

# How useful are Cochrane reviews in identifying research needs?

Lorcan Clarke, Mike Clarke, Thomas Clarke

UK Cochrane Centre, NHS R&D Programme, Oxford, UK

**Objectives:** To determine the extent to which reports of Cochrane reviews recommend the need for further research and, if so, the extent to which they make suggestions regarding that research.

**Methods:** We examined all 2535 reviews in Issue 4, 2005 of *The Cochrane Library*. Each review was categorized on the basis of whether a suggestion was included about specific interventions, participants, or outcome measures that should be included in future research. We also identified the frequency with which reviews conclude that no more research is needed or feasible, noted the need for further systematic reviewing, and referred to a relevant ongoing or planned study. We also report the number of studies listed in the 'Ongoing Studies' section in each review.

**Results:** Only 3.2% of reviews suggested explicitly that no more research is needed or feasible. In 82.0% of reviews, suggestions were made as to the specific interventions that need evaluating, in 30.2% the appropriate participants were suggested, and in 51.9% outcome measures were suggested. Suggestions for all three domains were made in 16.9% of the reviews. While 11.6% did not include a specific suggestion about any of these domains, 21.2% of reviews mention a relevant ongoing or planned study in one or both of the 'Implications for Research' and the 'Ongoing Studies' sections.

**Conclusions:** Most Cochrane reviews identify residual uncertainty and are a rich source of suggestions for further health-care research.

*Journal of Health Services Research & Policy* Vol 12 No 2, April 2007: 101–103 © The Royal Society of Medicine Press Ltd 2007

## Introduction

The Cochrane Collaboration is the world's largest organization dedicated to the preparation and maintenance of systematic reviews of the effects of health-care interventions.<sup>1</sup> It was established in 1993 and, as of early 2006, there were more than 14,000 people in almost 100 countries working together to achieve its aim of helping people make well-informed decisions about health care.<sup>2</sup>

The main output of The Cochrane Collaboration is a collection of systematic reviews, published in full in the *Cochrane Database of Systematic Reviews (CDSR)*, as part of *The Cochrane Library*. These reviews bring together the relevant research findings on a particular topic, synthesize this evidence and present it in a standard, structured way. By the end of 2005, *CDSR* included more than 2500 reviews, along with published protocols for 1600 more. Reviews include a section in which the authors provide their conclusions, under two sub-headings: 'Implications for practice' and 'Implications for research'. The aim of the latter is to help people

make well-informed decisions about future research. The section is used by a variety of people including commissioners of research (to help set their priorities) and by patient information services. Reviews also include a section in which the authors can list and briefly describe relevant ongoing studies.

The contents of the 'Implications for research' section vary widely. Our aim was to determine the extent to which the need for further research was recommended and, if so, whether or not suggestions were made as to the interventions to be evaluated, the patients to be included, and the outcome measures to be used. In addition, the authors' knowledge of relevant ongoing studies was assessed.

## Methods

An electronic file containing the contents of the 'Implications for research' section of reviews in Issue 4, 2005 of *The Cochrane Library* was provided by the Information Management System team at the Nordic Cochrane Centre. This included methodology reviews and reviews that are marked as withdrawn in *The Cochrane Library*. The contents of this file were printed to facilitate our assessment. One author (TC) read each record and categorized it on the basis of whether a recommendation was made as to the need

Lorcan Clarke, Junior Researcher, Mike Clarke DPhil, Director, Thomas Clarke, Junior Researcher, UK Cochrane Centre, NHS R&D Programme, Summertown Pavilion, Middle Way, Oxford OX2 7LG, UK.

Correspondence to: mclarke@cochrane.co.uk

for more research and, if so, whether suggestions were made regarding the specific types of intervention, participant, or outcome measures that should be assessed or included in future research. In addition, suggestions for a new, expanded or updated systematic review were noted. Another author (LC) read each record to identify whether it mentioned a specific ongoing or planned study. The third author (MC) read each record, checked the assigned codes, and made the final decision on the coding of each record. Subsequently, details were obtained on the content of the 'Ongoing studies' sections. The number of studies listed for each review was counted and cross-checked by two of the authors (TC and MC).

Our focus was on identifying specific suggestions about future or ongoing research and so we ignored suggestions:

- that simply stated there should be 'more trials' or 'better research';
- research that would not be eligible for a Cochrane review (for example, to examine a drug's pharmacokinetics or the prognosis of a condition);
- research on 'new', but unnamed, interventions;
- that simply restated in general terms that future research should include the population that was the basis of the existing review; and
- that outcome measures should be 'more appropriate', 'standardized', or 'as assessed in this review', without being more specific about what these should be.

## Results

Of 2535 'Implications for research' sections, only 82 (3.2%) suggested explicitly that there was no need for further research or that such research would not be feasible (Table 1). Of those recommending more research, 2075 (82.0%) included a suggestion about the types of intervention, 765 (30.2%) about types of participant, and 1315 (51.9%) about types of outcome measures.

There were 429 (16.9%) that included suggestions covering all three domains. In contrast, 295 (11.6%) did not include a specific suggestion about any of these three domains. This does not necessarily mean that the authors did not conclude that future research should be done because, for example, a small number of these suggested simply that 'more trials' or 'better research' are needed, without being explicit about the interventions, participants, or outcome measures that should be studied.

In 538 (21.2%) reviews, at least one ongoing or planned study was mentioned – 438 in the 'Ongoing studies' section, 22 in the 'Implications for research' section, and 78 in both sections. In addition, 151 reviews (6.0%) mentioned the need to update or expand the current review or to conduct reviews of related topics.

This project included 60 reviews that have been 'withdrawn'. For these reviews, the 'Implications for research' section was available in the file assessed for this project. Whether these reviews are included or excluded made no important difference to our findings (Table 1). They have been retained in the overall results.

It was also possible to examine differences between the 89 reviews that were published for the first time in Issue 4, 2005 of *The Cochrane Library*, the 53 that were substantively updated for that Issue, and the other reviews. As Table 1 shows, there are no major differences as regards the content of the 'Implications for research' sections.

## Discussion

Systematic reviews should be a key component in all decisions about new health-care research.<sup>3</sup> A systematic review should be used to provide the scientific and ethical rationale for the design of a new randomized trial. It should guide the choice of interventions to investigate, the population to recruit, and the outcomes to measure. A systematic review might reveal that the suggested hypothesis has already been answered or

**Table 1** 'Implications for research' section of Cochrane reviews subdivided for new, updated, withdrawn, and other reviews (%)

	Overall (n=2535)	New (n=89)	Updated (n=53)	Withdrawn (n=60)	Other (n=2333)
Conclude that no more research is needed	82 (3)	1 (1)	0 (0)	5 (8)	76 (3)
Include a suggestion about specific types of intervention	2079 (82)	77 (87)	45 (85)	37 (62)	1920 (82)
Include a suggestion about specific types of participant	765 (30)	30 (34)	20 (38)	14 (23)	701 (30)
Include a suggestion about specific types of outcome measures	1315 (52)	50 (56)	28 (53)	31 (52)	1206 (52)
Include a suggestion in all three domains	429 (17)	18 (20)	8 (15)	9 (15)	394 (17)
Do not include a suggestion in any of these three domains	295 (12)	8 (9)	6 (11)	11 (18)	270 (12)
Mention the need for a new or updated review	151 (6)	6 (7)	5 (9)	8 (13)	132 (6)
Mention an ongoing or planned study	100 (4)	3 (3)	1 (2)	4 (7)	92 (4)

lead to design changes that will make a trial more efficient and likely to provide an accurate answer.

Occasionally, Cochrane reviews have directly preceded randomized trials that have produced definitive answers. Two examples are the benefits of magnesium sulphate in pre-eclampsia<sup>4</sup> and the harms of corticosteroids in head injury.<sup>5</sup> However, it is more usual for the conduct and publication of a systematic review to be separate from the planning and conduct of a new randomized trial. People planning new research are faced with the prospect of either doing their own systematic review or finding an existing review, conducted by others. Furthermore, those trying to identify research priorities are faced with the daunting task of conducting or commissioning systematic reviews to help select topics. An existing source of reviews might provide a short cut to this information.

The study reported here is the first description of the 'Implications for research' section in Cochrane reviews. It reveals that the *CDSR* provides a short cut both for researchers and research commissioners. Most Cochrane reviews (90.3%) not only demonstrate residual uncertainty about the subject of the review but also suggest ways in which this might be resolved through further research or an expanded review, or both. The *CDSR* is a rich source of suggestions for future health-care research, as well as a source of evidence to help

people make well-informed decisions about health-care practice.

## Acknowledgements

We are grateful to Rasmus Moustgaard at the Nordic Cochrane Centre for providing the relevant contents of Cochrane reviews, Iain Chalmers for comments, and The Cochrane Collaboration's Discretionary Fund for funding. The opinions expressed in this paper are those of the authors and are not necessarily those of The Cochrane Collaboration.

## References

- 1 Clarke M. Cochrane Collaboration. In: Armitage P, Colton T, eds. *Encyclopedia of Biostatistics* Volume 2. 2nd edn. Chichester: Wiley, 2005;259-62
- 2 Allen C, Clarke M. International activity in Cochrane Review Groups with particular reference to China. *Chin J Evidence Based Med* 2006;**6**:541-5
- 3 Clarke M. Doing new research? Don't forget the old. *PLoS Med* 2004;**1**:100-2
- 4 Duley L, Gülmezoglu AM, Henderson-Smart DJ. Magnesium sulphate and other anticonvulsants for women with pre-eclampsia. *Cochrane Database Syst Rev* 2003, Issue 2. Art. No.: CD000025. Doi: 10.1002/14651858.CD000025
- 5 Alderson P, Roberts I. Corticosteroids for acute traumatic brain injury. *Cochrane Database Syst Rev* 2005, Issue 1. Art. No.: CD000196. Doi: 10.1002/14651858.CD000196.pub2.