Reviewer’s report

Title: Routine development of objectively derived search strategies

Version: 1 Date: 31 October 2011

Reviewer: Ann Mckibbon

Reviewer’s report:

- Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached)

1. Abstract: The abstract needs to reflect what was done in the paper so that people can easily choose to pursue the full text or not. Please expand the abstract and include some data.

2. Might be useful to include references to some of the validated “content” filters that are already in place such as palliative care, mental health, general nephrology and conditions that nephrology covers, and knowledge translation. The knowledge translation filters for CINAHL shows the problems of developing filters for a very diffuse and relatively new field.

3. In your methods section I would suggest that your goal is to show “proof of concept” by using the content area of brachytherapy in patients with prostate cancer. One small content area cannot come to the conclusion that this objective approach will work in all content areas. The content area (brachytherapy in patients with prostate cancer) needs to be in the abstract and objective of the paper.

4. Good methods on using both development and validation sets! Well done!

5. Your numbers of articles studies are low. Some research work by Yao and colleagues (http://www.biomedcentral.com/1472-6947/8/43) show that you should have in the range of 110 articles in both your development and validation sets. You need to justify this low number and include it as a weakness of the article.

6. Please put in a section of strengths and weaknesses in your paper. Your approach does not take into account missing articles that should be in the retrieval set or the number of articles that you need to read to identify one relevant article. As it stands now, I calculate that you would need to read 88 articles for each of the included studies. This number is a bit high and maybe indicates that tailoring of your search to automatically get the size of the retrieval down might be a good idea. Have you tried other search strategies that get this number down a bit? Maybe a table of various strategies might be an interesting addition to the article rather than just one article.

- Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
1. Careful with abbreviations. What is IQWiG? Please define PET/CT

2. Very minor point. First sentence should read in the PAST as LAST means final in some people’s eyes.

3. Your first sentence needs some clarification. I would agree in the world of systematic reviews, economic analyses, clinical practice guidelines, health technology assessments and other similar fields that the information specialist is important. In the rest of the world searching has become common place and an information specialist is far from the center of anyone’s thinking who is searching Google or other internet searching systems.

4. Are you sure that HTA is a main driving force of search strategies. Most of the search strategies were done, I think, are for systematic reviews and clinical practice guidelines.

5. Conceptual approach: Can you be a bit clearer here. You are using some of the more established methods filters as a starting point and then adding in the “content”. This distinction does not necessarily come through.

6. The Pubmed filters you describe are also from the McMaster group.

7. I am a bit confused by your methods. Does your gold standard database also have non-relevant citations—I am not sure what your population database is. If no non-relevant citations in your work you need to state that your gold standard database includes only “half” of what other gold standard databases includes. Your gold standard database of studies that need to be included only deal with retrieving what you desire and already know and does not deal with two other aspects of retrieval: non retrieval of articles not to be included and retrieval of unknown but important articles. What you have done is not “wrong” but needs to be described as only including articles that need to be included and are known. Please be very clear in your description. I am also not sure what you mean by “The developed strategy is run in each database and compared to the validation set from that database using their accession numbers (e.g. PMIDs in Pubmed).”

- Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)

none

1. Is the question posed by the authors new and well defined?

No, I do not think the objective is clear. I would like to see adding in the content idea (prostate cancer and Brachytherapy).

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

I would like to see more clarity on descriptions. Also a list of the strengths and weaknesses.

3. Are the data sound and well controlled?

No. sample size theory says that many more articles are needed. See citation
below. The article ignores two important issues in searching, identifying those articles that were not included in published reviews and the number of irrelevant articles retrieved—in this case for every included study the one search strategy brought back 88 irrelevant ones.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
Yes. I would like to see multiple search strategies however to make the article richer.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
No. A bit too simplistic.

6. Do the title and abstract accurately convey what has been found?
No. See comments elsewhere.

**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.