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## Cochrane Collaboration on Effective Practice

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# Implementing findings of medical research: the Cochrane Collaboration on Effective Professional Practice

Nick Freemantle, Roberto Grilli, Jeremy Grimshaw, Andy Oxman, for the Cochrane Collaboration on Effective Professional Practice

The availability of high quality systematic reviews of interventions is essential for providers and purchasers if they are to make sense of the ever increasing volume of medical research. The aim of the recently formed Cochrane Collaboration on Effective Professional Practice is to undertake and maintain systematic reviews of rigorous research which evaluate methods of promoting effective professional practice and to make these reviews available to relevant decision makers.

The focus of this group is on reviews of trials of interventions designed to improve professional practice, including, for example, various forms of information dissemination, continuing education, and quality assurance. The scope also initially includes reviews of trials of financial and organisational interventions used to help healthcare providers deliver services more effectively.

An international editorial team (the authors of this paper) has been established whose responsibility is to ensure the quality of reviews and to promote collaboration between reviewers in different parts of the world. The Cochrane collaboration will be supported from an editorial base at the new NHS Centre for Reviews and Dissemination at the University of York.

### Background

Although undertaking high quality reviews of the effectiveness of clinical interventions has attracted substantial interest, ensuring that clinical practice reflects the available evidence has been relatively neglected. Resources for health services are inevitably limited, and effective practice should be promoted for the benefit of patients. It is our intention to begin to redress the imbalance between evidence of clinical effectiveness and the effectiveness of methods for promoting evidence based practice, through the systematic location and synthesis of relevant research findings.

It is tempting to assume that implementation of effective practice occurs rapidly after publication of research or overviews which are germane to current practice. However, no such smooth transition from research to practice occurs.<sup>1</sup> Making information available in printed form to clinicians seems to have little impact on either process of care or patient

outcomes.<sup>2,3</sup> As David Eddy described a decade ago: "The profession has placed high value on developing the basic science of medicine: it has not emphasised the process by which the science is translated into practice...."<sup>4</sup>

Our need to know more about how to change health professionals' behaviour to enhance the implementation of research results is increasingly recognised. An important first step is to identify existing research and synthesise the findings in systematic reviews of studies of interventions aimed at improving the effectiveness of professional practice.<sup>5</sup> Such reviews will help to ensure that resources available for this process are well utilised, and they should guide future research.

### Systematic reviews

Systematic reviews use rigorous methods to locate and synthesise research relevant to clinical decisions.<sup>5</sup> In other words, they attempt to incorporate the same degree of methodological rigour which is expected of primary research. Unfortunately, many literature reviews published in medical journals whose aims are to summarise the state of knowledge and to influence practice fail to apply scientific methods in locating and synthesising all the relevant available evidence.<sup>6</sup> This leads to advice on practice which may not accurately reflect the findings of primary research and, perhaps more obviously, to publishing contradictory guidelines which may perplex clinicians attempting to provide the best available care.<sup>7</sup>

Systematic reviews of clinical interventions are often time consuming, and locating primary research studies and including them or combining them into reviews may entail considerable efforts among many researchers internationally. For example, the recent anti-platelet trialists' collaborative overviews entailed gathering original patient data on 130 000 patients included in over 300 randomised controlled trials.<sup>8-10</sup> However, such efforts are very necessary, as only through systematically reviewing and updating reviews can evidence on clinical effectiveness be made available. Antman *et al*, comparing the available evidence of the effectiveness of thrombolysis with the recommendations given

**NHS Centre for Reviews and Dissemination, University of York, York YO1 5DD, UK**  
Nick Freemantle, research fellow

**Istituto Mario Negri, Milan, Italy**  
Roberto Grilli, research associate

**Health Services Research Unit, University of Aberdeen, Foresterhill, Aberdeen AB9 2ZD, UK**  
Jeremy Grimshaw, programme director

**Department of Health Services Research, National Institute of Public Health, Oslo, Norway**  
Andy Oxman, senior research fellow

Correspondence to: Mr Freemantle

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by experts using non-systematic methods for literature review in textbooks and review articles, found a 13 year delay between convincing evidence becoming available and its incorporation into even half of the recommendations made.<sup>1</sup>

Rigour in undertaking research or systematic reviews does not necessarily result in important findings being incorporated into routine practice. For example, despite publication in the *Lancet* in 1988 of a very large pragmatic randomised trial which clearly showed substantial benefit for thrombolysis in treating acute myocardial infarction<sup>11</sup> a recent study in the Trent region suggested that only around 30-50% of patients likely to benefit received this treatment during the study period.<sup>12</sup>

Systematic reviews will be useful only if they help to inform questions relevant to the delivery of health care. Existing systematic reviews which examine methods to promote effective professional practice indicate that broadly defined continuing medical education,<sup>2</sup> clinical guidelines,<sup>3</sup> and computer assisted decision aids,<sup>13</sup> can be effective. However, interpreting these general conclusions for practice is difficult. It is important that future reviews build on the experiences of these and other recent reviews.

#### **Cochrane collaboration**

As a result of the work of Archie Cochrane (box) and the efforts of those influenced by his work, an international network of collaborators is evolving who are concerned to identify and interpret the findings of rigorous research.<sup>16</sup> The Cochrane collaboration will take this agenda forward in the context of promoting effective professional practice.

Archie Cochrane, a British epidemiologist writing over 20 years ago, drew attention to our great collective ignorance about the effects of health care.<sup>14</sup> He subsequently suggested that each specialty or subspecialty should develop and maintain systematic reviews of randomised controlled trials to enable more informed decisions to be taken about health care.<sup>15</sup> In the past few years this message has been increasingly taken up internationally, and the Cochrane collaboration has evolved to locate reports of rigorous research and synthesise them in systematic reviews that are updated.<sup>16</sup>

#### **Locating and disentangling the evidence**

Locating reports of rigorous evaluations of behavioural change among health professionals presents considerable difficulties. Added to the general difficulties of comprehensively locating trials of effectiveness of clinical interventions through electronic searches<sup>17</sup> is the tendency for research of behavioural change to be particularly poorly coded in electronic databases. Also the trials are published in many different journals across different disciplines, which may not be listed in major electronic databases. Commonly a journal may contain only one report of a relevant evaluation. Offers to systematically search relevant journals by hand will increase the likelihood of relevant

trials being located, and cooperation within the Cochrane collaboration as a whole will help to identify further reports of rigorous research.

Reviews of studies of interventions to improve professional practice raise methodological issues which may be less prominent (but still relevant) in reviews of clinical interventions: particularly disentangling complex interventions and multiple outcomes and interpreting evidence from different experimental designs. People interested in these issues have met, and work on this complex area has started, which will continue within the Cochrane collaboration.

#### **Editorial policy**

In constructing the reviews quality assurance will be secured through a multi-faceted process rather than the traditional peer review mechanism in which a few "experts" are consulted towards the end of the work period. The quality assurance process will address the technical quality of the review and the potential for its practical use. The editorial team will be supported by an editorial board whose members have skills and knowledge to help to inform the scope and quality of reviews, and they will include people with good subject knowledge from various backgrounds and decision makers whose work entails interpreting reviews to inform practice and future research.

The editorial office for the Cochrane collaboration is located at the NHS Centre for Reviews and Dissemination at the University of York. Funded by the NHS Executive to undertake systematic reviews on important topics, the centre has a particular responsibility to help to disseminate relevant research findings. It is a sibling organisation to the UK Cochrane Centre in Oxford, and the development of the Cochrane collaboration demonstrates the close collaboration between the two organisations.<sup>18</sup> A full time administrator and secretary have been appointed at the centre in York to support the information and methodological expertise available there.

#### **Updating reviews**

In areas of rapid publication of new research, reviews may lag behind the research evidence. The observed length of time between publication of research results and their incorporation into decision making may lead to considerable uncertainty whether the results of any review published in a medical journal are still relevant and represent the best possible advice. Systematic reviews developed by the Cochrane collaboration will be made available electronically as part of the collaboration's database, regularly updated according to the availability of new evidence, and open to constructive criticism and revision.

#### **Next steps**

International collaboration of this sort has already shown dividends. Rigorous evaluations examining the effectiveness of the implementation of guidelines<sup>3</sup> and those examining the impact of continuing medical education<sup>2</sup>

have identified trials which add to our knowledge. However, where the scope of these reviews is similar the separate efforts have produced reference lists which do not overlap perfectly. Collaboration has brought together these independent efforts and enabled each to benefit from the work of the others.

High quality systematic reviews on the effectiveness of opinion leaders, outreach visits, audit and feedback, and patient mediated interventions (in which professional practice may be affected through providing information to patients) are already being prepared. They will be systematically updated as new evidence from rigorous research becomes available, and they will be made available through the Cochrane Database of Systematic Reviews.

The Cochrane collaboration has already received many offers of help worldwide. We welcome approaches from others interested in being involved in this project, by undertaking systematic reviews, helping to identify reports of rigorous research through hand searching and other methods, or providing financial or methodological input.

Only through systematically identifying and interpreting rigorous research on dissemination are attempts to improve the effectiveness of professional practice most likely to succeed and may further research address important questions rather than merely repeating previous work.

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