Continuing Medical Education, Maintenance of Certification, and Physician Reentry

Martin Luchtefeld, M.D.¹ Therese G. Kerwel, M.D.²

¹Department of Colorectal Surgery, Spectrum Health Medical Group/Ferguson Clinic, Grand Rapids, Michigan

²Department of Colorectal Surgery, Grand Rapids Medical Education Partners/Michigan State University, Grand Rapids, Michigan

Address for correspondence and reprint requests Martin Luchtefeld, M.D., Department of Colorectal Surgery, Spectrum Health Medical Group/Ferguson Clinic, 4100 Lake Dr. SE, Ste. 205, Grand Rapids, MI 49546 (e-mail: Martin.Luchtefeld@spectrum-health.org).

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Abstract

Keywords

- continuing medical education
- maintenance of certification
- physician reentry

Continuing medical education serves a central role in the licensure and certification for practicing physicians. This chapter explores the different modalities that constitute CME along with their effectiveness, including simulation and best education practices. The evolution to maintenance of certification and the requirements for both the American Board of Surgery and the American Board of Colon and Rectal Surgery are delineated. Further progress in the education of practicing surgeons is evidenced through the introduction of laparoscopic colectomy and the improvements made from the introduction of laparoscopic cholecystectomy. Finally, reentry of physicians into practice following a voluntary leave of absence, a new and challenging issue for surgeons, is also discussed.

Objectives: Upon completion of this article, the reader should be able to identify and further discuss the following: (1) different modalities of CME and best practices for CME; (2) concepts of maintenance of certification along with requirements for the ABS and ABCRS; (3) the major problems encountered with the introduction of laparoscopic cholecystectomy and how these were prevented with the introduction of laparoscopic colectomy; and (4) physician reentry into the workforce following a voluntary leave of absence.

Background

Medical knowledge continues to expand at an unprecedented rate, challenging practicing physicians to stay up-to-date on knowledge and skills. Surgeons have the additional challenge of learning new skills, a significant undertaking when one is no longer in a formal training program. Two issues need to be addressed when discussing continuing medical education: (1) maintaining knowledge and skills, and (2) acquiring new skills as technology advances and standards of care change. The concepts behind maintenance of certification provide a better structure than in the past for practicing physicians to build on as well as maintain their knowledge. However, in

contrast to residency and fellowship programs, the infrastructure for surgeons to acquire new operative skills is much more nebulous.

History of Continuing Medical Education

Continuing medical education (CME) dates back to 1934, when the American Board of Urology required this as a means to improve awareness of recent scientific advances.¹ CME today remains a major cornerstone for practicing physicians to document their commitment to ongoing knowledge acquisition.² Even though CME is a major venue of education for the practicing physician and one of the primary means of demonstrating competence, the effectiveness of CME to improve patient care or outcomes is not well understood.^{3,4} A major initiative to review the data for effectiveness was undertaken by The American College of Chest Physicians who obtained support from the Agency for Healthcare Research and Quality (AHRQ). The AHRQ awarded this funding to the Johns Hopkins Evidence-Based Practice Center (EPC) to do a systematic review and attempt to answer several key questions. The results were reported in 2009.

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CME Effectiveness on Practice Performance

The impact of CME on practice performance was studied in a review based on 105 studies. Some of the objectives assessed were prescribing, screening, and diet among others. The majority of studies reported positive outcomes; only slightly less than 30% did not. Nine studies reported mixed results.⁵ This review also addressed which media was most effective for CME. Single live media (live, face-to-face) compared favorably and single print media did not seem to be effective. Studies employing multiple techniques to convey messages were also assessed. Multiple techniques compared better than single techniques, although the evidence was not overwhelming. Finally, what most know by experience, is that single exposure to a CME activity is not as successful at accomplishing the objectives as multiple exposures.⁵

CME Effectiveness for Knowledge Application and Psychomotor Skills

Few studies assess CME and physician knowledge application. In the EPC review, only 15 studies evaluated either knowledge application or psychomotor skills training; overall quality of evidence was low.⁶ The studies on knowledge application focused on primary care physicians. Most studies (11 of 12) demonstrated effectiveness in improving knowledge application in the short term. As might be expected, multiple exposures and longer duration led to better results.⁶

Regarding psychomotor skills, only three studies are available. In all three, the methods studied all improved psychomotor skills. The limitations to the studies were the simplicity of the procedures (knee injection, flexible sigmoidoscopy, and ankle/knee exam).⁶ It is difficult to relate this evidence to learning new operative procedures.

CME: Simulation Research

Theoretically, simulation holds the most promise to maintain or acquire new surgical skills. Simulation is in widespread use in residency programs. However, its effectiveness has yet to be proven and endorsed for practicing physicians. The Agency for Healthcare Research and Quality (AHRQ) has summarized the results of nine literature reviews on simulation: The authors felt that simulation was an effective method of teaching, but the overall strength of the evidence was weak due to a small number of studies and limited quantitative data.^{7,8} Furthermore, eight of the nine reviews found the studies themselves to be weak.⁹ However, there is a significant “dose response” between time spent with the simulator and the measurements for achievement.⁸

One of the reviews cited by the AHRQ was the Best Evidence Medical Education (BEME) collaboration.⁸ This review evaluated all best educational practices in 670 journal articles. The conclusions were “the weight of the best available evidence suggests that high-fidelity medical simulations facilitate learning under the right conditions.”⁸ The conditions that facilitated learning are as follows⁹:

1. Feedback is provided during learning experiences.
2. Learners engage in repetitive practice.

3. Simulation is integrated into an overall curriculum.
4. Learners practice tasks with increasing levels of difficulty.
5. Simulation is adaptable to multiple learning strategies.
6. Clinical variation is built into simulation experiences.
7. Simulation events occur in a controlled environment.
8. Individualized learning is an option.
9. Outcomes or benchmarks are clearly defined or measured.
10. The simulation is a valid representation of clinical practice.

CME: Best Educational Practices

A new concept to emerge is that of best education practices, which has been defined to have the following three elements: mastery learning, deliberate practice, and recognition that cultural barriers in the medical profession inhibit these practices.⁹ High-quality CME should incorporate these principles.

Mastery Learning

Mastery learning focuses on breaking down knowledge or skills into measurable units and pursuing learning of each unit until it is mastered with subsequent progression to the next unit. The purpose of mastery learning is to ensure that the final objectives are met by all learners with little to no variation in outcome. Not all learners will reach this at the same time.⁹ Mastery learning has been identified as having seven features⁹:

1. Baseline or diagnostic testing
2. Clear learning objectives, sequenced as units in increasing difficulty
3. Engagement in educational activities
4. Minimum passing standard for each educational unit
5. Testing to establish unit completion at a minimum passing standard
6. Advancement to the next educational unit
7. Continued practice or study on a unit until mastery is reached

Deliberate Practice

Deliberate practice refers to constant improvement of a skill or knowledge and is associated with the mastery learning model.⁹ There are nine components to deliberate practice⁹:

1. Highly motivated learners with good concentration
2. Engagement with a well-defined learning objective or task
3. Appropriate level of difficulty
4. Focused, repetitive practice
5. Rigorous, precise measurements
6. Informative feedback from educational sources (e.g., simulators or teachers)
7. Monitoring, correction of errors, and more deliberate practice
8. Evaluation to reach a mastery standard
9. Advancement to another task or unit

Deliberate practice is very demanding, but is well-grounded in the theories of skill acquisition and maintenance.

Cultural Barriers

There are several barriers to the implementation of best educational practices and the current system of CME is well established. Inertia within the medical field is thought to be one of the biggest barriers to implementing best educational practices.⁹ The practicing physician has traditionally had very little in the way of outside motivators to require the use of more demanding, ongoing education.⁹ But with the changes in health care delivery, including tracking outcomes and participation in databases, external motivators will likely be imposed through reporting and accountability. Also, seeing one's outcomes summarized together can provide a powerful internal motivation to improve or maintain a mastery level if that has been achieved.

Much of education in the past has been patient-centered, so the notion of mastery learning and deliberate practice is a relatively foreign idea. However, concepts of mastery learning and deliberate practice can be applied to the patient-centered approach. Examples are a surgeon struggles repeatedly to identify the root of the inferior mesenteric artery (IMA) during laparoscopic sigmoidectomy. Improvement can be brought about by discussing and observing colleagues perform this step, reviewing written materials, viewing films of the surgery, and then focusing on improving this specific step consistently and consequently for the next 5+ cases until mastery level is achieved. Then the surgeon can turn his or her attention to focusing on the next step for which mastery skill has not yet been achieved. The same can also be applied to patient care by finding a specific aspect to improve and pursuing this (example: consistently and consequently addressing if a patient with colorectal cancer needs to be screened for microsatellite instability, once this habit is well engrained then move on to the next issue).

Maintenance of Certification and the American Board of Surgery

The American Board of Surgery, one of the 24-members of the American Board of Medical Specialties, adopted maintenance of certification (MOC) in 2005. MOC represents a fundamental change in how surgeons maintain board certification. In its infancy, board certification meant a diplomat passed a secure examination following completion of residency and was able to maintain the designation "board certified" lifelong. The next major changes were the requirement to document CME activities and to retake a written exam at 10-year intervals. Today, board certification has evolved beyond the training requirements and initial examinations to encompass *maintenance* of certification. Maintenance of certification is a process that documents continuous professional development and communicates a surgeon has a certain level of training and maintains a certain level of knowledge and skill, which is determined by the surgical community.¹⁰ MOC also developed partly in response to public concern regarding quality of health care, so it fulfills the role of assuring patients that a surgeon certified through the ABS provides safe and effective treatment.¹⁰ MOC has common elements for all member boards, but individual boards can individualize certain parts.

For instance, general surgery requires reporting of CME to the board every 3 years, whereas the American Board of Colon and Rectal Surgery requires this reporting every 5 years. Both boards require a written secure exam every 10 years. The purpose behind MOC is to ensure that board certification remains a recognized, surgeon-defined, standard of excellence.¹⁰ The cornerstones of MOC through the ABS are

Part I: Professional standing—Evidenced by maintaining a full and unrestricted license, providing hospital admitting and operating privileges and references from the chief of surgery and chair of credentialing.

Part II: Life-long learning and self-assessment—Consists of CME and has been revised recently so that 90 (instead of 150) hours of category I CME over a 3-year cycle are required, of which 60 hours must be self-assessment with a posttest.

Part III: Cognitive expertise—Passing a secure examination in the specialty at 10-year intervals. Application for the exam requires submitting a 12-month operative log, letters of recommendation, and evidence of CME.

Part IV: Evaluation of performance in practice—Documented through participation in outcomes database or quality-assessment programs.

Maintenance of Certification and the American Board of Colon and Rectal Surgery

The American Board of Colon and Rectal Surgery, also a member of the ABMS, put into effect a MOC program in January 2011 for those certifying or recertifying in colorectal surgery. This program was also developed in response to public concerns regarding the quality of health care.¹¹ For colorectal surgeons fulfilling the MOC requirements for the ABS, reciprocity is granted and only two additional requirements are necessary: completion of a self-assessment program (Colon and Rectal Surgery Educational Program [CARSEP]) sponsored by the American Society of Colon and Rectal Surgeons and successful completion of an examination given by the ABCRS every 10 years.¹¹ For those diplomats not participating in the American Board of Surgery MOC, the ABCRS is developing their own MOC process, which closely resembles that put forth by the ABS. The only significant differences at the time of writing are the ABCRS requires reporting every 5 years (instead of every 3 for the ABS) and 150 hours of Category 1 CME, including CARSEP.

Acquiring New Skills: Lessons Learned from Laparoscopic Cholecystectomy and the Successful Implementation of Laparoscopic Colectomy

When laparoscopic cholecystectomy was first introduced, there was a strong public demand for the procedure and a rush from surgeons to offer this. Those who did not offer the procedure found that referrals diminished. With no system in place to provide surgeons with a significantly different set of skills, there was a major spike in common bile duct injuries. A surgeon could participate in CME and courses, but these were variable in their quality of education. These courses certified

attendance, but did not address competence. Like surgeons, hospitals were also under economic pressure and credentialing standards were not stringent. Frequently, surgeons would participate in a course and schedule cases for the following week.¹² From this experience, the concept of the “learning curve” emerged. The learning curve, or period of time/number of cases one needs to become competent, is defined as the first 50 cases for laparoscopic cholecystectomy. This is based on reports that 90% of bile duct injuries occur in the first 30 cases.¹³ The calculated risk for bile duct injury is 1.7% in the first 30 cases, and just 0.17% after 50 cases.¹³

With the advent of laparoscopic colectomy, the American Society of Colon and Rectal Surgeons, together with the ACS and SAGES, approved a registry to track early experience of the new procedure.¹⁴ This put them in a position to identify possible problems at the earliest possible point in time. The ASCRS also issued a position paper stating colorectal cancer should be treated laparoscopically *only* if the surgeon participates in a trial or registry that allows for evaluation of results.¹⁵ Furthermore, the society endorses curative laparoscopic colectomy for cancer only after a surgeon has completed 20 laparoscopic colon surgeries with anastomosis for benign or metastatic disease.¹⁶ These statements should convey to the public as well as to surgeons that it is not in their best interest to make widespread demands for the latest in technology or offer procedures before competence has been established.

Since the introduction of laparoscopic cholecystectomy, surgeons have combined with industry to provide better training for the initiation and application of new technology. This has been successful as we have seen the adoption of many procedures such as Nissen fundoplication and bariatric surgery without the spike in complications seen with laparoscopic cholecystectomy. This represents major improvement; however, a clearly defined system to teach practicing surgeons new procedures has not been developed. MOC begins to address one’s technical abilities by requiring references from the chair of surgery and the hospitals’ board for granting operating privileges, but the issue is just indirectly addressed. This is an area for further discussion and development, preferably from the ABS or ABCRS.

Emerging Topic: Surgeon Reentry into the Workforce after an Extended Leave of Absence

Physician reentry is defined as return to clinical practice for which one has been trained, certified, or licensed after an extended leave of absence not resulting from discipline or impairment. As of 2008, ~14,000 physicians under the age of 65 in the United States were identified as inactive from the physician masterfile of the American Medical Association. An unknown proportion of these physicians take a voluntary leave from clinical practice with the intent to return at some point in the future. This is becoming increasingly common. The American Board of Surgery (ABS) is just beginning to address the issue of reintegrating surgeons after a voluntary leave of absence, so no guidelines or recommendations have

been formally established. However, Dr. Jo Buyske, associate executive director of the ABS, maintains a registry of surgeons who have reentered. This registry tells us that reentry affects as many men as women and often the reasons for the leave revolve around events such as major illness in the physician, pursuing additional education, or business opportunities. Among female surgeons, leaving to take care of small children was not a major reason. This differs from generalizations about female *physicians* taking a leave of absence.¹⁷

With the lack of experience and guidelines from the ABS, we must look to other organizations to gather some insight into reentry. The stakes for reentering physicians and their patients are quite high when considering the challenges to ensure that cognitive knowledge and technical skills are in place following an extended leave of absence, often without clinical activity. Society also puts a tremendous investment in the production of physicians, and it is in their interest to reintegrate physicians who want to return. Physicians reentering the workforce can help to fulfill need without the expense of training new physicians. Experience with previous physicians who have reentered, tells us the majority do not undertake any retraining prior to reentry.¹⁸ This puts the responsibility of competence on the physicians who reenter as well as the regulatory bodies responsible for licensure, credentialing, and certification.

Who Takes Leave?

Traditionally, this field was thought to be primarily of interest to women physicians who leave the workforce for child-rearing. However, a survey from Jewitt et al in 2011 showed that women make-up only 50% of inactive physicians (under 65 and not retired) as well as those who took an extended leave of absence, but reentered. This issue cuts not only across gender but also specialty, with approximately half of the respondents in the survey licensed in primary care and the other half in subspecialties. Top reasons for the leave of absence cited by current inactive physicians and those who have reentered are¹⁷

1. Personal health issues, 35%
2. “Hassle factor” (e.g., paperwork, compliance issues), 26%
3. Need to care for young children, 22%

How Many Physicians Will Take a Voluntary Leave of Absence during Their Career?

For surgeons, no numbers are available. Among pediatricians, the American Academy of Pediatrics (AAP) reports 17% were either inactive or had taken a leave of absence from clinical activity for 12+ months.¹⁹ Translating this to surgeons is difficult as more women in pediatrics may mean more take leave for child-rearing, but more men in surgery may mean that there are higher rates of leave from personal illness or professional dissatisfaction, top reasons cited by men in the survey of inactive and reentered physicians.¹⁷ Another study has suggested that as many as 10,000 physicians could reenter practice each year.²⁰

Recommendations for Physicians Planning a Leave and Eventual Reentry

The American Academy of Pediatricians recognized a demand to address reentry issues and formalized their efforts under The Physician Reentry into the Workforce Project in 2005. They developed an inventory packet for physicians considering or taking leave with an eventual return. They emphasize the most essential component is advanced planning. General guidelines and advice are as follows²¹:

1. Address the reasons for leaving the workforce, become informed regarding the financial impact of loss of income and benefits, address the impact on the practice or organization, and address the regulatory issues such as licensure and board certification
2. Determine level of clinical practice: Many barriers to reentry do not exist if some level of clinical activity is maintained.
3. To facilitate return:
 - a. Of paramount interest is to maintain active licensure and certification when possible
 - i. 92% of medical boards do not require a physician to engage in a minimal amount of patient care for relicensure²⁰
 - b. Leave in good standing and maintain contacts/networking skills
 - c. Maintain and update knowledge through CME and conferences (with documentation)
 - d. For those not working, maintain some activity through volunteering, teaching, or shadowing (and document this)
4. Returning
 - a. Consider a graduated return
 - b. Seek out practice settings where you can interact with other colleagues
 - c. The following need to be in place to practice: board certification, licenses, medical liability insurance, DEA registration, credentialing, certification in basic and advanced life support, applications for insurance provider panels, and partnership agreements/contract
 - i. Check with the state medical board as 50% have a policy on reentry and require a reentry program²⁰
 - ii. Check with certification board; most do not have a formal policy

For further details of the inventory, go to Physician Reentry Workforce Inventory at http://www.physicianreentry.org/projects_activities/maintenance_of_practice_project.

Recommendations for Employers Working with Leaving and Reentering Physicians

The counterpart to the inventory for physicians taking leave or reentering the workforce is a brief manual sponsored by the AAP for employers titled "Physician Reentry: What Employers Need to Know." The document emphasizes that reentry is a different issue than planning for a new hire or

retirement and encourages discussing the following issues²²:

1. Before the physician leaves:
 - a. Effect the physician's absence will have on the practice?
 - b. Who will take over the physician's patients?
 - c. Financial issues revolving around partnerships, malpractice coverage, anticipated costs if return to the practice is planned?
2. Prospective planning: Final decisions rest with the employer
 - a. Will the physician be returning and is this time frame certain? Can the employer hold a position indefinitely considering the changing conditions?
3. Create a reentry plan if return to the practice is expected
 - a. Delineate responsibilities of the exiting physician (regarding CME, licensure, certification).
 - b. Is a formal reentry program required from the medical board? (Fifty percent of medical boards require this.) If not, the employer may mirror the policies used by hospitals for recredentialing and privileging.
 - c. Tailor the plan to meet the needs of the involved parties.
 - d. Revisit the plan if leave will be more than a year.
4. Formalize the agreement or terms between the departing physician and the employer.

For further details see "Physician Reentry: What Employers Need to Know" at <http://www.physicianreentry.org>.

Other Resources

Listed below are reentry programs; some are sponsored by academic institutions, others are independent. This list has been adapted from the AMA's website addressing reentry.²³

- The Center for Personalized Education for Physicians (CPEP) Clinical Practice Re-entry Program (Denver, CO)
- The Cedars-Sinai Medical Center Physician Re-entry Program (Los Angeles, CA)
- Drexel Medicine Physician Refresher/Re-Entry Course (Philadelphia, PA)
- Oregon Health & Science University Physician Re-entry Program (Portland, OR)
- University of California San Diego School of Medicine Physician Assessment and Clinical Education Program (PACE) (San Diego, CA)
- University of Wisconsin School of Medicine and Public Health Wisconsin Physician Assessment Center (Madison, WI)
- Upstate New York Clinical Competency Center at Albany Medical College (Albany, NY)
- Texas A & M Health Science Center KSTAR Program (Fort Worth, TX)

The Future of CME

In an effort to address deficiencies of the current system, the American College of Surgeons has developed the Accredited

Education Institutes, a network of education and simulation providers. The goal is to “focus on competencies and to specifically address the teaching, learning, and assessment of technical skills using state-of-the-art educational methods and cutting-edge technology.” There are also plans to do education research as well to better understand the science of acquisition and maintenance of surgical competence.²⁴

Mini-fellowships have also arisen to facilitate learning new skills or techniques. Sponsors are industry, academic institutions, or frequently both partner together. Participation ranges from 3 days to 3 months. The experience almost always involves a combination of learning techniques including didactics, simulation, cadaver laboratories, and video sessions; some also include participation in surgery. These educational activities appear to mirror formal training and are likely to be effective.

In the future, CME may also include the three following elements: assessment of learner needs, program design to meet those needs, and outcome assessment.²⁵ Colon and rectal surgeons have several learner needs, including acquisition of new skills, technology, and procedures. Performance measures can drive the identification of areas needing assessment or improvement. Stakeholders in performance measures are American Medical Association's Physician Consortium for Performance Improvement, the National Committee for Quality Assurance, the Agency for Healthcare Research and Quality, the National Quality Forum, and Centers for Medicare and Medicaid Services. Performance measures are usually derived from evidence-based clinical guidelines. CME providers should be aware of the participants' baseline knowledge of the science behind these guidelines. In an ideal CME program, the practitioner would have learning opportunities based on their own practice performance. This would allow the physician to compare their own data to established benchmarks and guidelines. Ultimately, this could lead to improvement in quality and safety in the physician's practice.

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