

Reviewer's report

Title: Development of a minimization instrument for allocation of a hospital-level performance improvement intervention to reduce waiting times in Ontario Emergency Departments.

Version: 1 **Date:** 9 February 2009

Reviewer: Craig Ramsay

Reviewer's report:

Thank you for the opportunity to review this manuscript, I found it a good attempt to standardize the a priori identification of potential confounders in system wide health care interventions. I have structured my critique around the guidance provided by Implementation Science. I have no major revisions, all are minor.

a) Is the question posed by the authors new and well defined?

Yes. For RCTs of drugs it is usually that case that (at least) age is used as a stratification variable because it is well known that the efficacy of drugs is often related to increasing age. In large scale complex interventions, there is little known about the mechanisms that moderate the effects of any interventions and it is by no means clear what factors investigators should be controlled for in the design. This study offers a systematic approach to identify possible factors - to my knowledge this is the first time that such a systematic approach has been attempted.

b) Are the methods appropriate and well described, and are sufficient details provided to replicate the work?

Generally the methods are well described; however I have some minor comments:

1. Could some additional description be added on the 4-stage framework in the methods section? (eg who developed the framework; what the setting was)
2. Table 1 summarises the candidate factors but could all the original 33 factors be listed? A full list might be useful for investigators in other contexts.
3. What was the process for selecting volume and geographic region as the demographic minimization variables?
4. In round 1, it was not clearly described how the panelists made the judgement on whether the factors were correlated with the demographic variables – was it just a rating scale?
5. Were the panelists roughly the same people the 1st (n=19) and 2nd (n=21) rounds? Please clarify in text.
6. There is no information given in the paper about how each of the 4 factors was to be scored for use in a minimization algorithm (aside from grouped into low and high). This is important – if the factors cannot be adequately categorized by the

centres in the study then they are useless as minimization factors.

c) Are the data sound and well controlled?

7. Table 2 – the “mean” column should be to 1 decimal place

d) Does the manuscript adhere to the relevant standards for reporting and data deposition?

Yes.

e) Are the discussion and conclusions well balanced and adequately supported by the data?

8. p10 Discussion 1st Paragraph – this is not a published example of a minimization algorithm (none have been randomized in this manuscript), rather it is a structured approach to identifying factors to be used in such an algorithm. Please amend.

9. Related to comment 6 above – I wonder if the authors might want to put in a comment that some piloting of the factors before use in a trial would be prudent? If there is little variance in the identified factors in the trial centres then it is not worthwhile using them as factors.

f) Do the title and abstract accurately convey what has been found?

10. Abstract (2nd sentence) – the survey instrument is not part of the minimization algorithm, it is part of the identification of factors to be used in a minimization algorithm.

g) Is the writing acceptable?

11. consistent use of word “factors” – eg page 4 last paragraph uses “covariates”

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests