Seminar

Analysis of complex outcomes through all-to-all pairwise comparisons: a journey across times and research areas

Leonid Churilov and Hannah Johns

Professor of Biostatistics and Postdoctoral Research Fellow, respectively.
Melbourne Medical School, University of Melbourne

The ability to reflect the complexity of the underlying clinical context characterized by potentially conflicting multiple endpoints through clinically meaningful design and valid analysis remains the focus of research effort in the area clinical trials. In this presentation, we review relevant pairwise comparisons-based approaches by revisiting some useful results from statistics, multiple criteria decision analysis, and graph theory. Based on this review, we propose a unifying Twice-Generalized Odds Ratio pairwise comparisons-based approach to the analysis of complex clinical outcomes with multiple potentially conflicting endpoints of different nature. We illustrate this unifying approach through the analysis of the recently published REMAP-CAP COVID-19 Corticosteroid Domain Randomized Clinical Trial.

Leonid Churilov is Professor of Biostatistics, Melbourne Medical School, University of Melbourne. He completed his PhD (1998) at the University of Melbourne. He is a recipient of international awards from the Operational Research (OR) professional societies of the USA & Japan and the Ren Potts Medal of the Australian Society for OR that recognises outstanding contributions to theory and practice of OR. His research interests are based on questions arising in clinical and health domains and range from design and analysis of adaptive clinical trials to systems modelling for clinical and health management decision support.

Hannah Johns is a post-doctoral biostatistician researching the application of statistics, data visualisation and machine learning techniques in the analysis of health and clinical data. She completed her PhD (2019) from RMIT University. She plays a key role in Australian Stroke Alliance Optimisation activities, working with Professor Leonid Churilov. During the COVID-19 pandemic, Hannah completed time-sensitive simulation modelling to assist the Royal Flying Doctor Service in planning for an influx of patients.

Thursday 24th June
9:30-10:30am AEST

This event will be streamed via Zoom.
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