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Capturing Value Across the Health Care System

ISPOR EUROPE EDUCATIONAL SYMPOSIUM
NOVEMBER 2019

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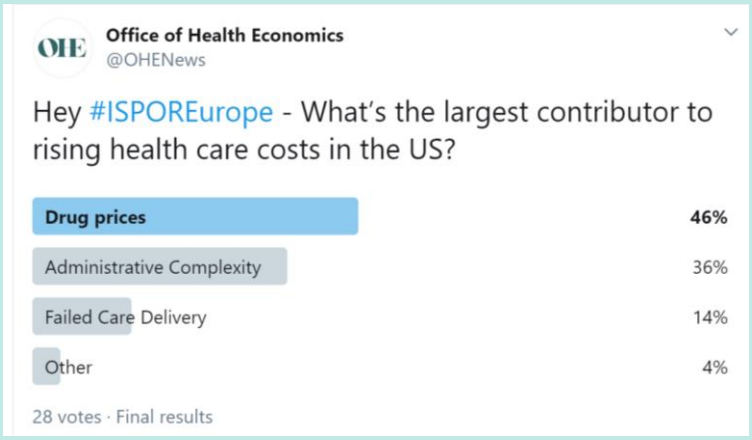
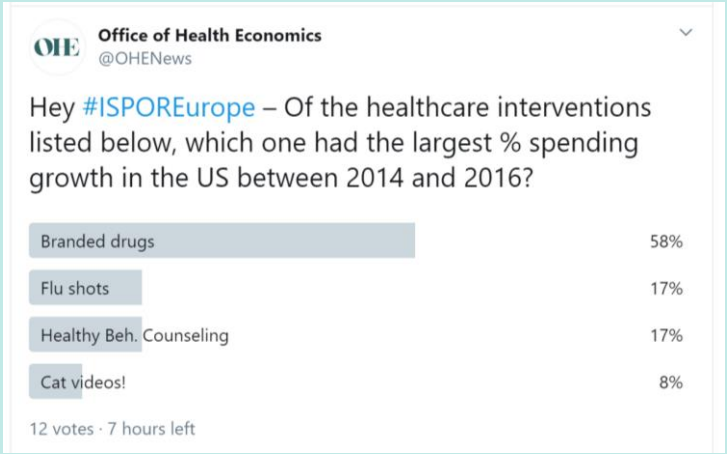
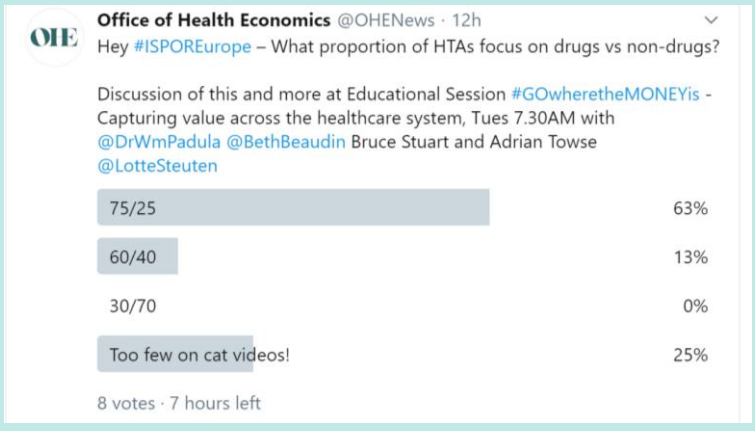



Office of Health Economics
@OHENews
Hey #ISPOREurope – Of the healthcare interventions listed below, which one had the largest % spending growth in the US between 2014 and 2016?
Branded drugs
58%
Flu shots
17%
Healthy Beh. Counseling
17%
Cat videos!
8%
12 votes · 7 hours left

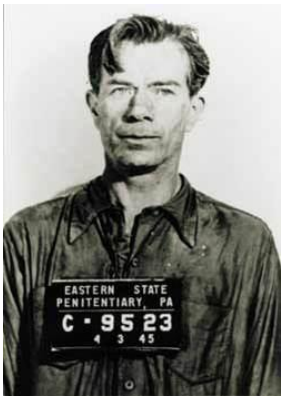

Office of Health Economics @OHENews · 12h
Hey #ISPOREurope – What proportion of HTAs focus on drugs vs non-drugs?
Discussion of this and more at Educational Session #GOwheretheMONEYis - Capturing value across the healthcare system, Tues 7.30AM with @DrWmPadula @BethBeaudin Bruce Stuart and Adrian Towse @LotteSteuten
75/25
63%
60/40
13%
30/70
0%
Too few on cat videos!
25%
8 votes · 7 hours left

Objective: demonstrate why value assessment is a critical component of any high performing health care system for:

- Identifying gaps in value information
- Reducing system-wide low value care
- Using best practices to measure the value of health services

Speakers

- Bruce Stuart, PhD, Emeritus Professor, University of Maryland Baltimore, USA
- Beth Beaudin-Seiler, PhD, Senior Analyst, Altarum Institute, Ann Arbor MI, USA
- William Padula, PhD, Assistant Professor, University of Southern California, Los Angeles, USA
- Adrian Towse, MA, Mphil, Director Emeritus & Senior Research Fellow, Office of Health Economics, London, UK



When asked why he robbed banks, Willie Sutton, a famous mid-20th century criminal in the US on his way to jail supposedly said to a reporter:

"Because that is where the money is."

We should apply the same principle to value assessment in health care

"Slick Willy" escaped prison 3 times and later became a consultant with banks on how to avoid robberies.

…easier said than done!

While value assessment is not new to health systems in developed countries,

methods have typically focused on drugs rather than hospital and medical services.

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Beth Beaudin-Seiler

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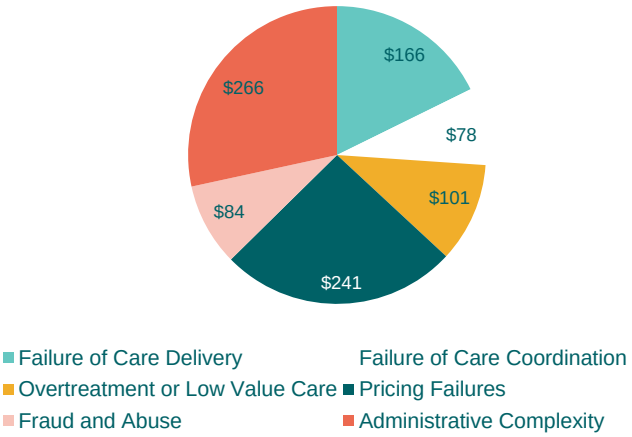
- factors underlying the rapid increases in health spending in the US and
- robust measures of high- and low-value services to align incentives for system improvement

Expanding the focus of value assessment

1. Reference: Shrank, W., Rogstad, T., Parekh, N. (2019). Waste in the US health care system: Estimated costs and potential savings. *JAMA*. Retrieved from https://jamanetwork.com/journals/jama/fullarticle/2752664

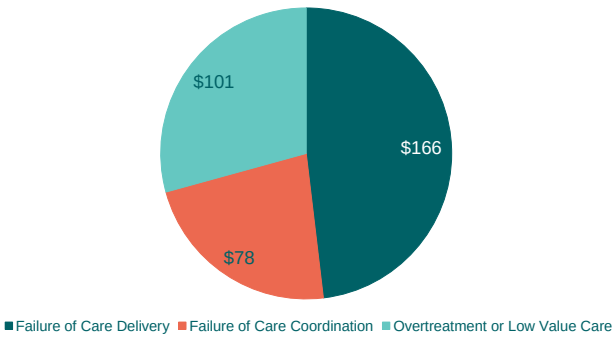
Estimated Waste in US Health Care Expenditures in Billions[1]



What's contributing to rising health care costs in the US?

1. Reference: Shrank, W., Rogstad, T., Parekh, N. (2019). Waste in the US health care system: Estimated costs and potential savings. *JAMA.* Retrieved from https://jamanetwork.com/journals/jama/fullarticle/2752664

Estimated Waste for Clinical Categories in Billions[1]



What's contributing to rising health care costs in the us?

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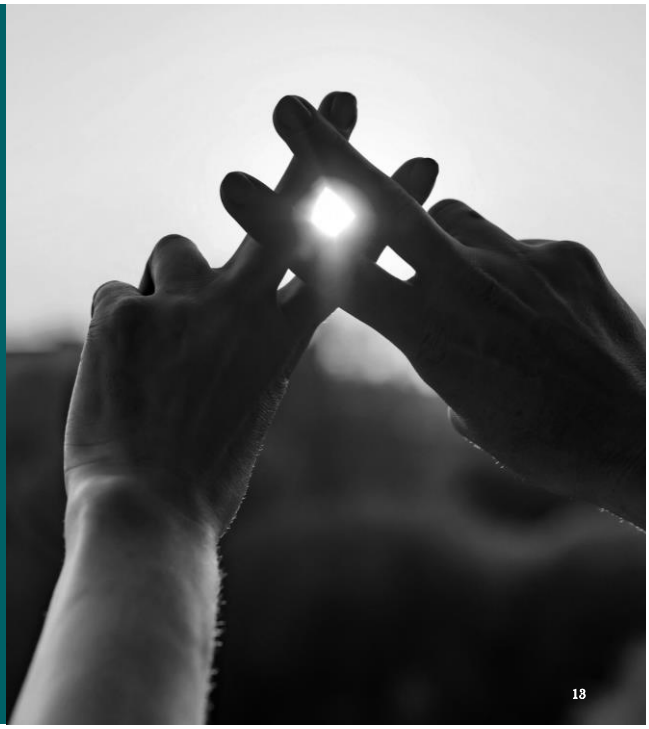
As much as $282 billion could be eliminated…

- Robust measurements
- Evidence-based strategies
- Alignment of incentives



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MEASURING LOW VALUE and HIGH VALUE CARE

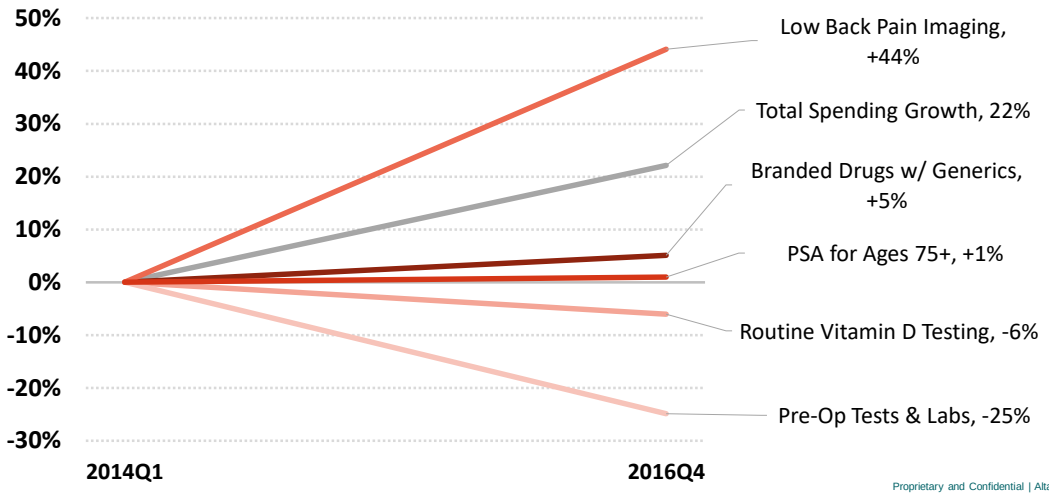
LOW VALUE

- **Vitamin D Screening Tests**
- **PSA Testing in Men 75+**
- **Unneeded Testing and Laboratory Work Prior to Low-Risk Surgery**
- **Imaging for Uncomplicated Low-Back Pain within First Six Weeks**
- **Use of More Expensive Branded Medications when Generics with Identical Active**

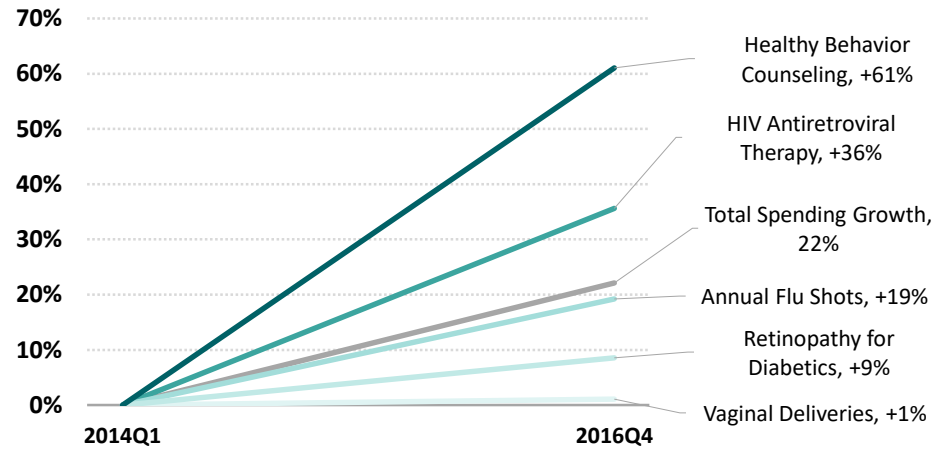
HIGH VALUE

- Retinopathy Screening for Diabetics
- Influenza Vaccinations
- HIV Therapy Drug Regimens
- Vaginal Deliveries
- Healthy Behaviors Counseling (BMI Counseling, Tobacco Counseling and Drug Abuse Counseling)

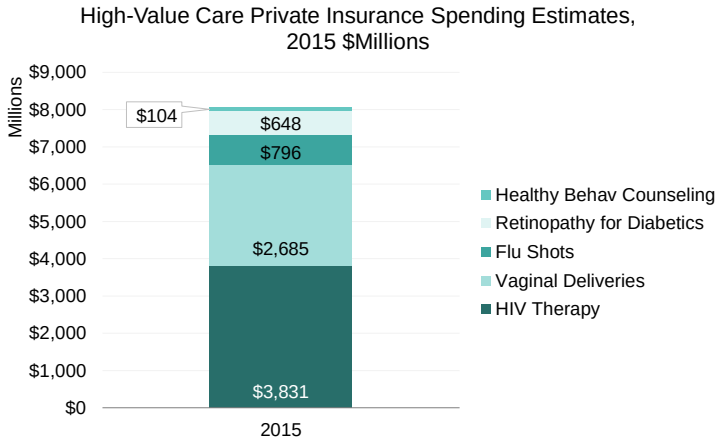
Overall Spending and Low Value Care



Overall Spending and High Value Care



High-Value Care Spending



Full Report: https://www.hcvalueassessment.org/application/files/5915/5853/6278/Research_Consortium_Research_Brief_No._1.pdf

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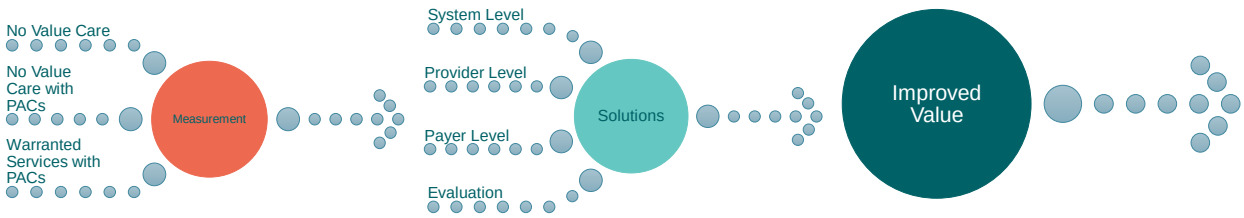
Advancing Value Through Robust Measurement and Aligned Incentives



Bruce Stuart

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HOW WE PERCEIVE VALUE IN HEALTH SERVICES

There are 2 fundamental perspectives on value and they imply very different approaches to value assessment in health services:

- Neoclassical utility theory
- Technology assessment through engineering

NEOCLASSICAL UTILITY THEORY

- The value of any drug or medical procedure is assessed by the marginal utility accruing to patients.
- Patients' expected marginal utility is measured by their willingness to pay.
- To maximize value for society as a whole requires that medical prices be determined through competitive markets and known to patients beforehand

APPLYING NEOCLASSICAL THEORY TO THE US HEALTH CARE SYSTEM

- In most sectors, health care prices are neither transparent nor determined through meaningful competition.
- This is nowhere more true than for hospital care which, not incidentally, accounts for more than 40% of all US health care spending

2019 RAND report: on average, case-mix adjusted hospital prices charged to commercial health plans were 241% higher than Medicare

HOW MUCH VALUE IS LOST THROUGH NONCOMPETITIVE PRICING OF HOSPITAL SERVICES?

The engineering approach to measuring value generally attempts:

1. to identify best practices in achieving pre-determined outcomes at the population level and
2. then determines how to produce those outcomes with the most efficient use of resources.

VALUE MEASUREMENT THROUGH TECHNOLOGY ASSESSMENT

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William Padula

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Using Economic Evaluation to Illustrate Value of Care for Improving Patient Safety and Quality: Choosing the Right Method

William V. Padula, PhD, MS, MSc,† Ken K.H. Lee, DrPH, MHS,*† and Peter J. Pronovost, MD, PhD*†‡*

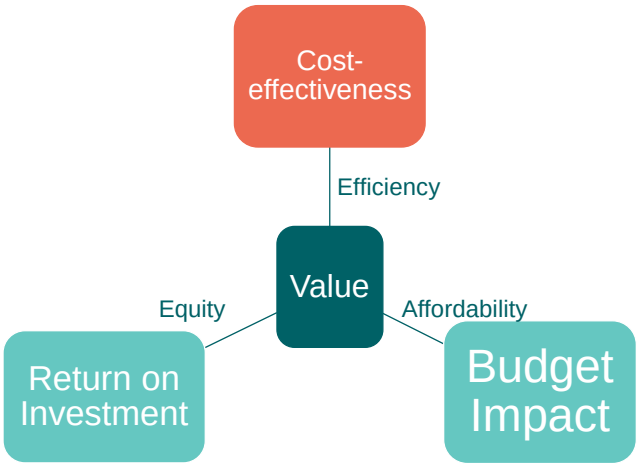
J Patient Saf • Volume 00, Number 00, Month 2017

TABLE 1. Stakeholders of QI Initiatives and the Associated Methodological Approach to Illustrate Value

Stakeholder	Approach to Economic Evaluation	Definition of Approach
Research (e.g., academic scientist, research medical liaison, hospital purchasing)	CEA, CBA	A measure of efficiency in terms of cost invested per incremental unit of effectiveness or benefit increase. Researchers in the field of health services and QI have expanded into the vast area of cost-benefit and CEA, based primarily on contributions of the U.S. PCEHM to illustrate true measures of value in terms of cost and patient well-being through NMB.
Policymaker (e.g., medical liaison to congress, public health department, payers)	BIA	Affordability of a treatment or intervention by extrapolating the difference in cost to an entire population. Policymakers prefer to interpret economic results using a BIA, that is, the cost of treatment applied across the landscape of their constituents.
Senior executives and accounting (e.g., chief executive officer, chief financial officer, certified public accountant)	ROI	Time to recoup finances invested to improve quality and reduce health system costs and inefficiencies. Health system executives, which may answer to a board in nonprofit organizations or to shareholders in for-profit organizations, usually focus on demonstrating a ROI so that funds invested in reducing cost and improving quality are quantified using traditional methods involving DCF, NPV, and IRR.

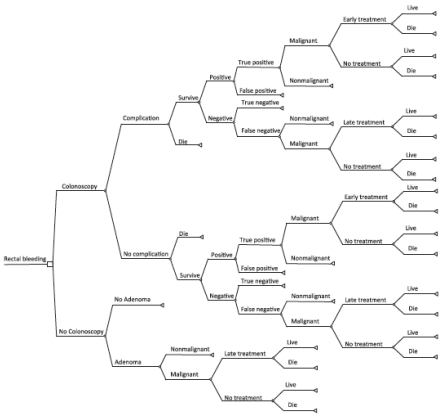
CBA, cost-benefit analysis; DCF, discounted cash flow; IRR, internal rate of return; NPV, net present value.

Value is in the Eyes of the Stakeholder

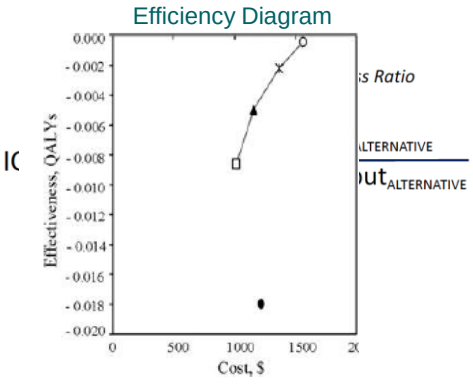


The type of value assessment a stakeholder desires may be based on goals

Cost-Effectiveness Analysis (CEA)



Value assessment methods help us translate decision analysis into cost-effectiveness in order to make efficient decisions to benefit populations' health



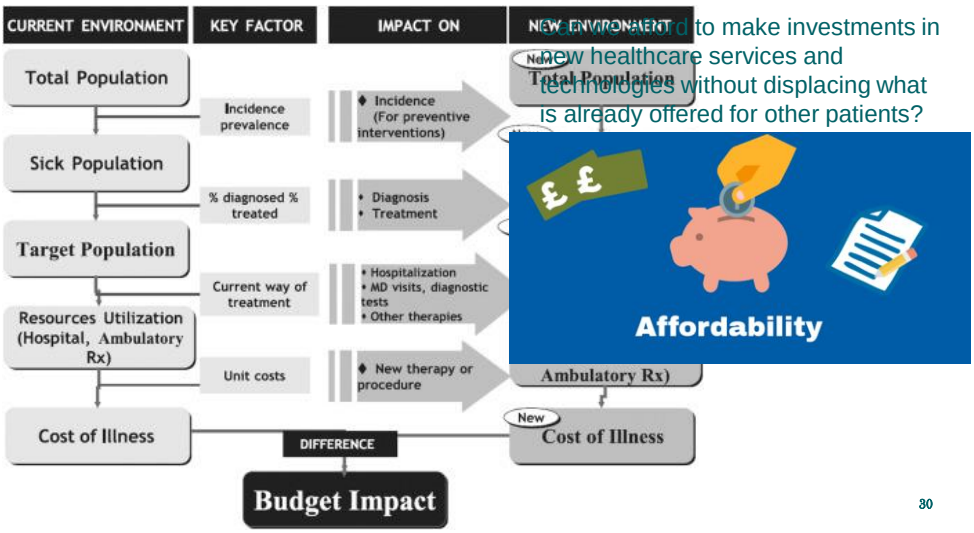
Cost-Effectiveness Analysis (CEA) Sample Calculation

"ICER" – Incremental Cost-effectiveness Ratio

$$ICER = \frac{Cost_{NEW\ PROGRAM} - Cost_{ALTERNATIVE}}{Output_{NEW\ PROGRAM} - Output_{ALTERNATIVE}}$$

- Costs
  - New Drug = € 25,000 per course of treatment
  - Alternative Drug = € 27,000 per course of treatment
- Effectiveness
  - New Drug Effectiveness = 12.3 QALYs
  - Alternative Drug Effectiveness = 10.6 QALYs
- ICER = (€ 25,000 - € 27,000) / (12.3 QALYs – 10.6 QALYs)
  = € -2,000 / 1.7 QALYs
- At a **willingness-to-pay threshold** of € 25,000 per QALY, this new technology is a **dominant** strategy compared to the alternative

Budget Impact Analysis (BIA)

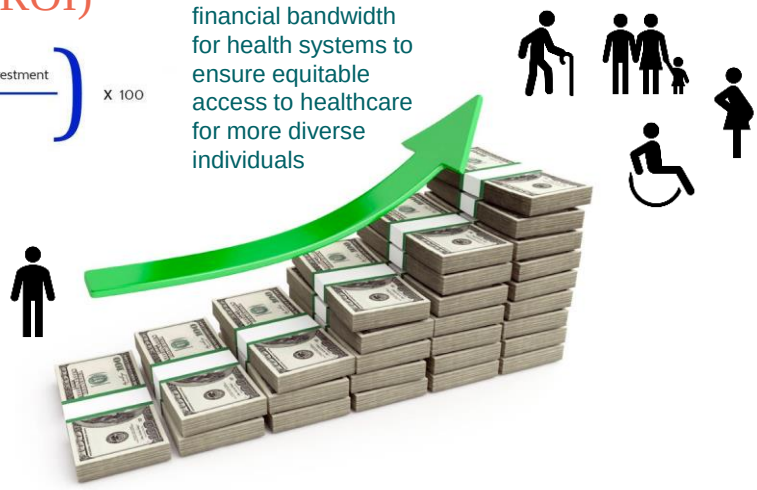


Can we afford to make investments in new healthcare services and technologies without displacing what is already offered for other patients?

Return on Investment (ROI)

$$\text{ROI (Return on Investment)} = \left(\frac{\text{Gain From Investment} - \text{Cost Of Investment}}{\text{Cost Of Investment}} \right) \times 100$$

High Returns on Investment increase financial bandwidth for health systems to ensure equitable access to healthcare for more diverse individuals

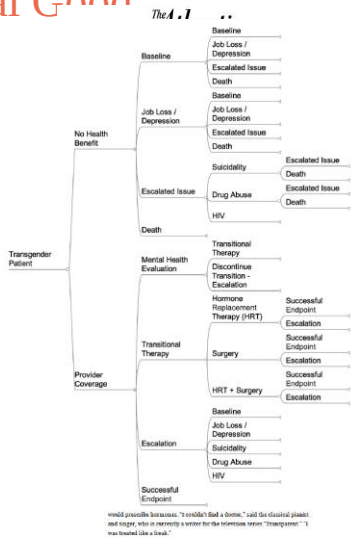


Case Study of Economic Evaluation for Social Good

Societal Implications of Health Insurance Coverage for Medically Necessary Services in the U.S. Transgender Population: A Cost-Effectiveness Analysis

William V. Padula, PhD MS MSc[1], Shiona Heru, JD[2], and Jonathan D. Campbell, PhD[3]

- Providing Health Insurance Coverage for Medically Necessary Services in the Transgender Population is ethically the right thing to do
  - Payers and governments are often turned away from paying for medically necessary services because of the high individual costs
  - But what about the cost-consequences of not covering these services?
- Cost-effectiveness analysis, 5-year time horizon
  - Cost of doing nothing: $10,712; Cost of Provider Coverage: $21,326
  - Utility of doing nothing: 3.71 QALYs; Utility of Provider Coverage: 3.98 QALYs
- ICER = ($21,326 - $10.712) / (3.98 QALY – 3.71 QALY)
  = $10,614 / 0.27 QALY = $39,311 per QALY
- Budget Impact = $10,614 x 30,000 people / 320 million citizens = $0.08 per member per month



These types of value assessment help stakeholders achieve goals

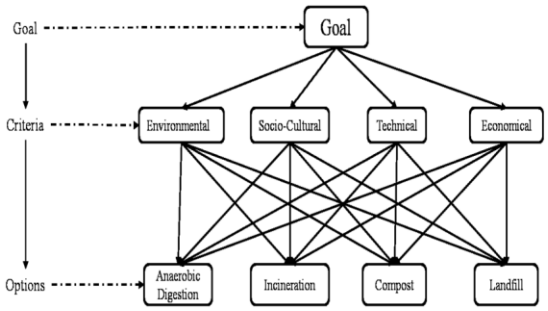
- ✓ Researchers
- ✓ Policymakers
- ✓ Payers

But what about the patient? What about the Provider?

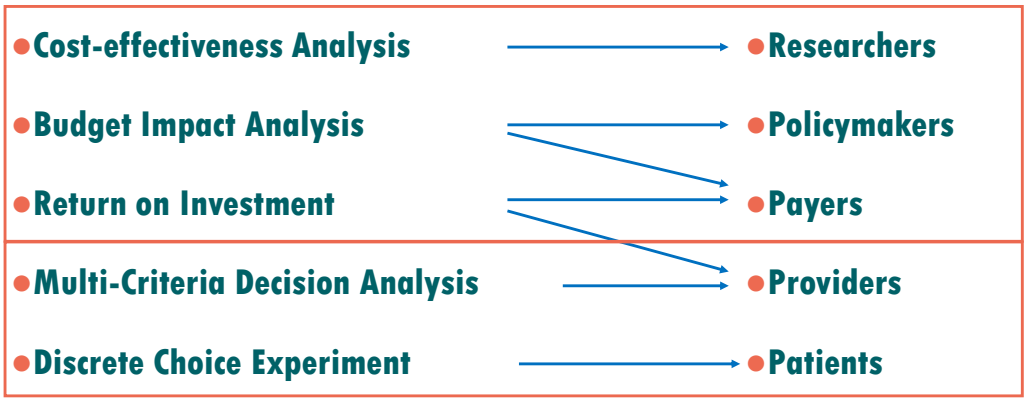
Methods to approach patient-centered value, and facilitate shared decision-making with providers

Discrete Choice Experiment (DCE)

Multi-Criterion Decision Analysis (MCDA)



How Value Assessment Methods line up with technology and health services



Why do we focus on cost components in health technology assessment, but stay away from such methods when addressing health service value?

Expanding the Role of the Patient-Centered Outcomes Research Institute: Reauthorization and Facilitating Value Assessments

William V. Padula[1,2] · R. Brett McQueen[3]

Applied Health Economics and Health Policy
https://doi.org/10.1007/s40258-019-00525-z

this methodology. In fact, PCORI statutes explicitly prohibit funding the use of any economic evaluations that use the primary statistic of a cost-effectiveness analysis, the cost per quality-adjusted life-year (QALY), otherwise known as the incremental cost-effectiveness ratio. This statute also extends to any research "that discounts the value of a life because of an individual's disability", which implicates the QALY [4].

If we want to tackle waste and reduce the use of low-value care throughout healthcare, we need to apply “health technology assessment” to all aspects of healthcare

as, for example, UK’s NICE does

Most countries spend 75% or more of their healthcare budgets on services, including waste

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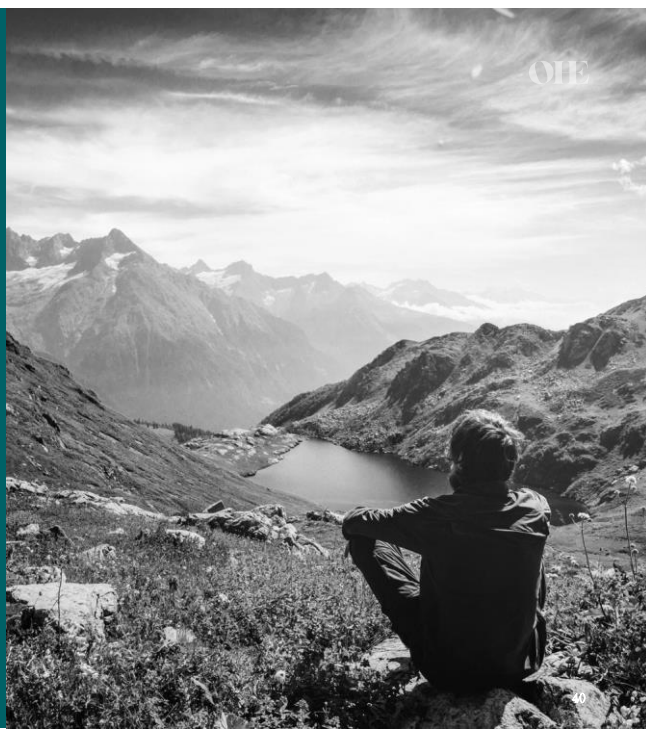
The application of HTA to non-pharmaceutical services, recognizing the need to account for differences in health care systems

HEALTH TECHNOLOGY ASSESSMENT IN THE EU

What is the role of HTA?

Its aim is to inform the formulation of safe, effective, health policies that are patient focused and seek to achieve best value.

(EUnetHTA Report, 2017) .



- Evidence-based, multidisciplinary process support healthcare decision making by assessing properties and effects of one or more new or existing health technologies in comparison with a current standard.
- Aiming at determining added value, HTA uses explicit analytical frameworks based on research and the scientific method in a systematic, transparent, unbiased way.

What exactly is HTA?

Sources: EUnetHTA, WHO, INAHTA, ISPOR

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- An intervention that may be used to promote health, to prevent, diagnose or treat acute or chronic disease, or for rehabilitation.
- Health technologies include pharmaceuticals, devices, procedures, and organizational systems used in healthcare.
  - Diagnostic and treatment procedures
  - Medical equipment
  - Pharmaceuticals
  - Rehabilitation and prevention methods
  - Organizational and supportive systems within which healthcare is provided
  - Information and communication technologies

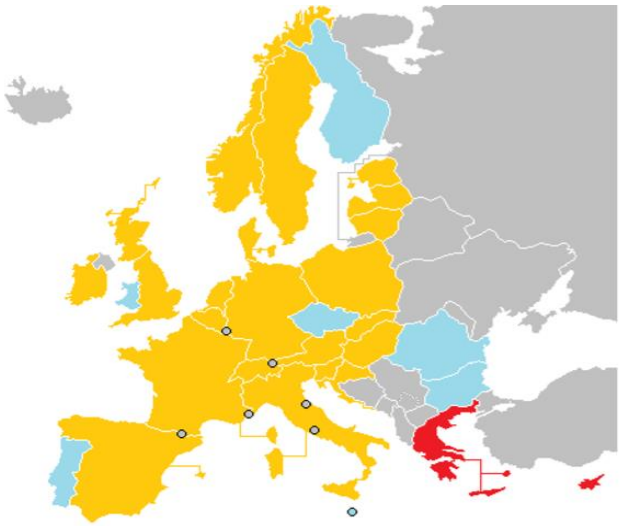
What is a health technology?

Sources: EUnetHTA, WHO, INAHTA, ISPOR

What's the problem?

Most countries in Europe assess both pharmaceuticals and non-pharmaceuticals in their HTA processes.

Source: EUnetHTA WP Final Report (2017): An Analysis Of HTA And Reimbursement Processes In EUnetHTA Partner Countries: Final Report.



Key: N=31 countries with England, Scotland and Wales counted separately; red = no current HTA procedure; blue = pharmaceuticals only; yellow = both pharmaceuticals and non-pharmaceuticals

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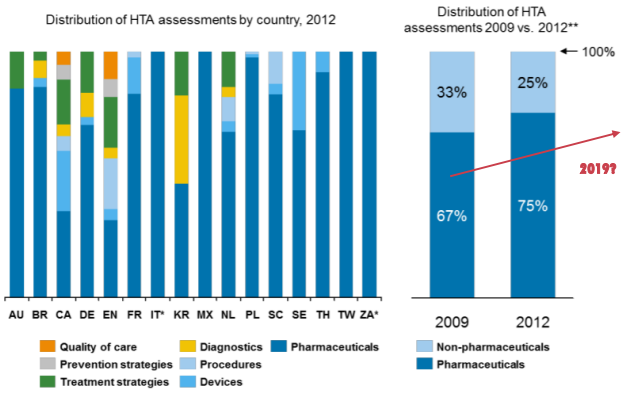
But within many countries, focus HTA shifting away from non-pharmaceuticals to pharmaceuticals

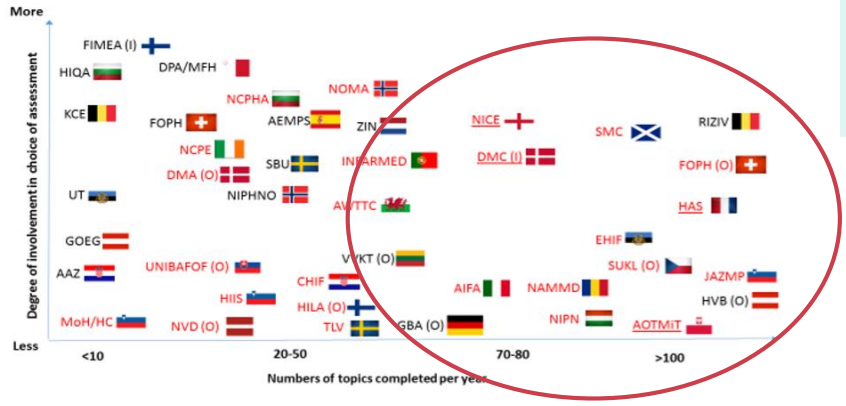
Source: Wilsdon, T., Fiz, E., & Haderi, A. (2014). A comparative analysis of the role and impact of health technology assessment: 2013. *Washington DC: Charles River Associates*.

Fig: Countries distribution of HTA by type of technology



*Source: CRA analysis; *Note: Data on 2012 assessments in Italy and South Africa are not published but it was confirmed in interviewees with the agencies and industry that only pharmaceutical assessments were conducted; ** The 2009-2012 comparison only includes those markets that were also included in the 2011 report*

Number of topics completed by agency involvement in procedure - Pharmaceuticals



Key: Black = agencies creating own REA assessment; Red = agencies appraising submissions and evaluating this rather than creating own REA assessment; Red underline = mixture of approaches depending on programme. (I) Inpatient only (O) outpatient only. Degree of involvement in choice of assessment = agencies at the bottom of the figure are not involved, agencies in the middle are involved alongside other agencies, agencies at the top choose their own topics

Source: EUnetHTA WP Final Report (2017): An Analysis Of HTA And Reimbursement Processes In EUnetHTA Partner Countries: Final Report.

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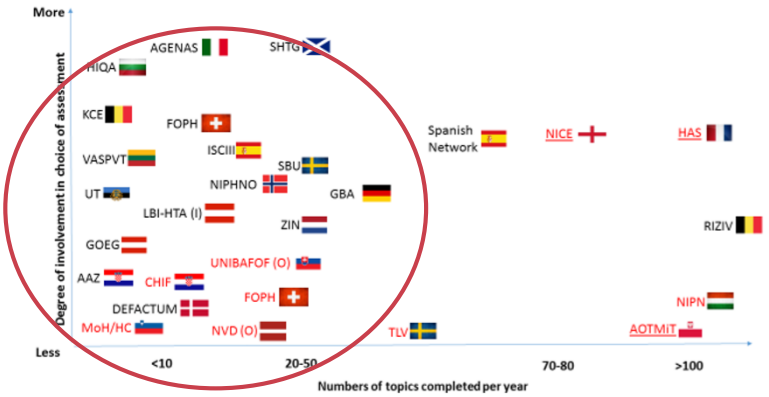
Number of topics completed by agency involvement in procedure - Non-Pharmaceuticals



Key: Black = agencies creating own REA assessment; Red = agencies appraising submissions and evaluating this rather than creating own REA assessment; Red underline = mixture of approaches depending on programme. (I) Inpatient only (O) outpatient only. Degree of involvement in choice of assessment = agencies at the bottom of the figure are not involved, agencies in the middle are involved alongside other agencies, agencies at the top choose their own topics

Source: EUnetHTA WP Final Report (2017): An Analysis Of HTA And Reimbursement Processes In EUnetHTA Partner Countries: Final Report.

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Activity Centres for managing collaborative assessments of "other technologies"

Other technologies = non-pharmaceutical procedures and medical devices

Source: Erdös, J., Ettinger, S., Mayer-Ferbas, J., de Villiers, C., & Wild, C. (2019). European Collaboration in Health Technology Assessment (HTA): goals, methods and outcomes with specific focus on medical devices. *Wiener Medizinische Wochenschrift*, 1-9.

Quality of evidence on non-pharmaceuticals is poor


VALUE IN HEALTH 20 (2017) 1420–1426

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/jval

ELSEVIER

Scientific Evidence in Health Technology Assessment Reports: An In-Depth Analysis of European Assessments on High-Risk Medical Devices

Britta Olberg, MScPH[1,2,*], Sabine Fuchs, MScPH[1], Dimitra Panteli, DrPH[1], Matthias Perleth, MD, PhD[2], Reinhard Busse, Prof. Dr. med.[1]

[1]Berlin University of Technology, Germany; [2]Federal Joint Committee, Berlin, Germany

- This study shows the **quality of scientific evidence used in HTA of high-risk medical devices is low** and therefore the use of evidence needs improvement.
- The European Commission recently updated the regulation on medical devices but mainly focused on the safety of materials and the CE-mark.
- Results show that additional changes are necessary, specifically with regard to the marketing authorization process of medical devices, with **stricter quality requirements based on methodologically robust trials, possibly in combination with other evidence sources.**

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The case for more focus on non-pharmaceuticals?

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- Note, this is **not** an argument for reducing investment in HTA for pharmaceuticals
- **The argument is for much more investment in HTA for non-pharmaceuticals**
- If we take a Value of Information (VoI) approach, the issue is uncertainty about the effectiveness and cost-effectiveness of an intervention
- Why do we care about uncertainty?
  - We want to avoid making the wrong decision
  - Can be both Type 1 and Type 2 errors (or their Bayesian equivalents)
  - At best we waste money, at worst we use technologies that don't benefit patients.
- Reducing uncertainty has to be worth it: benefits exceed costs?
  - Generating and reviewing evidence takes time and effort and costs money
  - The benefits come from reducing decision uncertainty (size of uncertainty x ability to reduce), the expected incremental health gain at stake for each patient x the numbers of patient and the expected incremental budget impact

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How do we move forward?

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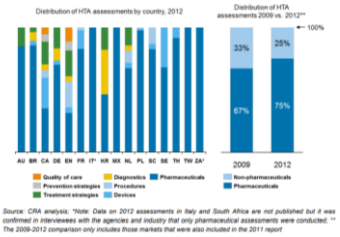
- Let's do the math, the VoI calculations about the potential returns from investment in non-pharmaceutical HTA
  - Let's look at improving the evidence base
- Let's look at the potential for avoiding duplication of effort through pan-EU initiatives through to joint assessment
  - Critical issue is the extent of context. How transferable are assessments of non pharmaceuticals as compared to pharmaceuticals.
- Should we/ can we reverse change the trend?



Source: CRA analysis; *Note: Data on 2012 assessments in Italy and South Africa are not published but it was confirmed in interviewees with the agencies and industry that only pharmaceutical assessments were conducted; ** The 2009-2012 comparison only includes those markets that were also included in the 2011 report

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QUESTIONS FROM THE AUDIENCE

RESEARCH PROPOSAL

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To enquire about additional information and analyses, please contact:

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Adrian Towse
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atowse@ohe.org

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