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CME: ACCP EVIDENCE-BASED EDUCATIONAL GUIDELINES

The Future of Continuing Medical Education*

Effectiveness of Continuing Medical Education: American College of Chest Physicians Evidence-Based Educational Guidelines

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To ensure that continuing medical education (CME) continues to evolve so that it offers educational activities that are relevant to physicians in keeping with the definition of CME, CME providers must respond to and prepare for emerging expectations. This article puts into context the impact of the current emphasis on lifelong learning in medicine, particularly the requirement for maintenance of certification and licensure, on CME. Further, the effect of changing needs assessments and the impact of the integration of new technology in CME is included. Finally, a discussion of the emerging unique needs of CME providers and organizations related to these changes are addressed in the following four broad categories: CME as a value center, resources in support of CME, research to further advance the field, and leadership to guide the profession.
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Key words: continuing medical education

Abbreviations: ACCME = Accreditation Council for Continuing Medical Education; MOC = maintenance of certification; SMB = state medical board

The continuing medical education (CME) system has changed significantly over the past decade. In the United States, the CME enterprise has grown significantly since 1998, with 10% more accredited providers, 40% more activities, 10% more hours of instruction, and 40% more physician participants.[1] Providers are offering new types of CME activities, including performance improvement CME, learning from teaching, and committee learning.[1] The role of evidence in CME has become even more important. For example, the American Academy of Family Physicians[2] approved evidence-based criteria for its prescribed credits that CME providers use. Perhaps one of the most important changes is the collaborative work that links CME to quality improvement and safety initiatives.

More hospital CME programs interface with their quality improvement committees to directly address gaps in patient care through education. Medical specialty societies are involving their leadership to ensure support for their members to meet Maintenance of Certification (MOC) requirements. CME professionals from state medical societies and medical schools have become involved in Ambulatory Care Quality Alliance[3] pilot projects that aim to "combine public and private information to measure and report on physician practice in a meaningful and transparent way for consumers and purchasers of health care."

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How will growing collaborations and other environmental conditions change the practice of CME and the expectations of regulatory agencies involved in CME? This article outlines some of the environmental factors that likely will influence the future of CME and suggests strategies for CME professionals to ensure that their work can meet expectations. The intended audiences of this article are CME providers in the United States, their teachers, and physician learners as well as other organizations in the United States with interests in CME.

Environmental Factors Affecting the Future of CME

Both the Accreditation Council for Continuing Medical Education (ACCME)[4] and the American Medical Association[5] define CME as "educational activities which serve to maintain, develop, or increase the knowledge, skills, and professional performance and relationships that a physician uses to provide services for patients, the public, or the profession. The content of CME is that body of knowledge and skills generally recognized and accepted by the profession as within the basic medical sciences, the discipline of clinical medicine, and the provision of health care to the public."

To ensure that CME continues to evolve so that it offers educational activities that are relevant to physicians in keeping with the definition of CME, providers must deliver CME while responding to and preparing for emerging expectations. Expectations for physicians to meet licensure and certification requirements and to provide current, patient-focused, evidenced-based care will shape the future of CME. At the same time, changing needs assessments that have arisen from the use of performance measures and the integration of technology also will play significant roles in the CME of the future. The following sections provide some background on each of these environmental factors.

The Impact of Licensure

As the entity authorized to enforce each state's Medical Practice Act, the State Medical Board (SMB) has an obligation to its state's citizenry to "ensure that the public is protected from the unprofessional, improper, unlawful, unethical, and/or incompetent practice of medicine."[6] Currently, 60 of the 70 SMBs require CME as part of licensure. The amount of CME required varies, as does the need for specific content. Discussion of other links between CME and licensure are underway, as SMBs consider evolving to continuous maintenance of licensure programs. As licensure requirements change, CME will need to respond in support of new licensing initiatives.

The Impact of MOC

When the process of certification by a specialty was initiated through the development of specialty boards beginning in 1917, certification was conferred for a physician's career. The ever-increasing pace of change in health care resulted in the recognition that recertification was needed. Today, the MOC program of the American Board of Medical Specialties[7] is the standard. MOC demonstrates a physician's continuing effort to assess and improve knowledge, skills, and performance. The four-part MOC process, guided by criteria and curriculum for each specialty set by the American Board of Medical Specialties 24-member boards, includes the following: professional standing (part I), lifelong learning and self-assessment (part II), cognitive expertise (part III), and practice performance assessment (part IV). An important impact of MOC on CME is the requirement of lifelong learning and self-assessment (part II), creating a direct link between MOC and CME. Further, CME has already made contributions to practice performance assessment (part IV), as its providers offer performance improvement CME and other activities that allow physicians to assess and improve their performance.

MOC expectations and the types of required performance changes will influence CME significantly. Self-assessments will spotlight learning needs that are not only unique and physician specific, but also critical for a physician to fulfill. This type of individualized self-assessment will create motivated learners who will want to not only participate, but also become involved in a learning process that supports desired changes. Just as physicians are working with more informed patients, CME providers will target engaged physicians who have increased expectations for CME.

The Impact of Performance Measures on Needs Assessment

Needs assessment in the future of CME will be multidimensional. Parker and Parikh[8] suggested that CME activities must include the following three processes: assessment of learner needs, program design to meet learner needs, and outcome measurement. Needs data that can be used in each of these processes can be drawn from expanding data sets

that benchmark a physician's performance against standards of care, such as those developed by the American Medical Association's Physician Consortium for Performance Improvement and the National Committee for Quality Assurance.[9] The consortium draws expertise from more than 100 national medical specialty and state medical societies, the Council of Medical Specialty Societies, the American Board of Medical Specialties and its member boards, experts in methodology and data collection, the Agency for Healthcare Research and Quality, and the Centers for Medicare & Medicaid Services. As of March 2007, 174 consortium performance measures were available for implementation. Other organizations, such as the National Quality Forum,[10] are involved with the use of performance measures and healthcare quality measurement and reporting.

Performance measures are used in a variety of ways, including value-based purchasing of health care.[11] Performance measures will be used for beneficiary reimbursement by the Centers for Medicare & Medicaid Services. If reimbursement becomes linked to performance judged against defined standards, physicians will have clearer direction for professional development to support the changes needed in their practice.

Performance measures determine needs assessments processes for CME providers in several ways. First, performance measures usually are derived from evidence-based clinical guidelines. When identifying needs that underlie physicians' performance practice gaps, CME providers should consider physicians' knowledge of clinical guidelines related to the performance measures. In addition the CME needs assessment process should help to identify why a physician's performance is what it is and how that performance came to be. Is a performance gap caused by more than a deficit in knowledge, and knowledge of what? Is a new skill needed, and what skill? Is there a difference in how the physician thinks about his or her current performance compared to how others think about it? Are there system barriers impeding the desired and expected performance? Helping physicians to assess these components of their learning needs goes far beyond a review of performance data into a rich source of information to support physicians' learning and change process. Examples of tools that can be provided to physicians to support them in these assessment efforts can begin with CME activities themselves. Developing educational opportunities that explain to physicians the resources available to help them assess and improve their performance is one way to engage physicians in the assessment process. Resources generated by professional societies could allow physicians to participate in a performance improvement process without the need to develop tools of their own.

Another dimension of needs assessment involves the potential "blind spot" of physicians not knowing what they do not know. Helping physicians move from a blind spot to an area in which they can compare their performance to peers or to recommended guidelines can be, in itself, a powerful tool to facilitate physician learning and change. When CME is practice based, these comparisons are possible. For example, practice-based CME can be achieved through systems in which CME is embedded within an organization aimed at quality improvement or by CME providers offering physician-learners the opportunities to review their own performance data and compare them to a benchmark. CME must be grounded in the specific practice profile of the individual physician, with trends or changes dynamically reflected in the self-assessment. This may become easier as future generations of physicians, educated in core competencies, are being exposed to practice-based learning as a part of their training.

Another dimension of needs assessment is the opportunity to close the loop with the learner with feedback on the implementation of a performance change. Looking only at new data sets will not reveal what was learned or the changes that the physicians or systems put into place to achieve different results. The use of feedback creates a new kind of needs assessment, refined by the physician-learner's new experience. This process will face the challenge of providing individual feedback on performance in a timely and ongoing manner to make comparisons, look for improvements, and identify factors that facilitated those improvements. There is a potential role for CME providers to structure assessment exercises that would allow physicians to evaluate changes and identify factors that supported these improvements. CME providers often follow up with physicians after they participate in a CME activity, and these follow-up exercises potentially can provide an evaluation component as well as become a part of a feedback loop. CME providers can report back to the physician-learners a count of the changes made, the types of changes made, and the facilitating conditions for these changes. These steps could serve as educational supports to physicians looking to monitor and improve their performance.

Follow-up exercises not only help to facilitate overall physician learning and change, but also support individual physicians' improvement processes. Providers of CME and physician-learners have already embraced other tools and formats of education that are tailored to individual physician-learners. For

example, performance improvement CME and performance improvement initiatives within various types of CME activities are designed, by their nature, to be based on individual physicians' performance. MOC activities, which often include CME, are based on individual physicians' performance and improvement. This type of individualized approach to CME will increase in the future and can be facilitated with additional uses of technology in CME.

The Impact of Technology

Technology has long influenced CME. Some changes have been unheralded, such as the replacement of acetate slides with computer slideshow presentations. Other technology, such as an audience response system, allows faculty and learners to find out information about the audience, guides the presentation, and offers spontaneous assessment of the audience's educational needs. Activities incorporating these two technologies may be very different from didactic activities of 15 years ago.

For several years, CME providers and physicians embraced additional technologies to deliver content, from the use of CD-ROMs and computers to more recently using personal digital assistants or computers to access the Internet for podcasts (*ie*, digital media files) and other types of media. These newer types of technologies offer flexibility to CME providers to support physicians' "just in time" learning. These types of encounters often relate directly to a question in a physician's practice, which is a desirable component of CME for licensure and MOC. As more physicians use personal digital assistants to help their prescribing decisions or the Internet to access databases at the point of care to assist them in the diagnoses or management of a particular patient, CME providers will need to ensure that they are assessing the learning and change that result from these CME encounters. In turn, accrediting bodies will need to make sure that providers and physicians are recognized for the impact of these interventions.

The use of electronic health records and computerized physician order entry systems will become more common and may lead to a standardized format for medical records. Both of these technologies will make it possible for physicians to obtain objective data about all their clinical encounters and prescribing patterns and, therefore, their performance gaps. CME providers should stand ready to facilitate learning and change with the physicians who have access to their own practice data and patient health data, and hospital CME departments should have an interface with the electronic health records and computerized physician order entry systems in their institutions so that CME can be linked to reminders or quality improvement initiatives based on reviews of data generated from these sources.

As CME providers deliver their products and services to newly graduating physicians who may use technologies in different ways than their older counterparts, it will be important for CME providers to assess not only the content of learning, but also the needs related to format and methodology. This type of planning only will be possible if additional knowledge is gathered through a research agenda that guides the CME community in the appropriate use of different technology options. For example, providers will benefit from knowing whether an interactive DVD is as effective as simulation in addressing a particular gap in knowledge, skill, attitude, or behavior. This information will help to ensure that formats and methods used in CME continue to evolve to serve the physicians in every target audience.

Implications for CME Providers

Over the years, CME providers have heard expectations from many stakeholders in the healthcare system. CME has evolved to meet the needs of licensure and certification, has integrated technologies, incorporated new needs assessments, and delivered content through new formats to meet the needs of its physician-learners. Providers of CME will continue to respond to the expectations of the environment to ensure that CME can support physicians' learning and improvement initiatives.

Released in September 2006, the ACCME's Updated Accreditation Criteria[12] rewards providers for working in ways that can help CME to meet expectations, including collaborating with stakeholders in CME, integrating CME into quality improvement processes, working to address or remove barriers to performance change, and using noneducational strategies to enhance change as an adjunct to CME activities. Providers that integrate such practices into their CME programs not only will be rewarded by high levels of accreditation from the ACCME, but also will design and implement the kind of CME that its stakeholders need.

At the same time, CME professionals need to talk about their own needs to address the goals for an effective healthcare system. CME needs fall into the following four broad categories: CME as a value center, resources in support of CME, research to advance the field, and leadership to guide the profession. CME should be viewed as a value center for an organization, not a cost center. The value of CME

needs to be embraced as an adjunct to quality and safety through its ability to help physicians learn and change. As a value center, CME would receive credit for the indirect benefits it brings to organizations and individuals. These indirect benefits may include financial and nonfinancial gains. In other words, CME should be seen as a strategic asset that helps to accomplish several strategic goals of an organization. These goals might include meeting requirements from regulatory bodies like the Joint Commission on Accreditation of Healthcare Organizations and payers that demand physicians to engage in ongoing education. CME programs not only can facilitate the development of activities that include topics like practice management, quality of care, error reduction, diversity training, communication, and personal and faculty development, but also can help to document compliance with these programs, a required goal of many organizations.

Resources and support are critical for CME to be a strategic asset for an organization. The need for staff with skills and abilities matched to CME in this century also has become critical. CME programs need staff with skills in education, evaluation, and the use of technology. The staff must understand the complexities of planning in today's regulatory environment, while appreciating how one or more activities help physicians to change competence or performance. CME staff must be aware of the role of needs assessment when designing and evaluating a CME activity that aims to improve patient outcomes. When staff lacks these skills, faculty training and learning opportunities must be provided and supported. CME providers must appreciate the complexity of helping physicians to identify gaps in knowledge, performance, and care; develop measurable and achievable objectives; choose appropriate educational designs; and select evaluation methods. From this perspective, CME staff members become learning and change facilitators, and support in this role is crucial for CME to continue to evolve.

In addition, support from and for physicians involved in CME is imperative. Participation in CME as a learner often requires a physician to take leave from the practice, and involvement as a planner of CME requires even more time. Physician involvement in the planning and teaching that occurs with CME is critical, and greater support for physicians who participate in the education of other physicians is needed.

Clinical content experts often cite that good clinical teachers are, by definition, "excellent teachers" because they know their subject matter.[13] In reality, most content experts have no formal training in educational theory or methods. When clinical content knowledge and general teaching methodologies are used together, a new form of teaching and learning results that commonly is defined as a "pedagogical content knowledge."[14–16] The challenge for CME providers is that the literature[17–22] only shows a few observational studies that describe teaching in clinical settings, with little attention focusing on the knowledge required for developing an ideal clinical teacher. CME providers need to help clinical content experts who have not been introduced to common adult educational theories by providing them with resources to become a learning facilitator of their pedagogical content knowledge.

CME also needs its own research agenda. Many authors have identified the need to understand the processes of physician learning and change, and others identify some of the ways that CME research could be expanded.[23] An expanded CME research agenda will focus on technology, performance measures, and requirements set by regulatory agencies. The Agency for Healthcare Research and Quality Evidence Report[24] included a review of the role that external factors, including environmental conditions, by themselves or in combination with others reinforce the effects of CME. The report was unable to offer conclusions on the effects of external factors on the impact of CME because of the limited research on the topic. Thus, it is important for this research to include some of the emerging environmental factors that influence CME to ensure that the endeavor is consistent with the intent of CME as outlined in its definition. For example, the ACCME's Updated Accreditation Criteria[12] seek to support providers in planning and implementing CME aimed at changing physicians' competence, performance, or patient outcomes. CME providers can now designate credits for newer types of formats, such as performance improvement CME and Internet point of care, in accordance with requirements established by the American Medical Association[5] and the American Academy of Family Physicians.[2] All of these organizations' requirements are important to the daily work of CME providers and influence requirements for participants. The degree to which these new requirements affect CME planning and outcomes requires future research.

Another need for CME is leadership. Leadership in CME will help to ensure that CME meets expectations while providing programs and services. Today's leaders in CME need to embrace the uncertainty of the future.[25] "Leading from the future as it emerges," as coined by Scharmer,[25] involves being able to let go and let come, to recognize that it may be time for some practices to sunset, and to embrace the uncertainly of trying new things.

CME providers should test new approaches based on Scharmer's[25] precepts, and some already have. For example, the American College of Chest Physicians developed new taxonomy and learning categories to make explicit to physician-learners the format and methodology they can expect in its CME.[26] The communication of learning categories will help physicians served by the American College of Chest Physicians to better select activities that match their learning needs and styles.

Conclusions

The CME community must take action to create change and shape the future rather than to react to it. Individuals and organizations involved in CME must lead the effort to ensure that CME maintains its role as a strategic asset for quality and safety to help physicians "maintain, develop, or increase their knowledge, skills, and performance."[4,5]

The nature of the "knowledge, skills, professional performance and relationships physicians use to provide services for patients, the public, or the profession"[5,6] has and will continue to evolve over time. CME will face uncertainty as the future emerges and becomes the present. While uncertainty is always uncomfortable, "fears and risks can be balanced by feeling ourselves part of something important that is emerging that will truly make a difference."[24] Supporting CME as a strategic asset for quality and safety to help physicians and the public is something that *all* involved in CME can be a part of, something important, something that will make a difference.

Conflict of Interest Disclosures

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Dr. Galbraith has no conflicts of interest to disclose.

Dr. Dorman presently has no relevant financial conflicts to disclose. He previously served as a consultant to an incubator company, Electrocare, Inc., and once owned stock in Visicu, Inc., which has since been bought by Phillips.

Mr. Dellert is the Vice President of Education Resources for the American College of Chest Physicians. He has served as faculty for the ACCME, holds a committee position with Alliance for Continuing Medical Education, and is immediate past president of Illinois Alliance for Continuing Medical Education.

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