Improving Health Worldwide

Design & Analysis of Cluster Randomised and Stepped Wedge Trials

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LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

Overview

This course will provide a clear understanding of how to design and analyse cluster randomised trials and stepped wedge trials. Cluster randomised trials and stepped wedge trials are the gold standard method for evaluating health and social interventions at the community level.

To get the best out of cluster randomised and stepped wedge trials, it's crucial to have a firm grasp of key principles such as when to use these trials, potential issues when designing them, the statistical methods, etc. Combining high-quality lectures based on real-life research with practical computer sessions, this course will give you a strong foundation for effective design and analysis of these highly impactful trials.

Course objectives

By the end of this course, attendees will be able to critique and apply a range of appropriate design approaches and analytical methods for cluster randomised and stepped wedge trials. The course will cover:

- Key concepts of cluster randomised trials, including measures of between-cluster variation and the rationale for cluster randomisation.
- Design of cluster-randomised trials, including stratification and randomisation procedures.
- Calculation of sample size.
- Analysis of cluster randomised trials using both cluster-level summaries and individual-level data (random effects models and generalised estimating equations).
- Design and analysis of stepped wedge trials.
- Ethical considerations, data monitoring and reporting of CRTs.

Who should apply?

The course will have a hybrid format and students can choose to attend in person in London or online. Teaching will take place through a blend of lectures and hands-on, live, practical sessions. There will be a strong emphasis on the practical exercises where participants will have hands-on experience using Stata to analyse illustrative datasets from a variety of trials. Solutions to practical exercises in R will also be provided to enable students with a solid knowledge of R to use that instead of Stata. The course will take place from approximately 9:30am to 5.00pm British Summer Time (BST).

Entry requirements

Students need knowledge of statistical methods (e.g. linear, Poisson, logistic regression) and clinical trials. The course uses Stata, with R support. Basic Stata or solid R knowledge and good English are required.

Attendance

This short course is studied on a full-time basis for one week. The course will have a hybrid format and students can choose to attend in person in London or online.

Key information

Course organisers:
John Bradley and Jennifer Thompson

Fees:
Up-to-date tuition fees can be found on our website.

Contact email:
shortcourses@lshtm.ac.uk

Find out more and apply:
lshtm.ac.uk/study/courses/short-courses/cluster-randomised-trials