

## EDITORIAL

## A Call for Systematic Reviews

In this editorial, we discuss the power of systematic reviews and their central role in evidence-based practice, and we encourage authors of systematic reviews to submit them for publication in *Journal of General Internal Medicine*.

Most clinical care research studies enroll patients who represent only a narrow spectrum of those to whom clinicians may wish to apply the results.<sup>1</sup> Also, most studies are not large enough on their own to measure precisely all relevant patient-important outcomes, for instance, both benefits and harms of therapy. Small studies often produce indeterminate or contradictory results. One potential solution is to conduct large clinical studies enrolling a wide variety of patients and measuring all patient-important outcomes with precision.<sup>2</sup> An alternative is to summarize and synthesize existing evidence in a systematic review.

In contrast to a nonsystematic review (i.e., the majority of narrative reviews and book chapters), a systematic review typically allows readers to appraise how the review was conducted and the evidence synthesized. Rather than being all encompassing, systematic reviews focus on a single question or a small set of closely related questions. In offering an answer, reviewers might decide to pool the results of individual studies using statistical techniques, a procedure called meta-analysis. Not all systematic reviews allow for such pooling. Also, not all meta-analyses pool the results of studies identified systematically. In this communication, we refer to both systematic reviews and to the meta-analyses conducted across studies included in systematic reviews.

Clinicians can trust the validity of a systematic review to the extent that it was conducted rigorously using protocols to implement safeguards against bias in assembling, critically appraising, and synthesizing the evidence. High-quality reviews also systematically explore and explain between-study differences. Such systematic reviews may yield valid, precise, and widely applicable answers to focused clinical questions.<sup>3</sup> Thus, systematic reviews have come to play a central role in 1) informing clinical decisions and guidelines and 2) identifying knowledge gaps for researchers and funding agencies. Because of their power to aid both clinicians and researchers, *JGIM* encourages authors of systematic reviews to submit them for publication in our journal.

The idea of systematically synthesizing research evidence began to emerge in the 18th and 19th centuries. In their historical account of evidence synthesis, Chalmers, Hedges, and Cooper noted that work published as early as 1904 in England and 1907 in the United States shared features with modern meta-analyses.<sup>4</sup> Meta-analytic techniques evolved and matured in agriculture and the social

sciences and preceded the identification of mechanisms to prevent bias in research synthesis. It was in the late 1980s and early 1990s that research documented the shortcomings of narrative reviews (and of the recommendations included in them).<sup>5-7</sup> Consequently, the number of systematic reviews and meta-analyses increased, and methodologists published criteria by which the quality of a systematic review could be judged.<sup>8,9</sup>

In 1993, an international group of reviewers and methodologists established the Cochrane Collaboration.<sup>10</sup> In 1995, they produced the first issue of the Cochrane Database of Systematic Reviews containing the full text of the first 36 Cochrane systematic reviews. Since the mid-1990s, the Cochrane Collaboration has promoted the methods of systematic reviews and has now prepared and disseminated more than 2000 systematic reviews of the effects of health care interventions and is endeavoring to keep all of these up to date. Researchers at York University in the United Kingdom have assembled the Database of Abstracts of Reviews of Effects (DARE) to list all systematic reviews in health care, not just those produced by the Cochrane Collaboration.<sup>11</sup> Both DARE and the Cochrane Database of Systematic Reviews are published in the Cochrane Library (<http://www.update-software.com/cochrane/>).

In 1997, the Agency for Health Care Policy and Research (now the Agency for Healthcare Research and Quality; AHRQ) began funding Evidence-based Practice Centers (EPCs) to conduct systematic reviews, collected in *evidence reports*, to answer specific questions about clinical conditions that are common, expensive, and relevant to the Medicare and Medicaid population of the United States.<sup>12</sup> Over 100 evidence reports have resulted from this effort, conducted in 13 EPCs across North America. The summaries and complete evidence reports are available on the EPC program's website (<http://www.ahrq.gov/clinic/epc/>).

Full Cochrane reviews and EPC evidence reports are published online. The electronic publication of these reviews facilitates their maintenance by allowing authors to update them as new relevant evidence emerges. And while the Cochrane reviews are available in full text with a subscription to the Cochrane Library (or through national licenses in some countries) and the EPC evidence reports are available for free on the AHRQ website, most clinicians never access these reviews. Moreover, clinicians who do access these reports may have difficulty using them, as they are typically very detailed and lengthy documents written for a wide audience and formatted in a way that may hinder clinicians' ability to efficiently and quickly appraise and apply their results in practice. The findings of Cochrane reviews

and EPC evidence reports therefore typically reach the practicing general internist's awareness only when summarized and published in peer-reviewed clinical journals.

Why should authors submit systematic reviews to *JGIM*? We believe that when authors of systematic reviews (including Cochrane reviews and EPC evidence reports) prepare reports for publication in peer-reviewed clinical journals such as *JGIM* and adhere to journal instruction and reporting guidelines (such as QUOROM<sup>13</sup> for systematic reviews of randomized trials or MOOSE<sup>14</sup> for systematic reviews of observational studies), their reviews gain in readability and their message disseminates with greater ease among the target audience. Systematic reviews published in *JGIM* may get additional dissemination through press releases, circulation of our table of contents by e-mail, access online via the *JGIM* website, and publication in secondary journals that scan and highlight high-quality articles published in *JGIM* (e.g., *ACP Journal Club*). Furthermore, *JGIM* reviewers and deputy editors may assist authors in optimizing the quality and clarity of their reports for the *Journal's* target audience.

In 2000, 80% of all systematic reviews were published in 11% of all clinical journals (including the Cochrane Library, which published 56% of these): 5 of the 9 reviews published in *JGIM* that year were rigorous systematic reviews.<sup>15</sup> Systematic reviews published in these journals received significantly more citations than narrative reviews published in the same journals.<sup>15</sup> Thus, both authors and journals can benefit from the publication of systematic reviews.

To further facilitate the publication of Cochrane reviews and EPC evidence reports, we have ensured that our policies regarding copyright and duplicate publication are consistent with those of the Cochrane Collaboration (<http://www.cochrane.org/admin/manual.htm>) and AHRQ (personal communication, Kenneth Fink, MD, MGA, MPH, September 7, 2004). Publication in *JGIM* will not limit dissemination of the Cochrane review or EPC evidence report in any way. Specifically, publication of full Cochrane reviews in the Cochrane Library and EPC evidence reports by AHRQ will not disqualify manuscripts derived from those reviews from consideration by *JGIM*. Authors of Cochrane reviews will retain copyright. Furthermore, to the extent that a protocol or the complete review is available in the Cochrane Library, the *JGIM* publication will point readers to this repository, noting that this is where the full review and any updates will be available. We will encourage authors of Cochrane reviews to cite the *JGIM* publication in the text of their Cochrane reviews, thereby drawing the attention of readers of the Cochrane review to a publication that might be more suited to some clinicians. A similar practice of cross-citation, when possible, will alert *JGIM* readers to the complete EPC evidence reports in the AHRQ website.

*Journal of General Internal Medicine* aims to be a premier general medical journal and to continue to meet the needs of all our readers. We believe we can further our mission by publishing rigorous and useful systematic reviews

of important topics relevant to our areas of focus: clinical care and health services research, patient-clinician communication, and medical education.<sup>16</sup> Systematic reviews submitted to *JGIM* do not need to be limited to the assessment of effectiveness of interventions; reviews of diagnosis and screening (test performance, clinical manifestations of disease, disease probability, and clinical prediction rules), harm and prognosis, and other aspects of potential relevance to our readers are welcome. We look forward to the opportunity to consider your systematic reviews for publication in *JGIM*.—**VICTOR M. MONTORI, MD, MSc**, Mayo Clinic College of Medicine, Rochester, Minn; **SOMNATH SAHA, MD, MPH**, Portland VA Medical Center and Oregon Health & Science University, Portland, Ore; and **MIKE CLARKE, DPhil**, UK Cochrane Centre, Oxford, England.

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