Use of Gap Analyses in Establishing Research Priorities

Discussant: Christine Laine, MD, MPH

Methods Workshop
March 6-7, 2012

Appeal of Systematic Review Based Gap Analyses To Set Priorities

- Evidence-based
- Pragmatic
- Systematic review "engine" already exists
- Large numbers of systematic reviews
- Systematic reviews rarely yield definitive answers to all of the questions they set out to answer

Problems with Systematic Review Based Gap Analyses to Set Priorities

- Large numbers of systematic reviews
- Systematic reviews rarely yield definitive answers to all of the questions they set out to answer
- Overwhelming number of gaps

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Review

Antivirals for Treatment of Influenza: A Systematic Review and Meta-analysis of Observational Studies

Jonathan Hsu, Nancy Santesso, Reem Mustafa, Jan Brozek, Yao Long Chen, Jessica P. Hopkins, Adrienne Cheung, Gayane Hovhannisyan, Liudmila Ivanova, Signe A. Flottorp, Ingvil Sæterdal, Arthur D. Wong, Jinhui Tian, Timothy M. Uyeki, Elie A. Akl, Pablo Alonso-Coello, Fiona Smaill, and Holger J. Schünemann

Ann Intern Med E-411published ahead of print February 27, 2012,

...for Treatment of Influenza: A **Systematic Review** and Meta-analysis of Observational...Barcelona, Spain. Background: **Systematic reviews** of randomized, controlled trials...influenza A. Discussion Our **systematic review** summarizes the evidence from...

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March 6, 2012, 156 (5)

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Annals of Internal Medicine | RESEARCH AND REPORTING METHODS

What Comparative Effectiveness Research Is Needed? A Framework for Using Guidelines and Systematic Reviews to Identify Evidence Gaps and Research Priorities

Tianjing Li, MD, MHS, PhD; S. Swaroop Vedula, MD, MPH; Roberta Scherer, PhD; and Kay Dickersin, MA, PhD

The authors developed and tested a framework for identifying evidence gaps and prioritizing comparative effectiveness research by using a combination of clinical practice guidelines and systematic reviews. In phase 1 of the project, reported elsewhere, 45 clinical questions on the management of primary open-angle glaucoma were derived from practice guidelines and prioritized by using a 2-round Delphi survey of clinicians. On the basis of the clinicians' responses, 9 questions were classified as high-priority. In phase 2, reported here, systematic reviews that addressed the 45 clinical questions were identified. The reviews were classified as at low, high, or unclear risk of bias, and evidence gaps (in which no systematic review was at low risk of bias) were identified. The following comparative effectiveness research agenda is proposed: Two of the 9 high-priority questions require new primary research (such as a randomized, controlled trial) and 4 require a new systematic review. The utility and limitations of the framework and future adaptations are discussed.

Ann Intern Med. 2012;156:367-377. www.annals.org
For author affiliations, see end of text.

Comparative effectiveness research (CER) is a key element of current efforts in health care reform in the United States (1). Before initiating new research, investigators must ascertain gaps in the evidence by identifying the important clinical questions in a topic area and then determining whether existing research has answered these questions. Prioritizing new CER to address identified gaps presents an ongoing challenge (2). The Patient-Centered Outcomes Research Institute (PCORI) has committed funds to develop, test, refine, and evaluate methods that can inform the process of establishing and updating national priorities for CER and patient-centered outcomes research (3, 4).

We propose and assess a general framework for prioritizing CER, using primary open-angle glaucoma (POAG) as a topic area. Worldwide, glaucoma of all types is a major source of morbidity, decreased quality of life, and increased health care costs (5, 6). It has been estimated to be the second-leading cause of blindness and visual impairment in 2010 (5, 6). In the United States, open-angle glaucoma accounts for more than 90% of all glaucoma cases; it affected more than 2.25 million Americans aged 40 years or older in 2000, and this number is expected to increase to 3.36 million by 2020 because of the aging population (5, 6).

We aimed to develop, implement, and evaluate a framework for identifying evidence gaps and prioritizing CER. Because clinical practice guidelines (CPGs) reflect questions of interest to clinicians, we considered them a starting point for building our framework to prioritize CER. Once the clinical questions addressed in a CPG are identified, one can search for relevant systematic reviews to determine evidence gaps. For questions of intervention effectiveness, a systematic review of high-quality randomized, controlled trials (RCTs) can show whether research has answered the question; uncertainty reflected by systematic reviews indicates a potential candidate area for primary CER (2, 7, 8). Opinions on topics and outcomes can be sought from stakeholders, such as practicing clinicians, patients, and evidence users, and incorporated during the prioritization process (for example, when framing or ranking the research questions). Our objective for this report was to identify systematic reviews that addressed clinical questions derived from the CPGs, classify their methodological quality, propose a CER agenda, and assess the utility of our framework.

METHODS

For practical purposes, we implemented and evaluated the utility of our framework in 2 phases (**Figure 1**). In phase 1, reported elsewhere (9), we used the 2005 American Academy of Ophthalmology (AAO) Preferred Practice Patterns for the management of POAG (10) to derive 45 answerable clinical questions that could be addressed by RCTs and systematic reviews of RCTs. We conducted a 2-round Delphi survey of 620 members of the American Glaucoma Society to prioritize the questions for research that would inform good patient care. Using responses from 169 participating clinicians, we classified 9 clinical questions as high priority (9).

In phase 2, we determined whether up-to-date systematic reviews were available for each of the 45 clinical questions derived from the AAO CPGs. To identify evidence

See also:

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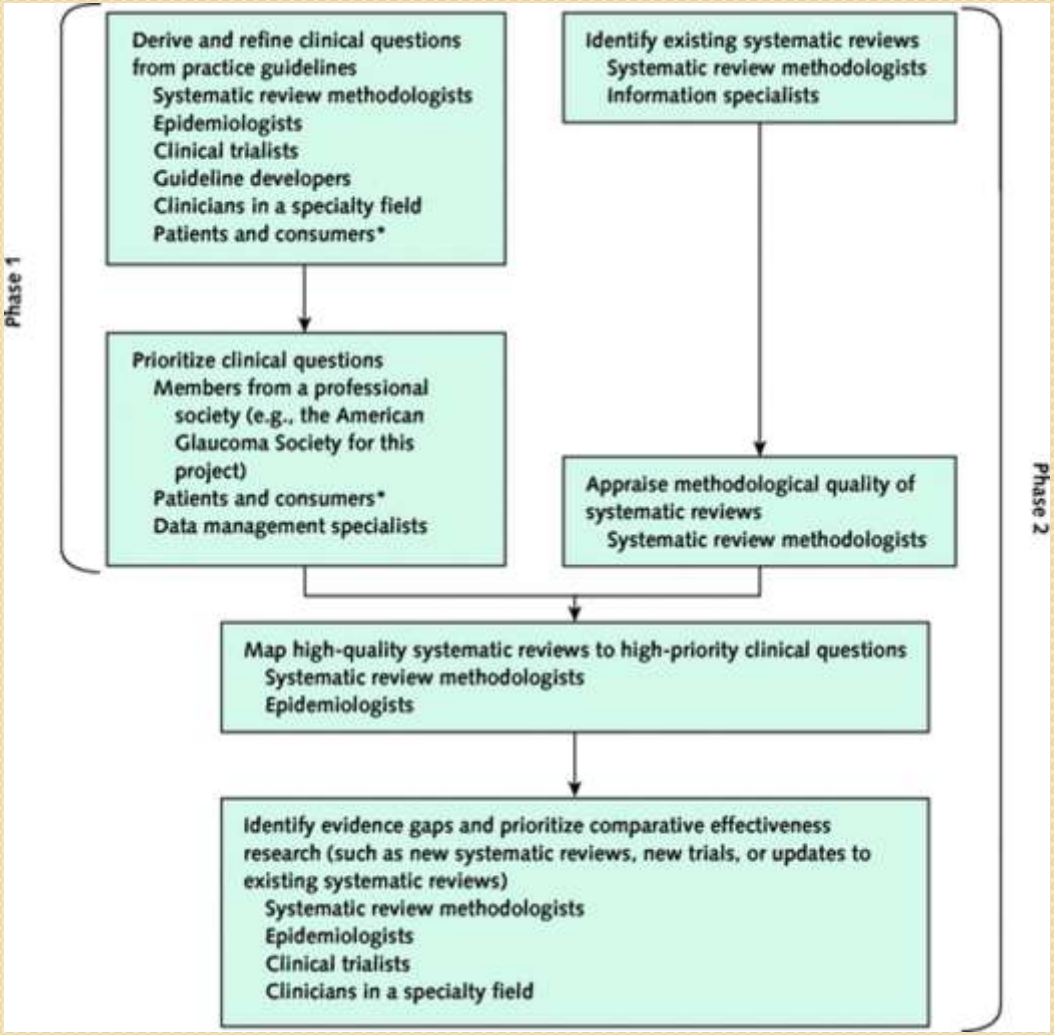
Appendix Figures
Conversion of graphics into slides

Li T, Vedula S, Scherer R, Dickerson K. Ann Intern Med. 2012. 156:367-77.

Key steps and stakeholder involvement in a framework that combines practice guidelines and systematic reviews to identify evidence gaps and prioritize comparative effectiveness research.* Patients and consumers were not involved in this project but could be...



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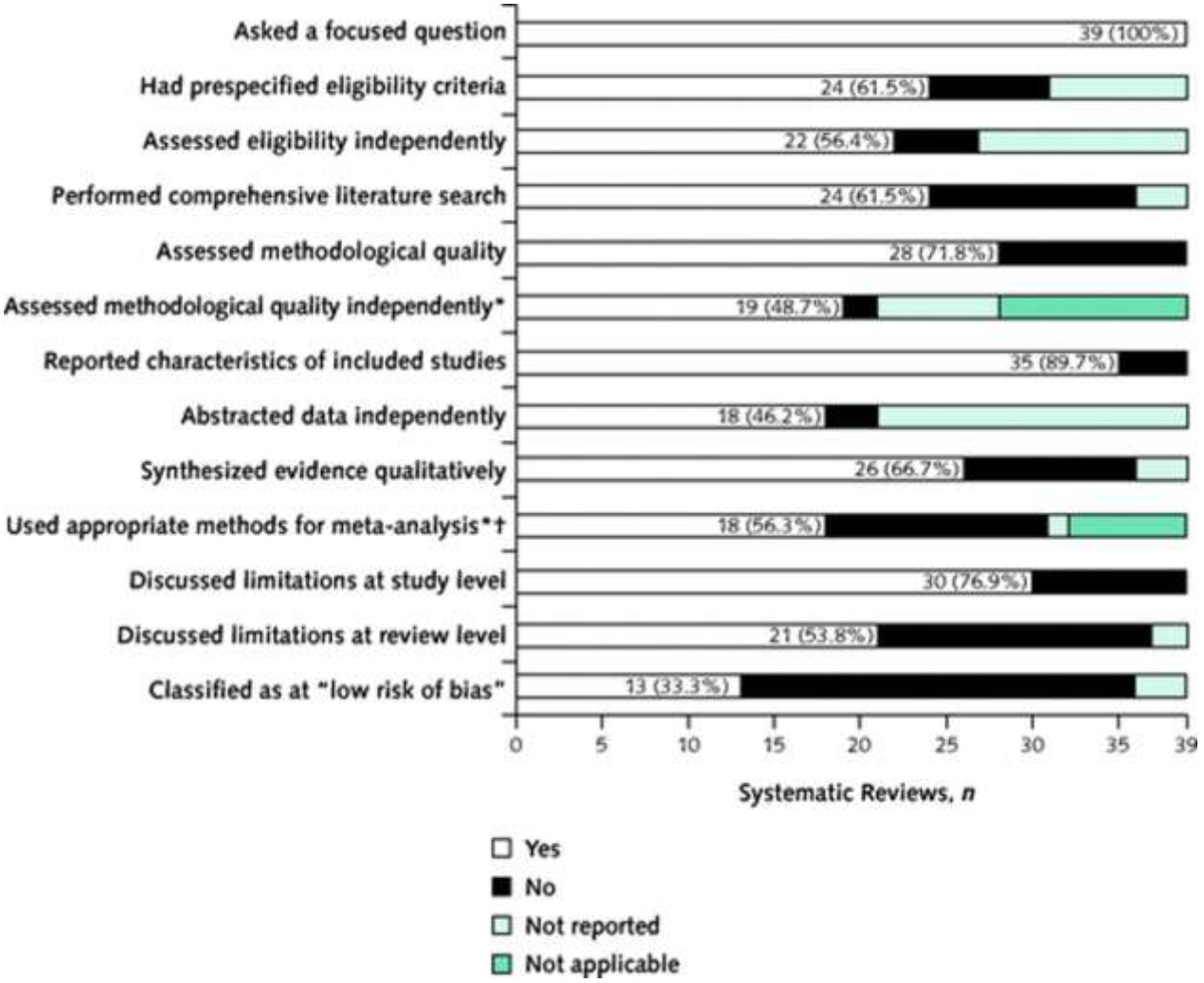
Systematic reviews on the management of primary open-angle glaucoma that satisfied each methodological quality criterion.* Not applicable because the reviews did not assess methodological quality or did not perform a meta-analysis.† The denominator was the ...



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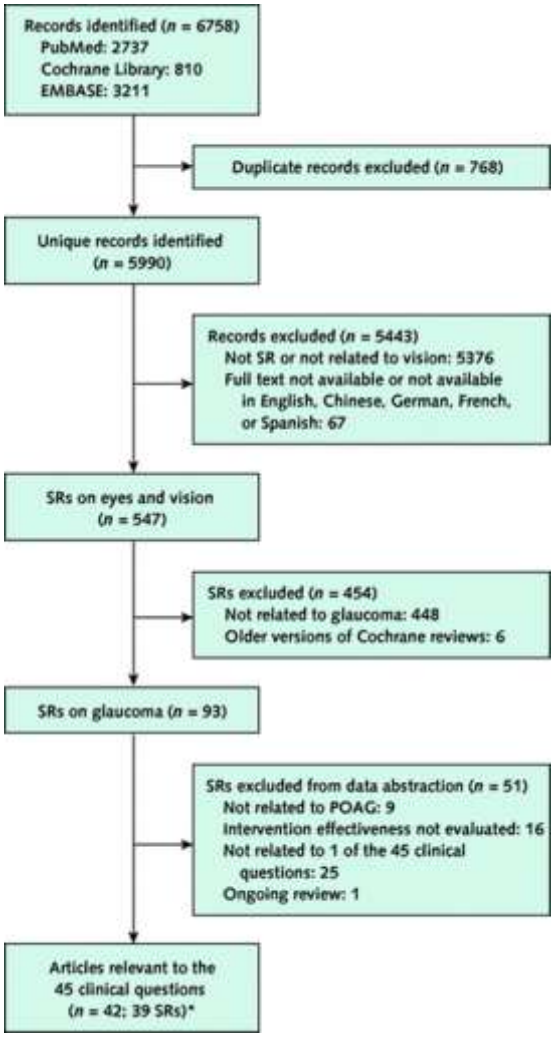
Summary of evidence search and selection.POAG = primary open-angle glaucoma; SR = systematic review.* One systematic review is associated with 4 articles.



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Screening for Obesity in Adults

Release Date: December 2003

This topic page summarizes the U.S. Preventive Services Task Force (USPSTF) recommendations on screening for obesity in adults.

Summary of Recommendations / Supporting Documents

Summary of Recommendations

- **The USPSTF recommends that clinicians screen all adult patients for obesity and offer intensive counseling and behavioral interventions to promote sustained weight loss for obese adults.**
  Grade: B Recommendation.
- **The USPSTF concludes that the evidence is insufficient to recommend for or against the use of moderate- or low-intensity counseling together with behavioral interventions to promote sustained weight loss in obese adults.**
  Grade: I Statement.
- **The USPSTF concludes that the evidence is insufficient to recommend for or against the use of counseling of any intensity and behavioral interventions to promote sustained weight loss in overweight adults.**
  Grade: I Statement.

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Supporting Documents

Screening for Obesity in Adults, December 2003

- Recommendations and Rationale (PDF File, 160 KB; PDF Help)
- Summary of the Evidence (PDF File, 215 KB; PDF Help)
- Systematic Evidence Review (PDF File Download)

U.S. Preventive Services Task Force

Screening for Osteoporosis

Release Date: January 2011

This topic page summarizes the U.S. Preventive Services Task Force (USPSTF) recommendations on screening for osteoporosis.

Summary of Recommendations / Supporting Documents

Summary of Recommendations

- **The USPSTF recommends screening for osteoporosis in women aged 65 years or older and in younger women whose fracture risk is equal to or greater than that of a 65-year-old white woman who has no additional risk factors.**
  Grade: B Recommendation.
- **The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for osteoporosis in men.**
  Grade: I Statement

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Supporting Documents

Screening for Osteoporosis, January 2011

- Recommendation Statement (PDF File, 580 KB; PDF Help)
- Clinical Summary (PDF File, 52 KB; PDF Help)
- Supporting Article (PDF File, 771 KB; PDF Help)—Published July 2010
- Systematic Evidence Review (PDF File, 3.2 MB; PDF Help)—Published July 2010

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Current as of March 2011

Internet Citation:

USPSTF Diabetes Screening

USPSTF 2003

"The U.S. Preventive Services Task Force (USPSTF) concludes that the evidence is insufficient to recommend for or against routinely screening asymptomatic adults for type 2 diabetes, impaired glucose tolerance, or impaired fasting glucose. This is a grade I recommendation."

USPSTF 2008

"Current evidence is insufficient to assess the balance of benefits and harms of routine screening in asymptomatic adults with blood pressure of 135/80 mm Hg or lower. (I statement)"

- Challenge is not identifying gaps
- Challenges are:
  - Prioritizing the gaps
  - Getting researchers and the entities that fund them to use gap analyses to formulate research questions
  - Focus the design of new studies so they are likely to yield results that fill identified gaps

What Might Help?

- Entities that fund or publish systematic reviews should begin to routinely require identification of gaps as part of this work
- Using clinical guidelines (based on systematic reviews) to identify high priority gaps may be more efficient than starting with systematic reviews


MIND THE GAP