Systematic reviews and meta-analysis of prognostic studies

Hospital Universitario Ramón y Cajal

20th of June – 21st of June 2018
15:30 to 19:30 h; 09:00 to 17:00 h

Organizers:

- **Consorcio de Investigación Biomédica en Red de Epidemiología y Salud Pública (CIBERESP)**
- **Cochrane Madrid**
- **Instituto Ramón y Cajal de investigación Sanitaria (IRYCIS)**
- **Universidad Francisco de Vitoria-Madrid**

Information:

Elena Stallings

Contact number: 91 3368103

Email: bioestadistica.hrc@gmail.com

Evidencia fiable.
Decisiones informadas.
Mejor salud.

Context:

The number of primary studies evaluating prognostic factors and models is rising per day. Alike for therapies and diagnostic tests, critically summarizing and analyzing the evidence from prognostic studies in a systematic review and meta-analysis is beneficial for health care professionals seeking the best evidence.

Reviews of prognostic studies are more challenging because of more variation in questions, designs, bias and reporting, and thus in the statistical meta-analysis. Several advances regarding the design, searching, data extraction, critical appraisal and statistical analysis in systematic reviews of prognostic studies have recently been made by conveners of the Cochrane Prognosis Methods Group.

In this course we will discuss and practice how to define your review questions, how to search the literature, how to critically assess the methodological quality of primary prognostic studies, and which statistical methods to use for meta-analyses of the results of primary prognostic studies. The course consists of plenary presentations, small-group discussions, and computer exercises.

Place and dates:

Hospital Universitario Ramón y Cajal. Edificio Pabellón docente. Primera Planta. Aula 3.
Ctra. Colmenar Km. 9,100. 28034 Madrid, España. How to find it: http://cort.as/lWq3

20th – 21st June 2018, 14:30 to 18:30 h; 09:00- 17:00 h

Number of places: 25

Background knowledge:

The participants are expected 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.

Course objectives:

- Explain the rationale for performing a systematic review of prognostic studies
- Formulate a focused review question addressing a prognostic problem
- Systematically search the literature
- Critically appraise the evidence from primary prognostic studies
- Formulate the difficulties of meta-analysis of prognostic research
- Meta-analyse the performance of prognostic factors models
- Meta-analyse the value of prognostic factors.

Topics:

1. Introduction to systematic reviews of prognostic studies.
    a. Types of prognostic studies and systematic reviews of prognostic studies
    b. Formulating the review question (PICO) and protocol of a review

2. Searching, Data extraction, Critical appraisal, Risk of Bias.
    a. Searching for prognostic studies
    b. Data extraction, Critical appraisal – CHARMS
    c. Practical: Risk of bias assessment prognostic factor studies – QUIPS
    d. Practical: Risk of Bias assessment prognostic model studies – PROBAST

3. Introduction to meta-analysis of prognostic studies.
    a. Rationale, Advantages/disadvantages of Meta-analysis of prognostic studies
    b. Computer exercise Meta-analysis example of a prognostic factor and a prognostic model.

Metodology:

Theory and practical with the participation of students. **The course will be exclusively in English.**

Bring a laptop with RevMan and R and R studio software installed (this software is free and can be downloaded from here: R- https://cran.rediris.es/ R studio - https://www.rstudio.com/products/rstudio/download/#download).

Taught by:

Carl Moons

Carl Moons is Professor of Clinical Epidemiology at the Julius Center for Health Sciences and Primary Care. He is Director of Research in the management team of the Julius Center and heading the research programme 'Methodology', affiliated to Cochrane Netherlands, and convenor of the Cochrane Prognosis Methods Group. Since 2005 he also is Adjunct Professor at VanderBilt University, Nashville, USA. Carl Moons is and has been a (principal) investigator in many international and national studies, and published over 500 peer revieweed articles and book chapters. His major expertise is developing and testing innovations in methodological design and analysis for development, validation and implementation of diagnostic and prognostic prediction models and clinical decision rules, and methods for systematic reviews and meta-analysis of prognostic studies.

Lotty Hooft

Lotty Hooft is an associate professor at the Julius Center for Health Sciences and Primary Care. Since 2015, she is the co-director of Cochrane Netherlands which is hosted by the Julius Center in the UMC Utrecht. Her research focuses on three main areas: Developing and refining methods for systematic reviews and meta-analysis; methods to improve the interpretation and presentation of systematic review results; and reducing clinical- and research waste. In addition, Lotty Hooft is and has been the managing director of the prospective Trial Register in the Netherlands since 2004.

Thomas Debray

Thomas Debray is an assistant professor at the Julius Center for Health Sciences and Primary Care, and affiliated to Cochrane Netherlands, Oxford University and the University College of London. His research and teaching activities focus on the development, implementation and evaluation of statistical methods for risk prediction and stratified medicine based on multiple sources of data.