2026, 21.1

Evidence Based Library and Information Practice

Research Article

Instructing Practicing Physicians in Their Continuing Professional Development: A Survey of Canadian Health Sciences Librarians

Jackie Phinney
Instruction/Liaison Librarian
Dalhousie University Libraries
Dalhousie Medicine New Brunswick
Saint John, New Brunswick, Canada
Email: j.phinney@dal.ca

Alison Manley
Librarian, Cataloguing and Metadata
Patrick Power Library
Saint Mary's University
Halifax, Nova Scotia, Canada
Email: alison.manley@smu.ca

Abstract

Objective – Practicing physicians must engage in continuous learning throughout their careers, and in Canada this learning is guided by frameworks that include information retrieval and scholarship. Health sciences librarians (HSLs) are well equipped to support knowledge growth in this area through their demonstrated instruction capabilities. Yet the literature depicting librarian

instruction of practicing physicians within the Canadian context is lacking, and an understanding of what characterizes their teaching to this learner group is needed.

Methods – Using descriptive study design, a bilingual, electronic survey was distributed across two professional listservs for HSLs in North America in May 2024. Once the survey closed, data were cleaned and tabulated using Microsoft Excel and responses to open-ended questions were reviewed.

Results – The survey engaged 21 respondents, and after data were cleaned, 15 were left for inclusion and analysis. Most worked in a hospital setting when teaching practicing physicians, and online synchronous delivery methods were most common, followed closely by in-person synchronous. A variety of topics were reportedly taught, and the use of formal objectives and feedback processes was common. In open-ended responses, participants suggested they may be interested in teaching practicing physicians about artificial intelligence.

Conclusion – This study's sample size is too small to offer definitive conclusions. However, it provides insight into what and how HSLs in Canada are teaching practicing physicians, and suggests missing components in planning instruction for this learner group. HSLs can provide value to Canadian physician organizations looking to bolster their CPD offerings and should advocate for themselves within their provincial and national networks.

Introduction

For librarians working in the health sciences, teaching is often part of the job. Whether it is in the academic, clinical, or other special library setting, teaching encounters can be individualized (and often spontaneous), as a patron may need help with an issue unique to them. At other times, this teaching is designed for larger groups, with health sciences librarians (HSLs) delivering sessions that require careful planning and consideration of learner needs on a wider scale.

The delivery of instruction in the health library context can be complex, as patrons span generations, skill levels, and institutional affiliations. One pocket of patrons that HSLs may find themselves teaching are practicing physicians. While often part of interdisciplinary care teams, physicians carry enormous responsibility and have wider decision-making powers within a patient-care setting. Thus, to ensure they remain competent in their profession once their formal training (such as medical school followed by graduate medical training) is complete, they are required to engage in lifelong learning that maintains their certification (Allen et al., 2020; Cordovani et al., 2020). This learning is primarily referred to as continuing professional development (CPD) or continuing medical education (CME) if the subject matter is clinical (Ontario Medical Association, n.d.).

Within the Canadian context, physicians' CPD (or CME) is guided by a competency framework that was first established by the Royal College of Physicians and Surgeons of Canada in 1996. Known as the CanMEDS framework, it has undergone regular updates since launching, and in 2017 was designated as the main resource to guide the training and assessment of physicians among various Canadian healthcare groups, including the College of Family Physicians of Canada (Royal College of Physicians and Surgeons of Canada, n.d.-b). Therefore, this framework is applicable to all physicians in Canada regardless of their chosen practice specialty. At the time of this writing, plans are underway to release an updated version of

the CanMEDS competencies (Royal College of Physicians and Surgeons of Canada, n.d.-b), but the edition current in 2025 includes the role of "Scholar," which encompasses the ability to identify and evaluate evidence and engage in scholarly initiatives, among other skills (Royal College of Physicians and Surgeons of Canada, n.d.-d).

In the lead author's previous work, a comprehensive scoping review was conducted to explore how HSLs have instructed practicing healthcare providers in a CPD environment. After mapping the literature for geographical locations, populations taught, and instruction-related details of these encounters, it was apparent that HSLs are comfortable instructing CPD to different healthcare professionals in a variety of ways. Yet, an underwhelming number of Canadian publications were identified when compared to publications from the United States, and some key teaching details were lacking within reports (Phinney et al., 2024). Since Canadian physicians should maintain competencies in scholarship-related topics (Royal College of Physicians and Surgeons of Canada, n.d.-d), and they have expressed some interest in learning more in this area (McConnell et al., 2018), there is an opportunity to look closely at the teaching of this specific population from a librarianship lens and generate descriptive data on how and what HSLs are teaching them in the Canadian context. This will help fill a gap in the literature while also supporting HSLs from diverse career backgrounds in their own instruction of practicing physicians (Koos & Scheinfeld, 2020).

Literature Review

There is ample evidence of HSL-delivered instruction in the Canadian context, which is unsurprising given that prominent North American health library organizations highlight the importance of teaching activities in health libraries (Frati et al., 2021; Medical Library Association Task Force to Review MLA's Competencies for Lifelong Learning and Professional Success, 2017).

Beginning with topic areas, HSLs throughout Canada have demonstrated their ability to teach undergraduate medical learners about evidence based medicine (EBM; Premji et al., 2020). This requires that clinicians ask a clinical question, locate the appropriate evidence, appraise the evidence for validity and relevance to the patient's needs, and work with the patient to apply it in their care (Kamath & Guyatt, 2016). HSLs have also applied their expertise in teaching family medicine residents about health literacy and consumer health sources (Szwajcer et al., 2014), thereby enhancing the wider healthcare system. Further to this, evidence synthesis is an area of expertise for many HSLs, and Chiang and McClurg (2024) described the creation of self-directed learning materials on this topic, which was directed at researchers across their institution and its embedded medical school. While these studies illustrate a small sample of what HSLs are equipped to teach, they also convey HSLs' ability to instruct on a variety of topics with different learner groups.

Teaching methods of HSLs have been explored by researchers who included evidence from the Canadian sector. In their systematic review of instruction on evidence based practice, Swanberg et al. (2016) found that lecture-style teaching was frequently used, however their included studies largely represented upper-level medical school learners as well as residents, with practicing healthcare providers being excluded from their review. Interestingly, they also found that most studies on this topic were published outside of Canada. Subsequent scholarship on Canadian HSL teaching methods has evolved, with evidence emerging that the COVID-19 pandemic forced academic HSLs to re-imagine existing learning objectives within an online teaching space (Fuller et al., 2021) and created barriers for hospital library workers who engaged with online instruction while feeling unprepared (Anderson et al., 2024). These findings are likely transferable across geographic borders, yet they remain relevant to this study's context

since physicians working in the Canadian healthcare system have reported that time constraints are a barrier to attending self-directed CPD (Jeong et al., 2018), and online instruction can offer flexibility to help mitigate this.

As a pillar of all types of librarianship, information literacy (IL) instruction teaches patrons how to recognize a need for information and efficiently locate, assess, and implement it (American Library Association, 1989). Demczuk et al. (2009) argued that the CanMEDS "Scholar" competencies align well with information literacy, and McClurg et al. (2015) reported their teaching of IL skills to Canadian undergraduate medical students in partnership with practicing physicians. Of note, they reported that their goal was to tie information skills to the clinical practice setting, thereby offering a realistic approach to help learners retain content. While IL tools such as the popular ACRL *Framework for Information Literacy for Higher Education* (Association of College & Research Libraries, 2016) have been used to teach Canadian learners self-reflective research skills (Cameron, 2019), Schulte and Knapp (2017) found in their American study that most hospital librarians, and a good portion of academic HSLs, in their sample lacked interest in using the prominent ACRL *Framework*. They further suggested that HSLs may feel the ACRL *Framework*, in particular, does not apply to their teaching audience. This poses an interesting question about how IL frameworks could apply to the instruction of physician CPD in a Canadian context.

An important component of physician CPD is accreditation of teaching sessions. The Royal College of Physicians and Surgeons of Canada requires that physicians complete at least 250 500 learning credits over a 5-year period (Royal College of Physicians and Surgeons of Canada, n.d.-c) and the College of Family Physicians of Canada also mandates at least 250 credits in a 5-year period, with at least 125 of those credits being certified by the accrediting body (College of Family Physicians of Canada, n.d.-b). While there is evidence of HSLs delivering instruction within accredited medical schools in the United States and Canada (Nevius et al., 2018), there is a need for more reporting that discusses HSL teaching that is certified for continuing education credits, particularly in the Canadian context. Tangentially, partnerships can create opportunities for librarians to engage in novel teaching initiatives. Orchanian-Cheff and Kaasa (2022) described a partnership between a Canadian hospital inpatient service and the on-site clinical librarian to offer training that supports the CanMEDS "Scholar" role. While practicing physicians were part of this team who interacted with the librarian, the authors' reporting largely centered around residents' learning experiences. This creates an opportunity to explore the prevalence of librarian teaching partnerships in a largely physician-oriented CPD context.

Librarians benefit from reflective teaching practices and constructive feedback aids in this process. Ha and Verishagen (2015) demonstrated how teaching can improve when structured feedback is provided by nursing students at a Canadian college, yet Phinney et al. (2024) found that reports of feedback were often used interchangeably with assessment or evaluation in a healthcare continuing education context. Distinguishing between feedback and assessment is important when designing instruction that is directed at practicing physicians. Armson et al. (2020) demonstrated that a select group of Canadian physicians appreciated assessment of their learning in a CPD context, and that these activities influenced their learning outcomes. Yet HSLs from the United States have experienced challenges with assessing learners due to time and staffing constraints (Nicholson et al., 2024). Thus, investigation into the assessment practices of HSLs who teach Canadian physicians whilst advocating against ongoing library cuts is warranted (Ross-White & Mason, 2024).

Aims

This research sought to explore the current landscape of what HSLs in the Canadian context are teaching practicing physicians and how they are planning for and delivering said instruction. Using the lead author's previous research (Phinney et al., 2024) to guide areas of focus, three main questions were raised during the study's conceptualization:

1. What topics are being taught to practicing physicians by Canadian HSLs, and what methods of teaching delivery are being used?
2. In planning their teaching, are Canadian HSLs using formal objectives, engaging with information literacy frameworks, seeking accreditation for their teaching, or pursuing external partnerships in support of their instruction?
3. In evaluating their teaching efforts, are Canadian HSLs soliciting feedback and are they assessing the learning outcomes of their physician learners?

In addition, this study sought to understand what topics Canadian HSLs hope to teach practicing physicians in the future, to understand emerging trends and possible knowledge requests from patrons.

Methods

To gain a better understanding of the phenomena of interest, cross-sectional study design was used to generate a snapshot of the population of interest at a specific moment in time (Cohen et al., 2018). We opted to collect data using a survey, and once the initial instrument was drafted in Microsoft Word it was piloted amongst colleagues with expertise in health sciences librarianship, continuing professional development/faculty development in medicine, and the medical profession (via a practicing emergency physician who also served as Dalhousie University's Associate Dean of Continuing Professional Development and Medical Education at that time). Upon completion of the survey pilot, modifications were made to the instrument and recruitment materials, and the study received subsequent approval from the Research Ethics Boards at both Dalhousie and Saint Mary's University. To offer our French-speaking colleagues the option to answer in their preferred language, the approved recruitment email, informed consent letter, and survey were translated from English to French by a professional translator (see Appendix for recruitment materials and data collection instrument). The English and French versions of the survey were uploaded into Opinio survey software as two separate surveys with unique access links.

The recruitment email, informed consent letter, and both versions of the final survey, in English and French, were distributed across two professional electronic mailing lists for health sciences librarians in North America (CANMEDLIB and MEDLIB-L). CANMEDLIB is hosted by the Canadian Health Libraries Association/Association des bibliothèques de la santé du Canada (CHLA/ABSC), which represents approximately 300 professionals across Canada who work in the health information and librarianship field (CHLA/ABSC, 2025) broadly, with roles and responsibilities that may fluctuate. MEDLIB-L is managed by the Medical Library Association, which is based in the United States but is an affiliate association of CHLA/ABSC with members who may be working across borders (CHLA/ABSC Board of Directors, n.d.). Thus, convenience sampling was performed due to the fact that the Canadian HSL community is relatively small, both electronic mailing lists are open to HSLs around the world, and both

lists are active platforms for HSL community discussion, meaning there was a high likelihood that our target population would be subscribed to one or both lists.

The survey remained open for the entire month of May 2024. Those who received the recruitment email were asked to share with colleagues to increase reach and maintain relevance. Participants were eligible to participate in the study if they answered "yes" to the first three qualifying questions, which were mandatory. These questions asked participants if they were currently working as an HSL, if they worked in Canada, and if they have ever delivered planned instruction to practicing physicians in their role (which could include interprofessional learning sessions). Definitions for "planned instruction" and "practicing physicians" were provided with these questions, to ensure correct interpretation by participants.

The survey used both multiple choice and open-ended questions where deemed appropriate. Following the qualifying questions, participants were asked to select "all that apply" to indicate the type of library in which they worked when delivering said instruction. While this question fell outside the primary aims of this study, it was determined important to know at the project outset due to our own experiences teaching in different types of health libraries, along with the delineation of different health library environments throughout the literature. From here, participants were asked to select "all that apply" from a list of instruction methods used when teaching practicing physicians, such as in-person synchronous, online synchronous, online asynchronous, and blended learning. Participants were then asked to select "all that apply" from a provided list of topics they have taught practicing physicians and were given space for additional answer(s) they wished to include for this question. Six yes/no questions were also asked pertaining to participants' statement of formal objectives for teaching content/sessions, planning of teaching content/sessions around an information literacy framework, application for accreditation of teaching content/sessions, engagement in teaching partnerships outside the library to promote or collaborate on teaching content/sessions, assessment of participant learning outcomes from content/sessions using various means, and solicitation of session feedback to improve quality of teaching or materials. To close the survey itself, participants were asked to answer an open-ended question on topics they hoped to teach practicing physicians in their future instruction. Lastly, to satisfy both open data practices and research ethics board requirements, participants were asked if they consented to their anonymous data being shared in an institutional repository.

Once the survey closed, all data were exported from Opinio into Microsoft Excel for merging of the English and French datasets and further cleaning. Datasets where respondents did not answer "yes" to the first three qualifying questions, participants provided no data beyond the qualifying questions, or participants whose responses were not actually submitted were removed from the data. Once cleaned, data were tabulated and responses to open-ended questions were reviewed for common themes. No additional analyses to determine relationships between variables were performed due to the very small size of the final dataset.

Results

The survey received engagement from 21 respondents, with 15 remaining for analysis after the data had been cleaned. Of these responses, 13 were received from the English version of the survey and 2 were received from the French version of the survey. The anonymous dataset (with two participants blinded by request) can be found at https://borealisdata.ca/dataset.xhtml?persistentId=doi:10.5683/SP3/M8SWF6. Due to the difficulty of ascertaining the exact numbers of practicing Canadian HSLs who liaise with physicians, we are unable to calculate the response rate with any certainty; not all Canadian HSLs work

with physicians and may have fluctuating responsibilities with other health professions or service models.

Participants included in this study were largely based in hospital (n = 9) or academic (n = 8) libraries at the time of their instruction to practicing physicians, with four participants selecting both hospital and academic libraries. Two participants indicated they worked in "special/other" libraries and were given the option to write a description of their specific type of library. One participant wrote "Oncology/Outpatient Clinic," while the other participant wrote "Public Health."

The most common method(s) of delivery participants used to instruct practicing physicians was "online synchronous" (n = 12), followed by "in-person synchronous" (n = 11). Responses regarding the topics taught to physicians varied, with the most popular topic being "citation management" (n = 10), followed by "evidence synthesis methods," "conducting literature reviews," "finding books and/or articles," and "searching for evidence" all receiving the same number of responses (n = 8). The survey instrument did not define any of the topic options, leaving it open to participants to interpret each topic as they understood it, with a final option of "other" to write in additional information about topics they have taught. Four participants chose "other" as part of their responses, and four answers were written in the free-text box: "presentation prep skills"; "Microsoft applications, Excel, Word, Access, data storytelling, Google searching"; "managing your research profile/scholarly communications"; and "databases."

Table 1
Responses to Question 6: "Please choose the topics you have taught to practicing physicians (check all that apply)."

Topic of instruction	Total responses (n =)
Citation management	10
Conducting literature reviews	8
Evidence synthesis methods (i.e. systematic/scoping reviews, etc.)	8
Finding books and/or articles in a library catalogue	8
Searching for evidence	8
Point of care tools/Medical information apps	7
Evidence based practice/Evidence based medicine	6
Critical appraisal	4
Other (please explain)	4
Setting up email alerts	4
Open access publication	3
Research data management	3
Writing for publication	2
Copyright	0
Data sharing	0
Records management	0

For the six yes/no questions regarding the different facets of planning and benchmarking their instruction, the majority of participants (n = 13) stated formal objectives for their teaching content/sessions, while fewer than half of participants (n = 7) had planned their teaching content/sessions around an information literacy framework. Only a handful of participants (n = 4) had applied for accreditation of their teaching content/sessions, yet many (n = 10) had partnered with others outside the library to promote or collaborate on their teaching efforts. While less than half of the participants reported assessing learning outcomes from their teaching (n = 6), all had solicited feedback to improve the quality of their teaching or materials (n = 15).

Lastly, participants were asked if there was anything they hoped to teach practicing physicians in their future instruction. Four participants responded to this question and gave the following answers (with grammatical and spelling issues corrected in brackets):

- "[Academic] librarians wanting to use literacy frameworks ... are forced to create our own tools, learning outcomes and literacy definitions when interfacing with physicians"
- "1. Adapt existing workshop instruction to address interest in AI and problems with access, time pressure. 2. Refresh workshops on updates & changes to 'old' tools (databases, citation managers)"
- "Skills for [supervising] students working on reviews"
- "[Why you should not trust generative artificial intelligence]"

While the first free-text response did not directly address the question posed, the answer did provide some additional insight into answers in the survey, as discussed below.

Discussion

This descriptive study sought to explore the instruction practices of Canadian HSLs who have taught CPD to practicing physicians. While the impetus for this work stemmed from the need to fill a gap in the literature, it was also inspired by the lead author's previous scoping review of CPD instruction for healthcare providers more broadly. Thus, while the participant sample in this study was very small and findings are non-generalizable, data emerged that can supplement the scholarly conversation on this topic while posing further questions that are worth exploring.

Setting, Teaching Delivery, and Topics Taught

Most participants in this study work in a hospital library. Academic librarians were about as well represented in this dataset. Since practicing physicians in Canada can hold faculty appointments with nearby medical schools, they may engage with clinical librarians as well as librarians at their affiliated university. Further to this, Canadian HSLs operate across environments that lack comprehensive coordination of library services at the national level, and they are required to work within a universal health system where reforms affect hospital libraries and medical school initiatives may impact the work of academic HSLs (Ganshorn & Giustini, 2017). Thus, having both settings well represented was unsurprising. Interestingly, Phinney et al. (2024) noted that the literature on HSL instruction for practicing healthcare providers is more representative of academic librarians, with hospital librarians being a close second. However, that review was broader in scope than this study, so it is difficult to make

meaningful comparisons between the two. Therefore, further research should examine how HSLs feel about supporting physicians who have access to library resources across settings.

The data suggests that Canadian HSLs provide a combination of online synchronous and in-person synchronous instruction. This is timely and relevant to today's CPD providers in the Canadian sector, as they grapple with ways to improve blended CPD experiences and address preferences for learning methods (Bernson-Leung & MacNeill, 2024). Yet, Phinney et al. (2024) noted that in-person instruction was the most reported throughout their sample of the literature. While it is once again difficult to determine exactly why there were differences in this finding, the current study reflects more recent teaching practices; as evidenced by Aronoff et al. (2023), the COVID-19 pandemic caused a shift in HSL teaching delivery methods within North America.

The literature demonstrates that HSLs are comfortable teaching evidence based practice (EBP)/evidence based medicine (EBM) in curricular settings (Premji et al., 2020; Swanberg et al., 2016), and it was expected that EBP/EBM would be the most prominent topic taught in this study sample given the Royal College of Physicians and Surgeons of Canada's emphasis on incorporating evidence into clinical practice (Royal College of Physicians and Surgeons of Canada, n.d.-d). Yet the data from this study raise questions as to whether this is, in fact, a significant topic being taught in its own right or if the mechanisms of EBP/EBM better align with participants' instructional offerings. Participants selected a mix of response options around searching for evidence, critical appraisal, and others that all fall under the umbrella of EBP/EBM teaching, while EBP/EBM itself was selected by fewer respondents. Further to this, participants were given the option to provide their experiences in their own words, but it can be argued that one open-ended response ("databases") overlapped with another in the provided list ("searching for evidence"). Therefore, since the literature indicates that HSLs have been teaching EBP/EBM in a continuing education context since the early 2000s (Phinney et al., 2024), there is an obvious limitation to this study in that HSLs' understanding of teaching topics (and how their teaching is part of EBP/EBM) may be context-dependent and hard to delineate in survey format.

Our data also suggest that citation management may still be a popular teaching topic for HSLs who instruct practicing physicians. The literature demonstrates that HSLs are comfortable teaching this topic in CPD settings more broadly (Phinney et al., 2024). Yet in this context, where physicians have grown fond of using point of care tools/medical information apps in the clinical setting due to their convenience and ease of use (Marceau et al., 2025), it was somewhat surprising to see respondents select "citation management" as a frequent topic of instruction. While it is difficult to determine exactly why from this limited data, the relative popularity of citation management instruction could be related to the desired portability of reference lists between hospital and academic settings that citation management applications allow. Physicians may also be using citation managers as a tool to keep track of literature. The frequency of this teaching topic could be related to increased calls for medical schools to support Canadian physicians as they engage in their own education scholarship (Van Melle et al., 2012), thus necessitating an understanding of how to organize and use citations for their own work. Future research should examine how HSLs feel about teaching citation management in modern healthcare settings and how HSLs communicate the value of these tools to healthcare providers.

Objectives, Information Literacy Frameworks, Accreditation, and Partnerships

The use of formal objectives is an important component of instructional preparation, and the data from this study suggest that HSLs place a high value on structuring their teaching with these pillars. This is important, as it implies that HSLs in this context are intentional with their audience's time and are

crafting instruction with specific goals in mind. Further to this, it sheds light on what has been largely underreported in the literature on HSL instruction of CPD in healthcare, within the context of instructing practicing physicians (Phinney et al., 2024). In considering this point, there is an opportunity to ask additional questions about the quality of these objectives, which must be captivating enough to engage physician learners amidst various barriers to their self-directed CPD (Jeong et al., 2018). While the health library literature has suggested tools such as Bloom's taxonomy to help craft learning objectives (Adams, 2015), scholars in the Canadian physician CPD space have examined the struggles of operationalizing this same taxonomy for meaningful learning (Légaré et al., 2015). Thus, given the importance of concrete objectives for grounded teaching (and the challenges that crafting them may pose), future work should explore HSLs' processes and comfort level in creating meaningful objectives for their teaching.

While it is interesting to note that most respondents in this small dataset were using formal objectives in their teaching, fewer were incorporating information literacy frameworks into their planning. This aligns with the findings of Phinney et al. (2024), as well as Schulte & Knapp (2017) who report low interest in using the prominent ACRL *Framework* among their sample of both hospital and academic HSLs. One survey respondent offered their opinion that information literacy frameworks are challenging to use when teaching physicians, which could speak to issues with instructing information literacy concepts that overlap (or diverge) from those taught under the umbrella of evidence based practice in healthcare (Olson et al., 2023). While work has been done to map the ACRL *Framework* to competencies for medical learners in the American context (Brennan et al., 2020), Canadian medical education and clinical contexts differ from the United States (Association of Faculties of Medicine of Canada Entrustable Professional Activities Working Group, 2016). Therefore, more work is needed to determine if and how information literacy frameworks can align with Canadian medical practice competencies before encouraging their use as HSLs formulate their objectives for practicing physicians.

Turning to accreditation of teaching, Jeong et al. (2018) have identified continuing education credits as partial motivation for Canadian physicians to engage in self-directed CPD opportunities. However, only a handful of respondents in this limited dataset reported applying for accreditation of their teaching content or sessions for practicing physicians. This is not surprising given the findings from Phinney et al. (2024), where accreditation of teaching was infrequently reported as part of HSL teaching of CPD more broadly. It is important to recognize that accreditation of physician CPD activities with the Canadian colleges is complex, and administrative standards and requirements may be seen as labour intensive (College of Family Physicians of Canada, n.d.-a; Royal College of Physicians and Surgeons of Canada, n.d.-a). Further to this, HSLs who are invited to instruct physicians may have little time to prepare extensive documentation, thus reducing the likelihood they will accredit their instruction for CPD credits. While most participants in this small study reported partnering with others beyond the library to promote or collaborate on instruction for practicing physicians, these data do not define those partnerships, nor is there sufficient evidence to draw any firm conclusions. Therefore, it is unclear whether Canadian HSLs are interacting with their institution's CPD medical education or faculty development offices when teaching practicing physicians, who could theoretically assist with applying for accreditation. Additionally, HSLs (like many library workers) are not immune to burnout (Casucci et al., 2020). Library closures and budget cuts remain an ongoing threat to Canadian HSLs, who must advocate for their services (Ross-White & Mason, 2024). Thus, while CPD credits are important, HSLs in this study suggest there may be low activity in pursuing formal accreditation of their instruction due to factors that remain unknown but warrant further investigation.

Feedback, Assessment, and Looking Forward

Attendee feedback on librarian instruction can be a double-edged sword, as comments can be helpful for future planning or hurtful if the audience is dissatisfied. Given this, it is encouraging to see that all participants in this study reported soliciting feedback to improve their teaching quality or materials. Practicing physicians are familiar with feedback mechanisms in their own teaching, yet institutional culture may play a role in the quality of feedback that is given and received (Ramani et al., 2018). This is interesting given that Canadian HSLs work in clinical or academic settings where instruction must be strategically offered alongside institutional operations (Anderson et at., 2024). Thus, while collecting teaching feedback appears to be prevalent in this study sample, the data remain limited and it is unclear how impactful this feedback has been on participants' teaching practices, thus warranting further investigation in future studies.

Looking at assessment practices, while Phinney et al. (2024) noted that librarian-reported teaching of healthcare providers often used feedback and assessment interchangeably, this study sought to isolate these by asking if assessment of participant learning outcomes (using different means) was incorporated into the teaching of practicing physicians. This was deemed important to the study, as practicing physicians have reported challenges when transitioning away from structured curricula into CPD opportunities where performance data may be lacking (Allen et al., 2024). Yet, the small number of participants in this study shared that they are mostly forgoing learning outcomes assessment in their instruction. Assessing learning outcomes after physicians' CPD programming can help HSLs determine how their teaching will impact clinical practice changes, as evidenced by Pettersson et al. (2017). Therefore, while difficult to determine the reasoning for a lack of assessment practices in this small dataset, it could be attributed to HSLs experiencing imposter syndrome (Barr-Walker et al., 2019) when assessing these professional learners or wider issues with administering assessments in a CPD context. Nonetheless, this finding suggests that Canadian HSLs may not be fully confident in how to evaluate learner development in a physician CPD context or are unsure how to meaningfully assess their teaching within the parameters of their setting and teaching delivery method(s).

Librarians must remain forward thinking to ensure their services align with evolving patron needs. In this vein, it can be difficult to know what to teach when first starting out with library instruction or when reviewing older content. HSLs are contending with advancements such as artificial intelligence (AI) in their own work (Robinson et al., 2025), thus it is unsurprising that a small number of survey respondents within this limited study indicated that they hope to teach practicing physicians about AI in future instruction. Interestingly, the words "not trust" were provided within the context of teaching AI. While this data point cannot be interpreted beyond what was provided, it is important to acknowledge that the Canadian healthcare sector has begun harnessing AI's capabilities to enhance patient care (University Health Network, 2025). Thus, while there is an opportunity for librarians to incorporate critical thinking about AI into their information literacy instruction (Lo, 2023), HSLs should present AI content carefully and with an open mind. This will create a welcoming environment for constructive dialogue so physicians do not assume their interest in the topic will be dismissed, thereby leading to missed teaching opportunities.

Implications for the Training of HSLs

Although this study's findings are limited, the data encourage larger questions about the preparedness of HSLs to teach practicing physicians. Julien et al. (2022) found that academic librarians feel largely unprepared to teach, and Anderson et al. (2024) noted the importance of continuing education

opportunities to address instructional knowledge gaps in the health sciences library workforce. Thus, while the research described here suggests that some aspects of planned instruction may be familiar to HSLs who teach practicing physicians, further training from professional associations may be needed to address other components of instruction planning and delivery, such as instructional design or accrediting of teaching activities. Additionally, the medical library sector can strategize how to fill gaps in master's-level training programs, where teaching in a medical library environment may not be addressed within library and information science curricula (Detlefsen, 2012).

Limitations

This study provides preliminary data to help benchmark the teaching activities of Canadian HSLs with practicing physicians, but there are key limitations that may have led to a low response rate and low generalizability of the study's findings.

The survey instrument was piloted amongst a group of professionals working in one geographic region, where institutional and health system norms could have impacted their understanding of the questions. Their perspective on questions surrounding teaching topics, methods of delivery, and the concepts of feedback as compared to assessment of learning outcomes may not have aligned with study participants' own experiences across Canada. Adding to this, we note that Question 5, which asked participants to share their methods of teaching delivery, should have included an open-ended response option to reduce researcher bias impacting results of this question. Further to this, we did not include any open-ended response questions for participants to add additional comments. As noted above, one participant made use of the open-ended response option in the question regarding future topics to make other comments regarding their perspective on teaching frameworks. Having a general question for participants to provide further reflection on teaching practicing physicians may have yielded richer data. Finally, we recognize that we did not ask participants questions about their knowledge of the CanMEDS "Scholar" role (Royal College of Physicians and Surgeons of Canada, n.d.-d). While this CanMEDS role contributed inspiration for this study, we realize that asking participants about awareness of the CanMEDS framework could have enriched the data.

In determining limitations in our study's recruitment processes, we note that the title of the research study (as described in the recruitment materials) revolved around librarians' involvement in the CPD of practicing physicians, yet the survey questions themselves focused on participants' instructional activities with this population without mention of CPD. We acknowledge that the choice of language in the recruitment materials could have dissuaded librarians from participating due to uncertainty of the study's relevance to their teaching. Regarding other factors that could have impacted participation in our study, we also recognize that our study population works within environments where they are "increasingly asked to do more with less" (Canadian Federation of Library Associations, 2025), and their ability to participate may have been hindered by heavy workloads.

Finally, in determining how the study could have yielded findings that resonate with library professionals more broadly, we recognize that the data could have been richer had this been mixed-methods research where follow-up interviews were conducted. We suggest the use of qualitative methods in future research on librarians' instruction of physicians, so participants may share their experiences in their own words. Further to this, we acknowledge that physicians outside the Canadian context must understand tenets of scholarship and information literacy in their professional practice, and HSLs are no doubt instructing on that. However, we opted to limit this study to the Canadian setting, which likely impacted our participant numbers and generalizability.

Conclusion

This study yielded data from a small sample, and its findings may lack transferability across health library settings. Yet it still offers a valuable benchmark of the teaching activities of Canadian HSLs in instructing practicing physicians and contributes to the wider conversation on HSLs and instruction. The results suggest that Canadian HSLs are teaching physicians but may not make use of formal structures such as information literacy frameworks, accreditation of their teaching content or sessions, or assessing learning outcomes from their teaching. While our experiences in both academic health sciences libraries and hospital libraries, backed by the literature, provided us with some insight as to why formal methods of instruction are not being used, further work in this area will shed light on the unique teaching environments for Canadian HSLs and how they inform HSLs' instructional practice.

For HSLs already teaching physicians or preparing to teach physicians, this study provides a lens on this work and can be used to suggest topic areas that may still meet the needs of the practicing physicians. Furthermore, this study can encourage HSLs to become more embedded in their user groups. To our knowledge, this is the first study that explored the teaching activities of Canadian HSLs in a physician CPD environment, and this evidence can embolden HSLs to advocate for their roles, demonstrate the value of their work and experience, and build more robust partnerships with Canadian physician organizations looking to expand their CPD offerings.

Acknowledgements

Author Contributions

Jackie Phinney: Conceptualization, Data curation, Formal analysis, Investigation, Project administration, Visualization, Writing – original draft, Writing – review & editing **Alison Manley**: Data curation, Formal analysis, Investigation, Visualization, Writing – original draft, Writing – review & editing

References

Adams N. E. (2015). Bloom's taxonomy of cognitive learning objectives. *Journal of the Medical Library Association*, *103*(3), 152–153. https://doi.org/10.3163/1536-5050.103.3.010

Allen, L. M., Balmer, D., & Varpio, L. (2024). Physicians' lifelong learning journeys: A narrative analysis of continuing professional development struggles. *Medical Education*, *58*(9), 1086–1096. https://doi.org/10.1111/medu.15375

American Library Association. (1989). *Presidential Committee on Information Literacy: Final report*. https://www.ala.org/acrl/publications/whitepapers/presidential

Anderson, M., Nault, C., & Serban, R. (2024). "It's not just teaching for the sake of teaching anymore": A quality improvement project for online instruction in a hospital library. *Journal of the Canadian Health Libraries Association / Journal de l'Association des bibliothèques de la santé du Canada*, *45*(2), 65–75. https://doi.org/10.29173/jchla29771

Armson, H., Roder, S., Wakefield, J., & Eva, K. W. (2020). Toward practice-based continuing education protocols: Using testing to help physicians update their knowledge. *Journal of Continuing Education in the Health Professions*, *40*(4), 248–256. https://doi.org/10.1097/CEH.0000000000000316

Aronoff, N., Maloney, M. K., Lyons, A. G., & Stellrecht, E. (2023). Health sciences library workshops in the COVID era: Librarian perceptions and decision making. *Journal of the Medical Library Association*, *111*(3), 657–664. https://doi.org/10.5195/jmla.2023.1663

Association of College & Research Libraries. (2016). *Framework for information literacy for higher education*. https://www.ala.org/acrl/standards/ilframework

Association of Faculties of Medicine of Canada Entrustable Professional Activities Working Group (2016, September). *AFMC entrustable professional activities for the transition from medical school to residency*. Association of Faculties of Medicine of Canada. https://md.utoronto.ca/sites/default/files/afmc_entrustable_professional_activities_en.pdf

Barr-Walker, J., Bass, M. B., Werner, D. A., & Kellermeyer, L. (2019). Measuring impostor phenomenon among health sciences librarians. *Journal of the Medical Library Association*, *107*(3), 323–332. https://doi.org/10.5195/jmla.2019.644

Bernson-Leung, M. E., & MacNeill, H. (2024). Big assumptions in online and blended continuing professional development: Finding our way forward together. *Journal of Continuing Education in the Health Professions, 44*(3), 211–216. https://doi.org/10.1097/ceh.0000000000000528

Brennan, E. A., Ogawa, R. S., Thormodson, K., & von Isenburg, M. (2020). Introducing a health information literacy competencies map: Connecting the Association of American Medical Colleges Core Entrustable Professional Activities and Accreditation Council for Graduate Medical Education Common Program Requirements to the Association of College & Research Libraries Framework. *Journal of the Medical Library Association*, *108*(3), 420–427. https://doi.org/10.5195/jmla.2020.645

Cameron, A. (2019). Scaffolding self-direction with the ACRL Framework: A reflection-based approach. *Partnership: The Canadian Journal of Library and Information Practice and Research*, *14*(2). https://doi.org/10.21083/partnership.v14i2.4529

Canadian Federation of Library Associations. (2025). *Position statement on the importance of health libraries in Canada*. https://www.chla-absc.ca/docs/2025-02-CFLA_Statement_on_Importance_of_Health_Libraries.pdf

Canadian Health Libraries Association/Association des bibliothèques de la santé du Canada. (n.d.). *About CHLA/ABSC*. https://www.chla-absc.ca/about_chla-absc.php

Canadian Health Libraries Association/Association des bibliothèques de la santé du Canada Board of Directors (n.d.). *CHLA/ABSC statement of support for MLA and its members*. Medical Library Association. https://www.mlanet.org/article/chla-absc-statement-of-support-for-mla-and-its-members/

Casucci, T., Locke, A. B., Henson, A., & Qeadan, F. (2020). A workplace well-being game intervention for health sciences librarians to address burnout. *Journal of the Medical Library Association*, *108*(4), 605–617. https://doi.org/10.5195/jmla.2020.742

Chiang, B., & McClurg, C. (2024). How developing a point of need training tool for evidence synthesis can improve librarian support for researchers. *Health Information and Libraries Journal*, *41*(2), 205–210. https://doi.org/10.1111/hir.12524

Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (8th ed.). Routledge.

College of Family Physicians of Canada (n.d.-a). *CPD program certification*. https://www.cfpc.ca/en/education-professional-development/cpd-program-certification/cpd-program-certification

College of Family Physicians of Canada (n.d.-b). *Mainpro+® program requirements*. https://www.cfpc.ca/en/education-professional-development/mainpro/mainpro-program-requirements

Cordovani, L., Wong, A., & Monteiro, S. (2020). Maintenance of certification for practicing physicians: A review of current challenges and considerations. *Canadian Medical Education Journal*, *11*(1), e70–e80. https://doi.org/10.36834/cmej.53065

Demczuk, L., Gottschalk, T., & Littleford, J. (2009). Introducing information literacy into anesthesia curricula. *Canadian Journal of Anesthesia/Journal canadien d'anesthésie*, *56*(4), 327–335. https://doi.org/10.1007/s12630-009-9063-4

Detlefsen, E. G. (2012). Teaching about teaching and instruction on instruction: A challenge for health sciences library education. *Journal of the Medical Library Association*, *100*(4), 244–250. https://doi.org/10.3163/1536-5050.100.4.005

Frati, F., Oja, L. A., & Kleinberg, J. (2021). CHLA standards for library and information services in Canadian health & social services institutions 2020. *Journal of the Canadian Health Libraries Association / Journal de l'Association des bibliothèques de la santé du Canada*, *42*(1), 14–44. https://doi.org/10.29173/jchla29526

Fuller, K., Gray, M., Bradley-Ridout, G., & Nekolaichuk, E. (2021). Flipping it online: Re-imagining teaching search skills for knowledge syntheses. *Journal of the Canadian Health Libraries Association / Journal de l'Association des bibliothèques de la santé du Canada*, *42*(2), 100–109. https://doi.org/10.29173/jchla29492

Ganshorn, H., & Giustini, D. (2017). New directions in health sciences libraries in Canada: Research and evidence based practice are key. *Health Information and Libraries Journal*, *34*(3), 252–257. https://doi.org/10.1111/hir.12190

Ha, C. M., & Verishagen, N. (2015). Applying Kolb's learning theory to library instruction: An observational study. *Evidence Based Library and Information Practice*, *10*(4), 186–199. https://doi.org/10.18438/B8S892

Jeong, D., Presseau, J., ElChamaa, R., Naumann, D. N., Mascaro, C., Luconi, F., Smith, K. M., & Kitto, S. (2018). Barriers and facilitators to self-directed learning in continuing professional development for physicians in Canada: A scoping review. *Academic Medicine*, *93*(8), 1245–1254. https://doi.org/10.1097/ACM.0000000000002237

Julien, H., Gross, M., & Latham, D. (2022). Teaching and its discontents: How academic librarians are negotiating a complicated role. *Journal of Information Literacy*, *16*(2), 41–52. https://doi.org/10.11645/16.2.3189

Kamath, S., & Guyatt, G. (2016). Importance of evidence-based medicine on research and practice. *Indian Journal of Anaesthesia*, *60*(9), 622–625. https://doi.org/10.4103/0019-5049.190615

Koos, J. A., & Scheinfeld, L. (2020). An investigation of the backgrounds of health sciences librarians. *Medical Reference Services Quarterly*, *39*(1), 35–49. https://doi.org/10.1080/02763869.2020.1688621

Légaré, F., Freitas, A., Thompson-Leduc, P., Borduas, F., Luconi, F., Boucher, A., Witteman, H. O., & Jacques, A. (2015). The majority of accredited continuing professional development activities do not target clinical behavior change. *Academic Medicine*, *90*(2), 197–202. https://doi.org/10.1097/ACM.0000000000000543

Lo, L. S. (2023). The CLEAR path: A framework for enhancing information literacy through prompt engineering. *The Journal of Academic Librarianship*, *49*(4), 102720. https://doi.org/10.1016/j.acalib.2023.102720

Marceau, M., Dulgarian, S., Cambre, J., Garabedian, P. M., Amato, M. G., Seger, D. L., Volk, L. A., Jackson, G. P., Bates, D. W., Rozenblum, R., & Syrowatka, A. (2025). Clinician attitudes and perceptions of point-of-care information resources and their integration into electronic health records: Qualitative interview study. *JMIR Medical Informatics*, *13*, e60191. https://doi.org/10.2196/60191

McClurg, C., Powelson, S., Lang, E., Aghajafari, F., & Edworthy, S. (2015). Evaluating effectiveness of small group information literacy instruction for undergraduate medical education students using a pre- and post-survey study design. *Health Information and Libraries Journal*, *32*(2), 120–130. https://doi.org/10.1111/hir.12098

McConnell, M., Gu, A., Arshad, A., Mokhtari, A., & Azzam, K. (2018). An innovative approach to identifying learning needs for intrinsic CanMEDS roles in continuing professional development. *Medical Education Online*, *23*(1), 1497374. https://doi.org/10.1080/10872981.2018.1497374

Medical Library Association Task Force to Review MLA's Competencies for Lifelong Learning and Professional Success. (2017). *Medical Library Association competencies for lifelong learning and professional success 2017*. Medical Library Association. https://www.mlanet.org/wp-content/uploads/2024/07/MLA-Professional-Competencies-2017-Full-Report.pdf

Nevius, A. M., Ettien, A., Link, A. P., & Sobel, L. Y. (2018). Library instruction in medical education: A survey of current practices in the United States and Canada. *Journal of the Medical Library Association*, *106*(1), 98–107. https://doi.org/10.5195/jmla.2018.374

Nicholson, J., Plovnick, C., van der Vleuten, C., de Bruin, A. B. H., & Kalet, A. (2024). Librarian-led assessment of medical students' evidence-based medicine competency: Facilitators and barriers. *Perspectives on Medical Education*, *13*(1), 160–168. https://doi.org/10.5334/pme.1145

Olson, D., Bates, S. L., Yarbrough, S., Westall, S., Denis, M. K. C., & Barnett, M. (2023). Information literacy curriculum mapping in the health sciences: A scoping review. *Journal of Information Literacy, 17*(1), pp. 65–88. https://doi.org/10.11645/17.1.3319

Ontario Medical Association. (n.d.). *Continuing medical education*. https://www.oma.org/practice-professional-support/learning-and-development/continuing-medical-education/

Orchanian-Cheff, A., & Kaasa, B. (2022). How to answer clinical questions at the point of care: Clinical librarian intervention for family medicine residents. *Canadian Family Physician*, *68*(5), e146–e150. https://doi.org/10.46747/cfp.6805e146

Pettersson, J., Bjorkander, E., Bark, S., Holmgren, D., & Wekell, P. (2017). Using scenario-based training to promote information literacy among on-call consultant pediatricians. *Journal of the Medical Library Association*, *105*(3), 262–267. https://doi.org/10.5195/jmla.2017.79

Phinney, J., Helwig, M., Rothfus, M. A., & Hancock, K. (2024). Health sciences librarians' instructional engagement in continuing education: A scoping review. *Journal of the Canadian Health Libraries Association / Journal de l'Association des bibliothèques de la santé du Canada*, *45*(1), 30–43. https://doi.org/10.29173/jchla29656

Premji, Z., Fuller, K., & Raworth, R. (2020). A cross-sectional survey on academic librarian involvement in evidence-based medicine instruction within undergraduate medical education programs in Canada. *Journal of the Canadian Health Libraries Association / Journal de l'Association des bibliothèques de la santé du Canada*, *41*(3), 104–125. https://doi.org/10.29173/jchla29458

Ramani, S., Könings, K. D., Mann, K. V., Pisarski, E. E., & van der Vleuten, C. P. M. (2018). About politeness, face, and feedback: Exploring resident and faculty perceptions of how institutional feedback culture influences feedback practices. *Academic Medicine*, *93*(9),1348–1358. https://doi.org/10.1097/ACM.0000000000002193

Robinson, K., Bontekoe, K., & Muellenbach, J. (2025). Integrating PICO principles into generative artificial intelligence prompt engineering to enhance information retrieval for medical librarians. *Journal of the Medical Library Association*, *113*(2), 184–188. https://doi.org/10.5195/jmla.2025.2022

Ross-White, A., & Mason, J. (2024). Canadian health library cuts and closures: What CHLA/ABSC is doing, and what you can do too. *Journal of the Canadian Health Libraries Association / Journal de l'Association des bibliothèques de la santé du Canada*, *45*(3), 134–136. https://doi.org/10.29173/jchla29816

Royal College of Physicians and Surgeons of Canada. (n.d.-a). *Accreditation standards for CPD activities*. https://www.royalcollege.ca/en/standards-and-accreditation/cpd-accreditation/standards

Royal College of Physicians and Surgeons of Canada (n.d.-b). *Development of the CanMEDS Framework.* https://www.royalcollege.ca/en/standards-and-accreditation/canmeds/development-and-updates.html

Royal College of Physicians and Surgeons of Canada. (n.d.-c). T*he MOC Program*. https://www.royalcollege.ca/en/cpd/moc-program.html

Royal College of Physicians and Surgeons of Canada (n.d.-d). *Understanding the CanMEDS roles: Scholar*. https://www.royalcollege.ca/en/standards-and-accreditation/canmeds/scholar-role.html

Schulte, S. J., & Knapp, M. (2017). Awareness, adoption, and application of the Association of College & Research Libraries (ACRL) Framework for Information Literacy in health sciences libraries. *Journal of the Medical Library Association*, *105*(4), 347–354. https://doi.org/10.5195/jmla.2017.131

Swanberg, S. M., Dennison, C. C., Farrell, A., Machel, V., Marton, C., O'Brien, K. K., Pannabecker, V., Thuna, M., & Holyoke, A. N. (2016). Instructional methods used by health sciences librarians to teach evidence-based practice (EBP): A systematic review. *Journal of the Medical Library Association: JMLA*, *104*(3), 197–208. https://doi.org/10.3163/1536-5050.104.3.004

Szwajcer, A., Macdonald, K., & Kvern, B. (2014). Health literacy training for family medicine residents. *Journal of the Canadian Health Libraries Association / Journal de l'Association des bibliothèques de la santé du Canada*, *35*(3), 128–132. https://doi.org/10.5596/c14-033

University Health Network (2025, September 25). *UHN becomes first Canadian hospital to appoint Chief AI Scientist.* https://www.uhn.ca/corporate/News/Pages/UHN_becomes_first_Canadian_hospital_to_appoint_Chief_AI_Scientist.aspx

Van Melle, E., Curran, V., Goldszmidt, M., Lieff, S., Lockyer, J., St. Onge, C. (2012, August). *Toward a common understanding: Advancing education scholarship for clinical faculty in Canadian medical schools: A position paper*. Canadian Association for Medical Education. https://www.came-acem.ca/wp-content/uploads/2019/07/CAME-Position-Paper.pdf

Appendix

Recruitment Email

 Apologies for cross-posting—French message follows

Hello,

You are being invited to participate in a study titled 'Instructing Practicing Physicians in their Continuing Professional Development: A Survey of Canadian Health Sciences Librarians'.

The purpose of this research is to determine the role of Canadian health sciences librarians in providing learning sessions to practicing physicians (i.e. medical doctors in any specialty who have completed both medical school and residency training and are fully licensed to practice independently) and reveal what topics they have taught/how they have planned and delivered their instruction. Using an online survey, it will also explore if these health sciences librarians have engaged with information literacy frameworks, accreditation processes, or external partnerships in their teaching to this group, and if they have incorporated assessment of learning outcomes or solicited teaching feedback in their instruction to practicing physicians.

This survey is open to health sciences librarians in Canada who have delivered planned instruction to practicing physicians while in their librarian role(s). This can include librarians who have worked in hospital, academic, or special library sectors. Please feel free to distribute this widely if you have colleagues who may be interested in responding to this survey.

This research study has been approved by the Research Ethics Boards at Dalhousie University [file #2024-7008] and Saint Mary's University [file #24-073]. It will take approximately ten minutes to complete, and the link to participate as well as the informed consent letter can be found here: [Insert link]

Thank you,

Jackie Phinney, MLIS (Dalhousie University) and Alison Manley, MLIS (Saint Mary's University)

Informed Consent Letter

Project Title: Instructing Practicing Physicians in their Continuing Professional Development: A Survey of Canadian Health Sciences Librarians

Lead Researcher: Jackie Phinney (MLIS), Dalhousie University

Other Researcher(s): Alison Manley (MLIS), Saint Mary's University

Introduction: You are invited to take part in a research study being conducted by Jackie Phinney and Alison Manley who are librarians at Dalhousie University and Saint Mary's University. Choosing whether or not to take part in this research is entirely your choice. The data collection for this project is completely anonymous and there will be no impact on your professional relationships if you decide not to participate in the research. The information below tells you about what is involved in the research,

what you will be asked to do and about any benefit, risk, inconvenience or discomfort that you might experience.

You should discuss any questions you have about this study with the lead researcher, Jackie Phinney, and please feel free to ask as many questions as you like.

Purpose and Outline of the Research Study: The purpose of this research is to determine the role of Canadian health sciences librarians in providing learning sessions to practicing physicians and determine how they have done it. Using an online survey, it will also explore if these health sciences librarians have engaged with information literacy frameworks, accreditation processes, or external partnerships in their teaching to this group, and if they have incorporated assessment of learning outcomes or solicited teaching feedback in their instruction to practicing physicians.

Who Can Take Part in This Study: Health sciences librarians in Canada who have delivered planned instruction to practicing physicians while in their librarian role(s). This can include librarians who have worked in hospital, academic, or special library sectors.

What You Will be Asked to Do: You are being asked to fill out an online survey containing multiple choice questions (with some open-ended response options). This can be completed in a single session and will take approximately 10-20 minutes to complete.

Possible Benefits, Risks, and Discomforts: There will be no direct benefit to you for participating in this research. However, this research will contribute to new knowledge on how health sciences librarians can support the continuing professional development of practicing physicians, which can inform the professional practice of our colleagues both nationally and internationally.

The direct risks of this study are minimal. However, some questions in this survey may trigger emotions regarding workload or work-related circumstances that you found uncomfortable. If this occurs, you may exit the survey at any time by closing your browser and not clicking the 'Submit' button.

Incentives/Reimbursement: There will be no compensation or reimbursement for your participation in this research.

How Your Information Will be Protected: Your participation in this study will be anonymous, and no identifying information will be asked of you in the survey instrument. If you choose to disclose any identifying information in the open-ended response options, your identifying information will be removed to ensure anonymity of your responses.

All data will be collected using the password-protected Opinio survey software, and once the data collection period has ended the raw data will be exported into Microsoft Excel and securely stored on the lead researcher's password-protected Microsoft OneDrive account. Data will then be cleaned to ensure any identifying information is removed and shared with the co-researcher using a secure Microsoft OneDrive folder where coding, tabulation, and analysis by both researchers will take place. Cleaned data may be shared with a professional data analyst (via secure email) if there is enough data to allow for specialized analysis or if additional expertise is required.

Your de-identified data may be shared publicly using Dalhousie University's institutional data repository. This means your information might be used by others anywhere in the world, and these

people may not have to follow the same ethical research standards we have in Canada. Therefore, the lead researcher will ensure that all data is completely anonymous prior to submitting it to the institutional repository. Even if you don't want your information put into Dalhousie's institutional data repository, you can still participate in this research by indicating at the end of the survey that you do not consent to your data being included in this repository.

The findings from this study may be shared publicly as a journal article publication or conference presentation. Only the results from all respondents will be reported, and individual results will not be shared. This means that you will not be identified in any way. The findings from this study will also be used to help develop educational training content for practicing healthcare providers but will only serve as inspiration for what to include in this training. Therefore, your individual answers will not be included in this training content, but your responses will help determine the topics included and methods of educational planning/delivery. This training content will be made publicly available on the internet once developed.

Once the study has ended your data will be stored in the lead researcher's password-protected Microsoft OneDrive account, and it will not be destroyed.

If You Decide to Stop Participating: The survey contains three introductory questions that are required in order to participate in this study, but all other questions are optional for you to respond to. You are free to leave the study at any time by closing your browser and not pressing the 'Submit' button, and your incomplete data will be removed from analysis. However, once you press 'Submit' at the end of the survey, any data you have provided will be impossible to remove as it will already be undergoing analysis.

How to Obtain Results: You may be provided with a short description of final results when the study is finished, if requested by contacting the lead researcher. No individual results will be provided.

Questions about the research: If you have questions, comments, or concerns about your participation in this research, please contact lead researcher Jackie Phinney at j.phinney@dal.ca.

The plan for this study has been reviewed for its adherence to ethical guidelines and approved by the Research Ethics Boards at Dalhousie University [File # 2024-7008] and Saint Mary's University [File # 24-073].

By clicking on the button to begin the survey, I agree to participate in this research project. I understand that I may close the browser at any time to leave the survey, but that once I press 'Submit' at the end of the survey any data I provide will be included for analysis.

[Start Button]

Survey Instrument

Introductory Questions:

1) Are you currently working as a health sciences librarian?
   a) Yes
   b) No

2) Do you work in Canada?
   a) Yes
   b) No

3) In your role as a health sciences librarian, have you ever delivered planned instruction* to practicing physicians**? This can include interprofessional learning opportunities where these physicians participated as learners.
   a) Yes
   b) No

   *Planned instruction = Instances where you taught content that was planned in advance of the learning opportunity. This teaching could be in-person, online, synchronously (live), or asynchronously (completed on their own time).

   **Practicing physicians = Medical doctors in any specialty who have completed both medical school and residency training and are fully licensed to practice independently. They may also be referred to as 'Attending Physicians' in a hospital environment.

Yes to all = continue

Main Survey Questions:

4) What type of library did you work at when delivering instruction to practicing physicians (check all that apply)?
   a) Academic
   b) Hospital
   c) Special/Other (please explain) _____

5) Please choose the method(s) of delivery you have used to instruct practicing physicians (check all that apply)
   a) In-person synchronous
   b) Online synchronous
   c) Online asynchronous
   d) Blended learning

6) Please choose the topics you have taught to practicing physicians (check all that apply)
   a) Evidence-based practice/evidence-based medicine
   b) Evidence synthesis methods (i.e. systematic/scoping reviews, etc.)
   c) Citation management
   d) Conducting literature reviews
   e) Copyright
   f) Critical appraisal
   g) Data sharing
   h) Finding books and/or articles in a library catalogue
   i) Open access publication
   j) Point of care tools/medical information apps
   k) Records management
   l) Research data management

m) Searching for evidence
n) Setting up email alerts
o) Writing for publication
p) Other (please explain) _____

7) When instructing practicing physicians, have you ever:
a) Stated formal objectives for your teaching content/sessions?
    i) Yes
    ii) No
b) Planned your teaching content/sessions around an information literacy framework?
    i) Yes
    ii) No
c) Applied for accreditation of your teaching content/sessions?
    i) Yes
    ii) No
d) Partnered with a department, unit, or group outside the library to promote and/or collaborate on your teaching content/sessions?
    i) Yes
    ii) No
e) Assessed participant learning outcomes of your teaching content/sessions using activities, tests, or other measures?
    i) Yes
    ii) No
f) Solicited participant feedback to improve the quality of your teaching and/or materials?
    i) Yes
    ii) No

8) Is there anything you hope to teach practicing physicians in your future instruction? If so please describe: _____

9) Do you consent to having your anonymous answers included in a publicly available data repository? (NOTE: If you select 'No', your data will still be included in analysis and communication of the study's results)
    i) Yes
    ii) No

[Submit Button]