

The Cochrane Collaboration

Mike Clarke & Phil Wiffen

The Cochrane Collaboration is the world's largest organisation dedicated to the preparation and maintenance of systematic reviews of the effects of healthcare interventions (www.cochrane.org). In recent years it has expanded this role to include systematic reviews of the accuracy of diagnostic tests. The Collaboration seeks to cover all areas of health and all aspects of care, including screening, treatment, prevention and rehabilitation. The Collaboration also produces Cochrane methodology reviews, which provide a unique collection of systematic reviews of various aspects of the methods for systematic reviews and other evaluations of health and social care.

The Cochrane Collaboration has ten guiding principles:

- Collaboration, by internally and externally fostering good communications, open decision making and teamwork.
- Building on the enthusiasm of individuals, by involving and supporting people of different skills and backgrounds.
- Avoiding duplication, by good management and co-ordination to maximise economy of effort.
- Minimising bias, through a variety of approaches such as scientific rigour, ensuring broad participation, and avoiding conflicts of interest.
- Keeping up to date, by a commitment to ensure that Cochrane Reviews are maintained through identification and incorporation of new evidence.
- Striving for relevance, by promoting the assessment of healthcare interventions using outcomes that matter to people making choices in health care.
- Promoting access, by wide dissemination of the outputs of The Cochrane Collaboration, taking advantage of strategic alliances, and by promoting appropriate prices, content and media to meet the needs of users worldwide.

- Ensuring quality, by being open and responsive to criticism, applying advances in methodology, and developing systems for quality improvement.
- Continuity, by ensuring that responsibility for reviews, editorial processes and key functions is maintained and renewed.
- Enabling wide participation in the work of The Cochrane Collaboration by reducing barriers to contributing and by encouraging diversity.

The Cochrane Collaboration was established in 1993, a year after the opening of the first Cochrane Centre in the UK. This Centre was opened with support from the Research and Development Programme of the National Health Service and is now part of the National Institute for Health Research. However, within months of the opening of the UK Cochrane Centre, the Collaboration had expanded into a multinational organisation. Although a large minority of the participants are still based in the UK, there are now more than 23,000 people actively participating in its work, in over 100 countries.

Most of these people are authors working on Cochrane reviews, almost always without direct reimbursement for their efforts. They are supported by one of the 51 Cochrane Review Groups that provide editorial input, and the administration and infrastructure needed to help prepare and maintain Cochrane reviews. These Groups cover specific areas of health such as pregnancy and childbirth, colorectal cancer, HIV/AIDS, skin diseases, incontinence and schizophrenia. Thirteen Cochrane Centres spread around the world provide regional assistance with training and support, and the dissemination of the findings of Cochrane reviews. There are also twelve Cochrane Methods Groups, covering issues such as applicability, information retrieval, statistics and health economics; and thirteen Cochrane Fields with broad areas of interest and expertise, such as child health, primary care and neurology. These cut across the scope of Cochrane Review Groups and help to identify people to work on reviews and to disseminate the findings. A Cochrane Consumer Network strives to promote the involvement of users of health care and services, in both the production and use of Cochrane reviews.

Some Cochrane Centres have a special responsibility for the Collaboration as a whole, above and beyond their regional role. One such example is the Nordic Cochrane Centre at the Righshospitalet in Copenhagen, Denmark, which develops the Collaboration's Information Management System (IMS). This is the software that is used to prepare and maintain Cochrane reviews and to submit them for publication. It includes Review Manager (RevMan), which is the software tool used to write Cochrane reviews and, where appropriate, to perform and display meta-analyses of the results of the included studies.

Cochrane is funded from a variety of sources including governments either directly or indirectly, not for profit agencies and academic institutions. There are clear policies on commercial sponsorship which include 'there should be a clear barrier between the production of Cochrane reviews and any funding from commercial sources with financial interests in the conclusions of Cochrane reviews' In practice this precludes the use of pharmaceutical and similar company funds for Cochrane activities.

Cochrane reviews are published in the Cochrane Database of Systematic Reviews, which is part of The Cochrane Library. This is an electronic publication available on the internet, for example in Wiley Interscience (www.thecochranelibrary.com) and on DVD. Cochrane reviews are indexed in Medline and included in the Thomson's Scientific Web of Science, with an impact factor of 5.182 for 2008. When the Cochrane Database of Systematic Reviews first appeared in 1995, it contained a few dozen full reviews. This grew to 500 in 1999, 1000 in 2001, 2000 in 2004, 3000 in 2007 and 4000 in 2009. The protocols for a further 1900 reviews are published alongside this completed work, setting out the methods that will be followed. More than 400 of these protocols become full reviews each year and a few hundred of the existing reviews are updated, with a hundred or more these changing to such an extent that readers who used their findings in the past are encouraged to read them anew.

All Cochrane reviews have the same structure, which, once mastered, makes it easy to move between reviews to find those sections of particular interest. The common components of Cochrane reviews include three different types of summary: a plain language summary aimed at

a lay audience, a structured abstract (sub-divided into sections that broadly correspond with the structure of the main text of the review) and a recently introduced Summary of Findings table which gives the main numerical results of the review and an indication of the strength of this evidence. The main text of the review covers the background and objectives, selection criteria for studies to be included in the review, search strategy for identification of studies, methods of the review, description of the studies and their methodological quality of included studies, results, discussion and the authors' conclusions divided into implications for practice and implications for research.

Cochrane reviews cover the whole range of health care, driven primarily by the enthusiasm of authors to meet the scientific challenge of questions about the effects of interventions and the appropriateness of a Cochrane review to answer these questions. Although there are now 4000 full Cochrane reviews and thousands of other systematic reviews, a lot of work remains to be done to cover all the areas for which reliable evidence is needed for decision making in health care. For example, the Cochrane Central Register of Controlled Trials contains more than 600,000 reports of studies of the effects of healthcare interventions, and less than 100,000 of these have been included in Cochrane reviews to date.

Another output of The Cochrane Collaboration is the *Cochrane Methodology Register*. This contains more than 12,000 records relating to published reports of empirical research, registrations for ongoing research, reviews of such research and useful resources such as criteria to assess the quality of studies.

Cochrane reviews are widely used in decision making and guidelines. For example, a survey in 2008 found that 54 guidelines from the National Institute of Health and Clinical Excellence (NICE) included a total of 572 citations to Cochrane reviews, and 49 guidelines from the Scottish Intercollegiate Guidelines Network (SIGN) included 271 citations (Data gathered for the UK Cochrane Centre annual report to the UK National Institute for Health Research). There are also initiatives to improve access to the findings of Cochrane reviews and their usefulness to decision and policy makers. For example, the Evidence Aid initiative was established after the Indian

Ocean tsunami in 2004 (www.EvidenceAid.org). This includes a collection of specially created summaries of Cochrane reviews of relevance to people making decisions in planning for, or responding to, natural disasters or other large scale healthcare emergencies. Other recent developments include the introduction of short, audio podcasts in which the authors of Cochrane reviews summarise the findings of their search (www.cochrane.org/podcasts) and a monthly, web-based Journal Club highlighting clinical and methodological aspects of a Cochrane review (www.CochraneJournalClub.com).

Further reading

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Short Biographies of co-authors:

Professor Mike Clarke

Professor Mike Clarke is Director of the UK Cochrane Centre (part of the National Institute for Health Research) and Adjunct Professor at the School of Nursing and Midwifery in Trinity College Dublin. He works on dozens of systematic reviews and several large randomised trials. He was Chair of the Steering Group of The Cochrane Collaboration from 2002-2004, and has a strong interest in increasing capacity for the conduct of systematic reviews and in improving their accessibility, in particular in low and middle income countries. His work on accessibility includes his role as Podcast Editor for The Cochrane Library (www.cochrane.org/podcasts).

Philip J Wiffen MSc MRPharmS

Phil works as the Director of Operations and Training at the UK Cochrane Centre and was formerly the editor of the Cochrane Pain, Palliative and Supportive Care Group. He is a clinical pharmacist by background and has extensive experience in pain medicine and research. He is honorary Professor at two Chinese Universities and has recently spent several months teaching systematic review skills in several Chinese cities. He has published extensively including a book on Evidence based pharmacy and is lead author of a recent book in the OUP Handbook series on Clinical Pharmacy.

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UK Cochrane Centre
National Institute for Health Research
Summertown Pavilion
Middle Way
Oxford OX2 7LG
England
(e-mail: mclarke@cochrane.ac.uk)