Chapter 19
Continuing Professional Development: Supporting the Complex Role of Today’s Physician

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ABSTRACT
Continuing professional development is a critical responsibility within the complex role of today’s physician. This chapter provides an overview of continuing professional development for physicians. The authors propose self-determination theory (SDT) as a foundational framework for discussing physician continuing professional development. They also address a variety of motivating factors for physicians being involved in continuing professional development. These factors include regulatory requirements, continued competence, career planning, and their own commitment to learn. Lastly, the authors include a discussion of various continuing professional development formats and the benefits of each, as well as challenges and barriers to effective continuing education.

INTRODUCTION
By this point in the book, readers will have already read descriptions of the joys and challenges of many years spent learning and training to finally begin their careers as practicing physicians. The formal medical education and training that physicians have participated in prior to the initiation of the practice phase of their career will generally have run anywhere between 7 and 15 years. Usually when one reaches such a monumental goal for which they have spent as many years preparing, he or she might see it as an end point, a finish line, or a destination. In the professional field of medicine, however, these accomplished individuals have achieved this feat, only to begin practicing. Merriam-Webster defines the term practice.
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as “To perform or work at repeatedly so as to become proficient” or “To train by repeated exercises” (Practice, 2019). Given the high stakes and constantly evolving nature of medicine, extensive continuing professional development is a necessary correlate to maintaining success throughout the duration of a physician’s medical practice.

BACKGROUND

The concept of continuing professional development (CPD) has been described by many throughout the literature and includes a variety of permutations (Academy of Royal Medical Colleges, 1999; Filipe, Silva, Stulting, 2014; World Health Organization, 2010). For the purpose of this chapter, we will use the definition provided by the World Federation for Medical Education (WFME). The WFME describes continuing professional development as the following,

all activities that doctors undertake, formally and informally, in order to maintain, update, develop and enhance their knowledge, skills, and attitudes in response to the needs of their patients. Engaging in CPD is a professional obligation but also a prerequisite for enhancing the quality of health care. The strongest motivating factor for continuous professional life-long learning is the will and desire to maintain professional quality.

Worldwide, continuing professional development has evolved from continuing medical education (CME) and differs in a number of ways (Table 1). Continuing professional development is an expectation of practice in many professional fields. However, in medicine, physicians are not expected to practice using only what they have learned throughout their previous formal education and training. Each is, instead, expected to continue to grow and develop in areas not only directly related to clinical care, but also as a researcher, a leader, a teacher, someone who looks out for their own well-being as closely as they do for that of their patients, as well as other areas that contribute to them being well-rounded physicians in the current age. In a field as complex and high stakes as medicine, this can be a challenging and daunting feat. While the more recent generations of physicians seem to be acquiescing to the diverse demands of practicing today, gone are the days of the physician with expertise only in patient care.

Terms related to CPD are often used interchangeably and institutions may have varying definitions for each (e.g. faculty development, professional development, lifelong learning, continuing education, career development, continuing medical education, etc.). More recently, these terms have been more carefully defined, compared, and contrasted, advocating for each to retain their own identity while emphasizing the shared components and opportunities for complementing one another (Silver & Leslie, 2017; Davis et al., 2017). Understanding these distinctions and the role of each is certainly important, however, it is clear that all emphasize the need for continued learning beyond formal medical education training programs. More specifically, the critical point behind the lifelong learning that all of these terms represent, is that one must develop and enhance competence and a personal career path relevant to the complex nature of practicing medicine, while promoting and contributing to quality healthcare. For the purposes of this chapter, the term continuing professional development (CPD) will be used to encompass this overriding concept.
LIFELONG LEARNING IN MEDICAL EDUCATION

Lifelong learning is expected to occur across the medical education continuum, from UME (undergraduate medical education) to GME (graduate medical education) to CME (continuing medical education). This book has provided an in-depth overview of UME and even GME, as it relates to the role of the educator. In those cases, the Liaison Committee on Medical Education (LCME), and the Accreditation Council for Graduate Medical Education (ACGME) provide guidance and regulations related to the training of individuals pursuing a career in medicine. Upon graduation from a GME Program, one enters the field of independent practice. At that time, there are numerous external bodies dictating a physician’s professional development, with requirements to obtain and maintain licensure, certification, and credentialing in order to practice medicine.

Ideally, and most often the case, those who choose to practice medicine have an inherent desire to not only maintain competence but also continue to learn and grow throughout their careers. The ever-evolving nature of medicine, changes in healthcare delivery, moving between practices, meeting the varying needs of changing patient populations, and/or personal responsibilities that may take one out of training or work for a period of time, all require on-going learning to maintain competence. Additionally, moving from novice to competence, to mastery or expert in their complex professional world is ideally the goal for most physicians in practice (Ericsson, 2004; Dreyfus, 2004). CPD is a critical element in the process for physicians to maintain competence and eventually achieve mastery.

MOTIVATION

There are numerous theories on what motivates one to continue learning throughout his or her profession, especially in the field of medical education, some of which are described by Cook and Artino (2016). Adult learning theory posits that a distinct difference between pedagogy and andragogy centers on motivational direction. Knowles (1980), known for his development of Adult Learning Theory, suggests that while children are primarily extrinsically motivated, adults are primarily driven by intrinsic motivators. Knowles theory suggests that, while there will always be tension between the balance of intrinsic and extrinsic motivational factors, adults are more satisfied with the learning process, more focused, more persistent, and more eager to apply their knowledge when they learn through experiences by which they are intrinsically motivated.

As is the case with adults in general, physicians are motivated both factors. Extrinsic motivation refers to performance in order to attain a separate outcome while intrinsic motivation refers to performance for the inherent satisfaction of the activity itself (Ryan & Deci, 2000). It is likely that, in order for physicians to reach and maintain their competence to ensure quality patient care, development as a well-rounded, thriving physician, both extrinsic and intrinsic motivations are at play. A complex web of professional requirements forces a sense of extrinsic motivation. Ambition and the desire to stay current, together with personal career planning, encourage activation of our intrinsic motivation. The drive for continued development is likely the result of both extrinsic and intrinsic motivation.
SELF-DETERMINATION THEORY AS A FOUNDATION FOR CPD

Deci and Ryan’s theory of Self-Determination (2000) proposes that, while intrinsic motivation is the biggest driver for the positive potential for human nature, extrinsic factors are clearly meaningful contributors to individuals’ behaviours. Many studies have shown that extrinsic factors such as “tangible rewards, threats, deadlines, directives, pressured evaluations, and imposed goals” (p. 70) undermine intrinsic motivation. As proposed by Knowles (1980), intrinsic motivation is ideal for adults to find the most value and meaning in an educational activity.

Thus, not only is it preferred for people to be motivated internally, but also there are findings that external motivations can be counterproductive. The field of medicine is full of external regulations and requirements for compliance. Therefore, in this professional world in which extrinsic motivators are prevalent, it is important to understand them and facilitate their integration into practice and lifelong learning.

Self-Determination Theory (SDT) (Ryan & Deci, 2000), emphasizes the importance of three main psychological needs that are the basis for positive self-motivation: competence, autonomy, and relatedness. SDT proposes that if these needs are met, the negative effects of extrinsic motivators can be minimized. This then informs that it is critical to foster competence, autonomy, and relatedness in a physician’s CPD opportunities for learning.

Feelings of perceived competence on a given topic can enhance intrinsic motivation for a related action and minimize the negative impacts of extrinsic motivators. Effective feedback, for example, has been considered to be the “cornerstone of clinical teaching” (Cantillon & Sargeant, 2008). However, feedback is an extrinsic motivator that can hinder development if it is given ineffectively, is demeaning in any way, or is seen as an indicator of incompetence. To the contrary, if feedback is given effectively, constructively, and promotes positivity, it can promote a feeling of perceived competence and, thus, minimize the negative impact of feedback as an extrinsic motivator.

A sense of autonomy is the second psychological need that is essential to positive self-motivation under SDT. SDT suggests that feelings of competence must be accompanied by an internal perceived locus of control or sense of autonomy to facilitate the internalization. If an individual feels as if they have some sort of control, choice, and volition over his or her competence and participation in developmental efforts, that feeling of autonomy enhances their intrinsic motivation to engage in the activity (Deci & Ryan, 1985). For example, forcing individuals to participate in specific CPD activities that may or may not correspond with their own preferences (related to format, content, timing, teacher, etc.) may compromise the desired need for autonomy. To the contrary, if they have the option to choose from a variety of opportunities, autonomy may be enhanced.

Relatedness is the third essential psychological need that SDT relates to optimized motivation. As defined by Merriam-Webster related is defined as, “Connected by reason of an established or discoverable relation” (Related. 2019). Within the context of CPD, when activities or behaviours are encouraged, modelled, or participated in by significant others to whom individuals are positively connected or related, this need is fulfilled. For example, an individual might feel a greater sense of connectedness to an activity if it were recommended by his or her respected mentor rather than assigned en masse across the organization. Similarly, if the content being discussed or presented is “related” to the work they are doing and can, thus, be applied, it is likely to be much more meaningful. This again is likely to enhance one’s internal motivation to use the opportunity for CPD.
Each physician will undoubtedly vary in their constellation of motivating factors. However, adult learning and SDT theories make it clear that attending to both extrinsic and intrinsic factors is critical to the success of CPD programs to maximize their professional growth potential.

**CPD REGULATORY REQUIREMENTS**

There is no escaping the numerous regulatory bodies and organizations that determine and monitor the requirements necessary for one to practice (and continue practicing) medicine. These serve as extrinsic motivation for CPD prescribing the necessary requirements needed to care for patients. SDT would emphasize the importance of careful attention to the three essential psychological needs in the face of this bevy of requirements to ensure the developmental process does not get waylaid.

Even with the simplest scenario, the ceaseless, fluctuating, and numerous requirements can be complicated and considerable for any busy physician. CPD is often a component of requirements put in place by State Medical Boards, Specialty Boards, and hospital or clinic employers. Individuals can utilize the external requirements as a form of guidance and organization. They establish the baseline or minimum required, fostering motivation to grow personally and professionally. Below is a brief description of the varied requirements in place for continued practice as a physician.

**Specialty Board Requirements**

Specialty Boards set the standards for *Certification*. Components of Maintenance of Certification (MOC) include 4 parts: 1.) Professionalism and Professional Standing; 2.) Lifelong Learning and Self-Assessment; 3.) Assessment of Knowledge, Judgement and Skills; 4.) Improvement in Medical Practice (American Board of Medical Specialties) (n.d.). Many Boards have included a high-stakes exam for those who have successfully completed their UME and GME training, in order to become *certified* initially. In the last 10 years, there have been many changes (and more on the horizon) to MOC, including many moving to a *continuous certification* model. There are similarities but also great variance in what each Board requires for one to obtain and maintain this certification throughout their career, many now moving away from a high stakes exam every 10 years, to this more *continuous certification* (and documentation of learning).

Despite highlights on websites, alerts sent via social media platforms, formal mailed letters, and discussions at national meetings, it is still difficult to remain abreast of the many, varied, and changing regulatory requirements. Thus, the onus is on the practicing physician to be proactive and seek out new information to stay updated. Individuals are encouraged to visit relevant Board websites, read the likes of relevant newsletters, seek out Board updates at national meetings, and/or help ensure such critical information is incorporated as part of one’s day-to-day work. Physicians should seek out any regular communications within an organization or community they are connected to, such as one’s Academic Medical Center Department, Specialty Society, private practice group, etc.

**State Board Requirements**

In order to practice in one’s State, one must meet State Medical Board *Licensure* Requirements, which are likely different than (although often complementary with) Specialty Board Requirements. There has been a growth in the number, and perhaps breadth, of State requirements, with newer emphasis on requir-
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exam to continuous certification and assessment with formative feedback). However, one cannot always be sure of the origin or outcomes of many of these regulations. As examples—Does requiring two CME Credits of “ethics” content every two years make one a better doctor? Does the process that individuals use to complete Level Four of MOC (Improvement in Medical Practice) make them a safer doctor? Given these questions, the push to evaluate the effectiveness of CME is critical (Smith, Stark, Rayburn, Davis, & Turco, 2017; O’Sullivan & Irby, 2017; Davis, Rayburn, & Smith, 2017).

Whether the regulations lead to the best patient care or not, physicians must comply in order to practice medicine. Identifying convenient and meaningful ways to address the requirements and demonstrate compliance is critical. Just as requirements continue to evolve, so are the means of documenting compliance and demonstrating understanding. Gone are the days of manila folders overflowing with CME certificates and multiple-choice exams every 10 years, covering content one does not need for practice. It is important to identify a method for staying current on requirements at the state, specialty, and local levels, especially given the continuous revisions and additions.

It is also important to establish a means of organizing individual activities and progress toward meeting requirements. There are numerous hospitals, specialty societies, and/or paid services that allow for electronic storage of CME credit or documentation of CPD activities. Physicians do not want to find themselves surprised by a certification or licensure requirement with no time left to meet it. More importantly, physicians do not want to adhere to these requirements simply for the purpose of checking off a box. Instead, these regulations can serve as a road map and a set of minimal requirements to continuing one’s professional development across a lifetime.

According to SDT, complex webs of requirements put the CPD process at risk for ineffective behaviour modification. They may or may not instill a greater sense of competence, but they contradict the concept of autonomy. Key to meeting these requirements in productive ways is to connect physicians with meaningful activities within which others may participate and to recommend to them activities that convey a sense of relatedness.

CONTINUED COMPETENCE

Maintaining continued competence and confidence is a strong motivator for physicians to engage in CPD and involves elements of both extrinsic and intrinsic motivation. Continued competence, by nature, is one of the psychological needs espoused by SDT. However, within the context of medical education, physicians are charged with balancing complex roles involving multiple facets for which they are held accountable making it challenging to achieve and maintain competence in all facets. As noted above, these facets may include clinical care, research, leadership, well-being, teaching, as well as areas such as professionalism, quality improvement, the business of medicine, and ethical excellence. These areas may appear to be disparate in nature, but all converge within the role of the physician across his or her career. Change is ubiquitous in medicine, and given the evolving nature of these areas, the profession makes it essential for physicians to regularly retool to keep up with advances and developments within each.

Clinical Care

Clinical care is fundamental to the role of a practicing physician. However, clinical practices change rapidly based on a variety of evolving factors, including advances in technology and techniques, re-
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search, patient demographics, innovations, and reimbursement. Imagine a point in time when smallpox was a major cause for concern in healthcare, but opioids were not. Consider when no one knew what the acronym LGBTQI stood for or what it might mean for his or her patients. A diagnosis of Human Immunodeficiency Virus (HIV) was once considered a death sentence. Advances in laparoscopy have so dramatically changed the surgical sciences, yet laparoscopic techniques were not always an option. While society has moved beyond these specific examples, new ones arise each day, and every subtle evolutionary point creates an additional learning opportunity for physicians. CPD is essential when it comes to physicians remaining current with the evolution of advancements in clinical care. Furthermore, each evolutionary point hinges on physicians and others to study, investigate, and improve upon what currently exists.

Research and Quality Improvement

The science of medicine would not exist without medical research. Medical research is critical to new discoveries, innovations, and evidence-based advancements in medicine. While formally trained researchers bear the brunt of the investigative work, it is essential for physicians who are involved in hands-on patient care to be familiar with the processes necessary to conduct basic research. CPD can support physicians in learning more about the process of formulating and investigating hypotheses in order to develop basic research skills that will benefit both themselves and their patients. Many of the basic research skills can also contribute to a better understanding of the quality improvement process that is so critical to a physician’s role (Sargeant, Wong, & Campbell, 2018). Quality Improvements (QI) may include simple interventions to minimize patient wait time, improving cancer-screening rates, modifying the residency curriculum to be more meaningful, or reducing unnecessary blood draws in young children. These changes can significantly impact the patient, physician, clinical care team, and/or learner experience. However, it is difficult to implement, measure, and maximize such changes without following an appropriate Quality Improvement process. CPD can help physicians to be better equipped to take on these challenges.

Leadership

Whether it is related to clinical care, research, a part of their more formal career path, or any other of the myriad of responsibilities encompassed within a physician’s role, physicians are often looked upon to be leaders (Storey, 2019; Angood & Birk, 2014; Grady & Hinings, 2018; Gunderman & Kanter, 2009). Often, immediately upon graduation from their GME training, physicians are expected to lead interprofessional healthcare teams. They may also be expected to lead the clinical discussions related to clinical research projects. There will be times when they are asked to lead the “business of medicine” charge within their practice. Furthermore, physicians often move into a variety of leadership roles without adequate guidance on how to be successful within them. These leadership skills are not generally learned during any part of the formal medical education continuum but can be incorporated into CPD.

Teaching

By virtue of their chosen profession, physicians are granted both the privilege and the responsibility to not only continue to learn throughout their careers, but also to share what they have learned. While many
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may not have consciously chosen a career as a teacher, an inherent element of practicing medicine is to teach. The word “doctor” is actually a derivative of the Latin word “docere,” which means, “to teach.” Teaching is well integrated into the daily role of a physician.

Physicians teach patients and patients’ families about their general health, conditions, prevention, and treatments. The literature clearly shows a connection between effective physician teaching and patient compliance (Leung et al., 2015; Peter, 2014). Critical to the heart of the medical education continuum, physicians teach medical students, residents, and fellows. Sometimes, this is done in the classroom, but more frequently, this is done through hands-on patient care experiences and small group or one-on-one conversations. They also teach their peers, at times both directly and indirectly.

Teaching skills are not generally parts of the formal learning physicians receive through medical education or GME training. Therefore, regardless of how proficient they may be within their clinical specialty, they may not be effectively equipped to teach what they know. Effective teaching involves a variety of key elements, many of which can be provided through CPD. CPD related to teaching might include topics to enhance physicians skills at effectively providing feedback, assessing and evaluating learners, teaching at the bedside, using simulation to teach, working with challenging learners, and incorporating active learning techniques or technology into their teaching.

Interprofessionalism

In addition to engaging in CPD in the areas of teaching, patient care, and research, physicians must maintain competence and often serve as leaders of interprofessional teams (Dow & Thibault, 2017). Interprofessional education (IPE) emphasizes collaborative training and practice that aims at promoting the working relationships between different healthcare professions. There is growing literature on the impact of such training on patient care (Cox et al., 2016). Programs like TeamSTEPPS (Agency for Healthcare Research and Quality, n.d.) have been developed and utilized at numerous institutions, that focuses on improved teamwork and communication in health care. Given that IPE is essential (and somewhat new), there are growing efforts and newly developed programs available to offer faculty development for those providing such education (Watkins, 2016).

The topics addressed within this section represent a sampling of the main areas of faculty CPD needs for continued competence. Faculty do not need to be experts in all of these areas, but do need to be adequately familiar with them all and more. The field of medicine also offers them the opportunity to choose amongst these areas to develop an advanced level of expertise. Formal expectations for the number of areas within which each physician should develop a higher-level expertise will be variable by specialty, employment, and personal preference for career advancement.

CAREER PLANNING

Physicians engaged in career planning and seeking of CPD may be either and/or both extrinsically and intrinsically motivated. Ideally, physicians move from passive compliance to active personal commitment, as described by Deci and Ryan (2000), and perhaps this can be fostered by the way in which physicians are supported in their lifelong learning. As noted earlier, focusing on competence, autonomy, and relatedness is likely to foster intrinsic motivation. Regardless of the motivational direction, there are ample
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opportunities and tools to guide a physician in their career development as one’s individual interests and needs evolve, and healthcare continues to change.

Annual Performance Evaluations

At a minimum, most employed physicians participate in a formal Annual Evaluation of Performance. A supervisor’s evaluation of an individual may be supplemented with a 360 (a safe environment for an individual to receive candid feedback from peers, supervisors, subordinates, and other individuals with relationships key to their success), and an opportunity for individual employee self-reflection. An Annual Evaluation of Performance may even include patient satisfaction surveys or the review of relevant patient care outcomes, such as from an Electronic Medical Record (EMR) system or procedural registries. There is often short and long-term goal setting for the individual and, in some cases, an Individualized Education Plan (IEP) developed based on feedback, outcomes, and personal career goals. This is a wonderful opportunity for one to identify any gaps in practice and, thus, opportunities for CPD. It is often difficult for individuals to identify where deficiencies may be (Eva & Regehr, 2008; Ward, Gruppen, & Regehr, 2002). Thus, incorporating more objective data is important to inform one on potentially problematic deficits and/or opportunities for growth. If an annual evaluation with some of the elements described above is not a component of one’s workplace and formally conducted by a supervisor, physicians should consider initiating something similar independently, either including a supervisor, or not.

Mentorship and Coaching

Both mentorship and coaching are important components of a physician’s CPD (Geraci & Thigpen, 2017; Lovell, 2018). There are distinctions between the two that may be important as one is determining what is best for their CPD. Gawande (2011) introduced the idea of coaching for physicians, first as an opportunity for someone to offer individualized observation and feedback (Geraci & Thigpen, 2017; Lovell, 2018). It has been transformed as a strategy for implementing individualized education, allowing faculty to guide performance, competency, and career progression of an individual learner (Deiorio, Carney, Kahl, & Juve, 2016). Coaching and mentoring both use questioning and guiding. Mentorship includes more advising, counselling, and supporting in a way that coaching does not. Mentorships are generally long-term relationships, while coaching tend to be shorter-term relationships (6 to 12 months) and target a potential change in performance (Abiddin, 2007).

It is likely one will find themselves on either side of these of mentoring or coaching (mentor/mentee, coach/coached) relationships at some point in their career. While distinctions have been made in the literature, in both cases, mentors and coaches have been found to foster CPD. Numerous programs have reported improved career advancement as a result of mentoring programs. Programs also report enhanced peer networking and improved career satisfaction as a result of mentoring programs (Fleming, 2017; Pololi, 2015). There are examples of mentoring and coaching programs that have improved patient outcomes for the mentee and or the individual being coached (Sheri et al., 2019; Lyasere et al., 2016). CPD that reaches the top of Kirkpatrick’s pyramid (impact on patient care) for program evaluation is a lofty goal and one which educators reach for in developing and offering educational programs (Kirkpatrick, 1994). This suggests mentorship and coaching can be quite impactful as a form or supplement to one’s CPD. An effective coaching and/or mentoring relationship can truly enhance feelings of relatedness.
Promotion and Tenure

If employed within an academic medical center, one is almost always faced with the variability of the appointments, promotions and tenure (APT) process, stimulating individuals to select meaningful CPD activities and incorporate them as part of a career plan. Over the last decade, some individuals and institutions have moved to the use of an “education portfolio” as a way to document scholarly educational activities and, in some cases, promote oneself (Lewis & Baker, 2007; Heeneman & Driessen, 2017). This is yet another opportunity to utilize objective data to inform one’s CPD and career planning. If used effectively, it is not just a laundry list of everything that an individual has done, but instead, hopefully, an illustration of thoughtfully designed, meaningful professional growth over time.

Being able to independently, and periodically, evaluate one’s own performance for purposes of growth and improvement is critical to professional success. This process directly connects with an individual’s need for perceived competence. However, this exercise can be less than ideally productive as it can also be detrimental to the development process as an extrinsic factor that compromises an individual’s intrinsic motivation. Thus, if none of the above career planning mechanisms are in place, or better yet, to complement the above, it is critical for physicians to take charge of their own lifelong learning and CPD. Self-Directed Learning Theory (SDL) promotes an individual: 1.) Diagnosing their learning needs; 2.) Formulating learning goals; 3.) Identifying resources for learning; 4.) Selecting and implementing learning strategies; and 5.) Evaluating learning outcomes (Jeong et al., 2018). According to Jeong et al, “Self-directed learning (SDL) is a learning process considered to be one of the most appropriate strategies within Continuous Professional Development (professional development) for physicians to remain current with new evidence and maintain their competency” (Jeong et al., 2018).

Ideally, this all happens as part of a structured process, complementing an existing CPD plan put in place by one’s employer or through another structured program (e.g. formal mentor/mentee program, employer orientation and annual reviews, offered by one’s specialty society). However, once leaving the structured confines of a training program, it may be left to the individual to plan, steer, and implement their growth and development. This promotes autonomy but may also be challenging without further guidance. SDL may be the most effective when it comes to career development within CPD. SDL suggests that the more internally motivated one is, the better the results. Given this, the Accreditation Council for Graduate Medical Education (ACGME) now requires residents to develop SDL skills as part of their training, recognizing the potential for SDL to enhance learning in residency and beyond (Nothnagle, Anandarajah, & Goldman, 2011). This reinforces the idea that physicians must be at the center of identifying and planning their CPD. Davis et al (2011) found that physicians feel confident in identifying their own learning needs. There are few processes within professional development that contribute more authentically to a professional’s incorporation of effective SDL practices during which he or she accurately identifies his or her areas of deficits, and then takes steps to mitigate them.

COMMITMENT TO LEARN

At the very top of Maslow’s Hierarchy of Needs (Maslow, 1943), one finds self-actualization. Self-actualization involves an innate desire to grow and develop in the direction of one’s values and reaching one’s full potential. Similar to the way in which Maslow posited that self-actualization might be realized once other more basic needs are satisfied, a physician is able to focus on his/her own innate commitment.
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to learn once he or she has addressed other requirements or guidelines for participating in CPD that may be more fundamental to success within his or her role.

The literature shows that once a physician’s basic compliance and other external motivators are met, intrinsic factors are the most significant motivators for their behaviour change (Phipps & Shortell, 2016). Intrinsic motivation often accompanies a certain level of expertise. Expertise, as described by Dreyfus (2004), allows one to intuitively perform and make decisions at a high level while also adapting to variable situations with subtle modifications. Given the high level of constant change in medical practice, clinicians need to develop the competence and expertise to function efficiently on everyday tasks, but also to create solutions for novel workplace challenges (Mylopoulos & Regehr, 2009).

Cutrer et al. (2010) proposed the Master Adaptive Learner as a model for providing physicians with strategies for learning and improving in the ever-evolving healthcare environment, all while effectively managing the constant influx of new information and on-going change to efficiently and effectively maintain competence.

As a part of their daily, minute-by-minute work, physicians are constantly problem solving. Oftentimes, the solutions they reach are based on the knowledge and experience they have attained throughout their formal education, training, and practice. However, there are times during which they will be challenged by circumstances that require additional learning or innovations with which they are not yet familiar to provide the best care. Master Adaptive Learning fosters the development and use of adaptive expertise in practice. The Master Adaptive Learner describes a metacognitive approach to learning based on self-regulation that can foster the development and use of adaptive expertise in practice.

Dreyfus’s (2004) model, presented in Figure 1, also describes a developmental approach that parallels metacognitive ability. The model suggests that once one attains a certain level of expertise, they are not only less focused on rules, more intuitively-driven, and more relevantly focused, but they are also more likely to be able to engage in the metacognitive process of self-regulated learning (Zimmerman & Schunk, 2001) that allows them to recognize their areas of strength and deficits, and then to thoughtfully address these areas with appropriate CPD. Self-regulated learning involves two main metacognitive elements: metacognitive monitoring and metacognitive control. Simply put, the metacognitive monitoring process guides an individual to recognize their strengths and deficits in knowledge, skills, and behaviours to adequately prepare him or her for the metacognitive control process. During the metacognitive control process, her or she would take appropriate developmental steps to maximize their strength potential and fill in his or her deficit gaps.

For example, a more novice practitioner who is well skilled in bedside teaching might attend a session on bedside teaching at a national conference because it is a topic of interest to him or her, despite the fact that he or she may receive very little developmental value from the activity. However, an expert practitioner would be more apt than a novice, advanced beginner, competent, or proficient practitioner to recognize his or her deficits in an area in which his or her skills are weaker and seek appropriate development opportunities to strengthen them. Therefore, an expert practitioner who is well-skilled in bedside teaching but recognizes his or her deficiencies (metacognitive monitoring) might forgo the bedside teaching session and instead choose to participate in a session that more directly addresses a topic area in which they may be deficient in an effort to maximize the developmental opportunity (metacognitive control).

The theory of Deliberate Practice illustrates the value of metacognitive monitoring and control in the development of expertise. The challenge at this point in the continuum is for experts to not become complacent and for them to continue to consciously seek further development (Ericsson, 2004).
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“Deliberate Practice” is a model that describes SRL through the development of expertise. It suggests the notion that individuals themselves assume responsibility for areas in which a teacher, coach, or mentor may have once been very valuable from an external perspective. Deliberate practice allows the individual to monitor and control their own development through the SRL process and engaging themselves in increasingly challenging variations to continue to enhance their knowledge, skills, and behaviours to the highest levels.

PROFESSIONAL DEVELOPMENT: FORMATS, BENEFITS & CHALLENGES

For many, CME evokes the concept of credits physicians are required to earn and claim to meet regulatory requirements. As others have described, CME has also been conceptualized as the CPD required to keep one up to date in their specific field (Davis, Rayburn, & Smith, 2017). As some have attempted to clarify and refine, CPD can be seen as the combination of “... CME, with its focus on content knowledge, and faculty development, with its focus on evidence-based learning methodologies, across the institution to produce a more robust, system-and outcomes-oriented program to facilitate both individual and organizational learning” (Davis et al., 2017). To meet the on-going needs of physicians, it is necessary for the CME system to evolve, including more innovative education and more opportunities for participation, which healthcare systems can recognize as providing strategic value in driving change (McMahon, 2016). This transition from CME to CPD reinforces a move away from simply counting CME credits, and a focus on staying current in one’s field of practice (Filipe, Golnik, & Mack, 2018).

Similarly, to meet the learning needs of individuals, there is a move away from education as just a didactic and clinically-oriented activity, and more toward learning “which encompasses diverse activities, addresses diverse aspects of physicians’ competency, and includes diverse professionals, highlighting the importance of team-based interprofessional education” (Kitto, Price, Jeong, Campbell, & Reeves, 2018). Additionally, there is much focus on the benefits of learning on the job and physicians have noted a desire for more credit for learning during patient care (Davis et al, 2011). While physicians must still count

Figure 1.
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CME credits and document completion of educational activities to meet many regulatory requirements, the goal is to help foster a love for learning, while making it convenient, accessible, and meaningful to ensure continued competence in the evolving healthcare field.

There are a multitude of options for physicians to participate in formal professional development. So many options offer the opportunity for physicians to engage in activities using methods with which he or she is most comfortable, often at times befitting to his or her busy schedule and/or offering additional benefits that may be personally meaningful. Allowing physicians to play an active role in their CPD plan and lifelong learning process, is more likely to lead toward successful outcomes by allowing them a greater sense of autonomy (Deci & Ryan, 1991). Deci and Ryan (1991) found that those whose motivation is more authentic (and less externally controlled) have more interest, excitement, and confidence that, in turn, leads to enhanced performance, persistence, and creativity. “Concomitantly, it is necessary for stakeholders and developers of accredited professional development programs to incorporate more SDL initiatives into their educational activities (Jeong et al., 2018).”

Oftentimes, physicians are challenged by identifying appropriate activities to meet their developmental needs. Thus, it is critical to have varied options allowing for preferences related to a variety of factors, including format (delivery), time available, cost, and, of course, content. As noted above, this still requires an individual to self-reflect and evaluate to identify how they learn best and what they need to learn to maintain competence, contribute to quality healthcare, reach for Maslow’s self-actualization and meet individuals’ need for autonomy. It is imperative that those engaged in the development of CME activities, faculty development, and or mentoring or coaching individuals recognize the importance of letting the learner lead the way. Table 1 for a list of potential CPD forums and the associated benefits each offers.

Table 1.

<table>
<thead>
<tr>
<th>Venue (Activity Type)</th>
<th>On Demand</th>
<th>Collaborative</th>
<th>Certificate</th>
<th>CME Credit</th>
<th>Networking</th>
<th>Timely Feedback</th>
<th>Q&amp;A</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Conferences</td>
<td>×</td>
<td>✓</td>
<td>P</td>
<td>P</td>
<td>✓</td>
<td>×</td>
<td>✓</td>
</tr>
<tr>
<td>Internal Conferences</td>
<td>×</td>
<td>✓</td>
<td>P</td>
<td>P</td>
<td>✓</td>
<td>P</td>
<td>✓</td>
</tr>
<tr>
<td>Webinars</td>
<td>×</td>
<td>×</td>
<td>P</td>
<td>P</td>
<td>×</td>
<td>×</td>
<td>P</td>
</tr>
<tr>
<td>Journal Review</td>
<td>✓</td>
<td>×</td>
<td>×</td>
<td>P</td>
<td>×</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Journal Clubs</td>
<td>×</td>
<td>✓</td>
<td>×</td>
<td>P</td>
<td>✓</td>
<td>P</td>
<td>✓</td>
</tr>
<tr>
<td>Graduate Programs</td>
<td>P</td>
<td>✓</td>
<td>✓</td>
<td>P</td>
<td>✓</td>
<td>P</td>
<td>✓</td>
</tr>
<tr>
<td>Enduring Materials (online modules)</td>
<td>✓</td>
<td>×</td>
<td>P</td>
<td>P</td>
<td>×</td>
<td>P</td>
<td>×</td>
</tr>
<tr>
<td>Point of Care Learning</td>
<td>✓</td>
<td>✓</td>
<td>×</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Practice Test Questions</td>
<td>✓</td>
<td>×</td>
<td>✓</td>
<td>✓</td>
<td>×</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>Fellowship</td>
<td>P</td>
<td>✓</td>
<td>✓</td>
<td>×</td>
<td>✓</td>
<td>P</td>
<td>✓</td>
</tr>
<tr>
<td>Academies</td>
<td>P</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>P</td>
<td>✓</td>
</tr>
</tbody>
</table>

Legend: ✓ = Yes, × = No, P = Potentially


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Practical Implementation

One option for CPD stands out as particularly robust in its potential benefits to physicians. The concept of “academies” has become commonplace within the CPD world, and so directly resonates with the concept of relatedness. Academies are communities of practice through which “groups of people who share a concern or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an on-going basis (Wenger, 1998).” People who belong to communities of practice do not necessarily work together every day, but commune related to their specific shared interest. For example, a group of physicians may vary in their clinical specialty, but have a shared interest in research, leadership, teaching, or something else altogether. These individuals might come together for various activities, collaborations, and/or to engage in meaningful discussions and innovations facilitated through a research, leadership, teaching, or other type of academy. More and more national organizations and academic medical centers (AMCs) are developing academies focused on one or more of these areas, promoting a community of individuals to support one another and fostering individual CPD.

In addition to academies, there are a multitude of options for identifying and accessing relevant, convenient and meaningful CPD opportunities, ranging from one hour twitter conversations to week long conferences or Master Degree programs. Most, if not all, AMCs offer various opportunities for CPD, either through a clinical department, academy (as noted above), Graduate Medical Education Office, or Office of Faculty Affairs or Professional Development. Additionally, Continuing Medical Education is a primary role of most Medical Specialty Societies, who sometimes even partner with relevant Specialty Boards to ensure regulatory requirements are being met through CPD opportunities. Medical Specialty Societies often offer an annual meeting, which is likely to include clinical, research, and teaching related sessions. There are also endless on-line resources available through commercial medical and education companies. Finally, there are lists of available CPD opportunities in academic journals, association websites, and repositories of opportunities such as ACCME’s CME Finder (www.cmefinder.org). Conducting an on-line search for CPD related to specific topics elicits a myriad of opportunities.

Obstacles and Barriers

There can be many barriers or challenges to offering and participating in continuing education for physicians. See Table 2. For learners, in addition to motivation as discussed above, these barriers can stem from individual preferences, styles, priorities, and or personal reasons. Barriers for learners can also be a result of poor support from an employer, or a lack of relevant quality educational programs available and made known. Thus, it is critical for educators to conduct ongoing and robust needs assessments or gap analysis to hear from learners about what they want and need. It is also important to effectively market educational activities and opportunities to the appropriate audiences. Another barrier to individuals participating in continuing education may be their belief (or their employer’s belief) that it won’t be impactful and or a good use of time and resources. This speaks to the need for robust program evaluation and presentation of outcomes. As Moore et al (2009) and Kirkpatrick (1994) describe, positive educational outcomes can range from participant satisfaction, to changes in participant behaviour or practice, to improvements in system process, and ideally, to improvements in patient care.

For those involved in developing and delivering educational activities, the challenges and barriers may be very similar to that of learners. See Table 2. There may not be adequate time or resources to develop and deliver the kind of educational activity that is believed would be most beneficial. It may be
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Table 2.

<table>
<thead>
<tr>
<th>Barriers to CPD for Learners</th>
<th>Barriers to CPD for Educators</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Not enough time</td>
<td>• Did not conduct a needs assessment (lacking feedback from learners)</td>
</tr>
<tr>
<td>• Too expensive</td>
<td>• Not enough time to develop/implement</td>
</tr>
<tr>
<td>• Content not relevant</td>
<td>• Too expensive to develop/implement</td>
</tr>
<tr>
<td>• Not preferred format of delivery</td>
<td>• Unsure of timely topics to be addressed</td>
</tr>
<tr>
<td>• Not accessible</td>
<td>• Difficult to meet diverse learner needs</td>
</tr>
<tr>
<td>• Previous negative experiences</td>
<td>• Lack of content area expertise</td>
</tr>
<tr>
<td>• Lack of information on what's available</td>
<td>• Identifying best day and time</td>
</tr>
<tr>
<td>• Resentment for required learning</td>
<td>• Identifying best venue/delivery method</td>
</tr>
<tr>
<td>• Employer not supportive</td>
<td>• Learners not committed or participating</td>
</tr>
</tbody>
</table>

a challenge to keep up with what are the current topics or content areas that need to be addressed. Again, this speaks to the need for conducting research ahead of time to recognize what learners want and need. Identifying the most convenient time and delivery method (for the greatest number of learners) may be difficult, just as meeting the needs of diverse learners. There may also be occasions when despite the development and implementation of a quality educational program, learners are not engaged. This mitigates their learning potential and perhaps that of others around them (if a live activity). Recognizing and understanding the barriers listed below (for learners and educators) is critical so they may be addressed to help ensure meaningful continuing education for physicians.

CONCLUSION

CPD is fundamental to most professions. The importance of CPD in medicine is exacerbated by the complex, evolving, and multi-dimensional role of the physician. Individuals move from the safe and more closely regulated confines of UME and GME training programs with supervision, formative feedback, and clear learning objectives, to independent practice with responsibility for the health and well-being of patients on their own. This responsibility alone is immense, but add in the inherent evolving changes in medicine, a new teaching role, pressure to conduct research, healthcare team leadership responsibilities, an emphasis on measuring quality of care, and keeping oneself “well,” among so many other things, and physicians are at risk for not doing any of these things very well. CPD is essential for physicians, as they must continue to grow and learn, especially given the changing nature of healthcare and their complex role.

There are extensive regulations and requirements in place for physicians, ranging from specialty boards, to State requirements, to employer requirements for lifelong learning. While one may not always be convinced of the effectiveness of these regulations and their role in motivating a physician to grow and learn, they exist to enhance and ensure physician competence and must be complied with if one
wants to continue to practice medicine. While this may be an overabundance of educational requirements, working to motivate individuals extrinsically, as is made clear by the Self-Determination Theory, that fostering competence, autonomy, and relatedness as part of learning are foundational to motivation. Also known from a number of theories discussed is that individuals are motivated to learn, grow, and strive for self-actualization once their basic knowledge and skills are in place. Thus, if physicians meet those basic licensure and certification requirements, maybe they are then motivated to “self-determine” how best to maximize their developmental opportunities.

It is not completely clear what motivates an individual and, in this case, a physician, to engage in CPD. While one may want to believe that individuals should be intrinsically motivated, it may be safest to assume that individuals are motivated both extrinsically and intrinsically and that it differs substantially by individual. This confirms the need for a variety of educational opportunities to help ensure individuals get the content and learning format they need and desire to remain competent and fulfilled throughout their career. Table 1 lists a large (although not all inclusive) number of forums that can be utilized for CPD and the potential benefits of each. Again, individuals must be responsible for identifying the opportunities for learning that are most personally impactful. And, for those responsible for promoting CPD and or creating educational content, recognizing the diversity needed to appeal to each different individual, is critical.

CPD is not optional in the field of medicine, and learning cannot stop upon successful completion of a GME training program. Given the high stakes, constantly evolving nature of medicine, and variety of roles physicians end up playing, extensive physician CPD is necessary. There is not one formula that works for all, and education researchers will always be seeking new understandings related to what motivates individuals to learn and what is most effective. The key is accepting that learning continues across one’s career and life and, for physicians, this translates to innovative medicine and quality patient care.

REFERENCES


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