

Health Sciences Libraries:

A Changing Landscape

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ABSTRACT

Health sciences libraries provide specialized resources and services to learners, clinicians, researchers, patients, and the community. The authors describe how health sciences libraries continue to evolve in a changing healthcare system landscape. New technologies, roles, educational resources, and learner expectations provide challenges and opportunities for health sciences libraries.

INTRODUCTION

Health sciences libraries are specialized collections and services developed in support of patient care, education, and research. These libraries can be found in hospitals, universities, industries, and government agencies. Health sciences librarians develop specialized skills to serve clinicians, patients, community members, students, and researchers. These skills include reference on sensitive health topics, familiarity with the medical literature and databases, connecting quality point-of-care resources to the electronic medical record, and research and publishing support for clinical and basic sciences.¹ They support the unique information needs of students and professionals at every level in clinical settings as well as in industries such as biotechnology, insurance, and pharmaceuticals. In Maine, health sciences librarians are found in hospitals, community colleges, universities, and research facilities. Health sciences librarians are adapting to the challenges of a changing healthcare and health information landscape while continuing to support clinicians, students, patients, and communities.

THE CHANGING HEALTHCARE LANDSCAPE

The healthcare system has several goals represented by the Quadruple Aim, a framework that emphasizes the interdependent goals of improved patient experience, population health, lower costs, and clinician engagement (Bodenheimer and Sinsky 2014). These four elements

of the quadruple aim—quality, health, cost, and workforce—give context to the tensions that affect the changing landscape of healthcare.

Medical costs are high and rapidly getting higher. Prices for goods and services related to providing medical care increase at a rate that regularly outpaces overall inflation: two examples include pharmaceuticals at 21 percent and supplies at 18 percent (Fleron, Krishna, and Singhal 2022). Travel and temporary staff necessary to provide patient care also increase labor costs significantly. The pressures of inflation and increased competition have driven hospitals and clinics to consolidate into health systems for cost savings and more coordinated care. In the United States, there were 1573 hospital mergers from 1998 to 2017, and a further 428 mergers from 2018 to 2023 (Levinson et al. 2024). Due to these mergers and financial pressures, health sciences libraries were closed or consolidated, and librarian positions were eliminated. In some cases, library staff were redeployed to nonlibrary roles such as credentialing or scheduling. During this same period, weakened regulatory and accreditation requirements jeopardized the medical library. In 1993, the Joint Commission on Accreditation of Healthcare Organizations shifted the librarian's role under technology and information management (Schardt 1998). In Maine, the regulation requiring a hospital to have a medical library was removed in 2009 (State of Maine 2009).

In the 2013 *Maine Policy Review* special issue on libraries, there were 20 hospital libraries listed; 11 years later, only 5 remain: Central Maine Health, MaineGeneral Health, Northern Light Eastern Maine Medical Center, Northern Light AR Gould, and MaineHealth (Bloomfield et al. 2013). In 2018, the Health Sciences Library and Information Consortium of Maine (HSLIC) dissolved after 45 years in operation, and its members elected to join the regional chapter of the Medical Library Association, the North Atlantic Health Sciences Libraries (NAHSL).

THE CHANGING HEALTH INFORMATION LANDSCAPE

Health systems and clinicians must be adaptable and constantly learning to lower costs and improve patient outcomes and community health. Engaged and curious clinicians are also less likely to experience burnout (Shanafelt and Noseworthy 2017). The Learning Health System is a framework for continual growth and quality improvement that uses data, evidence, and the medical literature to guide patient care and services (Agency for Healthcare Research and Quality 2019).² Large datasets and emerging information technologies such as artificial intelligence (AI) affect patient care and research and bring evidence to the point of care at an accelerated rate. In Maine and other rural communities, AI can help anticipate poor patient outcomes for more timely interventions (Schreiber 2024; Gassen 2024). Generative AI is also a useful way to summarize and abstract the medical literature to provide information for clinical decision support at the point of care (Hake et al. 2024). Health sciences librarians’ roles are evolving to account for these emerging technologies, supporting their value and a fast-paced environment while at times mitigating the issues of bias, error, and lack of transparency in AI.

Librarians increasingly scrutinize health sciences information to uphold the quality of the resources they provide to their users: clinicians, students, patients, or the public. The pace of research and publishing and emerging information technologies such as AI have increased problems such as misinformation, poor-quality studies, and even fraudulent publishing practices (Booth, Ross, and Detsky 2023). Preprint servers appeared during the 2010s allowing research to be disseminated rapidly without the inevitable delay of the publishing process. This quick access to information became essential during the COVID-19 crisis, but has produced confusion around the version of record and concerns about bias or spin (Hinchliffe 2021; Spungen et al. 2023). The exponential increase in publishing in the health sciences has resulted in a similarly acute rise in article retractions due to flawed methods or faulty data (Van Noorden 2023). Retracted articles may be referenced by papers causing a lasting impact on the medical literature. Health sciences librarians must be ever vigilant about the quality of the resources provided to the clinicians, researchers, students, and patients they serve.

SUPPORTING CLINICIANS AND RESEARCHERS

Maine’s health sciences librarians support clinicians in numerous ways across a variety of settings including academic medical centers, universities, community colleges, teaching hospitals, health systems, primary care clinics, rural hospitals, and more. Regardless of the size or the overall mission of the location, however, health sciences librarians carry out many similar, overlapping tasks, and often share their resources and expertise to ensure physicians, nurses, pharmacists, social workers, psychologists, and other allied health professionals are equipped with the highest-quality information available in a cost-effective, timely manner. Global data from a recently published study indicates that “the services most often offered by clinical librarians are expert literature searching (98%), one-on-one instruction for clinical patrons (97%), and topic or skill-based workshops (95%)” (Carlson and Towner Wright 2021: 173). The study further found that while “hospital librarians see

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the greatest impact of their services in saving clinicians time (92%), advancing evidence-based practice (90%), and contributing to professional development...academic librarians focused on the perceived value of their work in educating future health care providers (91%), advancing evidence-based practice (85%), and saving clinicians time (83%)” (Carlson and Towner Wright 2021: 176–177).

While these findings are informative, they fail to capture the expertise and specialized skills librarians have to offer as they provide tailored clinician support at the point of need, whether it be answering clinical queries, provisioning remote access to a library website or database, locating an obscure journal article, or maintaining library discovery systems and teaching clinicians how to navigate them. Health sciences librarians may be asked to locate health statistics, support quality improvement projects,

maintain current awareness services, sit on hospital committees, recommend new clinical resources, interpret usage data to inform purchasing decisions, locate the latest clinical guidelines, uncover the best practices to provide patient care, and more, as numerous studies demonstrate (Brett et al. 2016). Perhaps no time in recent history underscores health sciences librarian's contribution to clinicians more dramatically than the COVID-19 pandemic. Medical librarian Louise McLaughlin describes the critical urgency of the pandemic's early days as, "librarians, seeing an immediate need for clinical information and research information, put into play their own rapid response teams, building on their history of being critical partners in the delivery of shared knowledge and evidence-based patient care" (McLaughlin 2020). Another article details the creation of an innovative partnership in which "a plan was developed to create a website where quality research articles and clinical guidelines could be curated and disseminated for both the healthcare system and the academic medical center. Reference librarians at the Medical Center Library were organized to identify and provide relevant and timely articles from the biomedical literature" in an effort to "facilitate efficient access to the rapidly published information on the COVID-19 pandemic" (Charney et al. 2021: 49).

Health sciences libraries play a central role in educating future healthcare providers who will care for Maine's people.

For clinicians in New York State, the state library recognizes the many ways hospital libraries support patient care and provides funding and an infrastructure through the NYS Hospital Library Services Program to maintain essential information access for all clinicians. Services may be provided through their Reference and Research Library Resources Councils, and funding to enhance hospital information resources is also available. New York State Library's commitment to securing access to quality health information for clinicians throughout New York is a commitment to supporting evidence-based patient care for all its citizens.³

Health sciences libraries are also essential for our research infrastructure. In 2024 Maine citizens approved the Science and Technology Research and Commercialization

Bond to fund research, development, and commercialization of Maine-based public and private institutions in support of technological innovation, a portion of which will target life sciences and biomedical technology (Maine DSS 2024). Librarians improve the quality of research and help institutions secure grant funding for research and innovation. Maine's health sciences librarians have long supported research at their institutions and are well-positioned to support biomedical innovation related to the new bond issue and other funding mechanisms. To do so, policymakers and administrators must understand the need to maintain funding for library staffing and resources at institutions that conduct this research, including Maine's hospitals, colleges, universities, and laboratories.

These examples, highlighting the many ways in which health sciences librarians support clinicians and researchers and contribute to patient care, offer clear evidence that health sciences librarians are critical to preserving the biomedical information pipeline for our state's providers and their ability to deliver high-quality, evidence-based health care. We are an ever evolving, adapting profession, more vital than ever.

EDUCATING FUTURE CLINICIANS

Health sciences libraries play a central role in educating future healthcare providers who will care for Maine's people. Academic libraries in educational institutions provide students the resources, instruction, and services they need to learn to be capable lifelong learners and healthcare providers who base their care on current best evidence. Hospital libraries augment this by supporting the information needs of students and their teachers at clinical training sites.

Evidence-based practice lies at the intersection of the best available research evidence, the clinician's expertise and experience, and the patient's values and preferences. Implementation of evidence-based practice has improved patient care and outcomes, and this instruction is now embedded into health professions curricula across the span of disciplines. A JAMA Network Consensus Statement identified elements of evidence-based practice as core competencies for health professionals (Albarqouni et al. 2018). Accreditation standards for health professions programs such as medical, dental, nursing, pharmacy, physical and occupational therapy, and social work include standards related to competencies in evidence-based practice. Often framed as the "five A's"—ask, acquire, appraise, apply, and assess—health sciences librarians

frequently teach the first two or three of these principles. Health sciences librarians teach future health professionals how to ask an answerable clinical question to inform an effective search strategy, how to effectively search the biomedical literature, and how to appraise the found evidence. They teach evidence-based practice in a variety of ways including via live demonstrations with hands-on learning activities, online video tutorials, and web-based platforms. In short, health sciences librarians help students learn how to navigate the plethora of health information—good and bad—that they will continue to encounter throughout their careers.

In addition, health sciences libraries support the generation of new knowledge to effect positive changes in health care. Librarians support student and faculty researchers by assisting with literature reviews, background information, identifying gaps in the research literature, helping to navigate data sharing and management, research reproducibility, dissemination, and much more. Health sciences libraries spend millions of dollars annually to license the high-quality resources that future and current clinicians rely on to practice evidence-based practice and to generate practice-changing research. Policymakers should understand that health sciences libraries and librarians are integral to the education and training of Maine's future healthcare providers, and critical to supporting practicing providers and researchers to improve patient care and health outcomes.

WORKING WITH PATIENTS

Medical libraries have an important role in increasing health literacy (Whitney et al. 2017). While generally the role of the hospital medical library is to provide resources to medical staff that will be used to better care for their patients, occasionally medical libraries are involved in supplying medical information directly to the public. Some medical libraries are open to walk in use by the public. For example, at the MaineGeneral Library & Resource Center patients and visitors may use the print in-house medical reference books as well as medical databases that would normally be behind an expensive paywall.

Additionally, medical and academic libraries such as MaineGeneral, MaineHealth, and Maine's public and private colleges and universities are often part of statewide library systems, making print health resources in their collections available to library users via interlibrary loan

through their local public library. Medical libraries also engage in train-the-trainer programs in which medical librarians train public librarians to guide their library patrons in how to find trusted health information, for which public librarians have often received little to no previous training (Malone and Clifton 2021; Pandolfelli et al. 2022). In this age of an online information glut of questionable veracity, this training can make a significant difference in helping searchers find correct health information.

Strengthening health sciences libraries in Maine will strengthen the health information infrastructure for clinicians, researchers, learners, and citizens.

CONCLUSION AND RECOMMENDATIONS

Health sciences libraries are vital to Maine's hospitals, colleges, universities, and biotechnology centers; they inform and advance research, scholarship, teaching, patient care, and public health, ultimately improving people's lives. To maintain funding and support for these libraries, healthcare practitioners, students, researchers, and patients can speak up when services or staffing are threatened. Health sciences librarians can continue to work hard to serve their constituents and communicate their value to stakeholders. Policymakers and administrators can strive to understand the positive impact of health sciences librarians on innovation and quality of life in Maine and advocate for their continued support.

Strengthening health sciences libraries in Maine will strengthen the health information infrastructure for clinicians, researchers, learners, and citizens. The authors recommend the following steps to rebuild this vital resource:

1. Inclusion of one health sciences librarian as a required representative on the Maine Library Commission;⁴
2. In conjunction with the passage of An Act to Authorize a General Fund Bond Issue for Research and Development and Commercialization, establishment of a Maine Health Sciences Library Services Program to support basic services and

resources to all hospitals, clinicians and citizens throughout the state (Maine DSS 2024).

Health sciences libraries have changed in many ways in the past decade. Changes in health care, information technology and health sciences education have transformed many aspects of the health sciences librarian's role. Despite the challenges brought by these changes, health sciences librarians continue their commitment to quality information for clinicians, students, and the public. Whether providing expert search services, teaching evidence-based practice skills, or guiding patients to quality information, health sciences librarians are a vital part of building a healthier community for everyone.

NOTES

- 1 <https://www.mlanet.org/about-mla/about-the-profession/>
- 2 <https://www.ahrq.gov/learning-health-systems/about.html>
- 3 <https://www.nysl.nysed.gov/libdev/hlsp/index.html>
- 4 <https://www.maine.gov/msl/about/commission/index.shtml>

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