



Prognostic Research: Concepts and Models

Description

Prognosis is the probability that a specific event will occur in the future. Prognostic research is fundamental to clinical decision making, healthcare policy, and discovering new approaches to patient management. In this course we describe the basic concepts used to develop, validate, and implement a prognostic model in clinical practice and discuss how a web-based calculator might be constructed to give a useful decision-making tool. In addition we consider the reporting and impact of prognostic models and how the quality of prognostic research might be improved in order that prognostic information may be translated into clinically useful decision tools.

In the statistical sessions we will guide you through the main steps in prognostic modelling. As well as using Cox and simple parametric survival models, you will be introduced to flexible parametric survival models in Stata as a powerful tool for fitting prognostic data. We will present methods to select prognostic variables and investigate their form with fractional polynomials, compare and choose candidate models using information criteria, and validate the chosen model. We will use splines to model prognostic factors whose effect varies over follow up time and will investigate interactions between predictors. Although statistical theory will be discussed in the lectures, the emphasis will be on practical application of the statistical methods. The practicals will give you experience of selecting prognostic factors and assessing them, choosing between different models, and fitting and validating a prognostic model.

Objectives

- By the end of this course participants will have:
- An understanding of different types of prognostic research
- An understanding of how prognosis is used in clinical decision making and in discovering new approaches to managing patients
- Practical experience of analysing and assessing potential prognostic factors
- Practical experience of developing and validating a prognostic model
- An understanding of the quality of prognostic research and how it can be improved

Dates

Wed, August 21 – Fri, August 23, 2019

Equipment

Participants should bring their own portable computers.

Contact:

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CAS in Clinical Research



Course Structure

There will be a mixture of lectures, group exercises and Stata practicals. The practicals assume a good working knowledge of Stata and some experience of standard survival analysis, for example, using the Cox or Weibull model.

Assessment

Attendance and completion of practicals and group work.

Credits

1 ECTS

Preparation work: 2 h , Contact: 21 h

(1 ECTS corresponds to appr. 25-30 hours' workload)

Facilitators

Prof. Matthias Egger, Institute of Social and Preventive Medicine (ISPM) Bern

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Location

University of Bern, Mittelstrasse 43, Room: tba

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