

## Systematic reviews and meta-analysis of prognosis studies

### **Background**

Personalized and precision medicine is all about the inclusion of information about prognosis in the management of patients. Hence, in this era of personalized medicine it is not surprising that the number of publications of studies evaluating prognostic factors and models has exploded and literally rises per day. Hence, to guide care providers, decision makers, patients, citizens, editors, guideline developers and reviewers, appraising and summarizing the published data and evidence from prognosis studies in a systematic review and meta-analysis is urgently needed.

Reviews and meta-analysis of prognosis studies is just another type of review and meta-analysis, but may also be more challenging because of more variation in research questions, designs, bias and reporting. Many advances have recently been made regarding the design, searching, data extraction, critical appraisal, statistical analysis and reporting of systematic reviews of prognosis studies. In this comprehensive course we discuss and practice how to define your prognosis review question, how to search the literature, how to critically assess the quality of primary prognosis studies, which statistical methods to use for a meta-analysis of the results of primary prognosis studies, and how to interpret and report the findings. The course consists of plenary lectures, small-group discussions, and computer exercises.

### **Objectives**

The first two days will cover the review objective and defining the review question, as well as the protocol, literature searching, data extraction and the risk of bias assessment for reviews of prognosis studies. The third day addresses the more advanced topic of the principles of meta-analysis of prognosis studies. This will include computer exercises in which an actual meta-analysis is conducted. We will follow Cochrane guidance for preparing a systematic review of prognosis studies (see <http://methods.cochrane.org/prognosis/>).

At the end of the course, participants will understand the essentials and be able to:

1. Explain the rationale for performing a systematic review of prognosis studies
2. Formulate a focused review question addressing a prognostic problem
3. Systematically search the literature
4. Critically appraise the evidence from primary prognosis studies
5. Formulate the difficulties of meta-analysis of prognosis studies
6. Perform a meta-analysis in a review of prognostic factors
7. Perform a meta-analysis in a review of prognostic models

### **Target audience**

The workshop is directed to review authors, healthcare workers, clinicians, researchers,

journal editors, guideline developers and policy makers, who wish to know more about systematically reviewing and understanding prognostic evidence.

### **Prerequisites**

We expect participants to have a basic knowledge about the principles of primary prognosis studies (a short recap will be given at day 1) and of systematic reviews and meta-analysis. Computer exercises will be done using the free statistical software R. Although knowledge of basic R commands is desired, syntax code will be provided to replicate all analyses.

### **Topics**

1. Introduction to systematic reviews of prognosis studies.
  - a. Types of prognosis studies and systematic reviews of prognosis studies
  - b. Formulating the review question (PICOTS) and protocol of a review
2. Searching, Data extraction, Critical appraisal, Risk of Bias.
  - a. Searching for prognosis studies
  - b. Data extraction, Critical appraisal – using CHARMS
  - c. Practical: Risk of bias assessment of prognostic factor studies – using QUIPS
  - d. Practical: Risk of Bias assessment of prognostic model studies – using PROBAST
3. Introduction to meta-analysis of prognosis studies.
  - a. Rationale, Advantages/disadvantages of Meta-analysis of prognosis studies
  - b. Computer exercise Meta-analysis example of a prognostic factor and a prognostic model

### **Workshop Style**

The workshop will consist of online lectures, interactive small group exercises with ample room for discussion, and computer exercises. Participants are asked to do some preparatory work before the workshop and to do some self-study during the workshop. Participants are asked have R installed on their computer (detailed guidance will be provided later).

### **Faculty**

- Anneke Damen, PhD, Cochrane Netherlands and Julius Center, Utrecht.
- Thomas Debray, PhD, Cochrane Netherlands and Julius Center, Utrecht.
- Lotty Hooft, PhD, Cochrane Netherlands and Julius Center, Utrecht.
- Carl Moons, PhD, Cochrane Netherlands and Julius Center, Utrecht.
- René Spijker, MSc, Cochrane Netherlands, Utrecht, and Amsterdam University Medical Center, Amsterdam.
- Valentijn de Jong, PhD, Julius Center, Utrecht.

All facilitators are member of the Cochrane Prognosis Methods Group.

### **Language**

English.

### **Dates, insurance & cancellation**

See our [website](#) for exact dates.

This is a 3-day workshop. On all days, live Q&A sessions are planned and on the second course day there will be an assignment in small groups. Participants can do the other learning activities in their own pace.

NB: For this course a minimum number of participants is required. Two weeks before the start of the course we will decide whether the course will go ahead.

A full refund will be available if you notify us by email up to 30 working days before the date of the event. Refunds are not available if you cancel your place within 30 working days before the date of the event. The organization does not accept liability for individual medical, travel or personal insurance. Participants are strongly advised to take out their own personal insurance policies. In case an unforeseen event would force the organization to cancel the meeting, the organization will fully reimburse the participants registration fees.

### ***Course fee***

The course fee amounts € 895.-

### ***Registration and additional information***

To register for the course or to receive additional information, you can contact the course organizer at Cochrane Netherlands, Sabine van Dijk- van der Sluijs, [PAOJuliusCenter@umcutrecht.nl](mailto:PAOJuliusCenter@umcutrecht.nl).

For more information on the content of the course, you can send an e-mail with your question(s) to [cochrane@umcutrecht.nl](mailto:cochrane@umcutrecht.nl).

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