

Application of the Problem-Based Learning Model for Continuing Professional Education: A Continuing Medical Education Program on Managed Care Issues—Part II

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Abstract

Physicians must incorporate concepts of practice management and knowledge of managed care into their practices. Managed care presents an immediate and challenging opportunity to providers of continuing medical education to offer effective educational programs for physicians on managed care issues. In this exploratory research, the problem-based learning model was used to develop a continuing medical education program that would offer an interactive and effective method for teaching physicians about managed care. Problem-based learning is a departure from the traditional lecture format of continuing medical education programs because it is designed for small groups of self-directed learners who are guided by a faculty facilitator. Although only a small number of participants participated in this program, the findings offer important considerations for providers of continuing medical education. For example, participants reported increased confidence in their knowledge about managed care issues. Participants also clearly indicated a preference for the small group, interactive format of the problem-based learning model.

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The high value that society places on quality medical care is evident, as expenditures for medical education and healthcare now represent 14% of the gross national product.¹ Today, physicians must perform successfully in multi-dimensional roles, including those of clinician, patient educator, and resource manager. In addition, the medical profession must be able to demonstrate that physicians are being educated in ways that enable them to trans-

late their knowledge into performance, recognize their limitations, learn from their mistakes, keep up with technology, and, ultimately, provide high-quality care at a reasonable cost.¹

The rapid pace of technological advances, societal pressures for assurance of competency, and the desire of individual physicians to participate in lifelong learning all have fostered the demand for effective continuing education programs for physicians. Continuing medical education (CME) is an important component of continuing education. In this exploratory study, application of the problem-based learning (PBL) model was implemented as an example of one important option for consideration by educators who plan CME programs.

Background

Traditionally, medical education has not been considered innovative. Many medical schools continue to use the general curriculum format, based on Flexner's report in 1910, that linked the practice of medicine to its biological foundations.² Medical education still generally relies on lectures, memorization, laboratories, and heavy reliance on multiple-choice questions. This tradition also is evident in the delivery of CME programs. Although many CME programs now incorporate some presentations at "break-out" sessions of small groups with special interests, the lecture style typically is used for presentations.

Renschler and Fuchs³ conducted an in-depth study of physicians to examine the degree to which various aspects of their education contributed to their current practice. Physicians consistently reported that pre-clinical education and formal CME programs contributed the least, whereas independent learning and informal study groups were the most highly valued.

It appears that physicians' work performance benefits only minimally from the traditional CME format. Nevertheless, for several reasons, physicians continue to participate in CME programs. In addition to the mandatory requirement in many states, there is an

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assumed high degree of self-motivation to participate.⁴ The format of the CME programs may not be ideal, but research indicates that adults select learning resources according to availability, rather than usefulness.⁵

Developing strategies to identify the most appropriate resources and creating a learning environment to make the best use of those resources can increase the effectiveness of education. It is clear that CME providers are in a key position to structure educational programs that will promote desired changes in medical practice behavior, and that will help physicians to develop important self-directed learning skills, such as self evaluation.

The Association of American Medical Colleges (AAMC) Report of the Panel on the General Professional Education of the Physician and College Preparation for Medicine emphasizes that physicians are aware of their need for ongoing education, and that they participate in programs of continuing education.⁶ The AAMC also stressed that lifelong learning and adapting medical practice to reflect new knowledge and techniques will become increasingly important. Thus, new CME models must be developed that facilitate the enhancement of important skills, such as handling interpersonal relationships and team work, for professionals looking to broaden their responsibilities.⁴

Some medical schools are implementing the PBL model, which offers opportunities for new CME program design. Originally implemented at McMaster University during the late 1960s, PBL gradually has been adopted at other medical schools, such as those at the University of New Mexico, University of Sherbrooke, Michigan State University, and, to a limited extent, Harvard University.

The PBL curriculum has five key characteristics: (1) the starting point is a problem; (2) the problem is one that a physician is likely to face; (3) the subject matter is organized around a problem, rather than around a specific discipline; (4) students assume responsibility for their own education; and (5) most learning occurs in small groups. Thus, PBL is considered to be student-centered and self-directed learning.⁷

The model and its emphasis on the learning process of the individual parallels many aspect of the competence model for continuing professional education,⁸ which ties practice relevancy to job function and, based on an understanding of professionals in their own setting, focuses on the individual. The PBL format meets the needs of working professionals, as the accent on problem-solving activities fits well with physicians' practice environments. Physicians use re-

call, text books, and consultations with others to gather information and solve problems on a daily basis; PBL uses this format as well.⁹

At the University of Iowa, the Office of Consultation and Research in Medical Education conducted research to identify faculty concerns about implementation of PBL.² The highest levels of concern related to costs relative to those of traditional lecture-based instruction. The faculty also expressed concerns about the adequacy of content range; student dependence on the small-group environment; and its own opposition, which was related to increased time commitment required by those serving as group facilitators.

Many of these issues are important to CME planners. The significantly greater number of faculty required to offer a PBL-model CME program than a traditional program could affect the cost of providing new programs. Conversely, the PBL structure lends itself to offering participants attendance in small-group programs close to their homes. Faculty program facilitators could be recruited within a geographic radius that would minimize travel and lodging expenses. The use of small-group programs also would give practicing professionals the opportunity to enhance interpersonal skills relevant to the work place, and to receive peer evaluation about their program participation.

PBL Model Program Design for CME

The PBL model provides a useful format for a CME program. For this study, managed care was selected as the program topic. Given the national emphasis on healthcare reform, managed care is a subject that will become increasingly important to physicians, and postgraduate medical education will have to integrate business-related topics into all aspects of training.¹⁰

Methodology. This study was not experimental; rather, it was designed to explore a pilot CME model for additional research. The model CME program was constructed for participation by subject groups of five to eight physicians. Key components of the program, including the tutorial objectives and the problem based learning case, are given in Table 1. It was targeted to physicians in rural settings who provide primary care and who may have limited opportunities to work in a small-group setting with colleagues. The geographic area was a Midwestern city with a population of 60,000 to 70,000.

Six individuals participated in the program. Five were primary care physicians, and one was a faculty member in a university-based health services management program. Two of the five physicians had

been in practice for less than 5 years, one had been practicing for 5 to 10 years, and two had been in practice for more than 10 years.

The course was presented in two sessions conducted 1 week apart. At the first session, participants received resource materials (Table 2) and completed

Table 1. Problem Based Learning Case: Objectives and Situation

<p><i>Tutorial Objectives</i></p> <ul style="list-style-type: none"> ■ Participants will define key terms relevant to managed care. <ul style="list-style-type: none"> - Patient care outcomes - Health maintenance organizations (HMO) (staff vs group model) - Preferred provider organization (PPO) - Independent practice association (IPA) - Capitation - Managed competition - Accountable health partnerships (AHP) - Health insurance purchasing cooperative (HIPC) - Managed care - Risk distribution - Others identified in group discussions ■ Participants will be able to outline advantages and disadvantages of various managed care models based on different clinical situations presented during discussions. Situations will be discussed from the patient, public opinion, and provider perspectives. ■ Participants will complete an analysis of each others' findings in an informal group setting. Principles and concepts emphasized in the resources will be used to focus the group discussion. ■ Participants will evaluate course content and its value to them in their practices. ■ Participants will evaluate the effectiveness of the group facilitator in providing an atmosphere conducive to learning and sharing information. ■ Participants will compare qualities of the PBL format for CME with traditional continuing education formats. <p><i>Situation:</i> You are a physician in a small-group practice in a rural community. The office manager of your practice has just presented information to you about new opportunities to contract with various managed care organizations. One company is a staff model HMO, two are PPOs, and one is an IPA. Your primary concerns focus on the impact that these various options may have on the quality of care you can provide and on your clinical decision making.</p> <p>You also have been privately contacted by another HMO which has offered you a tempting salary and benefits package if you leave your current group to work for them.</p> <p>Your primary concern is the impact that these various options may have on quality of care and clinical decision making.</p> <p><i>Session I</i></p> <p>Before you make a decision:</p> <ul style="list-style-type: none"> ■ What is your initial reaction at this moment? ■ What will you ask your office manager? ■ How will you discuss this situation with other physicians in your group? ■ What additional information will you need to evaluate the advantages and disadvantages of the various contract opportunities? <p><i>Session II</i></p> <ul style="list-style-type: none"> ■ What potential effects (both negative and positive) on delivery of patient care do each of the various managed care groups present? ■ How is quality of care defined? <ul style="list-style-type: none"> - By you? - By patients? - By employers? - By insurance companies? - By the public? - By government? ■ What is the relationship between quality of care and cost of care? ■ What changes in your clinical practice would you have to consider if you chose to participate in any one of these managed care options?

a pre-program questionnaire (Table 3). Participants decided as a group how to use the materials so that all could acquire the information necessary to achieve the learning objectives. In addition, they identified areas in which their information needs were greatest, as well as areas in which prior knowledge could be shared with the group.

At the second session, the group participated in an in-depth discussion and analysis of the issues presented in the CME program. As group facilitator, the instructor had the responsibility of ensuring that each participant demonstrated a contribution toward achieving the learning objectives outlined for the program. The participants completed a post-program

Table 2. Case Study Resources for Participants

- Baker LC, Cantor JC. Physician satisfaction under managed care. *Health Aff* 1993;12:258-270.
- Berenson RA. A physician's view of managed care. *Health Aff* 1991;10:106-119.
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- Weiss BD, Senf JH. Patient satisfaction survey instrument for use in health maintenance organizations. *Med Care* 1990;28:434-443.

Table 3. Pre-Program Questionnaire

Tell us about you ...

Name: _____

Type of medical practice: _____

Geographic location: _____

Number of years in practice: _____

Tell us about your expectations from this program:

1. The most important thing I hope to get from this program is: _____

2. From my past experiences with CME programs, I expect that group discussions will be: _____

The following statements are true of me now (please circle one response for each question):

3. I am confident about my level of knowledge about managed care.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

4. There is often a direct relationship between cost and quality of care.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

5. I prefer the traditional format for CME programs.

1	2	3	4	5
Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree

questionnaire designed to provide the CME planner with information on the physicians' perceptions of the value of the program, and on possible revisions to improve the quality of the course. This questionnaire was similar to the pre-program questionnaire, except that the first two questions were omitted and a final question asking whether the format of this CME program helped the participant to gain new information relevant to his or her practice was added.

The instructor's copy of the program and the tutorial guide include brief summaries of key information pertaining to each learning objective. References were provided to the particular journal article or resource that supported the information.

For this study, three dependent variables were analyzed: (1) physicians' confidence level about their knowledge of managed care; (2) their perception of the relationship between cost and quality of care; and (3) their relative preferences for traditional and problem-based CME presentation formats. The exploratory survey data collected before and after the intervention were used to analyze the self-reported data relating to the three dependent variables.

In this small sample of participants, there was a reported increase in confidence regarding knowledge of managed care issues pre- and post-program. Opinions regarding the relationship between cost and quality of care remained mixed. While opinions on the preferability of traditional CME education remained divided in the pre- and post-program surveys, participants did indicate a clear preference for the interactive, small-group setting of the PBL model, as opposed to the traditional CME model.

Limitations of the Study

The self-report survey method of data collection was chosen because it was easy to administer simply and the participants required little or no training. One advantage of the self-report method is its ability to access information in areas that would otherwise be extremely difficult to measure.¹¹ A key disadvantage is its vulnerability to distortion by the subject. Nevertheless, a review of dependent variables used in counseling research clearly indicates that self-reporting is the most frequently used.¹¹

It is necessary to emphasize that the small number of participants in this exploratory research prevents the author from drawing specific conclusions. Despite the limited sample size, this pilot study may encourage other CME providers to experiment with the PBL model program as a means of teaching physicians about managed care. Future application of this model to larger subject populations will help to deter-

mine whether similar results can be duplicated in other settings.

Conclusion and Recommendations

CME programs that integrate clinical practice with aspects of resource management and patient education require continuing professional education programs that promote self-directed problem solving and opportunities for improved interpersonal relationships. These outcomes can be achieved when program planning incorporates new methods of presentation, such as the PBL format.

When CME program planning uses the small group, interactive format of PBL, participants have the opportunity to become actively involved in discussions and relate the information to their individual practice settings. Because PBL encourages participants to integrate new information in ways that can be applied in their practice, the link between information theory retrieval and use of information must be considered. The PBL model creates three conditions that link information theory to the appropriate retrieval and use of new information¹³: (1) prior knowledge is activated; (2) the context in which information is learned is similar to the context in which it will be applied; and (3) students can elaborate on the information, thus improving information processing. The PBL format offers CME providers a program design that incorporates the audience's preferred learning style—the small study group—with the opportunity for participants to relate new information directly to a context that will be relevant to their daily professional environment.

As a leader in the field of continuing professional education, the American Medical Association exerts substantial influence on the content of programs approved for CME credit.¹² In today's healthcare environment, it is important to incorporate into curricula a broader study of societal issues, which many professionals currently lack.⁴ Thus, physicians should receive CME credit for participating in programs that incorporate business-related topics into their continuing professional education.

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