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MLA Research Agenda. Systematic Review Project. Team Updates Presentation. MLA Annual Meeting Supplement. May 17, 2015

Jonathan D. Eldredge

Heather N. Holmes

Marie T. Ascher

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MLA Research Agenda

Systematic Review Project

Team Updates Presentation

Medical Library Association
Annual Meeting

May 17, 2015

Jonathan Eldredge, PhD, AHIP
Associate professor, Health Sciences Library and Informatics Center,
University of New Mexico-Albuquerque
University of New Mexico
jeldredge@salud.unm.edu

Marie Ascher, MS, AHIP
Lillian Hetrick Huber Endowed Library Director
New York Medical College
marie_ascher@nymc.edu

Heather N. Holmes, MLIS, AHIP
Clinical Informationist
Summa Health System
Instructor of Internal Medicine
Northeast Ohio Medical University
hholmes@neomed.edu

TEAM 1

Effects of librarian provided services in healthcare settings: A systematic review.

OBJECTIVE:
To assess the effects of librarian-provided services in healthcare settings on patient, healthcare provider, and researcher outcomes.

MATERIALS AND METHODS:
Medline, CINAHL, ERIC, LISA (Library and Information Science Abstracts), and the Cochrane Central Register of Controlled Trials were searched from inception to June 2013. Studies involving librarian-provided services for patients encountering the healthcare system, healthcare providers, or researchers were eligible for inclusion. All librarian-provided services in healthcare settings were considered as an intervention, including hospitals, primary care settings, or public health clinics.

RESULTS:
Twenty-five articles fulfilled our eligibility criteria, including 22 primary publications and three companion reports. The majority of studies (15/22 primary publications) examined librarians providing instruction in literature searching to healthcare trainees, and measured literature searching proficiency. Other studies analyzed librarian-provided literature searching services and instruction in question formulation as well as the impact of librarian-provided services on patient length of stay in hospital. No studies were found that investigated librarians providing direct services to researchers or patients in healthcare settings.

CONCLUSIONS:
Librarian-provided services directed to participants in training programs (eg, students, residents) improve skills in searching the literature to facilitate the integration of research evidence into clinical decision-making. Services provided to clinicians were shown to be effective in saving time for health professionals and providing relevant information for decision-making. Two studies indicated patient length of stay was reduced when clinicians requested literature searches related to a patient's case.

A scoping review of studies added value libraries bring to education, research, and patient care in the health sciences and health care fields

Question
From the existing literature, what have studies measured about the added value libraries bring to education, research, and patient care in the health sciences and health care fields?

Methods
Inclusion criteria:
- Study should report a project/service provided by a library/information center
- Project/service should be aimed at impacting education/research/patient care in health related field
- Study should provide qualitative or quantitative outcomes (not purely descriptive)

Resources searched:
- Medline [Ovid]
- LISA-Library Information Science Abstracts [ProQuest]
- LISTA-Library, Information Science, & Technology Abstracts [Ebsco]
- Reference searching through Scopus

Selection: 2 independent authors screened each article, first by title/abstract and then full text through Refworks

Coding: Each article was coded in Qualtrics by 1 author with the following characteristics: type of library setting, medical disciplines, geographical setting, study type, type of support, focus of study, clients measured, mentioned added value, measurements

Results
- PRISMA flowchart providing results of searching and screening
- 26% of articles mentioned added value
- The table below preliminary findings based coded articles, 70 more need to be screened

Team 3 of the MLA Systematic Review Project of the Research Section

Leader: Margaret J. Foster, MS, MPH, AHIP
Texas A&M University

Members:

Dennis Bashaw
William Brock Medical Library

Helen Caruso, MLIS, AHIP
SEL-AHEC Librarian, Bogalusa, LA

Saori Wendy Herman, MLIS, AHIP
Hofstra North Shore-LIJ School of Medicine

Amanda Horsman
Universite de Moncton

Margaret A. Hoogland
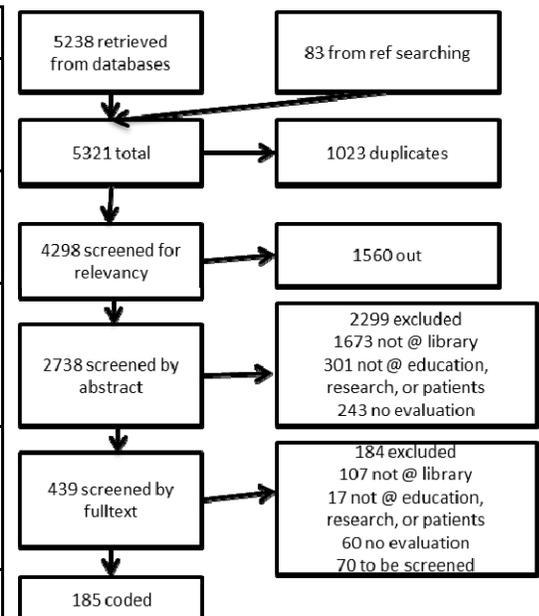A.T. Still University of Health Sciences

Jennifer A. Lyon
Stony Brook University

Melissa Kovac, MLIS, AHIP
Association of periOperative Registered Nurses

Farhad Shokraneh, BSc, MS, MedLIS

Benjy Stein, MSLIS, MSEd
Library & Information Services - Quintiles

Characteristic	Results	
Methods	68% survey	7% focus groups
	16% interviews	40% other
	18% observational	
Type of library and geography	58% academic; 23% hospital library; 1% public library; 18% other	
	65% U. S., 33% International, 2% not specified	
Health related fields	55% medicine	4% pharmacy
	31% nursing	4% dental
	4% physical therapy	23% other
	10% pharmacy	16% not specified
Measures of added value	43% use of services	33% value as results
	38% use of resources	35% education outcomes
	20% library impact on users	19% impact on patient care
Types of support	51% clinical; 73% education; 28% research	

PRISMA flowchart:
- 5238 retrieved from databases
- 83 from ref searching
- 5321 total → 1023 duplicates
- 4298 screened for relevancy → 1560 out
- 2738 screened by abstract → 2299 excluded (1673 not @ library; 301 not @ education, research, or patients; 243 no evaluation)
- 439 screened by fulltext → 184 excluded (107 not @ library; 17 not @ education, research, or patients; 60 no evaluation; 70 to be screened)
- 185 coded

MLA Research Agenda Systematic Review Project: Team 4 Update

Revised research question: What is the nature of the existing literature on the role and impact of librarians on health literacy?

Reasons for revision of the research question:
- Desire to characterize populations that are the focus of health literacy efforts, rather than limit to only groups specified in original question
- Desire to characterize the settings (libraries or other) in which health literacy programs occur
- Concern about the amount and type(s) of published literature available

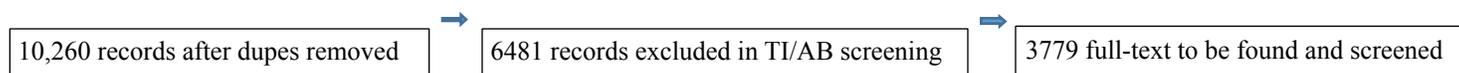This broader question allows us to systematically examine:
- The population groups targeted by health literacy interventions
- The settings in which librarians offer health literacy programs
- The nature of the existing literature on librarians and health literacy

With the change in research question, we altered our methodology. We are now completing a scoping review, a research design that is appropriate when the goal is "…to examine the extent, range and nature of research activity…"(Arksey & O'Malley, 2005; pg 21).

Databases searched: PubMed, CINAHL (EBSCOhost), Cochrane Library (Wiley). EMBASE.com, LISA (ProQuest), LISTA (EBSCOhost), Academic Search Premier, and Scopus.
Hand-searches were conducted of 2001-2014 conference abstracts for MLA, Canadian Health Libraries Association, and International Federation of Library Associations, and for 1999-2014 issues of JMLA, Journal of the Canadian Health Libraries Association, Health Information & Libraries Journals, and Journal of Health Communication.

Results:

10,260 records after dupes removed	→	6481 records excluded in TI/AB screening	→	3779 full-text to be found and screened

Data Management:
The study protocol, meeting minutes, and other procedural documents are stored in DropBox, while full-text articles to be screened are stored in a university-sponsored Box account.

EndNote and Excel are used to manage database citations and Phase 1(title/abstract screening) data.
Google Drive forms are used to collect and store data during Phase 2 (full-text screening) and hand-searching.

Phase 1, Phase 2 and hand-searching data are either stored locally (Phase 1) or in Google Drive.
Back-up files for all data are created on a regular basis and stored locally and off-site.

Discussion:
This scoping review will identify and characterize literature published by librarians that addresses health literacy. Our findings will identify trends and gaps in this literature, and serve as a map for future research.

For additional details, see poster #138, "Librarians and health literacy: A scoping review". Tue 5/19, 1-1:55pm.

MLA Research Agenda Systematic Review Project - Team 5 Summary

Team Leader: Aileen McCrillis **Team Members**: Karen Davies, Leah Osterhaus Trzasko, Lisa Philpotts, Deborah Thomas, Lisa Ziliak

Original Question: *What are the information needs of practicing physicians and other health care workers? The 1985 Covell article is still heavily cited but was published way back in 1985. The information environment has changed dramatically. We need to update that study in light of new educational strategies, resources, technology and social networks.*

Background: In 1985 Covell and colleagues conducted a study assessing how physicians answer clinical questions and found that only 30% of their information needs were met and usually by another physician or other health professional. Covell et al. concluded that "better methods are needed to provide answers to questions that in office practice." Since that time, the advent of the internet has radically transformed the way in which information can be accessed. The objective of this review was to assess how physicians today answer clinical questions.

Methods: We sought full reports of primary studies that evaluated the information sources used by physicians to inform clinical decision-making. **Reformatted Question:** What information sources are used by physicians to answer clinical questions? Eligibility Criteria:

- Full reports of primary studies that evaluate the information sources used by physicians to inform clinical care

- Only studies conducted among residents, fellows, and qualified physicians/surgeons will be included. Studies examining medical students and other types of clinicians will not be included, because their information needs may be different and students are still in training.

- Published in 2000-present, because the information landscape changed dramatically during the turn of the century due to the advent of the internet

- Conducted in high-income countries defined by the top quartile ranked by the Human Development Index, because there is a disparity between high income and middle- to low-income countries in access to information resources

- Published in English, because there are no funds available for translation

Results: Twenty studies were identified as meeting all eligibility criteria. Studies used varied methodologies (observation, surveys, interviews, and logbooks) and categorized information sources in different ways (specific titles, resource types, human sources, etc.) making it difficult to generalize findings. Consulting other physicians was among the top cited sources for information in nearly all identified studies.

Conclusion: The studies identified in this review demonstrate that physicians still largely depend on colleagues for answering clinical questions despite the increased amount of evidence-based information sources available online and that a large proportion of clinical questions go unanswered. This suggests that physicians would benefit from an increased awareness of evidence-based information sources available to them and perhaps assistance from medical librarians in answering clinical questions.

Current Status: Project complete. Manuscript submitted to Health Information Libraries Journal (HILJ)

MLA Research Agenda Systematic Review Project: Team 6, Emerging Technologies: Phase Two
Site: http://bit.ly/mlasr6site MLA14: http://bit.ly/mlasr6-posterMLA14 | http://bit.ly/mlasr6-slidesMLA14

Challenges

Methodological	Not a traditional systematic review. Methodology to support discovery, rather than synthesis. Project placed within an unknown and unknowable domain space.
Social	Coordinating meetings with all international team members. Impact of major life events for all team members.

Base Search

Source	Varela-Lemaa L, Punal-Riobóoa J, Acicóna BC, Ruano-Ravinaa A, López-Garcíaa M. Making processes reliable: A Validated PUBMED search strategy for identifying new or emerging technologies. Int J Technol Assess Health Care 28(04) October 2012:452-459. http://dx.doi.org/10.1017/S0266462312000578
Modifications	Truncation as appropriate; TIAB instead of TI only (in some places); addition of MeSH terms; closely related freetext terms not included in original strategy; added alternative spellings (US/UK); removed non-English terms; removed unique terms not found in Pubmed.
Final	Three versions 1. New base search, to use in combination with subgroup topic search filters. 2. More sensitive, to use in combination with technology specific search strategies. 3. More specific, to use in combination with extremely broad topics (ie. human body).

Selection Protocol (Draft)

Pubmed

Base Metrics	Newest article date
	Oldest article date
	Length of span (Years)
	Systematic review articles (Yes/No) [via Clinical Queries]
Focus	Technological
	Bench (cell or tissue)
	Animal / Human
Visualization	Shape of slope / curve when plotting growth in Pubmed over time

NLM Catalog

Books	Chapters (#)
	Entire books (#)
Journals	Titles on topic (#)
	Indexed? (Y/N)
	Years indexed (#)
	Impact factor
	Altmetric

Databases

Primary	Pubmed.gov; NLM Catalog; Clinicaltrials.gov; Grants.gov; Guidelines.gov
Secondary	Google.com/Scholar; Wikipedia

Team 7
Original question: **Does what we do matter?**
Longer form: ***Do the resources we provide – materials, reference services, educational offerings – make a difference to our customers: save lives, shorten length of stay, improve educational outcomes, increase research dollars, improve research results?***

Research to date presented at MLA 2014:
- Question refined to "What is the value and impact of health sciences libraries and information services on academic and clinical practice?"
- Refined search strategy, identified databases and grey literature resources to search
- Initial search results <7000
- Began initial screening

Challenges
- Varying levels of experience
- Time commitment
- Loss of team members
- Free citation management tools not ideal (Zotero used, but imperfect for project)
- Communication (time zones, email etc.)

The scope of the question proved to be very broad, and some of the relevant outcomes were being addressed in other systematic reviews in this project. Discussion with team members at MLA 2014, and via email with the entire team, resulted in re-thinking the question and scope.

Break from June 2014 – February 2015:
- Many team members on summer vacation
- Team leader unexpectedly off for two months

February 2015 – back on track with check in, confirmation of team member commitment, and structured plan for next steps

February 2015 – present:
- Team decided to reframe the question to specifically address a gap in existing literature
- New question: ***What is the value and impact of health library services for academic and scholarship activities?***
- Decided to do a rapid review rather than a full systematic review
- Literature searches complete

Question 9

Representative: Margaret Henderson, Team Leader

Do health sciences libraries and librarians have any measurable (statistically significant) positive impacts on consumer health, the outcomes of medical care, the productivity of biomedical researchers and the knowledge obtained by graduates of biomedical and health sciences training programs, and at what total cost?

We worked with the original question. We broke down the question and then created spreadsheets to brainstorm subject headings and keywords.
1. Health science libraries or librarians
2. Impact - statistically significant (quantitative measures)
3. consumer health knowledge, medical care outcome, research productivity, student success
4. total cost - two possibilities, actual monetary value or some other thing that can be calculated, for example time.
> Could be cost related to impact - does it save money or time in program being studied, but:
> After our poster was sent in, one team member pointed out that it might also mean the cost of providing the service of the library/librarian

The search was run in CINAHL, PubMed, Web of Science, Cochrane, ERIC, and Library Literature & Information Science Index and Library, Information Science & Technology Abstracts.

We are now reviewing all the 4,000 plus citations in Zotero.

Observations:
Don't try to learn a new, fancy collaboration tool and try to start work on a big project at the same time.
Deadlines help. This year's MLA deadline has been helpful to finally pull everything together. Although, I'm not sure if a self-appointed deadline would have worked as well.

Poster:
Accepted Abstract Title: Do Health Sciences Libraries and Librarians Have an Impact on the Cost of Healthcare and Research? A Systematic Review.
Date/Time to Staff Your Poster: Sunday, May 17, 2015, 2:00 PM – 2:55 PM
Poster Number: 83

MLA Team 10 was established to consider the return on investment created by medical libraries. Our team is multi-national, with 13 members from Ireland, Scotland, the United Kingdom, Canada and the US. Our members represent several different hospitals, military organizations, nursing colleges and medical programs.

- Ms Anne Madden, St. Vincent's University Hospital, Ireland.

- Ms Kristen DeSanto, Children's Hospital, Colorado, USA.

- Ms Diane Kunichika, Tripler Army Medical Library, Hawaii, USA.

- Ms Alison Winning, Healthcare Improvement, Scotland.

- Mr David Castelli, Intermountain Medical Center, Utah, USA.

- Ms Nancy O'Brien, UnityPoint Health, Iowa, USA

- Ms Michelle Purdon, Fraser Health Authority, British Columbia, Canada.

- Ms Sondhaya Sritongsook, Scripps Mercy Hospital, California, USA.

- Ms Pamela Collins, The Royal Wolverhampton NHS Trust Education Academy, West Midlands, UK.

- Mr Paul Stevenson, Airedale NHS Foundation Trust, Yorkshire, UK.

- Ms Hannah Prince, The Princess Alexandra Hospital NHS Trust, Essex, UK.

- Ms Loree Hyde, Oregon Health & Science University Library and School of Nursing, Oregon, USA.

- Ms Diana Delgado, Cornell Medical College, New York, USA.

In this session will review the purpose of the team, discuss some of the challenges we faced, and give an overview of what we have done so far, and potential journals where the results may be published.

MLA Systematic Review Team #12

Question: Does the instruction or assistance of a professional medical librarian have a long term impact on the information seeking behaviors of health care professionals?

Current status: in hiatus

Progress so far: Literature reviews of most major databases (Medline, Embase, CINAHL, Cochrane, ERIC) have been completed. Level one reviews have been partially completed.

Hiccups encountered: Given the necessary breadth we want, specificity is lower than desired for the Embase and Medline searches resulting in a large number of articles retrieved. A family illness slowed the searches a bit, and job and school changes have affected not only individual member's available time, but also continued membership. In fall 2014, we lost our leader and while another has volunteered to take over, it has been difficult reconstituting the group and moving forward. In order to move forward, the team may need to recruit new members.

The MLA Research Agenda Systematic Review Project
Medical Library Association Annual Meeting - Section Program 1 - May 17, 2015

Team 13: What are the most effective instructional methods used by librarians for teaching Evidence-Based Practice (EBP) within the health sciences curricula?

Team Leader: Assako Holyoke (MO)
Current Team Members: Carolyn Dennison (HI), Alison Farrell (Newfoundland), Christine Marton (Ontario), Kelly O'Brien (IL), Virginia Pannabecker (VA), Stephanie Swanberg (MI), Mindy Thuna (Ontario)

Current Status: Final data analysis and drafting of manuscript with plans to submit to *Evidence-Based Library and Information Practice* journal this year.

Inclusion & Exclusion Criteria:
- *Inclusion:* Evidence-based practice or evidence-based medicine; Instruction can be independent, not necessarily part of an EBP curriculum or program; Instruction conducted by a librarian or information specialist; Conducted for an academic institution; Assessment of learning outcomes
- *Exclusion:* Library orientation type of presentation without learning assessment; Veterinary studies; Letters or comments (non-research); Knowledge management and informatics.

Databases Searched: The team conducted searches in November 2013 and reran in December 2014 in the following databases: Campbell Library (2004-), CINAHL (1981-), CiNii Articles (1980-), Cochrane Library (1992-), EMBASE via OVID and embase.com (1974-), ERIC (1966-), Google Scholar, LILACS via Virtual Health Library (1982-), LISTA (1964-), MEDLINE via Ovid (1946-), PsycINFO via OVID & Proquest (1967-), PubMed (1946-), Scopus (1966-), Web of Science (1900-). Hand searching of 2011 - 2014 MLA Annual Meeting abstracts was also conducted.

Initial Results: After removal of duplicates, 30,043 citations were reviewed for eligibility by title and abstract and 637 reviewed by full text with 29 studies included in the final set for analysis. Overall, the final group of studies were very heterogeneous, making comparisons and conclusions difficult. A breakdown of studies is as follows:
- *Discipline:* Medicine (n=24); Nursing & Allied Health (5)
- *Level of Students:* Undergraduate level including MDs (19); Graduate level including residents, master's, and doctoral (10)
- *Geography:* US (23); Canada (3); Australia, England, and Italy (1 each); all were conducted at one institution only
- *Teaching Methods:* Lecture (19); Computer lab practice in online/hands-on searching (18); Small group discussion and/or one-on-one instruction (15); Web-based learning (6). Note that some studies used multiple methods.
- *Outcome Measures Used:* Quiz/test, pre- and post-test, peer review, hybrid
- *Journals Published In:* Library or information science (17); health sciences (11); conference proceedings (1)

Overall, findings were weakly positive for positive change in search performance for most studies. Several studies demonstrated robust positive findings for improvement in search performance or attitudes towards EBM skills training or both while others had mixed findings. Large variability in study sample, sample size, measurement tools and statistical tests employed made quantifying the amount of positive change in search performance and other measures by meta-analysis impossible.

Implications for Future Research: The team plans to recommend that future research conduct multi-site EBM/EBP intervention studies for students in the same year and same program and use standardized assessment tools, such as the Fresno or Berlin Questionnaire, to measure outcomes. In addition, studies comparing librarian-led instruction versus not would indicate the effectiveness of librarian instruction.

Team 14 Summary or Progress, Spring 2015

Team Lead: Linda Slater, University of Alberta
Team Members:

- Karin Bennedsen, Georgia Highlands College, Cartersville Campus
- Roy Brown, Virginia Commonwealth University School of Nursing
- Monique Clar, Université de Montréal
- Elizabeth Dyer, University of New England
- Linda Hartman, University of Pittsburgh
- Judith Scammel, St George's University of London
- Kathryn Smith, Trinity College Dublin
- Sarah Young, Cornell University
- Laura Zeigen, Oregon Health & Science University

Our Team has not made much progress, and that is due to the fact that I was taken out of commission by family illness and deaths in my family as well as added responsibilities at work due to a colleague's year long maternity. I am now back on track and am committed to seeing the project through. The Team Members mentioned above have agreed to continue on.

Our Team has had discussions about the original question (*In medical schools where librarians are included in the curriculum, do the students have a greater degree of information literacy than students in schools where librarians are not part of the curriculum?)*, and we had modified it to include students in any health profession. Now that I have been able to turn my attention back to the project, I have had another look at our question in light of a systematic review published in 2007 (Brettle, A. (2007). Evaluating information skills training in health libraries: a systematic review. *Health Information & Libraries Journal*, 24 (Suppl 1), 18-37 doi: 10.1111/j.1471-1842.2007.00740.x) on a question quite similar to the one we were assigned as well as the our modified question.

I have suggested to the Team that a useful contribution to the literature would be to update Brettle's review and use the following question as the basis of our review:

What research has been conducted on the effectiveness of librarian-led information literacy sessions in improving the information literacy skills of health care professionals and students in degree granting health professional programs?

I have just made the suggestion to focus our question as per the above to the group and am awaiting agreement from them that this is a sensible way to proceed. I'll probably have this information available to provide to Roy Brown who will be attending the Team Leaders' meeting in my place.

MLA Research Agenda – Team 15
Presenters: Anne Woznica, Keith Engwall
Research Question: Librarian Knowledge and Skills of Tools for Visualizing, Mining and Managing Large and Complex Research Data: A Systematic Review
Team Members: C. Boden, A. Adamczyk, L. Ambriz, B. Billman, A. Booth, E. Clark, K. Engwall, R. Johnson, A Miller-Nesbitt, M. Morris, A. Woznica

Introduction.
Our team consists of 10 librarians from across North America and Britain, some old hats and some trying systematic review methodology on for the first time.   In March 2013, we were asked by the MLA Research Agenda leaders to conduct a systematic review to answer the following question - What skills and knowledge must librarians possess in order to be able to design tools to help researchers visualize, mine, and otherwise manage large and complex data gathered during both quantitative and qualitative research?
Status of Project
Understanding and defining our broad and complex research question presented challenges to our team and delayed our progress. In the early phases of the project we had to work out the logistics of working together as a geographically distributed team, as well as selecting the technology that was best suited to our needs. Technology has not been perfect, but Blackboard Collaborate, Google Drive and Dropbox have been effective in managing documents and communication.

The systematic review is ongoing and we are making steady progress. The literature search identified 3910 records after deduplication. For title/abstract screening, records had to meet 4 criteria - address research data mining, management or visualization; relate to libraries, librarians or related professions; address competencies, skills or knowledge; and discuss tools. 165 records proceeded to full-text screening. For articles to be included in the SR, they had to meet the following criteria: deal with designing tools for research data mining, visualization and/or management; address librarian or information professional competency, skills, knowledge, curricula, education, professional development, or continuing professional education; describe of librarian or related professionals' competency etc with respect to some aspect of research data. Articles also had to have sufficient information to move forward to synthesis (completeness criteria). For instance, conference abstracts simply contain too little information for data extraction. The full-text screening is 60% complete and there are currently 26 articles included in the study. Not surprisingly, the majority of the articles address data management. However, there are 7 and 9 articles addressing data visualization and mining, respectively. The articles that address our question require a qualitative analysis. We have chosen a best-fit framework approach with a separate framework for the analysis of data management, data mining and data visualization, respectively. The data extraction forms are based on these frameworks. Our next steps are to complete screening, pilot the data extraction forms and conduct training on data extraction procedures. We estimate a completion date of August 2015 with a manuscript submitted by December 2015.

Reflections on Learning
This process has increased our understanding of systematic review methodology as a whole and the practicalities involved in conducting an SR. We have gained new knowledge and skills to contribute to librarian practice, such as documentation and tools, and a foundation for evaluating the quality of other systematic review. While the team looks forward to supporting and/or conducting systematic reviews in the future as a result of this experience, we also have some recommendations for similar projects in the future. A narrowly defined research question lends itself better to "learning by doing". At least one person on the team should be an experienced systematic reviewer in the type of question being asked (qualitative, quantitative, mixed) and all team members should have subject experience with the topic of the SR. All in all, it has been a great learning experience.