Incorporating Comparative Effectiveness Research Knowledge and Tools into Practice: Three Perspectives

Thursday, April 3
2:45 pm - 4:00 pm
Room 13 - 16

Speakers
J. Daniel Allen, PharmD
Newell McElwee, PharmD, MSPH
Eleanor Perfetto, PhD
Helen Sherman, PharmD

This session is supported by an independent educational grant from the National Pharmaceutical Council
SPEAKER BIOGRAPHIES

J. Daniel Allen, BPharm, PharmD

Dan Allen is a Clinical Pharmacist Consultant for OmedaRx (formerly known as RegenceRx) based in Portland, Oregon. Dan is responsible for developing and producing evidence-based medication reviews, support of formulary and medical policy development, and support of prior authorization and consulting with the pharmaceutical industry on improving clinical trial design. Dan also presents and advises on complex medical information to physicians and pharmacists in Pharmacy and Therapeutics committee settings for both internal and external health-plan clients.

Dan has a varied pharmacy background which includes experience in inpatient hospital, home infusion, industry-based drug information and drug safety, PBM and specialty pharmacy. Dan graduated with a BS Pharm and a PharmD from the University of Washington and completed a two-year, ASHP accredited residency in hospital pharmacy.

Dan is a member of AMCP, a JMCP peer reviewer, and a former member of the Editorial Advisory Board. He is currently a member of the Format Executive Committee.

Newell McElwee, PharmD, MSPH

Newell McElwee is pharmacist and epidemiologist with over 25 years of experience in Outcomes Research. Newell is currently the Executive Director of the U.S. Outcomes Research group in the Center for Observational and Real-World Evidence at Merck & Co., Inc. Prior to joining Merck in April 2009, he was Vice President, Outcomes Research at Pfizer. Newell has been active and has had leadership roles in various professional societies related to Outcomes Research and recently completed a term on the ISPOR Board of Directors (2011-13). He is also currently a member of the AHRQ National Advisory Council, the AHRQ CERTs Steering Committee, the AMCP Format Executive Committee, FMCP Board of Directors, and the IOM Roundtable on the Promotion of Health Equity and Elimination of Health Disparities. Newell received his B.S. in Pharmacy from Northeast Louisiana University, his PharmD degree at Mercer University, and his MSPH (epidemiology) at the University of Utah. He also completed an ASHP residency in clinical pharmacy and a post-doctoral fellowship in clinical pharmacology and toxicology.

Eleanor M. Perfetto, PhD, MS

Eleanor Perfetto joined the University of Maryland School of Pharmacy faculty in July 2013. There she has teaching and research responsibilities. Prior to joining the University of Maryland, Dr. Perfetto was with Pfizer Inc as Senior Director, Federal Government Relations, monitoring and analyzing healthcare policy issues, particularly regarding comparative effectiveness research, healthcare quality performance measurement, patient-focused drug development, and reimbursement.

Dr. Perfetto holds BS and MS degrees in pharmacy from the University of Rhode Island, and a PhD from the University of North Carolina School of Public Health, concentrating in health policy and epidemiology. She currently serves as a Pharmacy Quality Alliance (PQA) and Center for Medical Technology Policy board member. In 2008, she was appointed to the Centers for Medicare and Medicaid Services (CMS) Medicare Evidence Development & Coverage Advisory Committee. She is the current co-chair of the National Quality Forum’s (NQF) Alzheimer’s Disease and Related Dementias
Project. She has served on the Board of Advisors for the Health Industry Council and served for six years on the Drug Information Association Board of Directors and is a past President of the association.

Dr. Perfetto is an Assistant Editor for the Journal of Managed and Specialty Care Pharmacy and serves as a peer reviewer for journals, government granting agencies, and pharmacy professional organizations. She has spoken at many national and international conferences on comparative effectiveness research, quality, health economics and outcomes research, and related policy and regulatory topics. She has contributed book chapters, published in professional journals, and presented at scientific meetings. In 2009, she received a Distinguished Alumni award from the University of Rhode Island.

Helen Sherman, PharmD

Helen Sherman is a Vice President for Solid Benefits Guidance (SBG) and has over 25 years of experience in supporting payers, consumers, and health care professionals with informed, value-based decisions.

With a lifelong commitment to advancing the best use of medications, Helen is an advocate of health care transparency and value by using scientific evidence as a foundation for decisions. She is dedicated to helping clients develop effective solutions in a dynamic, evolving health care marketplace.

Helen has comprehensive leadership experience in pharmacy benefit management, including business development, market evaluation, contracting, clinical services, rebate management, sales, account management, operations, claims processing, customer service, Medicare D, regulatory requirements, and vendor/system transitions.

Helen spent 15 years in the health plan/pharmacy benefit industry, including as Vice President for Business Development and Chief Pharmacy Officer for RegenceRx (a health plan-owned pharmacy benefit manager). Helen’s accountabilities included providing leadership and strategies to support medication purchasing decisions for 10 million members nationwide, as well as responsibility for over $1 billion in pharmaceutical spend.

Additionally, Helen has experience in retail and hospital pharmacy, home infusion, hospice, and worker’s compensation consulting.

Helen is an internationally recognized speaker and thought leader on a variety of topics, including how to apply evidence-based medicine to determine the value of medications.

Helen’s national leadership service includes the Editorial Advisory Board of Atlantic Information Services (AIS); Blue Cross Blue Shield Association National Council of Physician and Pharmacy Executives (NCPE); Academy of Managed Care Pharmacy (AMCP) Format Executive Committee; and Comparative Effectiveness Collaborative, AMCP/National Pharmaceutical Council (NPC)/International Society for Pharmacoeconomic and Outcomes Research (Co-Chair).

Helen received her Bachelor of Science in Pharmacy at Oregon State University, Doctor of Pharmacy at Purdue University, Residency Certificate at Good Samaritan Hospital (Portland, Oregon), and completed a Pharmacokinetics/Infectious Disease Fellowship at State University of New York (Buffalo).
Incorporating Comparative Effectiveness Research Knowledge and Tools into Practice: Three Perspectives

An AMCP-ISPOR-NPC CER Collaborative Initiative

Sponsorship

• This session is supported by an independent educational grant from the National Pharmaceutical Council
Learning Objectives

- Identify opportunities for P&T committees and drug evaluation units to consider CER data as part of their formulary decision-making processes
- Discuss the importance of inculcating an understanding of CER into drug information courses and drug evaluation courses in schools and colleges of pharmacy
- Explain how pharmaceutical industry health economics outcomes research (HEOR) departments could incorporate CER guidelines into pre- and post-marketing study design recommendations

Continuing Pharmacy Education Credit

- Visit www.amcp.org
- Click on “Claim my CPE”
- Have available:
  - AMCP member ID
  - NABP e-profile ID
- Complete and submit session evaluation no later than May 5, 2014
- Information in CPE Monitor after June 4, 2014
Financial Relationship Disclosures

- J. Daniel Allen reports having no financial relationships with any commercial interests during the past 12 months.
- Newell McElwee receives both a salary and stock as an employee of Merck and owns stock in Pfizer as a former employee.
- Eleanor Perfetto received compensation as a consultant for Avalere Health.
- Helen Sherman received an honorarium from Janssen Pharmaceuticals for serving on an editorial board.

How to Participate in Audience Response

- Have your cell phone ready.
- Text responses to **22333**
  - Standard text messages apply.
  - Poll Everywhere cannot see your telephone number.

**EXAMPLE**

How do you like my presentation so far?

- Amazing
- Incredibly Amazing
- It's Alright

Text CODE 22333
Speakers

J. Daniel Allen, PharmD
Clinical Pharmacist Consultant
OmedaRx
Portland, Oregon

Newell McElwee, PharmD, MSPH
Executive Director, U.S.
Outcomes Research
Merck & Co., Inc
Whitehouse Station, New Jersey

Eleanor Perfetto, PhD, MS
Professor
University of Maryland School of Pharmacy
Baltimore, Maryland

Helen Sherman, PharmD
Vice President
Solid Benefit Guidance
Portland, Oregon
### Learning Assessment Question #1

Important activities to consider while implementing the ICER evidence synthesis method into the formulary decision-making process include:

- a. Extensive staff training
- b. In-service to P&T committees over multiple meetings
- c. Continuous quality improvement
- d. All of the above

### Learning Assessment Question #2

In the future, how can an understanding of CER and the methods used in CER be incorporated into a school of pharmacy curriculum?

- a. Included throughout the curriculum, as part of coursework and practical rotations
- b. As part of specific courses that address research methods and assessment of the literature
- c. As part of residencies and fellowships
- d. All of the above
Learning Assessment Question #3

Which of statement about the CER Collaborative online tools is not true?

- a. The tools use agreed upon elements of “good practice” for conducting studies
- b. The tools provide the ability to evaluate evidence in a similar fashion at different times, and with different individuals or organizations
- c. The need for evidence is considered for those generating and using evidence
- d. When evidence is considered before embarking on the actual research, industry has an improved return on investment which in turn leads to reduced research funding

Payer Approach Evidence in Varying Ways

- Types and sources of evidence considered differ
- Few organizations grade evidence for rigor and quality

Leung MY. J Manag Care Pharm. 2012;
Environmental Context

**Staff Resources**
- Consolidation
- ACA Requirements

**Increased Presence of Real World Data**
- Growing Number of Studies
- Evolution in Research Techniques
- Increased Availability of High Quality Observational Data

CER Collaborative: Advancing Use of Comparative Evidence to Improve Health Outcomes

*A Collaboration of the Academy of Managed Care Pharmacy, the International Society for Pharmacoeconomics and Outcomes Research and the National Pharmaceutical Council*

**Objective:**
- Guidance and practical tools to help P&T members critically appraise CER (primarily observational) studies to inform decision-making
- Provide greater uniformity and transparency in the use and evaluation of CER for coverage and decision-making
Special Thanks to Work Groups Members

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Retrospective</th>
<th>Indirect Treatment Comparisons</th>
<th>Modeling</th>
<th>Synthesizing a Body of Evidence</th>
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<tbody>
<tr>
<td>Dan Allen</td>
<td>Winnie Yang</td>
<td>Sherry Andes</td>
<td>Cheryl Kaltz</td>
<td>Lisa Cashman</td>
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<td></td>
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<td>Catamaran</td>
<td>U. of Michigan</td>
<td>MedImpact</td>
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<td>Eric Cannon</td>
<td>Jessica Dau</td>
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<td>Kristijan Kahler</td>
<td>Joseph C. Cappelleri</td>
<td>John Penrod</td>
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<td>John Graham</td>
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<td>Vijay Joish</td>
<td>Hong Kan</td>
<td>Rahul Ganguly</td>
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<td>Don Husereau</td>
<td>William Crown</td>
<td>Thomas Trikalinos</td>
<td>David Eddy</td>
<td>Bryan Luce</td>
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<tr>
<td>U. Ottawa</td>
<td>OptumInsight Life</td>
<td>Tufts Medical Center</td>
<td>Archimedes inc.</td>
<td>PCORI</td>
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<tr>
<td>Dan Mullins</td>
<td>Michael Johnson</td>
<td>Georgia Salanti</td>
<td>Andy Briggs</td>
<td>Richard Willke</td>
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<tr>
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<td>U. of Ioannina</td>
<td>U. of Glasgow</td>
<td>Pfizer</td>
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<td>Marc Berger (Chair)</td>
<td>Bradley Martin (Chair)</td>
<td>Jeroen Jansen (Chair)</td>
<td>J. Jaime Caro (Chair)</td>
<td>Pfizer</td>
</tr>
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<td>U. of Arkansas</td>
<td>Redwood Consulting</td>
<td>United BioSource Corp.</td>
<td>AstraZeneca</td>
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<td>Helen Sherman</td>
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<td>(Select Benefit Guidance)</td>
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AMCP/ISPOR/NPC CER Collaborative

Part 1: Critically appraise an individual study
Observational Studies Modeling Indirect Comparison

Part 2: Synthesize evidence from multiple studies with varying designs/reliability

Part 3: Assessing the Evidence by Decision-Makers: A Toolkit
IMPLEMENTATION OF THE ICER METHOD AT OMEDARX

J. Daniel Allen, PharmD
Agenda

• Motivation for formalizing evidence synthesis
• Selecting ICER
• Implementation
• Lesson’s learned

Who is OmedaRx?

• Stand-alone PBM wholly owned by Cambia Health Solutions
  – Formerly RegenceRx
  – Cambia Health Solutions – Blue Cross/Blue Shield franchisee in Oregon, Washington, Idaho, Utah
  – Full PBM services to the Regence family of health plans
• Provide formulary guidance and utilization management strategies to “Blues” and non-Blues plans nationwide
  – Medication Reviews
  – Medication Policies
  – P&T Support
Why Implement ICER?

• Challenge: How do you systematically summarize separate clinical trials and available safety information?
• Institute for Clinical Effectiveness Research (ICER)
  – Academic research group at Massachusetts General Hospital and Harvard Medical School
  – Rating system evolved from earlier AHIP workgroup guided by insurers to meet needs for coverage decision-making
• Freely available, nationally vetted, meshes with current evaluation methods

Implementation

• Extensive staff training
• Inservice to clients’ P&T committees over multiple meetings
• Ongoing training
• Continuous quality improvement
• Decision tracking
• Developing custom formulary frameworks for each clients
### The ICER Rating Matrix

<table>
<thead>
<tr>
<th>High Certainty</th>
<th>D (Inferior)</th>
<th>C (Comparable)</th>
<th>B (Small / Modest Benefit)</th>
<th>A (Moderate / Large benefit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate Certainty</td>
<td>I (Insufficient to determine)</td>
<td>P/I (Promising but Inconclusive)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Certainty</td>
<td>I (Insufficient to determine)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

| Negative Health Benefit | Comparable Health Benefit | Incremental Health Benefit | Substantial Health Benefit |

### The ICER Rating Matrix – Effect of Certainty

<table>
<thead>
<tr>
<th>High Certainty</th>
<th>D (Inferior)</th>
<th>C (Comparable)</th>
<th>Treatment Effect</th>
<th>A (Moderate / Large benefit)</th>
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</thead>
<tbody>
<tr>
<td>Moderate Certainty</td>
<td>I (Insufficient to determine)</td>
<td>Treatment Effect</td>
<td></td>
<td></td>
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<tr>
<td>Low Certainty</td>
<td></td>
<td>Treatment Effect</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Negative Health Benefit | Comparable Health Benefit | Incremental Health Benefit | Substantial Health Benefit | Treatment Effect |

[210] Incorporating CER Knowledge and Tools into Practice: Three Perspectives
Considerations for using the ICER Matrix

- Most reviews involve two comparisons - against placebo and against existing therapies
- New therapies often lack direct comparative trials
  - Compare the evidence synthesis of placebo-controlled data
- This process is always subject to peer review
  - We challenge each other on our assessment of the evidence, our assessment of the standard of care, and our assessment of the safety profile
### Finding Certainty of Benefit

<table>
<thead>
<tr>
<th>Certainty of Benefit</th>
<th>Definitions of Evidence (ICER)</th>
<th>Quantification of Studies (OmedaRx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Certainty</td>
<td>Allows estimation for the relative potential chances / magnitude of net health benefit</td>
<td>&gt;1 high confidence study; consistent results OR &gt;2 Fair confidence studies with: • Consistent results • Possibly clinically meaningful endpoint</td>
</tr>
<tr>
<td>Moderate Certainty</td>
<td>Difficult to estimate the net health benefit with precision</td>
<td>&gt;1 high confidence study; inconsistent results OR &gt;1 Fair confidence study with: • Consistent results • Possibly clinically meaningful endpoint OR &gt;2 low confidence studies with: • Consistent results • Possibly clinically meaningful endpoint</td>
</tr>
<tr>
<td>Low Certainty</td>
<td>Insufficient to allow assessment of the net health benefit</td>
<td>Low confidence studies not meeting threshold for moderate certainty (defined above) OR &gt;2 Fair confidence studies with inconsistency in the results</td>
</tr>
</tbody>
</table>

### Determining Magnitude of Health Benefit

<table>
<thead>
<tr>
<th>High Certainty</th>
<th>D (Inferior)</th>
<th>C (Comparable)</th>
<th>B (Small / Modest Benefit)</th>
<th>A (Moderate / Large benefit)</th>
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<tbody>
<tr>
<td>Moderate Certainty</td>
<td>I (Insufficient to determine)</td>
<td>P/I (Promising but Inconclusive)</td>
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<tr>
<td>Low Certainty</td>
<td>I (Insufficient to determine)</td>
<td></td>
<td></td>
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</table>

- **Negative Health Benefit**
- **Comparable Health Benefit**
- **Incremental Health Benefit**
- **Substantial Health Benefit**
Make safety modification to point estimate

<table>
<thead>
<tr>
<th>Safety Conclusion Example</th>
<th>Estimate of Certainty</th>
<th>Estimate of Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Track record with proven advantages (over active comparator)</td>
<td>← ←</td>
<td>↑</td>
</tr>
<tr>
<td>Track record with no new safety concerns</td>
<td>← ←</td>
<td>← ←</td>
</tr>
<tr>
<td>Insufficient track record</td>
<td>↓</td>
<td>← ←</td>
</tr>
</tbody>
</table>

2013 New Medications: Overall Evidence and Clinical Trials Quality

- **Individual Clinical Trials**
  - High confidence (1) 1%
  - Fair confidence (11) 13%
  - Low confidence (76) 86%

- **Medications’ ICER Evidence Synthesis**
  - High certainty (1) 2%
  - Review in progress (8) 18%
  - Moderate certainty (17) 40%
  - Low certainty (17) 40%
Case Example 1: Omalizumab

Clinical question:
• Does omalizumab reduce the rate of severe asthma exacerbations in ambulatory adults and children ≥12 yrs. with moderate to severe allergic asthma?
• What is the net clinical benefit of omalizumab compared with standard treatment?

PICOT
• P= ambulatory adults and children > 12 years of age
• I= omalizumab
• C= standard of care (ICS/LABA)
• O= asthma exacerbation, steroid reduction etc.

<table>
<thead>
<tr>
<th>Study #</th>
<th>Author</th>
<th>Year</th>
<th>Design</th>
<th>Omal N</th>
<th>Control N</th>
<th>Duration</th>
<th>Pop'n</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Busse</td>
<td>2001</td>
<td>R, DB, PC</td>
<td>268</td>
<td>257</td>
<td>1 yr</td>
<td>US, mod-severe AA</td>
</tr>
<tr>
<td>2</td>
<td>Soler</td>
<td>2001</td>
<td>R, DB, PC</td>
<td>274</td>
<td>272</td>
<td>1 yr</td>
<td>US+, mod-severe AA</td>
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<tr>
<td>3</td>
<td>1IC</td>
<td>Unpub (FDA)</td>
<td>R, DB, PC</td>
<td>176</td>
<td>165</td>
<td>32 wk</td>
<td>Non-US, severe AA, use of FP</td>
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<tr>
<td>4</td>
<td>Niven</td>
<td>2008</td>
<td>R, OL, STC (ICS+LABA)</td>
<td>115</td>
<td>49</td>
<td>1 yr</td>
<td>European, mod-severe poorly-controlled AA</td>
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<tr>
<td>5</td>
<td>Hanania</td>
<td>2011</td>
<td>R, DB, PC (ICS+LABA)</td>
<td>427</td>
<td>423</td>
<td>1 yr</td>
<td>US+Canada, severe poorly controlled AA</td>
</tr>
<tr>
<td>6</td>
<td>Humbert</td>
<td>2005</td>
<td>R, DB, PC (ICS+LABA)</td>
<td>209</td>
<td>210</td>
<td>28 wk</td>
<td>European, recent exacerbation, add-on w/hi-dose ICS+LABA</td>
</tr>
<tr>
<td>7</td>
<td>1A04</td>
<td>Unpub (FDA)</td>
<td>OL, STC (hi-dose FP)</td>
<td>206</td>
<td>106</td>
<td>1 yr</td>
<td>European, mod-severe poorly-controlled AA</td>
</tr>
<tr>
<td>8</td>
<td>Brusselle</td>
<td>2009</td>
<td>OL, UC</td>
<td>158</td>
<td>--</td>
<td>1 yr</td>
<td>Belgian, severe AA, add-on to OAT</td>
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<tr>
<td>9</td>
<td>Korn</td>
<td>2009</td>
<td>OL, longitudinal</td>
<td>280</td>
<td>--</td>
<td>24 wk</td>
<td>German, severe AA, add-on to OAT</td>
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</table>
Case Example 2: Efficacy

<table>
<thead>
<tr>
<th>Study #</th>
<th>Annualized Asthma Exacerbation Rate (omalizumab vs. control)</th>
</tr>
</thead>
</table>
| 1       | Stable phase: 0.28 vs. 0.54  
Steroid reduction: 0.39 vs. 0.66 |
| 2       | Stable phase: 0.28 (0.15-0.41) vs. 0.66 (0.49-0.83)  
Steroid reduction: 0.36 (0.24-0.48) vs. 0.75 (0.58-0.92) |
| 3       | Stable phase: 0.45 vs. 0.38*  
Steroid reduction: 0.98 vs. 0.92* |
| 4       | 1.26 vs. 3.06  RR=0.41 (0.29-0.58) |
| 5       | 0.66 vs. 0.88  IRR=0.75 (0.61-0.92) |
| 6       | 0.68 vs. 0.91 (not significant when unadjusted for baseline history)  
RR=0.74 (0.55-1.00) |
| 7       | 1.1 vs. 2.9 |
| 8       | 0.9 |
| 9       | 0.3 ± 0.8 |

Case Example: Safety

- Anaphylaxis 0.1%
- Malignant neoplasms 0.5%
- Most Commonly reported AEs with similar rate vs. control Injection site reactions
  - Viral infections
  - URI
  - Sinusitis

Omalizumab BLA 103976/5102. FDA.gov
### Active Learning Question

Which is **not** a net benefit point estimate of omalizumab vs. standard care?

<table>
<thead>
<tr>
<th>Option</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative net benefit</td>
<td>175554</td>
</tr>
<tr>
<td>Comparable net benefit</td>
<td>175576</td>
</tr>
<tr>
<td>Small net benefit</td>
<td>175647</td>
</tr>
<tr>
<td>Meta analysis not available</td>
<td>175866</td>
</tr>
<tr>
<td>Substantial net benefit</td>
<td>175872</td>
</tr>
</tbody>
</table>

### Active Learning Question

Which of the following is **not** one of the seven key domains to assess limitations to the net benefit certainty?

<table>
<thead>
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<th>Option</th>
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</thead>
<tbody>
<tr>
<td>Amount of evidence</td>
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</tr>
<tr>
<td>Potential bias due to the design and conduct of studies</td>
<td>177494</td>
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<tr>
<td>Directness (e.g., surrogate outcomes or indirect comparisons)</td>
<td>177495</td>
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<tr>
<td>Duration of studies given the time needed to capture important benefits and harms</td>
<td>177727</td>
</tr>
<tr>
<td>Precision of results</td>
<td>177729</td>
</tr>
<tr>
<td>Number of authors</td>
<td>177732</td>
</tr>
<tr>
<td>Applicability of results (i.e., generalizability to the “real world”)</td>
<td>177733</td>
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</tbody>
</table>
Active Learning Question

Your confidence in the net benefit is high if the point estimate:

a. Falls within one category
b. Extends to two categories (e.g., comparable and small)
c. Extends to three categories (e.g., comparable, small/incremental and substantial)
d. Extends across all four categories (e.g., negative through substantial)

TEXT TO
22333

a. 177737
b. 177898
c. 177899
d. 177906

Active Learning Question

What is the likelihood that the net benefit is negative?

a. None
b. Small
c. Moderate/high

TEXT TO
22333

a. 178376
b. 178882
c. 179263
Incorporating CER Knowledge and Tools into Practice: Three Perspectives
Lessons Learned

• Successful clinical evidence synthesis is dependent on rigorous clinical evidence evaluation
• Agreed upon, uniform grading and synthesis guidelines important for maintaining quality across multiple reviewers
• Never allow the quantification guidelines to override professional judgement

Eleanor Perfetto, PhD, MS

INCORPORATING COMPARATIVE EFFECTIVENESS RESEARCH KNOWLEDGE AND TOOLS INTO PRACTICE: ACADEMIA PERSPECTIVE
Active Learning Question

Have you had a class in epidemiology, biostatistics, or evidence-based medicine or a class in how to read the literature?

a. Yes
b. No
c. Sort of

a. 184674
b. 184675
c. 184698

Active Learning Question

How confident do you feel that you could assess a study that uses indirect treatment comparisons or network meta-analysis methods (ITC/NMA)?

1. I am an expert at ITC/NMA
2. I would be able to get by
3. I would struggle
4. Using a what??????

a. 184899
b. 184980
c. 184983
d. 184986
Education Goals

- Awareness
- Share with Colleagues/Peers
- See One
- Apply Consistently
- Do One

Three Approaches

1. University of Maryland School of Pharmacy
   - P2 Year required course
   - Epidemiology and Medical Evidence required course
   - 5 two-hour workshops during the semester
   - P&T Competition

2. University of Washington School of Pharmacy
   - P&T competition
   - PY2-Y4 students in a managed care elective course

3. University of Florida College of Pharmacy
   - P&T Competition
   - Graduate seminars for Pharmaceutical Outcomes & Policy Students
   - Online MS Managed Care Pharmacy Benefit Management course
University of Maryland School of Pharmacy Approach

All modules
- prospective and retrospective observational studies;
- modeling;
- indirect treatment comparisons

Advanced literature reading assignment

Enter into tools as a group assignment

Coordinated with lectures, e.g., lecture on observational studies followed by a workshop with the tools

University of Maryland School of Pharmacy- Learnings

Benefits of Approach
- A new way of teaching epidemiology and how to read the literature
- Highly structured approach: students were directed which tool to use for assignments

Limitations of Approach
- Lack of familiarity with terms (e.g., interaction, precision, etc.)
University of Maryland Future Year Approach

- P1 and P2 because of curriculum changes
- Less emphasis on didactic epi training
- More active learning on how to read and use the literature
- Lectures revamped to reflect the modules more directly, allows for a better synthesis of the evidence at the end
- Add an elective for pharmacy students who want more depth
- Introduce to grad students in CER/PCOR classes

Future Enhancements- Other Programs

- Inclusion in courses and across courses to increase evidence evaluation
- More explicit directions to help new users employ tools correctly
- Apply to a specific case study/drug example
- Complete literature evaluation course in future
  - Incorrect use of tool to evaluate RCTs
  - Mixed class- some had prior literature evaluation experience
- Timing
  - Lengthy process for in-class assignment
  - Complete as a homework assignment in the future
AMCP P&T Competition

• Required use of tools for aflibercept evaluation in P&T competition
• Opportunities exist
  – Improve instructions and training for faculty
  – Improve understanding of types of individual studies (RCTs vs. Observational)
  – Synthesis tools (across studies) is a new concept for many students; tried to apply to each study
  – Consistency and understanding to grow over time.

CER Certificate Program

http://www.pharmacists4knowledge.org/cips/cer
Year One Learnings Aid Future Education Needs Expansion

Enhance Tools (version 2.0 enhancements, validation)

BROADEN USE AND DRIVE REDUCTION IN ASSESSMENT VARIATION

Future Opportunities

Education (CE programs, Drug Info/MC Residency programs)

Helen Sherman, PharmD

INCORPORATING COMPARATIVE EFFECTIVENESS RESEARCH KNOWLEDGE AND TOOLS INTO PRACTICE: INDUSTRY PERSPECTIVE
Evidence Generation is Uncertain

Greater Uncertainty, Increases Risk, Decreases Incentives for Innovation

Elements of Risk
- Research has inherent risk
- Future marketplace can be unpredictable
- Stakeholders do not agree on the outcomes of interest
- Variable agreement on studies should be conducted (especially in real-world)
- Variation in evidence evaluation
- Contextual factors vary for different organizations
- Inability/risk for communication of evidence in real-world

Need to Uncover and Reduce Uncertainty

Few standards for "Inclusion"
Scientific judgments

Preference judgments
Organization specific

Analysis and Synthesis of Evidence (BLACK BOX)

Value Judgments

Information about Outcomes

Decisions/policy

Formulary

AMCP Dossiers

How to submit Evidence

CER Collaborative Tool Improves the Evidence Assessment Dialogue

- **Clarity**
  - Agreed upon elements of “good practice” for conducting studies
  - When evidence is considered = ROI for investing in further research
- **Consistency**
  - Evaluation of evidence in a similar fashion at different times or different individuals or organizations
- **Transparency**
  - Need for evidence is considered for those generating and using evidence

CER Collaborative Improves Evidence Generation Certainty

**Benefits**
- Tool was built from initial good practices for research and is designed for decision makers and researchers
- Part of the good practices to be incorporated in study design, management, conduct and reporting
- Expect evolution as research methods are enhanced

**Future Collaborations**
- Common agreement across various good practices and guidelines
- Required for external investigators and collaborators?
- Feasibility in a journal vs. study report
Improved Evidence Certainty Could Improve ROI for Evidence Generation

Incentives for Research
- Increased clarity on conduct and evaluation standards
- Investment in RWE?

Disincentives for Research
- Focus on utilization management
- Cost > evidence

A First Step to Reduce Uncertainty

Few standards for “Inclusion”
Scientific judgments

Organization specific
Preference judgments

How to submit Evidence
AMCP Dossiers

Analysis and Synthesis of Evidence (BLACK BOX)

Value Judgments

Information about Outcomes

Decisions/policy

Formulary

Retrospective Observational Studies

- Case study:

Adherence to Varenicline and Associated Smoking Cessation in a Community-Based Patient Setting

Joshua N. Liberman, PhD; Marc J. Lichtenfeld, PhD; Aaron Galaznik, MD; Vera Massei, BPharm, MS; James Hammett, PharmD, MPH; Kelly H. Zou, PhD; Joseph B. Leader, BA; and H. Lester Kirchner, PhD

www.amcp.org Vol. 19 No. 2 March 2013 JMCP Journal of Managed Care Pharmacy 125


**Study Credibility Helper Questions**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Can't answer</th>
<th>Add Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did the authors prospectively develop a comparative hypothesis?</td>
<td><img src="image1" alt="Image" /></td>
<td><img src="image2" alt="Image" /></td>
<td><img src="image3" alt="Image" /></td>
<td><img src="image4" alt="Image" /></td>
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<td>Was there evidence that a formal study protocol and an analysis plan were prospectively developed prior to executing the study?</td>
<td><img src="image5" alt="Image" /></td>
<td><img src="image6" alt="Image" /></td>
<td><img src="image7" alt="Image" /></td>
<td><img src="image8" alt="Image" /></td>
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<td>Was sample size and statistical power to detect differences addressed?</td>
<td><img src="image9" alt="Image" /></td>
<td><img src="image10" alt="Image" /></td>
<td><img src="image11" alt="Image" /></td>
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<td>Was the follow-up period of sufficient duration to detect differences addressed?</td>
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<td><img src="image14" alt="Image" /></td>
<td><img src="image15" alt="Image" /></td>
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<td>Were the sources, criteria, and methods for selecting participants appropriate to address the study hypotheses?</td>
<td><img src="image17" alt="Image" /></td>
<td><img src="image18" alt="Image" /></td>
<td><img src="image19" alt="Image" /></td>
<td><img src="image20" alt="Image" /></td>
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<td>Was there an adequate rationale provided for key inclusion and exclusion criteria?</td>
<td><img src="image21" alt="Image" /></td>
<td><img src="image22" alt="Image" /></td>
<td><img src="image23" alt="Image" /></td>
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<td>Was there an assurance that subject encounters or data were adequately recorded over the entire study time frame for each subject?</td>
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<td>For case-control studies, were the methods of case ascertainment and control selection appropriate?</td>
<td><img src="image29" alt="Image" /></td>
<td><img src="image30" alt="Image" /></td>
<td><img src="image31" alt="Image" /></td>
<td><img src="image32" alt="Image" /></td>
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<td>For cohort studies, were the methods of follow-up appropriate?</td>
<td><img src="image33" alt="Image" /></td>
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<td><img src="image35" alt="Image" /></td>
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<td>For matched studies, were the matching criteria appropriate?</td>
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<td><img src="image39" alt="Image" /></td>
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**Active Learning Question**

If the answers to questions 1-3, 5, and 7 are “no” should an HEOR group reconsider their methods?

- a. Yes
- b. No

**TEXT TO**

- a. 186205
- b. 186228
### Active Learning Question

If Reporting and Interpretation are strong but Credibility, Data, and Analysis are weak, should the HEOR group reconsider their design and/or discussion section of the research paper?

a. Yes
b. No

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**DATA**

1. **Was exposure defined and measured in a valid way?**
   - [ ] Yes
   - [ ] No
   - [ ] Can't answer

2. **Have the primary outcomes been defined and measured in a valid way?**
   - [ ] Yes
   - [ ] No
   - [ ] Can't answer

3. **Were the data sources sufficient to support the study?**
   - [ ] Yes
   - [ ] No
   - [ ] Can’t answer

4. **Was the follow up time the same among comparison groups? OR were differences in follow up accounted for in the analysis?**
   - [ ] Yes
   - [ ] No
   - [ ] Can’t answer

**ANALYSIS**

1. **Were sensitivity analyses performed to assess key assumptions or definitions?**
   - [ ] Yes
   - [ ] No
   - [ ] Can’t answer

2. **Was there thorough assessment of potential measured and unmeasured confounding?**
   - [ ] Yes
   - [ ] No
   - [ ] Can’t answer

**REPORTING**

1. **Were analyses of subgroups or interactions of effects reported for comparison groups?**
   - [ ] Yes
   - [ ] No
   - [ ] Can’t answer

2. **Were the methods defined in sufficient detail to enable replication?**
   - [ ] Yes
   - [ ] No
   - [ ] Can’t answer

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**TEXT TO 22333**

a. 186488
b. 186489
Incorporating CER Knowledge and Tools into Practice: Three Perspectives

**Interpretation**

1. Were the results consistent with prior known information or if not was an adequate explanation provided for the inconsistent results? [25]
   - Yes
   - No
   - Can't answer

2. Are the results (differences demonstrated) considered clinically meaningful? [24]
   - Yes
   - No
   - Can't answer

3. Are the conclusions fair and balanced? [27]
   - Yes
   - No
   - Can't answer

4. Was the impact of unmeasured confounding discussed? [17]
   - Yes
   - No
   - Can't answer

5. Were there any potential conflicts of interest? [23]
   - Yes
   - No
   - Can't answer

6. If there were potential conflicts of interest, were steps taken to address these? [18]
   - Yes
   - No
   - Can't answer

Based on your answers, is the Conflict of Interest domain a "Strength," "Neutral," or "Weakness" to the study? [22]

- Strength
- Neutral
- Weakness

**Conflicts of Interest**

- Sufficient
- Insufficient
Implications for Industry

• Use familiar language of the decision-maker
• Ensure research meets good practice principles through eyes of health care decision makers
  – Consider when designing research
  – Review when finalizing publications
  – Consider when communicating evidence to decision-makers
• Training
• Dialogue, dialogue, dialogue

Implications for Collaborative

• Formal and Informal Training Needed
  – Directions and use of tools
• Tool Enhancement
  – Ongoing testing and re-evaluation of tools
  – Experts and non-experts
• Time to Complete
  – Requires thorough review of article
  – Time to understand/find information
• “Seal” of Approval
  – Determine if there is a common agreement on studies
### Learning Assessment Question #1

Important activities to consider while implementing the ICER evidence synthesis method into the formulary decision-making process include:

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<tbody>
<tr>
<td>a.</td>
<td>Extensive staff training</td>
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<td>b.</td>
<td>In-service to P&amp;T committees over multiple meetings</td>
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<tr>
<td>c.</td>
<td>Continuous quality improvement</td>
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<tr>
<td>d.</td>
<td>All of the above</td>
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**TEXT TO**

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### Learning Assessment Question #2

In the future, how can an understanding of CER and the methods used in CER be incorporated into a school of pharmacy curriculum?

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<tbody>
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<td>a.</td>
<td>Included throughout the curriculum, as part of coursework and practical rotations</td>
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<tr>
<td>b.</td>
<td>As part of specific courses that address research methods and assessment of the literature</td>
</tr>
<tr>
<td>c.</td>
<td>As part of residencies and fellowships</td>
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<td>d.</td>
<td>All of the above</td>
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Learning Assessment Question #3

Which of statement about the CER Collaborative online tools is **not** true?

- a. The tools use agreed upon elements of “good practice” for conducting studies
- b. The tools provide the ability to evaluate evidence in a similar fashion at different times, and with different individuals or organizations
- c. The need for evidence is considered for those generating and using evidence
- d. When evidence is considered before embarking on the actual research, industry has an improved return on investment which in turn leads to reduced research funding

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<tr>
<td>a. 174774</td>
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<tr>
<td>b. 175505</td>
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<tr>
<td>c. 175528</td>
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<tr>
<td>d. 175538</td>
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Questions?