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Competency-based continuing professional development

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Abstract

Competence is traditionally viewed as the attainment of a static set of attributes rather than a dynamic process in which physicians continuously use their practice experiences to "progress in competence" toward the attainment of expertise. A competency-based continuing professional development (CPD) model is premised on a set of learning competencies that include the ability to (a) use practice information to identify learning priorities and to develop and monitor CPD plans; (b) access information sources for innovations in development and new evidence that may potentially be integrated into practice; (c) establish a personal knowledge management system to store and retrieve evidence and to select and manage learning projects; (d) construct questions, search for evidence, and record and track conclusions for practice; and (e) use tools and processes to measure competence and performance and develop action plans to enhance practice. Competency-based CPD emphasizes self-directed learning processes and promotes the role of assessment as a professional expectation and obligation.

Various approaches to defining general competencies for practice require the creation of specific performance metrics to be meaningful and relevant to the lifelong learning strategies of physicians. This paper describes the assumptions, advantages, and challenges of establishing a CPD system focused on competencies that improve physician performance and the quality and safety of patient care. Implications for competency-based CPD are discussed from an individual and organizational perspective, and a model to bridge the transition from residency to practice is explored.

Introduction

In an era of increasing demands for greater physician accountability, improved patient safety, and better quality of care, the introduction of strategies to enhance physician competence and produce measurable outcomes is reasonable and desirable. The goal of continuing professional development (CPD) is to ensure that physicians possess the required knowledge, skills, attitudes, and abilities to maintain and enhance competence and improve performance within their professional roles. However, studies of the effectiveness of formal CPD in enhancing competence and performance suggest that a substantial gap persists between the evidence available to inform practice and its translation into improved quality of care (Gabana et al. 1999; McGlynn et al. 2003; Choudhry et al. 2005).

Physicians are motivated to engage in CPD activities by a desire to deliver high-quality care to their patients (Ryan & Deci 2000) and by their commitment to lifelong learning as members of a self-regulated profession. However, as participation in CPD is increasingly mandated by regulatory authorities as a requirement of licensure, there is a growing need to ensure that physicians’ competence and performance are maintained in accordance with professional standards (Federation of Medical Regulatory Authorities of Canada 2008).

Practice points

Competency-based CPD is:

- a dynamic process that enables physicians to "progress in competence" toward the attainment of expertise within a defined practice context
- enabled by a set of learning competencies that physicians use to reflect on and learn from their practice experiences
- founded on clear, effective and measurable competencies for practice and on the integration of assessment and educational strategies that guide the planning of lifelong learning activities
- helpful in addressing the limitations of current approaches to CPD by virtue of its orientation around competencies that enhance performance, improve quality of care, and increase patient safety

In this theme issue, competence is defined as "the array of abilities across multiple domains or aspects of physician performance in a certain context" (Frank et al. 2010). This definition implies that competence is both conditional on and constrained by each physician’s practice context, is dynamic, and continually changes over time. The prevailing premise in
medical education has been that the competence required to practise independently is established upon the successful completion of a postgraduate education program. Success is judged on the basis of the achievement of established learning objectives, specialty requirements, and/or the completion of a certification examination. By this model, competence is a static set of attributes defined by the profession that serves as the basis for licensure. Residents are thus “launched” into practice with the assumption that the capabilities they demonstrate on entry into practice will remain at or above acceptable levels of performance until they retire (Klass 2007).

A competency-based model of CPD does not view competence as a static state. It begins with the premise that residents enter practice with a set of learning competencies that enable them not only to practise independently but also to sustain and expand their capabilities and to acquire new knowledge and skills over time. Applied to the problems presented within each physician’s defined “scope of practice,” these learning competencies serve as the basis for “progressing in competence” toward expertise (Dreyfus & Dreyfus 1986).

This paper explores the intricate challenges and implications of developing a competency-based CPD model by addressing three questions:

1. What learning competencies must be acquired by all residents before they enter practice?
2. How will the competencies for practice be defined?
3. What are the advantages of pursuing competency-based CPD?

### What learning competencies must be acquired before entry into practice?

Some authors have suggested that, to be effective lifelong learners, graduating residents must enter practice with a defined set of learning competencies (Ellaway et al. 2007; Parboosingh et al. 2008) that will enable them to critically assess and revise their practice through a process of reflection that allows them “make sense of complex situations” and “learn from experience” (Mann et al. 2007). These learning competencies can be described under the five domains summarized in Table 1 and explored in detail in the following sections.

#### Knowing one’s practice

The first learning competency is the ability to create and use a profile of the problems and issues typical of one’s own practice, thus facilitating the development of a practice-specific learning strategy (Galbraith et al. 2008). This competence enhances the ability of physicians to engage in learning activities relevant to their day-to-day work. For most physicians, the number and type of clinical problems they assess, diagnose, and manage will dominate their lifelong learning strategies. However, learning can be linked to other dimensions of professional life, such as teaching, research, and administration, addressing areas such as medical ethics, risk management, patient safety, office management, and health advocacy.

Creating an accurate practice profile entails reviewing and integrating information from a variety of sources, such as electronic health records, patient registries, and claims data. Practice profiles provide a basis for the selection of appropriate learning activities (e.g., to address gaps in knowledge, create measurable learning objectives, and achieve relevant outcomes measures. Because physicians’ practices evolve through the course of their careers, practice profiles will need to be continuously reviewed and updated.

#### Scanning the environment

The second learning competency is the ability to systematically and effectively scan one’s environment for new and relevant ideas. Effective scanning enables the physician to identify innovations at the development stage, new evidence that has been reviewed and approved by the profession (e.g., practice guidelines), and old practices that should be discontinued because they have been found to be ineffective or potentially harmful.

As members of a knowledge-intensive profession, physicians are expected to absorb and respond to an enormous volume of information scattered among thousands of journals, textbooks, monographs, reports, and guidelines (McKibbon et al. 2004; Haynes et al. 2006; Coppus et al. 2007). A systematic approach to scanning enables physicians to “filter information based on relevance and validity,” thus ensuring that they are reviewing the most clinically useful information (Davidoff & Florance 2000). Physicians can take advantage of electronic knowledge dissemination services that “push” summaries of relevant or critically appraised literature, drug alerts, or practice guidelines. More informal scanning...
techniques might include reminder systems within electronic health records, attending rounds or conferences, or sharing ideas with peers, colleagues or other health professionals who have similar or shared practices.

Managing learning in practice

The third learning competency is the ability to establish electronic or other personal knowledge management systems as a foundation for determining what information sources to access, what to read in depth, what to scan, and why. For example, RSS feeds (information streams from the Internet tailored to the recipient’s interests or needs) can be set up to deliver the latest information relevant to one’s practice profile, and online bibliographic databases can categorize and store records for easy retrieval. A learning portfolio can be created to select and manage projects to support continuous practice improvement, and online discussion forums can support the exchange of new information and ideas for enhancing practice. Although these strategies imply a significant amount of work, especially in view of the rapid expansion of medical knowledge, physicians must have the competence to adapt to change and continuously improve their performance in lifelong learning (Shaughnessy & Lawson 1999). Physicians require training to set up these personalized learning “portals” (Plsek & Greenhalgh 2001; Ho et al. 2004).

Raising and answering questions

The fourth learning competency is the ability to formulate good questions and translate them into learning opportunities. Asking questions is a frequent and natural activity of physicians (Barrie & Ward 1997). Some questions reflect an immediate need to resolve uncertainty or solve a problem. In the care of an individual patient, for example, questions frequently arise that stimulate an immediate search for evidence on which to base a clinical decision. Other questions are not time-sensitive and are generated to gain greater conceptual understanding or to satisfy intellectual curiosity. Questions can be stimulated by a spectrum of activities and can identify learning needs across multiple competencies (e.g., attending rounds, reading the literature, teaching, or reviewing performance data).

Since physicians typically learn best when learning is contextual, addresses their defined needs, and is directly relevant to their work (Govell et al. 1985; Embell 1999), the ability to pose and answer a well-formulated question is a central learning competency. Unfortunately, many questions raised in practice go unanswered because of a lack of resources at the point of care, insufficient time to search for evidence, and the difficulty of formulating answerable questions (Covell et al. 1985; Barrie & Ward 1997). The use of question formulation tools such as PICO (Population, Intervention, Comparator, and Outcome) may assist in defining search strategies and analyzing evidence in clinical areas (Armstrong 1999; Huang et al. 2006). Strategies to record, track, and resolve (make sense of) questions can facilitate the appraisal and translation of new knowledge into practice.

Practice assessment and enhancement

The fifth learning competency is the ability to use processes and tools to continuously assess and measure the impact of learning on knowledge, skills, and performance in practice. Assessment provides important opportunities for practitioners to assess how they are doing and how current their knowledge is, whether as individuals or as a team. Potential strategies for knowledge assessment include multiple-choice or short-answer questions, simulation (using standardized patients, high-fidelity mannequins, and computer-based simulation), direct observation, and audit and feedback. Processes that provide meaningful data and feedback to identify gaps (with or without comparative data from other physicians with similar practices) can bring unperceived needs to light. CPD plans derived from such assessment strategies can contribute to the achievement of measurable outcomes.

Although physicians’ use of personal practice outcomes data to improve competence and performance remains infrequent (Audet et al. 2008), their ability to independently detect strengths and weaknesses in areas of knowledge, skills, attitudes, or performance as these apply to clinical practice is often inaccurate (Davis et al. 2006). Comparisons of physicians’ self-rated assessments with external observations demonstrate little, no, or an inverse relationship (Eva & Regehr 2008). Physicians with the lowest accuracy in self-assessment have been shown to be the least skilled and most confident (Kruger & Dunning 1999). These studies provide evidence of the need to develop new initiatives and formats to assist the self-assessment process and to more accurately assess broader domains of competence such as lifelong learning (Davis et al. 2006).

To address gaps in knowledge, skills, or performance, physicians must have the opportunity and ability to engage in or plan assessments of their own practice, to measure their performance against specific standards of care, and to translate the findings into actionable plans. Unfortunately, no assessment option is uniformly effective, and the mean improvement in performance with existing approaches has been found to be modest – typically, from 5% to 10% (Jamtvedt et al. 2006).

How will the competencies for practice be defined?

In postgraduate medical education, the specific competencies to be learned and assessed are defined by the training program in accordance with external standards applicable to each discipline. When residents make the transition to independent practice, their training serves as the basis on which they assume responsibility for their actions and decisions as independent and autonomous physicians. They must rely, more than during their formal training, on self-directed learning processes through which they assume greater control over the issues or problems they pursue and how they will evaluate and learn from the outcomes (Candy 1991). In addition, the content they encounter will continually shift as a result of changing referral patterns, emerging research evidence, and personal interests. Given all of these factors,
the establishment and maintenance of professional competencies is clearly a complex endeavour.

Currently, medical regulatory authorities use a variety of strategies to determine whether practising physicians meet minimum standards of performance within a given context. This process is invariably focused on detecting physicians who have become incompetent, rather than on promoting the progression from competence toward excellence. From a regulatory perspective, if physicians are considered to be self-sufficient professionals, and their competence is viewed as a personal set of attributes or abilities, then someone must be held accountable when errors occur (Klass 2007). However, a regulatory approach to defining competence undermines the role of assessment as a professional expectation by generating apprehension about the consequences of the discovery of any area of incompetence.

Equally, the public’s view of competence is not based exclusively on a set of credentials or attributes. The public are primarily concerned with whether physicians possess the requisite knowledge and skills to solve patients’ problems, have a history of good outcomes, and are able to practise effectively within the health system (Klass 2007).

Within the last decade, several alternative approaches to defining the competencies required for practice have been developed and applied. In the United Kingdom, the General Medical Council’s Good Medical Practice document defines a set of general and discipline-specific competences expected by physicians and serves as a model or framework for the development of curricula and assessment strategies across all phases of medical education (General Medical Council 2010). In Canada, the CanMEDS framework describes a set of general competencies that serve as the basis for the development of educational and assessment strategies for residents (Bandiera et al. 2006). These competencies are being promoted as the basis on which CPD activities can be developed and evaluated for practice. However, the domains of competence set out in the CanMEDS framework have been criticized on the grounds that they are too broad and lack clear benchmarks (Del Bigio 2007). In the United States, the Outcome Project steered by the Accreditation Council for Graduate Medical Education in collaboration with the American Board of Medical Specialties has made it possible for assessment in medical schools and graduate training programs to be explicitly competency based (Green et al. 2009). Increasingly, these general competency frameworks are being applied within maintenance-of-certification programs in the United States (Hammond et al. 2005; Miller 2005; Green et al. 2009) and within revalidation and recertification strategies in Canada and the United Kingdom (Federation of Medical Regulatory Authorities of Canada 2008; Academy of Medical Royal Colleges n.d.).

Defining clear, effective, and measurable competencies for practice will require the integration of educational and assessment strategies and tools relevant to specific practice contexts. Although general statements of competencies are helpful in defining the focus for continuing medical education, the profession — working in collaboration with regulatory authorities, educational institutes, and the public — will need to be diligent in defining meaningful metrics for competency-based CPD that ensure credibility, transparency, and accountability. The biggest challenge may be the development of a practical process for recording and monitoring practice competencies that is easy to use, effective as a guide to planning CPD activities, trusted and accepted by physicians and the public, and not subject to punitive review or oversight outside the profession.

What are the advantages of pursuing competency-based CPD over the current model?

Accreditation standards for CPD organizations or programs are based in large part on a set of educational criteria that begin with the assessment of some type of need. For most programs, these “needs” are defined by planning committees who reflect the intended target audience. This needs assessment informs the development of learning objectives and the selection of educational methods to address the needs identified. The assumption is that participation in the program will lead to learning that will, in turn, be translated into practice. The impact of formal CPD based on this program planning mode has been studied extensively. Several recent systematic reviews of the impact or effectiveness of group learning on defined outcomes have identified a moderately positive impact of group learning on knowledge but a small to negligible impact on clinical behaviours and patient outcomes (Mansouri & Lockyer 2007; Marinopoulos et al. 2007). Given the limitations of our current system of CPD, there are advantages to re-establishing a CPD system around the competencies that enhance performance, improve quality of care, and increase patient safety.

Competency-based CPD from an individual perspective

Competency-based CPD recognizes the importance of learning that is designed to achieve quantifiable improvements in practice. When residents enter practice equipped with competencies in self-directed learning, they are in a position to develop a CPD plan specific to their practice needs, to continuously improve their performance, and to measure the impact of their learning on their practice and the health system in which they work (Batalden & Davidoff 2007). Competence promotes engagement in learning that is based, in part, on authentic assessments of current knowledge, skills, and abilities. Competency-based CPD is not confined to lecture halls or small-group workshops. It can occur in many settings, such as through the person-to-person exchange of stories and tacit knowledge, in simulation centres, and in practice under the supervision of a mentor or coach. Ideally, learning opportunities should be tightly connected with practice, so that they enable individuals to rapidly apply and evaluate in a real-world setting what they have learned through courses or workshops. Equally, assessment in competency-based CPD is not restricted to knowledge, skills, or performance in clinical practice; rather, assessments can apply to multiple competency domains, such as communication skills, collaboration with other health professionals, and aspects of professionalism. Rather than simply documenting participation in learning activities “for
credit,” a competency-based approach to CPD would require physicians to develop learning activities to review or enhance specific competencies to achieve measurable outcomes.

Competency-based CPD from an organizational perspective

Competency-based CPD changes the approach to needs identification from one based on perception and opinion to one derived from performance metrics, health outcomes, and adverse events (among others). The planning process for a competency-based learning event starts with the “ends in mind” and works backward, rather than starting with what physicians perceive they want to learn about and hope that what is learned will be translated forward into practice (Moore et al. 2009). Competency-based CPD integrates the development of learning activities across a broad range of venues, ranging from conferences and rounds to assessments in a real, simulated, or virtual practice. Every learning activity must have several layers of complexity to simultaneously address the needs of different physicians at different stages of progress toward expertise. Competency-based CPD must place greater emphasis on individual learners, challenging the dominant role of traditional formats such as large-group conferences. Finally, competency-based CPD promotes the measurement of outcomes beyond the satisfaction of learners or the self-reporting of learning; rather, it attempts to measure higher levels of outcomes for practice (Moore 2003). CPD organizations are important contributors to the development of a framework of competencies that extends beyond postgraduate education and facilitates the ability of individual physicians to meet their learning goals.

An alternative approach to competency-based CPD

A competency-based approach to postgraduate medical education (PGME) has the potential to reduce the time required to acquire the knowledge, skills, and abilities necessary for entry into independent practice. One such example is the implementation of competency-based postgraduate education in the Orthopedic Surgery program at the University of Toronto, which seeks to disconnect competence attainment from a set time frame (Kramer et al. 2009). Although CBME does not necessarily lead to shorter training periods and earlier entry into practice, this project anticipates that some individuals will achieve competence sooner than others.

With this example in mind, if training time in PGME could be reduced by, for example, two years without compromising the attainment of a defined set of professional competencies necessary for independent practice, the training time “remaining” could be used in a different way to bridge the traditional boundaries between postgraduate education and CPD. Assuming that the competencies established for earlier entry into practice are likely to be at a more “generalist level,” a competency-based approach to CPD could use the time saved during PGME to facilitate the acquisition of more specialized knowledge and skill as practice needs and interests shift over time. For example, residents could choose to devote one day a week over a defined time frame to “return to school” for periods of intense study. Devoting time to teaching others would both enable the transmission of acquired knowledge and skills to the next generation of learners and model the learning processes by which residents can learn and improve their practice. Devoting time to teaching, along with refining, extending, and attaining new competencies beyond those acquired at initial certification, is a natural approach to CPD for professionals (ten Cate & Durning 2007). This commitment to teaching and learning may promote the continuous refinement and attainment of competencies within and even beyond the traditional boundaries of a specialty.

Conclusion

A competency-based approach to education helps to define basic learning competencies that resident physicians need to acquire before they enter independent practice, so that they have the skills to maintain and enhance their competence throughout their professional lives. The competencies of the life-long learner must also be made explicit and at all levels of training from entry into medical school through residency and into clinical practice. Although the task is challenging on many fronts, the development of a competency-based model for CPD, given its important implications for individual learners, CPD provider organizations, and the health care system as a whole, may provide the foundation for developing a new vision of CPD.

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