Guidance for Evidence-based Practice Centers conducting comparative effectiveness reviews

Mark Helfand, MD
October 26, 2009
Guide chapters

• **Principles**
• **Topic nomination development**
• **Searching for relevant studies**
• **Avoiding bias in selecting studies**
• **Using previous reviews in SRs**
• **Nonrandomized studies**
• **Adverse effects**
• **Grading a body of evidence**
• **Applicability**
• **Pooling**
• **Updating**
Guide chapters

- Principles
- Topic nomination development
- Searching for relevant studies
- Avoiding bias in selecting studies
- Using previous reviews in SRs
- Nonrandomized studies
- Adverse effects
- Grading a body of evidence
- Applicability
- Pooling
- Updating

Bold published
Blue submitted
Italics draft completed
Pooling topics

• When to pool and when not to
  – Clinical diversity
  – Methodological diversity
  – Statistical heterogeneity
Pooling topics

• When to pool and when not to
  – Clinical diversity
  – Methodological diversity
  – Statistical heterogeneity

• Indirect comparisons
Pooling topics

• When to pool and when not to
  – Clinical diversity
  – Methodological diversity
  – Statistical heterogeneity
• Indirect comparisons
• Fixed vs. random effects
• Rare events
• Using different kinds of evidence in a meta-analysis
Focus on

- Transparency for the user
- Understanding variability in conclusions
- Reducing the risk of “mischief”
AHRQ Guidance:
The underlying principles

1. Approach the evidence from a clinical, patient-centered perspective.
2. Fully explore the clinical logic underlying the rationale for a service
3. Cast a broad net with respect to evidence
4. Present benefits and harms in a consistent way that is useful for decision-makers
for getting the questions right and responsive to the needs of d-ms
helfand, 10/25/2009
The best evidence

- addresses health outcomes and not just intermediate outcomes
- is from “real” patients
- considers harms and benefits
- fits the circumstances
- comes from well-designed, well-conducted studies
principles about what is the best evidence
helfand, 10/25/2009
Selecting questions for the *Guide*

- 1996 Underlying Principles for EPC program
- 2002 Oregon Health Plan reviews
- 2003 Barcelona meeting—methods needs
- 2005 *Annals supplement*
- 2006 Review AHRQ Evidence reports (Atkins)
- 2006 First AHRQ CERs
Conclusions

• Variability in terminology, inclusion criteria, quality assessment and synthesis
• Rationale for including nonrandomized studies not consistent or transparent
• Need to improve use of quality assessment for effectiveness and harms

Atkins
Selecting questions for the *Guide*

- 1996 Underlying Principles for EPC program
- 2002 Oregon Health Plan reviews
- 2003 Barcelona meeting—methods needs
- 2005 *Annals supplement*
- 2006 Review AHRQ Evidence reports (Atkins)
- 2006 First AHRQ CERs
Approach to developing guidance

• When there is an evidence base, develop evidence-based standards
• When there isn’t, use structural approaches and support methodologic research
Examples of structural approaches

- **General**
  - High standards regarding conflicts of interest

- **Getting the questions right**
  - Technical experts help in topic refinement*
  - Public review of key questions*
  - Publish the protocol

- **Searching**
  - Centralize searching of certain databases*

- **Determining eligibility of studies**
  - Dual review
  - Oversight by SRC and AHRQ*

- **Reporting**
  - Search for appropriate use of certain terms
  - Use reporting standards

- **Extensive, *external* peer review***
  - Publish comments and responses
  - Independent editorial oversight process

- **Products are publicly available, and free, without a subscription**
Timeline for *EPC Guide*

2005

2006
Prepared preliminary table of contents
Assembled a library of methodological articles relevant to each potential topic.
Invited background papers
Timeline for *EPC Guide*

2007
- Workgroups met
- Draft guidance in October
- Public comment

2008
- Revised manuscripts
- Peer review
- New workgroups

2009
- Appointment of 3 EPCs to lead methods research
Center Qualifications

- Can assist in constructing an evidence-based process using systematic reviews
- High standards regarding conflicts
- Experience producing reports that have been used to make clinical recommendations, coverage decisions, and policy
- Contract mechanism, timelines, budgets
Center Qualifications

• Able to produce different types of reports, depending on the purpose
Relationship to other Guidance

• USPSTF Methods (2001)
  – Robust quality criteria for randomized and observational epidemiological study designs
  – Strength of evidence vs. magnitude of effect
• Cochrane Handbook (2007)
  – Heterogeneity
  – Risk of bias vs. study limitations
• AMSTAR, PRISMA
• GRADE (ongoing)
  – Minimum set of domains for a body of evidence
  – Different concept of quality of evidence
Highlights

– Hierarchy emphasizing *effectiveness* and *meaningful comparisons*, incorporating IOM principles
– Strong rationale for use of observational studies and pooling methods for adverse events
– Guidance on indirect comparisons
– Better grading and reporting
Gaps

• No guidance on several important topics
• Guidance but *no training, textbook (with problem sets), certification, or recertification*
• *Gaps in the evidence base for conducting SRs (methodological research)*
What we’re working on now..

• **Methods research**
  – Defining the role of different types of evidence in decision-making.
  – Incorporating individual differences into methods for systematic reviews
  – Limitations of individual studies
  – Going from evidence to decisions about future research

• **Improving the guidance development process**

• **Better editorial processes**
What are we after?

• Systematic reviews of effectiveness should address questions that reflect clinicians’ and patients’ concerns.

• Decision-makers should begin to wrestle with the idea of what is good evidence.