



Essential Medical Statistics

20 - 24 September 2010

About the Course

This course will cover medical statistics, with special emphasis on three statistical techniques that are especially useful in large studies and research with hard clinical outcomes: logistic regression, survival analysis and meta-analysis. The course is ideal for non-statistical researchers wishing to gain a deeper understanding of the statistics used in health care research, and some personal experience in their application.

Multiple logistic regression

Logistic regression is used for case-control studies and cross-sectional studies, and is also useful for some cohort/follow-up studies. Students will learn to:

- Identify when and how to use binary logistic regression
- Fit, test and interpret logistic regression models involving both numeric and categorical predictors
- Assess goodness of fit and use fitted models for prediction.

Analysis of Lifetime Data (Survival Analysis)

In cohort/follow-up studies, participants may not all be followed for the same length of time. Survival analysis allows us to analyse the data while allowing for the different lengths of time that different people are "at risk". This course covers the widely-used, classic techniques of survival analysis including:

- The Kaplan-Meier method for plotting graphs of survival over time
- The log-rank test for comparing survival between different groups
- The Cox proportional hazards model for studying associations between exposures and survival, and adjusting for covariates.

Students will learn to implement these techniques and interpret the results.

Meta-analysis

Meta-analysis is the statistical science of combining results from multiple studies. In recent decades, the combination of systematic review and meta-analysis has become one of the most powerful tools in medical research and the source of many high-impact papers in clinical journals. This module will teach students the core techniques of meta-analysis for both dichotomous (e.g. case vs. control) and continuous (e.g. level of a risk factor after treatment) outcomes. After completing the course, students will have experienced:

- Use of appropriate models to perform meta-analyses of dichotomous and continuous outcomes
- Investigation of heterogeneity and bias
- Summarizing, displaying and interpreting results

Participants of this course should be familiar/comfortable with the basics of statistical inference (hypothesis testing), such as the use of t-tests and chi-square tests. Participants must also have some experience of using statistical software such as SPSS. Our online course, Statistics for Health Researchers, is a good foundation for this course.

Course Tutor

Course Tutors

The module will be delivered by the statistics group at the University of Oxford's Centre for Evidence Based Medicine and their collaborators:

- Richard Stevens Ph.D. University research lecturer in statistics, University of Oxford
- Bernie Higgins M.Sc., Senior lecturer in mathematics and statistics, University of Portsmouth
- Rafael Perera D.Phil. Director of statistics group (Dept Primary Care), University of Oxford
- Helen Doll D.Phil. Senior medical statistician, University of Oxford
- Jason Oke M.Sc. Medical statistician, University of Oxford.

How do I apply?

Further details of how to apply for the MSc, short courses and DPhil can be found on the website:

www.conted.ox.ac.uk/cpd/ebhc

or you can send an email to: cpdhealth@conted.ox.ac.uk
or telephone: **+44 (0)1865 286943**



The Oxford International Programme in Evidence-Based Health Care

Module Title	Dates for face-to-face teaching
M1: The Practice of Evidence-Based Health Care	18-22 October 2010 OR 28 March-01 April 2011
M2: Introduction to Study Design and Research Methods	06-10 December 2010 OR 09-13 May 2011
M3: Knowledge into Action	06-10 June 2011
M4: Clinical Epidemiology and Decision Making	31 January - 04 February 2011
M5: Evidence-Based Diagnosis and Screening	11-15 April 2011
M6: Systematic Reviews 1	24-26, 29-30 November 2010
M6: Systematic Reviews 2	02-04, 07-08 March 2011
M6: Systematic Reviews 3	04-06, 09-10 May 2011
M6: Systematic Reviews 4	19-20, 23-25 May 2011
M6: Systematic Reviews 5	15-17, 20-21 June 2011
M7: Randomized Controlled Trials 1	30 Sep-01 October, 04-06 October 2010
M7: Randomized Controlled Trials 2	02-04, 07-08 February 2011
M7: Randomized Controlled Trials 3	13-15, 18-19 April 2011
M8: Essential Medical Statistics	20-24 September 2010
M11: Qualitative Research Methods	27 June - 01 July 2011
M13: Statistics for Health Researchers 1 (Online)	17 January - 25 March 2011
M13: Statistics for Health Researchers 2 (Online)	16 May - 22 July 2011

MSc in Evidence-Based Health Care

This joint programme offered by the Oxford University Centre for Evidence-Based Medicine and the Continuing Professional Development Centre has tutors and contributors who are internationally recognized leaders in the field of evidence-based practice and teaching. The modules included in this MSc are listed above.

DPhil in Evidence-Based Health Care

The part-time DPhil Programme considers applications from those who have already been awarded the MSc in Evidence-Based Health Care. Applications may also be considered from students with a Master's in a related subject. Supervision is arranged to suit the DPhil topic and may involve staff from within Medical Sciences.

Short Course

The modules from the Oxford International Programme in Evidence-Based Health Care can be taken as stand-alone short courses.

Other Health Sciences Courses

Within the Health Sciences portfolio, we also run other courses, such as: Cognitive Therapy, Experimental Therapeutics and Paediatric Infectious Diseases.

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