Reviewer's report

Title: Identifying Quality Improvement intervention publications - A comparison of electronic search strategies

Version: 1  Date: 2 November 2010

Reviewer: Nancy Wilczynski

Reviewer's report:

General

The aim of this study was to develop, apply, and compare alternative search strategies for finding publications relevant to quality improvement. These strategies were developed to facilitate literature syntheses.

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

In the Background and Discussion sections of the paper the authors should discuss other research that has been done in this area, that is, other search filters that have been developed to detect quality improvement studies. For example, the study by Wilczynski and Haynes, Optimal search filters for detecting quality improvement studies in Medline, PMID: 20671080.

The approach used to form/develop the search strategies has a subjective component, in that the author decided on how the terms would be combined rather than compiling a list of terms (text words, MeSH etc – as the authors did) and letting a computer algorithm combine the search terms in all possible combinations (the authors did not do this). This might be reason for the low recall percentages reported. Perhaps a combination of terms other than what the authors determined would have had better performance characteristics. Using the computer algorithm approach, search filter sensitivities of 98% have been achieved in the area of quality improvement. The authors should discuss this as a limitation of their study.

The recall percentages reported are low. When conducting literature syntheses a higher sensitivity would be advantageous. The authors need to discuss the limitations of their results in light of their research objective – “to facilitate literature syntheses”.

The sample size of on-target articles in each of the 3 reference sets is small even when combined. The article by Yao and colleagues (PMID: 18823538) indicates that at least 99 on-target articles are required when developing/validating search strategies for a 10% or less width of the 95% confidence intervals. The authors should discuss this as a limitation of their study.
The definitions of quality improvement used to define the reference standards, that is, reference sets 1 through 3, should be provided.

The authors do not indicate how they determined that the subset of 10 journals used to validate the search strategies were “the most relevant”. This should be provided.

The authors should state what “the reviewer’s implicit understanding of quality improvement” was when undergoing the inclusion screening.

It is not clear what “relevant” means in the following sentence: “The search output was screened by two independent reviewers familiar with the quality improvement literature to determine the number of relevant publications within the total output retrieved with the strategy (precision).” “Relevant” = those articles from the 3 reference standards.”

It is not clear how the yield ratios in Table 2 are calculated. If it is the total retrieved divided by the total yield the ratios appear to be incorrect.

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

In the Results section of the abstract – I do not understand this sentence “Mean recall rates of reference publications ranged from 5% to 53% with strategies selected for further investigation.” Specifically, the latter part of the sentence “…with strategies selected for further investigation.”

There is an error in the footer of Table 1; MEDLINE 9Ovid) should be MEDLINE (Ovid).

Table 1 should be more explicitly labeled by providing information such as the time period of the search.

Table 1 – the third column should be labeled “Search terms and database searched”.

Table 1 – are the exact search strategies provided, that is, with Ovid syntax? For instance, “Intervention components (education, information campaign, academic detailing, workshop, training, audit, feedback, dissemination, provider reminders, computerized medical records, fee for service, financial incentives, managed care, discharge planning, guideline implementation, guideline adherence, quality assurance, or program evaluation)”. Is this part of the strategy shown as it would be entered when using Ovid Medline? If not, it would be useful to have them shown as searched so that they can be applied by others.

The following text “Table 1 shows the volume of publications produced by each search strategy. The retrieval rate ranged from 2,221 (#11 CQI methods) to 216,167 (#7 intervention components)” does not correspond to the data presented in Table 1.
The authors should reference the Table 1 strategy number in the following statement: “We tested a number of iterations of combined approaches. Applying a search strategy that identified either publications with ‘quality improvement’ in the title or abstract or publications categorized with the respective MeSH terms, and then restricting the search volume to publications referencing known intervention components identified 16,535 publications.”

Discretionary Revisions (which the author can choose to ignore)

None

Level of interest: An article of importance in its field

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.