Kurs-Nr.   2260.08.1.7/CW

Kurs-Titel: # Advanced Methods in Epidemiology: Applied Regression Modelling

Goal

By the end of this course participants will be able to fit, interpret and appraise multivariable models for analysis of epidemiological studies. They will have an understanding of (i) the appropriate use of multivariable models for different epidemiological designs, (ii) model criticism including tests for interaction, linear, nonlinear and categorical exposure effects and issues in choice of exposure variables and (iii) have a thorough working knowledge of regression modelling in StataTM.

Contents

The course will begin with an optional introduction to the StataTM statistical package, for students not familiar with the package or students who wish to refresh their StataTM skills. During the rest of day 1 and day 2 we will review the regression models commonly used in epidemiological studies (logistic regression, Poisson regression, Cox regression), show how these are fitted in StataTM and review interpretation of the output. On day 3 and day 4 we will introduce likelihood as the means of fitting statistical models and show how to use likelihood ratio tests to examine hypotheses about model parameters. We will show how to assess evidence for interaction and interpret output from models incorporating interaction parameters and how to fit and compare models with linear, nonlinear and categorical exposure effects. Day 5 will concentrate on issues in the analysis of clustered data, and on how to use cluster-level summary statistics, Generalized Estimating Equations (GEE) and random-effects models to analyse clustered data. The course will conclude with a question and answer session and a written exam. The course textbook will be «Essential Medical Statistics» by Betty Kirkwood and Jonathan Sterne. Participants should possess a copy of this book or may buy a copy from the Department of Social and Preventive Medicine, University of Berne. Students will have access to StataTM during the course and will be given the opportunity to purchase a license at a reduced rate.

Methods

Interactive lectures, group work, computer exercises and presentations from course participants. Questions and answer session on the concluding day. Students are invited to present on their ongoing work in the course.

Exam

Written exam during the course

Preparation, postprocessing

No preparation, 4 hours postprocessing

ECTS Credits

2 ECTS-Credits – in field 7

Target audience, admission

Target audience, admission
- Course for advanced students of the Public Health programme and PhD students
- Clinicians, researchers, public health specialists and other health care professionals who want to use multivariable models to analyse epidemiological data. Students should have a good understanding of epidemiological study designs and principles of statistical analysis, and be familiar with the interpretation of risk ratios, odds ratios, rate ratios and hazard ratios
- The course «Biostatistik I» (B106.20) is required
- The courses «Bevölkerungsbezogene Daten und epidemiologische Studien verstehen» (B101.20), «Einführung in die Statistiksoftware StataTM» (2180), «Konzepte, Methoden und Anwendungen der deskriptiven und analytischen Epidemiologie» (B102.30) and «Advanced Methods in Epidemiology: History and Concepts» (4150) are desirable

Organisation
Institut für Sozial- und Präventivmedizin der Universität Bern

Coordination of course
Jonathan Sterne, Professor of Medical Statistics

Co- Coordination of course
Matthias Egger, Professor of Epidemiology and Public Health

Lecturers and tutors
Jonathan Sterne, Professor of Medical Statistics and Epidemiology; Matthias Egger, Professor of Epidemiology, and other senior lecturers from the Institute of Social and Preventive Medicine, University of Bern

Dates
February 11-15, 2008

Location
Bern

Fees
Fr. 1500.-- (course material included)

Registration
Koordinationsstelle des Interuniversitären Weiterbildungsprogramms Public Health
mph@ifspm.uzh.ch

Registration deadline
December 10, 2007

Additional information
– Language: English
– Students will be required to bring a laptop and a pocket calculator with basic scientific functions