



STATISTICAL SOCIETY OF AUSTRALIA QUEENSLAND ORDINARY BRANCH MEETING

TIME: Talk at 4:30pm, with Pizza following the talk, Tuesday 23 October 2018

COST: Free

VENUE: Queensland University of Technology, Gardens Point, Z Block, The Gibson Room 1064

TITLE: Arbitrary levels of confidence in the results of clinical trials could be a massive waste of research dollars

SPEAKER: Professor Nicholas Graves, Queensland University of Technology

ABSTRACT:

Clinical trials might be larger than they need to be because arbitrary high levels of statistical confidence are sought in the results. Traditional sample size calculations ignore the marginal value of the information collected for decision making. We used data from a recent clinical trial powered with traditional rules of statistical significance. The data were also used for an economic analysis to show the intervention led to cost savings and improved health outcomes. Adoption represented a good investment for decision-makers. We examined the effect of reducing the trial's sample size on the results of the statistical hypothesis-testing analysis and also on the conclusions that would be drawn by decision-makers based on economic analysis. As the sample size reduced it became more likely that the null hypothesis of no difference in the primary outcome between groups would fail to be rejected. For decision-makers reading the economic analysis, reducing the sample size had little effect on the conclusion about whether to adopt the intervention. If the goal is to make a good decision about whether an intervention should be adopted, that could have been achieved with a much smaller trial.

BIOGRAPHY:

Nick's specialist areas of knowledge include health economics; health services research; decision making; cost-effectiveness; prevalence of high-value and low-value care and its effects on patients; healthcare associated infection; health behaviour change interventions; screening for infectious and chronic disease; and how research funding is allocated. Nick's major focus is on showing how health services can be improved at low cost, or even improved with cost savings

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