Comparative Effectiveness Research

Neil R. Powe, MD, MPH, MBA
Chief of the Medical Service
San Francisco General Hospital
Constance B. Wofsy Distinguished Professor of Medicine and Vice-Chair of Medicine,
University of California San Francisco
What’s hot in Health Care Reform

- Public Option
- Electronic Medical Records
- Elimination of pre-existing exclusion
- Patient-Centered Care
- Accountable Care Organizations
- Payment based on value not volume
- Integrated health delivery systems
- Federal Health Board
- Transparency in data, costs and outcomes
- Personalized health care and personalized information
- Chronic care models and Transitional Care Models
- Prevention and wellness programs
- **Comparative Effectiveness**
- Payment reform/Medicare cuts
- Shared decision making
Overview

• 2009 American Recovery and Reinvestment Act
• IOM Committee on Comparative Effectiveness Research
• Issues in Ophthalmology for Comparative Effectiveness Research
• Comparative Effectiveness in U.S. Health Reform
American Recovery and Reinvestment Act of 2009
111th U.S. Congress

• $1.1 billion for Comparative Effectiveness Research
  – $300,000 Agency for Healthcare Research and Quality (AHRQ)
  – $400,000 NIH - Office of Director (can be transferred to institutes and centers)
  – $400,000 at discretion of HHS Secretary

- Institute of Medicine to produce a report to Congress by June 30, 2009 (for ≤$1.5 million) that includes recommendations on the national priorities for CER to be conducted or supported with the funds and considers input from stakeholders
American Recovery and Reinvestment Act of 2009
111th U.S. Congress

• Federal Coordinating Council for CER (AHRQ, CMS, NIH, National HIT Coordinator, FDA, VA, DOD)
  – Half should be physicians or other experts with clinical expertise

• Strong Congressional Oversight - Operating plan and report on obligations, expenditures and unobligated balances
Comparative Effectiveness is not entirely new

- Late 1970s and 1980s -- Technology Assessment
- 1990s and 2000s -- Outcomes Research
- 2009 and beyond -- Comparative Effectiveness Research
Congressional Intent of CER funding

• “Funding shall be used to accelerate development and dissemination of research assessing the comparative effectiveness of health care treatments and strategies through efforts that:
  – Conduct, support, or synthesize research that compares the clinical outcomes, effectiveness and appropriateness of items, services and procedures that are used to prevent, diagnose or treat diseases, disorders and other health conditions
  – Encourage the development and use of clinical registries, clinical data networks and forms of electronic health data that can be used to generate outcomes”
Initial National Priorities for Comparative Effectiveness Research

www.iom.edu/cerpriorities

Institute of Medicine
Committee on Comparative Effectiveness Research Prioritization

HAROLD C. SOX (Co-Chair)
SHELDON GREENFIELD (Co-Chair)
CHRISTINE K. CASSEL
KAY DICKERSIN
ALAN M. GARBER
CONSTANTINE GATSONIS
GARY L. GOTTLIBEB
JAMES A. GUEST
MARK HELFAND
M. CAROLINA HINESTROSA*
GEORGE J. ISHAM

ARTHUR A. LEVIN
JOANN E. MANSON
KATIE MASLOW
MARK B. MCCLELLAN
SALLY C. MORTON
NEIL R. POWE
JOE V. SELBY
LISA SIMPSON
SEAN TUNIS
I. STEVEN UDVARHELYI
EUGENE WASHINGTON
JAMES N. WEINSTEIN

* Deceased
Charge to Committee

Recommend national priorities for CER to be conducted or supported by funds from the American Recovery and Reinvestment Act of 2009.

• Obtain national input from a wide variety of stakeholders, to develop a list of no fewer than 50 priorities
• Define how these recommended priorities should be incorporated into a balanced portfolio
• Recommend priority actions for ensuring the infrastructure and workforce for a long-term, sustainable national CER enterprise
IOM Definition of Comparative Effectiveness Research (CER)

The generation and synthesis of evidence that compares the benefits and harms of alternative methods to prevent, diagnose, treat, and monitor a clinical condition or to improve the delivery of care. The purpose of CER is to assist consumers, clinicians, purchasers, and policy makers to make informed decisions that will improve health care at both the individual and population levels.
What is different from what we have been doing?

• For many years, the government has regulated drugs and devices and supported biomedical research, but the goal was usually to establish if a particular treatment was safe and effective
  – Is latanoprost effective and safe in treating open angle glaucoma?

• not if it was better than the alternatives.
  – Is latanoprost MORE effective or LESS safer than timolol in treating open angle glaucoma?
Other Examples of CER

• Is it better to treat severe neck pain with surgery or a combination of physical therapy, exercise and medications?

• What is the best combination of “talk therapy” and prescription drugs to treat mild depression?

• How do drugs and “watchful waiting” compare with surgery as a treatment for leg pain that results from blockage of the arteries in the lower legs?

• Is it better to treat chronic heart failure by medications alone or by drugs and home monitoring of a patient’s blood pressure and weight?
Distribution of the recommended research priorities by primary and secondary research areas

Number of Priority Topics

Secondary Research Area
Primary Research Area

Ophthalmology
IOM Committee Priorities in Eye Disease

• Compare the effectiveness of different treatment options (e.g. laser therapy, intrathecal steroids, antivascular endothelial growth factor (anti-VEGF) for diabetes retinopathy, macular degeneration, and retinal vein occlusion.

Some examples:

• For moderate-severe diabetics retinopathy or retinal vein occlusion, laser alone vs anti-VEGF therapy plus laser vs anti-VEGF plus laser and/or intravitreal steroids

• For age-related macular degeneration, bevacizumab (Avastin) vs ranibizumab (Lucentis)
IOM Committee Priorities in Eye Disease

- Compare the effectiveness of treatment strategies for primary open angle glaucoma (e.g. initial laser surgery, new surgical techniques, new medical treatments) particularly in minority populations to assess clinical and patient reported outcomes

Some examples:

- For glaucoma recalcitrant to medical therapy (or subsequent laser trabeculoplasty), surgical trabeculoplasty vs traditional shunt surgery vs express shunt surgery
- Generic vs brand name medications
- Important clinical and patient-reported outcomes: visual field loss, optic nerve damage, side effects, reading, walking, driving, job function, hobbies.
### IOM Committee’s Recommended Research Priorities by Study Populations

<table>
<thead>
<tr>
<th>Study Population (multiple populations could be assigned to a topic)</th>
<th>Number of Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults (including elderly)</td>
<td>36</td>
</tr>
<tr>
<td>Population at Large (general population)</td>
<td>28</td>
</tr>
<tr>
<td>Women</td>
<td>27</td>
</tr>
<tr>
<td>Special Populations (e.g. pregnant women, low income, disabled)</td>
<td>24</td>
</tr>
<tr>
<td>Men</td>
<td>22</td>
</tr>
<tr>
<td>Children/Adolescents Only</td>
<td>20</td>
</tr>
<tr>
<td>Elderly Only</td>
<td>15</td>
</tr>
<tr>
<td>Other</td>
<td>13</td>
</tr>
<tr>
<td>Long-Term Care</td>
<td>7</td>
</tr>
<tr>
<td>Ethnic Subpopulations Only</td>
<td>5</td>
</tr>
<tr>
<td>Adults (excluding elderly)</td>
<td>4</td>
</tr>
<tr>
<td>Rare Diseases</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>203</strong></td>
</tr>
<tr>
<td>Types of Interventions</td>
<td>Number of Topics</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Systems of Care</td>
<td>43</td>
</tr>
<tr>
<td>Pharmacological Treatment</td>
<td>36</td>
</tr>
<tr>
<td>Standard of Care</td>
<td>33</td>
</tr>
<tr>
<td>Behavioral Treatment</td>
<td>29</td>
</tr>
<tr>
<td>Prevention</td>
<td>24</td>
</tr>
<tr>
<td>Procedures</td>
<td>23</td>
</tr>
<tr>
<td>Provider Patient Relationships</td>
<td>20</td>
</tr>
<tr>
<td>Treatment Pathways</td>
<td>19</td>
</tr>
<tr>
<td>Testing, Monitoring, and Evaluation</td>
<td>17</td>
</tr>
<tr>
<td>Devices</td>
<td>13</td>
</tr>
<tr>
<td>Alternative Treatment</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>284</strong></td>
</tr>
</tbody>
</table>

NOTE: The total exceeds the total number of priority topics as respondents were allowed to select multiple interventions to be compared for each topic.
IOM Recommendations

1. Prioritization of CER topics should be a sustained and continuous process, recognizing the dynamic state of disease, interventions, and public concern.

2. Public (including consumers, patients, and caregivers) participation in the priority-setting process is imperative to provide transparency in the process and input to delineating research questions.
IOM Recommendations

3. Consideration of CER topics requires the development of robust, consistent topic briefs providing background information, current practice and research status of the condition and its interventions.

4. Regular reporting of the activities and recommendations of the prioritizing body is necessary to evaluate the portfolio’s distribution, its impact for discovery, and its translation into clinical care in order to provide a process for continuous quality improvement.
IOM Recommendations

5. The HHS Secretary should establish a mechanism—such as a coordinating advisory body—with the mandate to strategize, organize, monitor, evaluate and report on the implementation and impact of the CER Program.

6. The CER Program should fully involve consumers, patients, and caregivers in key aspects of CER, including strategic planning, priority setting, research proposal development, peer review, and dissemination.
   - The CER Program should develop strategies to reach out to, engage, support, educate, and, as necessary prepare consumers, patients, and caregivers for leadership roles in these activities.
   - The CER Program should also encourage participation in CER in order to create a representative evidence base that could help identify health disparities and inform decisions by patients in special population groups.
IOM Recommendations

7. The CER Program should devote sufficient resources to research and innovation in the methods of CER, including the development of methodological guidance for CER study design such as the appropriate use of observational data and more informative, practical, and efficient clinical trials.
IOM Recommendations

8. The CER Program should help to develop **large-scale, clinical and administrative data networks** to facilitate better use of data and more efficient ways to collect new data to inform CER.

   – The CER Program should ensure that CER researchers and institutions consistently adhere to best practices to protect privacy and maintain security.

   – The CER Program should support the development of methodologies for linking patient-level data from multiple sources.

   – The CER Program should encourage data holders to participate in CER and provide incentives for cooperation and maintaining data quality.
IOM Recommendations

9. The CER Program should develop and support the workforce for CER to ensure the nation’s capacity to carry out the CER mission. Important next steps include:

– Development of a strategic plan for research workforce development.

– Long-term, sufficient funding for early career development including expanding grants for graduate and postgraduate training opportunities in comparative effectiveness methods as well as career development grants and mid-career merit awards.
IOM Recommendations

10. The CER Program should **promote rapid adoption of CER findings** and conduct research to identify the most effective strategies for disseminating new and existing CER findings to health care professionals, consumers, patients, and caregivers and for helping them to implement these results in daily clinical practice.
Health Reform Debates about CER

• What is it?
• How will it be used?
• How will it be funded in the future?
• How will it be governed?
What is it?

• Lawmakers and lobbyists agree that researchers should compare the clinical merits of different treatments.

• **Whether they should also consider cost is hotly debated**
  
  – House Appropriations Committee inadvertently stoked concerns in a report accompanying its version of the economic recovery bill. Research comparing different treatments could “yield significant payoffs” because less effective, more expensive treatments “will no longer be prescribed.”

  – Some have said the new research will eventually save money and lives and patients are put at risk, and billions of dollars are spent each year on ineffective or unnecessary treatments.
How will it be used?

• In a report filed with the bill, negotiators said they did not intend for the research money to be used to “mandate coverage, reimbursement or other policies for any public or private payer.”

• Consumer groups, labor unions, large employers and pharmacy benefit managers support CER, saying it would fill gaps in the evidence available to doctors and patients.

• Critics say it will put the government in the middle of the doctor-patient relationship -- bureaucrats “will monitor treatments to make sure your doctor is doing what the federal government deems appropriate and cost-effective,”
How will it be funded?

- Tax on healthcare insurance expenditures including Medicare
How will it be governed?

• Senate – Not for profit entity in private sector, Governing Board
• House – Within HHS, External Advisory Council
Other Issues

• Women and members of minority groups expressed concern about that approach. Drugs and other treatments can affect different patients in different ways, they said, but researchers often overlook the differences because their studies do not include enough women, blacks or Hispanics.

• In a letter to House leaders, the Congressional Black Caucus said, “We are concerned that comparative effectiveness research will be based on broad population averages that ignore the differences between patients.”
AHRQ Spending Plan for Comparative Effectiveness Research in 2010:

New Grants ($198.5 million):

- $148 million for evidence generation, including prospective studies and patient registries:
- $100 million for the Clinical and Health Outcomes Initiative in Comparative Effectiveness (CHOICE), a new national effort to establish a series of prospective pragmatic clinical comparative effectiveness studies that measure the benefits treatments produce in routine clinical practice. This will include novel study designs focusing on real-world and under-represented populations (children, elderly, racial and ethnic minorities, and other understudied populations).
- $48 million for the establishment or enhancement of national patient registries that can be used for researching the longitudinal effects of different interventions and collecting data on under-represented populations.
- $29.5 million to support innovative translation and dissemination grants.
- $20 million to support training and career development.
- $1 million for other grants.
AHRQ Spending Plan for Comparative Effectiveness Research in 2010:

New Contracts ($19.5 million):
$9.5 million to establish an infrastructure to identify new issues for comparative effectiveness research.
$10 million to establish a citizen’s forum to engage stakeholders and to expand and standardize public involvement in the federal comparative effectiveness research program.

Expand Existing Contracts ($79 million):
$50 million for evidence synthesis.
$24 million for evidence generation.
$5 million for translation and dissemination.

Administration ($3 million):
$3 million for salary and benefits for new AHRQ staff to administer the CER program.
Health Conditions Selected for Comparative Effectiveness Research by AHRQ:

• **14 priority conditions** designated earlier by the HHS Secretary under the Medicare Modernization Act. High interest for Medicare, Medicaid, and the Children’s Health Insurance Program (CHIP):

1. Arthritis and non-traumatic joint disorders
2. Cancer
3. Cardiovascular disease, including stroke and hypertension
4. Dementia and other brain and nerve conditions, including Alzheimer’s Disease
5. Depression and other mental health disorders
6. Developmental delays, attention-deficit hyperactivity disorder, and autism
7. Diabetes mellitus
8. Functional limitations and disability
9. Infectious diseases including HIV/AIDS
10. Obesity
11. Digestive system conditions (peptic ulcer disease and dyspepsia)
12. Pregnancy including preterm birth
13. Pulmonary disease and asthma
14. Alcohol and drug abuse
Summary

• More than ever, great deal of interest in and funding for comparative effectiveness research
• Initial priorities have been established by the IOM and AHRQ
• How comparative effectiveness research will be governed and used is still evolving and prototypical of the current debates on health reform