Statistical analysis with missing data using multiple imputation and inverse probability weighting

Training Course - University of St Andrews
20th – 22nd June 2011

This course aims to:

- provide an introduction to the issues raised by missing data, and the associated statistical jargon
- illustrate the shortcomings of ad-hoc methods for 'handling' missing data
- introduce multiple imputation for statistical analysis with missing data
- compare and contrast this with other methods, in particular inverse probability weighting and doubly robust methods
- introduce methods for exploring the sensitivity of inference to the missing at random assumption

Course content

The course will consist of 6 sessions, each of which comprises a 1hr lecture followed by a discussion and then a 1.5hr computer practical using Stata:

Session I	Introduction, issues raised by missing data, and towards a systematic approach
Session II	Shortcomings of ad-hoc methods; introduction to multiple imputation (MI)
Session III	More on MI (joint model approach, chained equations)
Session IV	MI in practice (hierarchical data, non-linearities, interactions, survival outcomes)
Session V	Sensitivity analysis
Session VI	Inverse probability weighting and doubly robust estimation

Target Audience

Epidemiologists, biostatisticians and other health researchers with strong quantitative skills and experience in statistical analysis. Stata will be used for the computer practicals, and so familiarity with the package is highly desirable, although full Stata code and solutions will be provided.

Course Materials

Participants will receive written course notes.

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ESSENTIAL INFORMATION

Registration: To register for the course please complete the on-line registration form.
https://onlineshop.st-andrews.ac.uk/browse/extra_info.asp?compid=1&modid=2&prodid=202&deptid=28&catid=14

The fee for the course **is £**100 or £50 for registered postgraduate students or unwaged which includes registration, course materials, lunches, refreshments.

Location: The IT Laboratory and Lecture Theatre, Irvine Building, North Street, St Andrews
http://www.st-andrews.ac.uk/gg/school/findus.shtml

Accommodation: You are responsible for booking your own accommodation. St Andrews has a wide range of accommodation to suit every budget. For further information log on to www.stayinstandrews.co.uk. Central hotel accommodation can be found at the Greyfriars Hotel, North Street, St. Andrews, Russacks Hotel, The Scores, St Andrews and there are also excellent Bed & Breakfast establishments on Murray Place in St Andrews.

Enquiries: Please direct any further enquiries to ship@st-andrews.ac.uk