Continuing education for medical students: a library model

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Purpose: The research assessed a three-year continuing medical education–style program for medical students in a Midwestern academic medical library.

Methods: A mixed methods approach of a survey and two focus groups comparing attendees versus non-attendees assessed the program.

Results: Eleven students participated in the focus groups. Attendance was driven by topic interest and lunch. Barriers included lack of interest, scheduling, location, and convenience.

Conclusions: Although attendance was a challenge, students valued opportunities to learn new skills. This study showcases a reproducible method to engage students outside the curriculum.

Keywords: Medical Subject Headings: Students, Medical; Information Literacy; Teaching; Education, Continuing; Focus Groups

INTRODUCTION

Locating, critically analyzing, and applying current research evidence are essential skills for all medical students for their future in patient care and research. However, the opportunities to teach these skills in the curriculum are severely limited. The current medical library literature focuses on integration of medical information literacy skills into the curriculum [1] but provides few answers on how to address lack of time in the curriculum.

A potential model for extracurricular instruction does exist. Professional licensing boards require health care professionals to complete continuing medical education (CME) programs to maintain their certification. The beauty of CME is that individuals can select and voluntarily attend CME sessions that are relevant to their immediate needs. The literature has also documented positive value in teaching information literacy skills at this level [2, 3]. What if this CME model was applied to medical school alongside course-integrated instruction? Would medical students recognize the value in such a program and voluntarily attend extracurricular sessions designed to meet their needs? An emerging medical library with a solid presence in the curriculum felt there were gaps in particular areas of medical information literacy and developed a program of extracurricular seminars for first- and second-year medical students.

The objective of this study is to describe this CME-inspired extracurricular program in information literacy and assess its perceived value by medical students, as well as compare the attitudes of students who utilized the program and those who did not.

METHODS

Program features and implementation

The medical library at the Oakland University William Beaumont School of Medicine offered an extracurricular program consisting of six to seven sessions each year, approximately once per month, modeled after CME seminars. Each session was one hour in length and typically included a short lecture and demonstration followed by hands-on exercises or informal discussion. A catered lunch was served as an incentive for participation. Topics, determined by librarians, were based on perceived gaps in the curriculum, reference questions from students, and major milestones, such as the United States Medical Licensing Examination (USMLE) Step 1, which students must pass in order to progress to the clinical years. Given the investment of time, effort, and money, the library decided to evaluate the program for quality and to find ways to increase participation.

	2012–2013 (Total M1/M2 students: 125)	2013–2014 (Total M1/M2 students: 175)	2014–2015 (Total M1/M2 students: 200)
September	PubMed Refresher (7 attendees)	PubMed Refresher (2)	Winter Is Coming: Survival Skills for M1s (20)
October	Databases Other Than PubMed (12)	Databases Other Than PubMed (11)	Finding Answers to Team-Based Learning (TBL) Questions Fast & Furiously (8)
November	Keeping Up with the Literature (11)	Finding Full Text Articles & Interlibrary Loan (5)	Why PubMed, Google & Google Scholar Should All Be in Your Super Searcher Utility Belt (6)
		Searching PubMed with Medical Subject Headings (MeSH) (11)	
January	United States Medical Licensing Exam (USMLE) Prep Resources (22)	Locating Survey Instruments (5)	Finding that Diamond in the Rough: Best Resources for Excelling at Organ System Exams and Step 1 (6)
February	All Things Google (11)	USMLE Prep Resources (29)	"To Prescribe, or Not to Prescribe": Quick Resources for Drug Information & Alternative Therapies (6)
March	Mobile Apps for Medicine (19)	Drug Information Resources (10)	—
April	—	Mobile Apps for Medicine (7)	—

M1=first-year medical students; M2=second-year medical students.

Table 1
Extracurricular education series schedule by year and number of participants

Program evaluation

The program was evaluated using an internal evaluation survey and two focus groups of medical students (attendees versus non-attendees).

Survey

An anonymous, five-item evaluation survey, including both quantitative and qualitative items, was distributed at the end of the first year of programming for internal use to gauge whether the series was useful and whether to continue it the next year. An electronic version was emailed to attendees, and a print version was distributed at the last session. The survey asked students to rate the quality of instruction, relevance to coursework, and convenience, as well as what sessions should be repeated.

Focus groups

Following the second year, with approval from the institutional review board, two focus groups were conducted to assess the series. One group consisted of attendees of at least one session, the second of students who did not attend any session. This qualitative method was selected to supplement the previous survey with rich discussion, provide a diverse set of perspectives and opinions, and compare the responses between attendees and non-attendees. Each forty-five-to-sixty-minute focus group was conducted in person with two members of the research team as moderator and note taker. Audio recordings of the sessions were made with a laptop and then transcribed and made anonymous by the primary investigator. Responses were coded independently by two members of the research team, and any differences in opinion were discussed and resolved by the team. Coded responses were analyzed thematically through constant comparison analysis, using grounded theory methods [4, 5].

RESULTS

Nineteen extracurricular lunch seminars were offered from September 2012 to February 2015, with a total of 208 participants (Table 1). Over the 3 years of the program, the cost to the library for providing a catered lunch was approximately $3,400.

After the first year of the program, 61% (n=28) of the 46 unique participants completed the internal evaluation. As the evaluation was solely used internally and not planned for research dissemination, specific results of the survey cannot be shared. However, the program was rated positively by students, and all agreed that it should continue the following year, prompting the planning of an annual series with content more relevant to students' learning needs.

After the second year, nine first-year medical students participated in the attendee focus group and two participated in the non-attendee group.

Participant responses fell into several categories or themes. The following section describes the results from each group and comparisons between the two.

Attendee group

The first two questions asked about reasons for attendance and strengths of the program. Participants appreciated the variety of topics, teaching styles of instructors, and topics that were not covered in the curriculum. Several participants agreed with one individual who stated, "Some of the topics were really great, like the mobile apps one. I really liked that one because that is something I didn't know how to set up on my own, but that I've heard a lot of older students and medical professionals say they use a lot." Unsurprisingly, several participants also appreciated the free food.

By far, the attendee group was most vocal in response to the question on how to improve the series, providing the library with several suggestions:

- Scheduling: Most of the comments revolved around scheduling conflicts with other events, exam study, and other school-related activities. Many comments focused on coordinating sessions with coursework, such as in the capstone (student research project) course. For instance, "A good example was with the Step 1 session. . .it was when we were thinking about Step 1, so it came at the right time and we retained all the information better...A bad example would be the PubMed one. It was so early on, I wasn't using PubMed at all. Maybe if it was during sometime when we were doing the Capstone draft proposal, when I was using PubMed. . .I would be, like, 'this is super helpful.'"
- Access to materials: Students wanted the ability to revisit session content on demand: "Have [session content] on the website. . .I know I'm going to forget what was said, but I'll have a little something, a PDF or paper handout, to go back to."
- Session format and structure: Several participants suggested that the sessions focus on key points rather than details. For example, "some of the ones I felt were clunky were where at the end I felt 'okay I learned, but can I remember...all these tools that they taught?'" One suggested that sessions be more like "the surveys one. It was more interactive; I liked that aspect as people could bring in their Capstone topics and search for surveys."
- Specific topics: Participants suggested several new topics, such as identifying a capstone mentor, preparing for clerkships, tracking literature, and other curricular activities.
- Location: All of the participants indicated that the sessions would be better attended if they were offered in the medical school building as opposed to the library.

In response to the question asking them to identify how they would apply what they learned from the sessions, the participants primarily identified the capstone course. Most of the other responses were general affirmations that they found the information useful. A few participants indicated that they felt more prepared for the Step 1 exams or their clinical rotations.

Non-attendee group

The reasons for not attending were split evenly between unavailability (schedule conflicts, etc.) and lack of interest in topics. Conversely, the strongest incentives for attending future sessions were to cover relevant topics and make the sessions more convenient to attend. Responses to several questions repeatedly came back to tying the sessions closer to capstone. Other suggested topics included learning more about the library, organization tools, and Google Scholar.

Comparison of attendees and non-attendees

In comparing the data between attendees and non-attendees, several common themes emerged. Topic interest or relevance was cited as a major reason for attendance by both groups. Both groups also identified several ways to improve attendance:

- manage scheduling and timing with other student activities
- hold sessions in the medical school
- offer new or more interesting topics each year
- keep food
- send reminders to registered students
- provide online access to material:
  - attendees suggested posting to the website
  - non-attendees suggested recording or live streaming the sessions

When asked what, if any, topics should be integrated into the curriculum, attendees stated they did not differentiate between curricular and extracurricular instruction. One participant stated, "It all ties together so just figuring out when you want to do it. It needs to be done." Another commented, "I feel either way you will get the same

amount of people [engaged]. One will be biased by free food, the others will just go on Facebook [during a mandatory class] instead." Both groups wanted additional instruction in the capstone course that tied more closely to their project milestones. Also, both wanted an overview of resources, recommendations on textbooks and study resources, and tools they could use throughout their careers.

DISCUSSION

To the authors' knowledge, this is the first study that (1) reports on CME opportunities that target medical students and (2) compares the attitudes of attendees and non-attendees regarding the value of these opportunities.

This study has some limitations including sample size, issues related to recruitment, and conformity bias. Although both first- and second-year medical students attended sessions in the series, only first-years participated in the focus groups. Second, it was a challenge to recruit students to participate in the non-attendee focus group, and, therefore, data were only collected from two students in the form of semi-structured interviews. A sample size of eleven is too small to make any broad generalizations, and a larger sample may have yielded a greater variety of responses. Further research into these areas, either by this medical library or other institutions that implement similar programs, may provide more concrete findings. Finally, as is common with all focus group studies, conformity bias may play a role in the results, and opposing viewpoints might not have been accurately represented if participants did not want to sway from the group.

Several factors should be considered when determining the overall effectiveness of the series, including participation numbers and perceived value. The average participation remained at about ten students per session throughout the three years; however, participation was much higher in the USMLE resources and mobile apps sessions, so interest in topics clearly affected attendance, as confirmed by the focus groups. The focus groups further revealed that students did value and appreciated the opportunity to learn beyond the curriculum, especially if the sessions were tied to the curriculum or other milestones, such as Step 1 and current course projects. Medical libraries have played a role for many years in developing similar opportunities at the CME level, with overall positive value in teaching these skills to health care professionals [2, 3]. This study provides some evidence that medical students are open to this CME-style instruction as long as topics are of interest and relevant to their needs, but additional research is needed to confirm these initial findings.

Curricular and extracurricular

A particular surprise was the degree to which the focus group participants did not differentiate between curricular and extracurricular instruction. Though not the focus of this study, this topic could be investigated further by future studies that specifically compare student attitudes of integrated versus extracurricular learning opportunities. This would be especially relevant considering that the literature attests to the success of integrated library instruction [1, 6, 7], yet medical school curricula get tighter and tighter, forcing librarians to discover additional opportunities to teach essential skills to students. A study by Eldredge revealed lessons learned from past mistakes regarding curriculum integration, including the need to adapt to school and curricular changes, gather continuous feedback on the relevance and quality of teaching, and remain resilient to setbacks [6]. The need to adapt stands out in particular as librarians explore new ways to approach information literacy instruction.

Overall, the views of attendees versus non-attendees did not differ significantly. Both groups identified similar barriers to participation, particularly scheduling conflicts, and had similar thoughts regarding how to increase participation, including keeping food, offering new topics, and repeating popular sessions each year, as well as providing other means of accessing content, such as streaming live or accessing materials online. This study builds on the library literature in curriculum integration and CME by showing that students appreciate opportunities to learn, interact, and expand their information-searching skills, both within and outside the curriculum.

Based on the focus group data analysis, several changes were made to the series after the second year:

- Scheduling: Instead of scheduling the entire year, the series was planned by semester after the curriculum and social calendars were posted. This reduced conflicts with student activities and exam days, but scheduling remains an ongoing issue as student meetings or activities are often scheduled at the last minute.

■ Reminders: Reminder emails were sent the week prior to the session.
■ Location: All sessions were moved to the medical school building.
■ Integration of content into the curriculum: Topics were more tightly integrated into the curriculum, and data from this study were used as evidence when discussing integrated content with course directors. For example, students wanted strategies and resources for identifying mentors for their research projects, so a twenty-minute session integrated into the capstone course was added. Also, online modules were added as capstone course requirements, including the session on locating survey instruments.

Even with the changes, lack of attendance continues to be a challenge. Conflicting events, such as test study or review sessions and other extracurricular programs, have increased, and while evidence suggests this may account for the lack of participation, further evaluation is required to confirm these events as a primary cause. The library continued to offer lunch during the fall semester of the series. Due to high registration rates, yet low attendance, the library reevaluated costs and, in the winter semester, switched from a catered lunch to a bring-your-own "brown bag" lunch, purchasing only light snacks. This significantly reduced costs and did not diminish attendance, which greatly increased the viability of sustaining the program in the long term. The medical library plans to continue offering this CME-inspired program, evaluating and adapting it as necessary.

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REFERENCES

1. Brettle A. Information skills training: a systematic review of the literature. Health Inf Lib J. 2003 Jun; 20(suppl 1):3–9. DOI: http://dx.doi.org/10.1046/j.1365-2532.20.s1.3.x.
2. Young T, Rohwer A, Volmink J, Clarke M. What are the effects of teaching evidence-based health care (EBHC)? overview of systematic reviews. PLOS One. 2014;9(1): e86706. DOI: http://dx.doi.org/10.1371/journal.pone.0086706.
3. Garg A, Turtle KM. Effectiveness of training health professionals in literature search skills using electronic health databases—a critical appraisal. Health Inf Lib J. 2003 Mar;20(1):33–41. DOI: http://dx.doi.org/10.1046/j.1471-1842.2003.00416.x.
4. Glaser BG, Strauss AL. The discovery of grounded theory: strategies for qualitative research. Chicago, IL: Aldine Transaction; 1967.
5. Leech NL, Onwuegbuzie AJ. An array of qualitative data analysis tools: a call for data analysis triangulation. Sch Psychol Q. 2007 Dec;22(4):557–84. DOI: http://dx.doi.org/10.1037/1045-3830.22.4.557.
6. Eldredge JD, Heskett KM, Henner T, Tan JP. Current practices in library/informatics instruction in academic libraries serving medical schools in the western United States: a three-phase action research study. BMC Med Educ. 2013 Sep;13:119. DOI: http://dx.doi.org/10.1186/1472-6920-13-119.
7. Burrows S, Ginn DS, Love N, Williams TL. A strategy for curriculum integration of information skills instruction. Bull Med Lib Assoc. 1989 Jul;77(3):245–51.

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