WISCONSIN MEDICAL JOURNAL

The Influence of Double-Credit Evidence-Based Continuing Medical Education on Presenters and Learners

Steven L. Lawrence, MD; Jeffrey A. Morzinski, PhD; Mary Ellen Radjenovich

ABSTRACT

Background: Medical specialties are adopting methods to improve continuing medical education (CME). A "double credit" option, sponsored by the American Academy of Family Physicians, is now available for presentations submitted and approved as evidence based (EB).

Purpose: To compare usual and double-credit CME presentations to determine differences in preparation resources and time, and to compare conference attendees' satisfaction. Those not submitting double-credit applications were asked about perceived barriers.

Methods: Three pretested, written surveys were administered at a 2.5 day CME conference held annually in Southeastern Wisconsin. Subjects were 38 presenters and 172 attendees, mostly primary care physicians.

Results: Twelve presentations were approved for double-credit; these presenters used a greater percentage of on-line EB resources to prepare their talks (64% versus 23%), and preparation required an additional 4.75 hours on average. Over 90% of attendees perceived greater conference quality due to the EB emphasis. Top barriers to double-credit EB applications were time limits and perceptions that topics were inappropriate.

Conclusions: Double-credit presenters use a greater percentage of EB resources, while their counterparts used more professional experience to prepare CME presentations. Attendees reported improved quality and value with increased EB CME. Time is a perceived and real factor in preparing double-credit applications.

Authors' Affiliation: Department of Family and Community Medicine, Medical College of Wisconsin, Milwaukee, Wis.
Corresponding Author: Jeffrey Morzinski, PhD, Associate Professor, 8701 Watertown Plank Rd, Milwaukee, WI 53226; phone 414.4546.4985; fax 414.456.6523; e-mail jmorzins@mcw.edu.

INTRODUCTION

In 2005, the American Academy of Family Physicians (AAFP) began offering double credit to family physicians attending evidence-based (EB) continuing medical education (CME) activities that had been documented, reviewed, and approved by the AAFP.[1] There were several reasons for offering these additional credits. It was perceived as a way to differentiate the credits granted to topics with strong evidence from topics such as complementary and alternative medicine for which the supporting evidence base was less established. Extra credit for EB CME also was viewed as a method of supporting the interests of state medical licensing boards that depend on CME to assure that their physicians are competent to practice and maintain adequate performance.[2-3] Finally, awarding double CME credit was a way to encourage CME faculty to employ increasingly accessible EB recommendations and guidelines in their presentations. The goal of double credits for EB CME was to ensure the validity and reliability of CME clinical content, leading to improved medical practice and patient outcomes.[4]

To qualify for an AAFP-approved EB presentation, CME presenters submit an application to the CME provider that includes documentation of supportive evidence from approved EB resources targeted to the proposed medical topic. Sources of approved evidence include Institute for Clinical Systems Improvement (www.icsi.org), US Preventive Services Task Force (www.ahrq.gov/clinic/uspstfix.htm), National Guideline Clearinghouse (www.guideline.gov/), and the Cochrane Database of Systematic Reviews (www.cochrane.org/index.htm). After the application is reviewed by the AAFP, the CME provider is notified about the approval status of the application. If approved, double-credit designation is granted. If submitted materials are not approved, an explanation accompanies the reply and the CME pro-

vider can contact the presenter about the option to revise the application and resubmit the materials.

The pilot study was designed to address 3 questions: (1) What are differences in the resources and time used by EB versus non-EB presenters in order to prepare their CME presentation? (2) Do CME learners rate EB versus non-EB session satisfaction differently, and does the presence of EB sessions impact attendee perceptions of the overall value and quality of the CME conference? (3) For presenters who don't submit EB CME applications, what are their perceived barriers to doing so?

We asked these questions in the context of a regional Midwestern CME conference in January 2006. This study protocol was reviewed and approved by the Medical College of Wisconsin Institutional Review Board.

METHODS

The Winter Refresher Course (WRC) is a regional, 2.5-day CME conference held annually in southeast Wisconsin during late January and early February. The 2006 conference marked the 36th year for this event, which is sponsored by the Department of Family and Community Medicine, Medical College of Wisconsin, with joint sponsorship by the Wisconsin Academy of Family Physicians. Vendor support for this conference occurs exclusively by their rental of booth space in a conference room separate from the educational program. The conference closely follows standards that concern identifying and resolving conflicts of interest as set by the Accreditation Council for Continuing Medical Education.

The WRC format offers 3 simultaneous presentations in different conference suites, allowing attendees to choose according to their educational needs. Conference topics originate through needs assessment and emphasize clinical content and skill development. Over several years prior to 2006, 16 prescribed (P) CME credit hours were reviewed and approved by the AAFP for this conference.

For the 2006 WRC, conference planners decided to pursue double credit as an added value for attendees and as a quality indicator for faculty presenters. Eight months prior to the program, all presenters were called and asked to apply for EB CME credits. Approximately 6 months prior to the program, lead presenters were mailed a follow-up request and specific instructions for double-credit applications, along with offers of administrative support. Honoraria are offered for the conference's 3 keynote presenters each year. No honoraria or other special incentives were offered for EB sessions.

The 38 lead presenters at the 2006 WRC were the subjects for our 2 main study questions. Of these presenters, 24 were male. All presenters were practicing physicians, and all but 3 had a primary faculty appointment at the Medical College of Wisconsin. Two presenters were from the University of Wisconsin-Madison, and 1 was from the AAFP. WRC attendees (n=172) were also subjects for the study. They completed evaluations of the specific sessions they attended as well as evaluations of the overall meeting. Attendees were health professionals (over 95% doctors, physician assistants, and nurse practitioners) from the Midwest, representing Wisconsin, Illinois, Indiana, Michigan, Minnesota, and South Dakota.

Three instruments were used for data collection, each completed anonymously. The presenter survey was designed and pre-tested prior to this study, and presenters were asked to complete it at the conference site immediately after their presentation. When turned in, the presenter survey was sorted into EB and non-EB folders based on researcher knowledge of who the AAFP had given double credit. All presenters were also given a small ($5) book gift card when they were given the survey.

The presenter survey asked subjects: "how much did you depend on" various types of listed resources "to prepare your Winter Refresher presentation?" The question was followed by a list of resource types such as "my own medical practice and experience," "in-person discussions with colleagues or consultants," "text books, CDs, audiotapes, or journals," and "EB medicine Web sites." For each resource type, subjects were asked to enter a percentage so the percentages totaled 100%. Next, presenters who had submitted their presentation for AAFP approval were asked to report the additional time spent researching resources and completing the required documentation for the AAFP. Finally, presenters who did not submit EB CME applications were asked to list any barriers that prevented their completion of AAFP materials.

The second instrument, the session evaluation survey, was directed to all conference session attendees. This survey was adapted from a pre-existing WRC survey that asked each attendee to rate each session on its content (eg, clear, current, comprehensive, best evidence), the presenter (eg, clear, interactive, organized), and overall, whether "this session was a good use of my time." Attendees were asked to use a Likert-type

rating for each item (1=excellent, 5=poor). All session attendees were asked to complete these post-presentation evaluations for all sessions they attended. These questionnaires were located in the registration packets and were preprinted with presenter names and topics for all sessions.

The third and final data collection instrument was the end-of-conference survey, also located in the registration packet. This instrument was based on the existing WRC survey and included 2 questions about the degree to which EB CME presentations were important to their perceptions of the WRC's overall value and quality. Registrants were asked to complete this survey at the end of the conference using Likert-type ratings from "very important" to "not at all important." Attendees were asked to drop both the session-specific surveys and the end-of-conference survey in a secure bin near the registration desk.

Data analysis for all instruments was performed using descriptive statistics (eg, means, standard deviations) and content analysis of text data, which required inter-rater agreement on response categories.[5] Where comparisons were made between means, one-way ANOVA was used with SPSS software.[6]

RESULTS

Meeting and Subjects

For the 2006 WRC for Family Practice, the AAFP approved 12 sessions for double EB CME credits. This resulted in family physician attendees having the opportunity to obtain up to 27.25 (P) credits for participation, an increase from the prior years' totals of 16 (P) credits.

Of the 38 primary presenters, 36 (95%) completed the presenter survey. Presenters' medical disciplines included family medicine, cardiovascular medicine, internal medicine, OB-GYN, pediatrics, radiology, and physical medicine and rehabilitation. Of the 36 responders, 12 (33%) submitted their application materials and were approved by the AAFP as an EB CME presentation. One of the 36 responders had applied for AAFP credit but was not approved. The remaining 23 (64%) did not submit their materials for double-credit review. Therefore, 35 presenter surveys were analyzed; 12 EB CME presenters and 23 non-EB presenters.

Of the 12 approved EB presentations, topic areas included acute allergic reaction, the febrile infant, dyslipidemia, and preventive services guidelines. Among the 23 non-EB sessions were 19 clinical topics in areas such as hospice care, diabetes therapy, seizures and epilepsy, and limping in children. The remaining sessions were about system or practice improvement topics—such as measuring performance quality—and methods of office coding.

The 172 conference registrants completed 1363 end-of-session surveys, an average of 36 evaluations for each of the 38 sessions. End-of-conference surveys were completed and returned by 107 of 172 registrants (62%). These survey returns by attendee practice types were consistent with the rates of conference attendees overall.

Study Questions

Question 1 asked what types of sources were used by EB versus non-EB presenters to prepare for their WRC presentation (Figure 1). EB presenters reported that their most relied-upon resources were EB medicine Web sites, which accounted for 33% of their preparation resources, compared to 10% for non-EB presenters. EB presenters reported that 31% of their preparation was done through full-journal Web sites such as Medline, compared to 13% for non-EB presenters. Non-EB presenters reported greater dependence on "my own professional practice and other professional experience," which accounted for 32% of their preparation resources, compared to 16% for EB presenters. The next most used resource for non-EB presenters was "textbooks, CDs, audiotapes, paper journals," which accounted for 22% of preparation, compared to 7% for EB presenters. The third most relied on resource for non-EB presenter preparation was "in-person discussions with colleagues and consultants," which averaged 15%, while these in-person contacts accounted for 2% of EB presenters' reported preparation.

EB presenters were asked to report the time required for preparing a successful EB application and the extra time needed to search and document EB resources. They reported requiring an additional 3.5 hours to research their source citations and an additional 1.25 hours to complete the required application materials for AAFP review. On average, 4.75 hours of additional time was needed for double-credit EB CME preparation.

Question 2 asked about differences in attendee ratings of EB sessions compared to non-EB sessions and whether attendees perceived that the presence of EB sessions raised the value of the meeting overall. The average of attendees' EB session ratings was 1.65 for quality/appropriateness of content, 1.69 for quality and style of presenter, and 1.66 for the overall session (1=excellent, 5=poor). Session ratings were almost identical for those given to the 23 non-EB sessions, where

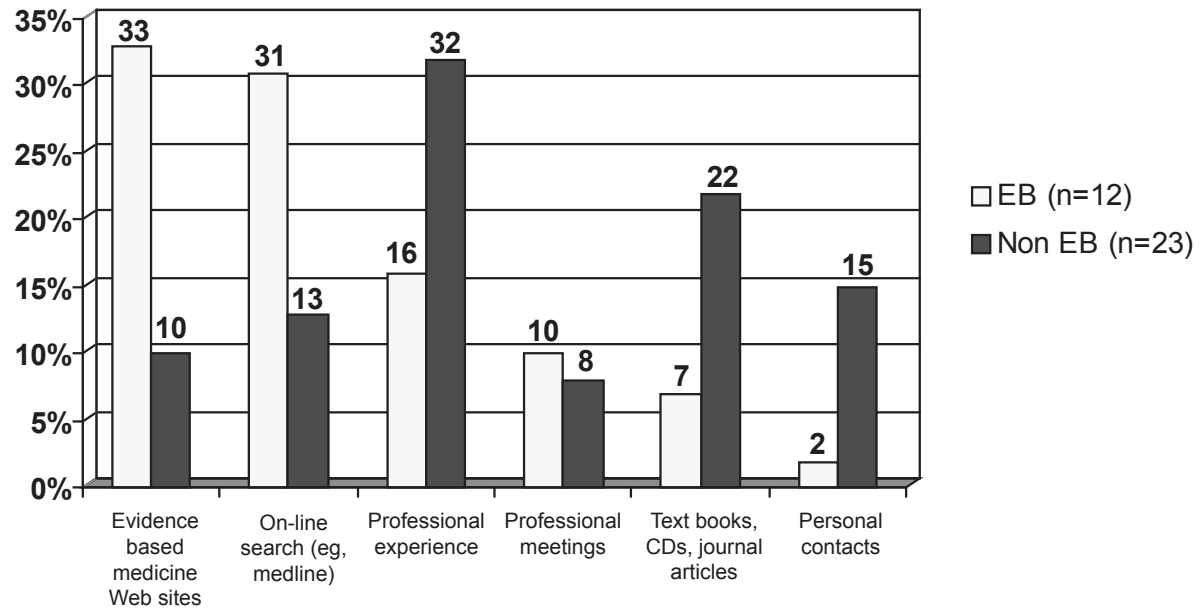

Figure 1. Resource types relied on by continuing medical education (CME) faculty to prepare for presentations given at the 2006 Annual Winter Refresher Course. Subjects (n=35) were CME faculty who reported the resources they depended on (by percentage) to prepare their conference presentations. Evidence-based (EB) presenters (n=12) applied for and were approved by the American Academy of Family Physicians for double credit, while non-EB presenters (n=23) did not apply.

content was rated 1.68, presenters 1.65, and the overall session rated an average of 1.67. In the end-of-conference instrument, attendees rated the importance of EB CME in quality and value; 93% reported EB CME as "important or very important" to improved meeting quality, and 61% reported that EB CME was an "important or very important" addition to the overall value of the conference.

Study Question 3 asked about perceived barriers that prevented CME presenters from seeking EB approval. A total of 20 of 23 who did not submit their presentation for EB CME review provided comments. Using a method of content analysis,[4] all 3 authors agreed the comments formed 4 principal categories. The greatest number of comments (9 of 20) dealt with presenters perceiving that the EB approach "did not apply" to their topic. Representative quotes from this set of comments were "didn't think my topic qualified after reviewing the [AAFP Web] site," "my presentation did not fit into the format," and "was difficult to make applicable for my topic." The next most cited barrier concerned a "lack of time" for completing the extra work presenters felt would be required (n=5). The final 2 categories of barriers were each noted by 3 non-EB respondents. One category concerned the process of application, which "seemed too complicated." In the final category, presenters felt they lacked information that applying for double credit was an option.

DISCUSSION

This study explored a double-credit initiative that is part of a larger movement of reform in all medical specialties to stimulate greater CME quality and to more closely link CME with improved practice performance and clinical outcomes.[5] This pilot study was conducted at a longstanding Southeastern Wisconsin CME event focused on family medicine. This study is the first to examine the influence of EB CME on presenter behaviors and conference attendee reaction.

The first of 3 study questions concerned the resources used by CME presenters while preparing their talks. Findings show that EB CME presenters used a different mix of resources to prepare than non-EB presenters, with much higher reliance on Web-based EB and Web-based journal resources. EB presenters utilized EB medicine Web resources <3 times more frequently than non-EB presenters. In part, these differences could be due to perceptions by non-EB presenters that their topics (eg, practice management or behavioral medicine) would not be represented in EB literature or on-line resources. But preparation for all topics could have included appropriate EB and other on-line searching. For example, Sackett and colleagues note the evidence-base for social, public health, and community interventions "rivals or swamps" available evidence-bases of medical impact.[8] On the other hand, the resource profile for non-EB presenters showed a heavier reliance on per-

sonal experience, print or other fixed-content resources, and in-person contacts. We conclude from our data that the double-credit EB application process stimulated presenters to seek and use EB resources. When CME presenters use EB Web sites, there is a greater likelihood that their teaching will reflect current practice recommendations and improve the recommended alignment of CME with practice guideline updates.[9]

EB CME presentations required time, and EB CME presenters reported an additional 3.5 hours to tap source materials, and an additional 1.25 hours to complete the required application. Some authors have discussed ways to build EB search efficiency and accuracy with specially prepared librarians or "informationists" to connect clinicians to best evidence,[9] a function that could be expanded to benefit CME speakers as they access and synthesize updated information. Because these time and resource costs are significant, they need to be factored into EB CME planning for both presenters and their sponsors.

The second study question examined conference attendee reactions. We found that ratings of EB CME and non-EB CME presentations showed no significant differences in satisfaction with content, presenters, or the "overall" session. This is not surprising, because factors such as presenter reputation and instructional methods can strongly influence learner satisfaction.[10] While session ratings did not indicate a positive benefit in favor of EB sessions, overall conference evaluations did: 93% of attendees reported that EB CME was important or very important to improved meeting quality, and 61% reported that EB CME was important or very important to added value. These data indicate that conference attendees appreciated the presence of an EB emphasis, even though the comparison of satisfaction across session types was inconclusive.

Our third main finding was regarding the question of "barriers perceived by presenters who did not apply for EB CME credit." Of the 23 non-EB CME presenters, the largest barrier was the perception that an EB approach was not appropriate for the presenters' specific topic, likely because of their emphasis on practice management. As noted above, this barrier appears to be false, as there are no explicit criteria that exclude such EB search topics. Medicine's evidence-base is constantly growing, and practice management topics (eg, group visits for chronic illness) have been approved for double-credit. "Time constraints" was the second largest barrier. As noted above, this concern should be addressed by increasingly efficient application and preparation processes for EB presenters.

This pilot study has several limitations. It relied on self-report data from a limited number of presenters and attendees at 1 CME meeting, which may have introduced bias into these findings and limited their generalizability. Presenters' resource and time use may be influenced by factors other than EB approach, such as their prior experience teaching a specific topic or the direct assistance of others not accounted for in this study. Another limit is the study's focus on perceptions and on-site reactions to CME—it was beyond the scope of this study to examine the possible association between EB CME experience and performance improvement. Study authors dropped the 1 presenter who submitted a double-credit application but was not approved from the analysis. Future studies should consider using different methods to explore the experiences and learning of these unsuccessful double-credit applicants. Finally, this study does not propose that double-credit approved CME assures high-quality instruction, but we believe it demonstrates that a higher, more transparent standard has been met for research and practice recommendations.

In conclusion, this study shows that EB CME presenters prepare their talks using resources that are likely to consist of current EB information—consistent with the goals of the AAFP. We found there were real and perceived investments of time for presenters who prepare EB presentations for double-credit. We also found that CME conference attendees perceive that EB CME improves overall conference quality and value. By this double-credit innovation, the AAFP is positively contributing to CME conference quality. We recommend further research on EB CME, possibly adapting these study methods in a different specialty or larger venue. Future studies should also be designed to examine the influence of EB instruction on clinician performance and patient outcomes.

Acknowledgments/Funding/Support: We thank the Wisconsin Academy of Family Physicians for conference support. We also extend our thanks to the Winter Refresher Course presenters who contributed to this study.
Financial Disclosures: None declared.

REFERENCES

1. Croasdale M. AAFP offers double-credit CME to push evidence-based learning. Available at: http://www.ama-assn.org/amednews/2005/11/14/prl11114.htm. Accessed June 3, 2008.
2. Johnson DA, Austin DL, Thompson JN. Role of state medical boards in continuing medical education. *J Continuing Education Health Professions.* 2005;25:183-189.
3. Williams BW. The prevalence and special educational requirements of dyscompetent physicians. *J Continuing Education Health Professions.* 2006;26:173-191.

4. American Academy of Family Physicians Web site. Available at: http://www.aafp.org/online/en/home.html. Accessed June 3, 2008.
5. Miles MB, Huberman AM. *Qualitative Data Analysis.* Thousand Oaks: Sage; 1994.
6. SPSS, Statistical Package for the Social Sciences, version 15.0. 2006.
7. McDonald WJ. Council of Medical Specialty Societies: committed to continuing medical education reform. *J Continuing Education Health Professions.* 2005;25:144-150.
8. Sacket DL, Straus SE, Richardson WS, Rosenberg W, Haynes RB. *Evidence-Based Medicine: How to Practice and Teach EBM.* 2nd ed. London: Churchill Livingstone; 2000.
9. Zieger RF. Toward continuous medical education. *J Gen Intern Med.* 2004;20:91-94.
10. Cervero RM. *Effective Continuing Education for Professionals.* San Francisco: Jossey-Bass; 1988.

advancing the art & science of medicine in the midwest

WMJ

WMJ (ISSN 1098-1861) is published through a collaboration between The Medical College of Wisconsin and The University of Wisconsin School of Medicine and Public Health. The mission of *WMJ* is to provide an opportunity to publish original research, case reports, review articles, and essays about current medical and public health issues.

Visit www.wmjonline.org to learn more.