Reviewer’s report

Title: Diagnostic Randomised Controlled Trials: The Final Frontier

Version: 2 Date: 10 March 2012

Reviewer: Craig Ramsay

Reviewer’s report:

Thank you for the opportunity to review this interesting paper. It is well-written and many of the arguments are clearly given. I have a few comments to make.

1. abstract/background – unclear what “lag far behind” means for non-therapeutic interventions. Is that lagging behind ‘in number’?

2. The value of the diagnostic RCT design – “indeterminate rate is often omitted in diagnostic cohort studies”. Need a reference (is that true?)

3. Potential limitations of diagnostic RCT
   - A discordant test RCT – ethics and timing of trial consent could have been described here. The purported limitation of influencing participation would be minimised if consent is taken after discordant status is known.
   - It is not clear why different clinical and demographic details in the diagnostic study using discordant pairs is a particular issue compared to the diagnostic RCT design. All RCTs have a similar concern regarding the generalisabilty of the study result to clinical practice.

4. comment. I wholeheartedly agree that more diagnostic RCTs should be conducted and reported, but clearer exposition of when one should be conducted could have been included. The Lord et al study quoted by this paper provides an excellent overview of the decision making processes that may be required. In addition, the role of decision modelling together with cohort design diagnostic studies in the context of decision making could have been described. In my opinion, an additional paragraph to describe some of the decision processes that researchers should undertake before deciding on the type of diagnostic study to conduct would be warranted.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Declaration of competing interests:

I declare that I have no competing interests