

ORIGINAL ARTICLES

# The refinement of topics for systematic reviews: lessons and recommendations from the Effective Health Care Program

David I. Buckley<sup>a,\*</sup>, Mohammed T. Ansari<sup>b</sup>, Mary Butler<sup>c</sup>, Clara Soh<sup>d</sup>, Christine S. Chang<sup>e</sup>

<sup>a</sup>Oregon Health & Science University, 3181 SW Sam Jackson Park Road, Mail Code: FM, Portland, OR 97239, USA

<sup>b</sup>Clinical Epidemiology Program, Methods Centre, Box 201B, General Campus, The Ottawa Hospital, 501 Smyth Road, Ottawa, ON K1H 8L6, Canada

<sup>c</sup>Division of Health Policy and Management, School of Public Health, University of Minnesota, 420 Delaware Street SE, Minneapolis, MN 55455, USA

<sup>d</sup>Kaiser Permanente Center for Health Research, Evidence-based Practice Center, 3800 N Interstate Ave, Portland, OR 97227, USA

<sup>e</sup>Center for Outcomes and Evidence, Agency for Healthcare Research and Quality, 540 Gaither Road, Rockville, MD 20850, USA

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## Abstract

**Objectives:** The Agency for Healthcare Research and Quality (AHRQ) Effective Health Care Program conducts systematic reviews of health-care topics nominated by stakeholders. Topics undergo refinement to ensure relevant questions of appropriate scope and useful reviews. Input from key informants, experts, and a literature scan informs changes in the nominated topic. AHRQ convened a work group to assess approaches and develop recommendations for topic refinement.

**Study Design and Setting:** Work group members experienced in topic refinement generated a list of questions and guiding principles relevant to the refinement process. They discussed each issue and reached agreement on recommendations.

**Results:** Topics should address important health-care questions or dilemmas, consider stakeholder priorities and values, reflect the state of the science, and be consistent with systematic review research methods. Guiding principles of topic refinement are fidelity to the nomination, relevance, research feasibility, responsiveness to stakeholder inputs, reduced investigator bias, transparency, and suitable scope. Suggestions for stakeholder engagement, synthesis of input, and reporting are discussed. Refinement decisions require judgment and balancing guiding principles. Variability in topics precludes a prescriptive approach.

**Conclusion:** Accurate, rigorous, and useful systematic reviews require well-refined topics. These guiding principles and methodological recommendations may help investigators refine topics for reviews. © 2014 Elsevier Inc. All rights reserved.

**Keywords:** Systematic review; Evidence-based practice; Stakeholder engagement; Methods; Decision making; Patient-centered care; Research design

## 1. Introduction

*“A prudent question is one-half of wisdom.”*

—Francis Bacon

Systematic reviews aim to improve health outcomes by developing evidence-based information about which interventions are most effective for which patients under

specific circumstances [1]. Systematic reviews are used by a variety of organizations to inform clinical guidelines [2], health-care policies [3], and insurance coverage decisions [4]. The Evidence-based Practice Center (EPC) Program, part of the Agency for Healthcare Research and Quality (AHRQ) Effective Health Care (EHC) Program, conducts systematic reviews on health-care topics nominated by stakeholders. Stakeholders may represent patients, consumers, advocacy organizations, clinicians, researchers, agencies that issue guidelines, policy makers, industry, or health-care organizations. Involving stakeholders in the nomination process provides an opportunity for end users of research to participate in asking and answering questions about health care.

To provide useful answers, systematic reviews must ask the right questions. Challenges arise when stakeholder-nominated topics are not ideally formulated for the broadest public health and/or clinical relevance or are inconsistent with accepted systematic review methods or EPC Program

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\* Corresponding author. Tel.: +1-503-494-8367; fax: +1-503-494-1513.

### What is new?

- This article provides methodological guidance for refining topics for systematic review in Agency for Healthcare Research and Quality Evidence-based Practice Center (EPC) Program. The *goal* of topic refinement is to produce a topic that addresses important health-care questions and dilemmas, considers the priorities and values of relevant stakeholders, reflects the state of the science, and allows for application of systematic review research methods. The article describes various EPC approaches to the refinement process, with their advantages and disadvantages, and provides guidance for a consistent approach to refinement and the reporting of refinement decisions in light of guiding principles. This can promote transparency, patient centeredness, and more useful and relevant systematic reviews.
- The *guiding principles* are fidelity to the original nomination, relevance, research feasibility, responsiveness to stakeholder inputs, reduction of potential investigator bias, transparency, and suitable scope.
- The nominated topic is refined with information from a literature scan and stakeholder inputs in an iterative manner.
- *Synthesis* of input requires judgment of the topic refinement team and consideration of the guiding principles. The investigators may balance certain principles when making decisions about whether and how to include input, especially when they are conflicting. Variability of topics in the EPC program makes it impractical to apply the guiding principles in a prescriptive manner.

principles for conducting reviews [5]. To ensure relevant and useful systematic reviews, topics nominated by stakeholders generally need to be refined.

In 2007, investigators with the EPC Program began developing methods for topic refinement. Although the EPC Program stipulates the elements of topic refinement, different EPCs have approached specific aspects in both similar and different ways. This variation provided an excellent opportunity to consider the advantages and disadvantages of different approaches and produce recommendations to guide the topic refinement process. To that end, we convened a work group of investigators experienced in conducting topic refinements from four EPCs and one AHRQ project officer.

## 2. Methods

Our work group followed previously described principles for developing EPC Program methods guidance [6]. We used a best-practice approach based on our experience, our assessment of topic refinement reports from other EPCs, and input on the draft methods guidance report [7] from investigators across the EPC program. We compiled a prioritized list of issues and concepts that were challenging for many EPCs, incompletely articulated in topic refinement summary reports, variable across EPCs, and/or consistent across EPCs. These items were consolidated into three main categories: (1) the purpose of topic refinement, (2) guiding principles, and (3) the mechanics of conducting a topic refinement. Through a structured process in 18 meetings, we discussed each issue and reached agreement on recommendations.

Recognizing the legitimate variability in topics and approaches, we described different viable approaches and discussed their relative merits. Experts in systematic review methods provided a peer review of a draft report, which was also posted for public comment. The methods are described in more detail in the full report [7].

## 3. Results

### 3.1. What is refinement?

Refinement implies making changes to attain a better fit with a certain standard. In this sense, the goal of topic refinement is to improve a nominated topic so that it is a good and accurate fit with specified criteria (Table 1).

Topic refinement is one stage in the process of producing a systematic review through the EPC Program (Fig. 1). It is preceded by topic nomination and development, in which investigators review stakeholder-nominated topics and determine if they meet program selection criteria and should proceed with topic refinement and systematic review [8].

The primary goal of topic refinement is to formulate research questions that can be addressed by a systematic review, not to answer the questions. A refined topic includes three principal elements: (1) clearly articulated population(s), intervention(s), comparator(s), outcome(s), timing, and setting(s) of interest—collectively referred to as the PICOTS [8,9]; (2) key questions that are precise, detailed, and focused; and (3) an analytical framework that represents the relationships between the PICOTS and the key questions [6,10–12].

Typically, unrefined topic nominations present the PICOTS elements in a general form. Nominated topics may be inadequately precise, overly inclusive, or overly narrow. Hence, refinement of a topic may narrow the focus of some elements of the PICOTS, expand some elements, or both—a process more closely resembling sculpting in clay rather than marble.

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