Bayesian adaptive randomised clinical trials

A two-day workshop in conjunction with the ViCBiostat Summer School 27–28 February 2020 in Melbourne and 5–6 March 2020 in Sydney

Adaptive clinical trial designs have proven valuable to accelerate the development of new treatments. Adaptive randomisation based on Bayesian principles has been proposed for testing several treatments in complex clinical trials on heterogeneous populations. Recent applications suggest that outcome adaptive approaches can accelerate drug development processes. Adaptive algorithms attempts to learn and identify, during the trial, the best available treatment options for individual patients enrolled in the trial.

We are pleased to present a workshop on Bayesian adaptive randomised trials, delivered by two international leaders in this field – Dr Lorenzo Trippa, PhD and Dr Steffen Ventz, PhD (see overleaf for their biographies).

Workshop overview

The workshop will discuss methods for the design and analysis of adaptive clinical trials with a particular focus on complex clinical trials for personalised medicine. The workshop will illustrate methods for designing innovative trials that improve the efficiency of the current experimental architecture for testing novel treatments. Statistical methods for platform studies will be presented which combine adaptive randomisation with the use of electronic health records and external control data. Real examples will be used to illustrate how Bayesian adaptive designs work. Participants will have the opportunity to learn how to use R packages to implement such methodology in practice.

The workshop will cover the following topics:

- Applications of decision theory to trial designs
- Bayesian multi-stage designs
- Bayesian phase I trial designs
- The control of false positive results in Bayesian clinical trials
- Adaptive randomisation
- Platform clinical trials
- Simulation of drug development studies
- Bayesian subgroup analyses
- The use of real world data in clinical trials
- Practical illustration and demonstration of methods in R

Who should attend?

This workshop is suitable for statisticians, clinicians and other scientists interested in innovative clinical trial designs and their analysis. Ideally delegates have an intermediate level of statistical expertise. Although not the main focus, the workshop involves practical sessions in R. Clinicians attending the workshop would ideally team up with a statistician during these sessions. Delegates should ensure that they have the R software installed in their laptops prior to attending the workshop.

Materials

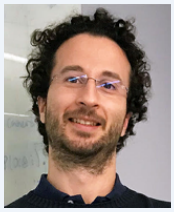
Electronic copies of presentation materials will be made available online. **Important note: attendees are required to have access to a laptop with the R software preloaded (https://www.r-project.org)**.

See overleaf for registration, cost and venue information

Australian Clinical Trials Alliance

ViCBiostat

AusTriM Australian Trials Methodology Research Network



Dr Lorenzo Trippa, PhD

Dr Trippa is an Associate Professor in the Department of Biostatistics and Computational Biology at Dana-Farber, and an Associate Professor in the Department of Biostatistics at the Harvard T.H. Chan School of Public Health. His research interests include clinical trials design; Bayesian nonparametrics; the development of prediction models in personalised medicine; computational methods for Bayesian adaptive designs; computational methods for Bayesian inference; and meta-analyses in personalised medicine. His motivation in adaptive designs research stems from the study of novel therapies in precision oncology that create new challenges, both in the development of efficient designs and in the analysis of clinical data. The primary purpose of this research is to develop innovative designs that are both practical and efficient.

Dr Steffen Ventz, PhD

Dr Ventz is a research scientist in the Department of Data Sciences and the Center for Regulatory Sciences at the Dana-Farber Cancer Institute and the Department of Biostatistics at the Harvard T.H. Chan School of Public Health. His research interests include response-adaptive clinical trials, statistical computation, Bayesian decision theory, Bayesian analyses and lately Deep Reinforcement Learning. He has worked in the areas of information theory, Bayesian dose finding methods, platform and basket trials, statistical inference under adaptive sampling designs, and computational biology. Recent collaborative projects have involved applications in cancer and infectious diseases.

Registration

https://clinicaltrialsalliance.org.au/events-forums/bayesian-adaptive-randomised-clinical-trials-workshop-sydney/

https://clinicaltrialsalliance.org.au/events-forums/bayesian-adaptive-randomised-clinical-trials-workshop-melbourne/

Costs

$150–$375

Venues

Melbourne
School of Public Health and Preventive Medicine,
Monash University
Ground Floor Conference Rooms 2 and 3
553 St Kilda Rd, Melbourne Victoria 3004
Contact: Aneesha Heranjal
Phone: +61 3 8639 0769
Email: Aneesha.h@clinicaltrialsalliance.org.au

Sydney
NHMRC Clinical Trials Centre
Level 3–Level 5, Medical Foundation Building
92–94 Parramatta Rd, Camperdown NSW 2050
Contact: Vanessa Cochrane
Phone: +61 2 9562 5328
Email: vanessa.cochrane@ctc.usyd

This workshop is presented by the Australian Clinical Trials Alliance (ACTA) in partnership with the Victorian Centre for Biostatistics (ViCBiostat) and the Australian Trials Methodology Research Network (AusTriM).

To find out more visit www.clinicaltrialsalliance.org.au

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