictors of receiving drug treat- treatment. Data management and analyses were conducted using SAS 9.4.

RESULTS: A total of 1,856 pregnant drug users were identified from 2005-2014. 19.23% pregnant drug users were dependent and 6% abused drugs respectively. About 81% of pregnant drug users reported using marijuana/hashish in the past 12 months, for an average of 111 days. Heroin was the drug for which majority of pregnant drug users (34.48%) sought treatment currently or during the past year. Pregnant drug users who were non-Hispanic African Americans (OR = 0.3 [0.1, 0.6]) and 0.0016) and 0.0001 were more likely to receive treatment compared to pregnant drug users who were non-Hispanic Caucasians. Pregnant drug users who abused drugs (OR = 7.5 [3.6, 15.8]) were more likely to receive treatment. CONCLUSIONS: Study findings may support for the development of tools to identify and treat more minority drug users as well as users who abuse or are dependent on drugs.

PHP11 RECENT TRENDS IN PROVIDER PERCEPTIONS AND USE OF VALUE FRAMEWORKS IN THE UNITED STATES (US)

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OBJECTIVES: Global value for money is increasing as the number of innovative technologies brought to market rise. Currently, evidence requirements lean heavily on establishing DM on par with traditional drugs and use of VAFs across providers in the oncology environment is still not consistent in decision-making. Providers identified multiple limitations across VAFs, which result in sub-optimal adoption to inform care decisions. As VAFs evolve, ongoing research is needed to gauge changing provider and payer attitudes and application of VAFs in decision making.

PHP12 ADULT RISK FACTORS OF NONCOMMUNICABLE DISEASE OUTCOMES

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OBJECTIVES: Global mortality for noncommunicable diseases (NCDs) remains high and is increasing. The impact of major NCDs on developed European countries is dis- counted, and the importance of NCDs as an increasing global mortality and aid global monitoring. With this motivation, this study aimed to address the risk factors of NCD outcomes.

METHODS: Data from the World Health Organization (WHO) were used to assess NCD mortality in 194 countries for the year 2014. The proportional mortality (percentage of total deaths) from NCDs was used as a predictor variable, and tobacco consumption, alcohol consumption per capita, raised blood pressure, and obesity variables were used as covariates. A random forest plot was used to examine NCD-related mortality risk factors while performing a Classification and Regression Tree (CART) algorithm. Classification accuracy, specificity, sensitivity, and area under the receiver operating characteristic curve (AUC) were used as performance measures. A decision tree graph was used to visualize the risk predictors of NCD mortality.

RESULTS: The CART algorithm showed classification accuracy, sensitivity, and specificity at values of 0.7425, 0.2889, and 0.7019, respectively. The AUC was 0.8285. Study results highlight that alcohol consumption per capita, in liters of pure alcohol, was the best predictor of NCD mortality. Raised blood pressure and obesity were also predictors of NCDs.

CONCLUSIONS: The study results offer several insights for health policy makers in the fight against increasing global NCD mortality. Evidence-based strategies – helping adults change their drinking behaviors, promoting compliance with alcoholism treatment, limiting access to cheap alcohol, and encouraging networking and the exchange of experiences among countries – are essential to combat detrimental alcohol consumption. It is crucial that all stakeholders work together to develop holistic and sustainable policies that are opposed to alcohol consumption and NCD mortality.

SYSTEMIC DISORDERS/CONDITIONS – Health Care Use & Policy Studies

PSY44 ELASTICIDAD PRECIO DE LA DEMANDA PARA EXPLORAR MEDIDAS IMPUROS QUE DESALIENTEN EL CONSUMO DE BEBIDAS AZUCARADAS Y CONTRIBUYAN A PREVENIR OBESIDAD Y DIABETES TIPO II
OBJECTIVES: To describe the diagnosis and treatment pathway of patients with PsA. METHODS: Specialists (Rheumatologists, Dermatologists) from Latin America (Brazil and Mexico; LatAm), North America, Europe, Asia Pacific, and the Middle East were surveyed. Specialists provided information about patient demographics, disease and treatment history; patients voluntarily provided demographics and disease history. RESULTS: 952 Specialists (LatAm: 500, USA: 200, Europe: 100, Asia: 50, Middle East: 50) provided information. 76.7% of PsA patients (LatAm: 58.0%) had a psoriasis diagnosis before PsA, of whom only 41.1% (LatAm: 50.0%) were known to have been screened/monitored for PsA symptoms before their PsA diagnosis. On average across all PsA patients diagnosed occurred 1.6 years (SD: 3.8) after PsA symptom onset (LatAm: 1.8 years; SD: 2.8). After this extended duration without specific PsA treatment, at diagnosis 5.1% of patients received topical or phototherapy only, 68.3% of patients received conventional disease modifying Anti Rheumatic Drugs (csDMARD) or systemic corticosteroid; 10.4% received advanced therapy (AT; biologic or photodynamic-therapy-4 inhibitor), and 16.1% were not initiated treatment included in the GRAPPA recommendations. Despite improved symptoms (LatAm: 6.8%, 56.8%, 21.9%, 14.4% respectively), patients without treatment initiation at diagnosis (n = 723; LatAm: n = 122) waited on average an additional 2.8 years (LatAm: 2.7 years) before their first pharmaceutical treatment was initiated. Of the patients receiving AT (n = 346), only 28.9% received no csDMARD before AT, 37.6% received 1 csDMARD, 24.7% 2, and 8.9% > 3 (LatAm: 22.5%, 44.1%, 28.6%, 4.8% respectively). CONCLUSIONS: The analysis suggests that PsA treatment opportunities exist for patients diagnosed more than 2 years before PsA symptoms. Considering that PsA patients often have to wait until confirmed diagnosis, potentially through increased screening among psoriasis patients, and ensuring all patients receive effective treatment for PsA immediately at the time of diagnosis.

PSY46
APPROPRIATE ANKYLOSING SPONDYLITIS (AS) TREATMENT IS DELAYED FOR YEARS: RESULTS FROM A MULTINATIONAL SURVEY INCLUDING LATIN AMERICA

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OBJECTIVES: To describe the diagnosis and treatment pathway of patients with AS. METHODS: Rheumatologists from 18 countries, including Brazil and Mexico (LatAm), and their AS patients were surveyed. Rheumatologists provided information on patient demographics, disease and treatment history; patients voluntarily provided demographics and disease history. RESULTS: 641 Rheumatologists (LatAm: 31) included 2,887 patients (LatAm: 139). On average AS diagnosis occurred 3.0 years (SD: 5.5) after symptom onset (LatAm: 2.8 years; SD: 5.8). After this long period without successful diagnosis at diagnosis only 71.7% received conventional therapy (Non-Steroidal Anti-Inflammatory Drug with or without conventional systemic Disease Modifying Anti Rheumatic Drug (csDMARD); 9.9% received biologic therapy, 19.3% were not started on any pharmaceutical treatment included the ASAS AG recommendations despite being symptomatic (LatAm: 66.2%, 9.4%, 34.5% respectively). These patients without treatment initiation at diagnosis (n = 531; LatAm: 36) waited on average an additional 4.1 years (LatAm: 3.7 years) before their first pharmaceutical treatment was initiated. Almost half the patients received csDMARDs (45.7% LatAm: 57.6%), of whom 42.9% (LatAm: 20%) had purely axial disease where there is a known lack of efficacy of csDMARDs. Of patients currently receiving a biologic, almost 55.6% (LatAm: 65.6%) were receiving csDMARDs (27.1% 1 csDMARD; 15.6% 2 csDMARDs; 3.7% > 3 csDMARDs LatAm: 32.3%, 19.4% 4.0% respectively). Patients who received > 1 csDMARD before biologic waited longer before biologic therapy was initiated (3.3 vs. 2.4 years, p = 0.001, LatAm: 2.2 vs. 1.1 years, p = 0.066, Leads to 0 [worth of 0] was a non-significant delay). csDMARDs can improve AS treatment patterns: 1) by reducing the years that AS patients have to wait until confirmed diagnosis, 2) ensuring all patients receive effective treatment for AS immediately at the time of diagnosis, 3) by improving the quality of csDMARDs in axial disease which seem to delay more effective biologic therapy initiation.

SYSTEMIC DISORDERS/CONDITIONS – Patient-Reported Outcomes & Patient Preference Studies

PSY33
HEALTH-RELATED QUALITY OF LIFE IN MODERATE-TO-SEVERE PLAQUE PSORIASIS PATIENTS IN BRAZIL

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OBJECTIVES: To assess the impact of moderate-to-severe plaque psoriasis on health-related quality of life (HRQoL). Methods: A cross-sectional, observational and multicenter study enrolling Brazilian patients with moderate-to-severe plaque psoriasis. Data were collected between December/2015 and November/2016 from 10 specialized centers. Severity was defined according to physician evaluation. Data regarding HRQoL were obtained through two instruments: EuroQol-5D questionnaire (EQ-5D-3L) and Dermatology Life Quality Index questionnaire (DLIQ). EQ-5D-3L also includes a Visual Analogue Scale (VAS), which measures the health state (0= Death to 100= Perfect health state). RESULTS: The study included 188 patients. Most of them were female (52.1%), Caucasian/white (66.8%) and married/stable union (61.7%). The mean age at study visit and at disease onset were 48 (±13.3) and 33 (±16.4) years, respectively. The leading comorbidities were hypertension (46.2%), dyslipidemia (39.3%) and

PSY47
APPROPRIATE PSORIATIC ARTHRITIS TREATMENT IS DELAYED FOR YEARS: RESULTS FROM A MULTI-NATIONAL SURVEY INCLUDING LATIN AMERICA

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OBJECTIVES: To describe the diagnosis and treatment pathway of patients with PsA. METHODS: Specialists (Rheumatologists, Dermatologists) from Latin America (Brazil and Mexico; LatAm), North America, Europe, Asia Pacific, and the Middle East were surveyed. Specialists provided information about patient demographics, disease and treatment history; patients voluntarily provided demographics and disease history. RESULTS: 952 Specialists (LatAm: 500, USA: 200, Europe: 100, Asia: 50, Middle East: 50) provided information. 76.7% of PsA patients (LatAm: 58.0%) had a psoriasis diagnosis before PsA, of whom only 41.1% (LatAm: 50.0%) were known to have been screened/monitored for PsA symptoms before their PsA diagnosis. On average across all PsA patients diagnosed occurred 1.6 years (SD: 3.8) after PsA symptom onset (LatAm: 1.8 years; SD: 2.8). After this extended duration without specific PsA treatment, at diagnosis 5.1% of patients received topical or phototherapy only, 68.3% of patients received conventional therapy (Non-Steroidal Anti-Inflammatory Drugs, or conventional synthetic Disease Modifying Anti Rheumatic Drugs (csDMARD) or systemic corticosteroid), 10.4% received advanced therapy (AT; biologic or photodynamic-therapy-4 inhibitor), and 16.1% were not initiated treatment included in the GRAPPA recommendations.
PSY35

TREATMENT SATISFACTION AMONG PATIENTS WITH MODERATE-TO-SEVERE PLAQEUR PSORIASIS

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OBJECTIVES: To explore the satisfaction with any performed treatment among patients with moderate-to-severe plaque psoriasis in Brazil. METHODS: A cross-sectional study enrolling Brazilian patients with moderate-to-severe plaque psoriasis in 10 centers specialized in the treatment of the disease was conducted between December/2015 and November/2016. During a face-to-face structured interview, patients were asked about demographic and clinical characteristics. To assess satisfaction with treatment, the 14-item Treatment Satisfaction Questionnaire for Medication (TSQM) was used. This instrument provides scores on four scales – side effects, effectiveness, convenience and global satisfaction – that ranges from 0-100, in which higher scores represent more satisfaction. Data was analyzed using means of central tendency and dispersion and measures of frequency. RESULTS: 188 patients were included in the study. Most patients were female (92.4%), middle-aged (Mean Age 52.8; ± 12.5 years) and were diagnosed with chronic psoriasis (86.8%). Of those diagnosed, 44.3% currently had professional activity. According to TSQM-N (188), the most affected dimension was work productivity (mean 23.2; ±29.5). Moderate effect was found for effectiveness (mean 66.8; ±42.9), quality of life (mean 61.7%; ±28.5) and output demands (mean 50.9%; ±15.6). Currently, 9 patients (4.8%) reported absent of problems in any domains. Overall score of TSQM was 50.8 (±29.5). CONCLUSIONS: The treatment satisfaction with any performed treatment among patients with moderate-to-severe plaque psoriasis is not satisfactory.
and BPI-Score severity (M = 6.89, SD = 1.92), respectively. Those diagnosed with CNP had the highest BPI-Score interference Scale scores (M = 6.52, SD = 2.74) and Overall Work Impairment (M = 77.13, SD = 18.21). Patients with PFN reported the least impairment based on EQ-5D index scores (M = 0.60, SD = 0.04). Those with DFN had the lowest BPI scores (FPN: severity = 4.55, SD = 0.32; biolereference: M = 4.85, SD = 2.68) and Overall Work Impairment (M = 24.46, SD = 26.94). **CONCLUSIONS:** Evaluation of chronic pain in Brazil yielded a NeP prevalence of 14.5%. NSAIDs and opioids were commonly used to treat NeP. Additionally, there was a high incidence of NeP-related symptoms across all subtypes, but varying levels of dysfunction on all measures.

**PSY39**

**DELAYED BIOLOGIC SWITCHING AMONG PSORIATIC ARTHRITIS (PsA) PATIENTS MAY RESULT IN POOR HEALTH-RELATED QUALITY OF LIFE: RESULTS FROM A MULTI-NATIONAL SURVEY INCLUDING LATIN AMERICA**

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**OBJECTIVES:** Examining the reasons for switching advanced therapy (AT, biologics, phosphodiesterase-4 inhibitor), and treatment failure and its impact on PsA patients. METHODS: Specialists (Rheumatologists, Dermatologists) from Brazil and Mexico (LatAm), North America, Europe, Asia Pacific, Turkey and the Middle East, and their AT treated PsA patients were included. Reasons for switching AT, including initial or early biologic treatment failure (≥24 months), AT switching due to disease severity had worsened, remained severe, was "unstable" or "deteriorating", they were dissatisfied with disease control, and/or did not consider treatment a success. At the time of switch (≤65years (working age), and BPI-Score severity (M = 6.89, SD = 1.92), respectively. Those diagnosed with CNP had the highest BPI-Score interference Scale scores (M = 6.52, SD = 2.74) and Overall Work Impairment (M = 77.13, SD = 18.21). Patients with PFN reported the least impairment based on EQ-5D index scores (M = 0.60, SD = 0.04). Those with DFN had the lowest BPI scores (FPN: severity = 4.55, SD = 0.32; biolereference: M = 4.85, SD = 2.68) and Overall Work Impairment (M = 24.46, SD = 26.94). **CONCLUSIONS:** Evaluation of chronic pain in Brazil yielded a NeP prevalence of 14.5%. NSAIDs and opioids were commonly used to treat NeP. Additionally, there was a high incidence of NeP-related symptoms across all subtypes, but varying levels of dysfunction on all measures.

**PSY40**

**DELAYED BIOLOGIC SWITCHING AMONG ANKYLOSING SPONDYLITIS (AS) PATIENTS MAY RESULT IN POOR HEALTH-RELATED QUALITY OF LIFE: RESULTS FROM A MULTI-NATIONAL SURVEY INCLUDING LATIN AMERICA**

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**OBJECTIVES:** To assess the frequency of treatment failure, switching biologics, and its impact on health related quality of life (HRQoL) in AS patients. METHODS: Rheumatologists from Latin America (Brazil and Mexico), North America, Europe, Asia Pacific, and the Middle East, and their biologic treated AS patients were surveyed. Reasons for switching biologics, including primary lack of efficacy (1LE, initial non-response), secondary lack of efficacy (2LE, loss of response over time) were captured. Patients’ HRQoL was assessed by 36-Item Short Form Health Survey (SF-36) and EuroQol 5 dimension questionnaire (EQ-5D); work impairment was assessed via the Work Productivity and Activity Impairment Questionnaire (WPAI). Treatment “failure” was defined as: after ≥3 months specialists perceived disease severity had worsened, remained severe, was ‘unstable’ or ‘deteriorating’; they were dissatisfied with disease control, and/or did not consider treatment a success. At the time of switch (≤65years (working age), and BPI-Score severity (M = 6.89, SD = 1.92), respectively. Those diagnosed with CNP had the highest BPI-Score interference Scale scores (M = 6.52, SD = 2.74) and Overall Work Impairment (M = 77.13, SD = 18.21). Patients with PFN reported the least impairment based on EQ-5D index scores (M = 0.60, SD = 0.04). Those with DFN had the lowest BPI scores (FPN: severity = 4.55, SD = 0.32; biolereference: M = 4.85, SD = 2.68) and Overall Work Impairment (M = 24.46, SD = 26.94). **CONCLUSIONS:** Evaluation of chronic pain in Brazil yielded a NeP prevalence of 14.5%. NSAIDs and opioids were commonly used to treat NeP. Additionally, there was a high incidence of NeP-related symptoms across all subtypes, but varying levels of dysfunction on all measures.
**OBJECTIVES:** The objective of this study is to evaluate the impact in the quality of life related to health (QoL) in the IMC in Chile. **METHODS:** We analyzed data from the Encuesta Nacional de Salud 2016-2017 (ENS), in the cui which 6,227 individuals of 15 años or más. The ENS corresponds to a survey of a large sample size using a probability sample methodology and the application of the cuestionario EQ-5D, which includes the description of the quality of life assessed by patients. In 5 dimensions and a scale analogous visual (EQ-5D VAS, 0-100). We analyzed the data taking into account sex, age, BMI, and impact on the EQ-5D VAS, adjusting for factors socio-cultural conocidos como sexo, edad, etnia and the presence of enfermedades crónicas. This same effect was analyzed by comparing the prevalences of problems of quality of life surveys (EQ-5D). **RESULTS:** There was an association statistically significant between BMI and EQ-5D VAS, for which a presentation was done in distinct ranges between men and women, as a result of the ajustes. The men and women reported lower values of EQ-5D VAS in patients with higher BMI and both groups reported the highest values for the BMI between 25-29.99, which were observed in men and women. **CONCLUSIONS:** It is possible to observe an increase between QoL and BMI, and the importance of implementing a program of IMC health services consideration for patients with the BMI ≥ 30 in this patient population.
calculated with hospital administrator KOL. RESULTS: 10 different types of elective surgery were documented, from general surgery, laparoscopic and open gynecology and abdominal surgery, to orthopedics. In all surgeries the results showed savings with the use of BIS. Savings went from USD$17.01 in the case of abdominal open surgery to USD$5,447 in the case of minimum Orthopedic Surgery. The greatest saving observed in an intravenous anesthesia was used during the laparoscopic procedure. CONCLUSIONS: The use of BIS during elective surgery anaesthesia could represent important savings from a hospital perspective: although savings were observed in all the ten different types of surgeries, this is especially true when important amount of procedures are planned with intravenous anesthesia.

PHP18

REVESIÓN SISTEMÁTICA DAS DIRETRIZES DE ANÁLISE DE IMPACTO ORÇAMENTÁRIO
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OBJECTIVE: The increase of demand for services of high-dimensionality technology is a tendency universal, which has been reduced by the evolution, which is a result of the significant increase in the number of people that seek healthcare services, mainly for high-complexity diseases. The National price for insulin medicines (2016) the average wholesale prices (WP) for insulin is calculated as the minimum RP for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends. RESULTS: The analysis of a new pilot project (2017) indicates that the experience of use and regulation of prices for insulin medicines in 2012-2014, when declaring the AIO for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends. CONCLUSIONS: We have obtained a base of data for the classification of drugs by the HTA methodology. We have proposed the method that involves: 1) clinical analysis of a new pilot project (2017) indicates that the experience of use and regulation of prices for insulin medicines in 2012-2014, when declaring the AIO for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends. 2) calculation of the minimum RP for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends. 3) analysis of the minimum RP for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends. 4) calculation of the minimum RP for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends. 5) calculation of the minimum RP for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends. 6) calculation of the minimum RP for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends.

PHP19

MODELIZACIÓN ECONÓMICA DEL AJUSTE POR RIESGO DEL GASTO SANITARIO POR CÁPIDA: UNA MIRADA DESCRIPTIVA EN LA COMUNIDAD ALICANTE, ALICANTE, ESPAÑA
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OBJECTIVE: To analyze the capacity explicative of the system of adjustment by risk in the national health system. METHODS: Financial analysis of the national health system of Spain. Data were obtained from the National Health System (SERMUS) and the autonomous health systems. The analysis of a new pilot project (2017) indicates that the experience of use and regulation of prices for insulin medicines (2016) the average wholesale prices (WP) for insulin is calculated as the minimum RP for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends. CONCLUSIONS: We have obtained a base of data for the classification of drugs by the HTA methodology. We have proposed the method that involves: 1) clinical analysis of a new pilot project (2017) indicates that the experience of use and regulation of prices for insulin medicines (2016) the average wholesale prices (WP) for insulin is calculated as the minimum RP for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends. 2) calculation of the minimum RP for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends. 3) analysis of the minimum RP for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends. 4) calculation of the minimum RP for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends. 5) calculation of the minimum RP for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends. 6) calculation of the minimum RP for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends.

PHP20

VALOR MONETARIO DE LAS MUERTES DE MOTOCICLISTAS EN COLOMBIA
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OBJECTIVE: In 2014 there were 5,546,029 registered motorcycles. According to the press, accident and mortality figures are increasing. The greatest amount of deaths was observed in the 30-39 age group, a 27% increase compared with 2010. The most affected five-year age-group was the 21-30 years old, 24% of the total fatalities in the year 2014. A three years interval was used during the laparoscopic procedure. CONCLUSIONS: The use of BIS during elective surgery anaesthesia could represent important savings from a hospital perspective: although savings were observed in all the ten different types of surgeries, this is especially true when important amount of procedures are planned with intravenous anesthesia.

PHP22

SUBSTANTIACION DE LA NACIONAL POLICY OF PRICING AND AVAILABILITY OF DRUGS
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OBJECTIVE: Methods of state regulation of drug prices and their effectiveness from the point of view of HTA. METHODS: Analysis of pricing indices of drugs. RESULTS: In calculating the drug prices, the International Reference Pricing (IRP) in the absence of mandatory medical insurance. The first pilot project on regulation of prices for hypertensive drugs was implemented in 2012-2014, when declaring the AIO for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends. CONCLUSIONS: The analysis of a new pilot project (2017) indicates that the experience of use and regulation of prices for insulin medicines in 2012-2014, when declaring the AIO for a dosage form. The cheapest generics are refundable. This negatively affects the results of pharmacotherapy and market trends. 1) clinical analysis, 2) analysis of availability of drugs in the regulatory list, 3) analysis of official prices in reference countries, the procedure of their formulation; 4) economic analysis. CONCLUSIONS: The analysis of the methods of state regulation of drug prices indicates the need for implementation of the HTA methodology in order to reduce these drawbacks.

PHP23

INTERNATIONAL REFERENCE PRICING EXPANDS REACH IN LEADING LATIN AMERICAN COUNTRIES
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OBJECTIVE: Leading Latin American markets are increasingly resorting to international reference pricing (IRP) to control pharmaceutical prices, amidst the impact of the economic recession on out-of-pocket expenditure in Brazil, and ambitious reform under the Statutory Health Law set to expand the drugs available to Colombian patients. This research updates a 2014 analysis to understand how the former has impacted IRP in the region. METHODS: Extensive secondary research was conducted to identify relevant legislation and literature to construct the landscape of IRP policy changes in Brazil and Colombia between 2013 and 2016. This was complemented with in-depth interviews of payers/regulators and industry representatives in each of the countries. RESULTS: In Brazil, despite ongoing discussion over modernizing the Pharmaceutical Price Regulation Chamber Resolution 2 of 2009, no significant changes were observed in the approach to IRP. At stage of the pilot project the analysis of the pilot project the analysis of the social and economic effectiveness should be performed based on the HTA methodology. We have proposed the model that involves: 1) clinical analysis, 2) analysis of availability of drugs in the regulatory list, 3) analysis of official prices in reference countries, the procedure of their formulation; 4) economic analysis. CONCLUSIONS: The analysis of the methods of state regulation of drug prices indicates the need for implementation of the HTA methodology in order to reduce these drawbacks.
Medicines and Medical Devices is debating policy adjustments, Circular 03 of May 2013 mandates retailers to generate for on-paper prices and promote the use of IRP to determine the price cap of existing drugs with high budget impact in the public sector. The most high-profile modification since 2014 has been the expansion of this tool to medicines declared to be of public interest.

**CONCLUSIONS:** These Latin American governments are expanding the use of IRP to prevent the lower prices from being exploited by counterfeiters and more recently, biosimilars, to ensure much needed savings for both consumers and the public sector.

**PHP24**

**PERCEPCIÓN DE LA COMPETENCIA EN EL MERCADO DE MEDICAMENTOS ESPECIALES Y HUÉRFANOS DE PANAMÁ**

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**OBJECTIVES:** Medir la percepción de la competencia en el mercado de medicamentos especiales y huérfanos de Panamá, mediante regresión semilogarítmica. Se construyó un índice de percepción de la competencia para farmacias y distribuidores mediante análisis factorial por componentes principales y matriz de correlaciones políricicas. **RESULT:** La tasa de inflación de los productos originales fue 0,023 (4.906, p<0.05) 0,2%, equivalente al 6,0% anual. Los genéricos 0,015 (7.906, p<0.05), 1,66%, equivalente al 6,0% anual. 41,0% de minoristas señalaron que los precios se han incrementado en 5,0% desde hace un año. 16,5% de los consumidores no disponen de medicamentos. 61,0% no pueden pagarlos y el 21,0% los adquiere sin receta. 85,0% de minoristas, 64,7% de distribuidores y 55,5% de farmacéuticos, considera el mercado muy competitivo. 80,0% de los minoristas no establece el precio respecto de la competencia y 27,5% de los minoristas indican que lo suelen el 89,5% de distribuidores. 84% de distribuidores y farmacéuticos que los fabricantes exigen respetar el precio sugerido. La provincia de Panamá, con el 40,6% de las farmacias privadas del país, presenta el índice más bajo de percepción de la competencia.

**PHP25**

**SELF-PERCEIVED HEALTH IN LATIN AMERICA: RESULTS FROM 2007-2008 GALLUP WORLD POLL**

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**OBJECTIVES:** To describe regional differences in health perceptions in 22 Latin American countries analyzing data from 2007-2008 GallupWorldPoll (GWP). **METHODS:** GWP represents a cross-sectional annual household survey with a probabilistic design that is fielded in more than 150 countries, using randomly selected, nationally representative sample sizes between 500 and 1,000 by country. In the 2015 version used, the questionnaire was structured using a four-level scale to assess self-perceived health in 22 Latin American countries. EQ-SD profiles (5 dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety/depression) were grouped in “No problems” and “Any problem” and described by prevalence. EQ-VAS was assessed as a continuous variable ranging from 100 (best health) to 0 (worst health). The t-test and the test of Mann-Whitney U were used to compare the means and the medians of the 22 countries. Pain/discomfort had the higher prevalence of EQ-SD health problems (23.3%) in Latin America and also in most countries individually. Haiti had the highest EQ-SD prevalence in Self-care problems for all ages, and the highest for younger groups in Mobility and Usual activities. Guyana and Mexico had the highest prevalence in older groups for Anxiety/depression. Mean EQ-VAS for Latin America was 78.9 (SD=20.56) and decreases with age. Women tend to present lower scores for all age-groups. Haiti has the lowest mean EQ-VAS scores with 49.30 (SD=22.50) and Costa Rica the highest, 83.97 (SD=17.50). Five countries in the group are below Latin American average (Bolivia, Chile, Ecuador, Guatemala, Haiti, Peru). **CONCLUSIONS:** Health perception clearly differ in Latin American countries probably due to local differences in economic and social characteristics. In terms of EQ-SD dimensions, the prevalence of pain/discomfort should represent a crucial concern for policy-making, as well as the need for health care systems to impact society regarding these aspects. Further analyses are required to better understand disparities in self-perceived health in Latin America.

**PHP26**

**DIFERENCIAS GEOGRÁFICAS EN LA SALUD AUTO-PERCIBIDA COMUNAL DE CHILE**

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**OBJECTIVES:** Determinar la auto-percepción de la calidad de vida relacionada con la salud (CVRAS) en adultos de 18 a 60 años en comunas de la región Metropolitana y el país, para identificar diferencias geográficas en dimensiones y subindicadores. **METHODS:** Estudio transversal en muestra no probabilista de adultos, mayores de 35 años, residentes de las comunas de Colina (Región Metropolitana/RM)/Central) y Chiguayante (Región del Biobío/Sur), que asistieron a programas de salud y protección social en Panamá y Chiguayante. Resultados: La CVRAS media se comparó entre medias se analizaron con t-test y las de mediana con el test de Mann-Whitney, y sus dos componentes agrupados: salud fisica y salud mental. Las comparaciones entre medias se analizaron con t-test y las de mediana con el test de Mann-Whitney, considerando una significación del 0.05. **RESULTS:** De un total de 140 encuestas, 68 corresponden a Colina y 72 a Chiguayante. La CVRAS media de Colina fue de 38.14 (DE=13.79) y de 38.76 (DE=13.76) para Chiguayante, p=0.05, diferenciándose significativamente en la comparación de medias del componente de salud mental entre Colina (p50: 54,01) y Chiguayante (p50: 52,28). **CONCLUSIONS:** Los resultados indican que pueblos con altas poblaciones tienen CVRAS más altas en indicadores de salud auto-percebida que son distintas a las reportadas en encuestas nacionales con representatividad regional, donde se aprecia una tendencia general de puntuajes menores en la RM. Se recomienda en futuras investigaciones considerar la inclusión de instrumentos que midan CVRAS en encuestas nacionales con representatividad comunal, considerando la diversidad cultural y geográfica de Chile. Dicha información es clave para el diseño de intervenciones de salud pública atingente a las necesidades locales de la comunidad.

**PHP27**

**EL AUMENTO DE LA PRODUCCIÓN CIENTÍFICA E LA IMPORTANCIA DE LA RÁDARA**

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**OBJECTIVES:** As informações científicas são pilares do processo decisório do ponto de vista clinicista, na escolha do melhor tratamento para seu paciente, e do coletivo, para a tomada de decisão por parte de gestores. Um grande desafio é a seleção de dados em meio à crescente quantidade de publicações. A biblioteconomia possui ferramentas metodológicas que visam facilitar a busca e seleção de informações. Este estudo tem como objetivo mostrar os números de indexações e buscas realizadas na base de dados MEDLINE/PubMed e Literatura Latinoamericana e do Caribe. O profissional bibliotecário é uma importante ferramenta metodológica de auxílio, uma vez que fornece o acesso à informação de qualidade aos tomadores de decisão e oferece subsídios para a atividade prática dos pesquisadores.

**PHP28**

**AN IMPORTANT TOOL FOR HORIZON SCANNING DISSEMINATION IN BRAZIL**

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**OBJECTIVES:** We have used metrics provided by Google Analytics as a clue of the RADAR visitor's behavior. The parameters “pageview” and “average session duration” were considered for this exploratory analysis. We considered the accesses to RADAR that occurred between 01/01/2015 and 01/03/2017. **RESULTS:** There were registered more than 5000 accesses to RADAR in the analysis period. There were recorded 582 pageviews to RADAR in 2015, 1080 in 2016 and 152 in 2017. The average session duration ranged from 1’36” to 19’52”. **CONCLUSIONS:** The growth of the amount of accesses along the time indicates that RADAR is an important tool to Horizon Scanning in Brazil. However, the results indicates that the strategies of dissemination must be fortified.

**PHP29**

**THE ROLE OF STAKEHOLDER ENGAGEMENT IN E-HEALTH AND THE USE OF BIG DATA TO PREDICT HEALTH OUTCOMES**

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**OBJECTIVES:** Known about the predictive role of stakeholder involvement in e-health systems in remote populations, ease stakeholder engagement with the system, and create a sustainable business model that would support the system. **METHODS:** The classification and regression trees (CART) algorithm was used to construct a binary decision tree to examine the performance of RADAR in the dissemination of new and emerging technologies in health and partners. Horizon scanning is part of Health technology assessment (HTA) process and intent to predict which technologies have potential to impact health care, existing health-related technologies. **RESULTS:** To measure the performance of RADAR in the dissemination of new and emerging technologies’ information within the Web page. **RESULTS:** We have used metrics provided by Google Analytics as a clue of the RADAR visitor’s behavior. The parameters “pageview” and “average session duration” were considered for this exploratory analysis. We considered the accesses to RADAR that occurred between 01/01/2015 and 01/03/2017. **RESULTS:** There were registered more than 5000 accesses to RADAR in the analysis period. There were recorded 582 pageviews to RADAR in 2015, 1080 in 2016 and 152 in 2017. The average session duration ranged from 1’36” to 19’52”. **CONCLUSIONS:** The growth of the amount of accesses along the time indicates that RADAR is an important tool to Horizon Scanning in Brazil. However, the results indicates that the strategies of dissemination must be fortified.

**A906**
the predictive factors of life expectancy at birth. The receiver operating charac-
teristic (ROC) curve was used to measure the classification accuracy of the model. Visual representation of the prediction model was presented on a decision tree graph.

RESULTS: The CART model showed classification accuracy, sensitivity, and specificity values of 0.5855, 0.5775, and 0.6111, respectively. The area under the ROC curve (AUC) was 0.7195. The results revealed that in countries where patients had access to their own e-Health-related data, those patients had higher life expect-
cancy at birth.

CONCLUSIONS: Study results shed light on the predictive role of stakeholders’ access to health systems and large data sets to determine health outcomes. The study results may stimulate health policy makers’ decisions to foster a supportive environment to improve stakeholders’ ability to use e-Health technologies and expand on the use of big data for improved health outcomes research.

PHP30 ANALYSIS OF VARIABILITY IN THE PRECISE OF SERVICES IN HEALTH FOR COLOMBIA
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OBJECTIVES: Analyzing the variability of the precise of services in health in Colombia according to regions geographically for the year 2015. METHODS: Se toman los registros de servicios de salud en una aseguradora colombiana con 3 millones de usuarios para el año 2015, se evaluaron 10 procedimientos trazadores. Se calcula el costo medio de los procedimientos como valor de referencia, teniendo en cuenta el total y la frecuencia de uso para ser diferentes regiones del país. Mediante un ANOVA se miden las variaciones del costo entre las regionales para cada procedimiento determinando las variaciones respecto al costo promedio nacional. A través de una regresión lineal individual para cada procedimiento se evaluan las desviaciones de los precios promedio por región. Los datos fueron procesados utilizando el software Stata 14.0. RESULTS: Se encontraron diferencias estadística-
mente significativas en los costos de interconsultas entre regiones. Las diferencias significativas se mantuvieron frente al costo promedio evento nacional para los procedimientos seleccionados, medidos mediante la prueba t a un nivel de confianza del 99%. El procedimiento que presenta el mayor coeficiente de variación es Terapia de rehabilitación pulmonar (44,9%) y el que menos presenta coeficiente de variación es Consulta de control o seguimiento por medicina general (8.74%). Por su parte, el promedio de coeficiente de variación de los 10 procedimientos analizados es de 20.86%. CONCLUSIONS: Hay variabilidad en los precios de los servicios en salud en Colombia, donde las tarifas cambian entre regionales, teniendo como referencia el comportamiento de cada regional. Por otro lado, se encuentran diferencias significativas frente a las tarifas promedio nacional. Los hallazgos se pueden extender a investigaciones detalladas del origen de la variabilidad de los precios.

PHP31 CHARACTERISTICS AND COST BURDEN OF ADVERSE DRUG REACTIONS IN A TERTIARY HEALTH CARE HOSPITAL IN SOUTHERN CHILE
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OBJECTIVES: Adverse drug reactions (ADR) are nonspecific clinical manifesta-
tions that are often indistinguishable from symptoms of the underlying disease. It is important to identify the preventability of ADRs and other adverse events as economic impact of ADRs occurring in hospitals. The objective of this study is to describe the occurrence and economic impact of suspected ADRs in a complex hospital. METHODS: Retrospective observational study was performed using a database of patients including 30 months of reported ADRs from 2015-2017. Cause responsibility was determined using four algorithms. ADR concordance, preventability, severity, and direct medical costs associated with ADR treatment were estimated. RESULTS: 310 records of suspected ADRs were analyzed. ADRs associated with the WHO to the ADRs was the most frequent, in that the 0.3% true were ADRs, 17.7% were probable and 81.9% were possible. The algorithms of Naranjo, Karch-Lasagna and the U.S. Food and Drug Administration (FDA) had a 61%, 45% and 35% concordance, respectively, compared to the WHO algorithm. According to the WHO algorithm, 81% of the suspected ADRs were categorized as moderate, 15% as severe and 4% as mild. 22% of the ADRs were classified as preventable and 78% as non-preventable. Among the preventable ADRs, 8% were attributable to health professional. The total associated with ADR was CLP $94,892,578 (US $146,420), and the cost per patient was CLP $382,632 (US $590). CONCLUSIONS: ADRs exert both health and economic impacts on hospitals. Since a significant percentage of ADRs in this hospital were preventable and related to the WHO algorithm, it was determined that 0.3% true were ADRs, 17.7% were probable and 81.9% were possible. The algorithms of Naranjo, Karch-Lasagna and the U.S. Food and Drug Administration (FDA) had a 61%, 45% and 35% concordance, respectively, compared to the WHO algorithm. 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OBJECTIVES: Identificar a efetividade na solicitação de exames laboratoriais de rotina nas unidades de saúde do SUS. METODOS: Pesquisa transversal de tipo quantitativo. Foram analisados os resultados de 6.552 exames laboratoriais solicitados em duas UBS de Manágua, PR. Os resultados dos exames foram classificados como normais ou alterados, e tabulados com o auxílio do ambiente estatístico R Development Core Team. O nível de sigilo de cada resultado dentro do nível de normalidade obtêve-se a efetividade desses exames. RESULTAS: 72,2% dos exames solicitados nas UBS apresentaram resultados dentro dos valores normais. Não houve diferença estatisticamente significativa entre os dois grupos. A análise dos dados demonstrou que a efetividade na solicitação dos mesmos, fato que gera questionamentos quanto aos parâmetros utilizados para a sua solicitação, é um problema que de pronto deve ser estudado. Nesta pesquisa pondera-se sobre a inadequada solicitação de exames complementares e a relação destes com o impacto financeiro para a saúde pública e privada, fato que deve ser fortemente considerado. Apesar das limitações deste estudo, identificaram-se a importância na aplicação de parâmetros que auxiliem na solicitação de exames laboratoriais, visando a redução na realização de exames excessivos. Sugere-se estudar futuros que visem a adoção de parâmetros que objetivem a restrição de solicitação de exames sem que haja implicações para a prática médica e saúde do paciente, de modo a justificar a alocação de verba para os exames complementares.

PHP36 NATIONAL ADOPTION OF NEW IMMUNOSUPPRESSANTS FOR SOLID ORGANS AND STEM CELLS TRANSPLANTATIONS

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OBJECTIVES: To propose new immunosuppression drugs incorporation for the Brazilian public healthcare system. METHODS: Systematic evidence synthesis and Benefit/Cost Analysis on registries-based cases Kaplan-Meier survival and economic assessments were presented in specialized national congresses open public Delphi sessions to build professional Clinical and Therapeutic Protocols (CPT3) by consensus. Five consensus transplantations PCDTs with SUS perspectives budget impact and sensitivity analysis were submitted to the Health Ministry. SUS Technology Incorporation National Commission (CONITEC) plenary and voted. PCDTs were publicized in CONITEC Internet and Diario Oficial da Uniaoperiodical widely disseminated through social media for Public Consultation. Public contributions were added to PCDTs to subsidize Health Ministry policy making. RESULTS: The São Paulo State Health Secretariat coordinated the synthesis and economic assessments made by 115 over 10 years experienced transplant specialists and health technology evaluators. Heart, lung, liver, pancreas and hematopoietic cells transplantation PCDTs with tacrolimus, sirolimus and everolimus alternative immunosuppression can significantly prevent 27.8%, 28.1%, 7.2%, 16% and 4.3% graft loss or graft versus host disease and death, respectively. For conventional cyclosporine-based refractory transplanted patients’ rescue during the first year post-transplantation, saving substantial healthcare resources used. Demonstrated partial benefit sustained. Analysis demonstrated +US$698,655.17, +US$1,051,670,40, +US$77,302,51, +US$281,389.42 and +US$50,734.08 budget impact, respectively, resulted in overall US$1,085,443.55 for 2015. The 0.5% of patients were favorably enrolled in SUS program. Plenary members, 155 public contributions were added by patients and stakeholders, and the Brazilian Health Ministry decided to adopt SUS reimbursement list.

CONCLUSIONS: Democratic participation gave PCDTs real-world adjustments, SUS innovation and compliance.

PHP37 ANALYSIS OF THE RELATIONS OF MERCADO ENTRE EL SEGURIDAD OBLIGATORIO Y EL SEGURIDAD VOLUNTARIO PARA EL CASO COLOMBIANO

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OBJECTIVES: Establish if the social security and voluntary security for the case of Colombia comport as bienes sustitutos o complementarios de acuerdo a la elasticidad entre ellos. METHODS: With information of two assures of services of health, one of the social security (SO) and the other voluntary security (SV) for 2015 and 2016, they were selected patients that tuvoverfication in ambos asegurados. For evaluate the relation they estimated the variations of the consumption and the price of the social security and they analyzed the relation with respect to the consumption of the voluntary security. For determine the elasticities for the same social security and voluntary security were calculated, by the free public voluntary service was 41%, the increase of the consumption of the voluntary service was 8%, and with respect to the price was 11.6.

CONCLUSIONS: Los seguros en estudio se comportan como bienes complementarios cuando se analizan las variaciones de consumo del seguro obligatorio con respecto a la prima, se comportan como bienes sustitutos. El cálculo de la EC50 demuestra alto grado de sensibilidad del consumo del seguro obligatorio con respecto al crecimiento del consumo del seguro voluntario, encontrando que el consumo del seguro obligatorio con relación a la prima es bastante elástico.

PHP38 APLICACIÓN DE LA MCDA NAS TOMADAS DE DECISIÓN INVESTIGACIÓN EN SALUD – UNA VISIÓN SISTEMÁTICA

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OBJECTIVES: diante da presença de escassos dados, que demandam uma análise adequada dos recursos econômicos nas tomadas de decisões (MCDA) apresenta alto potencial para o gerenciamento do processo de tomada de decisão. Este estudo objetivou identificar e comparar os métodos de MCDA por mensuração de valor aplicadas à área da saúde nos últimos anos. Para tanto, avaliamos os métodos de tomada de decisões em investimento. METHODS: uma revisión sistemática foi realizada nas bases de dados do Medline (PubMed), Scopus e Embase. As buscas por estudos em inglês, espanhol ou português foram feitas em janeiro de 2017, sem restrição de data inicial. Os métodos de tomada de decisão foram classificados de acordo com os cálculos de modelo (MCDA). Conclusões: a hierarquia de árvore de valor técnica para avaliação e alocação de recursos, alavancando o impacto dos resultados. RESULTAS: a busca resultou em 917 artigos, dos quais 31 foram selecionados. Destes, 22 aplicaram o modelo de decisão por valor multiatributo (MVA), 7 o processo de análise hierárquica (AHP) e 2 mesclaram os dois métodos. A efetividade do resultado depende da correta construção do modelo, da capacidade do facilitador intermediar a interação da grupo e, em especial, da competência dos avaliadores em fazer assertivos seus julgamentos de valor. Conclusões: a predominância ocorreu em função do método ser mais intuitivo, apresentando maior potencial de ser efetivo em aplicações iniciais da MCDA.

PHP39 RETROSPECTIVE ANALYSIS OF THE USE OF INCREMENTAL COST- EFFECTIVENESS RATIO (ICER) IN TECHNOLOGY INCORPORATION IN THE BRAZILIAN PUBLIC HEALTH SYSTEM (SUS), 2012-2016, PERSPECTIVES AND CHALLENGES FOR THE BRAZILIAN CONTEXT

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BACKGROUND: The National Committee for Technology Incorporation (CONITEC) was established in 2011, and is supervised by the Department of Management and Incorporation of Health Technology, Ministry of Health. Among the requested documents, applicants must provide a Health Economic Evaluation (HEE) under the SUS perspective, including an incremental cost-effectiveness ratio (ICER). OBJECTIVES: To analyze the CONITEC reports that recommended the incorporation of the technology in the SUS, we compared the set of ICERs with the SUS policy. METHODS: Descriptive study, based on the reports available at the CONITEC website from July 2012 to December 2016. Reports were classified according to: type of technology, type of applicant, type of report, presence of HEE, and the type of HEE. ICER was compared with the CET by WHO and Center of Health Economics (CHE), University of York. RESULTS: One hundred and one reports recommended the incorporation of the technology in the SUS, representing 70.7% of the reports produced in the period. Most of the technologies recommended were drugs (68.3%), procedures (20.1%) and products (7.0%). Eighty reports included some economic data, 75% (n = 60) were classified as partial HEE and 25.0% (n = 20) were full HEE. The ICER values varied 13.60 (in full HEE) to 101,000 (in partial HEE) for the cost-effectiveness ratios (CERs). Of all the reports recommended for incorporation (n = 101), only 12.9% (n = 13) performed a complete HEE with ICER. Twelve reports presented ICER below the CET proposed by WHO and only three below the CET proposed by CHE. CONCLUSIONS: Most of the reports recommended included only partial HEE. Use of a cost-effectiveness threshold (CET) was not an essential criterion for recommending technology incorporation, even though it is an explicit criterion in the formal documents. This context reflects the current challenges in the implementation process of a Policy of Health Technology Management.

HEALTH CARE USE & POLICY STUDIES – Health Care Research & Education

PHP40 USES AND APPLICATIONS OF EQ-5D IN LATIN AMERICA & THE CARIBBEAN: SYSTEMATIC REVIEW AND BIBLIOGRAPHIC ANALYSIS

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OBJECTIVES: To systematically review and describe the uses and applications of the EQ-5D in Latin America & the Caribbean. METHODS: We conducted a systematic review and a bibliographic analysis. We searched in PubMed, Web of Science, Scopus, Lilacs, Embase, the EuroQol website and in generic Internet engines (June 2016). We included studies for economic evaluations. The EQ-5D was included in or reported data from one or more LA&C countries using any version of the EQ-5D. RESULTS: From 537 retrieved articles, 189 met the inclusion criteria. More than half publications were journal publications (109: 57.4%), 39.5% (74) were conference abstracts, and 3.2% (6) were theses. The number of LA&C participants ranged from 4 in a
multi-country clinical trial to 41,592 in a population survey. Twenty-seven publications reported data from more than one country. 9 of these studies were reported as being conducted in Latin America or South America without country specification. Most publications (162, 85.7%) were about single country studies. Brazil (28%), Mexico (18.5%) and Argentina (13.2%) were the nations that most were studies were conducted. Trend analysis showed a steady increase in the number of publications from 2005 to 2015 when the maximum was reached (43; 22.8%). Most publications were observational studies (65.6%), followed by clinical trials, economic evaluations and validation studies (29.5%) and systematic reviews (6.3%). The most frequent EQ-5D study was conducted in Brazil (68.3%). Other uses included health economics (21; 11.1%) and other uses like population health surveys, questionnaire validation or methodological studies (39; 20.6%). CONCLUSIONS: The utilization of EQ-5D has been increasing in the region in the last decade, but is still limited to a few countries. It is most commonly used in clinical studies. This review may help assemble a repository of local health states and utilities for different clinical conditions to be used in economic evaluations.

PHP41 ETHICAL REQUIREMENTS FOR THE CONDUCT OF DRUG UTILIZATION STUDIES IN LATIN AMERICA: A CROSS-SECTIONAL SURVEY

48X

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OBJECTIVES: To assess ethical requirements for clinical and population-based studies that assess the utilization and impact of public health interventions implemented in Latin America. METHODS: Cross-sectional, descriptive, and analytical study of the ethics committees of hospitals, universities, and government agencies in five Latin American countries: Brazil, Colombia, Peru, Chile, and Argentina. RESULTS: 77 ethics committees of institutions in the region were identified. 22 of these ethics committees responded to the online survey, with an average 19.3% of responses per committee. 15 of these committees approved studies, 4 withdrew approval and 3 did not approve any study. CONCLUSIONS: The ethics committees have a significant role in the regulation of clinical studies. The variations in the ethical requirements across countries are due to different national legal frameworks and the specific contexts of each country. The ethical review process is time-consuming and the lack of uniformity in the ethical review process between countries is a challenge for the conduct of cross-national studies.

PHP42 EFFECTIVITy OF THE INTERVENTIONS IN CULTURE OF SAFETY IN THE PATIENT IN THE INSTITUTIONS HOSPITALARIES: REVIEW SYSTEMATICO

48X

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OBJECTIVES: To evaluate the effectiveness of the interventions for improvement of culture of safety in the patient in institutions hospitalaries. METHODS: Systematic review of the evidence related to the interventions for improvement of culture of safety in the patient. RESULTS: 296 articles were identified, of which 215 were included in the systematic review. 115 interventions were evaluated. The most effective interventions were those that involved patient participation. CONCLUSIONS: The interventions for improvement of culture of safety in the patient are effective and should be implemented in institutions hospitalaries. However, more research is needed to determine the best strategies for the implementation of these interventions.

PHP43 AVALIAÇÃO ECONÔMICA DE TECNOLOGIAS NA ÁREA DE NUTRIÇÃO: APLICAÇÕES E LIMITAÇÕES PARA O CONTEXTO BRASILEIRO

48X

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OBJECTIVES: To evaluate the economic applications and limitations of technologies in the area of nutrition in a Brazilian context. METHODS: Literature review confirmed the great disparity across local legislations on DUS in Latin America, as well as the variation in the implementation of strategies and their potential impacts on public health. CONCLUSIONS: The economic evaluation of technologies in the area of nutrition requires a multidisciplinary approach, taking into account the ethical and legal aspects. The variation in the implementation of strategies and their potential impacts on public health requires a multidisciplinary approach, taking into account the ethical and legal aspects.

PHP44 MÉTODOS DE ANÁLISE MULTICRITERIO EMPREGADOS NA SELEÇÃO DE MEDICAMENTOS

48X

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OBJECTIVES: To identify the potentialities of employing the method of multi-criteria analysis in the selection of medicines. METHODS: Literature review of the applications of the method of multi-criteria analysis in the selection of medicines. RESULTS: The method of multi-criteria analysis is widely used in the selection of medicines. However, there is a need for standardization of the methodology and for the development of specific tools for each country. CONCLUSIONS: The method of multi-criteria analysis is a powerful tool for the selection of medicines, but its applicability requires careful planning and standardization.
drugs with recommendation of incorporation. Six drugs without active registration in Brazil were incorporated. Main clinical indications were related to infectious-parasitic and musculoskeletal diseases. Main reasons given for incorporation decision were additional clinical benefits, low budgetary impact and unmet clinical needs in SUS. CONCLUSIONS: CONITEC’s establishment represents the development of HTA instruments to support the rationalization of private health insurance plans in Brazil. This study’s results show increases in rationality and use of clinical and economic evidence in supporting decisions regarding medicines in the period.

**PHP46** NATIONAL POLICY ON HEALTH TECHNOLOGY MANAGEMENT: A CASE STUDY OF THE NATIONAL COMMITTEE FOR TECHNOLOGY INCORPORATION, BRAZIL (CONITEC) YlabTV, Novaes HM, De Souza PC
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**INTRODUCTION:** In Brazil, the institutionalization of HTA as a health policy is recent. Two important landmarks in this context are the creation of the National Policy on Health Technology Management (Política Nacional de Gestão de Tecnologias em Saúde - PNGTS) in 2009, and the establishment of the National Committee for Technology Incorporation (Comissão Nacional de Incorporação de Tecnologias no SUS - CONITEC) in 2011. A fundamental proposition of this policy is the formal and systematic use of scientific evidence to support the management of health technologies. CONITEC was chosen as a single instrumental case study for the PNGTS implementation analysis, since it is responsible for advising the Brazilian Ministry of Health in the incorporation or disinvestment of health technologies into the Brazilian Public Health System (SUS) and development clinical guidelines at national level. This committee seeks to address the conflicts of interest among stakeholders and reflects the perspectives and challenges of policy implementation.

**OBJECTIVES:** To understand the PNGTS implementation process within the CONITEC structure. We used three types of data sources: document analysis, interviews with stakeholders and direct observation of CONITEC meetings. The main information observed in the first phase (document analysis) was the use of HTA, its content, the types of types of clinical guidelines and the cost-effectiveness analysis thresholds (CET) in the “CONITEC’s Recommendation Reports”. **RESULTS:** The analysis of the documents showed that most of the reports that recommended the incorporation of the technology into the public health system presented partial health economic evaluations (HEE). Use of a cost-effectiveness threshold (CET) was not an essential criterion for recommendation, although it is an explicit criterion in the formal documents. **CONCLUSIONS:** This context reflects the current challenges in the implementation process of a National Policy on Health Technology Management, and will be explored with the qualitative data collected.

**HEALTH CARE USE & POLICY STUDIES – Population Health**

**PHP47** EATING HABITS AND PHYSICAL EXERCISE PRACTICES OF BENEFICIARIES AND NON-BENEFICIARIES OF PRIVATE HEALTH PLANS IN BRAZIL Nardi E1, Minami M1
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**OBJECTIVES:** To describe differences in eating habits and physical exercise practices among beneficiaries and non-beneficiaries of private health plans in Brazil. **METHODS:** Analysis of data from Pesquisa Nacional de Saúde-2013 (PNS-2013), a population-based cross-sectional household survey conducted by the Brazilian Institute of Geography and Statistics (IBGE). Differences between private health insurance beneficiaries and non-beneficiaries eating habits and physical exercise were assessed using the Chi-square test. **RESULTS:** According to PNS, 28% (N=55,985,271) of population had private health insurance in Brazil in 2013 (Southeast: 55.98 %; South: 16.86%; Northeast: 15.43%; Midwest: 8.08%; North: 3.97%). More than half of Brazilian population were obese or overweight in 2013, mainly beneficiaries. **CONCLUSIONS:** Outcomes were shared among these countries.

**PHP48** CHRONIC NON-COMMUNICABLE DISEASES (NCDs) AND BODY MASS INDEX (BMI) OF BENEFICIARIES AND NON-BENEFICIARIES OF PRIVATE HEALTH PLANS IN BRAZIL Nardi E1, Minami M1
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**OBJECTIVES:** To describe the frequency of chronic non-communicable diseases (NCDs), obesity and overweight of beneficiaries and non-beneficiaries of private health insurance plans in Brazil. **METHODS:** Analysis of data from Pesquisa Nacional de Saúde-2013 (PNS-2013), a population-based cross-sectional household survey conducted by the Brazilian Institute of Geography and Statistics (IBGE). The interviewee was asked if any doctor had already given the diagnosis of the NCDs. Obesity (body mass index, BMI<30) and overweight (25.0<BMI<29.9) were assessed. Differences between beneficiaries and non-beneficiaries were assessed using the Chi-square test. **RESULTS:** According to the PNS, 28% (N=55,985,271) of population had private health insurance in Brazil in 2013 (Southeast: 55.98 %; South: 16.86%; Northeast: 15.43%; Midwest: 8.08%; North: 3.97%). Beneficiaries, 22.26% (IC95% 21.11-23.41) had arterial hypertension, 6.75% (IC95% 6.05-7.45) diabetes and 15.52% (IC95% 14.55-16.50) hypercholesterolemia. In comparison, 21.03% (IC95% 20.36-21.70) of non-beneficiaries had arterial hypertension, 6.01% (IC 95% 5.70-6.41) diabetes and 11.25% (IC95% 10.72-11.78) hypercholesterolemia. For all analysis, p-value was less than 0.01. On the other hand, more than one third of Brazilian population was overweight (beneficiaries: 37.57%, IC95% 36.14-39.01 and non-beneficiaries: 33.79%, IC95% 32.79-34.80; p<0.01) and proportion of beneficiaries and non-beneficiaries who was obese was 17.98% (IC95% 17.63-19.95) and 18.60% (IC95% 17.75-19.45; p-value<0.01), respectively. **CONCLUSIONS:** Higher proportion of beneficiaries had arterial hypertension, diabetes and hypercholesterolemia when compared with non-beneficiaries. Although differences of proportion of hypertension and diabetes between both populations were statistically significant, they are very small. More than half of Brazilian population were obese or overweight in 2013, mainly beneficiaries. NCDs and overweight are becoming one of the main public health issues in Brazil and policies for their prevention and control should be implemented.

**PHP49** WHICH ARE THE MOST COMMON QUALITY OF LIFE STATEMENTS IN LATIN AMERICA? A PARETO ANALYSIS OF A COLLABORATIVE PROJECT USING EUROQOL EQ-5D IN ARGENTINA, BRAZIL, CHILE AND URUGUAY Vélez A1,2,3,4,5, Vázquez Y1,4,5, Castaño V1,4,5, Gómez O1,4,5, De Souza Noronha K1,2,3,4,5, Fernández C1,4,5, Augustovski F6
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**OBJECTIVES:** To describe the most common health related quality of life (HQL) states that the general population of Argentina, Brazil, Chile and Uruguay using the EuroQol EQ-5D descriptive system, either with the 3L (243 possible states) or the 5L (3,125 states). **METHODS:** We included data from the national health risk survey in Argentina (3L; n=41,926) and from the valuation studies of Brazil (3L; n=3,362), Chile (3L; n=2,000) and Uruguay (5L; n=792). **RESULTS:** We report which are the most frequent health states (those which represent at least 90% of the population) and perform a Pareto analysis. **CONCLUSIONS:** The healthiest state (11111, or having no limitations in all five domains (mobility, self-care, usual activities, pain/discomfort and anxiety/depression) was by far the most frequent: 60.9%, 44.3%, 48.9%, and 44.6% in Argentina, Brazil, Chile and Uruguay respectively. Out of the 243 possible EQ-3L-3D health states only eight accounted for at least 90% of the population in Argentina, Chile, Uruguay, while in Brazil, in 5L only 3 out of the possible 3125 EQ-5D-5L states were reported by at least 90% of the participants. Most prevalent states were the ones with mild limitations in pain/discomfort, anxiety/depression and mobility. Considering the three countries that used EQ-3D-3L, 90% of their population shared a total of 19 health states. Only six of these most common states were shared among these countries. **CONCLUSIONS:** Our study shows a strong ceiling effect in the EQ-5D in the general population, as nearly half is in the best health state. The bulk of the rest is distributed in less than 10% of the total health “space”. These results, together with similar ones from other regions, direct to an important agenda regarding both the reevaluation of the descriptive classification as well as in the design of future valuation studies.
Analisar o processo de constituição de Protocolos Clínicos e Diretrizes Terapêuticas (PCDT) para doenças negligenciadas no âmbito do Ministério da Saúde. Esses documentos, que se baseiam em evidências científicas, estão previstos na Lei 8.808/90, que dispõe sobre a organização do Sistema Único de Saúde (SUS) no Brasil. **MÉTODOS:** Foram consideradas as seguintes etapas para elaboração dos PCDT: 1) Manifestações e questionamentos de especialistas e pacientes sobre os avanços sobre a relevância da constituição dos PCDT; 2) Construção participativa do escopo do PCDT, por um comitê gestor, que envolva a participação de áreas interessadas, no âmbito do Ministério da Saúde; 3) Submissão do escopo à enquete, de forma a permitir a participação da sociedade na definição da abrangência do PCDT; 4) Desenvolvimento do processo de busca, seleção e síntese de evidências por grupos de metodologistas externos; 5) Avaliação das evidências e elaboração das recomendações utilizando o Sistema GRADE; 6) Submissão do PCDT à Comissão Nacional de Incorporação de Tecnologias no SUS (CONITEC) e suas subcomissões, de acordo com trâmites estabelecidos por lei. **RESULTADOS:** Inicialmente foi proposta a elaboração de 10 PCDT para a doença no âmbito da Saúde Pública, de quais foram considerados em fase de elaboração. Até o momento, foram finalizados, após recebimento de contribuições da sociedade por meio das enquetes, os escopos de PCDT das seguintes doenças: doença de Chagas, leishmaniose visceral, leishmaniose tegumentar, chikungunya, febre maculosa e malária. As enquetes representam uma relevância, pois conferem publicidade e transparência ainda no processo inicial de elaboração. Os PCDT estão em fase de desenvolvimento e, uma vez concluídos, constituirão normas e recomendações sobre o diagnóstico, tratamento e acompanhamento de pacientes no âmbito do SUS. **CONCLUSÕES:** A constituição de PCDT para doenças negligenciadas no Brasil proporcionará qualificação do cuidado aos pacientes, além de agregar conhecimento sobre as doenças negligenciadas e fortalecer as políticas públicas de saúde no Brasil.

### HEALTH CARE USE & POLICY STUDIES – Conceptual Papers

**PHP52**

**ANALGESICS PRESCRIPTION PATTERN IN A SPECIALIST TEACHING HOSPITAL IN SOUTHEAST NIGERIA**

**Oygbo A, Oh U**

**NNAMDI AZIKWE UNIVERSITY, AWKA, Nigeria**

**OBJECTIVES:** Studies have shown that inappropriate prescription pattern is a regular occurrence in health facilities with its attendant consequences on treatment outcomes especially in developing countries with limited resources. Continuous audit trail of prescription patterns becomes essential at steering the tide. This study assessed analgesics prescription pattern in a tertiary health care facility.

**MÉTODOS:** A retrospective cross sectional audit of prescriptions covering from June 2016 to January 2017. The mean age distribution of the study population was 31.0 (25.6%). The mean number of drugs per prescription was 31.0 (25.6%). The modal age range was 61- 70 years (36.4%). A total of 121.0 prescriptions were examined in the study. Traders has the highest distribution of analgesics drugs. Given the universal use of this class of medicines, and the consequence, incorporation of Health Technology, National Committee for Health Technology (CONITEC), Brazilian Ministry of Health, Brasilia, Brazil.

**INTRODUÇÃO:** No ano de 2018, a solicitação de incorporação de tecnologias no SUS foi de 62 (1-942) meses. Dentre as prescrições medicamentos analisadas, a média de 7 ± 3 medicamentos e a mediana foi de 6 (1 - 15) medicamentos prescritos e 68 (27%) correspondendo menos um medicamento não prescrito. Os resultados sugerem uma alta prevalência de medicamentos inapropriados, considerando os riscos envolvidos aos idosos institucionalizados. Isto documenta que o critério de Beers é uma ferramenta útil no cotidiano de instituições de longa permanência. Esta realidade deve servir de alerta aos gestores em saúde, a fim de planejar ações que evitem as complicações decorrentes do uso inadequado de medicamentos.

**PHP55**

**JUDICIALIZAÇÃO DA SAÚDE NO BRASIL: PROXIMIDADE DOS MAGISTRADOS ÀS POLÍTICAS PÚBLICAS DE SAÚDE**

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**1Ministry of Health, Brasil**

**2Brazilian Ministry of Health, Brazilia, Brasil**

**3Department of Management and Incorporation of Health Technology, National Committee for Health Technology Incorporation (CONITEC), Brazilian Ministry of Health, Brasilia, Brazil**

**INTRODUÇÃO:** No ano de 2018, a solicitação de incorporação de tecnologias no SUS foi de 62 (1-942) meses. Dentre as prescrições medicamentos analisadas, a média de 7 ± 3 medicamentos e a mediana foi de 6 (1 - 15) medicamentos prescritos e 68 (27%) correspondendo menos um medicamento não prescrito. Os resultados sugerem uma alta prevalência de medicamentos inapropriados, considerando os riscos envolvidos aos idosos institucionalizados. Isto documenta que o critério de Beers é uma ferramenta útil no cotidiano de instituições de longa permanência. Esta realidade deve servir de alerta aos gestores em saúde, a fim de planejar ações que evitem as complicações decorrentes do uso inadequado de medicamentos.

**CONCLUSÃO:** A partir dos registros de questionamentos encaminhados via e-mail pelo Judiciário à Secretaria-Executiva da CONITEC, recomenda-se um distanciamento do Judiciário em relação as políticas públicas de saúde. Dessa forma, identifica-se a necessidade de aproximação do Judiciário com as políticas públicas de saúde no Brasil para melhor embaixamento e conhecimento das políticas de saúde e linhas de cuidado do Sistema Único de Saúde.
Determinantes dos custos dos processos judiciais de medicamentos em um município do Rio Grande do Sul.

Métodos: Trata-se de um estudo transversal realizado em uma capital do estado, no período de janeiro de 2016 a fevereiro de 2017. Foram investigados 541 processos judiciais de medicamentos, de acordo com os critérios de inclusão e exclusão definidos. Os dados foram coletados por meio de um formulário padronizado que contemplava as variáveis relacionadas ao caso jurídico e ao medicamento. Os custos foram calculados com base na legislação brasileira e em estudos comparáveis.

Resultados: Os custos médios dos processos judiciais foram de R$ 42.800,00. A maior parte dos custos foi decorrentes de honorários advocatícios (70,5%), seguidos de custos vinculados ao medicamento (22,7%) e custos advogacia (6,2%). Os custos foram associados a vários fatores, incluindo a demanda por medicamentos que não estão listados na lista de remédios do SUS (27,3%), a desnecessidade da prescrição de medicamentos e a utilização de medicamentos de maior custo (24,8%). Também houve uma associação entre os custos e a duração do processo, sendo observado um aumento nos custos à medida que o processo se alargava.

Conclusão: Os processos judiciais de medicamentos representam um desafio significativo para o sistema de saúde, devido ao alto custo associado. É necessário um esforço contínuo para reduzir esses custos, incluindo a implementação de políticas que promovam a prescrição de medicamentos mais eficazes e econômicos, além de medidas para reduzir os honorários advocatícios.
de cuidados especializados tales: Médico, psicólogo, enfermería, soporte nutricional, y la creación de nuevas fases de la enfermedad, como la alta impactación de la vida. El plan de atención de cuidados paliativos y cuidados de fin de vida se direcciona a los usuarios con diagnóstico de una enfermedad terminal, crónica, degenerativa o terminal, y depende de origen oncológico. El objetivo es mejorar la calidad de vida de estos pacientes hasta la etapa “final de la vida”. Participar de forma activa en la atención con los cuidados adecuados y/o preferidos, sensibilización de la enfermedad por el paciente y su familia, con la gran meta de ofrecer una mejor calidad de vida con un mayor costo efectividad de los mismos. Intervenciones sociales, de paliación, organización e identificación, hasta el seguimiento y la retroalimentación de resultados.

**PHP63**

**DETECCIÓN TEMPRANA DEL CÁNCER DE PULMÓN**

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**MUTUALSER EPS, PHAROS CENTRO DE ESTUDIOS CLÍNICOS, CARTAGENA DE INDIAS, Colombia.**

El Cáncer de Pulmón, es la principal causa de muerte por cáncer en el mundo, representando el 19% de las muertes por cáncer. Produce cerca de 1,6 millones de muertes al año, y es el segundo causante de muerte en hombres y el tercero en mujeres en el mundo. Es diagnosticado en aproximadamente 1,8 millones de personas/año, cerca del 13% de todos los cánceres, por lo que es considerado un problema de salud pública. El 10% de los pacientes diagnosticados con cáncer de pulmón en el mundo están en etapas avanzadas, en Colombia el 3% son diagnosticados tempranamente. Los costos promedios de un paciente con cáncer de pulmón son de US$ 7,000 a US$40,000 por año: Quimioterapia 88%, Diagnóstico y estadificación 5%, Cirugía 5%, Hospitalización 2%. La práctica clínica, la mayoría de pacientes con esta patología consulta al médico en estados avanzados, en tanto que los estadíos tempranos pueden pasar desapercibidos debido a que no presentan signos y síntomas característicos. Sin embargo, se han descrito posibles factores de riesgo para cáncer de pulmón, además No hay programas para detección temprana de cáncer de pulmón. Al desarrollar un programa para la detección temprana, los pacientes con riesgo de desarrollar cáncer de pulmón serán llevados a un programa de seguimiento, que permita diagnosticar tempranamente esta enfermedad, con lo cual se podrá iniciar un tratamiento oportuno, con aumento de la sobrevida y disminución de los costos de tratamiento al sistema de salud e iniciar programas de tratamiento y seguimiento del tabaquismo, para eliminar este factor como riesgo de cáncer de pulmón. Este programa de detección temprana de cáncer de pulmón incluye además Programa de seguimiento de Nódulo pulmonar, Programa para prevención y tratamiento del tabaquismo. Con lo cual se obtiene una reducción en los costos directos de tratamientos a menos de US$ 0,000/año.

**PHP64**

**ESTRATÉGIAS INSTITUCIONAIS COMO MECANISMO DE RACIONALIZAÇÃO DAS DEMANDAS JUDICIAIS DE MEDICAMENTOS**

Chagas VO, Provin MP, Amaral RG

**Universidade Federal de Goiás, Goiás, Goiás, Brazil**

**OBJETIVOS:** Identificar as estratégias institucionais criadas pelos agentes públicos, do setor saúde e do sistema de justiça, para racionalizar as demandas judiciais por medicamentos e garantir o acesso integral à saúde. **MÉTODOS:** Trata-se de um estudo de caso, com abordagem retrospectiva, em que os dados foram obtidos através de pesquisa documental e entrevistas semiestruturadas com os atores-chave do setor saúde. **RESULTADOS:** Identificou-se sete estratégias institucionais, sendo quatro criados pelo setor saúde e três pelo sistema de justiça. Dentre estas estratégias estão os departamentos, comissões, câmaras técnicas e termos de cooperação técnica, criadas como um mecanismo de decisão sobre a necessidade e a disponibilidade de medicamentos para o setor saúde. Estas estratégias solucionaram alguns problemas na gestão da assistência farmacêutica, além de funcionarem como um mecanismo de controle. **CONCLUSÕES:** Os resultados sugerem que o sistema de saúde deve atender as necessidades dos usuários de forma integral, sem a necessidade de processos jurídicos que sejam incapazes de garantir o acesso integral à saúde. O setor saúde deve criar novos caminhos ou estratégias institucionais pelo setor saúde e pelo sistema de justiça contra o setor saúde, ao priorizar a garantia do acesso integral à saúde, reduzir o número de demandas judiciais por medicamentos propostas pelo sistema de justiça contra o setor saúde, ao priorizar a resolução dos conflitos de acesso a medicamentos de forma administrativa. Estas medidas são cruciais para que o setor saúde e o sistema de justiça possam atender adequadamente às expectativas do paciente e do sistema público de saúde de uma capital da região centro-oeste do Brasil. Utilizou-se um formulário contendo variáveis relacionadas às características sociodemográficas e medicamentos que os pacientes apresentavam em suas demandas judiciais. **CONCLUSÕES:** Os resultados demonstram que as estratégias institucionais criadas por órgãos públicos no setor saúde e justiça para a distribuição de medicamentos na região central do Brasil, ao longo do período analisado, permitiram a implantação de um sistema de gestão padrão para o setor saúde. O uso desta estratégia pode ser uma alternativa para outras regiões do país e da América Latina. **CONCLUSÕES:** Os resultados sugerem que o sistema de saúde deve atender as necessidades dos usuários de forma integral, sem a necessidade de processos jurídicos que sejam incapazes de garantir o acesso integral à saúde. O sistema de justiça deve criar novos caminhos ou estratégias institucionais pelo setor saúde e pelo sistema de justiça, para garantir o acesso integral à saúde, sem a necessidade de processos jurídicos.
prestadores y pacientes) del sistema y llevan a un desbalance por el aumento de costos de las nuevas tecnologías y las que realmente disminuyen las tasas de morbi-
 mortalidad. Se analizaron 36.890 pacientes en el año 2016 en los cuales se realizaron intervenciones de salud, pertenecientes a un asegurador privado del régimen subsidiado en Colombia. Este modelo está basado en la auditoría para el mejoramiento de la calidad y la atención en salud y la pertinencia científica. Entendiendo a esta auditoría como una herramienta de gestión de la calidad, y a su vez la dirección científica como una herramienta de la gestión gerencial en el desarrollo de metodologías e instrumentos de uso en las experiencias existentes, basados en la evidencia científica demostrable, armonizándolas con sus condiciones específicas y adaptándolas de manera responsable tendientes a disminuir el consumo de recursos, que se traducen en costos en salud con mejores resultados para los pacientes y el sistema. Este método modifica y reduce significativamente en costos en salud, que son replicables en las organizaciones o aseguradores en salud, para lograr difundir el conocimiento, facilitar la participación de los actores del sistema de salud en la elaboración de pro-
tocolos clínicos y directrices terapéuticas que conlleven a mejorar la indicación de las intervenciones siendo más ceto efectivas, generando mayor cobertura y calidad en la atención.

PHP69 THE IMPORTANCE OF THE DISINVESTMENT PROCESS IN THE PUBLIC HEALTH SYSTEM
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In recent years, discovery of new technologies were accompanied by a growth in treatment costs and put health spending among the largest expenses of public sys-
tems and families around the world. In order to respond to the need to evaluate and select new technologies that deserve to be incorporated to health systems, some researchers have developed to support this process. However, post incorporation analyses of these technologies are necessary for safety or cost effectiveness of what is kept in circuit. This study aims to promote the understanding of the process underlying to the elaboration of recommendations regarding the maintenance of technology or disinvestment in Brazil, through definitions, detailed descriptions and case studies. The reasons for evaluating the performance of technologies already included in the Brazilian Public Health System, such clinical effectiveness of incorporated technologies, were elucidated, determining the factors that influence the decision to disinvest. The decision to disinvest considered the results of review of health technologies. Additionally, case studies were obtained from the database of the National Public Health System and consist of the exclusion of Telaprevir and Boceprevir, used in the treatment of hepatitis C, and betainterferon 1A 6,000,000 IU (30 μg) (Avonex®), used in the treatment of Relapsing-Remitting Multiple Sclerosis. Based on the reported cases, it was possible to conclude that the process of disinvestment and reinvestment in technologies should be focused on the best risk and benefit ratio for the population, aiming the availability of cost effective treatments and services, and that well-structured meth-
ods, such as the guideline published by National Committee for Health Technology Incorporation, could make the disinvestment process more transparent.

PHP70 UN MARCO CONCEPTUAL PARA EL ANÁLISIS DE LA IMPLEMENTACIÓN DE LOS COMPONENTES DE LA SALUD ELECTRÓNICA (E-SALUD) Y SU EFECTO EN LA CALIDAD EN LA PROVISIÓN DE SERVICIOS DE SALUD
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La salud electónica (e-Salud) es un concepto amplio que implica la aplicación de las tecnologías de la información y comunicación (TIC) y servicios del mundo de la salud a fin de mejorar la calidad de la atención y el proceso de salud de la población. La e-Salud se refiere a la utilización de la tecnología de la información e Internet para el desarrollo de servicios de salud electrónicos. En este sentido, los componentes de e-Salud son aquellas herramientas o servicios que permiten un mayor acceso a la información y servicios de salud, con el objetivo de mejorar la calidad de la atención y el proceso de salud. El objetivo de este estudio es establecer un marco conceptual que permita analizar la implementación de los componentes de e-Salud y su efecto en la calidad de la provisión de servicios de salud. Para ello, se realizó una revisión bibliográfica que permita identificar los componentes de e-Salud, su implementación y su impacto en la calidad de la provisión de servicios de salud. Se identificaron 10 componentes de e-Salud, los cuales se dividen en cuatro grupos: 1) Tecnología de la Información y Comunicación, 2) Tecnología de la Salud, 3) Tecnología de la Atención a la Salud, y 4) Tecnología de la Gestión. Estos componentes son determinantes en la implementación de e-Salud y su impacto en la provisión de servicios de salud. Se realizó una revisión bibliográfica en bases de datos de revistas de salud y tecnología de la información, con el objetivo de identificar los estudios que evalúan la implementación de los componentes de e-Salud y su impacto en la calidad de la provisión de servicios de salud. Se identificaron 30 estudios, los cuales se clasificaron en tres categorías: 1) Estudios empíricos, 2) Estudios de caso, y 3) Estudios de revisión sistemática. Se realizó una síntesis de los resultados de los estudios empíricos y se identificaron los componentes de e-Salud más relevantes en la provisión de servicios de salud. Los componentes de e-Salud más relevantes en la provisión de servicios de salud son: 1) Tecnología de la Información y Comunicación, 2) Tecnología de la Atención a la Salud, y 3) Tecnología de la Gestión.

DISEASE- SPECIFIC STUDIES
CARDDIOVASCULAR DISORDERS – Clinical Outcomes Studies
PCV1 SYSTEMATIC REVIEW OF STATINS EFFECTIVENESS IN PREVENTION SECONDARY IN ELDERLY
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OBJECTIVES: Although several studies have demonstrated the relationship between high serum cholesterol levels and cardiovascular disease incidence, this relationship is not evident in the elderly population. Observations have shown that, in the elderly, higher serum cholesterol rates represent reduction in mortality. Statins have already demonstrated their benefits in the treatment of cardiovascular disease events. This component analysis is in close connection with cardiovascular disease. Based on this context, the objective of this study was to evaluate the efficacy of statins in the secondary prevention of cardiovascular events in the elderly. METHODS: A systematic literature review was conducted in the databases PubMed, Embase, Cochrane Library, Center for Reviews and Dissemination (CRD), in which searched for randomized controlled trials (RCTs) that evaluated the efficacy of statins in the elderly whose outcomes were mortal-
ty. The search was performed by statistical software RevMan 5.3. RESULTS: Two independently reviewers identified articles that met the inclusion and exclusion criteria. The quality of the evidence was verified using the Cochrane bias risk assessment tool. RCTs were included in the sys-
tematic review and meta-analysis was performed by outcome. RESULTS: this sys-
tematic review show that in the elderly a co-existing cardiovascular disease the statin is able to reduce death from all causes, presenting a relative risk 0.78 (95%CI 0.68-0.89) I2=0% (p=0.5081), death by CVD RR=0.69 (95%CI 0.60-0.80) I2=0% (p=0.5611). CONCLUSIONS: Despite statins have shown efficacy, treatment effects should consider the patient’s individual status regarding cost, polypharmacy, and patient opinion, since the elderly have a higher risk of adverse effects by this drug's class.

PCV3 BUDGET IMPACT ANALYSIS OF ADOPTING EVOLOUCUMAB IN THE BRAZILIAN PRIVATE HEALTHCARE SYSTEM FOR PATIENTS WITH UNCONTROLLED LDL-C AND HIGH CARDIOVASCULAR RISK
dos Santos RF1, Alves FP1, Urbich M2, Villa G2, Farsky PS3
1Amgen, São Paulo, Brazil, 2Amgen (Europe) GmbH, Zug, Switzerland, 3Instituto Dante Pazzanese de Cardiologia (IDPC), São Paulo, Brazil
OBJECTIVES: To estimate the budget impact of adopting evolocumab to standard lipid-lowering therapy (LLT) [statins with or without ezetimibe] in high-risk patients from the Brazilian private healthcare system. METHODS: This analysis was based on a cost-effectiveness analysis of patients living closer or farther to the hospital that provided the PCI. However, patients living closer to the hospital in group B states had a lower mortality com-
pared to those living farther (0.80; p = 0.69), what was not observed in group A states. CONCLUSIONS: Distance between patients’ residence and hospital seems to have higher effect over mortality in lower GDP per capita states. Further investigation on reasons for differences between group A and B results is needed.
number of patients covered by the private healthcare system. **RESULTS:** Across all private healthcare systems in Brazil, adding evolocumab to standard LLT for high-risk patients leads to a yearly incremental cost of R$31 million. Adopting and utilizing evolocumab is expected to prevent 24% of the predicted CV events. Given the 48 million privately insured patients in Brazil, an additional expense of R$0.05 per member per month can be expected. **CONCLUSIONS:** In a cost-benefit analysis, monthly cost increases per privately insured patient were noted. The addition of evolocumab to standard LLT is anticipated to cause a significant reduction in the number of both fatal and non-fatal CV events and procedures.

**PCV4 COSTO DE EVENTOS CORONARIOS AGUDOS EN POBLACION CON FACTORES DE RIESGO CARDIOVASCULAR: ANALISIS RETROSPECTIVO**

**Dos Santos RF1, Alves FP1, Manfrin DF1, Sampaio M1, Caltabiano RH1, Paloni Ed 2, Paiva EC2**

**Fundación Saludis, Bogotá, Colombia**

**OBJECTIVES:** Determinar la tasa de presentación de eventos coronarios agudos en pacientes con diagnóstico de diabetes, hipertensión arterial e hipercolesterolemia y su costo asociado al manejo de la enfermedad y el costo cuando se presenta evento coronario. **RESULTS:** A partir de la información de 6 millones de afiliados, se encontró que 493.729 (7.95%) presentaron diagnóstico de las enfermedades de interés, distribuidos de la siguiente forma: diabetes 14.62%, hipertensión arterial 60%, hipercolesterolemia 21.78%, y las tres enfermedades juntas en el 3.58%. In the same year, 11,386 were admitted to the remaining hospitals. Patients who presented with diabetes were under treatment of $18.135.572,17 COP para pacientes con diabetes, hipertensión e hipercolesterolemia, respectivamente. **CONCLUSIONS:** The addition of evolocumab to standard LLT is anticipated to cause a significant reduction in the number of both fatal and non-fatal CV events and procedures.
methods for hemostasis and energy-based technologies for blood loss control. For the absorbable hemostatic Floseal is dominant versus the hemostatic sponge of gelatin or collagen, controlling 31% more hemorrhages at a lower cost ($873 USD vs $786). The robustness of the model was verified through the sensitivity analyses performed.

RESULTS: The cost-effectiveness analysis indicates that the absorbable hemostatic Floseal is more cost-effective than the hemostatic sponge of gelatin or collagen (Gelfoam). Based on this economic evaluation, the clinical and resource utilization advantage of Floseal may generate cost savings to institution compared to the unique option available in the IMSS.

PCVII
COST-EFFECTIVENESS ANALYSIS OF A RANDOMIZED TRIAL OF AN MHEALTH INTERVENTION TO IMPROVE CARDIOMETABOLIC PROFILE IN PREHYPERTENSIVE SUBJECTS FROM LOW-RESOURCE URBAN SETTINGS IN LATIN AMERICA

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OBJECTIVES: The primary randomized controlled trial evaluated a mobile health (mHealth) intervention to improve healthy lifestyles and cardiometabolic profile in pre-hypertensive subjects from low-resource settings in Argentina, Guatemala and Peru. It showed no reductions in its primary outcome—blood pressure—but a significant reduction in body weight. Additional, health-related quality of life was not reported in the primary trial report. We report the cost-effectiveness analysis performed alongside this trial. METHODS: Health outcomes were Quality Adjusted Life Years (QALYs) derived with EQ-5D-3L weight (in Kg) and costs (reported in 2015 International dollars [$]). We evaluated mean net changes between groups from baseline to 12 months of follow-up. A healthcare sector perspective for costs was used. Incremental Cost-Effectiveness Ratios (ICER) and their uncertainty were estimated. RESULTS: The cost-effectiveness analysis showed that the use of mHealth technology was $3,815 per QALY gained. In the cost-effectiveness acceptability curve, the probability that PC was more cost-effective than UCG was 90% at the INR 17,960 ($268.78) per QALY gained. In the cost-effectiveness acceptability curve, the probability that PC was more cost-effective than UCG was 90% at the INR 17,960 ($268.78) per QALY gained. In the cost-effectiveness acceptability curve, the probability that PC was more cost-effective than UCG was 90% at the INR 17,960 ($268.78) per QALY gained. In the cost-effectiveness acceptability curve, the probability that PC was more cost-effective than UCG was 90% at the INR 17,960 ($268.78) per QALY gained. In the cost-effectiveness acceptability curve, the probability that PC was more cost-effective than UCG was 90% at the INR 17,960 ($268.78) per QALY gained. In the cost-effectiveness acceptability curve, the probability that PC was more cost-effective than UCG was 90% at the INR 17,960 ($268.78) per QALY gained.

Conclusions: The PC was not very cost-effective among patients with stage III uncontrollable hypertension at the INR 17,960 ($268.78) per QALY gained. In the cost-effectiveness acceptability curve, the probability that PC was more cost-effective than UCG was 90% at the INR 17,960 ($268.78) per QALY gained. In the cost-effectiveness acceptability curve, the probability that PC was more cost-effective than UCG was 90% at the INR 17,960 ($268.78) per QALY gained. In the cost-effectiveness acceptability curve, the probability that PC was more cost-effective than UCG was 90% at the INR 17,960 ($268.78) per QALY gained. In the cost-effectiveness acceptability curve, the probability that PC was more cost-effective than UCG was 90% at the INR 17,960 ($268.78) per QALY gained.

PCVIII
CARDIOVASCULAR DISORDERS – Patient-Reported Outcomes & Patient Preference Studies

PCVII
COST-EFFECTIVE ANALYSIS OF PHARMACEUTICAL CARE IN MANAGEMENT OF PATIENTS WITH STAGE III HYPERTENSION: AN INDIAN PHARMACISTS EXPERIENCE

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OBJECTIVES: To calculate and compare cost effectiveness in hypertensive patients between intervention and usual care group in Stage III uncontrollable hyperten- sion. METHODS: The present study was a prospective, randomized, comparative study in 1525 patients of stage III hypertension for 24 months. Patients were ran- domly divided into two groups. Intervention group patients were provided self-care education through a structured training session over 6 month period. Usual care group patients were given care by the hospital and pharmacists. The economic evaluation on pharmaceutical care was based on patients perspective. The impact of the interventions on QoL was estimated by using the MINICHLA questionnaire. The primary outcomes were cost-utility and cost-effectiveness analyses. RESULTS: The data of the present study showed an incremental cost due to periodic monitoring cost INR 2245 ($31.59) with 0.17 quality adjusted life year (QALY) gained. The present study also showed an incremental utility ratio INR 17,960 ($268.78) per QALY gained. In the cost-effectiveness acceptability curve, the probability that PC was more cost-effective than UCG was 90% at the INR 17,960 ($268.78) per QALY gained.

Conclusions: The PC was not very cost-effective among patients with stage III uncontrollable hypertension at the INR 17,960 ($268.78) per QALY gained. In the cost-effectiveness acceptability curve, the probability that PC was more cost-effective than UCG was 90% at the INR 17,960 ($268.78) per QALY gained. In the cost-effectiveness acceptability curve, the probability that PC was more cost-effective than UCG was 90% at the INR 17,960 ($268.78) per QALY gained. In the cost-effectiveness acceptability curve, the probability that PC was more cost-effective than UCG was 90% at the INR 17,960 ($268.78) per QALY gained. In the cost-effectiveness acceptability curve, the probability that PC was more cost-effective than UCG was 90% at the INR 17,960 ($268.78) per QALY gained.
Travel: On average, caregivers accompanied the patient 6.7 times per year to CHF appointments, and for those who reported travel costs ($45, a mean cost of $6 per trip was incurred. CONCLUSIONS: These data are significant for understanding the impact of CHF on patients’ caregivers, and extrapolating its impact to the greater Argentinian population.

PCV16 ASSESSING THE BURDEN OF CHRONIC HEART FAILURE (CHF) ON PATIENTS’ CAREGIVERS IN BRAZIL

Lopes N1, Jackson J2, Cotton S3, Proença C3, Calado F3, MacPherson A4, Barbeau M5, Lopes N6
1Novartis Farmacéutica S.A de C.V., Buenos Aires, Argentina, 2Adelphi Real World, Bollington, Maclesfield, UK, 3Novartis Pharma AG, Basel, Switzerland, 4Dalhousie University, Halifax, NS, Canada

OBJECTIVES: To understand the burden of Chronic Heart Failure (CHF) on caregivers in Brazil. METHODS: A Disease Specific Program was conducted to assess the impact of CHF on caregivers. This program was made available through cardiologist-completed patient record forms, and patient and caregiver self-completion (CSC) questionnaires. RESULTS: CSC questionnaires revealed that a typical caregiver (n=98) was female (60%) with a mean age of 53.1 years. Caregivers spent approximately 37 hours per week for the caregivers’ CHF. The main caregiver was often the patients’ spouse (46%) or daughter/son (33%). Caregiver Activities: The most frequently reported tasks were providing emotional support/encouragement to patients (76%), and reminding them to take their medication (72%). Caregivers most frequently asked doctors about diet/lifestyle (78%) and treatment (68%) for the patient. Emotional Burden: 29% of caregivers reported a decrease in social activities due to caregiving. As a result of caring for the patient, 41% of caregivers suffered from stress and 33% from anxiety. Financial Burden: One in six caregivers reported a reduced income from a job change or reduction in working hours due to caregiver responsibilities. Additionally, 89% of caregivers did not receive financial assistance from the health care system. Nearly 20% of caregivers reported paying an average of $89 per month for the patient’s CHF prescriptions, and 5% covered all the cost for rehabilitation, an average of $109 per month. Ten percent of caregivers paid a mean of $454 per month for hospitalizations. Travel: On average, caregivers accompanied the patient 6 times per year to CHF appointments, and 30% of caregivers paid a mean of $58 per month for travel costs. CONCLUSIONS: These data are significant for understanding the impact of CHF for patients’ caregivers, and extrapolating its impact to the greater Mexican population.

PCV1 ASSESSING THE BURDEN OF CHRONIC HEART FAILURE (CHF) ON PATIENTS’ CAREGIVERS IN BRAZIL

Lopes N1, Jackson J2, Cotton S3, Proença C3, Calado F3, MacPherson A4, Barbeau M5, Lopes N6
1Novartis Farmacéutica S.A de C.V., Buenos Aires, Argentina, 2Adelphi Real World, Bollington, Maclesfield, UK, 3Novartis Pharma AG, Basel, Switzerland, 4Dalhousie University, Halifax, NS, Canada

OBJECTIVES: To understand the burden of Chronic Heart Failure (CHF) on caregivers in Brazil. METHODS: A Disease Specific Program was conducted to assess the impact of CHF in Brazil. Data was made available through cardiologist-completed patient record forms, and patient and caregiver self-completion (CSC) questionnaires. RESULTS: CSC questionnaires revealed that a typical caregiver (n=98) was female (60%) with a mean age of 53.1 years. Caregivers spent approximately 37 hours per week for the caregivers’ CHF. The main caregiver was often the patients’ spouse (46%) or daughter/son (33%). Caregiver Activities: The most frequently reported tasks were providing emotional support/encouragement to patients (76%), and reminding them to take their medication (72%). Caregivers most frequently asked doctors about diet/lifestyle (78%) and treatment (68%) for the patient. Emotional Burden: 29% of caregivers reported a decrease in social activities due to caregiving. As a result of caring for the patient, 41% of caregivers suffered from stress and 33% from anxiety. Financial Burden: One in six caregivers reported a reduced income from a job change or reduction in working hours due to caregiver responsibilities. Additionally, 89% of caregivers did not receive financial assistance from the health care system. Nearly 20% of caregivers reported paying an average of $89 per month for the patient’s CHF prescriptions, and 5% covered all the cost for rehabilitation, an average of $109 per month. Ten percent of caregivers paid a mean of $454 per month for hospitalizations. Travel: On average, caregivers accompanied the patient 6 times per year to CHF appointments, and 30% of caregivers paid a mean of $58 per month for travel costs. CONCLUSIONS: These data are significant for understanding the impact of CHF for patients’ caregivers, and extrapolating its impact to the greater Mexican population.

PCV18 ASSESSING THE BURDEN OF CHRONIC HEART FAILURE (CHF) ON PATIENTS IN BRAZIL

Barbeau M1, Jackson J2, Cotton S3, Proença C3, Calado F3, Lopes N4, MacPherson A5
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OBJECTIVES: To understand the burden of Chronic Heart Failure (CHF) on patients in Brazil. METHODS: A Disease Specific Program was conducted to assess the impact of CHF in Brazil. Data was made available through cardiologist-completed patient record forms, and patient and caregiver self-completion (CSC) questionnaires. RESULTS: CSC questionnaires revealed that a typical caregiver (n=98) was female (60%) with a mean age of 53.1 years. Caregivers spent approximately 37 hours per week for the caregivers’ CHF. The main caregiver was often the patients’ spouse (46%) or daughter/son (33%). Caregiver Activities: The most frequently reported tasks were providing emotional support/encouragement to patients (76%), and reminding them to take their medication (72%). Caregivers most frequently asked doctors about diet/lifestyle (78%) and treatment (68%) for the patient. Emotional Burden: 29% of caregivers reported a decrease in social activities due to caregiving. As a result of caring for the patient, 41% of caregivers suffered from stress and 33% from anxiety. Financial Burden: One in six caregivers reported a reduced income from a job change or reduction in working hours due to caregiver responsibilities. Additionally, 89% of caregivers did not receive financial assistance from the health care system. Nearly 20% of caregivers reported paying an average of $89 per month for the patient’s CHF prescriptions, and 5% covered all the cost for rehabilitation, an average of $109 per month. Ten percent of caregivers paid a mean of $454 per month for hospitalizations. Travel: On average, caregivers accompanied the patient 6 times per year to CHF appointments, and 30% of caregivers paid a mean of $58 per month for travel costs. CONCLUSIONS: These data are significant for understanding the impact of CHF for patients’ caregivers, and extrapolating its impact to the greater Brazilian population.

PCV21 QUALITY OF LIFE IMPROVEMENT IN A HEART FAILURE CLINICAL PROGRAM VS. CONVENTIONAL MANAGEMENT IN A SPECIALIZED CLINIC IN COLOMBIA

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OBJECTIVES: There is a consensus in the fact that Heart Failure (HF) should have a multidisciplinary and comprehensive management. In addition, the readmission rates and improving survival. Additionally, it should have an important impact in the patient’s quality of life. This work pretends to estimate the impact of a Heart Failure Clinical Program (HFCP) in the patients quality of life in terms of QoL and satisfaction. METHODS: Prospective, Randomized Control Medical Management (CMM), in a Colombian specialized Hospital. METHODS: A mathematical model using Markov chains was built, in order to project the Life Years Gained (LYG) as well as discounted QALY’s, along a 15 years horizon. Clinical data was obtained from the institution database with 511 patients during an
The prevalence of CVD is projected to increase to 1.6 million by 2035, while the economic burden, including both direct and indirect costs, would increase to US$14 billion. The value of reducing modifiable risks (except LDL-cholesterol) is estimated at US$0.5 billion over the forecast period. Similarly, the value of reducing LDL-cholesterol through increased access to effective treatment for two high-risk populations: hypertensive patients (WHO) targets. Another model estimated the impact of reducing LDL-cholesterol through increased access to effective treatment for two high-risk populations: hypertensive patients (except LDL-cholesterol) is estimated at US$10.5 billion over the forecast period.

The findings from this analysis showed that three pharmacists would need to be hired and there would be a surplus of US$2,632,414.91 over ten years. Physicians underestimated the length of time patients experienced symptoms before visiting a doctor; reporting 16.8 weeks, versus the patient-reported 24.7 weeks. Patients on average had been diagnosed for 3.6 years and the majority (60%) were considered to be stable/compensated. Cause: Hypertension was the leading cause of CVD in Argentina. The tool was developed according to budget impact analysis grounded in a cost-benefit analysis nested in a clinical trial. Direct medical and non-medical costs and indirect costs were considered. The perspective of the patient was taken in five steps: direct cost analysis, cost and outcomes projection, cost-benefit analysis, Monte Carlo sensitivity analysis, and epidemiological impact measurement. The key drivers of impact analyses structured the pharmacoeconomic tool. RESULTS: For a disbursement of US$93,700/year for the implementation of PC in a municipal level, the pharmacoeconomic tool has estimated that three pharmacists would need to be hired and there would be a surplus of US$2,632,414.91 over ten years. CONCLUSIONS: The pharmacoeconomic tool, currently in the patent process, has shown to be able and sensitive to assist health managers in the implementation of PC for reducing cardiovascular morbidity and saving health resources.

**CONCLUSIONS:** 1) The gathered knowledge from the literature review indicated that despite the increase of cardiovascular mortality in the developing world, lack of coordinated efforts to reduce CVD risk factors and improve access to effective treatment is the major limitation. 2) The increase of CVD risk factors (tobacco use, hypertension, type 2 diabetes, obesity and physical inactivity) in the general population in Argentina is a matter of concern. 3) Despite the increase of cardiovascular mortality in the developing world, lack of coordinated efforts to reduce CVD risk factors and improve access to effective treatment is the major limitation. 4) Economic studies and their results are crucial for understanding the burden of CVD and for planning health care policies to reduce this burden.
to assess the impact of CHF. Patient record forms (PRF) were completed by 50 cardiologists for 443 patients with CHF. The same patients were invited to complete a patient self-completion questionnaire. RESULTS: FR data (n=443) revealed that a typical patient was 65.7 years old, 55% were women, and had an ejection fraction of 46.1%. Physicians believed two fifths of patients were at a moderate or greater risk of being hospitalised and/or dying in the next year. Treatment: 75% of doctors and patients were in agreement about how the last treatment decision was made. Nearly 70% of patients received a Beta Blocker; 55% received Loop Diuretics, 52% received ACE (angiotensin-converting-enzyme) inhibitors. Physicians reported that only 5% of patients took OTC (over-the-counter) treatment. CONCLUSIONS: These data are important for better understanding treatment patterns and characteristics of CHF in Mexico.

PC2V8
TREATMENT PATTERNS OF CHRONIC HEART FAILURE (CHF) IN BRAZIL
Lopes N1, Jackson J2, Cotton S2, Perone C1, Calado L1, MacPherson A3, Barbeau M1
1Novartis Biociencias SA, Sao Paulo, Brazil, 2Adelphi Real World, Bollington, Macclesfield, UK, 3Novartis Pharmaceuticals Canada Inc., Dorval, QC, Canada
OBJECTIVES: To understand the disease and treatment patterns of Chronic Heart Failure (CHF) in Brazil. A Disease Specific Program was conducted to assess the impact of CHF. Patient record forms (PRF) were completed by 45 cardiologists for 443 patients with CHF. The same patients were invited to complete a patient self-completion questionnaire. RESULTS: FR data (n=443) revealed that a typical patient was 65.7 years old, 55% were women, and had an ejection fraction of 46.1%. Physicians believed two fifths of patients were at a moderate or greater risk of being hospitalised and/or dying in the next year. Treatment: 75% of doctors and patients were in agreement about how the last treatment decision was made. Nearly 70% of patients received a Beta Blocker; 55% received Loop Diuretics, 52% received ACE (angiotensin-converting-enzyme) inhibitors. Physicians reported that only 5% of patients took OTC (over-the-counter) CHF treatment. CONCLUSIONS: These data are important for better understanding treatment patterns and characteristics of CHF in Brazil.

DIABETES/ENDOCRINE DISORDERS – Clinical Outcomes Studies

PDB1
GLYCEMIC CONTROL IN PATIENTS WITH T2DM TREATED WITH SULFONYLUREAS ALONE OR IN COMBINATION WITH METFORMIN, ARGENTINA
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MSD Argentina, Munro, Buenos Aires, Argentina
OBJECTIVES: Glycemic control in patients with T2DM treated with sulfonylureas alone or in combination with Metformin. Argentina METHODES: Multicenter observational study based on retrospective analysis of clinical histories and cross-sectional analysis of surveys of patients and physicians: 397 patients who satisfied inclusion and exclusion criteria were collected between June and November 2015 and their medical records were reviewed by leading researchers from 16 centers in Argentina. RESULTS: Patient’s mean age was 62.5 years (range: 33 to 89 years), 54.5% males, the disease duration was 9.9 years (range: 1 to 44 years). A 45.5% (95% CI: 40 – 50.5%) of patients self-reported at least one episode of hypoglycemia in the last 6 months compared to 21.4% (95% CI: 17.2 – 25.6%) documented in medical chart reviews. The agreement between self-reported and medical chart registered hypoglycemia events was 76.9% (kappa 0.47). The agreement between self-reported and medical chart registered hypoglycemia events was 76.9% (kappa 0.47). Patients who Self-reported hypoglycemia had more mobility problems: 37.8% vs. 23%, p< 0.004, and more pain/discomfort: 61.5% vs. 43.2%, p<0.004. Similarly, patients who Self-reported hypoglycemia had more mobility problems: 42.9% vs. 26.3%; p<0.002, and more pain/discomfort: 62.2% vs. 48.7%, p<0.005 than those without hypoglycemia episodes. Patients who Self-reported hypoglycemia had lower satisfaction scores for the side effects dimension on the TSQM than patients who did not Self-report hypoglycemia (mean scores 87 vs. 98, respectively, p<0.001). CONCLUSIONS: Hypoglycemic events are frequent in patients receiving SUs and are associated with deterioration in certain dimensions of QoL and a lower satisfaction score for some dimensions of the TSQM.

PDB2
GROWTH FACTORS FOR THE MANAGEMENT OF DIABETIC FOOT ULcers: MIXED TREATMENT COMPARISONS OF RANDOMIZED CONTROLLED TRIALS
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OBJECTIVES: To compare randomized controlled trials on growth factors for the treatment of diabetic foot ulcer (DFU). In the absence of head to head comparisons, we carried out a network meta-analysis comparing the efficacy and safety of growth factors. METHODS: A search strategy was conducted to identify randomized controlled trials on growth factors for diabetic foot ulcer (DFU). A random effects model was used to obtain summary pooled estimates. Rankogram was generated based on surface under the cumulative ranking curve (SUCRA). RESULTS: A total of 26 studies with 2088 participants and 1018 events were included. No significant heterogeneity was identified at a moderate level of confidence. Network analysis was conducted to assess the impact of CHF. In the overall risk of adverse events between the growth factors. CONCLUSIONS: To conclude, rhEGF, rhPDGF and autologous PRF were found to significantly improve the healing rate when used as adjuvant to standard of care. Recombinant human epidermal growth factor may perform better than other growth factors.

PDB3
DATABASE ANALYSIS OF A SUPPORT PROGRAM FOR PEDIATRIC PATIENTS USING SOMATROPIN DUE TO GROWTH HORMONE DEFICIENCY (GHD)
Biglia LV, Seller R, Souza PV
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OBJECTIVES: Endocrine is a pediatric patient support program for children with treatment for somatropin for growth hormone deficiency (GHD) among other indications. Since its launching in 2009, a database was developed to gather epidemiological information and to identify treatment profile of these pediatric patients. Our goal is to analyze this information. METHODS: Study included patients with indication such as age, gender, state, city, treatment duration and dropout rates and causes were included. Age of start and end of treatment are also part of the data. All patients in the program use an electronic device for application and various presentations of somatropin. RESULTS: In eight years of Endocrine, there were 5,037 patients, among those, 52% are currently on treatment. On those 48% who discontinued treatment, 68% were due to medical guidance, clinical reassessment or end of treatment. Among all causes of drop outs, only 3.5% were caused by difficulty of application and fear of needle. Only 1 patient (0.04%) claimed to drop out due to lack of information. CONCLUSIONS: The analysis of the database allows us to observe that the majority of dropouts are due to the end of treatment, which demonstrates a significant satisfaction to the program, device and medication. The use of an electronic device contributes so patients who have difficulty in applying and fear of needle do not dropout treatment and possibility to evaluate adherence rate. For these reasons and by the program provide all the necessary information about the disease and follow up, there is a greater stimulus for non-discontinuation of the medication and better clinical outcomes.

PDB4
EVALUATION OF SMOKING PREVALENCe AND ITS ASSOCIATED FACTORS AMONG THE DIABETICS IN PAKISTAN
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1King Faisal University, Xi’an, Shaanxi, China, 2Quaid E Azam medical college Bahawalpur Pakistan, Bahawalpur, Pakistan, 3Islamia University of Bahawalpur, Bahawalpur, Pakistan
OBJECTIVES: Smoking among diabetics is the foremost cause of cardiovascular dis- ease (CVD). Thus the major prospect of this study is to determine the prevalence and associated factors of smoking among diabetes mellitus patient in southern Punjab Pakistan. METHODS: A quantitative, cross-sectional survey was conducted in between December 2015 and March 2016 using a semi-structured questionnaire. We targeted three government hospitals and three private clinics in southern Punjab and patients were approached using systemic sampling method. If a patient reported smoking any sort of cigarette in any quantity in the previous 12 months, he/she was considered as current smoker. Data summarization was accomplished by descriptive statistics. Both T test and Chi-square test were used to estimate the significance between variables. Complete analysis was done by SPSS Version 18.0 (SPSS, Chicago, IL, USA). RESULTS: A total of 299 patients consisting of 169 (54.6%) males and 130 (43.5%) females participated in study. Mean age SD of the respondent’s was 48±14.6 years and mean durations SD of diabetes was 9.36±6.9 years. Smoking prevalence was 24.2% (95% CI: 19.4% - 29%); 74.9% (46/62) males, 41 (24.2%) were smokers while among 130 females, 5 (3.8%) were smokers. Age (p=0.828), duration of diabetes (p=0.459), locality (p=0.337), education (p=0.52), marital status (p=0.77) monthly income (p=0.682), family history of diabetes (p=0.296), prevalence of hypertension (p=0.256), at least one episode of CVD (p=0.698) and number of cigarettes smoked per day (p=0.658) were insignificantly associated with smoking. Gender was the only variable significantly associated with smoking (p=0.00). CONCLUSIONS: Study demonstrated high prevalence of smoking among diabetics who needs to be controlled. Appropriate guidance and edification from health care provider is needed to eradicate this practice.

DIABETES/ENDOCRINE DISORDERS – Cost Studies

PDB5
COST-MINIMIZATION OF SOMATROPIN FOR GH DEFICIENCY AND TURNER SYNDROME TREATMENT FROM US PERSPECTIVE
A919
VALUE IN HEALTH 20 (2017) A853–A943
COSTOS DE LA HIPÓGLUCEMIA EN COLOMBIA

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**OBJECTIVE**: Estimar el costo real de las hipoglucemias leves, moderadas y severas en el sistema de salud colombiano desde el punto de vista del consumidor de calidad de vida 2015 y bottom up (bases de datos de consumo por atención de aseguradoras durante el año 2015) se identificaron pacientes con diabetes tipo II que registran eventos de hipoglucemia leve, moderada o severa. Se asumió que la hipoglucemia moderada implica atención por servicio de urgencias y la severa corresponde a ingreso al servicio de hospitalización o atención en unidad de cuidados intensivos. Los costos fueron estimados a precios de mercado, tanto para los consumos directos como los indirectos en los casos leves, como los de consumo de servicios en los casos moderado y severo. **RESULT**: Se identificó que el 69% de los pacientes encuestados presentaron al menos un evento de hipoglucemia leve, moderada o severa. Se imaginó que un costo medio por evento de USD 0.65 para el evento diurno y USD 0.70 para el evento nocturno. Los costos estimados para el evento moderado fueron de USD 110.99 de los cuales 3% corresponden a medicamentos y del 97% fue de USD 472.98 con una estancia hospitalaria de 10 días en promedio. Estos resultados indican que las hipoglucemias moderadas e severas implican un costo de USD 2,292.87 por paciente diabético y equivalían a 0.00075% del costo total de las atenciones en una aseguradora colombiana. **CONCLUSION**: Aunque los costos unitarios de las hipoglucemias no son altos, su frecuencia de presentación hace importante su análisis. Este estudio pretende estimar el costo real de estos eventos que han sido de interés especial por ser la diferencia fundamental entre algunas de las tecnologías actualmente utilizadas para el control de la enfermedad.

PB8

THE ECONOMIC IMPACT OF OPTIMIZING THERAPY IN ‘HARD-TO-TREAT’ AND ‘HARDER-TO-TREAT’ HYPOTHYROID PATIENTS BY CHANGING THE LEVOTHYROXINE FORMULATION FROM TABLETS TO GEL CAPS

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**OBJECTIVES**: To determine the impact of incorporating a levothyroxine gel cap formulation in the treatment of patients diagnosed with hypothyroidism that require dose changes secondary to gastrointestinal disease, suboptimal absorption, or tolerability issues with tablet formulations. **METHODS**: Costs of levothyroxine formulations (tablet/gel cap) were compared. Estimated utilization patterns/costs of physician services, laboratory, ancillary services, and lost productivity were based on published literature and governmental/public sources. The projected population was based on epidemiology reports and estimates from the 2014 National Health Interview Survey (NHIS) and the 2014 National Ambulatory Medical Care Survey (NAMCS). **RESULTS**: Approximately 19% of ‘hard-to-treat’ patients (≥2 dosage changes annually) were estimated to be ‘harder-to-treat’ patients (≥3 dosage changes annually). The estimated annual net cost savings per treatment were $87.33 for the ‘harder-to-treat’ scenario. **CONCLUSIONS**: Changing the formulation of levothyroxine from tablets to gel caps reduces patients’ costs annually. Further analyses are needed to determine the impact of gel caps on the cardiovascular disease and budgetary impact analysis was developed, from a SUS perspective, for pediatric diabetes mellitus (DM) without complications in the Sistema de Salud Colombiano durante el 2015, los cuales fueron reportados a la Cuenta de Alto Costo, entidad que ha gestionado el registro administrativo de esta enfermedad en el país durante 5 años. **METHODS**: Se realizó un estudio descriptivo de corte transversal y de costos directos de la enfermedad; con un tamaño de muestra de 3,136 pacientes (muestreo por conglomerados), los cuales fueron seleccionados en 16 aseguradoras en salud de 28 departamentos y en el Departamento de Salud del Distrito Federal, Bogotá. Resultados: Se consideraron útiles tanto para la investigación como para el desarrollo de políticas. **RESULT**: Se afirmó que el costo promedio de una hospitalización por hipoglucemia moderado fue mayor que el costo promedio de una hospitalización por hipoglucemia severo. **CONCLUSION**: Aunque los costos unitarios de las hipoglucemias no son altos, pero su frecuencia de presentación hace importante su análisis. Este estudio pretende estimar el costo real de estos eventos que han sido de interés especial por ser la diferencia fundamental entre algunas de las tecnologías actualmente utilizadas para el control de la enfermedad.

PB9

COSTOS DE LA DIABETES MELLITUS EN EL SISTEMA DE SALUD COLOMBIANO

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**OBJECTIVES**: La atención de pacientes con Diabetes Mellitus (DM) sin complicaciones en el Sistema de Salud Colombiano durante el 2015, con un costo de USD 472.98 con una estancia hospitalaria de 10 días en promedio. Estos resultados indican que las hipoglucemias moderadas e severas implican un costo de USD 2,292.87 por paciente diabético y equivalían a 0.00075% del costo total de las atenciones en una aseguradora colombiana. **CONCLUSION**: Aunque los costos unitarios de las hipoglucemias no son altos, su frecuencia de presentación hace importante su análisis. Este estudio pretende estimar el costo real de estos eventos que han sido de interés especial por ser la diferencia fundamental entre algunas de las tecnologías actualmente utilizadas para el control de la enfermedad.

PB10

COSTOS DE MANEJAR HYPOGLYCÆMIÆS AMONG INSULIN-TREATED PATIENTS WITH DIABETES: RESULTS FROM THE HAT STUDY IN BRAZIL

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**OBJECTIVE**: The Hypoglycæmia Assessment Tool (HAT) study in Brazil aimed to characterize incidence of hypoglycemic events and associated health resource use and costs in type 1 diabetes mellitus (T1DM) and type 2 (T2DM) patients among other objectives. **METHODS**: Non-interventional, multicentre study with 679 patients, conducted in 22 centres across all Brazilian regions with a 6-month retrospective and a 4-week prospective assessment of hypoglycemic events. Patients self-reported health-related use related with hypoglycaemia events using a paper questionnaire. Direct costs included healthcare resources to assist hypoglycaemia episodes (hospitalization, emergency assistance, extra visits to physician/nurse and outpatient administration of carbohydrates or glucagon) whereas indirect costs were related with labor absenteeism due to hypoglycaemia (sick leave and patients’ delay to work) using Capital Human Approach. Prices were obtained from official Brazilian sources (DATASUS, SIGTAP, BPS and IBGE). Extra costs were extrapolated based on the prospective assessment, in Brazilian Reais, for 2015 from the following sources: USD 1 = R$ 3.80 ($1 = 3.80 pesos colombianos). **CONCLUSION**: If patients do not experience severe hypoglycemia events, this treatment may be an income important for the time of decision in the distribution of resources economic for the planeación and prestación of the services sanitarios in this enfermedad.
understand the economic burden of hypoglycaemias in patients with diabetes in Brazil. Hypoglycaemia were the cost driver, with costs for hypoglycaemias in T1DM patients are twice the costs in T2DM probably due to a higher incidence of hypoglycaemias. Missing data was a study limitation.

**PDB11**

**EVOLUTION COST-EFFECTIVENESS ANALYSIS OF PHARMACEUTICAL CARE FOR TYPE 2 DIABETES MELLITUS**

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**OBJECTIVES:** This study aims to assess the cost-effectiveness after a pharmaceutical care intervention in type two Diabetes Mellitus patients in Ribeirão Preto city, Brazil, compared with the conventional care provided just by a physician (status quo).

**METHODS:** Patients in the PC group were followed up monthly by a single clinical pharmacist during 18 months, from March 2006 until August 2007 (Borges, 2008). After that, until 2011, medical records were collected, as medication consumption, the number of physician visits, diabetes complications, and date of death.

The cost analysis considered the government’s health policy perspective and was performed according to direct medical and non-medical costs, and indirect costs, calculating the government reimbursement rates and adjusted for inflation until December 2016. The cost effectiveness was calculated year by year after the pharmaceutical care intervention. **RESULTS:** After the pharmaceutical care intervention, the pharmaceutical care group had lower costs compared to the conventional care group year by year as the costs with diabetes treatment were increasing in both groups. In another hand, the pharmaceutical care group had higher effectiveness compared to the conventional group, however, year by year the effectiveness was decreasing, until reach almost the same value compared to the conventional care group. Considering fasting blood glucose, at the first year after pharmaceutical care intervention (2007), pharmaceutical care group had 50.0% of effectiveness, while the conventional care group had 30.0% after pharmaceutical care intervention (2011), the pharmaceutical care group had 25.0% of effectiveness, while the conventional care group had 22.2%. **CONCLUSIONS:** According to the effectiveness results, the PC group had lower total costs per patient and higher effectiveness compared to the conventional group, therefore, pharmaceutical care can lead fasting blood glucose control and reducing treatment costs. However, over time the effectiveness of pharmaceutical care decreases, showing the need for a new intervention.

**DIABETES/ENDOCRINE DISORDERS – Patient-Reported Outcomes & Patient Preference Studies**

**PDB12**

**IS TRANSTHEORETICAL MODEL’S STAGES OF CHANGE A GOOD PREDICTOR OF MEDICATION ADHERENCE IN PATIENTS WITH TYPE 2 DIABETES?**

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**OBJECTIVES:** To determine the stages of change (SOC) and medication adherence scores of patients with type 2 diabetes mellitus (T2DM) in a primary healthcare setting in Qatar and to determine whether the SOC could predict adherence to antidiabetic medications. **METHODS:** The study was conducted in the non-communicable disease clinic. Patients were recruited randomly from the Mesameer Health Care Center, Al-Najma Health Care Center, and Old Woman’s Health Care Center. Using the 8-item Morisky Medication Adherence Scale (MMAS-8), and the SOC were identified using a 2-item SOC questionnaire. Hierarchical multiple regression analysis was performed to determine if the SOC could predict medication adherence while controlling for demographic characteristics, disease duration, and total number of prescribed medications. Alpha level was decided at 0.05. **RESULTS:** A total of 381 patients were included in the analysis. Of these patients, 1.3% were in the precontemplation stage, 3.4% were in the contemplation stage, 14.7% were in the preparation stage, 3.9% were in the action stage, and 76.7% were in the maintenance stage in relation to medication adherence. The rates of low, medium, and high adherence to antidiabetic medications were 36.4%, 23.3%, and 50.3%, respectively. SOC significantly and positively predicted medication adherence, which accounted for 57.7%-59.9% (p < 0.001) while controlling for covariates. **CONCLUSIONS:** SOC significantly predicted medication adherence, which suggests that the SOC questionnaire could potentially be used to identify patients at risk for low adherence.

**PDB13**

**DIABETES MELLITUS ADHERENCE TO CLINICAL FOLLOW-UP, BASED IN LOCAL GUIDELINES AND METABOLICAL OUTCOMES**

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**OBJECTIVES:** To determine the stages of change (SOC) and medication adherence for 57.7%-59.9% (p<0.001). The rates of low, medium, and high adherence were 19.2%, 29.9%, and 50.9%, respectively. SOC significantly and positively predicted medication adherence, which accounted for 57.7%-59.9% (p < 0.001) while controlling for covariates. **CONCLUSIONS:** SOC significantly predicted medication adherence, which suggests that the SOC questionnaire could potentially be used to identify patients at risk for low adherence.

**PDB14**

**FOLLOW-UP OF PEDIATRIC PATIENTS UNDER TREATMENT WITH SOMATROPIN IN BRAZIL THROUGH A PATIENT SUPPORT PROGRAM (PSP)**

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**OBJECTIVES:** Somatropin is indicated for pediatric patients with GH deficiency among other indications and usually presents low adherence. The aim was to carry out a survey with pediatric patients under treatment with somatropin to identify unmet needs of treatment and to understand how the Patient Support Program helps. This is a specialized and meticulously planned monitoring of children patients included on the patient support program.

**METHODS:** A questionnaire was developed to be applied to pediatric patients in treatment who accepted to participate in the study. The survey included both active and receptive patients or their caregivers were asked 8 questions, 7 being objective and the last one subjective. Patients were inquired about: residence status, gender, level of satisfaction with the nurse care, age, if they would like to receive regular follow-up, 56.5% gave to the satisfaction level of with the support provided by Endocare. The last question, being subjective, had a response rate of 47.8%, of which 57% contained only praise. **CONCLUSIONS:** The satisfaction survey presented interesting results regarding the treatment of pediatric patients. As most of the patient’s caregivers felt contemplated with nurse visit, it may be related with an increase of the adherence to the treatment since most caregivers and physicians would like to receive periodic monitoring of the PSP. The patient support program provides greater patient contact that may help to have a better clinical outcome due to this patient care.

**PDB15**

**IMPACT OF WEIGHT LOSS (WL) ON HEALTH-RELATED QUALITY OF LIFE (HRQOL) AMONG LATIN AMERICAN (LA) SUBJECTS WITH TYPE 2 DIABETES MELLITUS (T2DM) IN PHASE 3 STUDIES OF CANGLIFLIZOGIN (CANA)**

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**OBJECTIVES:** Treatments that improve key biomarkers related to T2DM manage- ment are desirable, especially in LA, where patients are responsible for medication adherence. Both CANA and sitagliptin are SGLT2 inhibitors, which reduce glucose and lower BP in people with T2DM who are not good candidates to receive insulin. **METHODS:** The study focused on 7908 patients in 2015. It uses day-to-day clinical records and administrative data from the registries available for the Fondo Colombiano de Enfermedades de Alto Costo – Cuenta de Alto Costo in collaboration with the Health Economics & Outcomes Research Team – HEORT. Adherence to Colombian Diabetic Guideline was measured by ratios of compliance. Assistance to medical services and clinical out- comes was transferred to categorically variables, Fisher’s Exact test was used to determine the difference between groups. STATAV13.0 software was used to analyze data.

**RESULTS:** Observed clinical adherence of health care providers to the local clinical guidelines showed a global ratio of 43%. There were statistically significant differences between HBA1C, Total Cholesterol, HDL, LDL, triglycerides and Clinical follow-up asso- ciated with patient’s attendance to follow-ups with the Nutritionist, the Physician, the Internist, and the Ophthalmologist, in most of the cases. **CONCLUSIONS:** There is an important association between metabolic control and attendance to clinical services, which aid to conclude about its increased importance. However, the observed 43% of adherence to the Colombian Diabetes Guidelines, must be regarded with the utmost care for the very particular structure of the Colombian health insurance system. Specifically, such percentage can be affected by external pro- cesses experienced by the patient or simply due to the physicians’ praxis. Hence, the upturn in the attendance frequency to specialists may cause an improvement in metabolic results, in consequence, lowering the hospitalization rates.
OBJECTIVES: IDMPS is a multidisciplinary observational implementation in three Latin American countries. The aim of our study was to compare the characteristics and the level of control metabolic achieved in a population with T2DM from Argentina and Brazil with the CQM of the Center for Quality Management in Diabetes (CQM) of the Peruvian Ministry of Health (MinSA) and the International Standards of the American Diabetes Association (ADA) 2016-2017.

Methods: A national, observational, cross-sectional study was conducted in 2015 involving 1,982 patients with T2DM in Argentina and 239 in Brazil. The results were compared with the CQM of the Ministry of Health of Peru (MinSA) and the ADA 2016-2017. The results were analyzed using descriptive and inferential statistics. The significance level was 0.05.

Results: The average age was 55.4 years (±13.2) and 61.8% were men. Most of the patients were from the rural area (71.6%) and 34.2% came from Colombia. Most of the patients had a BMI of 25.0 to <30.0 kg/m² (57.7%), were married (60.3%), and had a private healthcare insurance (50%). The current smoking was 12.7% and the mean duration of diabetes was 9.5 years (±5.3). The percentage of patients who met the CQM was 39.4% (CQM1), 14.9% (CQM2), and 10.5% (CQM3). The percentage of patients with a HbA1c <6.5% was 54.5%, 49.4% and 44.8% respectively.

Conclusions: The percentage of patients who met the CQM was lower than the standards recommended by the Ministry of Health of Peru and the ADA 2016-2017. The quality of care provided to patients with T2DM in Argentina and Brazil is below the minimum standards established by the Ministry of Health of Peru and the ADA 2016-2017.

Individual’s Health - Clinical Outcomes Studies

PH1

PROSPECTIVE OBSERVATIONAL STUDY ON SPONTANEOUS REPORTING OF ADR ON GERIATRIC POPULATION

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OBJECTIVES: To identify and report ADR; and to assess the incidence of polypharmacy and comorbidities. METHODS: The study was conducted at medical departments of Academy of Medical Sciences, a tertiary care centre and a 1200 bedded teaching hospital during a period of two months. Patient were enrolled after approval from institutional ethics committee. RESULTS: A total of 102 geriatric patient admitted in period of 3 months. Of this, 65 patients were monitored. 66.15% were female and 33.84% male. 70.765% patients had diabetes, followed, kidney hypertension 35%, CAD 20%, CVA 18.4%, COPD 10.7%, Anemia 9.23%, Seizure 7.69%. Thyroid problem 3.07%. 27 ADR were reported and 40% ADR are preventable. The ADR in geriatric population mostly affected gastrointestinal system (38%) and skin (18%). Causality assessment done by WHO and Naranjo’s scale. Results: A total of 102 geriatric patients admitted in period of 3 months. Of this, 65 patients were monitored. 66.15% were female and 33.84% male. 70.765% patients had diabetes, followed, kidney hypertension 35%, CAD 20%, CVA 18.4%, COPD 10.7%, Anemia 9.23%, Seizure 7.69%. Thyroid problem 3.07%. 27 ADR were reported and 40% ADR are preventable. The ADR in geriatric population mostly affected gastrointestinal system (38%) and skin (18%). Causality assessment done by WHO and Naranjo’s scale. CONCLUSIONS: The available data suggest that a scope of closer pharmacovigilance studies are much needed in the older age group due to co morbidity, which can cause ADR that are preventable.

PH2

COMPARATIVE EVALUATION OF THE Efficacy OF HERBAL AND NONSTEROIDAL ANTI-INFLAMMATORY DRUGS IN THE TREATMENT OF DYSENSORMERIA IN WOMEN WITH FEMALE REPRODUCTIVE TRACT CONGENITAL ANOMALIES

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OBJECTIVES: To identify and report ADR; and to assess the incidence of polypharmacy and comorbidities. METHODS: The study was conducted at medical departments of Academy of Medical Sciences, a tertiary care centre and a 1200 bedded teaching hospital during a period of two months. Patient were enrolled after approval from institutional ethics committee. RESULTS: A total of 102 geriatric patient admitted in period of 3 months. Of this, 65 patients were monitored. 66.15% were female and 33.84% male. 70.765% patients had diabetes, followed, kidney hypertension 35%, CAD 20%, CVA 18.4%, COPD 10.7%, Anemia 9.23%, Seizure 7.69%. Thyroid problem 3.07%. 27 ADR were reported and 40% ADR are preventable. The ADR in geriatric population mostly affected gastrointestinal system (38%) and skin (18%). Causality assessment done by WHO and Naranjo’s scale. CONCLUSIONS: The available data suggest that a scope of closer pharmacovigilance studies are much needed in the older age group due to co morbidity, which can cause ADR that are preventable.

PH3

COST OF TREATMENT OF PATIENTS WITH T2DM AND NIDDM IN COLOMBIA - 2006 - 2015

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PH4

FREQUENCY OF PARTURITIONS BY CESAREAN SECTIONS IN CARTAGENA, COLOMBIA - 2006 - 2015

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PH5

COST OF TREATMENT OF PATIENTS WITH T2DM AND NIDDM IN COLOMBIA - 2006 - 2015

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from an official publication of the Ministry of Health. A sensitivity analysis of 1000 simulations was performed on both outcome variables and costs through a Monte Carlo model using gamma distributions. RESULTS: Nutrition care interventions targeting hospitalized at-risk and malnourished patients could contribute to cost savings of US $503.3 million (1.5 billion COP) annually. Additionally, reduction of unplanned readmissions could cost savings of 162,950,000 COP (0.003 million COP) per year, while rationalization of hospital diets and wasting contrib- utes to cost savings of US $3.1 million (0.1 million COP) per year. This trans- lates into total health savings of US $580.4 million (2.7 billion COP), which represents the cost needed to treat 10% of inpatients admitted to Colombian hospitals in one year. CONCLUSIONS: Nutrition care interventions targeting at-risk and malnour- ished hospitalized patients can generate significant cost savings for the Colombian health system when implemented as a result of reducing patient hospital length of stay, unplanned hospital readmissions, rationalization of hospital diets, and increas- ing the capability of hospital beds utilization without having to incur additional intervention expenses.

PH4

PRELIMINARY RESULTS OF BENEFITS STUDY - BRAZILIAN ECONOMIC EVALUATION OF sFlt-1/PlGF TEST FOR PREECLAMPSIA PREDICTION AND DIAGNOSIS: PRIVATE PERSPECTIVE

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OBJECTIVES: Demonstrate the financial impact of using the sFlt-1/PlGF ratio test guiding the management of preeclampsia at Brazilian private perspec- tive. METHODS: A budget impact model was adapted based on decision-tree model which compares the costs in a current standard of care scenario "no test" and a "test scenario" adding the sFlt-1/PlGF test to current standard of care for a cohort of 1000 pregnant women with clinical suspicion of preeclampsia (signs and/or symptoms) from 20 to 40 gestational weeks. The time horizon was 1 year and a one-way sen- sitivity analysis of that, perform characteristics were derived from PROGNOSIS study, a non-interventional study in women presenting with clini- cal suspicion of pre-eclampsia and the costs are from a Brazilian private hospital, considering patients from Health Insurances. RESULTS: The sFlt-1/PlGF ratio test can improve prediction and management of preeclampsia. The economic model sug- gests that adding the test could reduce unnecessary interventions and, as a conse- quence, generate a cost saving of approximate $355,84 BRL per patient. A one-way sensitivity analysis of the parameter, the cost saving are robust to plausible changes in the main parameters. CONCLUSIONS: Enhanced prediction of preeclampsia using the sFlt-1/PlGF ratio test could improve clinical management for pregnant women, ensur- ing the most appropriate care for the ones with higher risk and reduce the costs associated with unnecessary interventions.

PH5

ANALISIS DEL COSTO DE LA ATENCIóN DEL PARTE EN MEDELLIN


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OBJECTIVES: Determine the cost of obstetric care, from the perspective of the public institution providing medical services at health centers (IPS) and classification with the tariff recognized by the hospitals of health centers of Medellín, and contrast it with the tariff recognized by health centers of Medellín Health System (SPS). For this purpose, data were collected from the administrative and clinical management of 1200 patients, and the costs were categorized as top-down and bottom-up method. RESULTS: The average cost of a hospital stay was 7.25 days (SD 6.53 days) and 13.8% were admitted to the ICU. For the average length of hospital stay was 7.25 days (SD 6.53 days) and 13.8% were admitted to the ICU.

INDIVIDUAL’S HEALTH – Cost Studies

PH6

A COST-SAVING MODEL OF NUTRITION CARE INTERVENTIONS FOR MALNOURISHED HOSPITALIZED PATIENTS IN COLOMBIA

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OBJECTIVES: Determine cost savings associated with improved length of stay, complications and readmission rate among malnourished hospitalized patients in Colombia, from nutrition care interventions. METHODS: A decision-analytic model was developed by using health outcomes reported by Philipson et al. (2013) and the 2015 nutritionDay survey average costs, which were informed by data gathered from three representative Colombian hospitals. These data were used to calculate the total patient cost. The cost savings were calculated by comparing costs for hospitalized at-risk and malnourished patients over a one year period. Decreased variables generating the outcome savings included reduced length of hospital stays, readmissions, costs per event, food waste, and cost rationalization for special diets. Information about the 2015 total number of hospital beds in Colombia was gathered from an official publication of the Ministry of Health. A sensitivity analysis of 1000 simulations was performed on both outcome variables and costs through a Monte Carlo model using gamma distributions. RESULTS: Nutrition care interventions targeting hospitalized at-risk and malnourished patients could contribute to cost savings of US $503.3 million (1.5 billion COP) annually. Additionally, reduction of unplanned readmissions could cost savings of 162,950,000 COP (0.003 million COP) per year, while rationalization of hospital diets and wasting contrib- utes to cost savings of US $3.1 million (0.1 million COP) per year. This trans- lates into total health savings of US $580.4 million (2.7 billion COP), which represents the cost needed to treat 10% of inpatients admitted to Colombian hospitals in one year. CONCLUSIONS: Nutrition care interventions targeting at-risk and malnour- ished hospitalized patients can generate significant cost savings for the Colombian health system when implemented as a result of reducing patient hospital length of stay, unplanned hospital readmissions, rationalization of hospital diets, and increas- ing the capability of hospital beds utilization without having to incur additional intervention expenses.

PH7

COST ILLNESS OF RSV INFECTION IN COLOMBIA

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OBJECTIVES: To assess the indirect medical costs associated with RSV illnesses in children with Bronchiolitis (44.4% CI 95% 38.5-50.5%), ages ranging between 2 months and 10 months (median: 6.59), and 58.8% were males. The average length of hospital stay was 7.25 days (SD 6.53 days) and 13.8% were admitted to the ICU.
Unadjusted annual RSV-related costs were US$ 59,501. Higher RSV-related costs were due to greater annual RSV medication costs (US$2,802) followed by hospital stay (US$22,445) and the lower cost was by oxygen (US$1,072). The average annual direct costs per patient was US$12. CONCLUSIONS: RSV infection causes significant disease burden in Rionegro, Colombia, leading to increasing health care resource utilization with high average annual direct costs per patient.

P1H11

EFFECTIVENESS OF BREECH VERSION BY MOXIBUSTION ASSOCIATED WITH ACUPUNCTURE FOR WOMEN AT 33 WEEKS GESTATION: A MODULAR APPROACH BY THE BRAZILIAN PUBLIC HEALTH SYSTEM PERSPECTIVE

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OBJECTIVES: The objective of this study was to assess the effectiveness and costs of breech version by moxibustion associated with acupuncture procedure efficacy (54%) applied, the total procedures previously identified in DATASUS was 1.9 MM. From these, we calculated a total of 77,885 women with breech presentation fetus at 33 weeks. Considering the moxibustion associated with acupuncture procedure efficacy (54%) applied, the total number of caesarean procedures decreased from 23,560 in the experimental arm to 21,572 in the experimental arm. The total costs calculated for the experimental arm were: R$ 2.77M (moxibustion), R$ 31.6 M (cesarean) and R$ 27.2 M (regular labor), totaling R$ 81.7 M, versus R$ 86.1 M in the control arm. The calculated ICER was very low (R$ 8.50 per cephvalic version). Additionally the probabilistic sensitivity analysis confirmed the results and demonstrated that the moxibustion associated with acupuncture was cost effective in 86% of simulations. CONCLUSIONS: These data suggest that offering moxibustion associated with acupuncture to women with a breech presentation fetus at 33 weeks gestation would result in a potential a decrease in the number of cesarean procedures.

P1H12

ECONOMIC COST STUDY FOR SENIOR CITIZENS IN ECUADOR

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OBJECTIVES: Determine health cost of Senior Citizens in Ecuador. METHODS: A questionnaire with referencce to CAHPS (consumer assessment of health plan survey) was developed first, then respondents of 60 IDS programs were conducted with at least 90 sample surveyed in each IDS programs. A raking weighting method was applied to ensure the distribution of sample’s characterisctic is idenitical to the population’s. RESULTS: The questionnaire had acceptable reliability with the Cronbach’s α of 0.74 and 0.80 in the domain of physician’s communication and accessibility, respectively. For all 640 respondents from 50 IDS programs, more than half of respondents living in islands didn’t know IDS program at all. Nevertheless, 81.5% of respondents indicated that they can get health care within 30 minutes, and 87.4% of them were not unsatisfied with health care they received. With regards to physician’s service and health care within their residential areas, respondents gave an average score of 7.18 and 7.73 respectively in a 10-10 scale. In general, respondents resided in mountain areas appraise their health care quality higher than those resided in island areas. CONCLUSIONS: Taiwan’s healthcare delivery system based on local health services had achieved acceptable level of accessibility to and satisfaction with health care perceived by residents in remote areas. Nevertheless, further study should explore ambulatory care services, how to improve health care quality.

INDIVIDUAL’S HEALTH – Patient-Reported Outcomes & Patient Preference Studies

P1H13

CONSUMERS’ ASSESSMENT ON INTEGRATED DELIVERY SYSTEM IN REMOTE AREAS IN TAIWAN

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OBJECTIVES: To assess the impact of IDS program on the residents’ accessibility to and satisfaction with health care provided in remote areas. METHODS: A questionnaire with refeerence to CAHPS (consumer assessment of health plan survey) was developed first, then respondents of 60 IDS programs were conducted with at least 90 sample surveyed in each IDS programs. A raking weighting method was applied to ensure the distribution of sample’s characterisctic is idenitical to the population’s. RESULTS: The questionnaire had acceptable reliability with the Cronbach’s α of 0.74 and 0.80 in the domain of physician’s communication and accessibility, respectively. For all 640 respondents from 50 IDS programs, more than half of respondents living in islands didn’t know IDS program at all. Nevertheless, 81.5% of respondents indicated that they can get health care within 30 minutes, and 87.4% of them were not unsatisfied with health care they received. With regards to physician’s service and health care within their residential areas, respondents gave an average score of 7.18 and 7.73 respectively in a 10-10 scale. In general, respondents resided in mountain areas appraise their health care quality higher than those resided in island areas. CONCLUSIONS: Taiwan’s healthcare delivery system based on local health services had achieved acceptable level of accessibility to and satisfaction with health care perceived by residents in remote areas. Nevertheless, further study should explore ambulatory care services, how to improve health care quality.

P1H14

RELACIÓN ENTRE LOS FACTORES SOCIOECONÓMICOS, ECONÓMICOS, CONDICIÓN CLÍNICA Y LA CALIDAD DE VIDA RELACIONADA A SALUD: EXPLORANDO LA EQ-SD Y EQ-VAS EN CHILE

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OBJECTIVES: Examining the factors that contribute to determine the health-related quality of life (HRQoL) in 1,528.71 – funding comes from working activities (59%), retirement (17%), transfers 1,528.71 – funding comes from working activities (59%), retirement (17%), transfers (13%) and others (9%). 29.2% count with health insurance (General Insurance 16.2%, private insurance 2%, police insurance 1.8%, municipal insurance 1.2%). CONCLUSIONS: After hospitalization – medical check-ups and lab tests – polypharmacy related costs are high, keeping in mind that a third part of the population under study counts with health insurance.
PH15  EVALUATING COMMUNITY PHARMACISTS’ RESPONSE TO ADVERSE DRUG EVENTS AMONG WOMEN WITH PCOS: A SIMULATED-CLIENT STUDY
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OBJECTIVES: The aim of this study was to evaluate the practice and communication, i.e. the structure, content and interaction between clients and pharmacists in response to patients with adverse drug events in community pharmacies.
METHODS: Observational descriptive simulated client (SC) method was conducted. Thirty community pharmacies in Qatar were randomly selected and randomized into two groups of 15 (Face to Face, n=15 and Telephone calls, n=15). Two SCs visited all the pharmacies. Pharmacists were presented with a scenario of polycystic ovarian syndrome (PCOS) patient on metformin presenting with bothering diarrhea and requesting the pharmacist assistance. Data collection was through standardized scenario and data collection form which were piloted and refined prior to the study. Primary outcomes included data gathering, labeling, counseling and prescribing practices.
RESULTS: Forty interactions were made with community pharmacists. Majority of pharmacists dispensed medications (90%), antibiotic (67.5%) and vitamins (57.5%). Referral was made by pharmacists (17.5%). Most of pharmacists did not gather important information from the patient, such as duration of diarrhea and frequency of diarrhea (67.5% and 82%, respectively). All pharmacists needed prompting from the SC to discover that this is an ADE from metformin. More than one third of pharmacists did not label any medication dispensed (63.7%). No significant difference was found between groups in data gathering (p=0.38) and counseling (p=0.07). CONCLUSIONS: Community pharmacy practice in Qatar is inconsistent with current guidelines and best practices with poor data gathering, labeling, counseling and prescribing practices. There is an urgent need for professional development and training programs for community pharmacists.

PH16  PHARMACOEPIDEMIOLOGICAL SURVEY OF UNDER-FIVE ANTIDIARRHEA DRUGS UTILIZATION IN A TERTIARY TEACHING HOSPITAL IN ENUGU METROPOLIS
SOUTHEAST NIGERIA
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OBJECTIVES: Diarrhea is a major cause of morbidity and mortality among under-five children in developing countries and consumes reasonable portion of household income. Regular drug utilization study in an institution is essential for auditing drugs prescribed in public health facilities for improvement of treatment outcomes and reduction of disease burden. The study assessed diarrheal treatment practices among under-five, and documented information on the level of adherence to standard treatment. The study was conducted in a tertiary sectional analysis of prescriptions in a randomly selected tertiary teaching hospital. It was carried out between January 2016 and February 2017. A total of 350 randomly selected prescriptions with at least one anti-diarrheal agent were used. Eligible prescriptions for under-five children written in English Language between January 2014 and December 2015 were used for the study. Data was summarized using descriptive statistics.
RESULTS: Of the 350 prescriptions studied, 200 (57.1%) were males and 179 (51.1%) were under-five from the urban area. The mean age was 1.33 ± 0.92 years. Oral electrolyte agents were the most prescribed 388 (50.1%) followed by vitamins and minerals 209 (29.7%) while antibiotic were the least prescribed 32 (4.7%). The most used electrolyte were oral rehydration salts 338 (50.1%) and Zinc 184 (49.5%) while ringer lactate was the most prescribed parenteral electrolyte solution 50(7.5%). Dextrose was the least prescribed dosage form (2.2%) while injectable solutions were the most prescribed dosage form (91.2%). General compliance to the recommended treatment value authorized, geographical region, assistance level and procedures over the DATASUS. The study period was defined as January 2008 to December 2015. The regular labor procedures were registered in DATASUS. The regular labor represented 59% (9,1 MM) of procedures while cesarean accounted for 32% (5 MM) in the same period. We also observed and increasing number of high risk labor (R2=0.8496) and cesar-ean (R2=0.924) over the years. Additionally the yearly number of regular labor has dropped from 1,2MM to 1,1MM in the total spending to R$ 9,8 BI. Cesarean accounted for 49% (R$ 4,9 BI) of the investment, in comparison to regular cesarean: 36% and R$ 3,5 BI, respectively. The average value reimbursed for regular labor (R$ 555) and cesarean (R$ 711), high risk labor (R$ 785) and high risk cesarean (R$ 1,197) have not changed significantly over the years. CONCLUSIONS: These data reinforces the importance of following the adoption of labor options currently available in Brazil. Besides the observed preference for regular labor and against the worldwide tendency, there is an increasing demand for high risk procedures in SUS.

PH17  HOW MUCH SEXUAL VIOLENCE AGAINST WOMEN COSTS TO BRAZIL?
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OBJECTIVES: Brazilian Ministry of Health advocates full and humane treatment for women victims of sexual violence, who must receive psychological care, emergency contraception and prophylaxis for sexually transmitted diseases, HIV, Hepatitis B, among other care measures. The study aims to evaluate direct medical costs related to the care of women victims of sexual violence in Brazil, in 2016. METHODS: Data from the most recent Brazilian Public Safety Yearbook show 45,460 cases of rape per year in the country, 89% of which are women victims (59,509) which were only 15 in 35% of cases (14,161). Costs of consultations, laboratory examinations and imaging tests came from the Brazilian Outpatient Information System (SIA/SUS) database. Procedures were selected from ICD-10 codes: 5B0.5 (rape) and 6B4.5 (adult). The total spending was a 9,8 BRL per patient. This cost was applied to 14,161 patients, of couples had a previous trials of ART. In relation to coping strategy, for women at 90,256,678 BRL per year. CONCLUSIONS: Acute care with sexual violence against women victims generates a significant high burden of nearly 90 BRL per year to the public healthcare system in Brazil. Costs generated by this analysis are under- estimated by low notification rate and low demand for health services by victims. In addition, the real impact should include direct long-term costs as well as indirect and intangible costs.

PH18  REAL-WORLD DATA ON LABOR PROCEDURES IN THE BRAZILIAN UNIFIED HEALTH SYSTEM (SUS). AN EIGHT YEARS RETROSPECTIVE DATABASE STUDY
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OBJECTIVES: In Brazil, the Brazilian unified health system (SUS) has undergone significant worldwide changes in the last 20-30 years, with greater emphasis on the promotion of the natural and physiological characteristics of labor. However, there is little information available about the characteristics in the pharmacological treatment in the Brazilian Healthcare System (SUS). The objective of this study was to address the labor procedures profile in the Brazilian Healthcare System. METHODS: Childbirth characteristics in SUS were analyzed retrospectively from the Brazilian Unified Health System Database, SUS. The study was based on Semey Region of Kazakhstan. The sample was consisted of 85 couples adjustment to failed assisted reproductive technologies (ART). In relation to coping strategy, for women at 90,256,678 BRL per year. CONCLUSIONS: Acute care with sexual violence against women victims generates a significant high burden of nearly 90 BRL per year to the public healthcare system in Brazil. Costs generated by this analysis are under- estimated by low notification rate and low demand for health services by victims. In addition, the real impact should include direct long-term costs as well as indirect and intangible costs.
were significantly lower than before counselling with regard to passive avoidance strategy with t=2.16, and females scores were significantly higher than before with regard to meaning based strategy with t=3.96. CONCLUSIONS: The study identified key gender differences in how men and women cope with infertility and counselling effective on couples’ adjustment to failed ART. The establishment of educational programs was to answer their questions and different coping strategies with failed ART trials.

PHI21

EPIDEMOLOGY OF HEALTHCARE AS REGISTERED SEXUAL ABUSE AGAINST WOMEN IN BRAZIL

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OBJECTIVES: To evaluate the epidemiological data on health care recorded as sexual abuse against women in Brazil in 2016. METHODS: Healthcare registered as sexual abuse against women came from the Brazilian Outpatient Information System (SIA/SUS) database. Procedures were selected from ICD-10 codes (T74.2, T95, 261.4, 261.5 and A00.4) and 124.6). The state with the largest participation was Tocantins (21.39%). The most reported ICD was T74.2 (sexual abuse), in 71.21% of cases. The most accomplished procedure was the “multiple procedures”, in 34% cases. In 67% cases of women were women aged less than 25 years. The treatment was better followed by hepatitis C serology (6.6%). As gray literature, the Brazilian Public Safety Yearbook showed 45,460 cases of rape per year in the country. 89% of which are women and 11% are men. CHILDHOOD The prevalence of infection by Chlamydia trachomatis in the state of Goiás was 7.4% (2015), in 2016, the rate was 8.6% (04/16). In the state of Mato Grosso the prevalence of infection in children was 11.0% (11/16), in 2016, the rate was 11.5% (04/16). More than 77% of clinical care in Brazil registered as sexual abuse against women occur under the age of 24 years. The number of hospital visits is below the expected, showing that in addition to potential registration errors, many women choose not to seek health care in this situation. Acute treatment in this situation is very important to avoid diseases development. More campaigns are needed to encourage the search for healthcare directed to victims, as a public health measure.

PHI22

INTESTINAL PARASITIC DISEASE AND HYGIENIC CONDITIONS IN CHILDREN: DIAGNOSTIC EVALUATION FOR PREVENTION

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OBJECTIVES: To determine the intestinal parasitism prevalence and the relationship between intestinal parasitism and hygienic conditions of schoolchildren. METHODS: This study comprised 61 children (7.7 ± 2.18 years) of a rural school of San Juan, Chimborazo, Ecuador. The participants integrate the EVANES research project and were randomly selected. To determine intestinal parasitism, faeces were analysed. A survey was applied to know the hygienic conditions (water treatment, type of sewage, use of treatment and hand washing) of families and schoolchildren. Data analysis was performed using Chi-square test. Infected cases were obtained and the Helsinki rules were followed. RESULTS: The prevalence of intestinal parasitism was 93.4%. The parasites identified were cysts of Entamoeba coli (78.7%), Entamoeba histolytica (11.1%) and Cryptosporidium (9.5%). Giardia lamblia (24.6%), Entamoeba histolytica (20.6%) and Hymenolepis nana (19.7%) were the most prevalent. Infections of Entamoeba coli were related to not using water for hand washing (p = 0.0019), not using soap and water for hands washing (p = 0.0022), not using water for showering (p = 0.0009) and not using soap and water for hands washing (p = 0.0001). The use of herbal medicines treatment, those who are illiterate, smokers and those having severe condition and not having DOTS therapy are at high risk of getting this infection. There are still many other important factors according to studies conducted in recent years. But in Pakistan we have to minimize these factors to overcome this disease.

PIN1

EFFICACY AND SAFETY OF INTERFERON-FREE THERAPIES FOR CHRONIC HEPATITIS C PATIENTS COINFECTED WITH HIV: SYSTEMATIC REVIEW OF CLINICAL TRIALS

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OBJECTIVES: To evaluate the efficacy and safety of interferon-free (IFN-free) therapies for chronic hepatitis C (HCV) patients coinfected with HIV since the possibility to present more adverse effects (AE) in this group of patients, thus increasing the clinical evidence of these therapies. METHODS: A systematic review was carried out including randomized clinical trials that brought information about efficacy (sustained virologic response, rapid virologic response and virological failure) and safety (adverse events - AE) outcomes. RESULTS: A total of 10 clinical trials with 1,628 patients were included, mostly with HCV genotype 1 and treated during 12 to 24 weeks. The virological response outcomes evaluated presented rates of approximately 91%, while the rate of virological failure was less than 7%. Discontinuations due to AE were only 3%. Direct-acting antivirals (DAAs) of second generation had several advantages: virological response values higher than the mean reached by older therapies based on the use of IFN, reduced treatment time, increased safety and the possibility of several combinations. CONCLUSIONS: In this way, IFN-free therapies appear as a good option for the treatment of chronic hepatitis C in the group of patients coinfected with HIV.

PIN2

RISK FACTORS ASSOCIATED WITH TUBERCULOSIS IN PUNJAB, PAKISTAN

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OBJECTIVES: Tuberculosis is one of the most contagious diseases in the world. The number of patient of tuberculosis is increasing enormously day by day. The so rapid increase is associated with some particular risk factors that are responsible for it. The aim of our study was to identify the particular risk factors that are responsible for its spread and fully eradicate from the world. METHODS: Retrospective study was conducted from in 2016 Pakistan to identify the risk factors of the tuberculosis. A structured questioner was prepared to conduct the interview with the patients. The questioner consist of anticipated risk factors that are responsible for discontinuation of tuberculosis treatment i.e. duration of treatment, misconceptions and false belief, poverty and malnutrition, herbal medicines, literacy, patient compliance and smoking. Among the hospitals of punjab, almost 3500 patients were considered to identify the risk factors of tuberculosis. RESULTS: In this study there were 2500 subjects under consideration, among these 2500 patients, 1680 were males, 820 were females. The percentage of total subjects and female that is 32.8% and 32.8% respectively. More than 77% of clinical care in Pakistan registered as sexual abuse against women occur under the age of 24 years. The number of hospital visits is below the expected, showing that in addition to potential registration errors, many women choose not to seek health care in this situation. Acute treatment in this situation is very important to avoid diseases development. More campaigns are needed to encourage the search for healthcare directed to victims, as a public health measure.

PHI23

SOCIOECONOMIC AND ENVIRONMENTAL DETERMINANTS IN BREAST CANCER INCIDENCE AND MORTALITY: SCIENTOMETRIC REVIEW, 2006 - 2016

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OBJECTIVES: To verify the socioeconomic and environmental factors those are associated to breast cancer incidence and mortality in different countries. METHODS: The bibliometric review developed from the publications of the databases MEDLINE and LILACS, included in the Virtual Health Library. The keywords used in the research were BREAST CANCER and SOCIOECONOMIC FACTORS, BREAST CANCER and ENVIRONMENTAL FACTORS and BREAST CANCER and PESTICIDES. The search was undertaken in the middle of 2016 and as limits the publications were adopted from 2006 to 2016. RESULTS: 34 publications were selected to be better studied, 14 deal with social determinants between breast cancer and socioeconomic factors, 12 of the association with environmental factors and 8 of the association with pesticides. Positive association between higher socioeconomic status and breast cancer incidence was observed in three articles, mediated by differences in exposure to reproductive factors, hormone replacement therapy and alcohol ingestion. Positive association between lower socioeconomic status and mortality rate was observed in eight articles, attributed mainly to disparities in access to health services and less information regarding the prevention of breast cancer. Positive association between environmental factors, with regard to smoking, exposure to cadmium and air pollution, and breast cancer, was observed in seven of the 12 articles selected. In particular, the use of pesticides on the risk of developing breast cancer was found in half of the eight articles. CONCLUSIONS: The studies analyzed favor an understanding of the determinants of breast cancer incidence and mortality and reaffirm that genetic/hereditary, endocrine/reproductive factors, in addition to age, explain part of the risk of developing breast cancer. However, its cooccurrence with socioeconomic and environmental determinants are essential to better understand disparities in disease development.

INFECTION – Clinical Outcomes Studies

PIN1

A926

VALUE IN HEALTH 20 (2017) A853–A943

RESULTS Of A REAL-LIFE COHORT ANALYSIS: INFECTION – Clinical Outcomes Studies

INFECTION – Clinical Outcomes Studies

A926

VOLUME 20 (2017) A853–A943
Clinical characteristics and outcomes of the influenza A (H1N1) patients admitted to the tertiary level hospital, Peshawar

**OBJECTIVES:** Influenza A (H1N1) has been posing a serious public health concern worldwide since 2009. This critical illness may be associated with relatively poor outcomes. The aim of the present study was to evaluate the clinical characteristics and outcomes of Influenza A (H1N1) patients admitted to a tertiary level hospital, Peshawar, Khyber Pakhtunkhwa, Pakistan.

**METHODS:** This was a prospective, descriptive study performed at the Department of Medicine and Allied, Northwest General Hospital & Research Centre. It is a tertiary level hospital and research facility based in Peshawar. A total of 26 cases (confirmed and suspected) of Influenza A (H1N1) presented to the hospital over a period of 03 months from December 2015 to February 2016 were included in the study. Statistical Package for Social Sciences (SPSS v 16) was used for data analysis. A P-value < 0.05 was considered statistically significant. **RESULTS:** Of 26 patients included in the study, 50% (n=13) were males. Mean age of patients was 45.2±13.04 years. Average length of hospital stay was 7.8±5.17 days. No patient was previously flu-vaccinated. All of the patients were admitted after 6 days of symptom onset. Clinical manifestations included fever, shortness of breath, and dry cough. Hypotension (9 [34.61%]), asthmas (4 [15.38%]) and pregnancy (3 [11.53%]) were the most common co-morbidities. Quantitative Polymerase chain reaction (qPCR) was positive in 11 (42.31%) patients. Among 26 patients the 2010 H1N1 virus (19 [73.07%]) was detected and 9 (41.66%) H1N1 (stable clinical condition, venous access, social and logistic issues). Pediatric patients were evaluated for a multidisciplinary team composed by pharmacist, nurses, physicians and social workers to evaluate pre-requirements for a safety transitional care to OPAT. The present study revealed the serious nature of influenza A (H1N1) infection with high mortality. This emphasizes the need for early institution of the anti-viral therapy and close monitoring in these patients irrespective of PCR positivity.

**CONCLUSIONS:** Identifying patients with potential indication to OPAT among inpatients with a confirmed diagnosis of influenza A (H1N1) remains a challenge. The present study can guide the decision-making process to prioritize the patients for whom OPAT may be considered. The costs associated with OPAT should be carefully evaluated to ensure patient safety and resource efficiency.

PIN4

GASTRO AND COBERTURA DE INMUNIZACION EN NIÑOS MENORES DE UN AÑO DE EDAD EN ECUADOR

**OBJECTIVES:** The burden of genital warts in Latin America. The objective of this review is to describe the burden of genital warts in Latin American countries. The criteria used to review is to describe the burden of genital warts in Latin America.

**METHODS:** Systemic review of published biomedical

**RESULTS:** The burden of genital warts in Latin America is described in detail.
literature in Primo Search, a tool for searching published scientific and business literature, and abstracts of relevant conferences that have reported the incidence or prevalence of GW or the healthcare resource cost per GW-related episode of care in Latin American countries in the last 15 years. References from review articles were also selected. RESULTS: Fourteen studies reporting data from Argentina, Brazil, Chile, Colombia, Mexico, Panama, and Peru. These studies reported prevalence estimates of genital warts in Latin America range from 1.6% to 5.5% and incidence estimates range from 1,100 to 3,690 per 100,000. These prevalence and incidence estimates are higher than those reported in systematic literature reviews, which range from 0.019% to 17% and 160 to 289 per 100,000, respectively. Studies vary in methodological design and inherent bias; therefore, estimates may not be generalizable to overall populations. The estimated cost per GW-related episode of care ranged from $137 to $3,092 based on the number of specialist physicians, drug treatment costs, and patient education and counseling. The burden of genital warts in Latin America seems to be substantial and may represent considerable morbidity and cost to the population. Further studies are needed to continue understanding and the burden of GW and the need to implement preventive strategies, such as vaccination and patient education and counseling, in Latin America.

PIN10
BURDEN OF GENITAL WARTS IN ARGENTINA. PRELIMINARY REPORT OF AN OBSERVATIONAL STUDY
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OBJECTIVES: Genital warts (GW) are mucosal or skin lesions caused by human papilloma virus. The study objective was to estimate the incidence and prevalence of GW and usual practices of GW referral patterns in Argentina. METHODS: A sample of 101 public and private sector physicians practicing in gynecology, urology, dermatology, infectious diseases and proctology. Physicians are completing a daily log of all patients 18-60 years of age seen over 10 working days per month. Referral orders and patient demographic information. RESULTS: The majority of the GW cases were new cases (58.5%). Estimated IR (10-day period) was 294 new cases per 10,000 visits. The average patient age was 37.6 years. Most commonly, the reason for serious cases requiring specialized treatment was direct consultation and if physician did report referral, the majority of patients were referred to a gynecologist. CONCLUSIONS: The need to implement preventive strategies, such as vaccination and patient education and counseling, in Latin America.

INFECTION – Cost Studies

PIN11
COMBINED USE OF ISONIZID AND RIFAPENTINE IN THE TREATMENT OF LATENT TUBERCULOSIS: A BUDGET IMPACT ANALYSIS
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OBJECTIVES: To estimate the incremental budget impact of the combined use of isoniazid and rifapentine for three months in the treatment of individuals affected by latent tuberculosis from the perspective of Brazilian Ministry of Health for the time horizon 2016 to 2020. METHODS: The population of interest was determined by simulating the number of active tuberculosis cases from 1990 to 2014 and the number of cases of latent tuberculosis in the states of São Paulo and Santa Catarina in 2013. In 2016, the price of isoniazid was USD 0.0094 and USD 1.00 for rifapentine. The budget for the purchase of drugs for tuberculosis was estimated USD 10,000,000.00/year. The reference scenario was isoniazid daily for six months. RESULTS: We calculated that the combined use of isoniazid and rifapentine would decrease the budget of purchased drugs for the treatment of tuberculosis by 21.05% in 2016, 18.54% in 2017, 16.93% in 2018, 15.50% in 2019 and 14.13% in 2020. The adoption of the new treatment strategy to meet 100% of the demand projected in the study would imply total expenditures of USD 10,254,387.87, requiring the need for additional resources in the order of USD 22,600,000. CONCLUSIONS: The incremental budget was estimated USD 10,000,000.00/year. The reference scenario was isoniazid daily for six months. There was a decrease in the budget impact during the period analyzed. The study revealed a need for information that would increase the accuracy of the estimates, which would become unavailable, such as the unit costs of logistics (storage and distribution) of drugs purchased and distributed by the Ministry of Health, technical loss, rates of adherence and termination of treatment, as well as the incidence rate and actual number of cases of latent tuberculosis in Brazil.

PIN12
BUDGET IMPACT ANALYSIS OF THE USE OF DACLATASVIR + ASUNAPREVIR IN THE TREATMENT OF PATIENTS WITH CHRONIC HEPATITIS C IN PERU
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OBJECTIVES: To estimate and evaluate the budget impact of using DUAL (Daclatasvir (DCV) + Asunaprevir (ASV)) in the treatment of patients with Hepatitis C (HCV) in the Peruvian Social Health Insurance (EsSalud). METHODS: from a Markov model (MCO), the natural history of HCV and its complications is projected, verifying the incremental financial impact of DUAL against Telaprevir (TVR) or Simprevir (SMV), both + peginterferon-alpha and ribavirin (A/R) in eleven scenarios for EsSalud. A 5-year time horizon was considered and if physician did report referral, the majority of patients were referred to a gynecologist. CONCLUSIONS: The incorporation of DUAL in EsSalud results in important savings from the first year.

PIN14
COST-EFFECTIVENESS OF POSACONAZOLE IN PRIVATE AND PUBLIC BRAZILIAN HOSPITALS
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OBJECTIVES: Posaconazole is used for prophylaxis of invasive fungal disease (IFD). Some studies have proven its cost-effectiveness when compared to fluconazole/itraconazole, however, posaconazole had never been economically evaluated in the context of developing countries. The aim of this study was to perform a cost-effectiveness analysis of posaconazole compared to fluconazole/itraconazole in public (SUP) and private hospitals (PHS) in Brazil. METHODS: Cost-effectiveness simulation based on the pivotal study for the use of posaconazole in patients with AML, adjusting costs to Brazilian data. RESULTS: Pharmacoeconomic analysis projecting 100 patients with each prophylaxis group was performed. Total costs only with prophylactic drugs were: posaconazole (USD$ 220,656.31) and fluconazole (USD$ 83,875.00). Patients with IFD remain in hospital additional 12 days (USD$ 10,210.31) at an average cost of USD$ 850.85 per day. Total amount of money spent by PHS (Direct final total costs) for 100 patients were USD$ 342,318.00 for posaconazole group and USD$ 302,039.00 for fluconazole group. There was no difference considering 10% sensitivity analysis. CONCLUSIONS: In Brazil, posaconazole is cost-effective and it should be considered when choosing ideal prophylaxis in AML/MD5 patients under chemotherapy.
economic parameters of the model were extracted from the literature. Only direct costs were considered. The time horizon was 5 years and a 5% discount rate was applied. All costs are expressed in USD using an exchange rate of 1 MXN = 0.052812 USD.

RESULTS: Pharmacological cost of treating 1,172 genotype 1 HCV patients with Grazoprevir/Elbasvir (+/- RBV) was $4,873,572.16 USD (cheapest option) whereas Ombitasvir/Paritaprevir/Dasabuvir (+/- RBV) was $10,855,855.85 USD (most expensive option). The pharmacological cost of treating 11 patients with genotype 4 has a similar trend, with Grazoprevir/Elbasvir (+/- RBV) at $20,606,605 USD (cheapest option) and Gilvra/Sovaldi (+/- RBV) at $279,407,277 USD (most expensive option). The use of Grazoprevir/Elbasvir would generate an estimated budget savings of $10,104,543.26 distributed over the period 2017-2021. This is a percentage increase from 2.98 to 11.92.

CONCLUSIONS: The results indicate that the use of Grazoprevir/Elbasvir generates significant savings.

PIN16
CHARACTERIzACIÓN CLíNICA y ECONómICA DE HOSPITALIzACIÓN por VARICELLA en NIñOS en LA REGIÓN METROPOLITANA y REGIÓN DE VALPARAíSO, CHILE
Torres JP1, De la Maza V2, Castro M1, Conca N1, Izquierdo G3, Suau T3, Rodríguez P1, Córdova K1, Torres K1
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OBJECTIVES: Descripción clínica y del costo asociado a la atención de niños con varicela, hospitalizados en dos regiones de Chile. METHODS: Estudio multicéntrico, observacional y retrospectivo, de casos de niños hospitalizados(0-15 años) con diagnóstico de varicela en el periodo 2011-2014 en las dos regiones de Chile. Se revisaron las fichas clínica para evaluar las características clínicas y los costos asociados a hospitalización, que se determinaron según arancel sistémico nacional de salud (2012) y se estiman para el año 2017. Se revisaron 68 hospitalizaciones por varicela. El 57% correspondió a sexo masculino, con mediana de edad de 3,4 años. El 62% se presentó durante primavera-verano, sólo siete niños (10%) se presentaron durante la primavera de 2017. Las lesiones más frecuentes fueron lesiones en moderada-grave cantidad, el 21% ingresó en estado general y el 3% grave. El total de días de hospitalización en el periodo del estudio fue de 365 días, con una mediana de 3 días (RIC 2-5). El 7% de los niños ingresó a UTI, ocupando 190 días sin mortalidades. El 13% requirió hospitalización en UTI/internado, con un alto costo asociado, que pudo variar de $ 10,343 a $ 49,029 per day. El 3% ingresó a la UTI, con un costo total de $ 94,900 en los 68 hospitalizaciones (costo promedio/episodio $3,090). Se revisaron 68 hospitalizaciones por varicela. El 57% correspondió a sexo masculino, con mediana de edad de 3,4 años. El 62% se presentó durante primavera-verano, sólo siete niños (10%) se presentaron durante la primavera de 2017. Las lesiones más frecuentes fueron lesiones en moderada-grave cantidad, el 21% ingresó en estado general y el 3% grave. El total de días de hospitalización en el periodo del estudio fue de 365 días, con una mediana de 3 días (RIC 2-5). El 7% de los niños ingresó a UTI, ocupando 190 días sin mortalidades. El 13% requirió hospitalización en UTI/internado, con un alto costo asociado, que pudo variar de $ 10,343 a $ 49,029 per day. El 3% ingresó a la UTI, con un costo total de $ 94,900 en los 68 hospitalizaciones (costo promedio/episodio $3,090). Considerando U$618,516 en días-hospitalización básica, U$43,434 días-UTI, U$13,250 en días-internado, U$2,496 en visitas a urgencia (n = 667), U$8,958 en exámenes de laboratorio (n = 2352) y U$12,123 en imágenes (n = 330). Para el sistema privado de salud sería de $ 1,087,543.80 total de los 68 hospitales (promedio/episodio $15,993). CONCLUSIONs: La varicela es una enfermedad inmunoprevenible frecuente. Las tuvieron un mediana de tres días de hospitalización, 13% requirió hospitalización en UTI/internado, con un alto costo asociado, que podría disminuirse al incorporar la vacuna al programa nacional de inmunizaciones.

PIN17
ESTUDIO DE CUSTOS DA LEISHmANIOSE vISCERAL NO BRASIL
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OBJECTIVES: The objective of the study was to estimate the costs of treating children with leishmaniasis visceral (LV) in Brazil using the Brazilian Hospital Information System (SIH/DATASUS) database from January 2014 to December 2016. METHODS: This study was an observational retrospective study performed according to ICD-10 classification. The time horizon was 5 years and a 5% discount rate was applied. Economic parameters of the model were extracted from the literature. Only direct costs were considered. The costs of treatment during the outbreaks of dengue, zika, chikungunya and yellow fever were considered. In Brazil, the National Ministry of Health (MoH) and the World Health Organization (WHO) were also reviewed.

RESULTS: We extracted data on government expenditures for the treatment of patients during the outbreaks of dengue, zika, chikungunya and yellow fever. In the absence of data from Brazil, in three years after the implementation of this vaccine, its impact on varicella morbidity could provide improved protection against disease and further reduce morbidity and mortality from varicella.

PIN20
COSTO DE LA INmUNIzACIóN DE RUTINA EN mENORES DE UN AñO EN EL AñO 2016 EN EL ECuADOR
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OBJECTIVES: Estimate the costs of routine vaccination in Ecuador in the year 2016. METHODS: We carried out a study of costs that estimated the direct costs associated with routine vaccination in children in Ecuador in the year 2016. METHODS: We carried out a study of costs that estimated the direct costs associated with routine vaccination in children in Ecuador in the year 2016. For this purpose, we reviewed 423 articles, 420 were excluded due to duplication, because they did not address our topic or Latin America and due to design inadequacies. Thirteen studies were included for analysis. Data from the literature estimated the cost of treating dengue at around R$ 1 billion per year. Treatment of microcephaly and Guillain-Barre syndrome is one of the most severe consequences of Zika. After this incorporation, the economic impact of chikungunya treatment was projected at U$73.6 million. For the current outbreak of yellow fever, the economic impact has not yet been estimated. The costs of the government program to combatalaria were estimated according to official data from MoH since the outbreak of dengue in 2013. CONCLUSIONS: There is a need for greater investment in the prevention and control of the vector, which would save resources and avoid new outbreaks of these and other diseases transmitted by aedes aegypti.

PIN21
ESTIMACION DE INDIRECTOS COSTOS DE LOS CHILDREN VIRAL ACUTE INTESTINAL INFECTIONS THERAPY IN UKRAINE
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Of multiple vaccination against infectious causes of annual indirect costs for viral AII in children in Ukraine in 2017, which amounted to 25,170,822 UAH or 93,572 $ (taking into account current rate of exchange of foreign currency). The feasible indirect costs of budget for the treatment of viral diarrhea in children in Ukraine totaled 664,717 mln UAH in the third quarter of the year and the population of the country amounted to 42,620,007 ths. people. It was 173.29 UAH. Loss of GDP as a result of disability per one patient totalled 1041.6 UAH. Thus, the estimated feasible indirect costs per case ranged from 2.4 to 24,900 UAH for the treatment of viral diarrhea in children in 2017 may amount to 25,170,822 UAH or 93,572 $ (taking into account current rate of National Bank).

**Conclusions:** Given research had allowed to estimate the feasible annual indirect costs for viral AII in children in Ukraine in 2017, which amounted to 93,573 $.

**PIN23**

**AN ECONOMIC MODEL TO DECIDE DECISIONS ON THE ADOPTION OF MULTIVALENT VACCINATION AGAINST INFECTIOUS CAUSES OF REPRODUCTIVE DISORDERS IN BRAZILIAN COW-CALF CATTLE HERDS USING ARTIFICIAL INSEMINATION**

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**Objectives:** To compare the economic impact of multivalent artificial insemination net benefit of vaccination against infectious bovine rhinotracheitis (IBR) virus, bovine viral diarrhea (BVDV), parainfluenza 3 (PI3) virus, bovine respiratory syncytial virus (BRSV) and five leptospiral serovars on reproductive performance in Brazilian beef herds using a fixed time artificial insemination (FTAI).

**Methods:** Partial budgeting was used to develop a static, deterministic, simulation model to estimate the net benefit of vaccination. Economic evaluation was applied at the herd level from the perspective of the farmer including parameter values based on published literature and contemporary local costs and revenues. The model was constructed to enable calculation of net benefit in the first year of vaccination (Y1) (all cows receive two vaccine doses) or second year onwards (Y2) (cows vaccinated in Y1 receive one vaccine dose, replacements receive two doses) for two typical Brazilian farm management practice scenarios: cows receive one FTAI with clean-up bulls introduced 15 days later, remaining with the cows until the end of breeding season (day 120), then move to the dry lot. A second scenario is the use of two FTAI, pregnancy check on day 30 with second FTAI in non-pregnant cows (11 days later), no clean-up bulls (FM2).

**Results:** Results are presented for 100-cow herd. Vaccination yielded net benefit in Y1 and Y2 of R$4,689 and R$5,363 (scenario FM1) and R$5,839 and R$6,513 (scenario FM2). Net benefit was associated with enhanced pregnancy rate and reduced pregnancy losses leading to a reduction in the costs of FTAI (FM2 only) and increased revenues from increased number and weight (a function of month of birth) of calves sold at weaning. One-way sensitivity analysis showed that the most influential input variables were revenue per kg calf sold and pregnancy rate to first FTAI in unvaccinated cows.

**Conclusions:** Adoption of vaccination against infectious causes of reproductive disorders in Brazilian cow-calf herds can yield positive economic incremental net benefit.

**PIN24**

**OBJECTIVE-EFFECTIVENESS ANALYSIS OF VACCINATING THE ELDERLY WITH THE 23-VALENT PNEUMOCOCCAL POLYSACCHARIDE VACCINE (PPV23) COMPARED TO NO VACCINATION, THE 13-VALENT PNEUMOCOCCAL CONJUGATE VACCINE (PCV13), OR PCV13 FOLLOWED BY PPV23 IN BRAZIL**

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**Objectives:** Health economic evaluation of vaccination was conducted, using a Markov model that predict the natural history of pneumococcal disease (PDD), non-bacteremic pneumococcal pneumonia (NBPP), postmeningitis sequelae and death. A cohort of 60-year-olds in Brazil was followed up to 10 years. Costs and QALYs were estimated from an individual’s perspective in a meta-analysis and a clinical trial. Vaccine efficacy against NBPP was obtained from a population-based cohort study and a clinical trial. Vaccination coverage of 80% was assumed. Costs and utilities were discounted at a rate of 5% annually. Incremental costs and incremental QALYs gained for PPV23 were estimated at $21.04 million and $-39,477 respectively, corresponding to an ICER of $25.23 million for PPV23 compared to PCV13, vaccinating with PPV23 was associated with a reduction of cost by $12.41 million and an increase in QALYs by 1.40. The sequential strategy was estimated to be the most cost-effective with a reduction in cost by $4.60 million and an increase in QALYs by 3.70 compared to PPV23, however it was deemed to be not cost-effective at an ICER of $68,969.

**Conclusions:** Vaccinating adults aged 60 years with PPV23 was estimated to be a cost-effective vaccination strategy in Brazil.
ze arm became dominant (less expensive and more effective). CONCLUSIONS: Pyrimethamine-sulfadiazine was found to be the most effective and most costly than cotrimoxazole in the treatment of TE in Ethiopia. If the true death rate was similar for both drugs, cotrimoxazole would dominate.

PIN27 COST-EFFECTIVENESS OF POSACONAZOLE Versus FLUCONAZOLE in the Prophylaxis of invasive fungal infections in acute leukemia patients in colombia

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OBJECTIVES: Posaconazole is effective as primary prophylaxis of invasive fungal infections (IFI) in patients with acute myeloid leukemia (AML). A cost-effectiveness analysis of posaconazole versus standard azole therapy (SAT) has not been conducted in Colombia. This study evaluates the cost-effectiveness of posaconazole (standard azole therapy in Colombia) compared to fluconazole for IFI prevention in AML patients with chemotherapy-induced prolonged neutropenia in Colombia.

METHODS: We adopted a decision-analytic model based on phase III clinical trial data (probabilities of IFI, IFI-related death, and other death within 100 days) to Colombia, to assess the cost-effectiveness of posaconazole versus Fluconazol (FLU) in the prevention of IFIs among patients with acute myeloid leukemia (AML). The model predicts IFIs avoided, life-years saved (LYS), total costs, and incremental cost-effectiveness ratio (ICER: incremental cost per IFI avoided per QALY). RESULTS: Posaconazole was associate with fewer cases of IFI (0.041 vs 0.11, p=0.003) and increased life years (2.75 vs 2.54). Estimated mean prophylaxis costs per patient were COP$5,558.597 (1,821 USD) with posaconazole and COP$659.091 (216 USD) with Fluconazole. Over a lifetime horizon, posaconazole prophylaxis resulted in 0.2146 discounted LYS. The resulting incremental cost is COP$19,976,639 (6,543 USD) per QALY that is below of 3 gross domestic product (GDP), currently accepted.

CONCLUSIONS: Posaconazole is cost-effective compared with SAT when used as antifungal primary prophylaxis in AML patients with chemotherapy-induced prolonged neutropenia in Colombia.

PIN28 COST-EFFECTIVENESS EVALUATION OF A TWO-DOSE HUMAN PAPILLOMAVIRUS VACCINATION SCHEDULE IN COLOMBIA

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OBJECTIVES: Colombia currently offers a three-dose human papillomavirus (HPV) immunization program, however compliance with all three doses has been challenging. The relative cost-effectiveness of the AS04-HPV-16/18 vaccine (AS04-HPV-16/18) versus the HPV-6/11/16/18 vaccine (4vHPV) given in a two-dose schedule is assessed.

METHODS: A static lifetime cohort Markov model accounting for the natural history of low-risk and oncogenic HPV infection, screening effects, and vaccination is developed. The base case analysis reflected the effect of higher cross-protection levels provided by AS04-HPV-16/18 compared to 4vHPV. The base case analysis reflected the effect of higher cross-protection levels provided by AS04-HPV-16/18 against non-vaccine oncogenic HPV types, providing broader protection against cervical intraepithelial neoplasia (CIN) and CC. Greater reduction in treatment costs pertinent to CIN and CC with AS04-HPV-16/18 overweighed the greater reduction in genital wart costs with 4vHPV in the base case scenario. When higher treatment costs of genital warts were considered in a sensitivity analysis, AS04-HPV-16/18 was not cost-effective compared with 4vHPV. In contrast, 4vHPV dominated AS04-HPV-16/18 when no cross protection scenarios were considered.

CONCLUSIONS: Our results indicate that two-dose immunization with AS04-HPV-16/18 provides additional health benefits compared with 4vHPV, due to its greater cross-protection against oncogenic HPV types. These benefits outweigh in terms of costs those provided by 4vHPV when reducing low-risk HPV protection (e.g. genital warts). Also, implementation of a two-dose HPV vaccination schedule in Colombia has the potential to improve compliance compared with the current three-dose schedule.

PIN29 COST-EFFECTIVENESS OF PCV13 VS PPSV23 FOR THE IMMUNIZATION OF ADULTS OVER 65 YEARS WITH LOW OR MODERATE RISK OF PNEUMOCOCCAL INFECTION

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OBJECTIVES: To estimate the economic impact of using PCV13 compared with PPSV23 for the immunization of adults over 65 years with low or moderate risk of pneumococcal infection through the perspective of the Mexican public health system. METHODS: A cost-effectiveness analysis was performed considering six scenarios within the target population: one A+G, two A+G+D groups and two risk groups, and a time horizon of twenty years. A single-dose of PCV13 was compared to a PPSV23 scheme with a reinforcing dose every five years. The model considers two forms of pneumococcal infection: invasive pneumococcal disease (bacteremia and meningitis) and community acquired pneumonia. The model was mainly fed with inputs based on published local epidemiology data. The vaccine efficacy rates were estimated for each subgroup based on available clinical trials within the target population. The costs considered within the model are based on the local costs published by institutions of the Mexican public health system.

RESULTS: Considering a time horizon of twenty years: PCV13 yielded 0.6484 additional life years per patient over PPSV23 and PCV13 yielded savings of $525.39 whereas PPSV23 cost $1,817.64 per patient over PPSV23. Hence, PCV13 is a dominant immunization strategy over PPSV23.

CONCLUSIONS: Choosing PCV13 as an immunization strategy for adults over 65 years with low or moderate risk of pneumococcal infection would significantly reduce the number of pneumococcal infections expected on the target population. Sensibility analyses considering the lowest possible healthcare costs and a single dose scheme of PPSV23 did not modify the results of the model.
A532

PIN33

SYSTEMATIC REVIEW OF ECONOMIC EVALUATION STUDIES FOR DENGUE VACCINE: HOW VALID ARE THE RESULTS?

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OBJECTIVES: To review the literature on economic evaluation of dengue vaccine to produce evidence to support a local cost-effectiveness study and to substantiate the decision to introduce a dengue vaccine in the Brazilian National Immunization Program (NIP).

METHODS: We systematically searched multiple databases (MEDLINE (via PubMed), EMBASE, SCOPUS, NHS Economic Evaluation Database (NHS EED), HTA Database (via Centre for Reviews and Dissemination - CRD) and LILACS), selecting full HEIDs of dengue vaccine. Two independent reviewers screened articles for relevance and extracted the data. The methodology for the quality rating was assessed using CHECKS checklist. We performed a qualitative narrative synthesis of the results. A total of 186 articles were reviewed. They were conducted in Asian and Latin America countries. All studies were favorable to the incorporation of the vaccine. However, the values and assumptions assumed for vaccine efficacy, safety and duration of protection, as well as the choice of the study population and the type of model used in the analyses, associated to an insufficient reporting of the methodological steps, affect the validity of the studies results. The quality reporting showed that the majority of the studies reported less than 50% of the CHECKS criteria, which means that the studies did not meet the key methodological criteria. CONCLUSIONS: Our review found that the economic evaluation of dengue vaccine are not adherent to the key recommended general methods for economic evaluation. The presented cost-effectiveness results should not be transferred to other countries. It is recommended to conduct studies with local epidemiological and cost data, as well as assumptions about vaccination that reflect the results observed in clinical trials.

A535

AN ECONOMIC EVALUATION OF SINGLE TABLET REGIMENS OF ANTIRETROVIRAL THERAPY FOR TREATMENT-NAIVE HIV-INFECTED PATIENTS

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OBJECTIVES: Antiretroviral therapy (ART) has considerably changed the life expectancy and life quality of HIV-infected patients. However, upsurging epidemic of HIV infection and the new recommendation of early ART initiation cause a heavy financial burden. Cost-effectiveness of ART should consequently be considered. Single-tablet regimen (STR), one pill that contains a combination of multiple antiretroviral agents, is a recent advancement in HIV treatment and widely used now. The objective of this systematic review and economic evaluation study is to perform a cost-utility analysis of STR using a decision model to assess the cost-effectiveness of tenofovir disoproxil fumarate/ emtricitabine/rilpivirine (TDF/FTC/RPV) compared to tenofovir disoproxil fumarate/ emtricitabine/rilpivirine with raltegravir (TDF/FTC/RPV + raltegravir) for treatment-naive HIV-infected patients. METHODS: A Markov model with a hypothetical cohort of 1000 HIV-infected patients having initial viral load ≤ 100,000 copies/ml was designed. Quality-adjusted life year (QALY) was used as the health outcome and incremental cost-effectiveness ratio as the measure of cost-effectiveness. TDF/FTC/RPV + raltegravir was compared to TDF/FTC/RPV at the WTP threshold of 7000 USD/QALY. RESULTS: The following results were observed. TDF/FTC/RPV + raltegravir was dominated over TDF/FTC/RPV in terms of quality-adjusted life years gained and cost. The WTP threshold of 7000 USD/QALY was adopted.

A932

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A NATIONAL ADMINISTRATIVE DATABASE IN BRAZIL

A retrospective study was designed to investigate i) prescription trends and antibiotic economic burden ii) microorganisms sensitivity at the Biella General Hospital from the year 2011 to 2016. METHODS: Data were collected from official registry for prescriptions and economic burden. Sensitivity was obtained from the Microbiology Department of the Central Laboratory of the same hospital. Information regarding every single culture was collected, classified afterward according to bacteria strains and antibiotics sensitivity; results were used to build sensitivity charts along the studied period. RESULTS: Amoxicillin-Clavulanic Acid (ACA) was the most consistently prescribed antibiotic, not only at the 1stplace of the chart from 2011 to 2016 but also keeping a growing number of prescriptions (from 5,100 to 55,000 prescriptions/year) during the studied period. Along this time, ACA prescriptions associated costs decreased thanks to the management of public tenders (29,000€ in 2011 - 14,000€ in 2014). Other antibiotics on the top 5 ranking were fluoroquinolones, ceftriaxone and piperacillin-tazobactam. Due to its relatively low cost and broad spectrum, ACA is used to treat all kind of infections, from the airway to the urinary tract, including skin infections. It has shown a stable sensitivity pattern for Escherichia coli, Haemophilus influenzae, Pseudomonas aeruginosa and Proteus Mßlardi, even against extended-spectrum beta-lactamases (sensitivity less than 40%) and Staphylococcus aureus (below 60%). CONCLUSIONS: Antibiotic stewardship represents an important strategy to control inadequate antibiotic prescriptions and their consequences.
Brazillian Public Healthcare System Actions to Care for Children with Microcephaly

Fondo Colombiano de Enfermedades de Alto Costo, Bogotá, Colombia

OBJECTIVES: To measure indicators to assess the prevention of HIV infection by insurers in the Colombian Health System. METHODS: High-Cost Disease Office Administrative Registry of HIV and AIDS, was used for measure indicators related to insurance management HIV prevention. For 2015 and 2016 reporting periods were analyzed six indicators for the key population where children under six months exposed to HIV infection; pregnancy women with and without HIV and people living with HIV. Databases compile information of 61,174 and 73,465 people diagnosed with HIV for 2015 and 2016, respectively. The analysis was done with Stats Software 13v.

RESULTS: The supply of condoms in persons diagnosed with HIV in Colombia was 78% by 2015 and 80.5% by 2016; TAR coverage was 90.4% for 2015 and 91% for 2016. By 2015, 78.8% pregnant women were screened and for 2016 85.5%; Postnatal prophylaxis for children under six months was 92.1% by 2015 and 92.8% by 2016. The study of maternal-infant transmission in children under six months was done in 58% of cases for 2015 and 70.6% in 2016. Coverage of antiretroviral treatment was 89.3% by 2015 and 93.7% for 2016. The analysis was done with Stats Software 13v.

Conclusions: Improvement indicators shows the commitment and disposition for collaboration of Colombian Health System actors with HIV prevention strategies. The measure indicators provided valuable information to improve health care in patients exposed to HIV and those who live with HIV. Otherwise, measuring indicators provide data for Colombian government decision makers and allows to compare current HIV infection situation with other countries in the region and the world.

Facilitators and Barriers to Adult Vaccination in South East Asia and Latin America

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OBJECTIVES: The collaboration of government, researchers, and non-governmental organizations to address issues of childhood vaccine preventable diseases (VPDs) is a priority in many countries, especially in South East Asia (SEA) and Latin American (LA) over the next 30 years. METHODS: We examined the literature on the culture and barriers of vaccination among older adults in two global regions, SEA and LA. English language articles were searched in Medline from 2005 through 2015, with a focus on 3 countries from LA (Mexico, Argentina, and Brazil) and 3 countries in SEA (Indonesia, India, and Thailand) with different cultures and vaccination financing systems, and 3 vaccine preventable diseases (influenza, pneumococcal, and tetanus). Vaccine campaigns in LA encouraged coverage awareness and increased accessibility. In SEA, government funding for vaccines were only available in Thailand; cost of vaccines remains a barrier in India and most countries. Vaccines are intended for disease prevention, the Tabnet analysis showed that outbreaks were very high, especially in Brazil and Mexico.

Conclusions: The mean number of vaccination at non-outbreaks years in Brazil was approximately 6.5 million/year, corresponding to 3.1% of the Brazilian current population. Between 1999 and 2016, 70.24% were reported and 22.1% of the 2000 Brazilian population were vaccinated. This result corresponds to an increase of 700% in relation to the annual mean of vaccination. In 2008 (n=46 cases), an increase of approximately 290% in the number of people vaccinated in Argentina, Brazil, and Mexico were reported. In the first quarter of 2017, about 6.6 million vaccines were provided, overtaking the previous annual mean. Conclusions: A relation between the increasing number of vaccines and the number of yellow fever was shown. Although vaccination schedules were intended for disease prevention, the Tabnet analysis showed that outbreaks were probably the real motivation for increasing the number of doses applied.

Influenza vaccination among older adults: A systemic review in Latin America

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OBJECTIVES: To describe the collaboration of government, researchers, and non-governmental organizations to address issues of childhood vaccine preventable diseases (VPDs) is a priority in many countries, especially in South East Asia (SEA) and Latin American (LA) over the next 30 years. METHODOLOGY: We examined the literature on the culture and barriers of vaccination among older adults in two global regions, SEA and LA. English language articles were searched in Medline from 2005 through 2015, with a focus on 3 countries from LA (Mexico, Argentina, and Brazil) and 3 countries in SEA (Indonesia, India, and Thailand) with different cultures and vaccination financing systems, and 3 vaccine preventable diseases (influenza, pneumococcal, and tetanus). Vaccine campaigns in LA encouraged coverage awareness and increased accessibility. In SEA, government funding for vaccines were only available in Thailand; cost of vaccines remains a barrier in India and most countries. Vaccines are intended for disease prevention, the Tabnet analysis showed that outbreaks were very high, especially in Brazil and Mexico.

Conclusions: The mean number of vaccination at non-outbreaks years in Brazil was approximately 6.5 million/year, corresponding to 3.1% of the Brazilian current population. Between 1999 and 2016, 70.24% were reported and 22.1% of the 2000 Brazilian population were vaccinated. This result corresponds to an increase of 700% in relation to the annual mean of vaccination. In 2008 (n=46 cases), an increase of approximately 290% in the number of people vaccinated in Argentina, Brazil, and Mexico were reported. In the first quarter of 2017, about 6.6 million vaccines were provided, overtaking the previous annual mean. Conclusions: A relation between the increasing number of vaccines and the number of yellow fever was shown. Although vaccination schedules were intended for disease prevention, the Tabnet analysis showed that outbreaks were probably the real motivation for increasing the number of doses applied.

Yellow Fever's Next Move: The Rising Fear

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OBJECTIVES: Yellow fever is an acute viral hemorrhagic disease transmitted by mosquitoes and it is considered endemic in tropical regions, such as Brazil. Vaccination is strongly recommended. Although Brazil successfully controlled urban transmission in the 1940s through vector control and vaccination, the re-establishment of Aedes aegypti in urban areas has resulted in sporadic epidemics of urban yellow fever outbreaks, since 1991. The PAHO’s recommendations on vaccination further encouraged national governments to subsidize vaccinations for at-risk groups. Older adults (aged ≥60) experience a disproportionate burden of influenza mortality, designating them an at-risk group in many PAHO countries. The purpose of this review was to identify barriers to influenza vaccination among older adults in Argentina, Brazil, and Mexico. METHODS: A review and meta-analysis was conducted in Scopus, Medline, and EconLit, using search terms focused on barriers to influenza vaccination, centering on three countries in region of the Americas (Argentina, Brazil, and Mexico). Grey literature further supplemented the available data. RESULTS: Structural barriers, including lower education and socioeconomic status have been shown to increase the risk of influenza in older adults. Targeted educational and financial programs have been successful in increasing vaccination in Argentina, Brazil, and Mexico. However, additional work is needed to motivate future adult vaccine policy change and program implementation to ensure access to influenza vaccines among older adults.
that utilized 9602 esquemas de antimicrobianos e, destes, foram realizadas 1874 suspeita de ototoxicidade. O estudo foi concluído com 282 pacientes, retornando uma taxa de 87%.

4.5.3. Treatment Interruption of Biological Drugs in Rheumatoid Arthritis: An Assessment of Knowledge, Attitude and Practice

**Objectives:**

The aim of this study was to evaluate the treatment interruption of biological drugs, due to adverse events, in patients with rheumatoid arthritis. The study was conducted in a tertiary care hospital in Curitiba, Brazil, from February to October, 2016. The study population included patients with rheumatoid arthritis, and the data was collected using a structured questionnaire.

**Methods:**

A total of 450 patients with rheumatoid arthritis were interviewed, and the data was analyzed using descriptive and inferential statistics.

**Results:**

The most common reasons for treatment interruption were side effects (42.2%), lack of effectiveness (38.9%), and lack of coverage (27.8%). There was a significant difference in the percentage of treatment interruptions between patients treated with biological drugs at an institutional, regional or national level were also interviewed.

**Conclusions:**

The results highlight the importance of proper monitoring and management of adverse events related to biological drugs in patients with rheumatoid arthritis.

**References:**


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**Keywords:** Biological drugs, Rheumatoid Arthritis, Treatment interruption
After 12 weeks treatment, 10.7% (n = 8) of patients had mild disease activity, 35.7% (n = 94) of patients had moderate disease activity, and only 19.3% (n = 31) of patients had severe disease activity. The 70% of patients initially with severe disease activity were further classified using the erythrocyte sedimentation rate and C-reactive protein. Sensitivity analyses yielded similar results. CONCLUSIONS: SECUNIUMAB showed higher symptomatic improvement versus etanercept in psoriatic arthritis: comparative effectiveness up to 24 weeks assessed by matching-adjusted indirect comparison.

**Objectives:** When populations across different trials are heterogeneous, Matching-Adjusted Indirect Comparison (MAIC) can be used to assess comparative effectiveness; it is supported by NICE DSU guidance. The objective of this study was to assess the comparative effectiveness of secukinumab 150mg (SEC) fully human anti-interleukin-17A and etanercept 25mg twice weekly (ETN); tumour necrosis factor inhibitor (TNFi) up to 24 weeks in biologic-naive patients with psoriatic arthritis. Methods: In this MAIC, individual patient data from the pooled SEC arms of FUTURE 1 (F1) and FUTURE 2 (F2; n = 202) were weighted to match baseline characteristics of the ETN arm of NCT0317499 (n = 101); placebo arms were also matched. Before matching, one notable difference was the proportion of biologic-naive patients (67.2% [F1/F2] versus 100% [NCT0317499]). Logistic regression was used to determine weights for age, body weight, sex, race, PSA disease activity score, presence of psoriasis (5.5% body surface area), mean HAQ-DI, swollen joint count [JSC], CRP, methotrexate use and previous TNFi therapy failure. Recalculated outcomes from F1/F2 (SEC, effective sample size [ESS]=79; placebo, ESS=94) were compared with NCT0317499. Pairwise comparisons using odds ratios (ORs) were performed. Results: At week 24 (placebo-adjusted) ACR 20 and 50 responses were higher with SEC 150mg than OR [95% CI]: 5.24 [1.62–16.89], p < 0.006 and ACR 20 and 50 responses higher with SEC 300mg [3.82 [1.18–10.60], p = 0.010 and 4.9 [2.06–11.99], p < 0.001, respectively] than IFN. At week 24 54/52 in the pooled MAIC, ACR 20 and 50 responses were higher with SEC 150mg than OR [95% CI]: 4.05 [1.98–8.30], p < 0.001 and 1.90 [1.05–3.44], p < 0.034, respectively. Sensitivity analyses yielded similar results. Conclusions: SEC showed a higher degree of superiority for symptomatic improvement over IFN for active PsA at 1 year (non-placebo-adjusted).

**PM57 IMPACT OF SPIRONOLACTONE ON DAS-28 IN NAIIVE RHEUMATOID ARTHRITIS PATIENTS**

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**Objectives:** To determine the clinical efficacy (DAS-28 score) of spironolactone when added to continuing regimen of Disease-Modifying Antirheumatic Drugs (DMARDs) in therapy in naive rheumatoid arthritis (RA) patients, who failed to respond adequately on monotherapy or combination of conventional disease modifying agents. METHODS: A distinct study on 28 patients of 24 weeks was designed to gain additional data concerning the use of spironolactone (2 mg/kg/day) in RA patients. Modified Disease Activity Score (DAS-28) Score at zero week, 12 weeks and 24 weeks (Placebo-Adjusted ACR 20, 50 and 70 responses at week 24 (placebo-adjusted) and week 24 (non-placebo-adjusted) Placebo-adjustment at week 24 was not possible as patients could receive active treatment instead of the placebo. Leflunomide (10 mg/Kg) was used as standard and morin was used as alternative intervention. Results: At week 24 (non-placebo-adjusted), ACR 70 responses were higher with SEC than ETN OR (95% CI): 3.06 [1.30–7.19], p < 0.001. Conclusions: The results of this study are evidence to support the urgent need of education strategies for primary care physicians and the implementation of centers of excellence in RA in order to conduct a proper diagnose of RA and to avoid impact on health system budget.

**PM58 AMELIORATIVE EFFECT OF MORIN, A BIOFLAVONE FROM FREDON’S ADJUVANT-INDUCED ESTABLISHED POLYARTHRITIS IN RATS**

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**Objectives:** To evaluate the ameliorative effect of morin, a bioflavone from Freund’s adjuvant-induced polyarthritis in rats. METHODS: paw volume and percent inhibition. Mechano-tactile allodynia, thermal analgesia, and mechanical analgesia threshold were significantly improved (p < 0.05) by morin (20 and 100 mg/kg, p.o.) treatment. Placebo group revealed an increase in paw volume. Conclusions: Morin showed promising curative properties against FCA induced established polyarthritis in rats through multiple mechanisms and can be considered as a potential agent for further developments.

**PM59 COST-SAVINGS DUE TO IMPLEMENTATION OF A SCREENING ALGORITHM FOR DIAGNOSIS OF RHEUMATOID ARTHRITIS IN COLOMBIA**

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**Objectives:** The lack of expertise in diagnosis of rheumatoid arthritis (RA) at primary care centers becomes a major challenge of this condition. We implemented in Colombia at a specialized center in RA a diagnosis algorithm to achieve a correct and definitive diagnosis. The aim of this study was to describe the evaluation model and to find the proportion of patients with a correct diagnosis of RA when an algorithm to establish disease diagnosis was applied and the costs-savings associated with the accurate diagnosis of this disease. METHODS: A descriptive study included patients who were referred from primary care centers with presumptive diagnosis of RA. Every patient was evaluated to confirm or rule-out diagnosis of RA as follows: a rheumatologist fulfilled a complete medical record, including physical examination and joint counts; it was assessed rheumatoid factor and anti-citrullinated antigen antibodies (ACR) in each case. In addition, x-rays of hands and feet, and in some cases of persistent doubt about diagnosis was requested a comparative MRI or ultrasound of hands or/and feet. RESULTS: Between 2011 and 2016 10.716 patients were studied. With our screening model we found 46% (4.944) patients with RA, and 54% (5.772) had other rheumatic diseases mainly osteoarthritis. Conclusions: Our study suggests that when spironolactone added with DMARDs to the patients who respond incompletely to DMARDs alone or in combination therapy, provides valuable improvements both clinically and biologically in RA patients.
Rheumatoid arthritis (RA) is the prevalent autoimmune inflammatory disease characterized by chronic inflammation in synovial tissue, which leads to joint pain, swelling, and stiffness. The increasing use of biologics has revolutionized the treatment of RA, but their high cost is a significant concern. This analysis was developed from the adaptation of a cost-effectiveness analysis for Secukinumab. The aim of this study was to describe the cost savings due to the withdrawing of biological therapy for RA patients in a specialized RA medical center.

OBJECTIVES: To conduct a natural language analysis of the impact of secukinumab use versus anti-TNF agents in ankylosing spondylitis patients.

METHODS: This study involved patients with ankylosing spondylitis treated with secukinumab (150 mg and 300 mg) or anti-TNF agents (infliximab and adalimumab) in a tertiary care center in Brazil.

RESULTS: A total of 183 patients were included in the analysis. The average age of the patients was 42.7 years (median 40.5 years), with 62% male. The mean duration of disease was 11.8 years (median 9.3 years). The mean disease activity score (DAS28) at baseline was 5.4 (median 5.3). The mean disease activity score (DAS28) at follow-up was 3.3 (median 3.1). The mean change in DAS28 from baseline to follow-up was -2.1 (median -2.2). The mean change in patient global assessment (PGA) from baseline to follow-up was -1.8 (median -2.0). The mean change in physician global assessment (PGA) from baseline to follow-up was -1.5 (median -1.9).

CONCLUSIONS: Secukinumab was associated with significant improvement in clinical outcomes compared to anti-TNF agents in patients with ankylosing spondylitis. Further studies are needed to confirm these findings and to evaluate the long-term efficacy and safety of secukinumab in this patient population.

PMS11
ANALYSIS OF THE BUDGET IMPACT OF SECUKINUMAB USE VERSUS ANTI-TNF AGENTS IN ANKYLOGLYSING SPONDYLITIS PATIENTS

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OBJECTIVES: To conduct a natural language analysis of the impact of secukinumab use versus anti-TNF agents in ankylosing spondylitis patients.

METHODS: This study involved patients with ankylosing spondylitis treated with secukinumab (150 mg and 300 mg) or anti-TNF agents (infliximab and adalimumab) in a tertiary care center in Brazil. The analysis was developed from the adaptation of a cost-effectiveness analysis for Secukinumab. The aim of this study was to describe the cost savings due to the withdrawing of biological therapy for RA patients in a specialized RA medical center.

RESULTS: A total of 183 patients were included in the analysis. The average age of the patients was 42.7 years (median 40.5 years), with 62% male. The mean duration of disease was 11.8 years (median 9.3 years). The mean disease activity score (DAS28) at baseline was 5.4 (median 5.3). The mean disease activity score (DAS28) at follow-up was 3.3 (median 3.1). The mean change in DAS28 from baseline to follow-up was -2.1 (median -2.2). The mean change in patient global assessment (PGA) from baseline to follow-up was -1.8 (median -2.0). The mean change in physician global assessment (PGA) from baseline to follow-up was -1.5 (median -1.9).

CONCLUSIONS: Secukinumab was associated with significant improvement in clinical outcomes compared to anti-TNF agents in patients with ankylosing spondylitis. Further studies are needed to confirm these findings and to evaluate the long-term efficacy and safety of secukinumab in this patient population.

PMS12
BUDGET IMPACT ANALYSIS OF TOCILIZUMAB, INFILXIMAB AND ETAENERCEPT DRUGS FOR THE TREATMENT OF RHEUMATOID ARTHRITIS IN ECUADOR

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OBJECTIVES: To conduct a natural language analysis of the impact of secukinumab use versus anti-TNF agents in ankylosing spondylitis patients.

METHODS: This study involved patients with ankylosing spondylitis treated with secukinumab (150 mg and 300 mg) or anti-TNF agents (infliximab and adalimumab) in a tertiary care center in Brazil. The analysis was developed from the adaptation of a cost-effectiveness analysis for Secukinumab. The aim of this study was to describe the cost savings due to the withdrawing of biological therapy for RA patients in a specialized RA medical center.

RESULTS: A total of 183 patients were included in the analysis. The average age of the patients was 42.7 years (median 40.5 years), with 62% male. The mean duration of disease was 11.8 years (median 9.3 years). The mean disease activity score (DAS28) at baseline was 5.4 (median 5.3). The mean disease activity score (DAS28) at follow-up was 3.3 (median 3.1). The mean change in DAS28 from baseline to follow-up was -2.1 (median -2.2). The mean change in patient global assessment (PGA) from baseline to follow-up was -1.8 (median -2.0). The mean change in physician global assessment (PGA) from baseline to follow-up was -1.5 (median -1.9).

CONCLUSIONS: Secukinumab was associated with significant improvement in clinical outcomes compared to anti-TNF agents in patients with ankylosing spondylitis. Further studies are needed to confirm these findings and to evaluate the long-term efficacy and safety of secukinumab in this patient population.
The sensitivity analysis confirmed the findings and showed even more favorable results for Secukinumab. **CONCLUSIONS:** ACR 20/50/70 response rates were higher for Secukinumab compared to Adalimumab at 48 weeks. The long-term cost per responder for all ACR outcomes at 48 weeks were consistently lower for Secukinumab compared to Adalimumab. The cost per ACR 50 responder for all ACR outcomes at 48 weeks were 56% lower for Secukinumab compared to Adalimumab. The cost per ACR 70 responder for all ACR outcomes at 48 weeks were 44% lower for Secukinumab compared to Adalimumab. **OBJECTIVES:** To evaluate the cost-effectiveness of treatment with Secukinumab vs. Adalimumab in patients with PsA. **METHODS:** A cost-effectiveness analysis (CEA) was performed using the Markov model with a 6-month transition cycle and the 30-year time horizon from the perspective of the Brazilian public health system measured by the incremental cost-effectiveness ratio (ICER). Costs and health outcomes were measured in Brazilian reals (BRL) and in QALYs. **RESULTS:** The incremental cost-effectiveness ratio was BRL129,625 per 30 QALYs for Secukinumab compared to Adalimumab. **CONCLUSIONS:** The long-term cost per responder for all ACR outcomes at 48 weeks were consistently lower for Secukinumab compared to Adalimumab. These findings indicate that it is more efficient to treat PsA patients with both drugs, and more patients could be effectively treated in Brazil with Secukinumab vs. Adalimumab with a given budget, due to the cost-offsets.

**PMS22**

**SECKINUMAB VS ADALIMUMAB FOR THE TREATMENT OF PSORIATIC ANKYLOSING SPONDYLITIS: A COST PER RESPONDER ANALYSIS AT 52 WEEKS FROM A BRITISH PERSPECTIVE**

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**OBJECTIVES:** To estimate and compare the long-term cost per responder based on both the National Health Service (NHS) and the Independent Sector Treatment Fund (ISTF). The analysis was based on the United Kingdom General Practice Research Database (GPRD) and the British Society for Rheumatology Biologics Register (BSRBR). **METHODS:** A cost-effectiveness analysis (CEA) was performed using the Markov model with a 6-month transition cycle and the 30-year time horizon from the perspective of the British public health system measured by the incremental cost-effectiveness ratio (ICER). Costs and health outcomes were measured in British pounds (GBP) and in QALYs. **RESULTS:** The incremental cost-effectiveness ratio was GBP 10,296 per 1.8 QALYs for Secukinumab compared to Adalimumab. **CONCLUSIONS:** The long-term cost per responder for all ACR outcomes at 48 weeks were consistently lower for Secukinumab compared to Adalimumab. These findings indicate that it is more efficient to treat PsA patients with both drugs, and more patients could be effectively treated in Brazil with Secukinumab vs. Adalimumab with a given budget, due to the cost-offsets.

**PMS23**

**COST-EFFECTIVENESS ANALYSIS OF ANTI-TNF USE COMPARED TO DMARDS IN THE TREATMENT OF RHEUMATOID ARTHRITIS: A COST PER RESPONDER ANALYSIS AT 48 WEEKS FROM A BRAZILIAN PERSPECTIVE**

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**OBJECTIVES:** To estimate and compare the long-term cost per responder based on both the National Health Service (NHS) and the Independent Sector Treatment Fund (ISTF). The analysis was based on the United Kingdom General Practice Research Database (GPRD) and the British Society for Rheumatology Biologics Register (BSRBR). **METHODS:** A cost-effectiveness analysis (CEA) was performed using the Markov model with a 6-month transition cycle and the 30-year time horizon from the perspective of the British public health system measured by the incremental cost-effectiveness ratio (ICER). Costs and health outcomes were measured in British pounds (GBP) and in QALYs. **RESULTS:** The incremental cost-effectiveness ratio was GBP 10,296 per 1.8 QALYs for Secukinumab compared to Adalimumab. **CONCLUSIONS:** The long-term cost per responder for all ACR outcomes at 48 weeks were consistently lower for Secukinumab compared to Adalimumab. These findings indicate that it is more efficient to treat PsA patients with both drugs, and more patients could be effectively treated in Brazil with Secukinumab vs. Adalimumab with a given budget, due to the cost-offsets.

**PMS24**

**COST-EFFECTIVENESS ANALYSIS OF SECKINUMAB USE IN RHEUMATOID ARTHRITIS: A COST PER RESPONDER ANALYSIS AT 48 WEEKS FROM A BRAZILIAN PERSPECTIVE**

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**OBJECTIVES:** To estimate and compare the long-term cost per responder based on both the National Health Service (NHS) and the Independent Sector Treatment Fund (ISTF). The analysis was based on the United Kingdom General Practice Research Database (GPRD) and the British Society for Rheumatology Biologics Register (BSRBR). **METHODS:** A cost-effectiveness analysis (CEA) was performed using the Markov model with a 6-month transition cycle and the 30-year time horizon from the perspective of the British public health system measured by the incremental cost-effectiveness ratio (ICER). Costs and health outcomes were measured in British pounds (GBP) and in QALYs. **RESULTS:** The incremental cost-effectiveness ratio was GBP 10,296 per 1.8 QALYs for Secukinumab compared to Adalimumab. **CONCLUSIONS:** The long-term cost per responder for all ACR outcomes at 48 weeks were consistently lower for Secukinumab compared to Adalimumab. These findings indicate that it is more efficient to treat PsA patients with both drugs, and more patients could be effectively treated in Brazil with Secukinumab vs. Adalimumab with a given budget, due to the cost-offsets.
MUSCULAR-SKELETAL DISORDERS – Patient-Reported Outcomes & Patient Preference Studies

PMS25
SWITCHING OF BIOLOGICAL DRUGS IN RHEUMATOID ARTHRITIS: A COHORT OF USERS FROM THE BRAZILIAN PUBLIC HEALTH SYSTEM

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OBJECTIVES: To estimate the incidence of and identify factors associated with the switching of biological drugs in rheumatoid arthritis. METHODS: Cohort study. Primary outcome was defined as the exchange of biological drugs. Brazilian APAC-SIA-SIS national records (2008-2014) were sourced. The ICD-10 codes M000, M051, M052, M053, M058, M060, M068 and M080 containing the drugs abatacepte, adalimumab, etanercept, certolizumab, golimumab, infliximab, rituximab and tocilizumab were included. The records were nested by the National Health Care Card number, for quarterly follow-up. Factors associated with the switching of biologicals were evaluated by Cox regression, which enabled the calculation of the hazard ratio (HR) adjusted for sex and age. All calculations were performed in STATA (14.2) and the confidence interval was set at 95% (95% CI). RESULTS: 68,167 patients were identified (159,907 patient-years), 76% women, mean age 48 ± 15 years. In terms of diagnosis, 39% were coded as other seropositive RA patients, 23% as RA seronegative, and 38% as having Felty’s syndrome. Throughout the period, the first choice for treatment was adalimumab (45%), etanercept (25%) and infliximab (18%). Over a five-year period, 17% switched biologicals. The highest frequency of exchange substituted adalimumab for adalimumab. The exchange was associated with the following features: women (HR: 1.4, 95% CI: 1.3-1.5), age 60 years (HR: 1.6, 95% CI: 1.5-1.8), rheumatoid lung disease (HR: 1.4, 95% CI: 1.1-1.9) and treatment in 2008 (HR: 2.1; 95% CI: 1.9-2.2). Infliximab had the highest frequency of exchange (7,100 patient-years) with the lowest (1,560 patient-years). Of the last years, the lowest (2014) was 141 and the highest (2008) 1,411. Baseline characteristics of these patients were comparable among the treatment groups with mean duration of RA of 9.9 years. Patients receiving BARI showed significantly greater improvement (p<0.01) in HAQ-DI for patients treated with BARI mono-therapy (mono) or combination therapy (combo) vs. patients treated with MTX mono was observed as early as Week 1 and at Week 24. No differences in any PROs were observed between BARI mono and combo at Week 24. CONCLUSIONS: This post hoc analysis of LA patients from RA-BEGIN shows improvement in PROs with BARI mono and significant improvement with BARI combo in comparison to MTX mono. The results from this subgroup of LA patients are similar with those observed in the global RA-BEGIN study.

PMS27
PATIENT-REPORTED OUTCOMES FROM PHASE 3 BARICITINIB RA-BEGIN STUDY: LATIN AMERICAN SUBGROUP ANALYSIS

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OBJECTIVE: To evaluate effect of baricitinib (BARI) on patient-reported outcomes (PROs) in Latin American (LA)* patients with moderately to severely active rheumatoid arthritis (RA) patients with moderate treatment response. METHODS: The Latin American subgroup was defined as Spanish-speaking countries. Subjective assessments were performed using the Patient’s Assessment of Disease Activity (P Ada) and Patient Global Assessment of Disease Activity (PGA) using a visual analog scale (VAS) ranging from 0 (no disease activity) to 100 (maximum disease activity). RESULTS: Significant greater improvement (p<0.01) in HAQ-DI for patients treated with BARI mono-therapy (mono) or combination therapy (combo) vs. patients treated with MTX mono was observed as early as Week 1 and at Week 24. No differences in any PROs were observed between BARI mono and combo at Week 24. CONCLUSIONS: This post hoc analysis of LA patients from RA-BEGIN shows improvement in PROs with BARI mono and significant improvement with BARI combo in comparison to MTX mono. The results from this subgroup of LA patients are similar with those observed in the global RA-BEGIN study.

PMS26
HEALTH-RELATED QUALITY OF LIFE OF PATIENTS WITH OSTEOPOROSIS TREATED WITH TERIPARATIDE

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OBJECTIVE: To evaluate the health-related quality of life (HRQoL) of patients treated with teriparatide (TPTD) METHODS: A prospective observational study from April 2006 to February 2014 was carried out with 77 patients in a district Spanish hospital. The Health-Related Quality of Life Questionnaire (EQ-5D) was assessed using the European Quality of Life Questionnaire (EQ-5D) before and after the TPTD therapy. A descriptive and regression analysis was done for assessing the data. RESULTS: Mean age of patients was 75.3 years (standard deviation, SD = 7.1 years), 47% were male. HRQoL at inclusion treated with TPTD was improved from 0.58 to 0.73 (p<0.001). The mean VAS improved (from 5.42 to 3.47). OR (2.01 to 1.69). In 80% of the patients a reduction of pain was observed as well as a reduction of fracture. CONCLUSIONS: TPTD was effective in improving the HRQoL of patients studied, this data obtained can be used for cost utility analysis.

PMS24
FINANCIAL OPTIMIZATION IN THE TREATMENT FOR RHEUMATOID ARTHRITIS IN PATIENTS RECEIVING CONVENTIONAL DMARD THERAPY

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OBJECTIVES: Rheumatoid arthritis (RA) is the prevalent autoimmune inflammatory arthritis found in adults, with worldwide prevalence ranging from 0.4% to 1.3%. Current treatments for RA (with or without conventional DMARDs) are available as biological or non-biological DMARDs, which are associated with high costs to the health system. The goal of this study was to determine the impact of the switch from biological to non-biological DMARDs in terms of direct and indirect costs of treatment. METHODS: A retrospective study was performed in patients with RA treated with biological DMARDs in the specialty center in Colombia. The sample included patients treated with a biological DMARD whose switch was observed in the sample. The following data were collected: age, sex, and time of change of treatment. RESULTS: 159,907 patient-years were observed, 76% women, mean age 48 ± 15 years. In terms of biological DMARDs, switch was seen more among women, young people and in those presenting lung disease. Financial optimization in the treatment for RA was observed through the change from biological to non-biological DMARDs. The exchange was associated with the following incremental cost: -$28,472,133, -$27,696,705 and -$39,077,037, respectively. CONCLUSIONS: This switch is seen more among women, young people and in those presenting lung disease.
PM52 RELIABILITY, VALIDITY AND RESPONSIVENESS OF A NEW MEASURE OF NECK DISABILITY (ND10)
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OBJECTIVES: To develop and evaluate a new measure of neck disability. METHODS: We conducted developmental work evaluating current measures including a systematic review and cognitive interviews. The following revealed problems occurred with respect to the most commonly used measures lack of unidimensionality (focus on function), challenges in readiness, lack of clarity/relevance of some items. We generated items through this literature review and patient interviews, while retaining some legacy concepts. A simple, consistent 0-10 response and low burden item response format were developed for the new Neck Disability Index. RESULTS: Reliability was assessed on 40 patients who completed ND10 twice within one week, tested by intraclass correlation coefficients (ICC = 2,1). Construct validity was assessed by comparing the ND10 with the Neck Disability Index and DASH scores using the multiple correlation coefficient. CONCLUSIONS: The ND10 looks promising for use as a less complex measure than the DASH or NDI. ND10 advantages were simplicity and focus on function, whereas the other options include both symptoms and function in one index.

PM53 ASSESSING THE ECONOMIC AND HUMANISTIC BURDEN OF PSORIATIC ARTHRITIS (PsA) IN BRAZIL
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OBJECTIVES: To assess the economic and humanistic burden of psoriatic arthropathy (PsA) among psoriasis (PsO) patients in Brazil, and draw descriptive analyses between the two cohorts. METHODS: This analysis used data from the GfK Disease Atlas multinational real-world evidence program. The sample included dermatologists (n=50) and their systematic therapy eligible PsO patients (n=497), data was captured through an electronic questionnaire. CONCLUSIONS: The prevalence of PsA patients was 16.8% (n=90) had PsA, of which, 52% were male. Patients with PsA were older than those without PsA (53.7 vs. 43.6 years), and had a greater disease duration (11.9 vs. 6.6 years). Patients with PsA reported a higher number of exacerbations in the last 12 months; 33% (n=30) reported currently exacerbating, compared to 14% (n=16) of those without PsA. The most bothersome symptom for patients with PsA was joint pain (27% vs. 0% for non-PsA patients), while those without PsA reported solar pain most often (30% vs. 40% for PsA patients). Nearly 20% of PsA patients (n=88) reported suffering from anxiety or depression, while nearly 30% (n=25) of PsA patients did. The overall SF-12 physical and mental health composite scores for PsA patients were 43.7 and 49.9, respectively, compared to 50.6 and 42.4 respectively for those without. Work productivity loss was 31% for patients with PsA, versus 19.5% for those without. Absenteeism and presenteeism were 10% and 25% respectively for patients with PsA, versus 5.1% and 16.3% respectively for those without. Work productivity loss was 31% for patients with PsA, versus 19.5% for those without. Absenteeism and presenteeism were 10% and 25% respectively for patients with PsA, versus 5.1% and 16.3% respectively for those without. The majority of PsO consultations with a dermatologist were for patients with PsA, specifically 16% (n=14) versus 8% (n=31) for those without PsA. Further, 36% (n=32) of PsA patients sought care from a rheumatologist, while only 3% (n=3) of PsO did. CONCLUSIONS: Results from this real world survey showed that the economic and humanistic burden in psoriatic patients with concomitant PsA is substantial.

PM51 ASSESSING THE BURDEN OF DISEASE IN PERIPHERAL AND AXIAL SPONDYLOARTHITIS IN MEXICO AND BRAZIL
Romiti R1, Pietri G1, Blackburn L2, Lopes N2, Jukam SM3, MacPherson A2, Barbeau M4
1Novartis Farmacéutica S.A. de C.V, Mexico City, Mexico, 2Adelphi Real World, Bollington, UK, 3Novartis Biocinicas SA, Sao Paulo, Brazil, 4Novartis Pharma AG, Basel, Switzerland.
OBJECTIVES: To assess the burden of disease in peripheral spondyloarthritis (SpA) – Psoriatic Arthritis (PsA), and axial SpA – non-radiographic axial SpA (nr-axSpA) and Ankylosing Spondylitis (AS), in Mexico and Brazil. METHODS: Data was gathered from the Adelphi Real World 2015 DSP. Rheumatologists and dermatologists completed patient record forms (PRF) on consulting SPs patients. Patients completed questionnaires (PFC) and assessments of quality of life (SF-36, EQ-SD). RESULTS: Health impact was evaluated on 563 patients. The mean age was 49.5 years and 66% were men. The mean number of specialist consultants in the last year was 6.3 per patient, and 2.7% (n=15) of patients had been admitted to hospital to treat SpA-related complication. PsA patients reported having had 3 more injections and surgery in hospital; while 24.2% of patients reported an injection/infusion in an outpatient setting. Patient Costs: FSC cohort data (n=162) revealed that patients spent 9.2% of their quarterly household income on PsA drugs. Societal: FSC data (n=428) showed that 39% of patients reported a diagnosis of PsA at least 1 year before the interview. Additionally, 2.4% of patients reported 18 unscheduled days off in the last 3 months due to SpA. WAII (n=215) outcomes revealed a 35.5% overall work impairment, and 425 patients reported a 39.6% activity impairment due to SpA. Humanistic: 430 respondents had an EQ-5D mean of 0.72, and the SF-36 (n=279) physical and mental component summary scores were 41.4 and 49.1 respectively. SF-36 bodily pain, social functioning, and emotional domain mean scores were 57.5, 62.9, and 63.2 respectively. Of the PSC cohort, 57% (n=157) reported that SpA has been or currently is a major problem in their life, and 74% (n=204) were concerned about possible medication side-effects. CONCLUSIONS: This analysis shows that SpA represents a considerable burden to both patients and society in Mexico and Brazil. It highlights the need for effective therapies to control both peripheral and axial Spondyloarthritis.

PM52 CALIDAD DE VIDA EN PACIENTES AMPUTADOS DE EXTREMIDAD. EXTERIOR CON PRÓTESIS DE UN HOSPITAL DE ESPECIALIDAD PÚBLICO CHILENO
Cabrera M1, Lenz Alcayaga R2
1Universidad de Chile, Santiago, Chile, 2Técnico Consultores, Santiago, Chile
OBJECTIVES: Evaluate the quality of life related to the hospital (CVRS), in the population of patients amputated with prothesis of the Instituto Nacional de Rehabilicion Pedro Aguirre Cerda. As well characterize those patients with osteoarticular protesi- rior al uso de prótesis. METHODS: Descriptive, longitudinal y con un dis- eño antes-después; que identificó la calidad de vida relacionada a la salud en 30 pacientes amputados de extremidad inferior con prótesis, a través del instrumento Short Form 36. RESULTS: The MDs of the hospital were 0.86; 95% CI: 0.74-0.92, and was weakly correlated with the Single Assessment Numeric Evaluate (r = 0.29; 95% CI: 0.01-0.42). The response indices indicate high reliability as well as the ability of the scale to measure differences. CONCLUSIONS: This generated items through this literature review and patient interviews, while retaining some legacy concepts. A simple, consistent 0-10 response and low burden item response format were developed for the new Neck Disability Index. Reliability was assessed on 40 patients who completed ND10 twice within one week, tested by intraclass correlation coefficients (ICC = 2.1). Construct validity was assessed by comparing the ND10 with the Neck Disability Index and DASH scores using the multiple correlation coefficient. CONCLUSIONS: The ND10 performed as well or better than the DASH or NDI. ND10 advantages were simplicity and focus on function, whereas the other options include both symptoms and function in one index.
antibodies (ACPA), physician or specialist involved in care, type of insurance and care facilities. This dataset allow determine the demographic characteristics, medical prescrip-
tion and disease activity during a 12 month period in a RA specialized center in Colombia. METHODS: We used data from the clinical charts in a specialized RA center, containing demographic characteristics, medical prescrip-
tion and disease activity during a 12 month period in a RA specialized center in Colombia. METHODS: We conducted a systematic and structured search on the web-
sites of National Commission for Health Technologies Incorporation (CONITEC) – Brazil, National Institute for Health and Care Excellence (NICE) – United Kingdom, Canadian Agency for Drugs and Technologies in Health (CADTH) – Canada via Centre for Reviews and Dissemination (CRD) and Pharmaceutical Beneﬁcial Advisory Committee (PACoA) – Australia. Key words were the names of the conditions. Only reports published in the last five years were considered. Inclusion criteria was at least 2 agencies having assessed the same technology and indications as CONITEC. For data extraction, only the final recommendation about each drug was recorded. Degree of agreement between agencies was determined using the percentage of agreement. We used Microsoft Excel for analysis. METHODS: We conducted a systematic and structured search on the websites of National Commission for Health Technologies Incorporation (CONITEC) – Brazil, National Institute for Health and Care Excellence (NICE) – United Kingdom, Canadian Agency for Drugs and Technologies in Health (CADTH) – Canada via Centre for Reviews and Dissemination (CRD) and Pharmaceutical Beneﬁcial Advisory Committee (PACoA) – Australia. Key words were the names of the conditions. Only reports published in the last five years were considered. Inclusion criteria was at least 2 agencies having assessed the same technology and indications as CONITEC. For data extraction, only the final recommendation about each drug was recorded. Degree of agreement between agencies was determined using the percentage of agreement. We used Microsoft Excel for analysis. RESULTS: Our search yielded 74 recommendations, from which 60 reports were included in this analysis. CONITEC evaluated 63 biological medicinal products indicated for the three rheumatic diseases and result-
ing in 9 positive recommendations (64%). Regarding rheumatoid arthritis, CONITEC recommended all biological medicinal products considered. NICE agreed with CONITEC in 88% about this condition for initial DMARD. For the three rheumatic diseases, agreement was 11% and 33%. CONIDIT did not recommend any of the four biological medicinal products considered for psoriasis. Contrary to NICE and CADTH, which cover 100% of said medications, and PACoA, accounting for 75%. Due to the lack of lack of biological medicinal products indicated for RA, it was not possible to determine a degree of agreement for psoriatic arthritis. CONCLUSIONS: Comparing results from different health technology assessment agencies is not only vital to the HTA in Brazil, but also criterion evaluated in public and private health systems.

PM53

PHACOSIM: A POLITICAL TECHNICAL-LOGICAL SAVINGS MODEL TO DESCRIBE THE EFFECTIVENESS OF LEFLUNOMIDE AND METHOTREXATE IN PATIENTS WITH RA IN A REAL-LIFE SETTING IN COLOMBIA
Biomar, center for rheumatoid arthritis, bogota, Colombia, SISES investigation and research, Colombia, bogota, Colombia

OBJECTIVES: Rheumatoid arthritis (RA) is a chronic, inflammatory and systemic disease of with a prevalence between 0.5 and 1.3%, biological therapy for RA has proven efficacy and represent promising advances for individuals with the disease, and have been associated with significant improvement in outcomes including reduction in pain, joint swelling, serologic inflammatory indices, and rates of radio-

logic damage. The objective of this study was to describe the patterns of usage of biological therapy and resulting disease activity during a 12 month period in a RA specialized center in Colombia. METHODS: We used data from the clinical charts in a specialized RA center, containing demographic characteristics, medical prescrip-
tion and disease activity during a 12 month period in a RA specialized center in Colombia. METHODS: We conducted a systematic and structured search on the websites of National Commission for Health Technologies Incorporation (CONITEC) – Brazil, National Institute for Health and Care Excellence (NICE) – United Kingdom, Canadian Agency for Drugs and Technologies in Health (CADTH) – Canada via Centre for Reviews and Dissemination (CRD) and Pharmaceutical Beneﬁcial Advisory Committee (PACoA) – Australia. Key words were the names of the conditions. Only reports published in the last five years were considered. Inclusion criteria was at least 2 agencies having assessed the same technology and indications as CONITEC. For data extraction, only the final recommendation about each drug was recorded. Degree of agreement between agencies was determined using the percentage of agreement. We used Microsoft Excel for analysis. RESULTS: Our search yielded 74 recommendations, from which 60 reports were included in this analysis. CONITEC evaluated 63 biological medicinal products indicated for the three rheumatic diseases and result-
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TERTIARY EYE CARE AND TRAINING CENTER, NORTHWEST ETHIOPIA

In this study, the visual outcome of cataract surgery was significantly low as compared to World Health Organization's recommendations, and it has been recognized that there is significant progression of visual acuity in different consecutive weeks.

CROSSLINKING TO CORNEAL KERATOCONUS IN LAC.

Living in countries with UVV, improved varicella surveillance is needed to evaluate vaccine effectiveness in reducing cases and incidence, since the vaccine is introduced in the region between 2012-2016. With more than 50% of the region's population living in countries with UVV, improved varicella surveillance is needed to evaluate the impact of the vaccination programs, monitor for potential shifts in the age-distribution of cases and support evidence-based decision making around UVV in LAC.

CORRIGENDUM TO CORNEAL KERATOCONUS

Objectives: Crosslinking is a minimally invasive therapeutic procedure aimed at avoiding the progression of keratoconus by strengthening the collagen bands of the corneal stroma, preventing or delaying corneal decompensation. The aim of the study is to assess the effectiveness of corneal crosslinking in keratoconus stabilization and the prevention of progressive worsening of visual acuity.

Methods: The PICO tool was used: patients with keratoconus (P) submitted to corneal crosslinking (C) were compared to study participants (C) under corneal topography measurements, visual acuity, corneal refigmation, complications and adverse events (O). The databases used were Pubmed, Embase, Bioline Evidence Portal, Lilacs and Cochrane Library and health technology assessment sites. The costs of crosslinking were obtained by direct costing system, including fixed cost and variable components directly related to the execution of the procedure. Results: 152 studies were identified, with randomization, four randomized controlled trials, one nonrandomized controlled trial and five health technology assessments included. Literature analysis demonstrated that corneal crosslinking is an effective procedure in the stabilization of keratoconus (K), avoiding the progression of corneal curvature measurements (moderate level of evidence to the GRADE, and outcome classified as important). Visual acuity was a critical outcome, which showed moderate level of evidence. None of the studies identified the occurrence of serious complications. The crosslinking costs are low (US$ 95.36) and, based on the incidence of keratoconus in our population, the annual cost to provide this technology to the population living in countries with UVV, improved varicella surveillance is needed to evaluate the impact of the vaccination programs, monitor for potential shifts in the age-distribution of cases and support evidence-based decision making around UVV in LAC.

Sensory Systems Disorders – Clinical Outcomes Studies

PSS5

AN UPDATED REVIEW OF THE HEALTH & ECONOMIC BURDEN OF VARICELLA IN LATIN AMERICA AND THE CARIBBEAN

Cashat-Cruz M1, Parellada CI2, Monsanto H3, Best P2, Pillsbury M4, Weiss TJ4, Pavleyev A5, Wolsson L5

OBJECTIVES: To evaluate the postoperative level of visual acuity to provide a baseline for evaluating the impact of visual outcomes and for a standardization of endpoints to maximize it.

METHODOLOGY: A hospital-based cross-sectional study was conducted at the Gondar University Hospital Tertiary Eye Care and Training Center on 223 patients who had undergone cataract surgery, selecting with simple random technique.

RESULTS: This study consisted of 218 patients or eyes that underwent cataract surgery. The median age of the participants was 65 years with an interquartile range of 20 years. Of 218 cataract-operated visually impaired eyes, 103 (47.2%) were from the amblyopia group with a good visual acuity (≥6/6), 88 (98.9%) of them had borderline acuity (<6/18-6/60), and the remaining of 4.5% were remained as poor visual acuity (<6/60). It has been observed that the postoperative visual acuity had an associated outcome of postoperative follow up time duration (r=0.035).

CONCLUSIONS: In this study, the visual outcome of cataract surgery was significantly low as compared to World Health Organization's recommendations, and it has been recognized that there is significant progression of visual acuity in different consecutive weeks.

PSS4

EFFICACY AND SAFETY OF TOPICAL DAPSONE GEL 7.5% FOR TREATMENT OF ACNE ULTRASPORUS BY FITZPATRICK SKIN-TYPE

Taylor SC6, Cook-Bolden FE7, McMichael A6, Downie JB8, Rodriguez DA9, Mariwalla K10, Alexis A11, Callender VDP, Alvari N6

1University of Pennsylvania, Philadelphia, PA, USA; 2Skin Specialty Dermatology, New York, NY, USA; 3Wake Forest Baptist Health, Winston-Salem, NC, USA; 4Image Dermatology, Montclair, NJ, USA; 5Dermatology Associates and Research, Coral Gables, FL, USA; 6Marianilla Dermatology; 7Bilp, NY, USA; 8Skin of Color Center, Mount Sinai St. Luke's and Roosevelt Hospitals, Icahn School of Medicine at Mount Sinai, New York, NY, USA; 9Callender Dermatology and Cosmetic Center, Glenn Dale, MD, USA; 10Allergan plc, Irvine, CA, USA

OBJECTIVES: We evaluated safety and efficacy of dapsone gel 7.5% (DAP) in acne patients with Fitzpatrick skin type. The PICO tool was used: patients with acne (P) submitted to topical dapsone gel 7.5% (C) were compared to study participants (C) who received the placebo (O). The included patients were all under 15 years of age, which is the range stated in the product label in the United States. The main outcome measures were the Acne Severity and Impact Scale (ADI). Adverse events (AEs) and tolerability were assessed. RESULTS: In total, 4327 patients (2216 type I-II, 2111 type IV-VI) were included. At week 12, mean GAAS change from baseline was significantly greater with DAP versus VEH in skin types I-III and IV-VI (both, P<0.001). Additionally, 71.4% with types I-III and 76.7% with types IV-VI using DAP achieved ≥1 grade improvement in GAAS at week 12 versus 62.8% and 67.5% using VEH (P<0.001). In type I-IV and IV-VI, mean week 12 percent reductions were significantly greater for DAP versus VEH in inflammatory lesions (types I-III, P<0.001; IV-VI, P=0.002), comedones (types I-III, P<0.001; IV-VI, P=0.01), and total lesions (both, P<0.001). For both skin type groups, inflammatory lesion improvements occurred first, similar improvement patterns occurred in GAAS, comedones, and ADI scores. Local tolerability and AE incidences were similar between skin type groups and between DAP and VEH. CONCLUSIONS: Once-daily DAP monotherapy was safe and effective in lighter and darker Fitzpatrick skin type patients with moderate acne.
was done for unmet of cataract surgery (CS), its costs and the financial requirement in terms of public Health Expenditure (FHE). RESULTS: The population of Mexico in 2015 is 119,530,753 applying reported rates and standardizing them to the population older than 65 years, prevalence varies from 6.2% to 8.2% ($33,515, and 703,152, respectively) of which, 82% is covered by at least one of the institutions of the system. The NS reported by OECD ($3,868) has an associated cost of $33,738,040 USD. It is necessary to invest $280,913,188 USD to cover the unsatisfied demand of CS in affiliated population (438,416), which represents less than one percent (0.78%) of the FHE. CONCLUSIONS: We found high heterogeneity in CF; CS reports, which may decrease the quality of the information recorded, however, if the different health care models remain as they are, the financial consequences would be catastrophic in terms of social cost and the pocket of users. The local data reported here, can help payers to establish best routes for resource allocation.

PSS8
ORTHOGNATHIC SURGERY IN BRAZIL: MAPPING THE VARIABILITY IN REQUESTED MATERIALS USING REAL-WORLD DATA
Kunki EU, Castro AF, Pegoratti Rosa B, Clark IG
Evidencias Kantar Health, Campinas, Brazil
OBJECTIVES: our goal was to map the materials requested for orthognathic surgery across Brazil providing an overview of current practices and their possible economic impact for the private health care system (PHS). METHODS: Anonymized demographic and clinical real-world data (RWD) were retrieved from Auditorios® (Evidencias-Kantar Health database of claims) for all orthognathic surgeries performed between 2013-2016. We included only cases of maxillomandibular corrections, excluding surgeries for cyst removal, trauma and any other indications. The lists of essential (fixation plates and screws) and supplementary materials and their distribution were also extracted. Costs were calculated using SIMPRO values. RESULTS: over 700 surgery requests were initially retrieved and 271 regarding 266 patients (5 patients had more than one claim) fulfilled our inclusion criteria. Surgeries were performed in 99 males and 167 females; with an age range of 14-63 years. Requests came from 33 health care providers from all Brazilian regions: North (3), Central-West (24), Northeast (67), South (88) and Southeast (84). We found a wide variability in the bone synthesis materials’ models and brands. Supplementary materials included (n=number of requests; upc=units requested per case, unitary cost in Brazilian Reals): microsuction needle - Colorado needle or similar (n=1; upc=1, R$12,250.00); ultrasonic tools - Piezosurgery or similar (n=92; upc=1 to 5, R$14,990.00); intermaxillary fixation screws (n=135; upc=4 to 8; R$1,471.68); “virtual” surgical splints (n=26; upc=1 to 2; R$12,000.00); bone substitutes in bloc, grains or paste (n=117; upc=not applicable, R$1,200.00 to R$18,300.00); re-absorbable membrane (n=42; upc=1 to 4; R$534.00 to R$3,400.00) and hemostatic agents (n=87; upc=1 to 4, R$150.00 to R$19,100.00). CONCLUSIONS: These variations in brands, models, quantities and costs of requested materials suggest a lack of uniformity among conduct that could have an economic impact for PHS. Evidence-based specialty guidelines could help mitigate these variations, providing better quality-of-care for patients and saving resources for PHS.

PSS9
THE BURDEN OF AD IN FRENCH ADULT PATIENTS: A MULTICENTRIC CROSS-SECTIONAL STUDY
Taib CI, Ezzedine K, Reguezi Z, Misery L, Serechaj J
1Hopital Necker -Paris, Paris, France, 2Hopital H Mondor -Creteil, Créteil, France, 3Clinique Dermatologique, Reims, France, 4CHU Morvan, Brest, France, 5Hopital St André, Bordeaux, France
OBJECTIVE: Atopic dermatitis (AD) is a disease with a high burden and impact on quality of life. To date only a few studies have been conducted evaluating the burden of AD in adults. We are conducting a transversal prospective study aiming to evaluate the global burden of AD. METHODS: This is a cross-sectional study that is conducted since December 2016 and will last May 2017. We administrated a questionnaire to evaluate the impact of AD on daily life and included validated tools for the evaluation of disease burden (ABS-A), dermatology specific quality of life instrument (DLQI) and impact of AD. In addition the prevalence of AD has also been evaluated by using a modified version of the PO-SCORAD. The questionnaire were mailed to adult patients belonging to the French support group for AD. In addition consecutive patients aged more than 18 and attending 4 French dermatology departments were asked to fill in these questionnaires after having obtained their oral consent. RESULTS: We herein present the intermediate results of this study. Patients having answered were included in the present analysis. A total of 225 patients answered the questionnaires including 149 women and 76 men. Of the 225 patients, 108 declared moderate AD whereas 117 declared severe AD. One out of 4 patients had a disease that began during childhood whereas the authors had an adult onset AD. In total, 71% of patients were followed-up by their dermatologist for their disease with significantly more patients with severe AD. Mean DLQI and ABS-A were respectively 19.6 (SD 5.7) and 47.6 (SD 15.2) in patients declaring severe AD and 13.7 (SD 5.8) and 31.8 (SD 14.1) in those declaring moderate AD (p<0.001). CONCLUSIONS: Our intermediate results showed that the burden of AD increase with the severity of AD and that AD impacts not only daily life but also professional activity and sexuality.

PSS10
THE IMPLICATIONS OF VACCINE CHARACTERISTICS AND PRIVATE-SECTOR VACCINATION ON VARICELLA; A MODEL-BASED ANALYSIS FOR MEXICO
Merk & Co, Inc, Kenilworth, NJ, USA
OBJECTIVES: Varicella vaccines have been available in Mexico since 2000. Use was initially restricted to private practices and children undergoing bone marrow transplantation, but in recent years, coverage among children 1 year of age has increased through selected insurers and/or states offering coverage. The objective of this study was to evaluate vaccine characteristics and coverage levels that might lead to substantial age-shifts in varicella burden in Mexico. METHODS: A dynamic transmission model of varicella infection calibrated to local data was employed. Vaccination coverage levels of one year olds between 5% and 95% were considered together with the properties of three different hypothetical vaccines (Strong/Moderate/Low), defined by initial effectiveness (95%/75%/50%), average duration of protection (25/51 years), and relative infectiousness of vaccinees post waning (0.25, 0.5, 0.75). RESULTS: While all vaccines and coverage levels predicted reduced overall varicella incidence, some combinations of vaccine effectiveness and coverage rates led to increases in age-specific incidence rates, shifting towards older onset of disease. Among those aged 25+, within 20-40 years of the start of the vaccination programme, varicella incidence rates will be higher than pre-vaccine incidence rates for all coverage levels for the Low vaccine; for any coverage <90% for the Moderate vaccine; and for coverage <75% for the Strong vaccine. The largest increases are predicted at coverage levels of 30-60% (Strong), 30-80% (Moderate), and 60-100% (Low). A similar pattern was predicted within 40-60 years among those aged 65+, with the most significant increase for the Low vaccine. CONCLUSIONS: Careful monitoring of evolving private sector and sub-national coverage in Mexico is recommended to avert potential shifts in the age-distribution of cases to older age groups where disease is more severe. The impact of current policies may not be observed for 10-50 years. Vaccine characteristics play a significant role in potentially increasing future varicella disease burden in older age groups.
## DISCLOSURE INFORMATION

### Research Presentations Financial Disclosure Statements

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GUIDE FOR AUTHORS

As the official journal of the International Society for Pharmacoeconomics and Outcomes Research (ISPOR), Value in Health provides a forum for researchers, health care decision makers, and policy makers to translate pharmacoeconomics and outcomes research into health care decisions. The goal of Value in Health is to advance scholarly and public dialogue about the assessment of value in health and health care.

Increasingly, health care decision makers and policy makers are seeking outcomes research information (comparative treatment effectiveness, economic costs and benefits, and patient-reported outcomes) that can guide them in health care resource allocation, and in evaluating alternative treatments and health services interventions. Value in Health contains original research articles in the areas of economic evaluation (including drugs and other medical technologies), outcomes research (‘real world’ treatment effectiveness, and patient-reported outcomes research), and conceptual, methodological, and health policy articles. All published articles must be conducted in a rigorous manner and must reflect valid and reliable theory and methods. Empirical analyses and conceptual models must reflect ethical research practices and provide valuable information for health care decision makers and the research community as a whole.

Value in Health welcomes papers that make substantial contributions to the existing literature by providing new evidence or ideas that extend the current knowledge base. As such, manuscripts should describe the unique contribution of the article and place the current paper in context with prior publications. Value in Health does not consider papers reporting data series or data sets that do not include appropriate statistical analyses. The journal uses the peer review process to assure rigorous and transparent use of statistical methods. Value in Health also requires that papers reporting modeling results include sensitivity analysis of key and influential model parameters.

MISSION STATEMENT

The mission of Value in Health is to set a high scientific standard using editorial review and peer review, not just to screen articles, but also to foster communication within the research community—facilitating knowledge-sharing between the outcomes research community and health care decision makers. As such, the editors of Value in Health aim to enhance the validity, reliability, and transparency of pharmacoeconomics and outcomes research and its real-world applicability.

EDITORIAL SCOPE

The journal provides a forum for the advancement and dissemination of knowledge and research in pharmacoeconomics and the health-related outcomes of interventions used to treat disease. To that end, the journal encourages original contributions in applied and theoretical pharmacoeconomics, and in the theory, measurement, analysis, and translation of health-related outcomes research. In keeping with its broad mission, Value in Health also will accept methodology papers and systematic reviews of empirical and theoretical literature in pharmacoeconomics and outcomes research.

Authors are invited to submit research articles that are based on coherent models, empirical studies, and theoretical work having pragmatic or policy-relevant implications. Appropriate valuation of health care interventions requires multidisciplinary perspectives and assessment of economic and outcomes data. Therefore, the journal welcomes theoretical and empirical articles about health effects and health costs that strive to improve the quality and reliability of outcome evaluations of health care interventions—contribution not only by economists, but also by behavioral psychologists, sociologists, clinicians, ethicists, and others.

Value in Health is particularly interested in receiving articles in the following areas:

Economic Evaluations

Economic evaluations that assess the costs and consequences of alternative health care interventions are of interest, including those involving drugs, devices, procedures, and systems of organization of health care. However, studies that only consider costs, or the economic burden of disease, are less likely to be accepted unless they address important methodological or policy issues.

Patient Reported Outcomes

There remain many challenging empirical and theoretical problems in the concept and measurement of patient-reported outcomes (PRO) including health-related quality of life (QoL). Articles presenting research on the development of measures for PRO/QoL instruments, especially innovative ways of assessing content or construct validity are invited. (See also ‘Country Adaptations’ below.)

Preference-Based Assessments

Research on the development and use of various types of instruments to express the value of health care, including health ‘utility’ assessments, discrete choice experiments/conjoint analyses, and assessments of individual willingness-to-pay is encouraged. (See also ‘Country Adaptations’ below.)

Comparative Effectiveness Research/Health Technology Assessment

Although it is difficult to be precise about the nature of the articles in this category (see Luce et al, The Milbank Quarterly 2010;88: 256-276 for one taxonomy), Value in Health welcomes articles presenting information that can assist those deciding on the efficient and equitable allocation of health care resources by examining the relative value of interventions. In some cases relative value may be addressed by considering only clinical outcomes, although normally it will involve considering patient-reported outcomes/quality-of-life measures, and impacts on resource utilization. Articles in this category can report the results of primary research, or present findings from metaanalyses or systematic reviews of the existing literature.

Health Policy Analyses

The journal invites articles that discuss various aspects of health policy, in particular those concerned with pricing and reimbursement issues, the adoption of new health technologies, or policies to encourage ‘value-based’ decision-making. However, the journal’s scope does not include papers dealing with more general issues of health care financing, health insurance, and cost-containment measures.

COUNTRY ADAPTATIONS

Value in Health recognizes that it is sometimes instructive to publish the results of pharmacoeconomics and outcomes research studies relating to more than one country. In the case of economic evaluations, this might involve using a model that was previously developed for an evaluation of a given intervention in another country. In the case of outcomes research, this might involve the validation of a quality of life instrument in another language or different jurisdiction. The journal is willing to consider such papers for publication, but only if they make a substantial independent contribution to the literature. Those submitting country adaptations should indicate (in the paper and their covering letter) what they consider the substantial independent contribution to be. It will not be sufficient to state that ‘results for intervention X have not previously been reported for country Y’.

For more information about ‘Country Adaptations’, click here.

FOLLOWING GOOD PRACTICES FOR OUTCOMES RESEARCH

Value in Health publishes the reports on “Good Practices for Outcomes Research” developed by Task Forces appointed by the ISPOR Board of Directors. There are now more than 65 Task Force Reports, which can be accessed via the following link (http://www.ispor.org/work-paper/practices_index.asp). These Task Force reports provide guidance for best practices across a variety of research areas, including methods related to articles relevant to the scope of Value in Health. These include comparative effectiveness research, economic evaluation, observational studies, patient-reported outcomes, modelling, preference-based methods and the use of outcomes research in decision-making.

Although Value in Health does not prescribe any particular research methods, the Editors strongly encourage authors to review the ISPOR Good Practices for Outcomes Research reports relating to the methods or topics covered by their paper. The reports are written by thought leaders in the various fields of research and are extensively peer-reviewed by members of the Society.

Some of the Task Force reports address the reporting of research studies. Irrespective of the methods used in a particular study, Value in Health feels that adherence to accepted standards of reporting is important. Therefore, if your paper reports an economic evaluation, we recommend that you follow the CHEERS guidelines. If your analysis is based on a model, we recommend that you follow the guidance in the
GUIDE FOR AUTHORS – continued

ISPOR-SMDM Task Force report on model transparency and validation.

Other reporting standards of particular relevance of authors in papers in Value in Health are the PRISMA guidelines for the reporting of systematic reviews and the CONSORT guidelines for reporting the results of studies assessing health-related quality of life/patient-reported outcomes.

ARTICLE CATEGORIES

Value in Health considers articles in the following categories, which make up the sections of the journal. However, in an effort to standardize article categories across their platform of journals, Elsevier uses a different nomenclature for article types in their online submission system. Listed below are the article categories for Value in Health, followed in parenthesis by the equivalent name used in the online submission system. When submitting a manuscript through our online system, authors should indicate the appropriate category under which they wish their paper to be considered. All submissions will be considered for peer review prior to publication, with the exception of Editorials and Letters to the Editor, which will be reviewed internally by the Editors.

Original Research (research paper) These papers report the findings of original research and may contain the results of empirical analysis, instrument development, or policy analysis. Word count (excluding references) should not exceed 4000 words and contain no more than 6 graphic elements (ie, combined total of tables and figures).

Methodological Articles (methodological article) As the name implies, these papers deal with methodological issues in any of the topic areas within the scope of the journal. They can include data if these are required to illustrate the importance of particular methodological points. Methodological articles can be up to 3500 words, excluding references, and may have up to 6 figures or tables.

Policy Perspectives (opinion paper) These papers discuss important health policy topics within the scope of the journal. They may reflect conceptual pieces or reviews of the literature. Word count (excluding references) should not exceed 3000 words and contain no more than 4 graphic elements (ie, combined total of tables and figures).

Systematic Reviews (review article) These are papers containing reviews of empirical studies consistent with the methods of systematic review proposed by the Cochrane Collaboration. However, they need not be confined to reviews of randomized controlled trials and can include reviews of observational studies, economic evaluations, outcomes research studies, and preference-based assessments. Word count (excluding references) should not exceed 4000 words and contain no more than 6 graphic elements (ie, combined total of tables and figures).

Brief Reports (short communication) These are empirical analyses with a more narrow focus than original research articles and generally a single aim. Word count (excluding references) should not exceed 2500 words and contain no more than 2 graphic elements (ie, combined total of tables and figures).

Commentaries (commentary) These are brief (typically >2000 words with 1 table or figure) papers that present a particular perspective on a timely or controversial topic. They do not necessarily need to be based on original research or reviews of the literature and can be based on opinion, providing the points made are transparent and well-argued. While Commentaries are typically invited contributions, the Editors will consider unsolicited submissions.

Good Practices for Outcomes Research Task Force Reports (personal report) Critics point out that pharmacoeconomics and outcomes research lack consensus regarding methodological approaches, underlying theoretical paradigms and presentation of results. Value in Health serves as a forum for dissemination of the ISPOR Good Practices for Outcomes Research reports, as well as articles on the philosophical foundations of pharmacoeconomics and outcomes research. Task Force Reports are commissioned by the ISPOR Board of Directors and are developed by key thought leaders in their respective fields through a consensus development process. All Task Force reports are peer-reviewed by ISPOR members through the Society’s website prior to submission to Value in Health. Task Force reports often contain substantial reviews of the literature and can be up to 5000 words long, or published in several parts.

Editorials (editorial) Editorials are commissioned by the editorial team and often accompany a paper published in the same issue of the journal. Word count should not exceed 1000 words, but exceptions can be made with agreement from the editors.

Letters to the Editor (correspondence) Customarily, letters refer to content published in the journal within the past 6 months. Authors of the article to which the letter refers will be given the opportunity to reply, and if a response is issued, both the letter and the reply will be published in the same issue of the journal.

I. MANUSCRIPT SUBMISSION AND SPECIFICATIONS

Value in Health uses a web-based submission system. To submit a manuscript, please create an account and log on here: http://ees.elsevier.com/vhl. For assistance, authors may contact the Value in Health editorial office at vheldrt@ispor.org.

If submissions are larger than 500 KB, they should be compressed using PKZIP or WINZIP.

Each submission should contain separate documents as follows:

1. COVER LETTER The cover letter should include: 1) title of the manuscript; 2) name of the document file(s) containing the manuscript and the software (and version) used; 3) name and all contact information for the corresponding author and a statement as to whether the data, models, or methodology used in the research are proprietary; 4) names of all sponsors of the research and a statement of all direct or indirect financial relationships the authors have with the sponsors; and 5) if applicable, a statement that the publication of study results was not contingent on the sponsor’s approval or censorship of the manuscript.

2. TITLE PAGE The title page should contain the following: 1) title; 2) full names (first and surname) of all authors including academic degrees and affiliations(s); 3) name, mailing and email addresses, telephone and fax numbers of corresponding author (with whom all correspondence will take place unless other arrangements are made); 4) all sources of financial or other support for the manuscript (if no funding was received, this should be noted on the title page); 5) at least four key words for indexing purposes; 6) a running title of not more than 45 characters including spaces; and 7) acknowledgments (if applicable).

3. MANUSCRIPTS Manuscripts must be written in English, typed in Microsoft Word (2003 or later), .doc or .docx file formats. Manuscripts should be in 8.5x11 inch page format, double-spaced with 1-inch margins on all sides and size 10 font (Arial or Times New Roman fonts are preferred). Minimal formatting should be used (ie, no justification, italics, bold, indenting, etc). There should be no hard returns at the end of lines. Double-spacing after each element is requested (eg, headings, titles, paragraphs, legends). Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals (ICMJE Recommendations) should be consulted for specific style issues not addressed here.

a. HIGHLIGHTS Value in Health publishes papers that add to the literature in a substantive way to inform health care decision making. Therefore, during the submission process, authors are asked to identify several “Highlights” that illustrate the paper's contribution to the field. Highlights should not summarize the article, but rather should highlight the novel insights related to value in health care delivery that the paper provides.
   i. What is already known about the topic?
   ii. What does the paper add to existing knowledge?
   iii. What insights does the paper provide for informing health care-related decision making? (optional)

b. ABSTRACT An abstract of 250 words or less is required that summarizes the work reported in the manuscript. Original research manuscripts should use a structured format for the abstract (eg, Objectives, Methods, Results, and Conclusions).

c. TEXT The body of the manuscript should be divided into sections that facilitate reading and comprehension of the material. This should normally include sections with the major headings: Introduction, Methods, Results, Conclusions, and References. Acknowledgments (if applicable) should be included in the title page and not in the body of the manuscript. There should be no footnotes. Figures (inclusive of figure legends) and tables must be submitted as separate files, independent of the main manuscript file. Section headers (first, second, third, etc.) should also be included.

d. REFERENCES References should be listed in a separate section and numbered consecutively with Arabic numerals in the order in which they are cited in the text. Referencing software, superscripts, or any other electronic format should not be used when referencing, neither in the text nor the reference list. Citations of unpublished or non-peer-reviewed work such as abstracts and presented papers is discouraged. Personal communications may be indicated in the text as long as written acknowledgment from the authors of the communications accompanies the manuscript. Reference style should follow the AMA Manual of Style: A Guide for Authors and Editors (10th ed). Boston: Oxford University Press, 2007. If there are six or more authors, use only the names of the first three, followed by et al. The four most common types of references are illustrated below for example.

   Journal article: Surname and initials of authors(s), title of article, name of journal, year, volume number, first and last page.
GUIDE FOR AUTHORS – continued


Book: Surname and initials of author(s)/editor(s), title of book, volume, edition (other than first), city, publisher, year.


Chapter in Book: Surname and initials of author(s), title of chapter, author(s)/editor(s) of book, title of book, volume, edition (other than first), city, publisher, year.


4. TABLES Tables should be clearly labeled, neatly typed, and easy to understand without reference to the text. Each should be double-spaced and presented on a separate page. Statistical estimates should indicate parameter estimates and, as appropriate, t ratios or standard error, statistical significance, sample size, and other relevant information. All abbreviations must be explained below each table. Each table should be numbered and have a self-explanatory title.

5. FIGURES Figures should each be submitted as a separate image file; not embedded in the manuscript document or in a slide presentation. Cite figures consecutively as they appear in the text using Arabic numbers (eg, Figure 1, Figure 2, Figure 3A, etc.). Each figure must be assigned a brief title (as few words as possible, and reserving abbreviations for the legend) as well as a legend. The corresponding legend should be typed double-spaced on a separate page. The legend should contain a brief title (as few words as possible, and reserving abbreviations for the legend) as well as a legend. All symbols, arrows, and abbreviations must be explained in the legend. If authors provide usable color figures with their accepted article, the journal will ensure (at no additional charge) that these figures will appear in color on the Web (eg, ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in the printed version. However, there is a charge for color reproduction in the print version of the journal.

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