Poster # 2

Title of poster: Systematic reviews: Getting started with designing effective search strategies and study screening forms.

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Abstract

Context: Effective literature searches are imperative to systematic review (SR) conduct. Failure to design comprehensive searches compromises the validity of results and conclusions. Unfortunately, the quality, comprehensiveness, and transparency of published search strategies are variable. Novice researchers may lack guidance to tackle such issues. We recently conducted a SR of trials comparing antipsychotics for delirium treatment to alternatives (pharmacological or non-pharmacological strategies) for adults in acute care settings.
Purposes: To describe the methodology used to design the search strategy and study screening forms using the aforementioned SR for illustration purposes.

Methods: With the assistance of a professional librarian, we queried the following databases for primary sources: MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials, Cumulative Index to Nursing and Allied Health and the Latin American and Caribbean Health Sciences Literature. Concepts encompassed in our search strategy included: 1) the population (i.e.: patients in acute care settings experiencing delirium) and 2) the intervention (antipsychotics) and comparison interventions (non-antipsychotic). For each concept, we identified controlled vocabulary provided by the selected databases (e.g.: MeSH for MEDLINE, EMTREE for EMBASE), by navigating index trees and examining definitions provided in scope notes. We scanned relevant publications for additional controlled vocabulary, text words, and their synonyms. Appropriate truncations and wildcards were used to control for spelling variations; all possible drug names were included. Bolean operators were used to combine controlled vocabulary and text words using “OR” within each concept and “AND” between concepts. We applied the Cochrane filter for randomized controlled trials and a filter to limit to humans. No language restriction was imposed. Test searches were performed at various steps (before and after combination of terms) to ascertain the number of hits and to verify studies known to meet the inclusion criteria were present. The final search strategy was written for MEDLINE and thereafter customized to the other databases by a professional librarian. We searched for secondary sources in the Database of Abstracts of Reviews of Effects and the Health Technology Assessment Database. To identify other potentially relevant studies, we:

searched the Web of Science Citation Index, Conference Proceedings Citation Index and trial registration websites for ongoing trials, reference citations of selected publications, and contacted principal investigators of eligible trials and content experts. Pre-specified study inclusion and exclusion criteria developed in consultation with content experts informed the design of the study selection form. This form was piloted on 5 papers by 2 study team members and then applied after removal of duplicates and obviously irrelevant studies.
Results: The search strategy yielded 16,925 publications following duplicate removal (figure 1). After abstract and title review, 127 full text references were assessed; seven met inclusion criteria.

Conclusion: Designing an effective search strategy that identifies all eligible indexed studies without high numbers of irrelevant studies requires careful planning and involvement of professional librarians. Despite a rigorous search strategy, we identified a large number of irrelevant studies with significant resources required to identify eligible studies.