Searching, Training and Synthesis

Evidence Update
SUMMER
Ann Glusker

Objective – “To develop and validate search filters for MEDLINE and Embase for the adverse effects of surgical interventions” (p.121).

Design – From a universe of systematic reviews, the authors created “an unselected cohort...where relevant articles are not chosen because of the presence of adverse effects terms” (p.123). The studies referenced in the cohort reviews were extracted to create an overall citation set. From this, three equal-sized sets of studies were created by random selection, and used for: development of a filter (identifying search terms); evaluation of the filter (testing how well it worked); and validation of the filter (assessing how well it retrieved relevant studies).

Setting – Systematic reviews of adverse effects from the Database of Abstracts of Reviews of Effects (DARE), published in 2014.

Subjects – 358 studies derived from the references of 19 systematic reviews (352 available in MEDLINE, 348 available in Embase).

Methods – Word and phrase frequency analysis was performed on the development set of articles to identify a list of terms, starting with the term creating the highest recall from titles and abstracts of articles, and continuing until adding new search terms produced no more new records recalled. The search strategy thus developed was then tested on the evaluation set of articles. In this case, using the strategy recalled all of the articles which could be obtained using generic search terms; however, adding specific search terms (such as the MeSH term “surgical site infection”) improved recall. Finally, the strategy incorporating both generic and specific search terms for adverse effects was used on the validation set of articles. Search strategies used are included in the article, as is a list in the discussion section of MeSH and Embase indexing terms specific to or suggesting adverse effects.

Main Results – “In each case the addition of specific adverse effects terms could have improved the recall of the searches” (p. 127). This was true for all six cases (development, evaluation and validation study sets, for each of MEDLINE and Embase) in which specific terms were added to searches using generic terms, and recall percentages compared.

Conclusion – While no filter can deliver 100% of items in a given standard set of studies on adverse effects (since title and abstract fields may not contain any indication of relevance to the topic), adding specific adverse effects terms to generic ones while developing filters is shown to improve recall for surgery-related
adverse effects (similarly to drug-related adverse effects). The use of filters requires user engagement and critical analysis; at the same time, deploying well-constructed filters can have many benefits, including: helping users, especially clinicians, get a search started; managing a large and unwieldy set of citations retrieved; and to suggest new search strategies.

Librarians’ Reported Systematic Review Completion Time Ranges Between 2 and 219 Total Hours with Most Variance due to Information Processing and Instruction

Peace Ossom Williamson

A Review of:


Abstract

Objective – To investigate how long it takes for medical librarians to complete steps toward completion of a systematic review and to determine if the time differs based on factors including years of experience as a medical librarian and experience completing systematic reviews.

Design – Survey research as a questionnaire disseminated via email distribution lists.

Setting – At institutions that are members of the Association of Academic Health Sciences Libraries (AAHSL) and librarians at Association of American Medical Colleges (AAMC) or American Osteopathic Association (AOA) member institutions.

Subjects – Librarians of member institutions who have worked on systematic reviews.

Methods – On December 11, 2015, AAHSL library directors and librarian members of AAMC and AOA were sent the survey and the recommendation to forward the survey to librarians on staff who have worked on systematic reviews. Reminders were sent on December 17, 2015, and the survey closed for participation on January 7, 2016. Participants who had worked on a systematic review within the past five years were asked to indicate experience by the number of systematic reviews completed, years of experience as a medical librarian, and how much time was spent, in hours, on the following: initial consultations/meetings; developing and testing the initial search strategy; translating the strategy for other databases; documenting the process; delivering the search results; writing their part of the manuscript; other tasks they could identify; and any instruction (i.e., training they provided to team members necessary for completion of the systematic review). Participants also further broke down the amount of their time searching, by percentage of time, in various resources, including literature indexes/databases, included studies’ references, trial registers, grey literature, and hand searching. Participants were also given space to add additional comments. The researchers reported summary statistics for phase one and, for phase two, excluded outliers and performed exploratory factor analysis, beginning with principal components analysis (PCA), followed by a varimax rotation, to determine if there was a relationship between the time on tasks and experience.

Main Results – Of the 185 completed responses, 105 were analyzed for phase one because 80 responses were excluded due to missing data or no recent experience with a systematic review. The average
respondent had between 1 and 6 years of experience: 1-3 years in librarianship (49.5%) and 4-6 years (23.8%). The time reported for completion of all tasks ranged from 2 to 219 hours with a mean of 30.7 hours. Most of the variance (61.6%) was caused by “information processing” and “interpersonal instruction/training” components. Search strategy development and testing had the highest average time at 8.4 hours. Within that category, databases accounted for 78.7% of time searching, followed by other searching methods. For remaining systematic review tasks, their averages were as follows: translating research (5.4 hours), delivering results (4.3 hours), conducting preliminary consultations (3.9 hours), instruction (3.8 hours), documentation (3.0 hours), additional tasks that were written-in by respondents (2.2 hours), and writing the manuscript (1.8 hours). The most common written-in tasks were development of inclusion/exclusion criteria, critical appraisal, and deduplication. Other write-ins included retrieving full-text articles, developing protocols, and selecting a journal for publishing the systematic review.

For the second phase of analysis, 12 responses were excluded as extreme outliers, and the remaining 93 responses were analyzed to detect a relationship between experience and time on task. Prior systematic review experience correlated with shorter times performing instruction, consultation, and translation of searches. However, librarian years of experience affected the percentage of time on task, where greater years of experience led to more time spent consulting and instructing than the percentage for librarians with fewer years of experience. Librarians with greater than 7 years of experience skewed trends toward shorter time on task, and, with their data excluded, years of experience showed weak positive correlation with instruction and consultation.

Conclusion – Because the average librarian participating on systematic review teams has had few prior experiences and because the times can vary widely based on assigned roles, duties, years of experience, and complexity of research question, it is not advised to establish expectations for librarians’ time on task. This may be why library administrators have disparate expectations of librarians’ involvement in systematic reviews and find it difficult to allocate and anticipate staff time on systematic review projects. While it may not be possible to set specific overarching guidelines for librarians’ expected time on systematic review tasks, librarian supervisors and library directors planning for their staff to offer systematic review services should work to develop extensive understanding of the steps for conducting and assessing systematic reviews in order to better estimate time commitments.

Health Information and Libraries Journal

The development of search filters for adverse effects of medical devices in Medline and Embase

Su Golder et al

Background

Objectively derived search filters for adverse drug effects and complications in surgery have been developed but not for medical device adverse effects.

Objective

To develop and validate search filters to retrieve evidence on medical device adverse effects from ovid
Methods

We identified systematic reviews from Epistemonikos and the Health Technology Assessment (hta) database. Included studies within these reviews that reported on medical device adverse effects were randomly divided into three test sets and one validation set of records. Using word frequency analysis from one test set, we constructed a sensitivity maximising search strategy. This strategy was refined using two other test sets, then validated.

Results

From 186 systematic reviews which met our inclusion criteria, 1984 unique included studies were available from medline and 1986 from embase. Generic adverse effects searches in medline and embase achieved 84% and 83% sensitivity. Recall was improved to over 90%, however, when specific adverse effects terms were added.

Conclusion

We have derived and validated novel search filters that retrieve over 80% of records with medical device adverse effects data in medline and embase. The addition of specific adverse effects terms is required to achieve higher levels of sensitivity.

Tell me and I’ll forget; show me and I may remember; involve me and I’ll understand: a review of the Teaching and Learning in Action feature

Appointed at the turn of the year Donna Irving is the incoming Teaching and Learning in Action Regular Feature Editor, in this quarters issue Donna presents and overview of Regular Features over the past five years to share examples of your best practice.

Development of a search filter to identify reports of controlled clinical trials within CINAHL Plus

Julie Glanville et al

Background

Evidence synthesis reviews in health care rely on the efficient identification of research evidence, particularly evidence from randomised controlled trials (RCTs). There are no recently validated filters to identify RCTs in the Cumulative Index to Nursing and Allied Health Literature (CINAHL Plus).

Objectives

To develop, test and validate a search filter to identify reports of RCTs from CINAHL Plus.

Methods
Nine sets of relevant and irrelevant records were identified to develop and test search filters iteratively. Two sets were used to validate the sensitivity and precision of the filters. The performance of two previously published filters and the filter built into EBSCOhost was evaluated.

Results

We present a validated filter which offers sensitivity of 0.88 (95% CI: 0.77–0.95) and precision of 0.36 (95% CI: 0.31–0.41). This is comparable to the sensitivity of published filters, but has much better precision.

Conclusions

A sensitive and precise filter, developed using records selected based on title and abstract information, is available for identifying reports of RCTs in the CINAHL Plus database via EBSCOhost. Using this filter is likely to reduce the number of results needing to be screened to a quarter of those retrieved by other published filters.

**Topic search filters: a systematic scoping review**

Raechel A. Damarell et al

Background

Searching for topics within large biomedical databases can be challenging, especially when topics are complex, diffuse, emerging or lack definitional clarity. Experimentally derived topic search filters offer a reliable solution to effective retrieval; however, their number and range of subject foci remain unknown.

Objectives

This systematic scoping review aims to identify and describe available experimentally developed topic search filters.

Methods

Reports on topic search filter development (1990-) were sought using grey literature sources and 15 databases. Reports describing the conception and prospective development of a database-specific topic search and including an objectively measured estimate of its performance (‘sensitivity’) were included.

Results

Fifty-four reports met inclusion criteria. Data were extracted and thematically synthesised to describe the characteristics of 58 topic search filters.

Discussion

Topic search filters are proliferating and cover a wide range of subjects. Filter reports, however, often lack clear definitions of concepts and topic scope to guide users. Without standardised terminology, filters are challenging to find. Information specialists may benefit from a centralised topic filter repository and appraisal.
checklists to facilitate quality assessment.

Conclusion

Findings will help information specialists identify existing topic search filters and assist filter developers to build on current knowledge in the field.

**Journal of Librarianship and Information Science**

**Library & Information Science Research**

**Librarians and health literacy: A scoping review**

Mary L. Klem, Ahlam A. Saleh, Patricia J. Devine, Karen E. Gutzman, ... Emily Vardell

Pages 102-108

Scoping methodology examined 780 articles on health literacy authored by librarians and other information professionals.

Data collected included article and author characteristics, study methodology, and study participant demographics.

Findings revealed a heavy reliance on case study or survey methods and use of homogeneous study samples.

Librarians may enhance their impact on the study of health literacy by expanding their study methods and populations.

**Medical Reference Services Quarterly**

**PROSPERO: An International Register of Systematic Review Protocols**

Julie H. Schiavo

Pages: 171-180

PROSPERO is an international database of systematic review protocols produced by the University of York’s Center for Research and Dissemination and funded by the National Institute for Health Research. It contains protocols of systematic reviews on health and social care, welfare, public health, education, crime, justice, and health-related international development. PROSPERO compiles a comprehensive listing of systematic review protocols in an attempt to avoid duplication of effort, reduce reporting bias, and promote transparency.

**Librarians Flip for Students: Teaching Searching Skills to Medical Students Using a Flipped Classroom Approach**

Aurelia Minuti et al
This article describes the development of a flipped classroom instructional module designed by librarians to teach first- and second-year medical students how to search the literature and find evidence-based articles. The pre-class module consists of an online component that includes reading, videos, and exercises relating to a clinical case. The in-class sessions, designed to reinforce important concepts, include various interactive activities. The specifics of designing both components are included for other health sciences librarians interested in presenting similar instruction. Challenges encountered, particularly in the live sessions, are detailed, as are the results of evaluations submitted by the students, who largely enjoyed the online component. Future plans are contingent on solving technical problems encountered during the in-class sessions.
### Latest Evidence

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<th>Library &amp; Information Science Abstracts (LISA)</th>
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<tr>
<td><strong>Search broadly or search narrowly? Role of knowledge search strategy in innovation performance</strong></td>
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<tr>
<td><strong>Author:</strong> Li, Jian1; Li, Yishu1; Yu, Yue2; Yuan, Ling1 College of Business Administration, Hunan University, Changsha, China2 School of Management, Hunan University of Commerce, Changsha, China</td>
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<td><strong>Abstract:</strong> Purpose This paper aims to shed some new light on the mixed findings of previous empirical studies on the effect of knowledge search breadth (SB) on firms’ 2019 innovation performance (IP). Design/methodology/approach The paper adopts a contingent approach that examines the two organizational factors in determining the shape of the SB-IP curve. The empirical study is based on survey data gathered from 414 Chinese firms. In dealing with concerns on simultaneity and reverse causality, perceived time-lag between outcome variable and explanatory variables was introduced. Findings This study reveals that knowledge novelty and absorptive capacity are two functions underlying the SB-IP relationship. The results also indicate that innovation orientation and firm age moderate the SB-IP relationship in different ways: the more innovation-oriented the firm, the steeper the inverted U-shaped SB-IP relationship will be, while the older the firm, the flatter the SB-IP relationship will be. Interestingly, there is strong evidence for the shape-flip phenomenon of the SB-IP curve: SB has an inverted U-shaped effect on IP when a firm is young; however, SB has a U-shaped effect when the firm is older than 37 years. Originality/value By revealing two underlying functions and two moderators of the association between SB and IP at the firm level, this paper contributes to shed some new light to the mixed results reported by previous empirical studies that have examined the effect of knowledge search on firm innovation.</td>
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### Searching the Grey Literature: A Handbook for Searching Reports, Working Papers, and Other Unpublished Research |

| **Author:** Natal, Gerald, MLIS, AHIP1 Mulford Health Science Library, University of Toledo, Toledo, OH |
| **Publication info:** Journal of the Medical Library Association ; Chicago Vol. 107, Iss. 2, (Apr 2019): 276. |
| [https://search.proquest.com/docview/2214901514?accountid=26452](https://search.proquest.com/docview/2214901514?accountid=26452) |
| **Abstract:** Searching the Grey Literature: A Handbook for Searching Reports, Working Papers, and Other Unpublished Research, by Sarah Bonato is reviewed. |
Errors in search strategies used in systematic reviews and their effects on information retrieval

Author: Salvador-Oliván, José Antonio; Marco-Cuenca, Gonzalo; Arquero-Avilés, Rosario


https://search.proquest.com/docview/2214901488?accountid=26452

Abstract: Objectives: Errors in search strategies negatively affect the quality and validity of systematic reviews. The primary objective of this study was to evaluate searches performed in MEDLINE/PubMed to identify errors and determine their effects on information retrieval. Methods: A PubMed search was conducted using the systematic review filter to identify articles that were published in January of 2018. Systematic reviews or meta-analyses were selected from a systematic search for literature containing reproducible and explicit search strategies in MEDLINE/PubMed. Data were extracted from these studies related to ten types of errors and to the terms and phrases search modes. Results: The study included 137 systematic reviews in which the number of search strategies containing some type of error was very high (92.7%). Errors that affected recall were the most frequent (78.1%), and the most common search errors involved missing terms in both natural language and controlled language and those related to Medical Subject Headings (MeSH) search terms and the non-retrieval of their more specific terms. Conclusions: To improve the quality of searches and avoid errors, it is essential to plan the search strategy carefully, which includes consulting the MeSH database to identify the concepts and choose all appropriate terms, both descriptors and synonyms, and combining search techniques in the free-text and controlled-language fields, truncating the terms appropriately to retrieve all their variants.

CONCLUSIONS

The importance of information searches in systematic reviews is frequently discussed in the literature. Despite this, our study reveals that the number of search strategies that contain errors is very high and that the majority of these errors affect recall. Such errors occur primarily due to the failure to use synonyms or truncations to retrieve the different morphological variants of terms. Other frequent error types (although to a lesser extent) involve missing MeSH terms and failure to retrieve more specific terms through nonexplosion.

We recommend the following measures to improve the quality of PubMed search strategies:

* Consult the controlled MeSH vocabulary: Doing so will help to identify concepts and to select adequate terms, which are two key steps for achieving success in searching.

* Combine the techniques of controlled vocabulary and free-text searches: To avoid losing current relevant information, MeSH terms should be searched in both the [mesh] field and in the title and abstract free-text fields [tiab]. Terms that are not descriptors should be searched in the [tiab] and author keyword [ot] fields.

* It is preferable to search terms and phrases using field tags rather than allowing PubMed to process the search through automatic mapping, because the more specific approach avoids PubMed
mapping searches to inappropriate terms, possibly causing noise.

Terms must be truncated to retrieve all possible variations; however, it is important to consider that: (a) individual terms are truncated when they are searched in free-text fields; (b) MeSH terms are not truncated when searched in the [mesh] field; and (c) when a phrase is searched, only the last term should be truncated.

Errors in search strategies used in systematic reviews and their effects on information retrieval

Publication title: Journal of the Medical Library Association; Chicago
Volume: 107
Issue: 2
Pages: 210-221
Document URL: https://search.proquest.com/docview/2214901488?accountid=26452

ResearchGate
Author: O'Brien, Kevin, MLS
https://search.proquest.com/docview/2214900976?accountid=26452

Abstract: Contemporary scholarly scientific research and publishing are characterized by a large number of journals, the fast tempo of publication, and the competitiveness of the funding process. These factors, in conjunction with the pervasive adoption of communication via social media platforms in academia, have given rise to a demand for new venues for scholars and scientists to collaborate on, publicize, share, and quantify the impact of their published works. Because medical librarians are an integral part of the research and scholarly communication process, the popularity of these new platforms calls for a basic familiarity with their features that an informed library professional can provide. The high visibility that Re-searchGate has achieved has not come without controversy. During the platform's rise to prominence, one factor in its popularity was the large volume of full-text portable document format (PDF) articles present in many researcher pro-files.

ResearchGate's success in building a large user base gives it the potential to survive the substantial legal challenges it faces. While the platform's scale and attractive user interface may appeal to many researchers, issues such as a lack of transparency in the composition of the RG score, concerns regarding use of member data, and an attitude of ambivalence toward the complicated topic of article sharing contribute to a strong case that ResearchGate is not the optimal solution to the pressing need for a space for scholars and scientists to freely collaborate and communicate regarding their work.
Critical librarianship in health sciences libraries: an introduction

Author: Barr-Walker, Jill; Sharifi, Claire


https://search.proquest.com/docview/2214899341?accountid=26452

Abstract: The Medical Library Association recently announced its commitment to diversity and inclusion. While this is a positive start, critical librarianship takes the crucial concepts of diversity and inclusion one step further by advocating for social justice action and the dismantling of oppressive institutional structures, including white supremacy, patriarchy, and capitalism. Critical librarianship takes many forms, but, at its root, is focused on interrogating and disrupting inequitable systems, including changing racist cataloging rules, creating student-driven information literacy instruction, supporting inclusive and ethical publishing models, and rejecting the notion of libraries as neutral spaces. This article presents examples of the application of critical practice in libraries as well as ideas for applying critical librarianship to the health sciences.

Full text: Headnote The Medical Library Association recently announced its commitment to diversity and inclusion. While this is a positive start, critical librarianship takes the crucial concepts of diversity and inclusion one step further by advocating for social justice action and the dismantling of oppressive institutional structures, including white supremacy, patriarchy, and capitalism. Critical librarianship takes many forms, but, at its root, is focused on interrogating and disrupting inequitable systems, including changing racist cataloging rules, creating student-driven information literacy instruction, supporting inclusive and ethical publishing models, and rejecting the notion of libraries as neutral spaces. This article presents examples of the application of critical practice in libraries as well as ideas for applying critical librarianship to the health sciences.

Topic search filters: a systematic scoping review

Author: Damarell, Raechel A1 ; May, Nikki2 ; Hammond, Sue3 ; Sladek, Ruth M4 ; Tieman, Jennifer J1 1 College of Nursing and Health Sciences, Flinders University, Bedford Park, SA, Australia 2 South Australian Health Library Service, Flinders Medical Centre, Bedford Park, SA, Australia 3 Flinders University Library, Flinders University, Bedford Park, SA, Australia 4 College of Medicine and Public Health, Flinders University, Bedford Park, SA, Australia


https://search.proquest.com/docview/2186237876?accountid=26452

Abstract: Background Searching for topics within large biomedical databases can be challenging, especially when topics are complex, diffuse, emerging or lack definitional clarity. Experimentally derived topic search filters offer a reliable solution to effective retrieval; however, their number and
range of subject foci remain unknown. Objectives This systematic scoping review aims to identify and describe available experimentally developed topic search filters. Methods Reports on topic search filter development (1990-) were sought using grey literature sources and 15 databases. Reports describing the conception and prospective development of a database-specific topic search and including an objectively measured estimate of its performance ('sensitivity') were included. Results Fifty-four reports met inclusion criteria. Data were extracted and thematically synthesised to describe the characteristics of 58 topic search filters. Discussion Topic search filters are proliferating and cover a wide range of subjects. Filter reports, however, often lack clear definitions of concepts and topic scope to guide users. Without standardised terminology, filters are challenging to find. Information specialists may benefit from a centralised topic filter repository and appraisal checklists to facilitate quality assessment. Conclusion Findings will help information specialists identify existing topic search filters and assist filter developers to build on current knowledge in the field.

Exploring PubMed as a reliable resource for scholarly communications services

Author: Williamson, Peace Ossom, MLS, MS, AHIP; Minter, Christian I J, MSLIS
https://search.proquest.com/docview/2171123741?accountid=26452

Abstract: Objective: PubMed's provision of MEDLINE and other National Library of Medicine (NLM) resources has made it one of the most widely accessible biomedical resources globally. The growth of PubMed Central (PMC) and public access mandates have affected PubMed's composition. The authors tested recent claims that content in PMC is of low quality and affects PubMed's reliability, while exploring PubMed's role in the current scholarly communications landscape. Methods: The percentage of MEDLINE-indexed records was assessed in PubMed and various subsets of records from PMC. Data were retrieved via the National Center for Biotechnology Information (NCBI) interface, and follow-up interviews with a PMC external reviewer and staff at NLM were conducted.

CONCLUSION

The percentage of MEDLINE records in PubMed has been slowly decreasing; however, whether that trend will continue and the meaning and effect of this shift is not clear. Further research is necessary to investigate the impact of the increase in PMC content, especially the impact of the new review policies and the contributions of journals that fully participate, on the role of PubMed for users who are searching for literature and for authors who are attempting to seek validation for publications in which to publish. In addition, there is a lack of studies investigating the research quality of literature retrieved through PubMed as well as other resources, using proven critical appraisal methods rather than comparisons with lists of journals and publishers, like those created by Beall. Research of this caliber will support librarians' efforts to encourage users to engage in the same types of evaluations when searching for literature and choosing where to submit research articles.
Current Awareness Database Articles

If you would like any of the articles in full text, or if you would like a more focused search on your own topic, please contact us: library@bristol.nhs.uk

Topics (Searching, Systemic Reviews, Synthesis, Training)

Searching

Health Centre Staff Are Satisfied with Librarian-Mediated Search Services, Especially When Librarians Follow Up

Williamson, Peace Ossom. Evidence Based Library and Information Practice; Edmonton Vol. 13, Iss. 1, (2018): 43.

Objective—To determine the effects of the professional designation and communication method on clinical, educational, and research activities and related users’ reported satisfaction with and perceived quality of a librarian-mediated literature searching service. Design—Online survey. Setting—A large teaching hospital in Ontario, Canada.

Stretching PICO: Implications for Database Searching and Perceived Searching Confidence


Introduction: Library Technician (LT) students develop knowledge and expertise in translating diverse patron reference questions into effective search strategies. Traditionally they are taught generic concept mapping for identification of searchable components. This poster explores how PICO could be modified and applied, outside of the clinical context, as a novel teaching approach to structuring search strategies and promoting searching confidence in information literacy instruction across disciplines. This study examines the effectiveness of PICO vs generic concept mapping as searching strategies for first year LT students, also considering student preference, and any differences in perceived searching confidence. Methods: Classroom instructor and librarian collaboratively facilitated guided searching activities, wherein students employed both PICO and generic strategies, submitting their search results and personal reflections via an online form. Responses were analyzed for differences in the quality of search results, in students’ indication of preference, and in the students' perceived confidence scores. Results: Initial analysis of search results revealed comparable recall between the two strategies but greater precision with PICO searches. Students commented on the greater effectiveness of PICO for structuring a focussed search, yet no clear preference was noted. Self-rated searching confidence results were not significantly different between the two strategies. Discussion: Though no strong preference was
indicated, both strategies appeared useful to students depending on the context of the question. The instructor will continue to teach both generic concept mapping and PICO, thus equipping these undergraduate students for the various information seeking requests they will encounter, as either students or as library professionals.

**A systematic approach to searching: an efficient and complete method to develop literature searches.**

**Author(s):** Bramer, Wichor M; de Jonge, Gerdien B; Rethlefsen, Melissa L; Mast, Frans; Kleijnen, Jos  
**Source:** Journal of the Medical Library Association : JMLA; Oct 2018; vol. 106 (no. 4); p. 531-541  
Available at Journal of the Medical Library Association : JMLA - from Europe PubMed Central - Open  

**Abstract:** Creating search strategies for systematic reviews, finding the best balance between sensitivity and specificity, and translating search strategies between databases is challenging. Several methods describe standards for systematic search strategies, but a consistent approach for creating an exhaustive search strategy has not yet been fully described in enough detail to be fully replicable. The authors have established a method that describes step by step the process of developing a systematic search strategy as needed in the systematic review. This method describes how single-line search strategies can be prepared in a text document by typing search syntax (such as field codes, parentheses, and Boolean operators) before copying and pasting search terms (keywords and free-text synonyms) that are found in the thesaurus. To help ensure term completeness, we developed a novel optimization technique that is mainly based on comparing the results retrieved by thesaurus terms with those retrieved by the free-text search words to identify potentially relevant candidate search terms. Macros in Microsoft Word have been developed to convert syntaxes between databases and interfaces almost automatically. This method helps information specialists in developing librarian-mediated searches for systematic reviews as well as medical and health care practitioners who are searching for evidence to answer clinical questions. The described method can be used to create complex and comprehensive search strategies for different databases and interfaces, such as those that are needed when searching for relevant references for systematic reviews, and will assist both information specialists and practitioners when they are searching the biomedical literature.

**Systematic reviews**

**Systematic review searches must be systematic, comprehensive, and transparent: a critique of Perman et al.**

**Author(s):** Greyson, Devon et al  
**Source:** BMC public health; Feb 2019; vol. 19 (no. 1); p. 153  
Available at BMC public health - from BioMed Central  

**Abstract:** A high quality systematic review search has three core attributes; it is systematic, comprehensive, and transparent. The current over-emphasis on the primacy of systematic reviews over other forms of literature review in health research, however, runs the risk of encouraging publication of reviews whose searches do not meet these three criteria under the guise of being systematic reviews. This correspondence comes in response to Perman S, Turner S, Ramsay AIG, Baim-Lance A, Utley M, Fulop NJ. School-based vaccination programmes: a systematic review of the evidence on organization and delivery in high income countries. 2017; BMC Public Health 17:252, which we assert did not meet these three important quality criteria for systematic reviews, thereby leading to potentially unreliable conclusions. Our aims herein are to emphasize the importance of
maintaining a high degree of rigour in the conduct and publication of systematic reviews that may be used by clinicians and policy-makers to guide or alter practice or policy, and to highlight and discuss key evidence omitted in the published review in order to contextualize the findings for readers. By consulting a research librarian, we identified limitations in the search terms, the number and type of databases, and the screening methods used by Perman et al. Using a revised Ovid MEDLINE search strategy, we identified an additional 1016 records in that source alone, and highlighted relevant literature on the organization and delivery of school-based immunization program that was omitted as a result. We argue that a number of the literature gaps noted by Perman et al. may well be addressed by existing literature found through a more systematic and comprehensive search and screening strategy. We commend both the journal and the authors, however, for their transparency in supplying information about the search strategy and providing open access to peer reviewer and editor's comments, which enabled us to understand the reasons for the limitations of that review.

**Systematic reviews and tech mining: A methodological comparison with case study.**

**Author(s):** Anderson, Patricia F et al

**Source:** Research synthesis methods; Dec 2018; vol. 9 (no. 4); p. 540-550

**Abstract:** When the Medical Library Association identified questions critical for the future of the profession, it assigned groups to use systematic reviews to find the answers to these questions. Group 6, whose question was on emerging technologies, recognized early on that the systematic review process would not work well for this question, which looks forward to predict future trends, whereas the systematic review process looks back in time. We searched for new methodologies that were more appropriate to our question, developing a process that combined systematic review, text mining, and visualization techniques. We then discovered tech mining, which is very similar to the process we had created. In this paper, we describe our research design and compare tech mining and systematic review methodologies. There are similarities and differences in each process: Both use a defined research question, deliberate database selection, careful and iterative search strategy development, broad data collection, and thoughtful data analysis. However, the focus of the research differs significantly, with systematic reviews looking to the past and tech mining mainly to the future. Our comparison demonstrates that each process can be enhanced from a purposeful consideration of the procedures of the other. Tech mining would benefit from the inclusion of a librarian on their research team and a greater attention to standards and collaboration in the research project. Systematic reviews would gain from the use of tech mining tools to enrich their data analysis and corporate management communication techniques to promote the adoption of their findings.

**Evaluation of a new method for librarian-mediated literature searches for systematic reviews.**

**Author(s):** Bramer, Wichor M; Rethlefsen, Melissa L; Mast, Frans; Kleijnen, Jos

**Source:** Research synthesis methods; Dec 2018; vol. 9 (no. 4); p. 510-520

**Available at** Research synthesis methods - from Unpaywall

**Abstract:** To evaluate and validate the time of completion and results of a new method of searching for systematic reviews, the exhaustive search method (ESM), using a pragmatic comparison. METHODS: Single-line search strategies were prepared in a text document. Term completeness was ensured with a novel optimization technique. Macros in MS Word converted the syntaxes between databases and interfaces almost automatically. We compared search characteristics, such as number of search terms and databases, and outcomes, such as number of included and retrieved references and precision, from ESM searches and other Dutch academic hospitals identified by searching PubMed for systematic reviews published between 2014 and 2016.
We compared time to perform the ESM with a secondary comparator of recorded search times from published literature and contact with authors to acquire unpublished data. RESULTS We identified 73 published Erasmus MC systematic reviews and 258 published by other Dutch academic hospitals meeting our criteria. We pooled search time data from 204 other systematic reviews. The ESM searches differed by using 2 times more databases, retrieving 44% more references, including 20% more studies in the final systematic review, but the time needed for the search was 8% of that of the control group. Similarities between methods include precision and the number of search terms.

CONCLUSIONS The evaluated similarities and differences suggest that the ESM is a highly efficient way to locate more references meeting the specified selection criteria in systematic reviews than traditional search methods. Further prospective research is required.

Measures assessing attributes of evidence-informed decision-making (EIDM) competence among nurses: a systematic review protocol.

Author(s): Belita, Emily et al

Source: Systematic reviews; Nov 2018; vol. 7 (no. 1); p. 181

Available at Systematic reviews - from BioMed Central

Abstract: BACKGROUND There are growing professional expectations for nurses to engage in and develop competence in evidence-informed decision-making (EIDM) due to opportunities for improved client and community outcomes and provision of the highest quality of care. However, EIDM is underdeveloped, with low implementation rates among nurses. The use of indicators to assess EIDM performance has potential to encourage nurses' engagement in EIDM through competence recognition and support assessment of strengths and competency gaps for individual nurses and organizations. Currently, the state of evidence regarding measures that assess EIDM competence attributes (i.e., knowledge, skills, beliefs/values, behaviors) among nurses is unknown. This systematic review aims to address this gap through a narrative synthesis of the characteristics and psychometric properties of EIDM competence measures.

METHODS The search strategy, developed in consultation with a Health Sciences Librarian, consists of online databases, contacting experts, hand searching reference lists, key journals, websites, conference proceedings, and grey literature. Studies will be included if the following criteria are met: (1) sample includes practicing nurses and data for nurses are reported separately; (2) conducted in any healthcare setting; (3) quantitative or mixed-methods design; (4) reports use or testing of a measure assessing EIDM competence attributes (i.e., knowledge, skills, attitudes/values, and/or behaviors); and (5) published in English. Screening will be conducted independently by two reviewers using a two-stage process: (1) title and abstract level; and (2) full-text level. Data extraction of study characteristics (e.g., sample, setting) will be conducted by a single reviewer and checked for accuracy by a second reviewer. Psychometric properties of acceptability, reliability, and validity evidence for each measure will be independently extracted by two reviewers. Data on measures will be synthesized.
narratively according to acceptability, number of validity evidence sources established, and reliability of scores. Data pertaining to population and healthcare setting will also be reported for each measure.

**DISCUSSION**

This systematic review will provide a current understanding about the state of evidence with respect to EIDM competence measures in nursing to assist in determining potentially relevant and robust measures for use in different nursing practice settings.

**SYSTEMATIC REVIEW REGISTRATION**

Protocol registered in PROSPERO Registration #: CRD42018088754.

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**Transforming the systematic review service: a team-based model to support the educational needs of researchers.**

**Author(s):** Roth, Stephanie Clare

**Source:** Journal of the Medical Library Association: JMLA; Oct 2018; vol. 106 (no. 4); p. 514-520

**Abstract:** To meet the current needs of researchers who perform systematic reviews in health care settings, libraries need to provide high-quality educational services for researchers as part of their systematic review services. A team of librarians with diverse skills is also important for ensuring the growth and sustainability of systematic review services. This commentary describes a new team-based systematic review service model that can transform systematic review services by providing a pathway for librarians to offer a comprehensive educational service for systematic review research in a variety of health sciences library settings.

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**A Primer on Systematic Reviews and Meta-Analyses.**

**Author(s):** Nguyen, Nghia H; Singh, Siddharth

**Source:** Seminars in liver disease; May 2018; vol. 38 (no. 2); p. 103-111

**Abstract:** With the rapid growth of biomedical literature, there is increasing need to make meaningful inferences from a comprehensive and complex body of evidence. Systematic reviews with or without meta-analyses offer an objective and summative approach to synthesize knowledge and critically appraise evidence to inform clinical practice. Systematic reviews also help identify key knowledge gaps for future investigation. In this review, the authors provide a step-by-step approach to conducting a systematic review. These include: (1) formulating a focused and clinically-relevant question; (2) designing a detailed review protocol with explicit inclusion and exclusion criteria; (3) performing a systematic literature search of multiple databases and unpublished data, in consultation with a medical librarian, to identify relevant studies; (4) meticulous data abstraction by at least two sets of investigators independently; (5) assessing risk of bias in individual studies; (6) quantitative synthesis with meta-analysis; and (7) critically and transparently ascertaining quality of evidence.

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**Roles for librarians in systematic reviews: a scoping review.**

**Author(s):** Spencer, Angela J; Eldredge, Jonathan D

**Source:** Journal of the Medical Library Association: JMLA; Jan 2018; vol. 106 (no. 1); p. 46-56

Available at Journal of the Medical Library Association: JMLA - from Europe PubMed Central - Open
**Abstract:**

Objective: What roles do librarians and information professionals play in conducting systematic reviews? Librarians are increasingly called upon to be involved in systematic reviews, but no study has considered all the roles librarians can perform. This inventory of existing and emerging roles aids in defining librarians’ systematic reviews services.

Methods: For this scoping review, the authors conducted controlled vocabulary and text-word searches in the PubMed; Library, Information Science & Technology Abstracts; and CINAHL databases. We separately searched for articles published in the Journal of the European Association for Health Information and Libraries, Evidence Based Library and Information Practice, the Journal of the Canadian Health Libraries Association, and Hypothesis. We also text-word searched Medical Library Association annual meeting poster and paper abstracts.

Results: We identified 18 different roles filled by librarians and other information professionals in conducting systematic reviews from 310 different articles, book chapters, and presented papers and posters. Some roles were well known such as searching, source selection, and teaching. Other less documented roles included planning, question formulation, and peer review. We summarize these different roles and provide an accompanying bibliography of references for in-depth descriptions of these roles.

Conclusion: Librarians play central roles in systematic review teams, including roles that go beyond searching. This scoping review should encourage librarians who are fulfilling roles that are not captured here to document their roles in journal articles and poster and paper presentations.

**Synthesis**

**Training**

**Medical Librarians may be underutilised in EBM Training within Pediatric Resident Programs**


Objective – To identify the use and role of medical librarians in pediatric residency training, specifically in the teaching of evidence-based medicine (EBM) to medical residents. This research also aims to describe current strategies used for teaching evidence-based medicine in pediatric residency training programs. Design – Web-based survey. Setting – Pediatric residency programs within the United States of America.

**Librarians collaborating to teach evidence-based practice: exploring partnerships with professional organizations**


Objective: The study sought to determine if librarians are collaborating with nurses and professional nursing organizations to teach evidence-based practice (EBP) continuing education courses, workshop, classes, or other training activities. Methods: A 15-question survey was sent to 1,845 members of the Medical Library Association through email.

**Roles, Methods, and Values in Teaching Evidence-Based Medicine: Roaring or Silent Librarians?**

Introduction: Teaching evidence-based medicine (EBM) is often a vital and substantial portion of medical libraries' instructional programs. Yet teaching EBM has presented challenges for both medical librarians and medical school faculty, ranging from finding time in the curriculum to faculty's lack of EBM knowledge and skills, as well as difficulties in students' mastering EBM skills and in librarians' being included in EBM curricula. This qualitative study investigated effective educational approaches, including the role of librarians, in teaching EBM. Methods: Using a grounded theory approach, semi-structured interviews at multiple institutions were conducted in person with librarians and faculty involved in teaching EBM at schools of medicine and other health sciences. Questions included: Where/when in the curriculum are EBM topics introduced (e.g., PICO, literature searching, and critical appraisal of evidence?) With sophisticated tools such as UpToDate available, is there still value in students learning EBM skills? What specific teaching methods are used; how do you know whether they are effective? To what extent are librarians involved in the curriculum; why (or why not)? Two reviewers are independently coding interview data using MAXQDA and will subsequently reconcile differences and reach a consensus on themes. Results (preliminary): 90 interviews were completed at sixteen institutions in the Pacific Northwest. Interviewees stated that more robust and standardized EBM curricula and addressing the perceived lack of EBM relevance to students are needed. Medical faculty and librarians expressed different perspectives on librarians' roles and value in teaching EBM.

Information literacy instruction for pharmacy students: a pharmacy librarian reflects on a year of teaching.
Author(s): Conlogue, Bridget C
Source: Journal of the Medical Library Association : JMLA; Jan 2019; vol. 107 (no. 1); p. 98-102
Available at Journal of the Medical Library Association : JMLA - from Europe PubMed Central - Open Access
Abstract: Librarians have ever-expanding teaching responsibilities in many academic disciplines. Assessment of learning outcomes requires longitudinal evaluation to measure true retention of skills and knowledge. This is especially important in the health sciences, including pharmacy, where librarians take an active role in teaching students to help prepare them for a profession in which solid information literacy skills are required to safely and effectively provide evidence-based care to patients. In this commentary, I reflect on a year of teaching in a pharmacy program and consider the outcomes of my instruction, areas for improvement, student retention of learning, assessment challenges, faculty-librarian collaboration, and continued support for library instruction in the pharmacy curriculum.

Medical Information Literacy Q-Bank: A Collaborative and Developing Project.
Author(s): Fitterling, Lori; Garber, Diane; Palazzolo, Erin
Source: Medical reference services quarterly; 2018; vol. 37 (no. 4); p. 331-340
Abstract: With the inclusion of medical informatics and information literacy skills in required core competencies, medical librarians are teaching courses in medical informatics and information literacy that require formal assessment. Librarians from three osteopathic universities surveyed osteopathic medical libraries to find out how many librarians are teaching formalized courses in the curriculum, how many librarians are writing formal medical test questions on medical informatics
and/or information literacy topics, and whether there is any interest in creating a shared question bank of medical library test questions.

**Miscellaneous**

**Adapting data management education to support clinical research projects in an academic medical center.**

**Author(s):** Read, Kevin B  
**Source:** Journal of the Medical Library Association: JMLA; Jan 2019; vol. 107 (no. 1); p. 89-97  
Available at Journal of the Medical Library Association: JMLA - from Europe PubMed Central - Open Access

**Abstract:** Background: Librarians and researchers alike have long identified research data management (RDM) training as a need in biomedical research. Despite the wealth of libraries offering RDM education to their communities, clinical research is an area that has not been targeted. Clinical RDM (CRDM) is seen by its community as an essential part of the research process where established guidelines exist, yet educational initiatives in this area are unknown. Case Presentation: Leveraging my academic library's experience supporting CRDM through informationist grants and REDCap training in our medical center, I developed a 1.5 hour CRDM workshop. This workshop was designed to use established CRDM guidelines in clinical research and address common questions asked by our community through the library's existing data support program. The workshop was offered to the entire medical center 4 times between November 2017 and July 2018. This case study describes the development, implementation, and evaluation of this workshop. Conclusions: The 4 workshops were well attended and well received by the medical center community, with 99% stating that they would recommend the class to others and 98% stating that they would use what they learned in their work. Attendees also articulated how they would implement the main competencies they learned from the workshop into their work. For the library, the effort to support CRDM has led to the coordination of a larger institutional collaborative training series to educate researchers on best practices with data, as well as the formation of institution-wide policy groups to address researcher challenges with CRDM, data transfer, and data sharing.

**A Clinical Librarian Embedded in Medical Education: Patient-Centered Encounters for Preclinical Medical Students.**

**Author(s):** Blake, Lindsay; Yang, Frances M; Brandon, Hutton; Wilson, Benjamin; Page, Renee  
**Source:** Medical reference services quarterly; 2018; vol. 37 (no. 1); p. 19-30

**Abstract:** Adding patient encounters and simulation to the preclinical years of medical school is becoming increasingly popular. This article describes the creation of active learning opportunities by a clinical librarian that are aimed at training preclinical students through the use of simulated patient scenarios. Scenarios for second-year students walk them through the evidence-based resources needed in clinical years and beyond through a standardized patient encounter. Scenarios for first-year students involve role-play of cases where the patient and physician bring contrasting ideas to the outpatient interaction. All scenarios are carried out under the guidance of a clinician and librarian.
Opportunities for faculty-librarian collaboration in an expanded dentistry curriculum.

**Author(s):** Stone, Sean; Quirke, Michelle; Lowe, M Sara

**Source:** Health information and libraries journal; Jun 2018; vol. 35 (no. 2); p. 170-176

Available at [Health information and libraries journal](https://www.ebscohost.com/) from EBSCO (MEDLINE Complete)

**Abstract:** With the increased emphasis on evidence based practice, developing information literacy skills earlier in health care education programmes is widely accepted. However finding opportunities for relevant teaching can present challenges, often leading to a lack of integration. In this paper, guest writers Sean Stone and colleagues from Indiana University discuss their involvement with an expanded dental hygiene curriculum in the University School of Dentistry. This expansion has provided the opportunity to plan integration of information and oral health literacy instruction and evidence based practice across the new curriculum, and provide transferable skills for any major. In particular, the paper addresses the developmental work the health librarian team engaged in from course design, delivery and assessment to improve student preparedness for evidence based practice. H.S.

Evaluating the impact of clinical librarians on clinical questions during inpatient rounds.

**Author(s):** Brian, Riley; Orlov, Nicola; Werner, Debra; Martin, Shannon K; Arora, Vineet M; Alkureishi, Maria

**Source:** Journal of the Medical Library Association : JMLA; Apr 2018; vol. 106 (no. 2); p. 175-183

Available at [Journal of the Medical Library Association : JMLA](https://www.ncbi.nlm.nih.gov/) from Europe PubMed Central - Open

**Abstract:** ObjectiveThe investigation sought to determine the effects of a clinical librarian (CL) on inpatient team clinical questioning quality and quantity, learner self-reported literature searching skills, and use of evidence-based medicine (EBM).MethodsClinical questioning was observed over 50 days of inpatient pediatric and internal medicine attending rounds. A CL was present for 25 days and absent for 25 days. Questioning was compared between groups. Question quality was assessed by a blinded evaluator, who used a rubric adapted from the Fresno Test of Competence in Evidence-Based Medicine. Team members were surveyed to assess perceived impacts of the CL on rounds.

ResultsRounds with a CL (CLR) were associated with significantly increased median number of questions asked (5 questions CLR vs. 3 NCLR; p<0.01) and answered (3 CLR vs. 2 NCLR; p<0.01) compared to rounds without a CL (NCLR). CLR were also associated with increased mean time spent asking (1.39 minutes CLR vs. 0.52 NCLR; p<0.01) and answering (2.15 minutes CLR vs. 1.05 NCLR; p=0.02) questions. Rounding time per patient was not significantly different between CLR and NCLR. Questions during CLR were 2 times higher in adapted Fresno Test quality than during NCLR (p<0.01). Select participants described how the CL’s presence improved their EBM skills and care decisions.

ConclusionsInpatient CLR were associated with more and improved clinical questioning and subjectively perceived to improve clinicians’ EBM skills. CLs may directly affect patient care; further study is required to assess this. CLs on inpatient rounds may be an effective means for clinicians to learn and use EBM skills.

Satellite stories: capturing professional experiences of academic health sciences librarians working in delocalized health sciences programs.

**Author(s):** Phinney, Jackie; Horsman, Amanda Rose

**Source:** Journal of the Medical Library Association : JMLA; Jan 2018; vol. 106 (no. 1); p. 74-80

Available at [Journal of the Medical Library Association : JMLA](https://www.ncbi.nlm.nih.gov/) from Europe PubMed Central - Open
Abstract:
Objective: Health sciences training programs have progressively expanded onto satellite campuses, allowing students the opportunity to learn in communities away from an academic institution's main campus. This expansion has encouraged a new role for librarians to assume, in that a subset of health sciences librarians identify as "satellite librarians" who are permanently located at a distance from the main campus. Due to the unique nature of this role and lack of existing data on the topic, the authors investigated the experiences and perceptions of this unique group of information professionals.

Methods: An electronic survey was distributed to health sciences librarians via two prominent North American email discussion lists. Questions addressed the librarians' demographics, feelings of social inclusion, technological support, autonomy, professional support, and more.

Results: Eighteen surveys were analyzed. While several respondents stated that they had positive working relationships with colleagues, many cited issues with technology, scheduling, and lack of consideration as barriers to feeling socially included at both the parent and local campuses. Social inclusion, policy creation, and collection management issues were subject to their unique situations and their colleagues' perceptions of their roles as satellite librarians.

Conclusions: The results from this survey suggest that the role of the academic health sciences librarian at the satellite campus needs to be clearly communicated and defined. This, in turn, will enhance the experience for the librarian and provide better service to the client.
Library Opening Times

Staffed hours: 8am-4pm, Monday to Friday
Swipe-card access: 7am-11pm, seven days a week

Level Five, Education and Research Centre
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