

Keeping up with Technology

Beyond The Lecture Hall: Placing Noon Conference Lectures Online For Internal Medicine Resident Review.

Omar S Khokhar, Jacqueline L Fischer, G Stephen Nace

From University of Illinois College of Medicine, Peoria, IL 61637

Correspondence: Dr Omar Khokhar, Division of Gastroenterology, Georgetown University Hospital, Washington, DC. Email:okhokhar78@yahoo.com

Received: June 19,2008 Accepted: September 23, 2008

ABSTRACT

Objective: In our study in which didactic lecture material is uploaded to a resident-accessible website, we determine utilization patterns and satisfaction with this online resource.

Methods: Powerpoint materials used in the traditional “noon conference” lecture at a mid-sized, university-affiliated internal medicine residency program were uploaded to the residency’s unique website. To access online content, utilizers are asked (but not required) to complete both a pre- and post-access brief questionnaire.

Results: Overall, a group of 29 categorical medicine (IM) and 24 medicine/pediatric (MP) residents accessed the resource 1124 times. Pre- and post-access questionnaires were completed for 46% and 16% of the utilizations respectively. Most IM utilizers (51%) had already attended the lecture prior to accessing it whereas only 15% of the MP utilizers had done the same. Regardless of program, the most commonly listed reason for online utilization was, “Unable to attend the lecture but wanted to review content.” Most respondents (67%) accessed the resource from home.

Conclusion: The resource was used extensively by both IM and MP residents for review and study purposes. It was commonly utilized from home, was likely to be used again, was felt to be user-friendly, and received high satisfaction scores. We suggest that making didactic noon conference

lectures available for online review is a worthwhile endeavor for medicine (IM and MP) training programs. (Rawal Med J 2009;34:108-111).

Key Words: Resident education, internet-based learning.

INTRODUCTION

For decades, internal medicine (IM) residency programs across the United States have utilized didactic lectures as a supplement to bedside teaching during residency.¹⁻³ Studies have shown a positive impact of didactic curricula on medical education as evidenced by better standardized examination scores, increased self-evaluated knowledge scores, and increased performance satisfaction scores.⁴⁻⁶ However, many residents, because of urgent patient care responsibilities, off-site rotations, or work-hour restrictions, are unable to attend such live didactic presentations. Online content delivery offers an alternative to live attendance at didactic conferences, and thus may benefit residents unable to physically attend a given presentation. However, it is unclear whether residents would actually access such an online resource and for what purpose. Thus, the goal of this study was to determine trainee utilization of an internet-based resource containing previously delivered didactic lecture material; determine factors influencing utilization of this online content source; and determine trainee satisfaction with this internet-based educational resource.

METHODS

At the University of Illinois College of Medicine-Peoria (UICOMP) internal medicine residency program, a daily noon conference is offered to all IM and MP residents. Beginning in October 2006, all noon conference lectures were transferred online after delivery of presentation and speaker consent. Uploaded files included Power Point slides only; no audio was included. An interface was developed

which allowed presentations to be sorted by title, general content area/subspecialty, date, or presenter, or searched by free text. This allowed users rapid, easy access to a particular lecture of interest.

Fig 1. Pre-Access Questionnaire.

- 1a) Did you attend this lecture in person?
 - a. Yes
 - b. No
- 1b) If no, why not?
 - a. Not interested in speaker/content
 - b. Interested but was on vacation/excused leave
 - c. Was on night float or MICU rotation
 - d. Interested but urgent patient care responsibilities on the following rotation that day did not allow attendance. [UHATS/Med consult/Ambulatory/Acute Care/Subspecialty/ED/Pediatrics]
- 2) Why are you accessing this lecture?
 - a. Was unable to attend but wanted to review content.
 - b. Attended but wished to revisit content.
 - c. Wanted to review specifically for study purposes or reference.
 - d. Specific answer in regard to current patient care issue.
- 3a) Where are you accessing this lecture from:
 - a. Home
 - b. SFMC
 - c. Other
- 3b) If you are at SFMC, are you on call?
 - a. Yes
 - b. No
- 4) What time of day are you accessing this lecture?
 - a. Morning (6 am – 12 pm)
 - b. Afternoon (12 pm – 5 pm)
 - c. Evening (5 pm – 10 pm)
 - d. Night (10 pm – 6 am)
- 5) What postgraduate level are you?
 - a. PGY-1
 - b. PGY-2
 - c. PGY-3
 - d. PGY-4
- 6) What residency program are you a part of?
 - a. Categorical Internal Medicine
 - b. Combined Medicine/Pediatrics
 - c. Preliminary Internal Medicine

Informed consent was obtained from all speakers prior to placing their lecture on the website. The website was password-protected and only accessible to UICOMP residents and faculty. Prior to viewing the lecture, however, the user was automatically forwarded to a 6-item pre-access questionnaire (Fig. 1). After viewing the lecture, users were again automatically forwarded to a 5 item

post-access questionnaire (Fig. 2). Resident attendance at noon conference lectures was tracked by the Department of Medicine.

RESULTS

A total of 696 questionnaires were completed by resident utilizers, accounting for a 31% survey completion rate during the study period. The majority of responders were IM residents (64%). Overall, resident trainees accessed the online noon conference lecture resource 1124 times between October 2005 and April 2006. The majority of users were IM residents (677 [60.2%]). The most frequently accessed presentations were internal medicine board review lectures; these accounted for 28.3% of all accessions entries into the system.

Fig 2. Post-Access Questionnaire.

- 1) Do you feel that reviewing this lecture was educationally worthwhile?
 - a. 1- Not worthwhile
 - b. 2- Somewhat worthwhile
 - c. 3- Neutral
 - d. 4- Worthwhile
 - e. 5- Very worthwhile
- 2) Do you feel that the online availability of noon conference lectures is beneficial to the program?
 - a. 1- Not beneficial
 - b. 2- Somewhat beneficial
 - c. 3- Neutral
 - d. 4- Beneficial
 - e. 5- Very beneficial
- 3) How likely do you think it is that you would access this online resource again to review a noon conference lecture?
 - a. 1- Not likely
 - b. 2- Somewhat likely
 - c. 3- Neutral
 - d. 4- Likely
 - e. 5- Very likely
- 4) Did you find the online resource “user-friendly?” (rank on scale of 1-5)
 - a. 1- Not at all
 - b. 2-
 - c. 3- Neutral
 - d. 4-
 - e. 5- Very much
- 5) Do you have any suggestions or feedback to improve this resource? [empty box]

The majority of categorical IM utilizers had already attended the accessed online lecture (79%), whereas only 15% MP utilizers had done the same. Primary reason for accession by IM residents was study/review (75.5%), whereas the most cited reason for MP residents' accession was the inability to initially attend the lecture (61%) (Fig.3). Approximately half of both IM (49.6%) and MP (56%) utilizers accessed the resource from home.

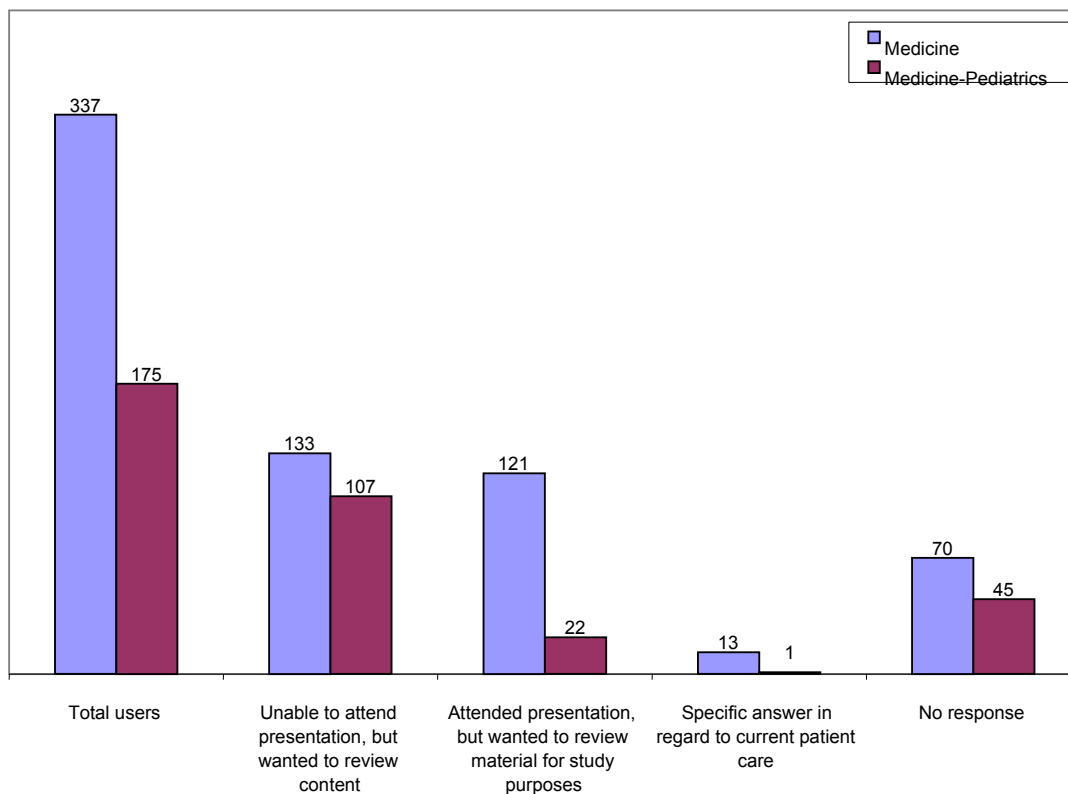
Over 90% (93% IM /96% MP) responders felt that the resource was worthwhile (Fig. 4). In addition, a strong majority of responders felt that the resource was of benefit to their training. Residents from both IM (93%) and MP (100%) training programs were extremely likely to revisit the website. Technically, both IM (97%) and MP (96%) utilizers found the resource to be user-friendly.

DISCUSSION

In the UICOMP IM program, it is estimated that over 200 faculty speakers spend an aggregate of over 1200 hours annually in the preparation and delivery of lecture material for this conference series. Additionally, our 50 program residents spend an aggregate total of over 6000 hours annually in

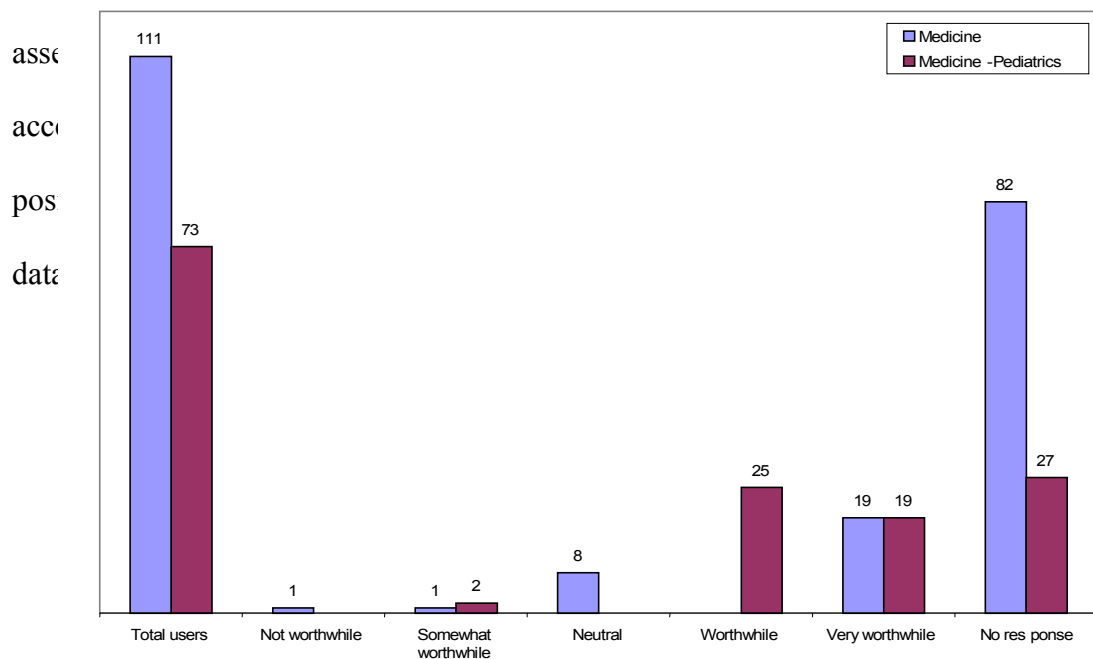
attendance time at this conference.

Fig 3. Why are you accessing this lecture?



Presentation of didactic lectures online has been implemented in undergraduate medical education settings and has been met with varied success.^{7,8} Studies have shown that online availability of material is feasible, efficient, and effective when compared to traditional teaching.^{9,10} Medical students have

Fig 4. Do you feel that reviewing this lecture was educationally worthwhile?



A majority of MP users accessed the resource not having previously attending the lecture. At UICOMP, MP residents are scheduled according to a tri-semester academic year with alternate IM and pediatric blocks. While on pediatrics, MP residents cannot attend IM curriculum, and therefore the resource provided allowed these residents to view lectures that would have otherwise be inaccessible to them. This, in fact, was cited by a majority of MP utilizers when asked for the reason for accession. Trainees as a whole were satisfied with the internet-based resource. They found the resource to be worthwhile and of benefit to training. Importantly, residents felt they would access the resource in the future as part of their continuing education. Finally, trainees from both programs deemed the site user-friendly. Online presentations do have disadvantages compared with live attendance. Examples include inability to ask questions of the presenter, lack of group interaction and discussion of a topic and the fact that online formats are simply “not like being in the room with the presenter”.¹¹ Furthermore, the files uploaded in our study did not include any audio accompaniment. One might

well speculate that including voice-over narration and discussion would enhance both educational value and motivation to access the materials. Our study is limited by the number of survey respondents who did not respond to various queries. In conclusion, based on our experiences, we recommend that didactic noon conference lectures be made available online, thus providing residents opportunities to review the lectures at their own convenience, independent of time and location; review the information in the lecture at an individualized pace; and have the lectures available for ad hoc reference.

REFERENCE

1. Slawson DC, Shaughnessy AF. Teaching information mastery: creating informed consumers of medical information. *J Am Board Fam Pract* 1999;12:444-9.
2. Fraker LD, Orsay EM, Sloan EP. A novel curriculum for teaching research methodology. *J Emerg Med* 1996;14:503-8.
3. Schwiebert LP, Aspy CB. Didactic content and teaching methodologies on required allopathic US family medicine clerkships. *Fam Med* 1999;31:95-100.
4. Moon MR, Damiano RJ Jr, Patterson GA. Effect of a cardiac-specific didactic course on thoracic surgery in-training examination performance. *Ann Thorac Surg* 2003;75:1128-31.
5. Schell SR, Flynn TC. Web-based minimally invasive surgery training: competency assessment in PGY 1-2 surgical residents. *Curr Surg* 2004;61:120-4.

6. Gold JP, Begg WB, Fullerton D, Mathisen D, Olinger G, Orringer M, et al. Successful implementation of a novel internet hybrid surgery curriculum: the early phase outcome of thoracic surgery prerequisite curriculum e-learning project. *Ann Surg* 2004;240:499-507; discussion 507-9.
7. Wehbe FH, Armstrong BK, Peachey MR. Formative evaluation to guide early deployment of an online content management tool for medical curriculum. *AMIA Annu Symp Proc* 2003:1049.
8. Broudo M, Walsh C. MEDICOL: online learning in medicine and dentistry. *Acad Med* 2002;77:926-7.
9. Spickard A 3rd, Alrajeh N, Cordray D, Gigante J. Learning about screening using an online or live lecture: does it matter? *J Gen Intern Med* 2002;17:540-5.
10. Solomon DJ, Ferenchick GS, Laird-Fick HS, Kavanaugh K. A randomized trial comparing digital and live lecture formats. *BMC Med Educ* 2004;29:27.
11. Peuker ET, Filler TJ, Jerosch J, Held W. Possibilities of multimedia online teaching in medical education. *Zentralbl Gynakol* 1998;120:471-3.
12. Pilcher ES. Students' evaluation of online course materials in fixed prosthodontics: a case study. *Eur J Dent Educ* 2001;5:53-9.
13. Nieder GL, Nagy F. Analysis of medical students' use of web-based resources for a gross anatomy and embryology course. *Clin Anat* 2002;15:409-18.
14. Richardson D. Student perceptions and learning outcomes of computer-assisted versus traditional instruction in physiology. *Am J Physiol* 1997;273:S55-8.

15. McGee JB. Development and successful pilot of a web-based scaleable, distributed curriculum development and management system for medical education. *AMIA Annu Symp Proc* 2003;1069.
16. Mehta MP, Sinha P, Kanwar K, Inman A, Albanese M, Fahl W. Evaluation of Internet-based oncologic teaching for medical students. *J Cancer Educ* 1998;13:197-202.
17. Zebrack JR, Mitchell JL, Davids SL, Simpson DE. Web-based curriculum. A practical and effective strategy for teaching women's health. *J Gen Intern Med* 2005;20:68-74.

