Value in Health Regional Issues (ViHRI): Writing Quality Manuscripts for Success

Presented by the ViHRI Asia Editorial Board

Moderator
Co-Editor-in-Chief: Bong-Min Yang, PhD

Speakers
Co-Editors: Nathorn Chaiyakunapruk, PharmD PhD
Jeff (Jianfei) Guo, MS, PhD
Kenneth KC Lee, MPhil, PhD, RPharm (HK)
Shuchun Li, PhD (Australia)
CEA, CBA, Outcomes Research & Health Policy

• Cost-effectiveness analysis
• Markov modeling for decision making
• Cost-benefit analysis
• Patient centered outcome research
• Pharmacoepidemiology & drug safety
• Public health
• Health policy

Topics for CEA, CBA and Markov modeling

• Cost-effectiveness of colonoscopy in screening for colorectal cancer
• Cost-effectiveness of population Helicobacter pylori screening and treatment
• Cost-effectiveness of new treatments for overactive bladder
• Cost-effectiveness of bronchodilator therapy for COPD patients
• Cost-effectiveness of hepatitis B immunization in low-income country
• Cost-benefit analysis of educational program for general practitioners in China for the prevention and treatment of depression
• Cost-benefit analysis of childhood vaccination against chickenpox (varicella vaccination)
• Cost-benefit analysis of immunization for pneumococcal pneumonia
Cost-Effectiveness of a Collaborative Care Depression and Anxiety Treatment Program in Patients with Acute Cardiac Illness

Christopher M. Celano, MD, PhD, MD, Brian Healy, PhD, MD, Laura Swann, MD, Douglas E. Levy, MD, PhD, MS, Edouard M. Addis, MD, James L. Januzzi, MD, Jeffrey C. Hoffman, MD

Background: The effectiveness of a collaborative care (CC) intervention for depression and anxiety in patients with acute cardiac illness has been studied. The current study aimed to determine the cost-effectiveness of a CC program using healthcare utilization and quality-of-life data from the Cardiac Care Network (CCN) and the Cardiac Outcomes in Practice (COOP) studies. Methods: The CC intervention was compared to usual care using a decision analytic model. The model was built using data from the CCN and COOP studies. Results: The CC intervention was associated with lower healthcare utilization and higher quality of life compared to usual care. The incremental cost-effectiveness ratio was $28,930 per quality-adjusted life-year (QALY) gained. Conclusions: The CC intervention is a cost-effective way to improve the healthcare outcomes of patients with acute cardiac illness.

Good Research Practices for Cost-Effectiveness Analysis Alongside Clinical Trials: The ISPOR RCT-CEA Task Force Report

Scott Ramsey, MD, PhD (co-chair), Richard Wilke, PhD (co-chair), Andrew Craig, PhD, Rick Brown, MS, Martin Buxton, PhD, Anthony Chua, PhD, John Cook, PhD, Henry Glick, PhD, Berge Lejba, PhD, Diana Petri, MD, PhD, Beverly Reed, PhD

Objective: To develop a framework for the conduct of cost-effectiveness analysis (CEA) alongside randomized controlled trials (RCTs) to ensure that research is conducted in a rigorous and transparent manner. Methodology: A Task Force was convened to develop a framework for the conduct of CEA alongside RCTs. Results: The framework includes guidelines for the design, conduct, and reporting of CEA alongside RCTs. Conclusions: The framework provides a comprehensive guide for the conduct of CEA alongside RCTs to ensure the highest quality of research.
Example#3

Cost-Benefit Analysis of Preventing Nosocomial Bloodstream Infections among Hemodialysis Patients in Canada in 2004

Zhiyong Hong, MD, DrPH,1 Jun Wu, MD, PhD,1 Clem Tisdell, PhD,2 Crystal O’Leary, BHSc,1 James Gomes, PhD,1 Shi-Wa Wai, MD, PhD,4 Howard Njoo, MD2

1Blood Safety Surveillance Division, Public Health Agency of Canada, Ottawa, ON, Canada; 2The University of Queensland, School of Economics, Brisbane, QLD, Australia; 3University of Ottawa, Faculty of Health Science, Ottawa, ON, Canada; 4University of Ottawa, Ottawa Health Research Institute, Ottawa, ON, Canada; 5Centre for Communicable Diseases and Infection Control, Public Health Agency of Canada, Ottawa, ON, Canada

ABSTRACT

Objective: Hemodialysis-associated bloodstream infections (BSIs) is a significant public health problem because the number of hemodialysis patients in Canada had doubled from 1996 to 2003. Our study aimed to determine the costs of nosocomial BSIs in Canada and estimate the potential savings for establishing isolation control programs in general hospitals and conduct cost-benefit analysis.

Methods and Methods: The data from the Canadian Nosocomial Infection Surveillance Program was used to estimate the incidence rate of nosocomial BSIs. We used Canadian Institute of Health Information data to estimate the extra costs of BSIs per day across Canada in 2004. The cost of establishing and maintaining an isolation control program in 1983 was estimated by the US Centers for Disease Control and Prevention and converted into 2004 Canadian costs. The possible 20% to 30% reduction of total nosocomial BSIs was hypothetically.

Results: A total of 22,938 hemodialysis-associated BSIs were reported among 13,278 hemodialysis patients in Canada in 2004. The total annual costs to treat BSIs were estimated to be CDN$99.8 million. Total treatment costs in prevention and treatment were CDN$13.2 million. The savings of avoided medical costs after establishing isolation control programs were CDN$86.6 million. The benefits ratio was 1.0 to 1.8.

Conclusion: Our study provides evidence that the economic benefits from implementing isolation control programs could be expected to be well in excess of additional cost per infection if the reduction of BSIs can be reduced by 20% to 30%. Isolation control offers substantial benefits, saving money while simultaneously improving the quality of care.

Keywords: Bloodstream infections, costs and benefits, health economics, isolation control program.

Topics for patient centered outcomes research

- Health care with individual’s preferences, autonomy, and needs
- Treatment outcomes related to patient’s survival, function, symptoms, and health-related quality of life;
- Individual differences and access barriers in various health care settings
- Health disparity between ethnicities, urban/rural areas, etc.
- Optimize health outcomes while addressing burden to individuals, technology, and personnel, and other stakeholder perspectives.
Topics for pharmacoepidemiology & drug safety

- Drug adverse event (or adverse drug reaction)
- Drug use evaluation
- Drug utilization pattern
- Pharmacotherapy and medication therapy management
- Risk and benefit of preventive, diagnostic, therapeutics and health delivery system

Example#4


Jeff J. Gao, PhD,1 Swapnil Pandey, MS,1 John Doyle, PhD,1,4 Boyang Shan, MS,1 Yvonne Lis, PhD,1
Debra W. Ruscic, PhD2

1University of Cincinnati Health Academic Center College of Pharmacy, Cincinnati, OH, USA; Kendall International Inc., Cincinnati, OH, USA
2Department of Epidemiology, Mailman School of Public Health, Columbia University New York, NY, USA
3Centers for Socioscientific Research, Welsh School of Pharmacy, Cardiff, UK; University of New Mexico, College of Pharmacy, Albuquerque, NM, USA

ABSTRACT

Objective. Although regulatory authorities evaluate the risk and benefit of any new drug therapy during the new drug approval process, quantifying risk–benefit assessment (RBA) is not typically performed, nor is it presented in a consistent and evaluated framework when it is used. Our purpose is to identify and describe published quantitative RBA methodologies for pharmaceuticals.

Methods. Using MEDLINE and other internet-based search engines, a systematic literature review was performed to identify quantitative methodologies for RBA. These unified RBA approaches were characterized to highlight the implications of their differences for the pharmaceutical industry and regulatory agencies.

Results. Theoretical models, parameters, and key features were reviewed and compared for the 12 quantitative RBA methods identified in the literature, including the Quantitative Framework for Risk and Benefit Assessment, benefit-risk analysis, a quality adjusted time without symptoms and toxicity, number needed to treat (NNT), and number needed to harm and their relative value adjusted versions, proportionality test, clinical efficacy, incremental net health benefit, the risk–benefit plan (RBP), the probability estimation method, multi-criteria decision analysis (MCDA), the risk–benefit contour (RBC), and the standard performance method (SPM). Whatever source approaches (e.g., NNT) rely on subjective weighting schemes or non-statistical assessments, other methods (e.g., RBP, MCDA, RBC, and SPM) assess joint distributions of benefits and risks.

Conclusions. Several quantitative RBA methods are available that could be used to help inform comparative drug assessments and to help guide authorities toward more objective and transparent decision-making. When evaluating a new drug therapy, we recommend the use of multiple RBA approaches across different therapeutic indications and treatment populations in order to understand the risk–benefit profile.

Keywords. drug safety, incremental risk–benefit ratio, multi-criteria decision analysis, number needed to treat, risk–benefit assessment, risk–benefit plan, standard performance method.
Topics for public health & health policy

- Immunization program evaluation
- Rare disease treatment and policy
- Insurance coverage and accessibility
- Reimbursement policy
- Drug pricing
- Hospital formulary
- Chronic diseases and impacts for society

Example#5
**Value in Health Regional Issues (ViHRI):**
How to become a quality peer-reviewer?

*Presented by the ViHRI Asia Editorial Board*

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**Peer-Review**

- Peer review is at the heart of the scientific method.
- Peer-review journal is a high-standard journal.
- Basically someone’s research must survive the scrutiny of experts before it is presented to the larger scientific community;
- Peer-review is by no means a perfect system, it is still the best system of scientific quality control;
- Peer-review is such a central part of the scientific process:
  - Reviewers can identify questionable scientific findings, and
  - Authors can provide objections to the rigor of review.
Reviewers (also called Referees)

• Reviewers (or Referees) are experts in a particular topic area or study field.
• They have the relevant research experience and knowledge to evaluate:
  – Study methods,
  – Result accuracy,
  – Appropriate interpretations, and
  – Reasonable limitations/discussions.

Role of Reviewers

• For authors, reviewers should provide useful comments:
  – General impressions about the manuscript (both strong points and week points)
  – Specific problems, such as:
    • inappropriate research design,
    • inadequate data analysis,
    • limited sample size,
    • inappropriate outcome/dependent variables,
    • fail to control confounding variables,
    • wrong interpretation,
    • major limitation,
    • misspelling, or table-design, or figure-design, etc.
• For Editors, reviewers should alert the editor to any of above problems, and make recommendations as to whether a paper should be accepted, returned to the authors for revisions, or rejected.
• Referees are not expected to replicate results or (necessarily) to be able to identify deliberate fraud.
Editor’s page for VIHRI

Quality Review

• Quality review increases the quality of manuscripts, and quality manuscript increases the quality of journal;
• Speedy review accelerates the editorial process and speed-up the publication;
  – Speed-up editorial process will satisfy authors.
• Our Editors usually score (0-100) the quality of reviewer for each manuscript review.
  – Higher quality review will be helpful and encouraged.
Example of Reviewer’s Comments

Different Review Comments for Different Kind of Manuscripts

• Experimental original research
  – design appropriate? Control employed? Ethical standard? Better way for research question?...

• Non-experimental original research
  – Design appropriate? Comparison? Confounding factors? Any major limitation?....

• Systematic review & review
• Methodological article
• Policy perspectives
• Brief report
Becoming a peer-reviewer for VIHRI

• Be a member of ISPOR (Asian-Consortium);
• Publish at least one manuscript in VIH/VIHRI;
• Publish one paper in Elsevier relevant journals;
• Accept our invitation for peer-reviewer and enter your interested areas by categories;
• Co-Editors can enroll a specific reviewer via system;
• Etc...