Quality filtering techniques in paediatric evidence-based searches

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Evidence-based literature searching in general and subspecialty Paediatrics areas presents challenges and opportunities to adapt evidence based filters. The Library at the Hospital for Sick Children has taught and used evidence filter searching since 1997. The transition to the web-based version of OVID enabled us to store these filter strategies.

Challenges in Paediatrics:
Randomized controlled trials (RCTs) are not as common in general and sub-specialty Paediatrics as they are in adult medicine for the following reasons:
1) ethics approval of children in trials
2) pharmaceutical company investment in developing paediatric drugs
3) "N of 1 trials" due to the congenital, inherited metabolic or genetics conditions
4) small populations of rare conditions requiring multicentre participants
5) multicentre studies, observational or cohort studies (prospective or retrospective) more common study design methodology

Filters:
All filters are stored as Expert Searches on the OVID system. They are accessible from the generic and departmental ID user logins.

Direct Patient Care searches –
1) The diagnosis, therapy, prognosis and causation strategies developed by the McMaster Hedges group, the Cochrane Collaboration and the Robinson-Dickersin sensitivity strategy have been adapted to facilitate clinical searches
2) Additional filters for pregnancy and neurocognitive outcomes were developed for our Motherisk program

Systematic Review searches –
1) Cochrane Collaboration Disease study group strategies adapted
2) Robinson-Dickersin sensitivity strategy (2001) adapted

Evaluation Method:
User feedback to evaluate and revise filtering search strategies from
1) staff training coordinators – the library customizes all training sessions with search examples relating to the department or group. The class co-ordinator is asked to review the search results and comment on the relevancy.
2) staff training sessions - participants are asked to test the filters on their own search topics and provide feedback
3) mediated searches – staff are asked to provide feedback on the relevancy of the retrieval
4) bibliometric studies – library staff participate in testing strategy retrieval [1]

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[1] Cohen E. Uleryk E. Jasuja M. Parkin PC. An absence of pediatric randomized controlled trials in general medical journals, 1985-2004. Journal of Clinical Epidemiology. 60(2):118-23, 2007 Feb

Changes in Practice:

As staff's comfort level increases with the search interface, they report higher use of the filters. The Hospital is in the process of selecting an LMS [Learning Management System] that will enable us to track online learning module sessions. The Library is in the process of developing online learning modules to interface with the new LMS.

Conclusions:
1) Higher retrieval relevancy using the McMaster Therapy filter without text words
2) Higher relevancy using the "specific" McMaster Prognosis filter strategy
3) Lower relevancy using OVID or PubMed Clinical Queries due to text wording content
4) Higher relevancy using Age Groups limits vs. text wording age group terms

Expert Searches (top)
☐ MEDLINE_Filter_Effectiveness_Diagnostic_Tests
  Use to focus search on effectiveness of diagnostic tests
☐ MEDLINE_Filter_Etiology_Causation_Harm
  Use to focus search on etiology, causation or harm
☐ MEDLINE_Filter_Prognosis_Natural_History
  Use to focus search on disease prognosis or natural history
☐ MEDLINE_Filter_TherapyTreatment_Effectiveness
  Use to focus search on therapy or treatment effectiveness
☐ MEDLINE_Hedge_MotheRisk_Neurodevelopment
  WHAT: This filter helps to find articles on all aspects of neurodevelopment and outcomes including the physic brain, mental health, behavior, communication, intelligence, and psychomotor skills. It is intended to be a sensi or broad search strategy. *HOW*: Run a search on your topic. If appropriate, run the Pregnancy Hedge (below). Combine by ANDing together all or part of this search. Each set represents a different aspect of the topic, and is labelled in brackets. *QUESTIONS?* Please contact Tyla Holmes at the Sick Kids Hospital Library, extension 752
☐ MEDLINE_Hedge_Pregnancy
  Motherrisk Hedge
☐ Robinson_Dickersin
  Sensitive Search Strategy for RCTs

Sensitive

#	Search History	Results
1	cohort studies/ or longitudinal studies/ or follow-up studies/ or prospective studies/	620537
2	prognosis/ or disease-free survival/ or medical futility/ or pregnancy outcome/ or treatment outcome/ or treatment failure/	566659
3	disease progression/	47665
4	morbidity/ or incidence/ or prevalence/	215462
5	mortality/ or cause of death/ or fatal outcome/ or hospital mortality/ or infant mortality/ or maternal mortality/ or survival rate/	182716
6	survival analysis/ or disease-free survival/	78031
7	natural histor???.tw.	23801
8	or/1-7	1372731

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7	natural histor???.tw.	23801
8	or/2-7	956886
9	1 and 8	204692

Specific