Reviewer's report

**Title:** A method to develop empirically derived search strategies: Identifying nurse staffing research in PubMed

**Version:** 1  **Date:** 23 March 2010

**Reviewer:** Pamela Royle

**Reviewer's report:**

The authors have posed a well defined question and the manuscript is well written and conclusions balanced and adequately derived from the data. Also, some of the methods are interesting and novel.

However, I think the main problems with the study are a couple of methodological one -namely that the studies in the development set were not assessed for relevancy and quality, and the choice of journals chosen for the hand search set, which resulted in a quite low number of records for the hand search set.

**Major Compulsory Revisions:**

Some questions which I think need to be addresses are: How were the 3 particular systematic reviews used for the Development Set identified? Were they chosen as a result of a systematic search or just a convenience sample? What were the inclusion/exclusion criteria for selecting the reviews?

Similarly, how and why were the journals chosen for the hand search set identified? Why these particular journals? (The low relevancy rate i.e 17/1274 indicates that the most relevant journals for nursing staff were probably not chosen. A precise search of Medline for 2008 showed that the Journal of Nursing Administration had the second highest number of articles on nurse staffing, but Medical Care and Health Services Research had very few relevant articles. Examples of journals with impact factors > 1 in this area which gave a much higher number of relevant research articles were Journal of Clinical Nursing, Journal of Advanced Nursing, American Journal of Nursing or International Journal of Nursing Studies).

Suggest the paper would be improved by including more than 17 relevant records in the hand search set – this will increase the precision of the figures in Table 5 (i.e. much narrower confidence intervals).

Also think it is very important that when choosing articles in the development set from the systematic reviews that they are assessed for relevancy, especially as these are also used in your text mining procedure. I do not think it is correct to assume that they are all relevant, and including irrelevant records will most likely decrease the precision and accuracy of your search strategy. A more accurate and relevant approach might be to include only the articles in the systematic review which were selected and critically appraised (assuming the systematic reviews had done a comprehensive search for all relevant articles).
Discretionary Revisions
Re: the eligibility criteria in Table 4 for the hand search set. Do not think it is valid to specify that you are excluding systematic reviews from your hand search set - unless you are specifically developing a search strategy only to identify primary studies in nurse staffing research, in which case it would be best to state this in your objectives.

Also paper says that sensitivities of the newly developed sensitive search strategy were 100% across the 3 used test sets – but looking at Table 5 it seems the figure is 98.7% sensitivity for the development set (not 100%).

Minor Essential Revisions
The Results in paragraphs 1 and 2 refer to Table 4 – think it should be Table 5?

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

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
'I declare that I have no competing interests