Reviewer's report

Title: Developing Search Strategies for Clinical Practice Guidelines in SUMSearch and Google Scholar and Assessing their Retrieval Performance

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Reviewer: Robert Badgett

Reviewer's report:

As the developer of SUMSearch it is very exciting to see SUMSearch objectively studied. Although I have no financial gain with SUMSearch, I certainly have academic investment and so this should be considered in assessing whether I have conflict of interest in this review.

General

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

I had two principle difficulties. First was difficulty understanding the methods. I am sympathetic to this as when I have done similar research my methods have also evolved during the project. This evolution complicates writing the description. My specific questions are clarifying numbers, specifying final search strategies exactly (or at least an example for one of the 9 diseases), and which sections of SUMSearch were used (as its PubMed guidelines section has been offline) Details of my questions are below in the Discretionary section. My concerns are listed in discretionary because every question does not need addressing, but enough to clarify.

My second difficulty is the use of the “in the title” restriction at Scholar. This should be justified because the two major web locations for practice guidelines, the National Guidelines Clearinghouse and PubMed, do not concatenate ‘guideline’ into the HTML title field of their pages. This restriction would seem to reduce the sensitivity of Scholar (though should increase its specificity). Can the authors state why they did this? Even if the answer is that informal searching noted that Google was retrieving excessive citations without this limit, the reason should be stated.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Questions about the methods in general:

1. What was the role of the nine different diseases (obesity, osteoporosis, rheumatoid arthritis, Parkinson disease, multiple sclerosis, alcoholism, depression, schizophrenia, and attention deficit disorder) versus the sole disease back pain? At times it appears that all of the study was done only with back pain. However, the sentence “The second term was one of the nine MeSH terms mentioned above” and the number of guidelines found (119) makes me uncertain. Finally, in the titles to Figure 2 and Table 4, after I spent much time on the paper, I realize it is clear that all the results are for the 9 diseases pooled. The abstract states nine mesh terms, but would be helpful to also state 9 diseases in the abstract.

As noted above, but now in the results section, please state exactly and expand which search strategies led
to the numbers in the sentence, “the search yielded a total of 2830 retrievals; 987 (34.9%) in Google Scholar and 1843 (65.1%) in SUMSearch. When I search SUMSearch today with “back pain and Guideline” with no focus or limits, I get <300 citations including all sections of the results. Likewise, please state exactly how the search was performed at Scholar. I assume the numbers you are reporting are not just for back pain, but all nine diseases pooled? If so please clearly state this in both the abstract and the body of the paper. For example, Table 4 seems pretty clear that

Similarly, in Table 4, why do the sums for the two search engines both equal 2830? Seems for SUMSearch the total used in the table should be 1843 and 987 for Google.

Regarding methods used to search SUMSearch:
1. The manuscript states “the search was restricted to the category ‘Practice Guidelines’ (NGC and PubMed)”. Did your study use the link provided by SUMSearch to guidelines at PubMed? Or did you use the original research section of SUMSearch. The PubMed practice guidelines section of SUMSearch has not been providing citations for several years. This is the only bug I have not been able to fix and I suspect it may be due to SUMSearch querying PubMed faster than allowed by PubMed. Since SUMSearch can not provide the citations from PubMed, instead it builds a link to search for guidelines at PubMed that the user can click.

2. The methods state that DARE was excluded at all stages of the project, but the heading of the final column in Table 1 suggests that DARE was included.

3. I could not replicate Table 1 and to me the numbers reported do not match the methods cited. When I search SUMSearch for guideline*, I get approximately 29,500 citations only if I sum the results of all sections of SUMSearch. This huge number is mainly due to including the citations from “PubMed (possible systematic reviews)” section – which does not use automated revisions. If I only look at the Guidelines Clearinghouse section and the number of citations when I follow the link built for guidelines at PubMed, I get about 15,000 citations.

Regarding methods used to search Scholar:
1. What was your search method exactly? Did you use the advanced interface and select “in the title”. Then which search box did you put the terms in? When I search Scholar with “allintitle: back pain OR guidelines guideline” I get 53 results which may be the same as yours with the passage of time and more citations to accrue. Still clarifying whether you used the ‘with all of the words’ versus ‘with at least one of the words’ box would help. Did all GLAD terms go into one of these boxes, or did you split and put the disease terms in the ‘with all of the words’ and the guidelines terms in the ‘with at least one of the words’.

Less important comments:
Did the results vary by disease? ‘Attention Deficit Disorder’ is the most difficult term as its canonical mesh term is not a phrase used commonly. Did Google have the most trouble with this disease since the study used MeSH terms?

“Meta-analyses and systematic reviews were excluded”. Please clarify - did you include practice guidelines that are based on systematic review of the literature (such as the USPSTF)?

Please clarify (this may be in the manuscript and I missed it) how many of the search results for both search engines that you reviewed for possible guidelines. Did you look at all of the results, or just the first 50, or first 100, etc?

Although the authors and myself have described SUMSearch as a meta-search engine, emerging terminology might suggest ‘federated search’ as more appropriate (http://en.wikipedia.org/wiki/Federated_search) as SUMSearch searches databases rather than search engines. However, I admit the meta-search versus federated search distinction is murky.

The description states SUMSearch searches the Merck Manual. The Merck search was removed several years ago.

A major difference between SUMSearch and the various flavors of Google is that SUMSearch performs Boolean searching with automated revisions of searches; whereas, Google versus uses relevancy with PageRank™. This makes an interesting contrast.

Discussion:
I would very much like to mix the methodologies of SUMSearch and Google into one portal. However, the
closing of Google’s SOAP API prevents this (http://code.google.com/apis/soapsearch/).

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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:

Academic conflict of interest as I noted in my comments above.