Reviewer's report

Title: Predicting Risk of Hospital and Emergency Department Use for Community Based Elderly Persons through a Secondary Analysis of Cross-National Data

Version: 2  Date: 26 April 2014

Reviewer: Karen Grimmer

Reviewer's report:

1. Is the question posed by the authors well defined?
The issues addressed in this paper are of real importance internationally, that is, identifying the significant predictors of older people presenting at ED.

2. Are the methods appropriate and well described?
I found this paper almost incomprehensible. While it started out well by describing the problem, however it was all downhill from there. It made a number of assumptions that I could not verify and which fatally flaw the paper for publication. For instance it reported on data generated in a number of American states, from the interRAI instrument which the paper claimed to be widely used and understood. There was no justification for the choice of US states, and only interRAI user manuals were cited in the reference list. My searching on the instrument indicated that it could only be purchased, and thus was not available to the reviewers, and it appears that there are no peer-reviewed papers, as none were cited in support of the instrument and there was no evidence of its validity testing (despite claims made on the interRAI website). There was scant information in the paper on exactly what was in the interRAI tool, how the tool was administered, and when, what ethics protections were placed on the databases, and what the purpose of capture of information from interRAI was. While it may be in place in practice in the US states cited in this paper, it is certainly not in use widely in my country, and this to publish this paper in an international open access journal, there needs to be more substance.

There were also claims about a literature review undertaken by the team to identify important characteristics of older people presenting at ED, but no information was provided on the review. Thus this is not a useful addition to this paper in terms of its believability. The paper then went on to describe complex large sample statistical analyses of what appeared to be multiple dependent variables (captured with interRAI), but the purpose of these analyses was not well explained. There was an assumption that a critical strength of association (OR 1.3, or 0.75) was in place, for which no justification was given, nor was there a discussion on confidence intervals. The findings left me unconvinced.

Essentially I cannot see that what this paper reports is new, as the predictors for ED presentations by older people have already been reported by many authors internationally and are not new. The authors make no attempt to put their findings into context in terms of international policy or health services.
3. Are the data sound?
I can’t tell from the information provided.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
I don’t believe so, as too little information is provided.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
Given my concerns with the data collection and its handling above (in 2) I don’t believe that it is

6. Are limitations of the work clearly stated?
No, in fact the authors don’t appear to have any concerns about limitations on their work

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
Not as clearly as they should

8. Do the title and abstract accurately convey what has been found?
No

9. Is the writing acceptable?
Yes, the writing is acceptable

Major essential revisions> To be publishable, this paper must provide more detail on the interRAI instrument, on the datasets that have been generated from it, and on the 'so what' of the analysis

**Level of interest:** An article of limited interest

**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'