

THINGS GO BETTER WITH PEPC: TESTING THE PERFORMANCE OF PATIENT-RELATED LITERATURE SEARCH FILTERS

Tamara Rader, MLIS; Kelly Farrah, MLIS; David Kaunelis, MLIS; CADTH, Ottawa, Ontario

BACKGROUND

The experiences and perspectives of patients give context and background about living with a condition and undergoing diagnosis and treatment. Our intention for patient engagement at CADTH is to enhance our methods and expand the reach of the organization. As a supplement to the direct participation of patients and patient group representatives in CADTH work, a literature review of perspectives and experiences of patients and caregivers (PEPC) can enhance a clinical and economic review.

OBJECTIVE

To develop the CADTH PEPC search filter using text mining and to test its performance in Ovid MEDLINE using a reference standard of relevant articles.

METHODS

Text Mining

To refine the previously developed PEPC filter, a set of relevant records was retrieved by searching all records indexed with the major MeSH subject heading “Patient Acceptance of Health Care” (including all narrower subject headings under this heading) from January to November 2015. A total of 1,807 records were retrieved from PubMed. Text mining software (Primitive Word Counter) was used to extract terms from the titles and abstracts of these records and to rank single words and phrases by frequency. One information specialist (KF) reviewed the list of words and phrases to exclude non-relevant or overly broad terms. Relevant novel words or phrases were added to the search strategy based on discussions (TR, KF, DK).

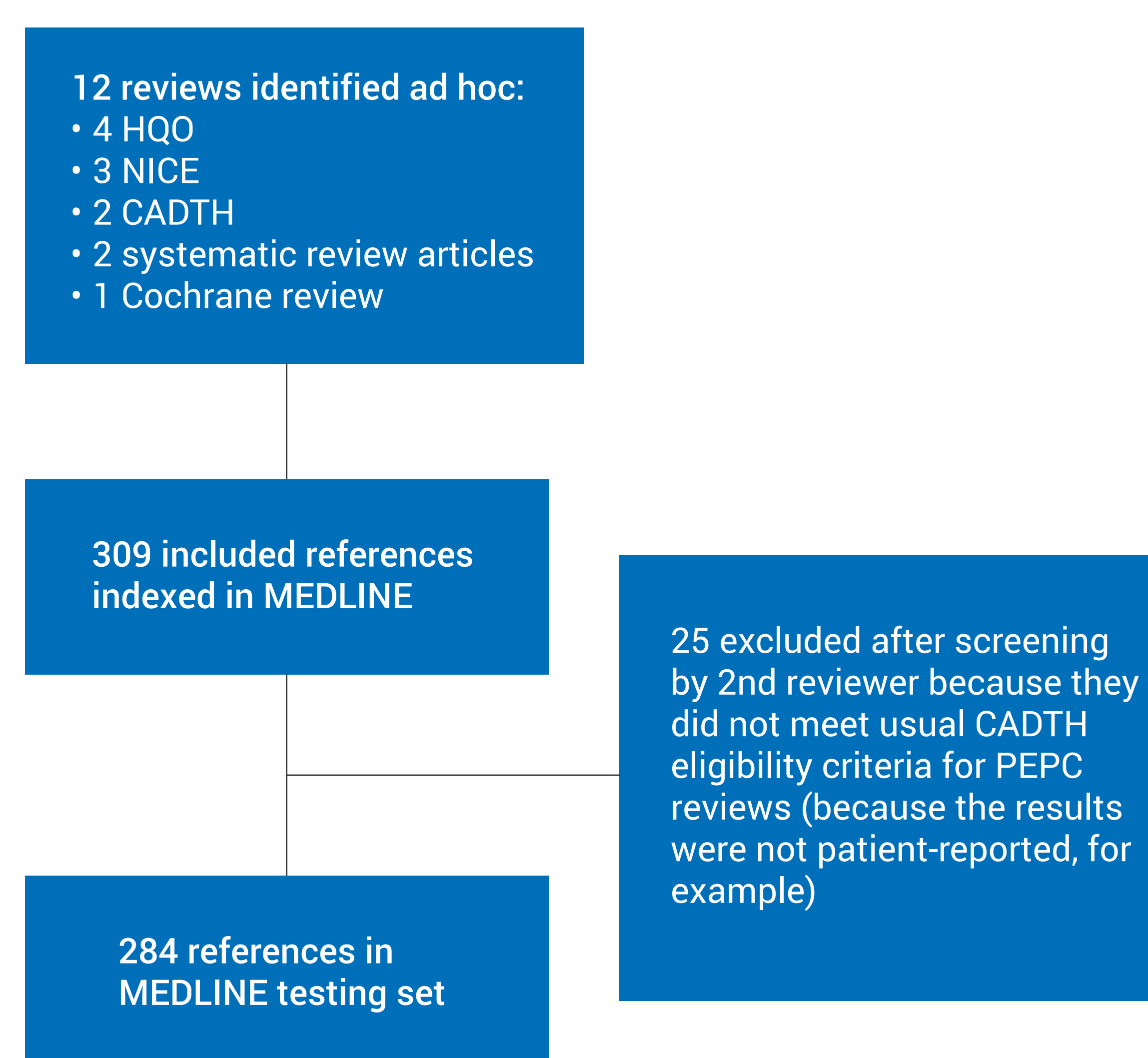
Selection of Reference Standard

To test the draft PEPC, a reference standard database was created using the included studies of the patient preferences and experiences section from 12 reviews (see Figure 1).

Filter Testing

The revised CADTH PEPC filter was tested in Ovid MEDLINE for the relative recall of the reference standard database. The performance of two other similar filters for MEDLINE was also tested. After initial testing and through an iterative process, the CADTH PEPC filter was modified with additional keywords to improve recall of the target reference standard database articles.

Figure 1: Selection of Articles for Reference Standard Set



HQO = Health Quality Ontario; NICE = National Institute for Health and Care Excellence; PEPC = Perspectives and Experiences of Patients and Caregivers.

RESULTS

See Table 1 for details on the relative recall of search filters tested.

TABLE 1: Performance of Perspectives and Experiences of Patients and Caregivers Filters, Ovid MEDLINE

Filter	Total Number of MEDLINE Records Retrieved by Filter	Number of Reference Standard Records Identified (n = 284)	Relative Recall (%)
CADTH narrow	794,934	234	82
CADTH broad ^a	1,158,577	269	95
SIGN ¹	4,013,204	274	96
Hielkema & Wessels ²	943,483	246	87

^a Includes additional qualitative study design terms and broader title-only set. Note: Relative recall = number of relevant records retrieved by a search filter divided by the total number of relevant records in the reference standard set multiplied by 100.

CONCLUSIONS

- Using text mining to identify potential keywords adds objectivity to filter design and reflects the current vocabulary used in a 2015 set of MeSH indexed papers.
- The CADTH narrow PEPC filter aims to balance recall and precision, retrieving a feasible number of results to screen, while potentially missing some relevant records.
- More testing is planned with another reference set to calculate precision and to retest recall of the revised CADTH PEPC filter.
- CADTH PEPC filters are currently customized for the specific needs of CADTH health technology assessment reports.

SEARCH STRATEGY

Contact poster authors for search strategy details at tamarar@cadth.ca.

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