

**Comparative Effectiveness Research  
in US Federal Research Agencies**  
Where Is It Headed, When Will It Get There and  
Will It Make A Difference  
(For US or for You) ?

David Atkins, MD, MPH  
Director, Quality Enhancement Research Initiative  
Veterans Healthcare Administration  
Washington, DC

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"I am indebted to Jean Slutsky, Director,  
Center for Outcomes and Evidence at  
the Agency for Healthcare Research and  
Quality for some material in this  
presentation. "

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**Disclaimer**

- I am not speaking as a private citizen and not on behalf of any US Agency
- I have no commercial interests

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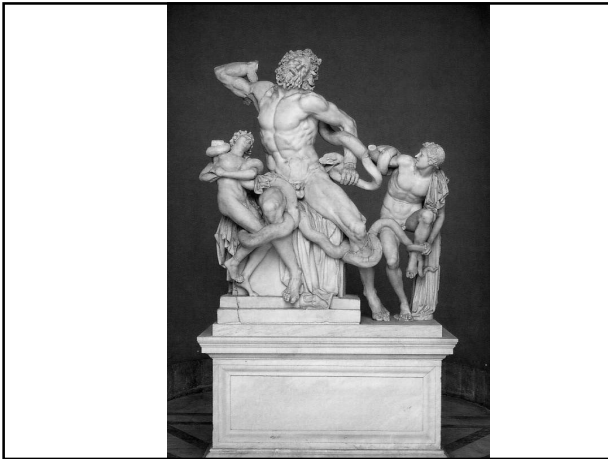
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### What I Will Say

- \$1.1 billion new investment in *comparative effectiveness research* by US government
- Two reasons for interest in CER
  - Hope CER will identify ways to reduce spending
  - Current research doesn't reflect needs of decision makers
- How CER will be used to guide health policy in the US is not yet known
  - Complicated political issue
- May signal more fundamental change in how research and regulatory approval is conducted
  - But probably not in near future

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### Current Political Context

- Obama Administration attempting to reform US healthcare in middle of economic crisis.
- Dual Goals:
  - Expand coverage to 40 million uninsured
  - Reduce rate of growth of health care costs
- Expanding coverage is easy (but expensive)
- Restraining costs in US is much harder

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### Interest in Comparative Effectiveness is Not New

- Unsustainable growth of healthcare costs acknowledged by both political parties
- Options include:
  - Reduce payments to physicians and hospitals
  - Restrict costs of pharmaceuticals and devices
  - Reduce overuse of ineffective procedures
- Regional variation in practice and spending well-documented
- Can comparative effectiveness less controversial areas to cut costs without harming health?

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### Existing Research Paradigm Does Not Serve Decision-Makers

- Discovery-based research at NIH
- Industry-sponsored trials for regulatory approval or marketing
  - “safe and effective”
- Little emphasis on *comparing* alternatives with comprehensive outcomes
- Little emphasis on *real world (effectiveness)* study conditions

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### What Healthcare Decision Makers Need To Know

- *Can it work?*
- *Will it work?*
  - In which patients?
  - Under what conditions?
- Is it *worth* it?
  - Do benefits outweigh harms?
  - Do benefits justify costs?
- Is it better than existing alternatives?

*adapted from Brian Haynes  
ACP Journal Club*

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## What Types of Questions Do Decision-Makers Have?

- **Payment** -- *Should Federal insurance pay for implantable cardiac defibrillators (ICD) for heart failure in patients over age 65? Which patients?*
- **Clinical Practice Guidelines** – *Should diuretics be the primary treatment for uncomplicated hypertension?*
- **Patient** -- *Should I take medications or have surgery for gastroesophageal reflux disease?*
- **Health System** -- *Should we establish an in-patient stroke unit in our hospital?*

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## Department of Health and Human Service



### National Institutes of Health

Biomedical research to prevent, diagnose and treat diseases



### Centers for Disease Control

Population health and the role of community-based interventions to improve health



### Agency for Healthcare Research and Quality

Long-term and system-wide improvement of health care quality and effectiveness

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## Comparative Effectiveness and the Recovery Act

- “Stimulus” legislation added \$1.1 billion for comparative effectiveness research:

- AHRQ: \$300 million
- NIH: \$400 million
- Secretary of Health: \$400 million



- Institute of Medicine Committee assigned to define priorities for CER

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### Definition: US Institute of Medicine

- Comparative effectiveness research (CER) is 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.

*National Priorities for Comparative Effectiveness Research  
Institute of Medicine Report Brief  
June 2009*

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### Characteristics of Comparative Effectiveness Research

- Aims to inform *clinical decisions* or *health policy decisions*
- Compares at least TWO alternative interventions
- Examines both *benefits and harms*
- Examines results in “real world” settings
- Examines results for populations and subgroups
- Matches methods and data sources to decisions of interest

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### What Will Money Support?

NIH – Supplement existing comparative research  
AHRQ funds will support:

- Pragmatic clinical comparative effectiveness studies – CHOICE (\$100M)
- National Registries: Up to 5 awards (\$48M)
- Distributed Data Networks (DEcIDE Consortium) -- \$24 M
  - using data from electronic health records
- New systematic review capacity (\$50 million)
- New work on research methods (\$2 million)

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## AHRQ Operating Plan for Comparative Effectiveness

- **Stakeholder Input and Involvement:** To occur throughout the program
- **Horizon Scanning:** Identifying promising interventions
- **Evidence Synthesis:** Review of current research
- **Evidence Generation:** New research with a focus on under-represented populations
- **Research Training and Career Development:** Support for training, research and careers

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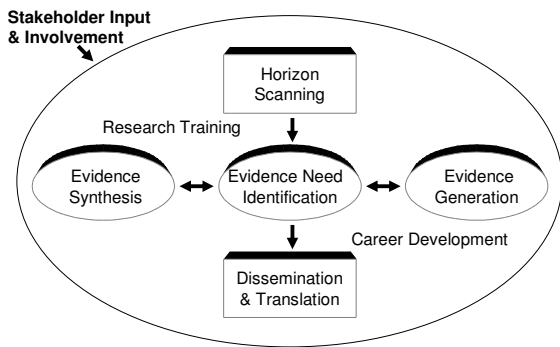
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## Conceptual Framework




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## Additional Proposed Investments

- Supporting AHRQ's long-term commitment to bridging the gap between research and practice:
  - Dissemination and Translation
    - Between 20 and 25 two-three-year grants (\$29.5M)
    - Eisenberg Center modifications (3 years, \$5M)
  - Citizen Forum on Effective Health Care
    - Formally engages stakeholders in the entire Effective Health Care enterprise
    - A Workgroup on Comparative Effectiveness will be convened to provide formal advice and guidance (\$10M)




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## AHRQ Comparative Effectiveness Research

The screenshot shows the AHRQ Effective Health Care website. The main content area displays search results for the query 'Comparing Oral Medications for Adults With Type 2 Diabetes'. The results list several studies with their titles and brief descriptions, such as 'Comparing Oral Medications for Adults With Type 2 Diabetes' and 'Comparative Effectiveness of Glycemic Control in Type 2 Diabetes Mellitus'. The website layout includes a navigation menu on the left and a search bar at the top.

<http://effectivehealthcare.ahrq.gov>

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## How Will CER Change the Research We Conduct?

- More emphasis on “pragmatic” comparative clinical trials
  - Inform decisions vs. advancing science
  - Effectiveness vs. efficacy
- Greater role of non-randomized studies
  - Registries, prospectively collected data from electronic health records
- Greater focus on health system interventions

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## IOM's 100 Priority Topics

- *Initial National Priorities for Comparative Effectiveness Research (June 20, 2009)*
- Topics in 4 quartiles; groups of 25.
- Topics in 1<sup>st</sup> quartile (highest priority) include:
  - Treatment strategies for atrial fibrillation, including surgery, ablation and drugs
  - Primary prevention methods for falls
  - Strategies to prevent healthcare-associated infections
  - Care coordination strategies for chronic disease



Report Brief Available At <http://www.iom.edu>

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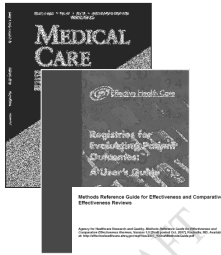
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### Emerging Methods in Comparative Effectiveness, EBM & Safety



- Variation in methods among systematic reviews undercuts transparency
- Poorly done new research can be misleading
- Methods must continue to evolve and not remain stagnant
- AHRQ has and will continue to make investments in improving methods, esp. in understanding clinical heterogeneity.

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### Comparative Effectiveness: Political Challenges

- How comparative evidence is *used* will be very political
- Need transparent process to engage all stakeholders, including patients and consumers
- Need to address concerns that CER will slow innovation and emerging technologies



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### Comparative Effectiveness: Scientific Challenges

- Can we predict and reduce major sources of bias in non-randomized studies?
  - "confounding by indication"
- Can we better account for individual variation within any population in benefits and harms?
  - Heterogeneity of treatment effect
- How can we improve information relevant to under-represented populations?
  - Very elderly, racial and ethnic minorities, patients with multiple comorbidities
- When can we integrate information from RCTs and observational studies to improve decisions?

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### **What Are Implications for Research Outside of US?**

- Growth of “distributed networks” of data collected from electronic health records
- Registries – collaborations with international device and procedure registries
  - E.g. orthopedic implants
- Need for greater methods research on use of registry and other observational data
- Collaborate to prioritize comparative clinical trials
- Can we learn from collaboration to study health care organization and delivery questions?

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### **What Are Implications for Cochrane Activities?**

- Reviews should take greater account of perspective of decision-makers – Patients and Systems
  - Benefits and Harms
  - Applicability
- Pay more attention to translating findings of reviews
  - Expressing benefits and harms
  - Exploring patient subgroups
  - Defining range of uncertainty
- Methods expertise within Collaboration can protect us against overreliance on non-trial data
- Contribute to methods in use of prospectively collected non-experimental (observational) data?
  - When is it good enough for decision making?

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