**Prognosis reviews: Proposal to include exemplars in *The Cochrane Library***

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**Date: 30 March 2012**

We propose that members of the Prognosis Methods Group (PMG), in collaboration with members of CRGs, develop three exemplar prognosis SRs, one each of the types numbered 1-3 below, and that these be published in *The Cochrane Library*. Information relevant to this proposal is outlined below.

**What is prognosis research?**

Prognosis research seeks to understand, summarise and explain future clinical outcomes in individuals with a specific health condition (e.g. with a particular diagnosis or having a particular disease).1 Prognosis research findings are increasingly used by clinicians to help manage patients as they provide information about well-being and future outcomes of individuals, and about factors (either in isolation or in combination using so-called prognostic prediction models) that predict adverse or favourable outcomes or response to a particular treatment. They are integral to making decisions about appropriate treatments, as the absolute effect of a treatment depends on an individual’s underlying prognosis (i.e. their baseline risk). Also, the clinical course (i.e. prognosis) is often used to validate a diagnostic test in the absence of a 'gold standard' or reference test for the target disease under study. Finally, prognosis studies help to separate different stages of a disease, separate different forms of the same disease, and distinguish different diseases that previously were considered as one disease.

**Types of systematic reviews of prognosis**

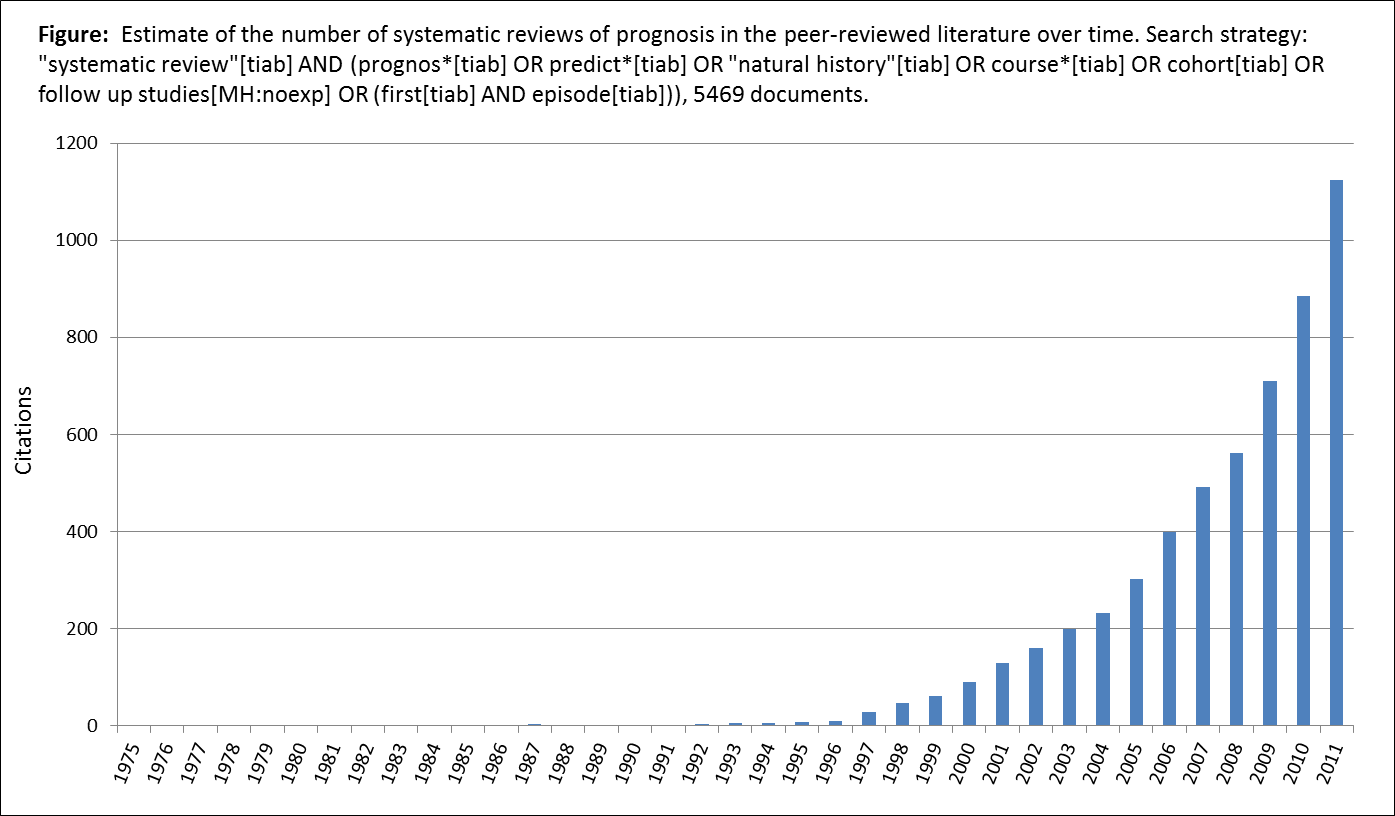
Driven by the relevance of and need for information about prognosis to healthcare decision-making and policy, systematic review methods for prognosis studies have been rapidly developing. Although the basic principles to reduce bias and random error are similar to those used for reviews of intervention and diagnostic studies, there are several challenges unique to systematic reviews of prognosis studies including lack of clarity in the indexing of these studies for bibliographic searches, their generally low quality, poor (and often biased) reporting, and heterogeneity in methods and design, leading to difficulties in identifying studies at low risk of bias and performing reliable meta-analysis. Nevertheless, recent work about prognosis studies has helped clarify different types of primary prognosis studies that will improve future systematic reviews and provide information that clinicians, policy makers and researchers need.

The main types of prognosis research questions where systematic reviews are needed are:

1. **What is the overall prognosis?** describing the likely (average) course or probability of particular outcomes in people with a particular health condition, and the variation in this;
2. **What are the prognostic factors for specific outcomes?** identifying which factors are associated with worse outcomes;
3. **Which combination of prognostic factors can predict specific outcomes?** identifying (i.e. developing and validating) prognostic models that predict the probability of specific outcomes for individuals; and
4. **Which factors predict (modify) the effect of a specific treatment?** identifying those factors (such as biomarkers) that interact with treatment effect, such that the treatment works better for some patients than others.

**Activity inside and outside The Cochrane Collaboration**

Despite the lack of a detailed handbook2 about how to prepare them, a large number of systematic reviews of prognosis studies have been published in the peer-reviewed literature. Although no comprehensive count of prognosis systematic reviews exists at this time we estimate, based on the sensitivity and specificity of MEDLINE searches and our preliminary screening, that approximately 2500 systematic reviews of prognosis have been published since 2005, with over 1100 published in 2011, more than a two-fold increase from 2007 (see Figure). A large number of systematic reviews of prognosis are published in high impact journals. A MEDLINE search using PubMed (June 2011) and title/abstract screen of six top general medical journals (*JAMA, BMJ, Annals of Internal Medicine, NEJM, CMAJ, Lancet*) identified over 300 systematic reviews of prognosis. One explanation for the increasing number of published systematic reviews of prognosis is that healthcare decision-makers (government and industry), clinicians and researchers increasingly realise the need for syntheses of evidence on the prognosis of diseases and other health conditions.



Over the last year, the Cochrane Prognosis Methods Group has had 16 requests for assistance from researchers to assist with writing and publication of systematic reviews of prognosis studies, notably addressing one of the first three above types of primary prognosis studies. Cochrane Review Groups, including the Anaesthesia Review Group and the Cystic Fibrosis and Genetic Disorders Group (CFGD), have expressed their interest in publishing SRs of prognosis studies. The Cochrane Prognosis Methods Group regularly receives requests from researchers to become members of the Group, and currently has over 130 members.

**Opportunities if prognosis SRs are included in *The Cochrane Library*:**

1. Provide best level evidence about important prognosis questions to those who need it.
2. Produce high-quality systematic reviews about important healthcare information that is:  
   1. directly connected to diagnostic and treatment decision-making; and
   2. needed for guidelines and decision support/point-of-care tools.
3. *The Cochrane Library* will benefit from the impact (citations in peer reviewed literature and guidelines) of these reviews.
4. Develop improved methods for systematic reviews of prognosis studies:  
   1. more rapidly, because methodological developments will be run in parallel to generation of topic specific systematic reviews of prognosis studies. Methodological guidance is currently being developed by members of the Prognosis Methods Group (PMG) and can be improved in an iterative cycle based on increasing experiences. This will help us to produce over time a robust and evidence-based ‘handbook’ for SRs of prognosis studies.
   2. within *The Cochrane Library* (if methodological issues can be published separately or within systematic reviews) and benefit from the impact of these as measured by impact factor.
5. Increase funding/revenue because:   
   1. countries and institutions will need to buy *The Cochrane Library* to access important health care information; and
   2. The Collaboration will be a key partner for producers of decision support/point-of-care software.

*(Please note: Wiley-Blackwell and the Collaboration Trading Company will be better able to advise on potential impact on funding/revenue.)*

Rather than wait some years until we have developed detailed guidance, we believe it is far better to create three exemplar reviews to be published in *The Cochrane Library* as a major stimulus to developing best methods and the evidence base simultaneously. Researchers and methodologists interested in undertaking a prognosis review can then be directed to and learn from the exemplars, the importance of these reviews for The Cochrane Collaboration can be investigated, and the suitability of existing processes can be explored.