



ROYAL COLLEGE
OF PHYSICIANS AND SURGEONS OF CANADA
COLLÈGE ROYAL
DES MÉDECINS ET CHIRURGIENS DU CANADA

March 2014

Competence by Design:

Reshaping Canadian Medical Education





FOREWORD

Worldwide, the system of medical education is experiencing an unprecedented level of attention, discussion, and innovation, with trends to competency-based medical education taking the foreground in many jurisdictions. From 2010-2012, the Royal College of Physicians and Surgeons of Canada undertook the development of the Competence by Design series to engage Fellows in an exercise to consider the strengths, weaknesses, and opportunities in the current postgraduate medical education system. Participants were encouraged to boldly consider how Canadian residency training could be improved, while preserving the best of the contemporary postgraduate medical education enterprise. This project resulted in a series of 10 papers that together are intended to inform future strategic directions for the College vis-à-vis postgraduate medical education. Together, these papers form a vision for systemic transformation, growth, and development in the Canadian postgraduate medical education system.

The Competence by Design series was launched as a contribution to another project that occurred concurrently, the Future of Medical Education in Canada Postgraduate (FMEC-PG) project, which had a mission to review the state of postgraduate medical education in Canada. Conceived of as an opportunity to engage Royal College Fellows in a broad debate and ensure strong input on the FMEC project, the Competence by Design series has also helped to evolve and communicate the Royal College’s vision for the future of postgraduate medical education in Canada. In this vein, these papers form the scholarly underpinnings of a multi-year, transformational change initiative in the system of specialty medical education entitled *Competence by Design*.

With this re-release two years later, the series of ten papers have been updated and refreshed for their new role as the foundation for the strategic program. We would like to express our true gratitude to all Fellows and staff who have contributed to this project. We applaud the thoughtfulness of your ideas, the strength of your conviction, and your dedication to the mission of the Royal College. We are honoured to be working with you towards the Royal College’s vision of **the best health for all, the best care for all**.


Kenneth A. Harris


Jason R. Frank



INTRODUCTION

The Competence by Design paper series was intended to outline a path forward for postgraduate medical education. Any examination of the postgraduate medical education system must acknowledge and respect the many successes of current residency education in Canada. To this end, the paper series highlighted several strengths and areas for consideration in postgraduate medical education. These areas, crossing the papers in their entirety, highlight the current state from which the Competence by Design program is launched.

Strengths of Postgraduate Medical Education

Physicians today receive the best medical training in the history of civilization. Arguably, residency education in Canada is the envy of the world, as a result of its unique configuration, the strength of its educators, curriculum, standards and innovations. These include, but are not limited to:

- A global reputation for **high-quality training** and graduate performance, with Canadian designations and physicians being highly regarded around the world;
- International aspiration for Canadian PGME **standards**, including requests for collaboration and development support by numerous jurisdictions;
- Worldwide recognition of Canadian medical education **innovations**, including the CanMEDS framework, multi-source feedback instruments, certification examinations, teaching and assessment of professionalism, simulation methods, and competency-based initiatives;
- Leadership in **faculty development** in medicine;
- A unique and enabling **university infrastructure** with academic resources for postgraduate medical education;
- A system of accountability and leadership in the form of residency **program directors and postgraduate deans**; and
- An **accreditation** system considered a gold standard in medical education worldwide.

Challenges and Opportunities in Contemporary PGME

Fellows of the Royal College, while acknowledging the many strengths of our contemporary PGME system, have identified a number of important challenges and opportunities for enhancement. These included:

- 1. System complexity.** The Canadian system has many players with overlapping mandates and redundant infrastructure. Precious resources, including finances, expertise, and authority for decision making are spread across multiple organizations. Practicing physicians in the health human resources “pipeline” must navigate numerous affiliations, applications, examinations, and jurisdictions.
- 2. An era of accountability.** The 21st century has seen medical education criticized for its failure to ensure that all graduates are adequately prepared for practice or the next stage of their careers. Evidence shows graduates still exit residency with significant “lacunae” in competence, and that in practice, physician abilities narrow and degrade over time. These trends have resulted in an inability to adequately meet the needs of the population we serve. Our profession must not only be accountable for the “product” at each stage of medical education, it must also enable maintenance and enhancement of competence over a career in medicine.
- 3. Resource imperatives.** Healthcare and education frequently consume the majority of provincial government budgets, and in a time of fiscal restraint, medical education lies at the nexus of the two. New dollars are unlikely to flow into the enhancement of postgraduate medical education. Health human resources are strained. Accessibility of health care

services is a perpetual problem. Physicians are working harder than ever before. Therefore transformation, not addition, is the mode for successful change.

- 4. Community expectations.** Meanwhile, those served by medicine continue to raise their expectations for comprehensive, timely, safe, high-quality, and personalized care. Medicine must rise to these expectations, to remain relevant and meet the changing needs of society.
- 5. The evolving nature of residents.** Residency education is now 100 years old, dating back to when Osler, Halsted, and others created “a seminary for advanced medical study.” However, the nature of being a resident has evolved significantly since its inception with questions of duty hours, the nature of work and service, and what it means to be a ‘learning professional.’
- 6. The evolving roles of faculty.** The very definition of a medical teacher has changed dramatically in recent decades. Physicians are being asked to do more than ever before. Teaching occurs in settings across the country, far beyond the traditional teaching hospital. New questions arise as to how best to support faculty for continuing excellence in postgraduate medical education in this new context.
- 7. New models and standards in medical education.** Around the world, medical educators are reconsidering the model of PGME. Competency-based medical education, new teaching models, more direct observation, new assessment tools, greater use of portfolios, new teaching settings, greater emphasis on in-training assessment, and the rise of simulation are a few examples of major shifts in medical education.

Transformation of the Royal College’s Role: *Competence by Design*

In collaboration with other partners in Canadian medicine, the Royal College is embarking upon *Competence by Design*, a multi-year transformational change initiative in the system of specialty medical education. This project, focused on the learning continuum from the start of residency to retirement, is based on a competency model of education and assessment. Ultimately, it is designed to address societal health need and patient outcomes.

The vision and mission of the *Competence by Design* initiative is underpinned by the following ten papers, all of which articulate an impressive and scholarly vision for change. We invite you to read, reflect, and consider the implications of these papers.



Acknowledgements

Pierre LeBlanc, MD, FRCPC, was a comparative reviewer for the French translation of this paper. An active physician and academic in the Canadian medical education system, particularly in the Francophone community, he generously assisted in the preparation of the French papers. The other participants in this paper series acknowledge his important contributions to the Competence by Design eBook.

Ernest Prigent, MD, CCFP (EM), CSPQ, FCFP, was a comparative reviewer for the French translation of this paper. An active physician and academic in the Canadian medical education system, particularly in the Francophone community, he generously assisted in the preparation of the French papers. The other participants in this paper series acknowledge his important contributions to the Competence by Design eBook.

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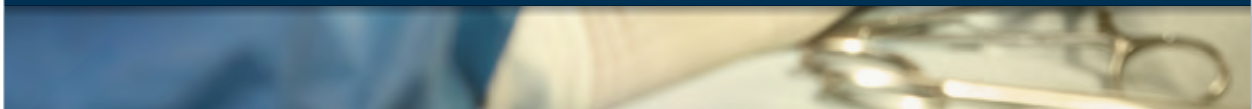


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1. Addressing Societal Health Needs



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Addressing Societal Health Needs



Acknowledgements

Robert F. Maudsley (1938-2012) was the lead author for this paper. A major driving force in Canadian medical education for many years, he was consistent and persistent in his vision of a better process for preparing physicians for Canada and the world. The other participants in this paper acknowledge his many contributions.

“Si monumentum requiris, circumspice”

ABSTRACT

The mandate of medicine is to serve the health care needs of society. This mandate is given by the public to the profession as a quid pro quo in acknowledgement of the privileged right to practise medicine as a self-regulating profession. Although the primary societal need is to alleviate disease and minimize the impact of disability, the needs of communities and society change and evolve over time. For example, recently there has been a greater emphasis on health and wellness, and social determinants of health are currently receiving greater attention in all areas of medicine.

Postgraduate medical education must be cognizant of two distinct approaches to responding to societal needs: **quantitative** and **qualitative**. The quantitative approach speaks to the number and type of doctors that are produced by Canadian medical schools to meet societal needs. The qualitative approach addresses physicians' knowledge, skills and attitudes, as well as their ability and willingness to take on a variety of roles to meet the needs of society.

This paper outlines the unique challenges faced by those involved in health human resource planning. It concludes that this planning must ultimately be done in a way that is coordinated and that allows for the necessary flexibility and adaptability in the resulting system.

INTRODUCTION AND BACKGROUND

Postgraduate medical education (PGME), as a major component of the preparation of physicians to serve societal needs, must be responsive to needs identified by society in general — and the profession in particular — and must do so in a responsible and accountable way. As Boelen noted, there is an important distinction between responsibility and accountability: a socially responsible (medical school) perceives the needs of society and reacts accordingly; a socially accountable (medical school) also consults society about priorities and provides evidence of the impact of its needs.¹ In a 2001 monograph, Health Canada cited the 1995 World Health Organization (WHO) definition of the social accountability of medical schools, as follows:

The obligation to direct their education, research and service activities towards addressing the priority health concerns of the community, region and/or nation they have a mandate to serve. The priority health concerns are to be identified jointly by governments, health care organizations, health professionals and the public.²

For developed countries such as Canada, it would be appropriate to add an international perspective beyond the explicit identification of community, region and/or nation.

Quantitative needs — namely ensuring the appropriate mix and type of physicians are being trained to address societal needs — are collaboratively the responsibility of various levels of government (representing the public interest), organized medicine and other health professions. PGME, under the aegis of Canadian medical schools and the national colleges, must play a role and have a voice in the deliberations. However, PGME cannot be the sole or major determinant of quantitative needs. Although the

previously cited WHO definition uses the word “or” to allow medical schools to potentially choose the scope of their societal focus, the mobility of the medical workforce and the distribution of medical schools in Canada largely in major urban areas requires that all schools pay attention to the breadth of need — nationally, provincially and regionally — with the size of school and the presence or absence of other schools in a province playing a role in the determination of relative responsibility. The traditional focus on the needs of the individual academic health science centre or particular region in Canada have possibly contributed to health human resource (HHR) oversupply in some disciplines in recent years, when residency programs have been created or expanded in response to short-term local service demands and local strategic initiatives.

Although these quantitative responsibilities rest with many organizations, meeting qualitative needs — which relates to the physicians’ knowledge, skills and attitudes and their ability and willingness to take on a variety of roles to meet societal needs — is well within the purview of PGME, and PGME must play the primary role. To a great extent these needs are and will be addressed by the CanMEDS competencies, as defined by extensive enquiry.

The CanMEDS competency framework was conceived and developed to capture the essence of identified societal needs in physicians. The role of PGME is to put these roles into action in an efficient and effective manner by assisting with faculty development, learning methods and curricular design, and by developing and implementing assessment strategies and program standards. Some of the competencies/qualitative aspects to meeting societal needs are geographic and/or culture-specific (such as the social determinants of health and the burden of illness in Aboriginal communities). PGME must encourage and prepare its graduates to have the capacity to identify — and to be sensitive and responsive to — issues inherent in or integral to the individual patient or the community’s specific culture and context.

Another important aspect of meeting societal needs is the need for PGME to actively consider and be responsive to the social determinants of health that have a significant impact on the communities served. The social determinants of health can loosely be defined as how circumstances in which people develop and live affect their mental and physical well-being and life expectancy. They have been characterized as a key cause of health (or ill health).³ As the United Kingdom Royal College of Physicians notes “many doctors have long seen their role as curing illness and have paid insufficient attention to their responsibilities in promoting and protecting health, preventing ill health and reducing inequalities in health or access to healthcare.”³

The report from the Future of Medical Education in Canada-Postgraduate Project acknowledges the role that PGME plays in responding to societal health needs and it provides direction for residency programs. As well, in 2012, the Council of the Royal College of Physicians and Surgeons of Canada approved the following definition of societal health needs:

Societal health needs are the requirements at the individual, family, community and population levels-across the continuum of care-to achieve physical, cognitive, emotional, social and spiritual wellbeing, taking into account the broad determinants of health.⁴

This definition, along with the application guide, is intended to be used by individuals and committees within the Royal College to inform decisions regarding Royal College activities that will have an impact on responding to and meeting societal health needs.

CURRENT STATUS

With respect to the quantitative aspect of PGME, there is reason to be pessimistic about HHR planning. However, not planning is not an option. Canadian medical schools and the national colleges must continue to be actively engaged in HHR planning activities, looking at different and innovative ways to address the number and type of doctors needed by Canadian society. For example, Radiation Oncology has developed a forward-propagating manpower model that incorporates key indicators that influence HHR needs, including the incidence of cancer and the full-time equivalent (FTE) workload as determined by the number of all incident cases and the number that are referred to radiation oncologists.

Factors that have an impact on HHR planning may be discipline-/specialty-specific. For example, modest changes in practice patterns and delivery can have an impact on highly specialized disciplines such as Cardiac Surgery. These changes are often difficult to predict or anticipate many years in advance for the purposes of HHR planning.

Other disciplines also have unique HHR issues. For example, Psychiatry as a discipline can continue to create an almost inexhaustible demand for psychiatric services by increasing the boundaries of its scope of practice, in a sense developing its own HHR needs and issues. As such, it is difficult to predict the number of residents needed in Psychiatry training to meet changing discipline boundaries as determined by the specialty, medicine and the community at large. In instances such as these, where demand is more under the control of the practitioner and the profession, it could be argued that the need to attend to societal need is even more important, both from a planning perspective and also in terms of individual professionalism.

Although considerable headway has been made over the past decade with the introduction and implementation of the CanMEDS Competency Framework,⁵ much more remains to be done. This is particularly true in competencies other than Medical Expert, specifically,

and, to some degree, with the roles of Communicator and Scholar. As well, there is a need to better integrate the CanMEDS roles into the curriculum, particularly as they relate to meeting societal needs. Clinician Educators hired by the Royal College's Clinician Educator Program are making an impact; however, their work, particularly with respect to faculty development, requires ongoing and increasing effort and support.

DRIVERS FOR CHANGE

The unpredictable nature of evolving HHR needs highlights the need to prepare today's — and particularly tomorrow's — physicians to be more flexible and able to adapt to and meet evolving patterns of practice throughout the course of their professional lives. At the same time, physicians have to maintain and enhance their competence, with the ultimate goal of serving and meeting societal needs. The need for the link between PGME and continuing professional development (CPD) in this regard is self-evident.

Implicit, in a qualitative sense, is the need during PGME to instill the following values:

- professional responsibility, flexibility and adaptability;
- maintenance and enhancement of evolving competencies; and
- the overarching altruistic virtue of meeting societal needs, both as an individual and as a profession.

A key part of these values is the recognition that the physician's responsibility includes both the patient in front of them and the people needing care who are not able to access that care.

Currently, there is a collective tendency within PGME to address, in the first instance, the physician resource needs

of medical schools and their major teaching hospitals rather than taking a larger view of societal needs. (Some observers note that Canadian medical schools have been more attentive to meeting societal needs in the domain of undergraduate medical education (UGME), with the clinical imperative of the service needs of clinical faculty members and the tertiary care teaching hospitals being dominant and overly influential in dictating the number and size of residency programs.) Just as we expect residents and practising doctors to be flexible and adaptable, it is evident that residency programs and teaching hospitals must also become more flexible and adaptable to meet clinical service needs as the broader issues and needs of society are addressed. There appears to be a paucity of open dialogue between specialty career expectations and opportunities for those entering medical school and residency and their primary individual and collective responsibility to meet societal needs. A more focused and intensive proactive effort at career counselling prior to or early on in PGME appears to be a significant requirement if the qualitative responsibilities of PGME are to be met along with the balancing issues of career satisfaction and retention.

There appears to be a mismatch between the burden of illness and social determinants of health and the amount of curricular time devoted to addressing important issues (e.g., obesity, poverty, access to care, Aboriginal health). This speaks to the role of the doctor as health advocate, collaborator and professional.

There appears to be variability among specialty disciplines as to how well they prepare their residents and colleagues to “retrain” to adapt to the changing and evolving needs of their specialty in order to meet societal needs. As changes in medicine and the delivery of health care continue unabated, it becomes increasingly important for today’s and tomorrow’s doctors to have the individual and collective capability and capacity to accommodate to changing societal needs.

Currently residency program are not particularly accountable with respect to meeting societal needs in terms of both the quantitative and qualitative aspects. There is a need for programs to demonstrate how their graduates are meeting broader societal needs through career choice, practice settings and professional responsibilities.

The focus of responsibility and control for HHR planning is unclear. Although ostensibly provincial ministries of health provide direction and some control, their focus is often short-term and politicized. HHR planning, particularly with respect to specialty medicine, requires, at a minimum, medium-range, if not long-range, planning. Such planning must be done actively in concert with Canadian medical schools and the national colleges. Certainly more coordination is definitely in order, and a workable and effective balance must be created between the implementation of sound HHR planning and the need to accommodate the resultant changes to PGME, particularly with respect to service delivery within large teaching hospitals.

POSSIBLE SOLUTIONS

PGME will require some major changes if it is to become more focused on meeting societal needs. There are several options that could be considered in order to effect the necessary change.

We need to move away from the notion that students and residents have an inalienable right to practise in the specialty and scope of their choosing without regard to societal need. There is an incredibly wide array of career options available within medicine. There is a need for early career counselling and open dialogue around the unspoken expectations of students and residents with respect to specialty choice. PGME must move away from teaching hospitals relying on residents for clinical service, particularly in specialties for which there is little current or anticipated future demand required to meet societal needs.

Although HHR planning is a critical component of determining the quantitative aspects of meeting societal needs, it is not the only approach that should be entertained. As previously noted, HHR planning is imperfect and fallible and, furthermore, in many instances, it takes a decade from the start of medical school for an individual to become a specialist physician. Therefore, flexibility and adaptability must be enhanced within faculties of medicine and teaching hospitals, and individual physicians must be prepared to retrain over the course of their professional lives. PGME, through its clinical teachers, must foster these attitudes among residents, primarily through role modelling and example. It is important to recall that adaptability and flexibility are context specific and that they evolve over time. No one size fits all.

PGME needs to continue to align the competencies of its graduates with societal needs. Assuming that the CanMEDS competency framework/roles properly identifies and describes these roles, then there is a need to increase efforts in the learning, teaching, modelling and implementing of these roles in the practice of medicine. Some of these activities can be operationalized as competency-based medical education evolves by clearly defining behavioural objectives to guide residents in the attainment of the competencies needed to meet societal needs.

PGME program accreditation needs to continue to shift its emphasis to outcome measures rather than process if it is to better reflect the attainment of outcomes that meet the quantitative and qualitative needs of society. In this regard, PGME will become more accountable and socially responsible.

The concept of Health Intelligence Units⁵ needs to be seriously considered by all Canadian medical schools. Such units have a mandate to review health data from a variety of sources and to identify important health problems and trends that should inform the curricular content of both

UGME and PGME. Their goal is to be responsive to the current and emerging needs of individual communities — within the larger context of national and international trends — by continually profiling the health status and health care needs of the community.²

BARRIERS TO CHANGE

There are some significant financial implications involved with the following:

- enhancing the capacity of the CPD component of the medical education continuum to enable practising doctors to have a greater opportunity for and access to retraining and other strategies to maintain competence and adapt to evolving societal needs;
- decreasing the reliance on residents for hospital service, particularly in specialties with an anticipated reduction in HHR needs; and
- enhancing the collaborative efforts of HHR planning and the development of Health Intelligence Units or other data-gathering and analysis mechanisms to ensure that medical education is positioned to meet current and future societal health care needs.

There is a relatively long timeline to prepare specialist doctors, and this, combined with the inexact projections of HHR planning, typically produces cycles of under- and over-supply both in general and within specific specialties. Although improvements in career flexibility may partially offset these supply issues, it is unrealistic to rely on radical career changes as a viable option.



PGME in Canada is centred, by design, in the 17 faculties of medicine — a model that brings great strength to PGME and that is unique in the Western world. However, because of the diversity of the mission and mandate of each of the faculties of medicine and their obligation to meet provincial and regional needs, it is difficult to establish a coherent national HHR planning and implementation process.

Academic health science centres have an inordinate influence in setting/dictating the number of various specialties produced, primarily to meet pressing “in-house” service needs but also the capacity to staff the institutions (possibly at the expense of pressing broader community needs).

PGME is mostly centred in urban areas with little, although improving, opportunity for clinical experience in small urban and rural communities.⁶ This facet of PGME will require continuing attention in order to address the requirements of the number and mix of specialists to serve this segment of Canadian society.

Most health authorities in Canada are regionally (or provincially) based, and those authorities have a compelling interest in meeting the health care needs of the region. This may at times not be synchronous with wider or national needs with respect to HHR planning and resources.

Although the national colleges and all PGME residency programs subscribe to the CanMEDS competency framework, there appears to be some apathy or resistance to actively incorporating all of the competencies into residency programs. This will likely improve over time and with support and leadership from within the national colleges and faculties of medicine. If indeed the CanMEDS competencies do capture the requisite knowledge, skills and attitudes needed by contemporary doctors to meet societal needs, then a significant effort must be made by all concerned to ensure that they are incorporated into all residency programs.

RECOMMENDATIONS

In meeting societal health care needs — both quantitatively and qualitatively — with respect to PGME, Canadian faculties of medicine and the national colleges have important and essential roles to play. In some instances, efforts to effect the needed change will demand a strong advocacy and collaborative approach in concert with other organizations, while, in other areas, the faculties and the national colleges have a direct mandate to make the necessary changes.

- 1.** The Royal College’s Committee on Specialties will need to review their Specialty Training Requirements and Objectives of Training to ensure that societal health needs are recognized and that the learning opportunities for and practice patterns of specialists in practice outside the academic health science centres are incorporated into resident training programs.
- 2.** A more coordinated and accountable system of HHR planning and implementation at both the regional and national levels needs to be introduced in the near-term. The faculties of medicine and the national colleges will need to play a prominent role, along with the various levels of government and medical and health care organizations. The Royal College should consider facilitation and coordination roles in bringing about, at least initially, a dialogue about the coordination of HHR planning at a national level for specialist medical care for Canadian society.
- 3.** The Royal College should advocate for the development and implementation of Health Intelligence Units to be housed within faculties of medicine at the provincial and regional levels to bring the best possible data acquisition and analysis to bear on the preparation of physicians and to guide practising physicians to meet evolving societal needs.

- 4. The Royal College should advocate for increased career counselling of medical students and residents to advise them of the wide array of career opportunities available in medicine and to alert them to the reality that they may not have the opportunity to pursue their initial or preferred choice of specialty. Encompassed within this dialogue should be emphasis on the responsibility of doctors, both individually and collectively, to meet, as their primary objective, the health care needs of society.
- 5. The Royal College should advocate for greater access and opportunities for different and innovative ways for practising specialists to adapt and modify their practice in order to meet the evolving health care needs of their communities. A variety of options will need to be made available, with flexibility as a hallmark. Such an enhanced approach to CPD will require the support of faculties of medicine, funding authorities, medical regulatory authorities and national specialty societies and the national colleges.

The following are areas in which the Royal College has a direct influence and responsibility to effect change.

- 6. The Royal College should continue to modify program accreditation standards to place greater emphasis on outcome-based measures in order to demonstrate accountability in meeting societal health care needs. This embraces both the quantitative and qualitative aspects of PGME. For example, tracking career paths of residency program graduates over a number of years would shed light on how programs are meeting identified needs (numbers, type of practice, location, various professional roles, etc.). Such tracking, at least in part, may be facilitated by data gathering through the Royal College's Office of Professional Affairs and specialists' involvement in the Royal College CPD program. This information will also be important as part of the feedback loop to inform ongoing HHR planning.

- 7. The Royal College, mainly through its Office of Professional Affairs, should promote, support and embrace the need for practising specialists to maintain their flexibility in adapting to the evolving health care needs of society. This approach should be in concert with and supportive of increased emphasis and effort during the PGME component of the continuum to prepare graduates for a professional lifetime of flexibility and adaptability. In this regard, the Royal College must continue to emphasize and accommodate flexibility within residency programs, particularly at more junior levels, to permit specialty career change with maximum credit for experience gained and minimal impact on overall duration of training. The Royal College, in concert with residency programs and faculties of medicine, needs to demonstrate the flexibility and adaptability being advocated for individual residents and practising specialists.
- 8. The Royal College must continue to address the qualitative aspects of meeting societal needs through the continuing implementation of the CanMEDS competency framework. These efforts should be supported and enhanced as competency-based medical education is further introduced into PGME. The role of the Royal College Clinician Educator needs to continue to be supported and could possibly be expanded. Included in this qualitative aspect is an enhanced opportunity for residents to engage with the social determinants of health (for example, employing the Collaborator role) so that they can better understand and incorporate these important elements of health care into their clinical practice.

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2. Generalism: Achieving a Balance with Specialization



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Generalism: Achieving a Balance with Specialization

“I will not cut, even for the stone, but will leave such procedures to the practitioners of that craft.”

Hippocrates of Cos, ca 400 BCE

“The good physician treats the disease; the great physician treats the patient who has the disease.”

William Osler, 1913

ABSTRACT

The concept of generalism — a widely held, fundamental value in medicine and medical education — is not well understood. There are a plethora of definitions for the term, along with ongoing confusion between the terms “generalism” and “generalist”.

The Task Force on Generalism commissioned by the Royal College of Physicians and Surgeons of Canada has broadened the discussion of generalism in Canada, and it is striving to develop a working definition of the concepts of generalism and generalist physicians. This definition would be applicable to both family physicians and specialty physicians.

There is a perceived need to train more generalist-specialists in order to meet societal needs; however, there are challenges inherent in this, including the hidden curriculum in medical education and the remuneration of generalist-specialists in practice, both of which undervalue generalism.

This paper will examine the concept of generalism as it is applied to postgraduate medical education, as well as its potential impact on practising specialty physicians in Canada.

INTRODUCTION

From the dawn of the recorded era of Western medicine there has been a dynamic tension between those who have provided a broad scope of medical services to their patients and those specialists who have a restricted scope of expertise. In one of the more frequently quoted segments of his oath, Hippocrates enjoined his acolytes not to cut for stone, directing that this clinical service be provided by those with special skills. By the nineteenth century, the broad range of specialty services that we recognize today was well defined. The science-based curriculum at Johns Hopkins University School of Medicine and the organization of clinical services into specialties that supported medical education were held up as the ideal educational model by Flexner in his 1910 report.¹ This report had a profound impact on medical school curricula and the subsequent practice of graduates from North American medical schools. The issue of generalism and the impact of specialization was already a concern for Osler in first part of the twentieth century. He acknowledged the inevitability of subspecialization with advances in medical knowledge. However, he thought that specialization was intellectually limiting, and he held up generalism as a fundamental value within medicine.² This value has been widely accepted, and it continues to permeate most discussions related to specialty practice. However, in spite of its importance, there have been few attempts to describe what generalism means within the Canadian specialty medicine context.

When the Royal College of Physicians and Surgeons of Canada was established in 1929, there were two specialties: Medicine and Surgery. However, within eight years, more specialties were added at the request of the Canadian Medical Association. From that time, there has been an almost continuous increase in the number and variety of specialties and subspecialties, apart from two brief moratoriums when the application process was halted to permit an evaluation of the approval process

and to slow the apparently inevitable fragmentation of medical practice and care delivery. As of 2013, the Royal College recognizes 67 disciplines, as follows: 29 specialties, 35 subspecialties and 3 special programs. There are also 10 Areas of Focused Competence (diplomas). The most recently approved subspecialty, General Internal Medicine, acknowledges the range and complexity of a generalist approach to clinical care.

With the approval of each new discipline, concerns have been raised by many involved in the organization of clinical service provision — particularly the provincial and federal governments — that the fragmentation of care and the narrowing of scope of practice and expertise of physicians are detrimental to health service delivery in Canada.

The College of General Practice of Canada was founded in 1954 to recognize and support the role of general physicians. In 1967 it was reorganized as the College of Family Physicians of Canada and, in 2007, it officially recognized Family Medicine as a specialty. As such, in the Canadian context, there are no longer general physicians, as licensure requires certification by either the Royal College or the College of Family Physicians. Similarly, there is now no national organization that recognizes and supports generalists across the spectrum of medical practice.

To respond to this issue, in 2011, the Royal College established a Task Force on Generalism under joint chairs Dr. Paul Dagg and Dr. Jim Rourke. This led to a consensus conference in February 2012 that included educators, representatives of provincial regulatory authorities, health system managers, practising specialists, and family physicians from urban and rural communities. A draft report on the conference was prepared and circulated to the Task Force members in late 2012.³

Some people believe that that generalism and specialization is a dichotomy, with generalists and specialists being at opposite ends of a spectrum. As such, generalists

have in the past been perceived as less “complete” physicians, when, in fact, a broadly focused practice demands more of practitioners than does a limited scope of practice where only familiar, albeit perhaps more complex, clinical problems are managed. There have been frequent reports that for particularly complex clinical problems and interventions, subspecialists have better outcomes, although there is no apparent advantage for the management of routine clinical problems. In addition, subspecialists are frequently quoted in the media commenting on or explaining complex issues in health care and they are often the recipients of awards, promotions and accolades for their focused expertise.

Generalists, on the other hand, are seen as toiling “in the trenches” and are infrequently held up as models for medical students and residents. Generalists also tend to be at greater risk for work–life balance problems, as they are willing and able to see patients with complex, undifferentiated problems. Generalists in university settings may do more teaching or see more or different types of patients; this may limit their research activities. In terms of recognition and academic advancement as a member of a university faculty, research publications and grants are the typical measures used to determine excellence, something that may be more difficult for the generalist physician to accomplish. As a consequence, academic generalist physicians tend to direct their interests toward medical education activities and health systems research, which may not result in prominence in the public realm. However, generalists are likely better placed to address the broad determinants of health of a population — including education, employment, environment and family income — and to direct the future of the health care delivery system in Canada.

The purpose of this paper is to examine the concept of generalism, which has been held up as a quality that is lacking in current Canadian residency education programs and, subsequently, in specialty practice. Inherent in this

dialogue is an assumption that generalism is a well-understood term. In reality, there are multiple definitions of generalism, a fact that increases the confusion and misunderstanding. This paper will do the following:

- review current definitions of the term “generalism” and propose an initial set of generalist competencies for Royal College specialties for further development;
- define some principles of generalism in the context of specialty medicine;
- examine the possibilities for research opportunities to assist with the development of a generalist initiative in Canadian health care;
- discuss the generalist-specialist physician supply in the Canadian context, including the international and domestic balance of generalist physicians; and
- review the issues related to the preparation of a balanced physician workforce by Canadian medical schools to meet the needs of the Canadian population.

DEFINITIONS

There are a number of different definitions and concepts that have been used to describe generalism. Each of these definitions has inherent advantages along with significant problems, all of which serves to alter the effectiveness of their usage.

Generalism defined as a particular set of disciplines:

- Five generalist disciplines are recognized in the United States: Family Medicine, Internal Medicine, Obstetrics

and Gynecology, Pediatrics, and Emergency Medicine. In these disciplines, patients have direct access to all physicians, both specialist and generalist.

- George Goldsand defined five generalist disciplines in the 1990s for Canadian usage: Internal Medicine, Pediatrics, General Surgery, Emergency Medicine and General Pathology.⁴ However, this definition restricts the utility of the term to a narrow definition of disciplines and it does not include Family Medicine.

Generalism defined as a first point of access to the health care system:

- Generalists are primary care physicians who are accessed directly by patients. This would typically apply to Family Medicine; however, in the Royal College context this definition would apply only to Emergency Medicine.

Generalism defined by the patient population:

- Generalist physicians are those who see and manage patients with undifferentiated problems. In the Canadian context this would potentially exclude most Royal College disciplines, as patients are seen by most specialists only upon referral.
- Generalists see broad-based clinical problems and patients with multiple diseases or diseases involving more than one organ system. However, this definition may still refer to several disciplines that are not normally recognized as generalist (e.g., Medical Genetics).

Generalism defined as a set of competencies/attitudes/philosophies or an approach to patient care:

- Generalists are integrative and cross several domains of clinical practice. However, this could include several of the subspecialties currently recognized by the Royal College (e.g., Pain Medicine, Palliative Medicine).
- Generalism is defined by the CanMEDS intrinsic competencies that are common to all physicians.⁵

Generalism defined as foundational training or with direct entry from medical school:

- Generalists have less in-depth training despite the observation that generalist physicians such as General Surgeons may require longer training periods to acquire the necessary skills in Orthopedics and Obstetrics and Gynecology that may be required for a community General Surgical practice.
- Generalism is a fundamental competency upon which specialties and subspecialties are built. This concept — adopted in the United Kingdom postgraduate medical education (PGME) system — if implemented in Canada, may have the undesired impact of lengthening the time of training for specialties and subspecialties.
- Generalist specialties are those with PGY-1 entry through the Canadian Resident Matching Service (CaRMS) process. This captures several disciplines that would normally be regarded as narrowly focused subspecialties (e.g., Neuropathology, Pediatric Neurology).

Generalism defined as the antonym to specialization:

- This fails to capture the importance of generalist specialties, such as Internal Medicine, as well as those that are more broadly based, such as General Surgery.

Despite their problems, several of these definitions capture important concepts that inform the working definition for this paper. It is understood that any definition that is accepted will have an impact on the education of specialty physicians in Canada. The following served as the working definition of generalism in the context of this paper and for Royal College specialty residency education:

Generalism is a philosophy of care with acknowledgement by the physician that broad-based comprehensive care is provided and the physician espousing generalism values is prepared and willing to reach across the existing gaps in the health care delivery system. The principles of generalism are

applicable to all Royal College specialties and subspecialties. A specialist with generalism values works directly with primary care providers, particularly Family Physicians. Ideally, physicians are able to develop their clinical practice to meet community needs and refrain from narrowing their practice.

The Task Force on Generalism simplified and clarified the above wording and proposed the following definition:

Generalism is a philosophy of care that is distinguished by a commitment to the breadth of practice within each discipline and collaboration with the larger health care team in order to respond to patient and community needs.

Using this latter definition, nearly all Royal College specialties and subspecialties contain some aspects of generalism, and the Objectives of Training (OTR) documents incorporate the broad-based knowledge and skills expected of every graduate of a Royal College-accredited residency program. An important component of generalism is maintaining the full breadth and depth of the discipline as defined by the OTR, as opposed to removing a component of the OTR, which would serve to narrow the scope of practice. Graduates of specialty residency programs in Canada need to be able to recognize (if not manage) any illness that they are likely to see in their practice even if it is outside the scope of their usual practice or area of concentration.

The generalist competencies expected of Royal College specialists and subspecialists need to incorporate the following concepts:

1. The ability, commitment and mandate to accept in consultation, investigate and manage patients whose problems are within the entire scope of practice for a specialist/subspecialist as defined by that discipline's OTR document.

2. Sufficient working knowledge of the practice of medicine, as broadly defined, to integrate and collaborate effectively with primary care physicians and other specialists for patient-centred care delivery.

These two components can apply to virtually all Royal College specialties and subspecialties. As well, this approach ensures that the concepts of generalism are valued and sustained throughout residency and into active specialty practice. Practice patterns evolve throughout a physician’s professional life, driven by community needs, the continuing expansion of medical knowledge and individual personal preferences. Using this description, non-generalist physicians are those who significantly restrict their practice within their discipline and who are typically accessed by referral only from other specialists. The apparent mismatch of specialty training with the positions currently available highlights the importance of ensuring that the educational system is responsive to societal needs. [See [Addressing Societal Health Needs](#).] It can be hypothesized that the drivers for subspecialization and the subsequent restriction of scope of practice are more a function of the demands of academic health science centres than a response to societal needs.

DRIVERS FOR CHANGE

The mismatch between specialist and generalist physicians has been identified by government, health care planners and physician groups alike. The responsibility of the medical education system to prepare physicians to meet societal needs was recognized in the Association of Faculties of Medical Education of Canada’s report entitled *The Future of Medical Education in Canada (FMEC): A Collective Vision for MD Education*,⁶ which highlighted four specific recommendations regarding the importance of generalist competencies in medical education:

1. Ensuring that the health human resource planning process aligns the mix of generalists and specialists in the physician workforce with the needs of populations.

2. Identifying and addressing elements of the hidden curriculum that devalue generalism and Family Medicine.
3. Increasing representation of generalists within faculties and among preceptors.
4. Providing learning opportunities for students to experience patients with undifferentiated problems and early presentation of illness in natural contexts.⁶

Training

The Canadian model of health care delivery is based on a strong primary care system with secondary access to specialist services by referral. However, the health needs of the Canadian population is dependent on several well-defined social determinants, including education, employment status, a healthy environment — including access to clean water and air — decent housing and reliable nutrition. The Royal College, as the certifying body that recognizes individual specialties, has a particular responsibility to respond to these needs.

The current system appears to train physicians who closely mirror their clinical teachers working at academic health science centres. These centres have a large number of physicians who are able to practice in a restricted area within their specialty or subspecialty. With their preceptors as role models, residents learn to model their own practices on these restrictive models of clinical activity. In addition, at the end of their residency program, many residents pursue fellowship programs. A number of reasons have been offered for this phenomenon, including insecurity on the part of the residents as they begin independent practice, increased opportunities for good non-academic positions as some larger community hospitals look for specific skill sets and interest in obtaining positions at the academic health science centres, which almost invariably require additional training or research expertise prior to recruitment. The academic health science centres have also become dependent on post-certification trainees for the provision of complex clinical programs.



Recruitment and Reward of Generalists

In an era of inadequate physician human resources, residents had the luxury of access to an unlimited range of job opportunities. With increased output from medical schools and residency programs in the last 10 years, this physician deficiency is being addressed and, indeed, in some specialties there is now a surplus of graduates (e.g., Radiation Oncology, Cardiac Surgery, Neurosurgery). A rebalancing of residency positions to respond to real health human resource needs provides an opportunity to redress the balance between generalists and highly subspecialized physicians.

The lack of clear understanding between stakeholders regarding the need to produce, nurture and sustain generalist physicians leads to funding issues, including lower compensation for generalist physicians. This has a negative impact on recruitment. Family Medicine has seen a drive toward enhanced career flexibility — a draw for medical students⁷ and the Royal College disciplines will need to ensure that there are opportunities for specialty residents to develop and evolve their own practices to meet societal needs once training is complete. The restructuring of the organization of Family Medicine service delivery has seen the development of team-based care; this has also increased the appeal of Family Medicine as a career option for Canadian undergraduate medical students.

Practice

Most specialist physicians have some practice activities that are hospital-based. Over the last 20 years, the hospital system in Canada has seen a virtually continuous restructuring. Smaller hospitals — particularly those close to larger centres — have seen their clinical services re-organized, rationalized and, in many cases, centralized to the larger community hospitals. By virtue of their care provision, teaching hospitals are focused on education of specialist physicians and surgeons — therefore there may be less interaction with family practitioners. Reliance on expensive technology in support of clinical services has

also driven this centralization process. Specialty programs within these centralized institutions have furthered the drive to restricted practice. Although most regional hospitals are well served by graduates of the residency programs, there are still a number of rural and isolated hospitals that struggle to maintain a range of basic specialty services in the face of a limited population base. Although almost a quarter of the Canadian population may be defined as rural, according to the 2005 National Physician Survey, only 9.4% of physicians are based in rural areas.⁸ Despite this fact, rural Canadians have a higher burden of illness and a shorter life expectancy. The need for the medical community and medical educators to respond to this challenge is obvious.⁹

As detailed in this section, all of the pressures on medical students and residents to lose the principles of generalism during their education programs are strong and need to be addressed directly.

ADDRESSING BARRIERS TO CHANGE

Generalism seems to be a concept that is in direct opposition to the trend, from time immemorial, in most domains of human endeavour toward increasing specialization. It will be a challenge to reverse, let alone stabilize, this trend in medicine. However, since the fundamental objective of the medical education system is to provide the correct number and variety of physicians to meet the health care needs of Canadians, there is a strong impetus to consider how medical education can begin to turn the tide toward the values of generalism.

Training physicians to meet the needs of Canada's diverse and widely distributed population demands that the PGME system consider these demographics when selecting and training residents. Rourke has summarized a number of obstacles in training undergraduate medical students within our programs.¹⁰ Some of these obstacles also apply to PGME. Furthermore, postgraduate training is also affected by selection biases and opportunity, among other factors.

Organization and Structure of PGME

One of the challenges to increasing the focus on generalism is the organization of residency training. Currently, many residency programs consist of rotations through a variety of sub-specialty services. This model may not be the most effective way to prepare physicians for generalist practice, particularly given the important role that mentors appear to play in career choice.¹¹ This current model harkens back to the organizational structure of the rotating internship, which ultimately became unsuitable to prepare physicians for general practice.

Furthermore, there is little opportunity for residents to interact with regional or community-based specialist physicians, let alone experience alternative models of care delivery. [See [Diversified Learning Contexts](#).] On the contrary, many residents are given the impression that specialist physicians working outside of large university centres are of a “lesser quality.” This unspoken undercurrent, which is part of the hidden curriculum, devalues the contributions of generalist physicians. This attitude can be further reinforced by the observation that some, usually isolated, regional or community centres are staffed by internationally trained specialist physicians, some of whom may have less than the “gold standard” of Royal College certification.

Post-residency fellowship positions are offered to enhance clinical service delivery without necessarily having well-defined educational objectives for the individuals in these programs. While there is an imperative to provide for the service needs of large institutions, there are already many professionals working to support such care. In order to better understand how these fellowships might have an impact on generalism, more research should be done to look at the number of fellowship trainees, the locations of training, and the training objectives and skills being acquired, recognizing the potential impact of post-certification fellowship programs on the organization and delivery of clinical services at the academic health science centres.

In addition, there is limited support for generalist physicians in practice who wish to maintain competence in a broad range of practice. Re-entry to postgraduate training is difficult and is usually financially punitive, if available. Instead of shorter periods of retraining — retooling programs — physicians are expected to retrain by entering into formal residency programs that last for several years.

Health Care System Delivery and Government

The development of inter- and intra-professional team-based care, while being patient-centred, has further divided the organization of clinical services. Graduates of Royal College specialty programs may not have the wide range of specialty and subspecialty colleagues available to them in regional hospitals and may therefore believe that they are poorly prepared for clinical practice in these centres, where more broadly based skills and knowledge may be required. It is therefore not surprising that the regional and smaller centres have had, and continue to have, difficulty recruiting new Canadian graduates.

Recently certified specialists who have trained alongside other specialists are more comfortable in the larger metropolitan hospitals where their limited, but highly skilled, expertise is more appropriate to their scope of practice. The subspecialization of services seen in the large cities is not possible in the smaller regional hospitals, let alone in remote or rural areas. The observation that many of the specialists who have a broad range of expertise and who practice in rural areas are largely international graduates has raised concerns that the curricula and training environments for our domestic graduates are not meeting the needs of Canadians.

The service needs of the academic health science centres demand the ready availability of a significant cadre of residents. This limits the possibility of residents going further afield to experience other models of care. However, when residents are able to spend time away from the

academic health science centres, they often experience the challenges and opportunities available in a generalist practice; this can stimulate in them an interest in pursuing a more generalist practice and in working in a wider variety of settings.

Provincial and territorial medical regulatory authorities have jurisdiction over the practise of medicine by physicians in Canada. Increasingly the regulatory authorities are defining scope of practice for physicians to ensure that physicians are competent to provide defined clinical services. This trend to define specialties and scope of practice may be counterproductive to the goal of producing more generalist physicians who, of necessity, have a broader range of skills and knowledge than does a narrowly defined subspecialist. The corollary is to ensure that practising physicians know both their own competencies and limits of their clinical expertise in the interests of patient safety and the achievement of high-quality patient care.

Governments often consult with universities on matters related to the residency training of specialist physicians. The opinion leaders on this matter are usually the senior faculty of university academic departments. Thus when direction is needed on matters of health service delivery, including funding, expert advice is sought from opinion leaders who may have competing interests. Governments should, therefore, be advised to seek out alternative additional expertise in order to gain a more well-rounded perspective on matters related to residency training.

Remuneration of specialist physicians is quickly becoming a challenge in many provinces. The tendency to support university-based academic groups through special contract arrangements has changed the playing field significantly and has created further tensions between academic (often “focused practice physicians”) and non-academic (generalist) physicians.

Universities

A significant driver influencing trainees is the observation that future career advancement within a university atmosphere demands attention to research and publication rather than patient care. Provincial departments of health subsidize universities to sustain the academic mission of teaching and research. The balance between clinical service delivery and the academic mandate has, therefore, been altered from the traditional model where clinical delivery directly subsidized teaching and research.

Communities in Canada recruit general specialists from all over the world. Saskatchewan is widely recognized to have approximately 75 per cent of their regional/rural areas staffed by international medical graduate physicians, including generalist-specialists.¹² Many of our Canadian-trained generalist-specialists choose to remain within large centres, and they are often encouraged to take on positions as hospitalists or educators, as well as specific positions such as in emergency rooms or specialty clinics. Most of these positions are salaried or contract-based and are negotiated as part of alternative funding arrangements for academic departments. Individuals in these positions soon become quite restricted in their skill set and are then not available to work as true generalist-specialists, even for the purpose of locum support in struggling communities.

Restricted Scope of Practice

Specialist physicians often develop highly defined areas of expertise, with a corresponding tendency to restrict their scope of practice. Such narrow areas of focus can further restrict patients’ ability to access specialists and can limit the availability of physicians to provide on-call services. On the other hand, generalist practice, which encourages at least some degree of breadth of practice, can be seen as more difficult, particularly when it comes to maintaining competence. The maintenance of skills and competence for generalists requires a broadly focused approach to the rapidly expanding knowledge base for every specialty and sub-specialty.

RECOMMENDATIONS

The barriers discussed in this paper also offer opportunities for change. The following recommendations are actions that the Royal College — as the accreditation and certification body for Canadian specialists and a major body speaking for specialty medicine in Canada — can do to ensure a move toward generalism within specialty medicine. These recommendations address some general issues, as well as the education and practice issues of specialty physicians.

General Recommendations

- 1.** The Royal College should enhance generalism by creating a competency rubric of generalist competencies acknowledged by all specialty programs that include the following:
 - a.** an understanding of what the societal health needs are for their discipline;
 - b.** an understanding of how the health care system works outside of their training program;
 - c.** an enhancement of the CanMEDS Roles of Manager (to include hospital structure and function, physician regulation, and the structure of the Canadian health care system), Professional, Health Advocate, Collaborator and Scholar; and
 - d.** emphasis on generalist competencies within the evaluation systems both in training and in certifying examinations.
- 2.** The Royal College should gather data on generalist-specialist practice and help facilitate a more thoughtful discussion on generalism. In particular, there should be a focus on the dialogue between governments, which are often promoting

generalism, and universities, which often resist. Where appropriate, the Royal College should use the research activities detailed below to advocate for the training of more generalist-specialists.

- a.** Building on the research that has already been undertaken on generalism, the Royal College should undertake research to help clarify the term “generalism” within the context of specialty medicine.
- b.** The Royal College should take on a leadership role in bringing together key players in collecting health human resource data. Specifically, this should include monitoring specialty health care delivery over time and gathering more data on generalist-specialist practice and the needs for such service in order to better plan for health care needs.
- c.** The Royal College should undertake a national census of specialist physicians currently working in smaller communities and isolated hospitals. This information will be needed to determine the specialist physician human resources needed in the future, in addition to the generalist-specialist requirements, with a view to the continuous evolution of the hospital system in which most specialists practise.
- d.** The Royal College should develop a repository of information on generalism in specialty medicine and should make this information available to governments in order to better inform health human resource planning and health policy. This repository could later be expanded to include other areas of specialty medicine.

Recommendations for Changes in Education

3. The Royal College should advocate for enhanced exposure to generalism champions as part of undergraduate medical education. These types of pre-residency experiences may encourage medical students and residents to broaden the focus of their career objectives and may predispose them to embark on a more generalist practice after completing their residency training.

4. The Royal College should work to enhance the accountability of residency programs and their sponsoring universities as they respond to the physician requirements of the populations they serve. Although government usually determines the total number of physicians in residency education programs, the universities have a responsibility to ensure that the distribution of positions in specialty programs reflects population needs.

a. The Royal College Accreditation Committee should explore how social accountability can be built into the accreditation standards, with a focus on generalist principles. For example, one outcome of the accreditation process should be having programs provide information in the pre-survey documentation on the types of practice that their graduate residents have entered, including the number who entered post-residency fellowship programs, and the drivers for their decisions.

b. Similarly, specific questions on how the program responds to the generalist objectives of the OTR should be added to the pre-survey questionnaire. Specialty Committees will need to develop specific questions for their own disciplines.

5. The Royal College should encourage flexibility in the PGME system in order to promote generalism.

a. Specialty Committees should enhance and clearly define the generalist competencies expected of practising consultants in their disciplines by adapting the specialty training requirements (STRs) to encourage more learning activities that are directed to generalist practice patterns and generalist competencies. This may be through elective or selective rotations; however, these rotations must have a generalist focus and permit longitudinal experiences to gain classic 'subspecialty' competencies.

b. Specialty Committees and the Education Subcommittees need to consider how to enhance flexibility within programs by permitting residents to spend more time in clinical rotations at non-accredited training sites; this is currently limited to six months in a five-year program. Given that most health care institutions in Canada are now involved in medical education, and with the improvements in learning technology, it is time to reconsider the utility of this limitation.

c. Specialty Committees should consider how they can improve intra-specialty flexibility by allowing residents to tailor their training, particularly in their senior years, to suit their future career environment. An example would be a resident wanting to practise in a particular rural or community setting who may need specific skills to meet the needs of that population.

d. The Credentials Committee should consider whether there are additional mechanisms that could be implemented to grant credit for generalist training. This would, of necessity, need to be specific for each discipline, but

would assist with the generalist initiatives. This would help promote re-entry into the PGME system and increase the generalist perspective in specialty training programs.

6. The Royal College's Accreditation Committee should consider instituting mandatory, structured career counselling in residency training. This would offer the opportunity for residents to learn about the different careers within their specialties and what a practice that embodies generalism within their specialty might be able to offer them, particularly from a career flexibility perspective, while maintaining established standards of residency education.

a. The Accreditation Committee should consider adding questions to the pre-survey documentation about what formal career counselling a program offers its residents. Specifically, programs should be required to introduce residents to the full breadth of career options available within that specialty, not just the options available within the university. Programs should be encouraged to provide residents with first-hand experience in a variety of career options, including generalist-specialist practices, within their disciplines. This counselling should have formal, structured components and should be distinct from a routine discussion at the six-month meeting with the program director.

Recommendations for Supporting Practising Specialists

7. The Royal College must support practising physicians throughout their professional lives and must support them to gain access to retraining

programs to refresh knowledge and learn new skills. The Areas of Focused Competence (diplomas) are one method to encourage physicians to learn new skills they can adapt to meet community needs. In addition, the Royal College should do the following:

a. Encourage the Specialty Committees to include a continuing professional development plan in their STRs. This is particularly important for generalist specialties where practitioners often have a wide breadth of skills to maintain over the course of their professional careers. This will need to be coordinated with acknowledged societal health needs, and will require the co-operation and involvement of the national specialty societies.

b. Actively support generalist-specialists in practice by maintaining an up-to-date list of learning opportunities and contacts for skills enhancement programs. This should be available to all Fellows and housed in the Office of Professional Affairs.

8. The Royal College should promote teaching and research skills for non-academic health science centre-based teaching physicians.

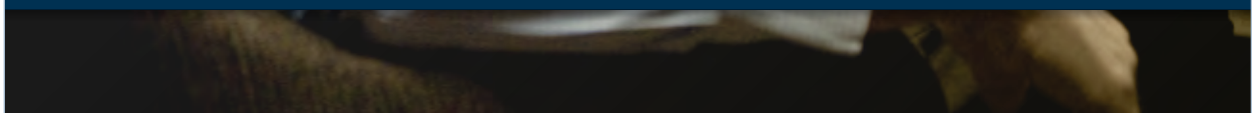
a. The Royal College's Office of Professional Affairs should work with their continuing professional development educators to consider how the Scholar role — incorporating teaching and research skills — could be emphasized through continuing professional development programs and, specifically, for non-academic health science centre-based physicians.

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3. Diversified Learning Contexts



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Diversified Learning Contexts



Acknowledgements

Robert F. Maudsley (1938-2012) was a contributing author for this paper. A major driving force in Canadian medical education for many years, he was consistent and persistent in his vision of a better process for preparing physicians for Canada and the world. The other participants in this paper acknowledge his many contributions.

ABSTRACT

With questions about how best to prepare trainees to meet the needs of society and, with a move toward more competency-based education in medical training, it becomes imperative to consider both where and, more broadly, how residents are being trained. The purpose of this paper is threefold:

1) To discuss the best setting and location for residency training to ensure that training reflects practice; **2)** To determine what changes would need to be made within the postgraduate medical education system to enable residency education to take place in more varied contexts; and **3)** To suggest what education supports would be needed to ensure that residency training in diversified contexts is at least as effective as the training that is currently occurring in the clinical teaching unit setting.

The focus of this paper will go beyond the paradigm of distributed medical education to consider diversified learning, which speaks to the broader context and models of learning in addition to the physical location of training. While distributed medical education seeks to provide trainees with exposure to a larger variety of training sites and experiences (often in smaller or more rural communities), diversified learning focuses on the end competencies and practice that a trainee will have upon graduation, and seeks to find the most appropriate training site to achieve those ends. There has been a tension in Canada for many years between the traditional clinical teaching unit model in an academic health science centre and the often preceptor-based teaching that may occur in smaller distributed sites. The core thesis of this paper is that the diversification of the learning context needs to be considered on the basis of the learning needs of the resident — based on design rather than tradition, politics or history — with the goal being to best prepare the resident to meet societal needs.

INTRODUCTION

Within the context of the Canadian postgraduate medical education (PGME) system, the diversification of the learning context includes ensuring that there are a variety of physical locations for training such as urban, non-urban, rural, academic health science centres, ambulatory settings, in-patient care and outreach care. In addition, this diversification includes the format of that training, including the clinical teaching unit (CTU), preceptorship model or alternative models where residents work as individual practitioners with higher levels of supervision. While there is an array of options to choose from, the majority of PGME in Canada remains situated within large academic health science centres and tertiary care hospitals.

In order to consider how PGME in Canada could train residents using a variety of formats and locations, it is important to first discuss the characteristics that are required of a training site. While not exhaustive, the following list highlights key features that should be present in order to promote effective residency education:

- a learning environment that is supportive of the educational mission;
- a scholarly approach to patient care;
- a sufficient mix and volume of patients to enable the learner to achieve his/her learning objectives in a reasonable time (learning that is both efficient and relevant);
- the opportunity for learners to be fully engaged in patient care (not just passive learning) up to the level of his/her individual competence;
- an environment that fully engages the resident in the clinical setting to avoid “educational tourism”;

- adequate supervision to meet the needs of the learner as he/she progresses through residency;
- promotion, where possible, of interdisciplinary learning and care;
- commitment to quality of care and how that is monitored and assessed;
- an environment where the CanMEDS competencies are modelled by faculty;
- an environment where there is time dedicated to reflection; and
- an environment where there is a supportive framework/formative environment.

The following are deliberately missing from the above list: a hospital setting, a minimum number of trainees and a requirement for a hierarchy of trainees. These were omitted because they are often artificially determined and based on habit and tradition rather than the deliberate, needs-based planning of educational settings. Moving forward, it is imperative that PGME get the cart and the horse in the right order. Rather than having the location and context for residency education predetermined and then fitting competencies and training experiences into that context, planning for residency training should involve first establishing what competencies need to be developed and, second, determining the best location and context to achieve the desired outcomes.

Also missing from the list is the need for the clinical experience in which the learning is embedded to reflect — but not necessarily be identical to — the clinical experience in which the graduate may ultimately work. One of the reasons supporting education in tertiary centres is the opportunity for the learner to be exposed to rare or uncommon conditions in a reasonably predictable way. However, the learning can lose relevance if the experience is so divorced from the graduate’s likely practice setting.

The correct balance needs to be considered in light of the nature of the learner’s specific specialty or sub-specialty as well as the catchment area in a given setting. It is also important to reflect changes underway in medicine, where some specialties and sub-specialties are moving to more consolidated services in tertiary or even quaternary centres, while others are moving to more distributed expertise. However, it is essential to keep in mind that this situation is in flux and may change again in future years.

BACKGROUND AND CURRENT STATUS IN CANADA

The classic twentieth-century model of teaching PGME in Canada is the CTU, a concept that was first approved by the Association of Canadian Medical Colleges (ACMC) in 1962.¹ The definition of a CTU included

...the idea of designated areas of the hospital and later entire hospitals as teaching units; teaching staff, who were jointly appointed by the university and the hospital; and a team approach to care, involving learners at all levels with graded responsibility under the supervision of the attending medical staff. The overall objective was to provide patient care as a template for clinical education and research.”¹

While this model can expose learners to diverse cases, and has arguably served some of the larger disciplines such as Pediatrics, Internal Medicine and Surgery well, it does not meet the needs of all disciplines and has drawbacks with respect to diversifying learning contexts and increasing divergence from the reality of practice for some specialties. Nonetheless, the CTU model has become engrained as the model for PGME in Canada and as the default setting for resident training.

Other models of PGME, such as a preceptorship (where a trainee is immersed in someone’s individual practice), have sparked renewed interest in different learning models, and these other models are beginning to reappear² as some disciplines are looking outside of the CTU to enhance residency training and expose residents to more varied practices and potentially other aspects of the CanMEDS roles. Concern has been raised about similarities between preceptorships and the old apprenticeship model, with the latter being seen as an entirely service-oriented experience that provides a poor educational experience. However, the type of learning model — be it a preceptorship, CTU or other — is not important as long as the key features listed in the previous section form part of the learning environment.

After a period of relative stasis in medical education, followed by significant cuts in the early 1990s, the growth in medical education over the last decade has coincided with an increased emphasis on distributed medical education with the establishment of programs such as the University of British Columbia’s Island and Northern undergraduate programs.³ Perhaps, most notable, was the opening of the Northern Ontario School of Medicine (NOSM), a school that is entirely situated (both undergraduate and postgraduate training) in northern Ontario. The NOSM campus spans 750,000 km² and has greater than 70 clinical placement locations. This model has taken medical education into a variety of settings, from “...large urban settings to rural, remote and Aboriginal communities.”⁴ This has brought a welcome diversity to medical education in Canada; however, it is a trend that can be rapidly politicized, as communities and regions advocate for medical education sites for prestige and service reasons without careful planning of the rationale for training in these sites and without ensuring that there are adequate resources in place to provide effective, high-quality education. There is a risk in the growth of distributed education that the cart remains in front of the horse, with locations for training being selected based on non-educational factors.

While a shift away from the default CTU setting has started, there is still a long way to go before a competence-by-design approach prevails. This approach would be typified by universities thinking first about what setting would provide their residents with exposure to the most appropriate breadth and types of cases in the most representative context in order to optimize training and facilitate a smooth transition into independent practice. The automatic assumption that the bulk of (if not all) training needs to be done in an academic health science centre should be challenged, with the majority of training, if appropriate, being moved to settings that optimize the acquisition of the required competencies. Outside of the resources and training required to implement a diversified approach to medical education, there will have to be a change in culture so that distributed sites are not viewed as providing second-rate education and are not simply set up to try to emulate a CTU. Rather, PGME will need to recognize the advantages of and opportunities offered by varied training sites and capitalize on this diversity in order to produce well-trained physicians who are capable of meeting societal needs and practicing in a variety of settings.

There are potential cost implications involved in moving from a system that emphasizes training high numbers of residents in one setting — crudely akin to a factory setting — to more of a cottage industry, with trainees in various settings, often in smaller numbers as needs vary from program to program and learner to learner. However, if this shift results in physicians who are better trained to match the breadth of societal needs in Canada, the investment is likely worthwhile. There are certainly specialties and sub-specialties that require the consolidation of clinical experience and expertise that can only occur in a centralized setting and where the physician’s future practice will be exclusively or largely in that setting. For those, the decision to place them in a centralized setting should be done deliberately and not just for economic reasons.

Faculty development in both traditional and non-traditional educational sites is a core part of the shift necessary to allow training contexts to better match the educational needs of residents. There is a need for all educators to be engaged, to have a general understanding of the new wave of training and learning contexts, and to be better prepared, particularly in terms of how to assess candidates in a variety of educational contexts. The expertise in assessment that has been developed in the CTU needs to be exported and revised to meet the needs of faculty who supervise smaller numbers of residents more closely in a broader variety of settings. A diverse faculty that reflects the full range of the future work of the specialist-in-training is essential given the importance of role modelling.⁵ Consideration should also be given to the location of faculty members and to the experience of faculty, who in the current system often have experience that is limited to the academic health science centre. Broadening the learning context to include a greater range of interprofessional and primary-specialist physician teaching are both important factors if one is to diversify learning contexts for trainees.

Clearly, one of the driving forces behind the current move to more distributed learning contexts has been social accountability, with the need to better train physicians to better meet the health needs of society. This is particularly true given long-standing shortages of broad based specialist physicians in many communities outside of academic health science centres.⁶ A better understanding of the future physician human resource needs in specialty medicine will help define the context for training. More importantly, there is a need for a reassessment of the automatic assumption that training best occurs in the traditional university hospital setting. Combined with a move towards a competency- and needs-driven system of determining where PGME should occur, residency training should become more responsive and better able to reflect societal needs. [See [Addressing Societal Health Needs](#).]

DRIVERS FOR CHANGE

Currently, the classic CTU model is the predominant form of PGME in Canada, and while it is a model that works well for many specialties at many stages of training, it does not address the needs of all specialties and it does have its own set of challenges. Junior residents are often the ones doing most of the clinical work and thus they have limited time for reflection and self-directed learning. The CTU in Canada often exists within large hospitals or academic health science centres, with emphasis on the primary relationship between trainees within a specific program and secondary relationships with other closely related specialty medical programs. For example, Family Medicine programs and family physicians are now rarely present in these settings and, as such, the important interaction between specialists and family physicians has been lost. Opportunities for interprofessional education are also limited by the team structure, which usually focuses on vertical interaction between trainees and faculty within the same program but of varying seniority. The size and complexity of large teaching hospitals can substantially impede the development of meaningful relationships or interactions with other specialties. The discontinuity of care caused by frequent turnover of medical staff and residents can make it difficult to track responsibility for patient care issues and can have a negative impact on the development of the relationships with nursing and allied health professionals that are so important for the provision of good quality continuous care.

While the CTU does provide a relatively seamless transition from undergraduate medical education to PGME, it is not a model of education that enables a smooth transition into continuing professional development (CPD). This creates a significant gap in the learning spectrum from PGME to CPD. [See [The Continuum of Medical Education](#).]

Attention to CPD is growing as the nature of medical practice evolves, with physicians’ practices changing substantially over the course of their careers. Despite this, medical education in Canada is largely front-loaded, with the bulk of learning occurring in the first professional decade. The classic CTU is not necessarily geared to help a physician in practice upgrade his/her skills or develop new competencies. If reflection, self-assessment and self-directed learning are not emphasized in PGME, these skills are less likely to be part of a physician’s practice post-residency, despite the essential role these skills play in maintaining competency and evolving a practice to meet the changing needs of society.

Notwithstanding the welcome and novel development of the NOSM, the vast majority of postgraduate training in Canada continues to occur in university settings primarily located in cities. This training usually occurs in tertiary hospitals that are increasingly specialized, focusing on acute events and very short lengths of stay. In reality, this represents only a small portion of the health care services provided in Canada. As a result, a resident’s clinical experience predominantly involves a narrow scope of clinical problems, which is a marked contrast to the health needs of society and to clinical practice after graduation. This is illustrated in the diagram below (Figure 1).



Figure 1: Diagram of patients seen in training settings vs. practice settings

When designing PGME, it is important to pay attention to the effectiveness, relevance and efficiency of education. A learning opportunity may be highly relevant and effective; however, repeated exposure to the same learning opportunity can contribute to the development of an inefficient system. For several reasons, there is a growing need to find increased efficiency in the PGME system. There are increased expectations for learning in what were once largely service-driven experiences, increased awareness and attention to the broader competencies of physicians beyond the Medical Expert role, increasing amounts of information that require mastery, and concerns about resident work hours that have resulted in reduced hours available for both education and educationally important clinical work.⁷ At the same time, there is pressure not to extend the total length of training time, given the amount of time already spent training specialist physicians. This means that training needs to be more closely tied to the desired competencies so that residents are learning the skills they will need in practice and are spending as little time as possible on work that has minimal or no educational value. At the same time, this need for efficiency for the learner often results in more inefficiency, or at least greater work for the organizers of residency education. It is far easier to provide standardized training in large groups — irrespective of the needs of the learner — than it is to customize training to meet the individual needs of residents.

The distribution of physicians in Canada remains a challenge despite the fact that it has been identified as such for many years.⁶ The system produces too few physicians who go on to practise in the small urban, rural or remote areas in Canada. For many reasons, including familiarity with the practice environment, recruitment by mentors, a desire to model practice after these mentors and the needs of their family, residents often stay where they train. Since 80 per cent of physicians are married to other professionals — who have often established careers during the time their partners were completing residency training — moving

post-residency is particularly challenging. This further highlights the need to carefully examine where physicians are trained.⁸ Despite these facts, the amount of distributed specialty education in Canada is currently only a fraction of the training that is tied to academic health science centres. As long as programs fail to train people outside of urban areas and academic health science centres, the residents graduating from these programs are likely to opt to work only in those or similar locations, while under-served areas will remain that way.⁹ This also fails to adequately prepare residents to meet societal health needs.

Despite challenges with the current CTU model, it is important to note that this model also has significant strengths, particularly for teaching and clinical care. The challenge is to be mindful of the opportunities to diversify the CTU model and to focus on a needs-based approach to planning, rather than to continue with the status quo without reflecting on whether the current approach is in fact the best approach. A return to the criteria outlined earlier in this paper that should be used to judge clinical teaching teams (whether dyads or large, complex teams) should support the diversification of learning in medicine in a more purposeful way.

POSSIBLE SOLUTIONS

Moving forward, CTUs should be thoughtfully chosen as training sites, rather than being the default for training. Furthermore, CTUs need to be designed or reworked to address issues of interprofessional learning and to bring back the close collaboration with family physicians that is the backbone of the Canadian medical system. The nature and location of CTUs need to be carefully considered, with the quality elements previously outlined always in mind. The paramount drivers should be the learning needs of the residents and, in particular, how this learning aligns with societal health needs. The learning environment — wherever it is — needs to be driven by competencies

and desired outcomes. Vague terms such as critical mass of learners or faculty are often cited as reasons to keep learning centred in large academic health science centres without ever providing a definition of that critical mass that is deemed to be so important. Furthermore, these arguments fail to recognize the value of interactions with diverse learners in settings where the number of junior residents in a specific specialty may be low.

Attention must be given specialty by specialty to the future of care in that specific discipline. Furthermore, consideration should be given to whether or not there is value in developing specific training pathways for residents who plan to work in centralized, university hospitals where there may be greater need for sub-specialization and the development of focused expertise with strong underpinnings in research. With length of training already challenged by some of the issues discussed earlier, there may, in fact, be ways for training to become more efficient through the development of some variability and streaming within residency, recognizing the need for flexibility over time for those residents who interests change. This planning needs to be carefully tied into health human resource planning and the evolution of practice within the particular specialty with respect to sub-specialization and the need, based on quality of care and patient safety issues, to perhaps concentrate expertise. Streaming of this nature needs to be carefully considered as physicians' career paths may shift over time. In order to have training programs that better reflect the larger community of medical practitioners in Canada, we need, if anything, more movement by individual physicians in and out of traditional faculty positions in medical schools. Finally, it is important when considering the possibility of training physicians in more specialized or focused streams to continue to reject assumptions based on past practice about the location or format of that training. Specifically, the assumption that all components of training are best delivered in traditional academic health science centres should be challenged.

Residency training in Canada is block- and time-based, with the model one of a single continuous period of training — largely, if not entirely, in one location — with the vast majority of that training done in person. This assumes that, despite graded responsibility, there is a distinct point in time at which a physician becomes competent for individual, independent practice, and that the physician retains this competence, in most cases, until the end of his/her career. As noted earlier, this creates a major disjunction between PGME and CPD. In other professions, discontinuous training has been developed with a variety of work experience or co-op programs, in which learning periods are interspersed with opportunities to work. The pattern of moving in and out of work and education may, in the long run, be more supportive of the development or continued maintenance of competency, and could promote a smoother transition from PGME to CPD. The development of focused learning opportunities for residents in such a model of training may also result in the development of training opportunities that are more relevant or practical for physicians who are already in practice. In addition, as distributed medical education has evolved in Canada, new web-based or distance-learning opportunities have been developed. Technological developments allow for sophisticated supervision from afar; this not only supports distributed residency education, but also provides a practical platform for CPD.

The current PGME model in Canada has created a high level of standardization. This results in Canadian medical education that is of a predictable high quality, regardless of the school or accredited teaching program, and it is important that this quality be maintained. In addition, the current system creates a relatively predictable supply of new physicians, with the intake numbers reflecting output in four to six years, depending on the individual specialty training requirements. Training large groups of residents in one place is efficient for the training organization; however, a more diverse approach to learning may allow for a greater connection between PGME and CPD, which could be of profound benefit for the physician workforce

in Canada. As well, a diversified approach would allow for greater workforce flexibility. There would be less need to ensure that every skill has been mastered within the neat box of residency training, as physicians would be able to more readily re-enter training throughout the course of their career.

BARRIERS TO CHANGE

The PGME system is a complex one that includes not just residency programs and universities, but also teaching hospitals, ministries of health and of advanced education, and the three colleges (through their accreditation standards). Recognition of the contribution of all of these parts of the system is important to understanding the barriers to change, whether it be accreditation standards, funding mechanisms or the operational requirements of teaching hospitals.

As quality control of residency education through accreditation in Canada has become more rigorous and effective, the training requirements — as outlined in the Royal College’s Specialty Training Requirements and the Objectives of Training — are increasingly complex. Efforts to ensure more exposure to people with chronic disease and more experience with settings that promote continuity of care longitudinally increase the need for oversight of residency education, making it more difficult to distribute that training. Ironically, even as we address an important societal need — the need for residents to treat and follow people over time — we make it more difficult to move the resident out of the traditional academic health science centre in order to ensure that he/she is comfortable working in a variety of communities and settings. This is not an impossible situation; however, if the focus remains on rotation-based education, with the resident still primarily based at the academic health science centre, these new expectations of training may well tie the resident even more to the academic health science centre.

Quality of residency education — supported by a robust accreditation system and strong scholarship in medical education — is a hallmark of the Canadian medical education system. Involving new partners in this enterprise, particularly those not traditionally involved in medical education, creates understandable concern about maintaining the quality of that education. This concern, however, may lead to a bias against education that takes place outside of the academic health science centre, particularly that done in smaller urban centres, with the related perception that the educational experience in those centres is not as good when compared to that in the academic health science centre. Apparent objective indicators of quality education, such as the number of rounds or access to visiting professors, may at first glance reinforce this view. However, it is important to recognize that education in diverse settings is necessarily different, not better or worse. To mitigate concerns, there should be clearly established expectations regarding the competencies that the alternative setting is best suited to address, with careful attention to the drivers of quality education. The goal is not to replicate the training that residents get in large academic health science centres, but instead to recognize that all training sites offer different experiences. This can be done by aligning training so that residents get the right exposure at the right time to the variety of learning opportunities best suited to the development of a specialist physician who is most able to meet the needs of Canadian society. The Manager role may be, for example, one of the competencies best taught outside of the complex structure of the academic health science centre.

Advances in simulation have the potential to have a great impact on medical education. It is essential that, as the infrastructure for simulation is developed, attention is paid at the outset to the portability of this educational resource. There is no reason that simulators and their support staff cannot be highly portable. In fact, making simulation a tool, not just for the distributed education of residents, but also for CPD for physicians and other health care staff, could have positive outcomes for health care professionals in practice.

Currently, university hospitals in Canada rely heavily on residents to provide important services. Any increase in diversification of learning contexts will have profound implications on the care of patients in these hospitals. Hospitals manage best when they have a predictable number of residents coming through the system, and, therefore, these centres will have to adapt to more fluctuations in this supply, without relegating residents to the role of bystanders who are left behind by systems that have adapted to their absence. It will be necessary to develop a capacity to hire flex staff who can step in to do the work that is currently done by residents. At the same time, the nurses and other health professionals who move in and out of these positions need to be fully engaged and need to understand the essential role they play in medical education so that the staff is prepared to appropriately engage a resident when he/she is part of the team.

The fact that diversification of learning has a significant impact on many people within the system must be addressed. There may be a potential negative impact on residents resulting from multiple and varied training sites, given that residents frequently have families who cannot move easily. Although exposure to suburban hospitals may provide some of the experiences that are obtained from working in a small community, it is not the same, as it does not expose residents to issues such as transport and distance to sub-specialty backup. Nonetheless, suburban hospitals may be an alternative for residents who are not easily able to relocate. Another approach is to place the primary training site outside of a major urban centre/academic health science centre, only using the latter when necessary for education, and using technology, where possible, to avoid physical travel. It should be noted, however, that the utility of these approaches will be highly specialty-specific, dependent on the nature of the work in a specific specialty as well as the distribution of that specialty.

At first glance, distributed residency education can be seen as a way to provide service to underserved areas. However, this can lead to trainees ending up in settings that are not able to provide them with the necessary supports.

As such, an area that is critically short of physicians cannot take on the education of residents without the influx of significant new teaching resources. The thoughtful selection of distributed sites is essential in order to avoid placing residents in a community for reasons that are often politically driven. Even though the goal is not to replicate the academic health science centre resources, there still needs to be clear and explicit standards for training sites with respect to faculty and teaching capacity.¹⁰

There is little doubt that there will be a significant cost associated with the diversification of learning sites. Therefore, for diversified learning to be successful, there needs to be careful planning and forethought, with full engagement of all stakeholders. Equally important, however, is the recognition that the goal of medical education is to train physicians who will improve the health of the population. Improving the capacity of the system to address chronic illness and developing a physician training system that is more closely aligned with, and that responds to, the full spectrum of societal need, should move us closer to this end. As the old saying goes: “If you think education is expensive, try ignorance.”

Current expectations around the way that doctors are trained and practise may need to be altered to better respond to societal needs. Residents may fashion their practice to reflect the model of care they were exposed to in their training. In Canada there are many potential training sites for most residents; however, training is currently rooted in one location and there is the expectation that the resident will remain in that place for many years — up to 10 years or more if residency is pursued in the same centre in which the learner attended medical school. With anecdotal evidence showing a trend for residents to be older at the start of medical school, and with the increased trend towards two profession families in medicine,⁸ there is a substantial impact on families when residents have to move. The system currently exists so that a resident’s total education is under one program and one program director. While this improves accountability for training, it also means that people now expect to be in one physical

location and are exposed to only 1 system because they are under the auspices of a single program for the duration of their residency.

Residents might be less likely to select a system that places greater stress on them by increasing their movement through a diversity of learning opportunities. However, if PGME is going to become more responsive to societal needs, it may be necessary for there to be more varied experiences during residency.

The funding of PGME is highly variable from school to school and province to province, with no coherent approach to capture the full costs of PGME. It will be challenging to make significant changes to the system without a better understanding of the full costs and an appropriate allocation of funding.

RECOMMENDATIONS

1. Together, universities and the Royal College need to re-examine the role of the CTU in PGME, with a recognition of the diverse approaches to training possible with broadly defined and innovative CTUs, preceptorships and possibly even periods of more independent practice with distant supervision. In order to do this well, it is essential that careful attention is paid to the development of standards that are not site- or setting-specific, but that instead speak to an approach to patient care and education that is scholarly, that has a quality and safety focus, and that occurs with good supervision, support for the learning mission and opportunities for reflection. Finally, the selection of the site, style of teaching or any other aspect of the learning context needs to be done purposefully.
2. The assumption that training needs to occur primarily in an urban centre in an academic health science centre or a tertiary hospital needs to be reassessed on a specialty-by-specialty basis. Training should occur in the location that will

optimally facilitate the acquisition of the required competencies. In addition, the training setting or settings should reflect the full spectrum of practice within a specialty over the course of training including exposure to broad based clinical practice.

- 3.** The Royal College needs to encourage the Specialty Committees to review their specialty training documents and assess whether or not they can build in more flexibility so that residents are able to train in settings that reflect the full diversity of their specialty. As well, the training needs to ensure that the resident is exposed to the kinds of practices in which he/ she is going to work.
- 4.** The Royal College and universities need to recognize the complexity of a diversified approach to PGME and advocate for improved support for program directors to enable them to facilitate more distributed and diverse residency training. This will require additional funding, enhanced communication tools and greater innovation. Faculties of medicine need to develop expertise and resources centrally to support the process of diversification, with attention to logistical issues, but also to issues related to the support and development of new faculty in non-traditional settings around issues such as evaluation, effective clinical teaching and competency-based education.
- 5.** The Royal College should review all new policies that are put in place to improve the quality of education to ensure that changes to educational policy do not unnecessarily prevent the evolution of diversified and distributed learning.

6. The Royal College should assist and/or facilitate new health care partners in medical education, who, with university partners, must recognize, fully support and fund the educational mission in their facilities, recognizing the benefits for quality care in so doing. The Royal College should facilitate inter-university collaboration and hospital–university dialogue through increased engagement of program managers, including staff in distributed sites, and should support professional development for program managers and directors, as well as site managers and clinical leaders through such means as the Royal College’s annual International Conference on Residency Education (ICRE). In particular, faculty and support staff working in non-traditional settings need assistance to become familiar with issues in medical education common to program managers and directors, but also with those issues unique to distributed sites. Enhanced national networking with people from across Canada who are dealing with these issues can be facilitated through ICRE and similar venues.

7. The Royal College’s Accreditation Committee should review the accreditation requirements for the learning environments and CTUs so that the key elements suggested in this paper are in place at all training sites. The language in the accreditation standards that supports the exclusive reliance on the CTU needs to be reconsidered, with the overall goal being settings that reflect learning needs, regardless of structure. Accreditation standards should also focus on outcomes in relation to various competencies and also in terms of diversity of resident experience and capacity of program graduates to work in the full range of practice settings for their chosen specialty. Accreditation standards should be reviewed to ensure that they promote learning in a variety of settings, not just in the academic health science centre or traditional CTU setting.

- 8. Comprehensive and structured career counselling needs to be part of residency training to ensure that residents are familiar with the full range of professional opportunities within their specialty and to assist with their selection of the training that is appropriate for them.
- 9. The role of the senior resident needs to be re-examined as relevant training at this level may well be better done in a community setting, which

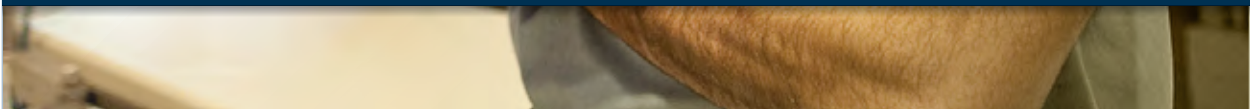
would provide greater independence, rather than in a CTU, where their role is to run the service efficiently. While this may reflect a useful skill, or at least a reasonable proxy for the managerial skills needed in practice, the current expectations under the Royal College's General Standards of Accreditation are that each resident "must assume the role of the senior resident," which apparently only reflects that role within a traditional CTU.¹¹

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4. The Resident's Dual Role as Learner and Service Provider



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The Resident's Dual Role as Learner and Service Provider



Acknowledgements

Robert F. Maudsley (1938-2012) was a contributing author for this paper. A major driving force in Canadian medical education for many years, he was consistent and persistent in his vision of a better process for preparing physicians for Canada and the world. The other participants in this paper acknowledge his many contributions.

ABSTRACT

Residents are called upon to play two roles throughout their postgraduate medical education (PGME): that of learner and that of worker. There should not be an inherent conflict between these two roles. Rather, patient care should be viewed as an important professional activity through which residents learn and, as such, no patient contact should be without some form of learning.

It can be challenging to find an ideal balance between the resident's two roles, particularly since there must be the recognition that any balance will be dynamic and will change as the resident moves through his/her education. Many factors have an influence on whether or not a balance will be struck, including the trend toward reducing resident duty hours, the need to meet societal health needs and the complexity of the Canadian PGME system.

This paper explores these factors and offers some recommendations to guide future work in this area.

that service is essential to residency education.¹ Overall, in recent years, the relative balance has shifted more explicitly toward increasing the amount of time dedicated to formal education. Striking an optimal balance in residency would ensure that, upon graduation, learners are well-trained, competent physicians who are capable of autonomous, reflective practice. However, there are multiple factors that have an impact on the ability to achieve this balance, including institutional needs, societal health needs and duty hour regulations.

While some of these factors, the drivers behind them and the repercussions to PGME go far beyond education, given the mandate of the Royal College, this paper will focus on the educational impact. As such, the fundamental values that underpin this paper are as follows:

- The provision of care is a fundamental and integral component of PGME. Active involvement in the care of patients is essential to the development of clinical skills.
- Education and patient care are not two concepts in opposition, but rather patient care is an integral part of learning. Being a member of the care team and providing care are key elements of learning throughout the educational continuum.
- No patient contact is without some form of education or learning experience. The challenge is how to ensure that every experience of patient care is seen as educational.
- Supervision is an integral part of the learning experience and it should evolve over the course of residency to meet the changing needs of the learner.
- While the educational aspects of residency training are the focus of the Royal College,

INTRODUCTION

In considering the future of postgraduate medical education (PGME) in Canada, it is imperative to address the roles played by residents – roles that are often characterized as a worker-learner duality. This notion of duality arises from the perception of residents as either workers – when they engage in patient care – or learners – when they participate in formal educational activities. The pervasive use of terms such as “service-to-education ratio” has led to a perception that moves beyond one of duality to one of opposition, with workers and learners viewed as opposing forces. In a recent perspectives article in *The New England Journal of Medicine*, Kesselheim and Cassell point out the fallacy of this perception of opposition, highlighting

there is a need to recognize that residents are also relied on to provide patient care. Any changes to or recommendations regarding the status quo should have a manageable impact on patient care.

BACKGROUND/ CURRENT STATUS IN CANADA

Residents themselves sometimes see service and education as opposing concepts, with service being mundane and necessary only to deliver care and with learning occurring only through formal education or selected patient care activities that residents see as being clearly aligned with their purpose as learners. On the other hand, faculty members and educators may feel that much of the education that takes place in residency occurs within the context of care delivery. Residents are “professionals-in-training,” and part of their professionalization is learning the value of providing service to others. Not only is this a social value in itself, it is felt to be a process of enculturation into the professional role.² Patient care is, therefore, the important medium through which residents learn, and it forms a critical part of residency education. As such, it is difficult to separate out educational activities from service to patients, and it is more challenging still to explicitly differentiate between the provision of care and education in residency training as the balance remains dynamic.

However, residents do not necessarily perceive all patient care activities as having the same, or any, educational value. In reality, the relative educational value of an activity may change based on one’s perspective, the situation or over the course of one’s residency. What may be considered as primarily an educational activity by a PGY-1 may be considered to be of little educational value by a PGY-4. However, in a competency-based system of education, residents need to be able to examine the

clinical activity at hand and determine how to use that activity to address gaps in their competencies or how to improve their level of competency with deliberate practise. However, the latter may be particularly challenging when more educationally relevant patient care experiences are being sacrificed so that residents can perform other tasks to make up for a lack of physicians and other health care professionals. As well, there should be an emphasis not only on how residents learn in practice, but on how this learning can be applied after graduation, as learning through active involvement in patient care is an integral part of continuing professional development (CPD).

The relationship between hospitals that rely on residents to provide patient care and the universities that oversee their learning also has an impact on the balance between service and education. The hospitals in which residency training programs exist have a significant influence on defining what residents do during their training. In many cases they serve as the paymaster for the resident. While there are many advantages to this arrangement, it fosters the expectation of a homogenized, highly educationally weighted experience in each hospital rotation. This can be difficult to achieve in practice.

To further complicate the matter, the role of the resident also varies dramatically by both specialty and site. Residency programs must grapple with the challenges of ensuring that residents have realistic work expectations when they begin practice while adhering to regulations and societal expectations of reduced duty hours to help ensure patient safety and resident wellness. While the changes to duty hour regulations continue to be hotly debated, they pose a challenge for both residents and educators. There is a need to maximize the educational efficiency of residency training to make up for the reduction in duty hours and not to lengthen the total time spent in training. Duty hour regulations will pose challenges to both patient care and formal education; facing these challenges will require changes to the curriculum and design of residency education.

Societal health needs is another factor that must be considered. In fact, these needs must be a primary consideration in the allocation of residency positions, rather than the more immediate service needs of specific programs, distributed learning sites or academic health centres. Recognizing that residents provide invaluable services in many aspects of health care, the intake of residents must nonetheless be aligned with the health needs of society to help curb medical workforce maldistribution among disciplines as well as the recent employment challenges faced by a number of new specialty and subspecialty certificants.

DRIVERS FOR CHANGE

A significant driver for re-examining the issue of this dual role is the effort in the last decade to reduce the number of resident duty hours. Changes to the standards of the Accreditation Council for Graduate Medical Education (ACGME) in 2003 resulted in restricted duty hours for residents in the United States (limited to 80 hours a week averaged over four weeks).^{3,4} The introduction of the European Working Time Directive had similar consequences in the European Union, with duty hours now as low as 48 hours per week. While the total time spent in training became longer in European jurisdictions with the introduction of reduced duty hours, the total time spent in training has not changed in either Canada or the United States.

More recently, the maximum number of consecutive hours of work for residents has also been reduced. In the United States, PGY-1s are limited to 16 consecutive hours of work, while more senior residents can work up to 24 hours consecutively. In the United Kingdom, consecutive hours are limited to 13. Starting in July 2012, the maximum number of hours that residents can work in a row in Quebec was limited to 16. Elsewhere in Canada, the mindscape varies, as work hours are set through the collective bargaining process between provincial house staff organizations and ministries of health or their agents.

Negotiated decreases in on-call requirements in Canada have had some impact on the time available for training, although the impact has been more on the maximum number of consecutive hours that can be worked rather than on the number of hours per week available for education and care provision. Programs have not increased the total length of training time to accommodate these changes, despite the increased workload of caring for sicker patients and the additional learning required as medical knowledge content continues to expand. Many graduates currently go on to complete fellowships after residency, presumably to gain confidence and/or competence for practice. In the 2009-10 academic year there were 2,425 clinical fellowship positions available across Canada.⁵

Methods to offset the workload of patient care and improve the delivery of PGME to ensure that graduates attain competency at the end of training include physician extenders and competency-based medical education (CBME). [See the [Competency-Based Medical Education paper](#).] Ultimately, there is a need to ensure that residents are well-trained, competent physicians at the end of their residency, even if they spend less time in clinical settings as a result of duty hour regulations. If the system does not change in response to duty hours, there is a risk that residents will not achieve the desired competencies within the current training times.

The potential impact of duty hour restrictions on medical education, resident and faculty wellness, patient safety, and the delivery of patient care are complex and potentially affect in different ways the different stakeholders and segments of Canada's complex and interdependent medical education system. From 2012-2013, the Royal College engaged eight key stakeholder organizations in a pan-Canadian consensus process on resident duty hours that is funded by Health Canada. This work, now complete, has assembled the available evidence on duty hours in the report, **Fatigue, Risk and Excellence: Towards a Pan-Canadian Consensus on Resident Duty Hours**, and

provides clear principle and recommendations on resident duty hours, directions and best practices.

From a professional standpoint, patient care during residency ethically dominates the learning role, requiring learners to fit their educational needs into their patient care duties. However, residents have empowered themselves to influence their dual role by developing professional organizations that are able to negotiate for their rights as service providers, including for the unique educational needs that must be met while providing patient care. While this capacity to influence the system offers many advantages, there is a potential risk of conflict with the learner’s role as professional.

Although changing, many faculty members who teach PGME have historically had little or no formal training in either educational principles or the impact of a rapidly evolving health care system and changing learner demographics on program delivery. [See the [Faculty Development Re-Imagined paper](#).]

Increasing professional responsibility, previously referred to as graded responsibility, for patient care is a cornerstone of the current definition of PGME; however, it must be implemented carefully if it is to be congruous with good educational principles, including CBME. Alongside increasing professional responsibility is the need for graded supervision, junior learners perform simple, mundane tasks where repetition may have little educational benefit since they are not often observed and evaluated. They “put in their time” until they are senior enough to be rewarded with the more complex, relevant, engaging patient care duties, coupled with ready access to or observation by a supervisor. Junior learners who are inexperienced and more susceptible to errors secondary to fatigue can pose patient safety issues if they are not properly supervised.³ In addition, there is a lack of flexibility in the current system, in that learners are unable to move through residency at a pace that matches their abilities. Given that the selection processes for medical school and residency are rigorous, most candidates are able to attain the skills taught in

residency quickly; however, the current system does not allow for the flexibility to tailor residency training to the specific educational needs of individual residents.

Finally, another impetus for reconsidering residency training and, in particular, the resident’s dual role is the need to support residents in looking after their own health and wellness. Specifically, wellness is often not well addressed or role modelled during residency training. Residents have a unique set of wellness needs and challenges, particularly because they do not have the same control over their own schedules as do practising physicians. This can limit their ability to take control of their own health and wellness. While there is a connection between work hours and resident health, other issues, such as emotional support and debriefing, are also important and are often overlooked. Residents may be faced with the loss of a patient or a stressful care situation, which can take an emotional toll on trainees, and there is currently very little support for this aspect of medical training.

POSSIBLE SOLUTIONS

An organized approach will be required when solving some of the current educational challenges and incorporating innovations to improve PGME.

The work–education balance may be best addressed with a discussion about what constitutes work versus education (although, as mentioned earlier, a clear-cut delineation between the two concepts is unlikely to be forthcoming as they remain intertwined during residency). Some patient care tasks require little repetition to master or do not greatly improve a learner’s understanding of the practice of medicine, but they may constitute a reasonable part of a learner’s duties in providing patient care. The balance of work and education in PGME can be tipped in favour of education by using other health professionals (e.g., phlebotomists, EKG technicians, laboratory technicians) to perform some of the more routine tasks. Operating room assistants, wound care nurses and nurse practitioners –

whose domains of competence overlap those of junior trainees – can also help deliver patient care and can free the resident to devote more time to educationally rich activities. The addition of these professionals could also enhance PGME by providing training, direct observation, feedback and assessment, particularly for junior learners. Widespread adoption of physician extenders (as in the United States) may shift the spectrum of patient care that physicians currently provide – effectively narrowing the professional domain – so that junior trainees would become responsible for more complex care and would have a decreased volume of work overall.

The CanMEDS framework is a competency-based system of medical education. The Royal College has been adapting medical education in Canada to become more congruent with this framework. PGME may become more efficient in a CBME system where learners progress by demonstrating competence in a specific area of practice.⁶ As programs change to align themselves with CBME, there will be a more robust assessment of the educational value of patient care activities and how those activities help the resident achieve competency in specific areas. Programs will assign residents not by time on rotations but by the opportunities they can use to attain or improve competencies in a continuum of expertise toward independent practice. Training faculty to become better teachers and educators will also improve the learning and help address duty hour restrictions. Faculty development has a key role to play in ensuring that the resident’s needs as a learner are met throughout the course of residency training.⁷

There should also be a greater emphasis on residents “owning” their education by becoming better CanMEDS scholars and paying attention to the principles of adult education and lifelong learning. Residents who do so can then tailor their educational experience and maximize efficiency. To address some of the resident wellness issues, faculty development focused on emotional debriefings with residents should be considered as part of faculty training. These debriefings would continue to serve residents well as they move into practice and CPD activities.

In order to optimally train residents, PGME must organize residency training around the transitions that learners face as they enter residency and graduate into practice, providing graded education and responsibility along the way. [See the [Continuum of Medical Education paper](#).] High-stress situations tax the ability of junior residents to learn and function (a key aspect of the ACGME report). Therefore, junior learners may require more attention, supervision and direction. However, they must slowly gain autonomy in their learning and patient care roles. Senior residents require less supervision than do their junior colleagues for routine procedures; however, important skills such as crisis management that are learned at the senior level still require supervision of some form. Senior residents also need to be given the opportunity to practise independently so that their performance can be assessed at the level of a junior consultant. The process of graded autonomy requires flexibility in training as well as the need to ensure that supervision changes appropriately over the course of residency.

BARRIERS TO CHANGE

The governance of PGME in Canada is highly complex. It involves medical schools, the hospital system, medical regulatory authorities, ministries of health (as payers), ministries of education, certifying colleges and the faculty who are also independent practitioners. This may lead to a situation of competing interests and expectations. With this reality in mind, a set of solutions that recognize this complexity will likely be required to address the tensions in the resident’s dual role.

Traditional learning structures and policies have been built over many years on the assumptions that residents will be present in certain hospitals and will provide a relatively predictable amount of patient care. In some instances, the educational process was relied on to provide personnel for health care delivery, even linking training position allocation to the ability to provide adequate service and

call coverage. However, improvements in working and education conditions have resulted from negotiations with resident associations. Some of the traditional roles required of residents (particularly mundane tasks) are now delegated to other members of the health care team. This progress has occurred at variable speeds in different environments and, with the advent of distributed medical education, it will be important to consider how residents can be supported in hospital settings where they are coming in as a new part of the existing health care team.

While on the one hand there is a desire not to lengthen the amount of time spent in training, there is at times also a resistance to changing the standard or traditional training models and paradigms. This tension will need to be addressed if restricted duty hours become a reality, creating the need to find increased efficiency with respect to education during residency. To date, the individuals responsible for training programs have assumed that the standard five years is required for the education of trainees, and they may be resistant to identifying new standards and methods as well as the truly essential elements that are required for all entry-to-practice-level physicians. Given the general appreciation of the high-quality practitioners produced by the Canadian medical education system, there may be an increased resistance to changing training models, as people invoke the “if it’s not broken, don’t fix it” adage.

The fact that residents provide care for patients and take on increasing responsibilities throughout their training is recognized as an excellent training model that helps prepare future physicians for the reality of practice. The practical aspect of being able to deliver care under supervision allows for residents to safely address the complexity and variations in patients’ medical presentations and treatments. Responsibility for patient care may be an optimizing factor in a resident’s education. Creating an environment that is reflective of a resident’s future practice remains an important part of residency education, and this is something that will need to be carefully considered in the debate around duty hours.

Specialist physicians trained in environments that do not reflect the realities of community-based practice can be limited in their ability to practise outside a training environment and, as such, risk not meeting societal health needs. [See the [Addressing Societal Health Needs and Diversified Learning Contexts papers.](#)] Ensuring that residents will be well equipped to practise in a variety of settings and that they have realistic expectations around work hours once they have graduated remain challenges that will require further debate and discussion.

POTENTIAL BENEFITS

While a discussion of the resident’s dual role often highlights some of the inherent tensions and challenges in the current system, it is also important to acknowledge the advantages of the combined roles and the many opportunities to improve training, learning and the residency experience. Recognition that residents must assume a dual role of service provider and learner will maintain the current construct of health care provision in medical education while, at the same time, will challenge medical educators to look for outdated modes of training and ask whether or not there are better alternatives. The expected reduction in duty hours combined with the desire not to lengthen the time spent in training should encourage the Royal College, specialty committees and residency programs to look for increased efficiencies and different training models in the PGME system and to promote the concept of residents becoming “expert learners.” Furthermore, changes in PGME that enable residency programs to maintain or shorten the current length of training have the potential to increase the number of health care workers available in the system.

Although the principles of graded responsibility are embedded in residency curricula, the parallel concept of graded supervision – a cornerstone of CBME – has not been given comparable attention. Directing more energy to clearly defining and implementing graded supervision will help ensure that trainees are given the opportunity to

practise with decreasing levels of supervision so that they can smoothly transition to independent practice. This will also ensure that residents have explored how to identify the limits of their competence and know when to seek help and how to further investigate areas of challenge. Promoting appropriate supervision at all levels of residency training will help improve the educational value of residency and promote patient safety.

Finally, while there are mundane tasks that all physicians must carry out, perhaps these should be looked at as challenges to determine how, as a practitioner, one can learn from every patient encounter and how one can constantly address quality improvement, starting in residency and continuing over the course of one's professional career.

RECOMMENDATIONS

1. That allocation of training positions to residency programs should be based on projected health human resource needs by discipline rather than on the short-term requirements to meet care provision needs.
2. That the design of residency programs be increasingly competency-based, using the appropriate methods of assessment that can be employed in diverse training settings and taking advantage of the resident's capacity for self-directed learning.
3. That the Royal College should support a model of residency training that allows for greater flexibility in how training requirements are met, recognizing that issues of educational design and clinical exposure are, to a large extent, specialty specific.

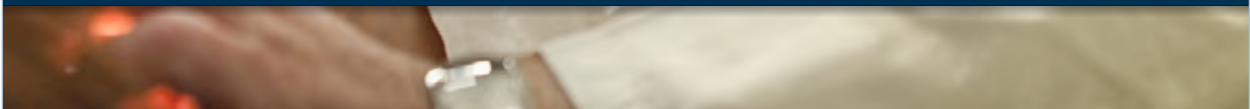
4. That the Royal College take the position that the primary response to restrictions in duty hours is not the lengthening of the amount of time spent in training. Overall training length should be determined by the attainment of the required competencies.
5. That residency programs be structured such that the allocation of time to formal education and clinical activities evolves progressively over the course of a resident's training.
6. That the Royal College – in partnership with the other certifying colleges, faculties of medicine, provincial and national house staff organizations, ministries of health, and other partners – develop a shared understanding of the evidence relating resident duty hours to patient safety, resident and faculty wellness, medical education, and health system performance.
7. That the Royal College restructure residency education to incorporate an initial phase of orientation and incoming assessment as well as a terminal phase of preparation and outgoing assessment for practice to facilitate transitions into and out of residency.
8. That the Royal College work with residency training programs, hospitals, faculties of medicine and other system partners to optimize the clinical learning environment, reconciling the implicit value of clinical care provision with the demand for efficiency in training. Activities devoid of educational value should be identified and then reduced, eliminated or delegated to other appropriately trained providers.

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5. Professionalism



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Professionalism



Acknowledgements

Kristin Sivertz (1951-2011) was a contributing author for this paper. A major driving force in postgraduate Canadian medical education for many years, she was an active clinician, faculty member and consistently engaged in improving the health care system throughout all her work. The other participants in this paper acknowledge her many contributions.



Robert F. Maudsley (1938-2012) was a contributing author for this paper. A major driving force in Canadian medical education for many years, he was consistent and persistent in his vision of a better process for preparing physicians for Canada and the world. The other participants in this paper acknowledge his many contributions.

ABSTRACT

This paper addresses key elements relating to the teaching and assessment of medical professionalism. Medical professionalism is fundamental to all aspects of the teaching and practice of medicine and, as such, deserves special consideration when one is looking to the future of medical education from the perspective of postgraduate education.

As the certifying body for specialist physicians in Canada, it will be essential for the Royal College to take a leading role in shaping postgraduate education on — and assessment of — medical professionalism.

This paper focuses on the core elements that are essential to developing and maintaining medical professionalism as a central tenet of medical education, societal needs and expectations, and the evolving delivery of health care in the twenty-first century.

For the purposes of this paper professionalism is viewed as an individual competency; however, it is important to remember that this competency is formed and informed by institutional, systemic and societal cultures that can nurture or impede its development and expression. As such, the cultural context must be acknowledged and understood. The interplay among the many social, cultural, systemic, organizational and individual elements that comprise the conceptualization of medical professionalism is extremely complex and multi-layered. To aid in developing an understanding of the different facets, a visual representation in the form of a concept map was developed.¹

This paper outlines the key definitions of medical professionalism and highlights key concepts that relate to the teaching and assessment of professionalism within postgraduate medical education. We have included new issues as well as the more traditional concepts of medical professionalism. In particular, this paper touches on the issues relating to altruism, ethics, professional autonomy, digital communication and social networking, and physician wellness. In addition, we address challenges related to teaching medical professionalism and highlight areas of emphasis and potential resources to guide residency educators and physician teachers in innovating and implementing curricula for this core component of training.

While the paper is directed toward education at the postgraduate level, it is recognized that the core content is no less germane to all levels of medical education — from the undergraduate level through postgraduate medical education to the education of those in practice.

BACKGROUND

While there is a rich body of literature related to defining, teaching and assessing medical professionalism, it is a complex construct and there is no clear and widely accepted comprehensive definition of the term. Before exploring the aspects of this domain that are essential considerations in envisioning the future of postgraduate medical education (PGME), it is important to consider the current definitions of both “profession” and “medical professionalism.”

The term “profession” is often defined broadly to include the concepts of altruism and a specialized body of knowledge. Cruess and colleagues propose a more

extensive definition of the term “profession”, which includes the importance of the societal contract and self-regulation.² Their definition of “profession” is as follows:

An occupation whose core element is work based upon the mastery of a complex body of knowledge and skills. It is a vocation in which knowledge of some department of science or learning or the practice of an art founded upon it is used in the service of others. Its members are governed by codes of ethics and profess a commitment to competence, integrity and morality, altruism, and the promotion of the public good within their domain. These commitments form the basis of a social contract between a profession and society, which in return grants the profession a monopoly of the use of its knowledge base, the right to considerable autonomy in practice and the privilege of self-regulation. Professions and their members are accountable to those served and to society.²

“Professionalism”, by extension, is defined by Cruess and colleagues as the “list of attributes, characteristics, or behavioural patterns” that are expected from one who practises in a profession (a “professional”).²

The definition of medical professionalism is further delineated as principles and responsibilities in the American Board of Internal Medicine article, “Medical Professionalism in the New Millennium: A Physician Charter.”³ This article highlights three principles of medical professionalism: **i)** primacy of patient welfare, **ii)** patient autonomy and **iii)** social justice. The document also includes 10 professional responsibilities that consist of a commitment to each of the following:

- i. professional competence
- ii. honesty with patients
- iii. patient confidentiality
- iv. maintaining appropriate relations with patients
- v. improving quality of care
- vi. improving access to care
- vii. just distribution of finite resources
- viii. scientific knowledge
- ix. maintaining trust by managing conflicts of interest
- x. professional responsibilities

In addition, in their report on the Medical School Objectives Project (MSOP), the Association of American Medical Colleges defines the physician professional according to the following four overarching attributes: knowledge, skill, altruism and duty.⁴

The CanMEDS Physician Competency Framework outlines key competencies for the Role of Medical Professional as follows:

Physicians are able to...

1. Demonstrate a commitment to their patients, profession, and society through ethical practice;
2. Demonstrate a commitment to their patients, profession, and society through participation in profession-led regulation;
3. Demonstrate a commitment to physician health and sustainable practice.⁵

It is worthwhile to note the explicit inclusion of the notion of physician wellness as an element of medical professionalism in the CanMEDS definition of the Role.

In a recent publication sponsored by the Carnegie Foundation for the Advancement of Teaching, Cooke and colleagues make further distinctions relating to medical professionalism:

...we prefer the term **professional formation** to professionalism to underline the continuous, dynamic, multifaceted, and profound nature of the construct. Building on an essential foundation of clinical competence, communication and interpersonal skills, and ethical and legal understanding, professional formation necessarily extends to aspirational goals in performance excellence, accountability, humanism, and altruism.⁶

We also emphasize that residents must attain Medical Expert competence, as well as competence in all of the CanMEDS Intrinsic Roles, and they must have a commitment to life-long learning. Cooke and colleagues refer to this as “aspirational goals of excellence, accountability, humanism, altruism and continued progress toward expertise after completion of training.”⁶

The authors highlight challenges to professional formation, including the following:

lack of clarity and focus on professional values; failure to assess, acknowledge and advance professional behaviors; inadequate expectations for progressively higher levels of professional commitments; and erosion of professional values because of pace and commercial nature of health care.⁶

The authors also provide recommendations to enhance the professional formation process, including the following:

promote formal ethics instruction; address the underlying messages expressed in the hidden curriculum; offer feedback, opportunities for reflection, and assessment of professionalism in the context of longitudinal mentoring and advising; promote relationships with faculty who simultaneously support learners and hold them to high standards; and create collaborative learning environments committed to excellence and continuous improvement.⁶

It is important to include all of these definitions, as they have been influential in shaping medical education and professionalism and as they vary in their focus on the values, attitudes, principles and responsibilities that underpin professionalism. It is also worth noting the work of Lesser and colleagues who identify the specific behaviours that encompass professionalism on the part of individual physicians, organizations and health care systems.⁷

CHALLENGES AND DRIVERS FOR CHANGE

The challenges and drivers for changing professionalism are complex and both have evolved significantly over the past two decades. They include the following:

- Societal expectations – Public expectations are constantly evolving and growing in concert with the ease of access to medical information through the media, Internet and other resources.
- Collaborative care models – Issues around the sustainability of the health care system and limited health care resources, coupled with increasing patient complexity, have led to new, multidisciplinary and team-based models of health care delivery. These models of

practice require physicians to be skilled in teamwork and interprofessional collaboration. (See [Recommendation VIII – Advance Inter- and Intra-Professional Practice – in *The Future of Medical Education in Canada \(FMED\): A Collective Vision for MD Education*](#).⁸⁾

- Rising malpractice complaint rates – A United States study showed that communication challenges were at the root of 70% of malpractice claims.⁹
- Increasing recognition of medical error – Awareness of high rates of in-hospital morbidity and mortality due to medical error has generated a mandate both within and outside of the profession to increase safety and accountability in the practise of medicine and within health care delivery systems. This represents an evolving area of required physician competence that encompasses quality improvement skills as well as the skills and obligations inherent in error disclosure and transparency.
- Rates of physician impairment and mental health issues – Risk management and patient safety initiatives, as well as improved physician regulation and monitoring, have focused attention on issues surrounding physician impairment and mental health issues, which occur with higher frequency in the physician population than in the general population.^{10,11} This fact raises an important issue: emphasis on physician wellness can be at odds with the tenet of altruism. This tension is further heightened in the setting of overburdened health care systems, shortened resident duty hours, and a sicker, aging population and the resultant higher clinical and educational demands. Attitudes to these same issues may contribute to tensions between generations of physicians in practice and in training.
- Advances in technology and medical science – Exponential growth in medical knowledge and diagnostic capabilities has raised complex ethical issues within certain areas, including end-of-life care, genetics testing and stem cell research.

- E-professionalism – Several key issues relating to computers and the Internet have created new challenges to the traditional constructs of medical professionalism. These include the fact that the enduring nature of on-line and email communication can result in the continued dissemination of material beyond the author’s intended audience and long after the author may have changed his/her expressed opinion. This is particularly relevant for material generated in a trainee’s formative years when his/her judgment may not be fully matured. There is also a need to balance how social networking sites are used as an educational resource and forum for communication versus as a forum that can reveal open displays of unprofessional conduct.¹²⁻¹⁴ Finally, there are confidentiality issues relating to electronic communication with patients (e.g., email, text messaging) and peripheral issues with response times, firewalls and patient treatment blogs.
- Trainees’ negative perceptions of the professionalism of others – There is a perception among learners that it is solely their responsibility to develop and demonstrate professional behaviours. These learners experience conflicts between the professional principles they are being taught and that are expected of them and the witnessed behaviours of their role models. Learners also perceive that health care systems and the profession as a whole have abrogated responsibility for making the changes that would address systemic problems that are at odds with the principles of professional behaviour.^{7,15}
- Threat to self-regulation – Self-regulation is a central tenet of the definition of a profession; however, it is both a privilege and a responsibility of the members of that profession. Several factors may pose a threat to the self-regulation of the medical profession, including restrictions to physician availability imposed by both physicians themselves and health care institutions. This may be perceived as limiting the temporal access obligations of the social contract. The message that the shift from a single provider of patient care to a group responsibility will continue to meet these obligations has not been well communicated to the public. As well, the

need for the health care system to be sustainable and to contain costs – and the resultant move for funding bodies to play a greater regulatory role – also threaten the self-regulation of the medical profession. Another issue is the public perception that the colleges and governing bodies protect individual physicians (“circling the wagons”) rather than the profession as a whole in its role as provider for the good of society.

- Conflict of interest policies – Academic institutions, industry sponsors, regulatory bodies and the public have a heightened awareness of issues of trust and honesty that could be adversely affected by industry involvement in research and education. This poses challenges and ethical dilemmas whenever funding of educational programs is supported by the pharmaceutical industry.

RECOMMENDATIONS for Postgraduate Education in Medical Professionalism

1. Professionalism must remain a central tenet of PGME.

A. Accreditation

- i.** The Royal College accreditation standards must maintain the mandate of teaching and assessing medical professionalism as core components in all phases of residency training programs.
- ii.** The Royal College accreditation standards should mandate the assessment of policies and teaching activities directed at resident wellness.
- iii.** The Royal College should take a lead in collaborating with other credentialing bodies, including the College of Family Physicians of Canada (CFPC) and the Liaison Committee on Medical Education (LCME), in order to foster the development or identification and

implementation of educationally sound teaching methods and rigorous assessment methods for medical professionalism across the continuum of medical education from undergraduate to physicians in-practice. (See [Recommendation 2](#), below, for implications for Maintenance of Certification.)

B. Teaching of medical professionalism

- i.** The teaching of medical professionalism needs to be reframed from a list of values and attitudes – which are difficult to assess – to focus on observable and measurable behaviours that demonstrate professionalism⁷ and that can be used as benchmarks for learners and teachers alike. The teaching and assessment of medical professionalism should be a cornerstone of competency-based medical education.

This “re-framing” of how professionalism is taught in many centres may lead to greater buy-in on the part of students and residents, and may help to align what is taught with what is observed by learners in their day-to-day interactions with practising physicians. Examples of the behaviours related to specific values that are emblematic of medical professionalism are shown in Appendix A.

- ii.** The teaching of medical professionalism must evolve to include guidelines on the use of digital media and social networking for students, residents and practising physicians. (See [Recommendation 3](#).)

The Royal College must collaborate with the LCME, CFPC, the Association of Faculties of Medicine of Canada (AFMC) and provincial/territorial colleges to ensure that definitions of medical professionalism are comprehensive and are uniformly applied across the continuum of medical education and practice,

such that the teaching and learning of professional behaviours is consistent from one stage of training to the next.

- iii. The Royal College should support residency programs and universities to develop strategies to balance service and workloads with the optimal “cognitive load.” This would help maintain an effective learning environment in which professional behaviours are not at risk of compromise due to “cognitive overload” and the anticipated modifications to trainee duty hours.¹⁶
- iv. The Royal College should invest in the development of teaching programs on professionalism. This will require ongoing support and the strengthening of the resources available within the Royal College to identify and/or develop – and then disseminate – effective teaching programs/methods. The use of newer educational models, including simulation and virtual patients, should be encouraged to foster learner engagement and case authenticity.
- v. The Royal College should invest similarly in the development of teaching programs on physician wellness, a foundational element of professionalism that warrants particular emphasis.
- vi. Effective programs/methods related to medical professionalism should be disseminated to postgraduate deans and residency program leaders as well as to other credentialing bodies across the continuum of medical education from undergraduate learners to those in practice. Dissemination should be targeted at resident leaders and physician–teachers to promulgate the definitions and understanding of professional behaviours at a national level.

- vii. The Royal College should partner with the AFMC, CFPC and provincial/territorial licensing bodies to develop programs of remediation for learners and physicians in practice who are identified as having deficiencies in professionalism.

C. *Assessment of medical professionalism*

- i. The teaching of medical professionalism must be accompanied by the formal assessment of professional behaviours. It is essential that this occur throughout the continuum of medical education and practice to ensure that practising physicians – those who are role models to learners – operate under the same rubric of professionalism as that being taught at the undergraduate and postgraduate levels.
- ii. The Royal College should collaborate with the AFMC, CFPC and provincial/territorial licensing bodies to develop a formal document that details Milestones of Professional Behaviour. This document should include resources for the assessment and teaching of professional behaviours across the continuum of medical education. The Royal College will need to take a leadership role in disseminating the Milestones document once it is completed.
- iii. The Royal College has taken some initiative in this regard with the publication of the *CanMEDS assessment tools handbook*.¹⁷ This document should be updated and should ultimately be developed further to provide individual resources for the assessment of each of the core competencies, including medical professionalism. Emphasis should be placed on direct observation for the assessment of professionalism.

- iv. Formal assessment of postgraduate trainees’ professional behaviours is mandated through the current accreditation guidelines. Application of validated instruments for this assessment should be encouraged, not only in residency programs but also at the undergraduate and practising physician levels. The assessment methods employed need to be sufficiently robust as to fail a resident who behaves unprofessionally, regardless of his/her medical expertise.¹⁸⁻²⁰
- v. The Royal College, in collaboration with other medical governing bodies, should develop a “tool kit” resource for remediation interventions for use by teachers, faculties of medicine and licensing bodies.

2. Professional development is a critical component of enhancing the teaching and assessment of medical professionalism across the continuum of medical education and practice. [See the [Faculty Development Re-Imagined paper](#).]

A. Faculty development teaching/training on medical professionalism should be strongly recommended for members of all faculties of medicine.

- i. In order to foster the effective teaching and assessment of professional behaviours, faculty development will be essential for medical teachers. LCME and Royal College Accreditation Standards must mandate access and physician support (i.e., recognition for promotion, protected time and remuneration for time) for such faculty development programs.

B. Faculty development on medical professionalism must include the following:

- i. Clear definitions of the terms “profession” and “medical professionalism” that are accompanied by concrete examples of behaviours that must be demonstrated by both the medical professional and medical professional organizations.⁷
- ii. A model that encourages behaviours to be taught along an uninterrupted, developmental continuum, beginning with undergraduate medical students and progressing into practice.
- iii. Appropriate methods for the assessment and identification of deficiencies in medical professionalism in formal and informal settings.¹⁸⁻²⁰
- iv. Tools for addressing identified gaps in medical professionalism.
- v. Clear standards for practising physicians that mirror the standards defined for trainees.
- vi. Standards and guidelines regarding the use of digital media and social networking in the medical milieu. (See [Recommendation 3](#).)

C. The Royal College should collaborate with LCME and provincial/territorial licensing bodies to ensure that faculties of medicine are defining and assessing the professional behaviours of all physicians in an adequate manner.

D. Maintenance of Certification in areas relating to medical professionalism should be a requirement for all participants in the Royal College Maintenance of Certification Program. Maintenance of Certification for physicians should be tailored to relevant aspects of professionalism specific to both the physician’s role in clinical practice and as a teacher.

E. The Royal College should collaborate with provincial and territorial licensing bodies, the Canadian Medical Association (CMA), the Canadian Medical Protective Association (CMPA) and AFMC to identify, develop and disseminate resources that address issues of physician wellness and how to deal with impaired and disruptive physicians. Making these resources available to residents and physician–teachers should be an accreditation requirement.

3. Evolving areas in medical professionalism

The Royal College needs to stay abreast of evolving areas in medicine and society that will have an impact on the conceptualization of medical professionalism in the future. Current examples are the impact of digital media and the ethical dilemmas that arise out of stem cell research, diagnostic modalities and end-of-life care, as outlined below.

As leaders in PGME, the Royal College is well placed to develop and collaborate on appropriate, relevant guidelines to address evolving issues affecting medical practice. The Royal College should endeavour to take a pioneering and leadership role in guiding the profession as new areas arise in the future.

A. Digital media and social networking

The Royal College should collaborate with the relevant certifying, educating and regulatory bodies in medicine in Canada to develop guidelines with respect to professional behaviours relating to the use of the Internet, email and social networking where it pertains to medical practice and patient care. These guidelines should be disseminated to all practising physicians and adopted by faculties of medicine and provincial licensing bodies in Canada. The guidelines should be incorporated into the descriptions of professional behaviours expected of competent physicians.

B. Evolution of medical technologies and current thinking

The Royal College should participate with the appropriate governing and educational bodies in medicine for the purpose of consensus building around ethical dilemmas that arise from evolving medical technologies and debates, such as stem cell research, end-of-life care and the use of diagnostic tests.

The Royal College should play a key role in disseminating resources to assist in teaching the fundamentals of biomedical ethics that can be used as an approach to engaging with medical trainees and practising physicians as part of their Maintenance of Certification on these topics.

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Appendix A: Table 1. Framework for Conceptualizing Professionalism – Individual Physician Behaviors in Interactions with Patients and Family Members and Other Health Care Professionals²¹

Values	Examples of Individual Physician Behaviors	
	Interactions with Patients and Family Members	Interactions with Colleagues and Other Members of the Health Care Team
Compassionate, respectful, and collaborative orientation, “in service” of the Patient	<ul style="list-style-type: none"> • Provide patient-centered care, demonstrating empathy, compassion, and actively working to build rapport • Promote autonomy of the patient; eliciting and respecting patient preferences, and including patient in decision making • Be accessible to patients to ensure timely access to care and continuity of providers • Act to benefit the patient when a conflict of interest exists 	<ul style="list-style-type: none"> • Work collaboratively with other members of the care team to facilitate effective service to the patient • Demonstrate respect for other team members in all interactions
Integrity and accountability	<ul style="list-style-type: none"> • Maintain patient confidentiality • Maintain appropriate relationships with patients • Promptly disclose medical errors; take responsibility for and steps to remedy mistakes • Actively manage conflicts of interest and publicly disclose any relationships that may affect the physician’s recommendations related to diagnosis and treatment (eg, part ownership of surgery center) 	<ul style="list-style-type: none"> • Report impaired or incompetent colleagues • Participate in peer-review and 360-degree evaluations of team • Specify standards and procedures for handoffs across settings of care to ensure coordination and continuity of care
Pursuit of excellence	<ul style="list-style-type: none"> • Adhere to nationally recognized evidence-based guidelines (eg, guidelines issued by Agency for Healthcare Research and Quality or US Preventive Services Task Force), individualizing as needed for particular patients but conforming with guidelines for the majority of patients • Engage in lifelong learning and professional development • Apply system-level continuous quality improvement to patient care 	<ul style="list-style-type: none"> • Participate in collaborative efforts to improve system-level factors contributing to quality of care
Fair and ethical stewardship of health care resources	<ul style="list-style-type: none"> • Do no harm; do not provide unnecessary or unwarranted care • Commit to deliver care equitably, respecting the different needs and preferences of subpopulations, and to provide emergent care without regard to insurance status or ability to pay • Deliver care in a culturally competent and resource conscious manner 	<ul style="list-style-type: none"> • Establish mechanisms for feedback from peers on resource use and appropriateness of care • Work with clinical and nonclinical staff to continuously improve efficiency of care delivery process and ensure that all members of the care team are optimizing their contributions to care delivery and administration • Actively work with colleagues to coordinate care, avoid redundant testing, and maximize prudent resource use across settings

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Appendix A: Table 2. Framework for Conceptualizing Professionalism – Organizational Behaviors in Practice and Physician Advocacy and Professional Organizations²¹

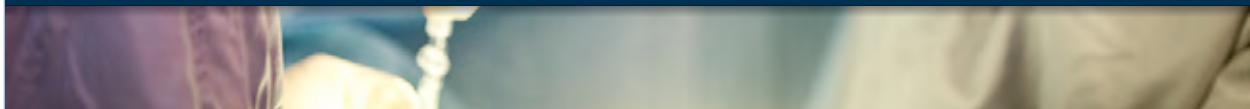
Examples of Organizational Behaviors		
Values	Practice Settings (i.e. Hospitals, Health Systems, Physician Organizations)	Physician Advocacy and Professional Organizations
Compassionate, respectful, and collaborative orientation, “in service” of the patient	<ul style="list-style-type: none"> • Support ongoing development of communication skills and cultural competency to foster effective interactions with patients, families, and care team members • Invest in shared decision-making supports and actively encourage patient engagement in care decisions • Establish mechanisms to engage representatives of patients and family caregivers in organizational management and governance • Adopt policies and practices that support timely access to patients’ providers of choice • Foster creation of a physical environment that promotes healing 	<ul style="list-style-type: none"> • Advocate payment policy that supports clinician time with patients to build rapport, engage in shared decision making, and be accessible to patients to provide timely care • Actively promote ongoing development of competencies related to patient engagement and teamwork
Integrity and accountability	<ul style="list-style-type: none"> • Provide peer and organizational support for disclosure of medical errors and reporting impaired or incompetent clinicians • Adopt clear and stringent policies regarding conflict of interest and maintaining patient confidentiality • Provide performance feedback to care team and hold the team accountable for results for a defined population, eg, via compensation, public reporting, or both • Discourage provision of services without an evidence base to support value to the patient 	<ul style="list-style-type: none"> • Develop and encourage organizational strategies to foster a “culture of professionalism” • Participate in development of professional standards and establish mechanisms for remediation and discipline of members who fail to meet those standards • Commit to disclosure of meaningful performance information • Encourage development of systems to report and analyze medical mistakes to inform prevention and improvement strategies • Develop conflict of interest policies • Use benefit to patients as the metric to guide resolution of conflicts of interest
Pursuit of excellence	<ul style="list-style-type: none"> • Invest in system-level supports for organization-wide quality improvement, eg, electronic health records, registries • Establish clear targets for improvement and continuously monitor and raise the bar for performance 	<ul style="list-style-type: none"> • Develop and encourage use of meaningful measures of clinical quality of care and sound guidelines for clinical practice • Establish ambitious targets and support actions to achieve significant and rapid system- wide improvements in quality of care • Advance scientific knowledge

Examples of Organizational Behaviors		
Values	Practice Settings (i.e. Hospitals, Health Systems, Physician Organizations)	Physician Advocacy and Professional Organizations
Fair and ethical stewardship of health care resources	<ul style="list-style-type: none"> • Encourage judicious use of resources to care for a patient population, eg, by providing information on system- level costs and outcomes • Implement mechanisms for supporting cultural competency and continuous quality improvement focused on reducing disparities in care 	<ul style="list-style-type: none"> • Advocate for development and adoption of tools to support cost-effective care and judicious use of health care resources • Promote public health and advocate on behalf of societal interests with respect to health and health care, without concern for the self-interest of the individual physician or the profession • Advocate for payment policies that drive a focus on total cost of care rather than discrete encounters and individual clinician inputs • Support development of tools to facilitate reflection on disparities in care and drive down unwarranted variation

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6. Just Culture of Patient Safety



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ABSTRACT

Patient safety is a cornerstone of quality health care. The provision of high-quality, safe health care goes beyond patient- and disease-specific diagnosis and management to demand the adoption and cultivation of a proactive systems perspective termed a “just culture” of patient safety. Canadian stakeholder organizations have long been concerned with patient safety, leading to the development of tools and resources intended to improve patients’ clinical outcomes. However, despite the quality of these initiatives, the authors’ experience suggests that their uptake remains minimal and inconsistent among postgraduate medical education (PGME) programs and that more work is needed to improve that uptake, ultimately ensuring health care systems are designed to deliver consistently safe care.

Recognizing the importance of patient safety and the development of a culture of patient safety, this paper explores the possible reasons for the poor uptake of *The Safety Competencies*. In particular, the “hidden curriculum” has the ability to undermine the best efforts to implement a well-constructed and thoughtful formal patient safety curriculum. Subsequently, the authors also outline a series of recommendations for change, including a number of approaches for embedding patient safety into existing PGME curricula. These recommendations include increased teaching capacity, deliberate planning and creation of a patient safety curriculum, and developing teaching strategies and tools, as well as methods of assessment. Specific ways in which the Royal College can advance patient safety in specialty PGME include the following:

- enhanced articulation of patient safety competencies in the next iteration of the *CanMEDS Physician Competency Framework*;
- inclusion of patient safety knowledge, skills and attitudes on the Royal College exams and as a mandatory component of Maintenance of Certification; and
- measurement of patient safety culture as a PGME accreditation requirement.

Academic departments are urged to formally recognize teaching and research in patient safety and quality improvement, and leadership is encouraged to include patient safety in their academic missions, effectively promoting and advancing patient safety in the teaching and clinical environments within their organizations. Together, these elements would serve to demonstrate a collective commitment to establishing an articulated just culture of patient safety, which is essential if we hope to improve patients’ clinical outcomes by avoiding healthcare related harm.

INTRODUCTION

Providing safe care goes beyond patient- and disease-specific diagnosis and management to demand a systems’ perspective that considers the nature and contribution of the organization, people, tasks, tools, technology and environment to patients’ clinical outcomes. Those organizations that truly embody a commitment to patient safety also foster a proactive and innovative *culture* that identifies and corrects vulnerabilities in the processes and systems of care rather than waiting to respond to adverse events.¹ It is important, as such, to focus on the development of a culture of patient safety. In this context, a “culture of patient safety” refers to

the commitment of health care practitioners and their institutions and organizations to minimize patient harm, promote the well-being of patients and health care providers, reduce the likelihood of adverse events, and communicate safety concerns – while at the same time learning from close calls and other events.²

There are principles and values that are common to a patient safety culture. For instance, a culture of patient safety values transparency,³ accountability,⁴ and patient- and family-centred care,⁵ and is one that learns from adverse events, including errors and close calls (near misses). This culture is generative and that of a learning organization — one in which information is actively sought, failures and near misses result in inquiry, and new ideas are welcomed.⁶ In this type of culture, health care workers are also provided with the opportunity to develop the knowledge, skills and attitudes to practise the safest medicine possible. Finally, a recent review generated a conceptual *culture of safety* model. In this work, seven subcultures of a patient safety culture were identified: leadership, teamwork, evidence-based, communication, learning, just and patient-centred.⁷

Admittedly, it is challenging to define, and to speak specifically about, culture in the context of a system as complex as health care. It is often said that “culture is the way we do things around here.”⁸ However, in health care, there are a variety of locations within which patient care is provided and a variety of *individuals* by whom patient care is provided. As such, notions of both “we” and “here” are complex. The current patient safety research literature, and indeed this paper, recognizes that in terms of attitude, knowledge and uptake related to patient safety, each environment or unit will be unique.⁹

BACKGROUND

Patient safety, or the freedom from harm related to the provision of health care, is a cornerstone and key dimension of high-quality health care.^{10,11} Current statistics regarding adverse events underline the need for continuous, rigorous improvements in patient safety throughout the Canadian health care system. Although no organization or health care professional intends to harm a patient, the reality is that the health care system is not yet designed to deliver consistently safe care.¹² In Canada, between 9,000 and 24,000 adults are injured every year in hospital as a result of adverse events.¹³ Similarly, a recently published chart review identified that 9.2 per cent of children admitted to Canadian hospitals experience an adverse event.¹⁴

The occurrence of adverse events has devastating human and fiscal implications. It is important to see beyond the numbers and statistics outlined above. Each incident or event has happened to a person with a name and a face; the harm they experienced has an impact on them as a patient, as well as on their loved ones, the community and society as a whole. The fiscal cost of treating system-related adverse events is also significant.⁹ In an era of increased expectations of accountability, such costs emphasize the importance of addressing, and improving, patient safety.

Recognizing the importance of improving patient safety in health care settings, stakeholders have long been concerned with patient safety in Canadian postgraduate medical education (PGME). However, to date, these initiatives have not seen comprehensive, national implementation. Evidence suggests that more work is needed to promote and advance a just culture of patient safety. The Future of Medical Education in Canada (FMEC) initiative provides an opportunity to bring patient safety to the forefront of PGME.

An Overview of Patient Safety Initiatives

A number of initiatives have been launched with the intention of improving patient outcomes and reducing the number of adverse events. A selection of international initiatives includes the following:

- a national consensus conference jointly sponsored by the American College of Surgeons (ACS) and the Accreditation Council for Graduate Medical Education (ACGME) on the development of a curriculum on patient safety for American residency programs;
- the Institute for Healthcare Improvement’s (IHI’s) Open School, an online resource for learners, teachers and educators;
- the World Health Organization’s (WHO’s) Patient Safety Curriculum Guide for Medical Schools; and
- Australia’s National Patient Safety Education Framework.¹⁵

Furthermore, there have also been provincial or local examples of patient safety-focused initiatives within Canada, as follows:

- McGill University’s Faculty of Medicine and the McGill University Health Centre have provided patient safety teaching to fourth-year students since 2008;

- Memorial University in Newfoundland has implemented an interprofessional patient safety module for medicine, nursing and pharmacy students; and
- the University of Toronto started a MSc concentration in quality improvement (QI) and patient safety in 2012.

In 2001, the Royal College of Physicians and Surgeons of Canada hosted a forum on patient safety that generated a national strategy to systematically improve patient safety. Subsequently, a National Steering Committee on Patient Safety was created. The committee identified the need for educational and professional development programs and supported the creation of a national not-for-profit patient safety organization: the Canadian Patient Safety Institute (CPSI). Through collaboration with the Royal College, the CPSI developed *The Safety Competencies*, the first national effort to identify the knowledge, skills and attitudes required by all graduating health care professionals to ensure the provision of safe patient care. *The Safety Competencies* framework related to the following six domains of patient safety:

- contribute to a culture of patient safety;
- work in teams for patient safety;
- communicate effectively for patient safety;
- manage safety risks;
- optimize human and environmental factors; and
- recognize, respond to and disclose adverse events.²



However, despite the development of *The Safety Competencies* framework, in addition to the other frameworks that have addressed patient safety through the lens of health professional education, the implementation of patient safety and quality improvement content in medical education curricula remains inconsistent across Canada and is often limited to pockets of innovation and excellence.

CURRENT STATUS

Evidence from across Canada and the United States corroborates a concern that patient safety frameworks and content have not yet been integrated into medical education. For instance, a survey in 2006 of Internal Medicine Clerkship Directors in the United States and Canada indicated that, despite calls from regulatory, medical and educational organizations to increase the patient safety training of medical students, few schools had implemented specific patient safety curricula.¹⁶

The IHI recently undertook a research and development project to assist academic medical centres and PGME programs to become aligned and capable in quality and safety programming. As part of this project, a multi-faceted scan was performed. That scan characterized the current state as having

poor institutional QI and patient safety alignment; faculty who do not have the time, motivation, or knowledge to participate in QI and patient safety activities; and residents who travel through their clinical education with little to no exposure to QI and patient safety methods and practice.¹⁷

Furthermore, this lack of exposure is echoed in shortcomings in patient safety knowledge among medical trainees across a broad range of training levels, degrees and specialties, demonstrating a need for effective educational interventions.¹⁸ Moreover, while some undergraduate and postgraduate training programs have begun to include the knowledge and skills that represent the scientific aspects of patient safety emphasized in *The Safety Competencies* framework in their formal curricula, the culture and attitudinal aspects of patient safety are not formally (or informally) addressed. The latter may be the most challenging to address; however, it may be the most critical predictor of resident (and faculty) behaviour.¹⁹

EXPLORING POTENTIAL CHALLENGES TO IMPLEMENTATION

This paper theorizes that uptake of *The Safety Competencies* and other frameworks among Canadian PGME programs have been limited for the following reasons:

1. Teaching patient safety has not been an imperative. The Royal College and the College of Family Physicians of Canada (CFPC) do not explicitly require PGME programs to include the teaching and the assessment of the knowledge, skills and attitudes that comprise *The Safety Competencies*.
2. *The Safety Competencies* framework is a high-level, outcomes-based document,²⁰ and it may be challenging for educators to translate the competencies into formal, informal and incidental education for residents. Furthermore, concrete teaching and assessment tools that can be used at

the program level have not been widely developed nor disseminated and, as such, it is challenging for program directors and other educators to convert the high-level framework into practical teaching for learners. Additionally, requirements may be different in different specialties (e.g., medicine versus surgery), making a universal hospital/university approach too non-specific to be applied effectively.

Currently, PGME programs are required to organize their curricula using the CanMEDS framework. Patient safety competencies are embedded in the framework, albeit in a diffused manner. Mapping *The Safety Competencies* to the CanMEDS framework is often a challenging curricular task; as a result, it may be difficult to incorporate the teaching of *The Safety Competencies* into existing curriculum. As part of the development of this paper, the authors worked to map the competencies to the CanMEDS Roles. This task was demanding, as each of the six patient safety domains cuts across a number of CanMEDS Roles. Even at the individual competency level, many of the patient safety competencies contained aspects of two or more CanMEDS Roles. An initial classification can be used as a starting point for future debate. An additional document, also mapped to the CanMEDS Roles, provides an assessment tool for program directors.²¹ There is a need for broad agreement on the linkages between the two frameworks in order for the results of this linking exercise to be a useful tool for program directors.

3. There is not enough expertise at the faculty and program levels to integrate patient safety content into PGME programs. Patient safety and QI are relatively new niche areas of faculty expertise, and there is a paucity of educators with the necessary background/training to develop and

deliver this type of curricula at all levels of training, including faculty development and PGME. In many instances, university support and recognition for teaching — particularly for quality and patient safety — continue to lag behind that for research and clinical care.

4. The culture of medical education — and of many hospitals — is not generally one of patient safety. Although hospitals and programs may mandate safety processes and patient safety curricula, the curricula have not been universally accepted and are often taught without a true commitment to, and understanding of, patient safety. As such, one of the key reasons that uptake has been inconsistent is the existence of the hidden curriculum, which has the potential to undermine initiatives such as *The Safety Competencies*.

Many tools, including systems thinking and design, teamwork, communication, and situational awareness, are applicable to patient care and are instrumental in delivering the safest care possible. However, to be effected and effective, these sciences and tools must all operate within a supportive environment, which is a culture of patient safety. Until the above are addressed, patient safety will remain on the periphery of medical education and, consequently, will not become explicitly embedded into either the culture or practice of medicine among current and future generations of physicians. In addition, the public cannot ascertain if its physicians are competent in these domains. Medical educators, and the PGME system as a whole, have a responsibility to the public to ensure that the physicians of the future are trained within evolving paradigms of teamwork, communication, systems thinking, and preventing and learning from adverse events, all in a supportive learning environment.

POSSIBLE SOLUTIONS – The Explicit Curriculum

There are a number of options that have been considered by the authors to challenge the *status quo* and effect change. This paper discusses four specific changes that should be made relating to tools and resources for curricular development, teaching and assessment, as follows:

1. Increased formal education and training in patient safety should be incorporated into the curricula of undergraduate medical education (UGME) and PGME and continuing professional development (CPD) programs.
2. Teaching tools should be developed and disseminated.
3. Assessment strategies and methods should be developed and disseminated.
4. Faculty development is needed to create a cohort of on-site experts in patient safety who will teach and serve as role models for students.

Subsequently, the authors also discuss the need for overarching approaches and principles to address the hidden curriculum and promote a culture of patient safety.

First, there is a need for increased formal education and training in patient safety that weaves through training — starting at the undergraduate level through PGME to CPD — and is embedded in the Maintenance of Certification (MOC) cycle. Patient safety should be ideally taught at every clinical encounter, rather than only as episodic stand-alone, didactic sessions,²²⁻²⁶ and faculty development in teaching patient safety should be incentivized in order to promote and further a safety culture in the learning and working environments.

In particular, it must become an imperative that PGME programs incorporate *The Safety Competencies* into their curricula. The Royal College is in a unique position both to mandate that all programs teach and assess the competencies outlined in *The Safety Competencies* framework and to take ownership of incorporating *The Safety Competencies* into the CanMEDS framework in a more easily identifiable manner.

However, one must recognize that the introduction of such curricular materials without the necessary supports will not have the intended positive impact on Canadian programs. The introduction of a new framework or approach requires tools, resources, and faculty development and support at the program level. Prior experiences with the launch of major endeavours, such as the original CanMEDS framework in 1996, have demonstrated very clearly that this need increases considerably in times of innovation and implementation of a new system.²⁷ As such, the introduction of this imperative must be supported by practical tools to help medical educators and program directors embed the patient safety content into their existing curricula. As such, the authors’ second recommendation concerns the development of teaching tools.

For example, the document, *Situational Awareness and Patient Safety - A Short Primer*, developed by the Royal College, is an excellent example of the type of teaching tool that should be developed and disseminated.²⁸ In particular, the authors recommend the development of a tool kit that is accessible and easily implementable, and that contains tools that are customizable to address discipline- and context-specific needs. The Royal College may also consider existing tools, such as the CanMEDS “What Works” inventory, to provide educators with concrete examples of initiatives that have been successful in similar programs.

A broad range of teaching tools should be explored, including teaching at the bedside and at hand-offs, in the form of “what if” conversations, formal and informal

discussions of real-life incidents,²⁹ case-based learning (CBL),³⁰ grand rounds,³¹ patient safety rounds,³² mortality and morbidity (M&M) rounds,³³ journal club,³⁴ practice objective structured clinical examinations (OSCEs),^{35,36} and simulation sessions.³⁷ Moreover, systematic reviews of continuing professional development efforts to include quality and safety for practising clinicians have revealed that well-established adult learning techniques, such as experiential learning, are key to the successful implementation of these skills.³⁸ Consequently, educational tools, such as simulation, that promote a teaching environment which advances patient safety themes, professionalism and interprofessionalism, while maintaining the patient problem at their centre, need to be identified and utilized. Other teaching strategies to generate authentic and meaningful discussions of patient safety include the use of narrative,³⁹ reflective practice,⁴⁰⁻⁴³ and presentations by physicians and patients themselves of real-life incidents,⁴⁴ all of which appear to be valued by students as they see these strategies as helping them to learn about and practise patient safety competencies.²⁹

In addition to including a variety and broad range of strategies, the authors recommend that those developing the teaching tools consider recent, innovative strategies, including online curricula.⁴⁵ These include the IHI's Open School,⁴⁶ the US Department of Veteran Affairs' Patient Safety Curriculum⁴⁷ and the WHO Patient Safety Curriculum Guide for Medical Schools.⁴⁸ The Canadian Medical Protective Association (CMPA) recently launched its "Good Practices Guide," a patient safety curriculum created for medical students as an online self-study tool that is supplemented with teaching aids for faculty to facilitate student learning.⁴⁹ In addition, the online, interactive, case-based "PCC Curriculum on the Go" was developed — through the collaboration of the CPSI, the Paediatric Chairs of Canada (PCC) and program directors from national paediatric residency programs — based on *The Safety Competencies* framework.⁵⁰ This curriculum was designed to be flexible, so that it can be tailored to sessions of varying lengths as required by users.

Third, assessment strategies and tools will be needed in addition to the teaching tools and strategies for curriculum planning. Assessment of resident performance should include the use of validated tools for assessing patient safety competencies. One such tool is the Anaesthetists' Non-Technical Skills (ANTS) rating system that is used to assess teamwork performance.⁵¹ Methods of assessment may include direct observation in the workplace, in a simulated environment or of a group task, as well as multisource feedback from members of the interprofessional team and from the patients and families.⁵² Assessment methods may also include the assessment of group or team performance in addition to the assessment of an individual's performance.⁵³⁻⁵⁶ Direct observation, practice OSCEs and simulation scenarios are also valuable formative assessment strategies to help identify the learning needs of trainees and health care providers with regard to the knowledge, skills and attitudes that comprise *The Safety Competencies* in the clinical setting.⁵⁷ The value of implementing patient safety OSCEs includes the ability to evaluate the impact and effectiveness of the patient safety curricula taught to and accessed by trainees.⁵⁸ In terms of summative assessment, it is believed that the explicit assessment of patient safety competencies in the Royal College certification exams would be a powerful driver to encourage their inclusion in PGME curricula (e.g., the Obstetrics and Gynecology examination included a disclosure OSCE in 2010). In the United States, the American Board of Medical Specialties began, in 2003, to encourage its individual specialty member boards to introduce patient safety material into certification examinations.⁵⁹

Dissemination of both teaching and assessment tools is critical. Developing a "repository" of available resources for teaching and assessment will facilitate faculty access to the needed tools, and enable faculty to share expertise and experiences, and will help them avoid "recreating the wheel." One approach to dissemination is to develop platforms — such as awards, grants, fellowship and diploma programs, and academic recognition — to support, foster and celebrate excellence in the teaching and assessment of patient safety competencies. Another

approach to dissemination is to acknowledge scholarly patient safety and QI projects initiated and undertaken by residents and faculty. These strategies would highlight the importance of the competencies, as well as interprofessionalism, in training, throughout practice and in lifelong learning.

Fourth, it is also critical that a cohort of on-site experts in patient safety is developed. These individuals can apply the tools to teach and advise the next generation of physicians, and will act as champions for safety.⁶⁰ Patient safety may be ideally taught in an interprofessional setting⁶¹ with the acknowledgement of two significant and consistent challenges: logistics barriers and the lack of qualified instructors who are “trained, knowledgeable, have adequate experience in this field, and are able to effectively educate and mentor.”^{17,62-64} The capacity to creatively embed this content in Canadian training and professional development is still small, and the reluctance on the part of practising clinicians to include patient safety content as part of their own learning plans contributes to the challenges experienced in the learning environment. As such, there needs to be faculty development to increase capacity to teach patient safety in formal, informal and incidental encounters.^{17,26,62,65,66} Moreover, to be truly effective, faculty will need to consider strategies to embed patient safety and QI into undergraduate and postgraduate training and, concurrently, to ensure that patient safety is being taught at the sharp end of providing patient care.⁶⁷ For example, a layered approach to teaching patient hand-off might start with a formal didactic session, followed by a small-group session that incorporates discussion around a case and role play, with a subsequent simulation scenario or practice OSCE accompanied by immediate feedback followed by feedback on work-based assessment.

Faculty development will also ensure that faculty and other members of the interprofessional team model appropriate practices. Such teaching embedded in the daily practice of medicine is a necessary complement to formal instruction. These situations also ensure that learners are provided

with an opportunity to put into practice that which they have learned in the formal setting and then are given direct, immediate feedback by their role models and further opportunities to integrate feedback to improve subsequent performance.

The Royal College has an important role to play in national faculty development. The Royal College’s national mandate with respect to specialty medical education lends it a unique perspective and an opportunity to develop a national faculty development program. [See the [Faculty Development paper](#).] Toward this end, the Royal College and CPSI collaboratively developed a four-day faculty development workshop — ASPIRE (Advancing Safety for Patients in Residency Education) — to teach faculty how to: incorporate patient safety content into faculty development and residency training programs; develop and facilitate patient safety training; play a leadership role in patient safety activities; and identify and develop local champions at individual institutions. In addition to such initiatives, the Royal College may consider the development of a fellowship program or a national diploma program in patient safety to build the cadre of experts within medical education. The development of a community of patient safety and QI clinician teachers, educators, experts and education scholars, the dissemination of patient safety curricula — including both episodic teaching encounters and longitudinal programs — and the development of assessment tools will likely all contribute to the development of a patient safety culture.

POSSIBLE SOLUTIONS – An Imperative to Address the Hidden Curriculum and the Culture of Medical Education

The possible solutions articulated above relate to the explicit curriculum in PGME. However, perhaps most fundamentally, efforts must be made to address the hidden

curriculum, which can sabotage these potential solutions by contradicting “the goals and content of the coursework that is formally offered.”⁶⁸

The hidden curriculum is a “set of influences that function at the level of organizational structure and culture,”⁶⁹ affecting the nature of learning, professional interactions and clinical practice. More concretely, the hidden curriculum consists of “observed faculty or clinician behavior, informal interactions and conversations with fellow students and with faculty and practicing professionals, and the overall norms and culture of the training or practice environment.”⁶⁸ This hidden curriculum is extremely influential in forming the professional identity, values, attitudes and practices of trainees.⁴⁰

To optimize the safety of patients in our care, formal strategies to embed patient safety in PGME programs must address both the explicit and hidden curricula.⁷⁰ Practical solutions for addressing the culture of medical education and the hidden curriculum can be challenging to identify and implement, making this barrier difficult to overcome. In medicine, the learning environment is entrenched in the working environments of hospitals and other health service centres; to address the culture of the learning environment, one must also address the culture of medicine.

There are five key strategies that are suggested to address the hidden curriculum to promote a culture of patient safety:

1. using explicit data to inform the hidden curriculum;
2. being mindful role models;
3. using collaborative language;
4. promoting interprofessional education and teamwork competencies; and
5. encouraging leaders to promote, prioritize and formally recognize the value of patient safety.

Using Explicit Data to Inform the Hidden Curriculum

To begin to assist faculty with this effort, it is suggested that PGME programs begin to formally measure the culture of the working and learning environments vis-à-vis patient safety using a validated tool or instrument. A number of instruments have been developed to assess learners’ perceptions of the educational environment, such as the Dundee Ready Education Environment Measure (DREEM) among others.^{19,71-75}

An excellent review of the various published tools used to measure a patient safety culture is provided in the recently published *Handbook of Human Factors and Ergonomics in Health Care and Patient Safety*,⁷⁶ and there is growing evidence of the use of these tools in the learning environment.^{77,78} For example, in a 2009 study, Parry, Horowitz and Goldman used the Safety Attitudes Questionnaire (SAQ) designed by Sexton and colleagues to understand Pediatric residents’ perceptions of patient safety. Their data “suggest that trainee physicians are comfortable with their ability to care independently for patients... [however, they] are not fully comfortable with their ability to act interdependently.”⁷⁷ Recently, Eric Thomas and colleagues have developed a tool specifically for medical students — the Medical Student Safety Attitudes and Professionalism Survey (MSSAPS) — to assess the impact of their clinical experiences on their attitudes about the provision of safer patient care.⁸⁰ Another tool, the Patient Safety Culture Tool, is required of all health services accredited by Accreditation Canada.⁷⁹ It might be valuable for the Royal College to explore collaborating with Accreditation Canada, such that the same tool could be used for both the working and learning environments.

While the data from individual studies may not be generalizable to all trainees in all programs, the concept of measuring culture through the attitudes of individuals is a common thread. Measuring patient safety culture will provide clinicians and educators with baseline data to

determine the level of maturity of the culture that currently exists in their programs, and will help them assess the impact of efforts that are implemented to improve or maintain the existing culture.⁸¹

Being Mindful Role Models

There is evidence that a positive learning climate reduces errors and encourages learning from errors and avoided mistakes.^{82,83} All physicians, in every type of practice environment, need to practise and model safe and effective care. Physicians must be explicit with this practice and with the example they set for observers, including appropriately supervising learners.⁸⁴ As Cruess, Cruess and Steinert state, “role models inspire and teach by example, often while they are doing other things.”⁸⁵ Furthermore, as noted by Maudsley, “faculty development activities, including discussions about what good role models are and how to model appropriate attributes, should be central to the school’s efforts.”⁸⁶

Faculty must have an awareness of the behaviours that they model. To be effective role models, faculty must dynamically demonstrate patient safety competencies, as well as their commitment to providing safe care. Appropriate tools must be developed to assist faculty to develop the skills to effectively model key behaviours, including clinical competence, teaching skills and personal values. Faculty should also actively engage residents to participate in and initiate patient safety interventions in order to counter the perception that residents are transient care providers and to foster a sense of ownership of patient safety issues.⁸⁷

Using Collaborative Language

Teaching and practising collaborative language may enhance learning opportunities and promote improved interdisciplinary and interprofessional teamwork and patient safety. There is a steep authority gradient within

the traditional hierarchical environment of health care settings; this gradient further exacerbates the difficulty for the learner to “speak up” when there appears to be potential patient safety concerns.^{88,89} And yet “speaking up” is a measure of both teamwork and a safety culture in a health care setting. The culture of safe practice is one that not only tolerates, but that actively encourages, the difficult tasks of asking questions, expressing disagreement, and challenging the decisions and actions taken by superiors.⁸⁸ Clinician–teachers, educators and other members of the health care team who teach and work with trainees should welcome and support trainees to diligently communicate observed errors and near misses, and they should work toward eliminating the intimidation related to medical hierarchy that can hinder trainees from being safety advocates.⁹⁰ The culture of collaboration should also include the patient. Faculty members demonstrate and model the principle of patient-centredness by encouraging patients to be active participants in their own care.^{5,91}

Promoting Interprofessional Education and Teamwork Competencies

Another opportunity to overcome the barriers related to culture and the hidden curriculum, particularly as they relate to the traditional hierarchy in health care organizations, is through interprofessional education. Health care delivery is provided in a complex system by multiple individuals from many different disciplines.⁹²⁻⁹⁴ Teamwork and collaborative practice are essential for the delivery of high-reliability health care. Interprofessional education — defined as “when two or more professions learn with, from and about each other to improve collaboration and the quality of care”⁹⁵ — is a key strategy that can improve collaborative practice and teamwork. Therefore, interprofessional education must become an essential and routine component of UGME, PGME and CPD, as part of a physician’s lifelong learning plan.⁹⁶

The knowledge, skills and attitudes required to effectively work in teams are not innate; they must be taught, modelled, learned and practised, and they cannot be completely acquired in the silos of the traditional uni-professional-centred educational processes. For example, a nurse-shadowing program at the University of Michigan Medical School was developed to enable first-year medical students to learn more about the role of nurses in health care. This program was associated with a more positive attitude toward nurses and an improved understanding of nurses’ roles in health care teams.⁹⁷

Two studies speak to the need to develop faculty capacity to model and teach patient safety and interprofessional care.^{63,64} In 2009, Anderson and colleagues designed a patient safety curriculum for medical students that was delivered through lectures and small-group sessions and that was later consolidated into practice. They found that students who participated in interprofessional groups, as opposed to uni-professional groups, gained added value from these interactions and were able to frame their thinking more clearly within the context of a safe interprofessional teamworking environment.⁹⁸ Headrick and colleagues describe an initiative to integrate improvement and patient safety into medical and nursing school curricula, and found that the lack of clinically based faculty willing and able to teach about the improvement of care was a limiting factor for the programs.⁶⁴

The Canadian Interprofessional Health Collaborative summarizes the need in the following quote: “How can they work together if they don’t learn together?”⁹⁹ Embedding patient safety curricula in medical education must therefore include a comprehensive interprofessional education component, with an emphasis on team learning at all levels of medical education. In summary, the culture of safe practice of medicine is also reflected in a safe learning environment — one that is free from abuse and intimidation — and an atmosphere of collaboration and professional respect. Implicit issues within the

learning environment, such as negative role modelling, can be significant barriers to implementing *The Safety Competencies* in PGME and must be addressed.

Encouraging Leaders to Promote, Prioritize and Formally Recognize the Value of Patient Safety

It has long been recognized in patient safety literature that leadership support is needed to implement patient safety processes and changes in hospitals and other health service organizations. Committed leaders are able to drive culture and change; they are needed to envision, design, implement and promote a culture of safety. Leadership is also required to support the efforts of program directors and champions to design and deliver safety curricula and to evaluate its implementation.

Executive walkabouts and other strategies have become increasingly common aspects of organizational quality and patient safety programs.^{100,101} Similarly, the authors of the *Unmet Needs* report argue that leadership support — “primarily medical school deans, teaching hospital CEOs, department chairs, and residency program directors”¹⁰² — is needed to alter the culture of medical education such that both the explicit and hidden curricula support a just culture of patient safety.

There are a number of ways that leadership can actively promote patient safety: making patient safety a priority, formally recognizing patient safety and advancing patient safety through organizational practices.

Making patient safety a priority

First, patient safety can be actively made a priority. As the *Unmet Needs* report highlights, patient safety extends beyond going through the motions of completing a checklist or following mandated protocols. The culture of practice must embrace the concepts of the provision of

safe and effective care and that every available reasonable step must be taken to reduce medical error. Without leadership support, culture will be slow to change. Similarly, program directors and medical educators will not likely have the resources and tools needed to truly effect change.¹⁰³⁻¹⁰⁵

Those institutions that have made patient safety a priority will most likely have articulated organizational quality and safety aims that are aligned with PGME training. They will also likely have the following characteristics: leaders (including CEOs, deans, department chairs and clinical chiefs) who understand the value of quality and safety training for residents and who insist on linking this training to institutional quality and safety goals; appropriately trained faculty who have the time and resources to teach quality and safety and who have ample career opportunities to pursue research and teaching in quality and safety; residents who incorporate quality and safety into their daily clinical work and who are rewarded and recognized for their efforts; and PGME programs that continually facilitate and support quality and safety learning opportunities and that provide trainees with opportunities to explore fulfilling careers in quality and safety beyond clinical training.¹⁷

Formally recognizing patient safety

Second, leadership in academic departments and institutions can formally recognize patient safety by including patient safety and QI in their academic mission. These leaders are uniquely positioned to develop, promote and institute patient safety and QI strategies, programs, initiatives and interventions at the local level. Moreover, academic departments and institutions can facilitate faculty capacity to lead scholarly patient safety and QI programs and to collaborate, undertake research, disseminate and recognize participation through academic promotion.¹⁰⁶ Creation of a dedicated section on patient safety and QI within an academic department would allow a more coordinated patient safety and QI strategy. Moreover, such an initiative would be a powerful statement of a department's

commitment to patient safety and QI and would help to establish a clearly articulated culture of patient safety.¹⁰⁷

Advancing patient safety through organizational practices

Third, leadership can set the tone and change the culture of patient safety within the working and learning environments by altering traditional structures, such as M&M rounds. In a culture of blame, these rounds are not treated as a learning opportunity. Leadership needs to view M&M rounds and other patient-centred structures as vehicles to reinforce and embody the content of the patient safety curriculum and patient care management.³³ M&M rounds, or other structures such as patient safety grand rounds, chart audits or personal learning projects (PLPs), should include learning objectives for students, residents and faculty. These existing structures also need to be viewed as an important venue for lifelong learning. There should be recognition that these compelling educational experiences can drive change. For example, residents' involvement in experiential QI projects, such as chart audits — as part of a formal quality/safety curriculum — frequently leads to significant improvements in processes of care.^{22,108-110}

When harm from the delivery of health care has occurred, the focus of immediate efforts should be centred on meeting the clinical, emotional and information needs of patients and making improvements to limit similar harm to other patients in the future. However, in many institutions and organizations, when harm has occurred, there is often little or no emotional support provided to the involved health professionals, including physicians and trainees. Support should be offered to those involved¹¹¹ so that all health professionals develop appropriate and healthy coping mechanisms and that the organization actively cultivates a just culture. Moreover, the response to an adverse event should include taking part in exercises in QI and root cause analysis to inform all providers, including residents, of how to improve the quality and safety of care in their practices and foster a generative patient safety culture.¹¹²

Certainly, training should include disclosure of adverse events to patients and the role of apology in often difficult circumstances, including legislative requirements.¹¹³⁻¹¹⁵ These existing structures provide an excellent opportunity for educators and practitioners to shift the focus from blame and shame to a fair and just culture approach that emphasizes system issues in the understanding of adverse events and close calls, and also concurrently, takes into account individual responsibility for professional behaviour.

POTENTIAL BENEFITS of Addressing the Importance of Culture

The main benefits that have been identified are vis-à-vis culture with respect to patient safety and the hidden curriculum. In particular, these efforts are seen as helping to articulate and bring awareness to that which is being taught implicitly and to promote more explicit decision making about what needs to be taught and the methods to teach this agreed upon curriculum effectively, with the intent of nurturing a just culture.

In a culture of patient safety, faculty will actively contribute to planning, building, modelling and sustaining a culture that values and promotes patient safety. Faculty will model respectful and professional behaviour at all times, appreciating that quality health care is patient-centred. Where the existing culture falls short of what is needed for safe patient care, as reflected in robust data garnered from an assessment of the culture, faculty will work to create a culture that embodies the way things should be done.

Further, the solutions are seen as helping to develop a safe learning environment for all medical trainees. In a learning organization, both faculty and trainees are learners. In such an organization, knowledge will be continually enhanced from relevant sciences (e.g., biological sciences, reliability science, human factors engineering, cognitive psychology)

to improve the delivery of safe care. Learnings from other high-reliability organizations, such as aviation and offshore drilling — where the consequences of error are high and where unwavering commitment to a culture of safety is required — will also be applied. Error prevention will be emphasized rather than error management, leading to improved, proactive systems and analysis.

In summary, including *The Safety Competencies* into PGME curricula and addressing the barriers to implementation will

- have a positive impact on the culture of the working and learning environments;
- foster resident participation and leadership in patient safety and QI initiatives; and
- hopefully, lead to improvements in the safety and quality of patient care.

RECOMMENDATIONS

1. The Royal College has an essential role to play in leading change with respect to teaching the patient safety curricula in postgraduate specialty residency programs and articulating that the teaching and assessment of The Safety Competencies must become a mandatory part of PGME program curricula.

In particular, there are a number of areas in which the Royal College has levers to directly effect change:

- incorporating *The Safety Competencies* into the next iteration of the CanMEDS framework;
- embedding patient safety in the accreditation standards for all PGME programs;

- ensuring patient safety knowledge is assessed in the specialty-specific Royal College exams, including error avoidance and management; and
- requiring continuing professional development in patient safety and QI as part of the annual MOC requirements.

2. There needs to be faculty development and continuing professional development for teachers and practising physicians to embed the patient safety themes and behaviours into the cultures of medicine and medical education.

In terms of the Royal College levers for change, it is recommended that

- the Royal College partner with the CMPA, CFPC, CPSI and others to explore options for a train-the-trainer program and the provision of appropriate resources for PGME faculty;
- this train-the-trainer program be used to promote the identification and development of local champions for patient safety education at each medical faculty;
- the Royal College, with its partners, create a tool kit or inventory of best practices to assist faculty with both embedding patient safety in their existing curriculum and creating innovative teaching encounters; and
- the Royal College advocate for, and/or work with its partners to develop, a Royal College Area of Focused Competence (diploma) program in patient safety.

3. Patient safety curricula (for both teaching and learning) should be interprofessional in nature.

It is recommended that the Royal College

- advocate for partnerships with organizations representing other health professionals to create faculty resources and other tools;
 - encourage health professions to be mindful and aware of the patient safety curricula and faculty resources developed by other groups and organizations to ensure that their teachings and materials are aligned; and
 - encourage the use of direct observation and simulation as valuable tools for interprofessional education in both the learning and working environments.
- 4.** Systematic strategies to measure and change the working and learning environments to support a patient safety culture should be implemented.

The Royal College’s levers with respect to this recommendation include the following:

- including the measurement of culture in PGME programs using a valid and reliable instrument as a postgraduate training program accreditation requirement; and
- advocating for leadership support for patient safety and setting the tone for culture by altering traditional structures, such as M&M rounds and others, to include a focus on error identification, mitigation and prevention, including a review of complications and near misses, to promote and advance a fair and just culture.

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GLOSSARY OF TERMS

Authority Gradient

The term “authority gradient” was first defined in aviation when it was noted that pilots and co-pilots may not communicate effectively in stressful situations if there is a significant difference in their experience, perceived expertise, or authority.¹

The term was first applied to health care in *To Err Is Human*² to refer to the balance of decision-making power or the steepness of command and hierarchy in a given situation.³

Error, Provider (Medical)

The following definition is taken from the glossary created for the Royal College of Physicians and Surgeons of Canada ASPIRE workshop (April 2013):⁴

Many definitions of medical error exist, developed for research, quality improvement, legislation, and regulatory authority use. Some focus on unexpected and unwanted clinical outcomes as being indicators of error. Other definitions consider the omissions and commissions in care at both the individual provider or system levels. A 1990 definition by James Reason for medical error is: the failure of a planned action to be completed as intended (an error of execution) or the use of a wrong plan to achieve an aim (an error of planning).⁵ Reason’s definition distinguishes between errors of execution and errors in planning; acknowledging that mental/judgmental and physical/technical failures both contribute to errors. However, this definition neglects errors of omission: What if there was no plan, or no action?⁶ In addition the failure of a planned action to be completed may or may not be an error but simply represent a change in plan based on changing circumstances.⁷

More Recent Definitions of Error

An act of omission or commission in planning or execution that contributes or could contribute to an unintended result.⁶

An action (plan, decision, choice, action or inaction) that, given the information available and the patient's clinical condition at the time, was done wrongly or performed incorrectly in those circumstances, and therefore resulted in an adverse event (accident in Québec), or a near miss.⁸

The fact that an error occurred does not necessarily mean that the care provided was negligent (in law). See *Négligence/faute professionnelle*.

Harm

Harm is defined in The Safety Competencies as “an outcome that negatively affects the patient's health and quality of life.”⁹

Harm implies impairment of structure or function of the body and/or any deleterious effect arising there from, including disease, injury, suffering, disability and death, and it may be physical, social or psychological.¹⁰

Harm from Health Care Delivery and Related Terms

The World Health Organization (WHO) is developing an internationally agreed upon classification and terminology — the International Classification for Patient Safety (ICPS) — to facilitate the sharing of information and to promote learning from and of patient safety incidents.

The purpose of the International Classification for Patient Safety is to enable categorization of patient safety information using standardized sets of concepts with agreed definitions, preferred terms and...to

facilitate the description, comparison, measurement, monitoring, analysis and interpretation of information to improve patient care.¹⁰

For the purposes of this paper, we have chosen to retain the terminology used in the original version of the “Just Culture of Patient Safety” white paper. We include in the glossary terms that are included in the ICPS and that will likely be incorporated into patient safety and quality work and teaching in the future.

The following is taken from the ASPIRE glossary:⁴

Different terms are used within Canada and worldwide to refer to the reasons for unintended harm from healthcare delivery. The scientific literature and healthcare organizations may use various terms to describe similar types of clinical events, while the provinces and territories may use different terms in their laws.

There are 3 main approaches to terminology used in Canada:

1. Patient safety incident terminology

The International Classification for Patient Safety (ICPS), being developed by the World Health Organization (WHO), is a framework and terminology to facilitate the sharing and learning of patient safety information globally. One purpose of the ICPS is to harmonize language about patient safety so that providers, organizations, jurisdictions and countries may start to classify like events similarly, enabling the sharing and comparison of information about incidents in order to learn from each other's experiences. For more information on this new terminology see <http://www.globalpatientsafetyalerts.com/English/ToolsResources/Pages/International-Classification-for-Patient-Safety.aspx>.

The Canadian Patient Safety Institute (CPSI) supports the WHO-ICPS and has adapted its associated definitions. The CPSI encourages the use of the alternate term “harmful incident” rather than “adverse event”.

CPSI recommends the use of the following terms:

Patient safety incident: An event or circumstance which could have resulted, or did result, in unnecessary harm to a patient.

There are three types of patient safety incidents:

- Harmful incident: A patient safety incident that resulted in harm to the patient. (Replaces “preventable adverse event” and “sentinel event.”)
- No-harm incident: A patient safety incident that reached a patient but no discernible harm resulted.
- Near miss: A patient safety incident that did not reach the patient. (Replaces “close call.”)

Note: The reasons for these types of incidents are system failures related to the processes of care, and provider performance issues including errors.

The ICPS also recommends the term “reportable circumstance” to define situations that need to be reported or flagged.

Reportable circumstance: A situation in which there was significant potential for harm, but no patient safety incident occurred (specific patient not involved).

2. Adverse event terminology

The term adverse event is still used in Canada to describe harm from health care delivery, and some provincial laws reference this term.

Adverse event: An event that results in unintended harm to the patient, and is related to the care and/or services provided to the patient rather than to the patient’s underlying medical condition.¹¹

Note: The reasons for adverse events include the inherent risks of investigations and treatments, system failures related to the processes of care, and provider performance issues including errors.

Other related terms (as taken from the Safety Competencies):⁹

No-harm event: An event that reaches the patient but does not result in harm.

Close call: An event with the potential for harm that did not result in harm because it did not reach the patient due to timely intervention or good fortune (sometimes called a near miss). The term “good catch” is a common colloquialism to indicate the just-in-time detection of a potential adverse event.

3. Terminology used in Québec:^{4,12}

It is important for physicians practising in Québec to understand the terms accident and incident, as these are entrenched in law and will help physicians to fulfill their obligations for disclosing and reporting events.

Accident: In Québec law, accident refers to harm resulting from healthcare delivery. The *Act respecting Health Services and Social Services* defines accident as “an action or situation where a risk event occurs which has or could have consequences for the state of health or welfare of the user, a personnel member, a professional involved, or a third person.”

An accident would include harm to a patient that results from any one or a combination of the following:

- recognized risks inherent in investigations or treatments
- system failures
- performance issue of an individual provider

Depending on the terminology being used, the meaning of accident aligns most closely with either of the following terms used in the rest of Canada:

- adverse event
- harmful patient safety incident¹²

An accident should be disclosed to the patient. The *Code of Ethics of Physicians* in Québec states that the physician must “inform his patient or the latter’s representative of any incident, accident or complication which is likely to have or has had a significant impact on his state of health or personal integrity.”⁴

Incident: In Québec’s *Act respecting Health Services and Social Services*, an incident is “an action or situation that does not have consequences for the state of health or the welfare of the user, a personnel member, a professional involved, or a third person, but the outcome of which is unusual and could have had consequences under different circumstances.”

The meaning of *incident* aligns most closely with both of the following terms used in the rest of Canada:

- no-harm event (an event reached the patient but no harm resulted)
- near miss (an event did not reach the patient but the potential for harm existed)¹²

An incident, as the term is defined in Québec, may require disclosure if:

- the incident reached the patient but no harm resulted. Generally such incidents should be disclosed to patients.
- the incident did not reach the patient (i.e. the incident was caught in time) but the potential for harm existed. The patient should be informed of the incident if there is a similar, ongoing safety risk for that patient, or if the patient is aware of the incident and an explanation will allay concern and promote trust.

In Québec government-run institutions such as hospitals, the law requires the completion of a report in the prescribed format, for both accidents and incidents. The report is kept with the patient’s medical record. It is prudent to alert the patient to the incident, the report, and any subsequent preventive

measures put in place. This will reduce the likelihood of misunderstanding or mistrust if the patient views the medical record and report in the future.⁴

Human Factors

Ergonomics (or humans factors) is the scientific discipline concerned with the understanding of the interactions amongst humans and other elements of a system. It is also the profession that applies theory, principles, data and methods to design in order to optimize human well-being and overall system performance.¹³

The system represents the physical, cognitive, and organizational artifacts that people interact with. The system can be a technology, a software, or a medical device; a person, a team, or an organization; a procedure, policy, or guideline; or a physical environment. Interactions between people and the systems are tasks.¹⁴

Interprofessional Education

“Interprofessional Education occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care.”¹⁶

The Centre for the Advancement of Interprofessional Education (CAIPE) uses the term “interprofessional education” (IPE) to include all such learning in academic and work-based settings before and after qualification, thereby adopting an inclusive view of “professional”.¹⁵

Just Culture of Safety

In 1999, the Institute of Medicine published *To Err is Human*, a seminal document that propelled patient safety into the public domain and dialogue. One of the report’s main conclusions is that medical errors are commonly caused by faulty systems, processes and conditions that lead people to make mistakes or to fail to prevent them.

This marked a shift from the traditional stance of looking for an individual provider to fault and blame toward a “no-blame” approach. More recently, patient safety experts have described a need to redefine personal accountability. Marx presents a process of deciding how an individual is accountable for his own decisions, and outlines four key concepts: human error, negligence, reckless conduct and knowing violations.¹⁶

The Canadian Medical Protective Association (CMPA) defines “just culture” as follows:

A health care approach in which the provision of safe care is a core value of the organization. The culture encourages and develops the knowledge, skills and commitment of all leaders, management, health care providers, staff, and patients for the provision of safe patient care. Opportunities to proactively improve the safety of care are constantly identified and acted on. Providers and patients are appropriately and adequately supported in the pursuit of safe care. The culture encourages learning from adverse events and close calls to strengthen the system, and where appropriate, supports and educates health care providers and patients to help prevent similar events in the future. There is a shared commitment across the organization to implement improvements and to share the lessons learned. Justice is an important element. All are aware of what is expected, and when analyzing adverse events any professional accountability of health care providers is determined fairly. The interests of both patients and providers are protected.¹⁷

Frequently, the terms “patient safety culture” and “patient safety climate” are used interchangeably; however, there are “conceptually meaningful differences in their scope and depth.”¹⁸

“Patient safety climate” refers specifically to shared perceptions or attitudes about the norms, policies and

procedures related to patient safety amongst team members.¹⁹ As such, measuring climate attempts to capture the team’s perceptions about the observable, surface-level aspects of culture during a particular point in time.²⁰⁻²²

Most often, safety climate is measured by administering questionnaires or surveys that ask team members about their perceptions of the team, tasks and environment.

The difference between culture and climate is often reduced to a difference in methodology. Studies involving surveys of clinicians and staff are categorized as studies of safety climate, and ethnographic studies involving detailed, longitudinal observations are categorized as studies of safety culture.¹⁸

The term “patient safety culture” has been used throughout this paper; however, it would be more correct to use “patient safety climate” when one is referring to the measurement of patient safety culture at a single point of time.

Negligence/Faute Professionnelle

The following is taken from the ASPIRE glossary:⁴

A legal concept. In all provinces/territories of Canada except Québec, to establish negligence by a physician, a plaintiff patient must prove to the satisfaction of a court that harm to the patient was caused by the failure to exercise a reasonable and acceptable standard of care by the *physician*. In the courts, the medical standard of care to determine negligence is not one of perfection but rather the standard of care that might reasonably have been applied by a colleague in similar circumstances.

In Québec, the concept of *faute professionnelle* is at the heart of civil liability. Every person has a duty to abide by certain rules of conduct or standards, and if a person does not, he or she has committed a fault. The plaintiff must demonstrate the physician committed a fault, that is, did not act as a reasonably prudent physician of similar training and experience would have under the circumstances. The plaintiff must also have suffered an injury as a result of the fault committed, and the plaintiff must establish the fault caused the injury.⁸

Situational Awareness

The simplest definition of “situation awareness” or “situational awareness” is “knowing what is going on around you.”²³ Situation awareness can be expanded to refer to the

perception of the elements in the environment within a volume of time and space, the comprehension of their meaning and the projection of their status in the near future.²⁴

Situation awareness is further defined as the “cognitive processes for building and maintaining awareness of a situation or event,” which include

continuous monitoring of the environment, noticing what is going on and detecting any changes in the environment (and) functions as the first stage in the decision-making process.²⁵

The most well-known model of situation awareness, developed by Endsley, includes three levels — information gathering, interpretation of the gathered information and anticipation of future states — and acknowledges the importance of the perception of time and other temporal aspects to the formulation of situation awareness.²³

System Failure

“System failure” can be defined as the lack, malfunction or failure of policies, operational processes or supporting infrastructure for the provision of health care.²⁶

Team

A team is a group of individuals with a shared, common goal who, although they each have defined individual tasks, achieve the goal by working interdependently and cooperatively...Healthcare teams vary hugely in size, complexity, the mix of skills, professions involved and seniority of members.²⁷

Technology

“Technology” can be defined as a piece of equipment or a tool used to perform an activity. This can range from the simplest tools to the most complex engineered and designed devices and systems used to accomplish human tasks, activities and goals (e.g., ranging from allergy alert wristbands to CT scanners to computerized physician order entry systems).⁹

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7. Competency-based Medical Education



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ABSTRACT

Competency frameworks such as CanMEDS, CanMEDS-Family Medicine (CanMEDS-FM), the Royal Australasian College of Physicians Supporting Physicians’ Professionalism and Performance (SPPP) project, and the United States’ Accreditation Council for Graduate Medical Education’s Outcome Project form the basis of training for many medical learners, particularly at the residency level. The rationale for competency-based medical education (CBME) is that it focuses on outcomes and abilities, with competencies as the organizing principle of curricular design. CBME promotes learner centeredness and de-emphasizes time-based criteria for the achievement of competence. However, there is a spectrum of approaches for designing residency programs — from time-dependent to time-free — with a hybrid model in between. In this paper, we address the criticisms of CBME and propose steps to move toward a competency-based approach to curriculum planning and resident education.

generations. Contemporary society is increasingly characterized by consumerism in health care. In the current era of accountability, society and governing bodies demand that our system consistently produces competent practitioners. Medical educators have a responsibility to respond to these challenges by ensuring that every graduate is equipped for practice.

One approach to assuring competence is to focus on explicit competencies and use these competencies as a way to organize residency education. This has been called outcomes-based or competency-based medical education (CBME). CBME is simply an outcomes-based approach to designing postgraduate medical education (PGME) that emphasizes competencies. It has recently been defined as

an approach to preparing physicians for practice that is fundamentally oriented to graduate outcome abilities and organized around competencies derived from an analysis of societal and patient needs. It de-emphasizes time-based training and promises greater accountability, flexibility, and learner-centredness.¹

INTRODUCTION

The practice of medicine has changed remarkably over the past 100 years, yet medical education is still modelled on changes proposed at the time of William Osler and in the 1910 Flexner Report. Today’s medical educators face the criticism that our current structures for training future doctors, particularly at the postgraduate level, do not reflect our current context. Medical knowledge and technology have grown exponentially since the 1960s, requiring residents to learn more complex knowledge, skills and behaviours. Medical information is now readily available to patients through the Internet, and patients’ view of medical expertise differs from that of previous

In CBME, learners assume greater responsibility for their own learning and assessment than they do in the traditional approaches. In CBME, the outcomes (competencies) are not isolated elements of knowledge or a skill, but rather they integrate

multiple components such as knowledge, skills, values, and attitudes. Since competencies are observable, they can be measured and assessed to ensure their acquisition. Competencies can be assembled like building blocks to facilitate progressive development.²

CBME may be viewed as an approach to medical education where time is a resource for acquiring competencies; however, CBME should not be viewed as incompatible with traditional time-based education that is organized around predictable rotations. Nor should CBME be viewed simply as an approach that has as its aim meeting only minimum levels of competence. On the contrary, CBME facilitates the development of excellence by explicitly identifying milestones for stages along the spectrum from novice to expert.

To facilitate this approach, standard-setting and certifying bodies such as the Royal College must modify the design of PGME to enable a “progression of competence” through the achievement of milestones. If these milestones are extended to both undergraduate medical education and continuing professional development, they would then exist over the continuum of medical education.

The following steps should be followed when one is planning a CBME curriculum:

- identifying the abilities needed of graduates;
- explicitly defining the required competencies and their components;
- defining milestones along a development path for the competencies;
- selecting educational activities, experiences and instructional methods; and
- selecting assessment tools to measure progress along the milestones.

These steps have been expanded upon by Holmboe and Snell.³

BACKGROUND AND CURRENT STATUS OF MEDICAL EDUCATION AND COMPETENCIES

The literature on competency-based education dates back over 60 years and has been used as an approach across multiple professions, including social work and teacher education.² The August 2010 issue of *Medical Teacher* was devoted in its entirety to a discourse around CBME, providing evidence of a resurgence of interest in the topic.

Over the last 15 years, competencies — or physician abilities — have become the standard unit used in medical education planning in Canada and around the world. Competency frameworks such as CanMEDS,^{4,5} CanMEDS-Family Medicine (CanMEDS-FM)⁶ and the Outcome Project of the Accreditation Council for Graduate Medical Education in the United States⁷ form the framework for training large numbers of medical learners, particularly at the PGME level.

Despite this fact, most residency programs around the world are still organized in terms of time spent on defined rotations rather than on the achievement of competencies, and the amount of time spent is often used as a surrogate marker of competence. This approach would be unacceptable in other enterprises. Resistance to CBME may stem from a perception that CBME is incompatible with time-based models. We suggest that CBME can be incorporated at the residency level within a time-based structure, and we advocate for a hybrid model of competency-based, timed rotations. There is a spectrum of approaches for designing residency programs, ranging from “time-dependent” to “time-free,” as illustrated in [Table 1](#).

Examples of current CBME programs include the University of Toronto’s Division of Orthopaedic Surgery residency program pilot project, the Royal Australian and New Zealand College of Psychiatrists’ residency program, and the undergraduate program at the Cleveland Clinic. Many of these programs are structured in a way that is somewhere between time-defined and time-free.

Table 1. The Spectrum of Design Approaches for Residency Curricula
Built on the Work of Carraccio¹¹

	Time-dependent Model	Hybrid Model	Time-free Model
Organizing Structure	Time spent on rotations	Progression of competence within a time-based rotation	Progression of competence
Degree of Structure	Rotations and academic half-days and other formal teaching contexts	Structured flexible curriculum; rotations as only one learning method	Structured, learner-centred curriculum; time-independent; rotations as a resource to aid learning
Learning Goals	Objectives of training	Milestones	Milestones
Role of Timed Rotations	The unit of curriculum	Resource for acquiring competencies	Irrelevant
Role of In-training Assessment	To ensure that rotations are passed	To document progression and milestone achievement during rotations, plus overall progress over time both within rotations and in other contexts (e.g., simulation)	To document overall progression and milestone achievement in all contexts
Role of Summative Assessment	To infer readiness for exam	To ensure attainment of competencies and milestone achievement	To ensure attainment of competencies and milestone achievement
Key Assessment Tools	Single subjective measures, often removed from the workplace (e.g., in-Training Evaluation Report [ITER], Final in-Training Evaluation Reports [FITERs], global rating scales, oral exams); emphasis on assessment at the end of a time period	Formative and some summative collected in a portfolio (e.g., encounter cards, mini-Clinical Evaluation Exercises [mini-CEX], multi-source feedback [MSF], logbooks, practice-based assessments, Objectively Structured Clinical Examinations [OSCEs] and other simulation methods)	Multiple objective measures emphasizing observation in authentic settings (e.g., encounter cards, mini-CEX, MSF, logbooks, practice-based assessments, OSCE and other simulation methods) all collected in a portfolio with reflection needed
Program Focus	Processes for rotations	Acquisition of competency outcomes via rotations and other activities	Acquisition of competency outcomes
Teacher Roles	Supervision, teaching	Supervision, teaching, direct observation	Supervision, teaching, direct observation
Learner Roles	Service on rotations; attend academic sessions; study for exam	Ownership of learning; plot course for progression of competence through rotations	Ownership of learning; plot course for progression of competence through all learning activities

CHALLENGES AND DRIVERS FOR CHANGE

The rationale for CBME has been outlined in a recent review article,² and that rationale is reviewed here.

- 1. A need to focus on curricular outcomes.** Many current curricula do not explicitly define the outcome abilities needed of graduates, let alone ensure that these abilities are learned, assessed and acquired. These curricula fail to ensure that medical graduates demonstrate competence in all essential domains of their intended practice. This lack of explicit definitions may allow competence in one domain to be misconstrued as competence in another (e.g., excellent communication skills taken as evidence of medical knowledge). This does a disservice to both the profession and the public.
- 2. Little emphasis on abilities or competencies as an organizing principle of curricula.** The objectives-based approach has led to an over-emphasis on knowledge objectives at the expense of skills and higher order aspects of practice such as attitudes and behaviours. Using lists of knowledge objectives may lead to a program in which the full range of skills and behaviours needed for future practice are not required or attained.
- 3. An emphasis on time-based training at the expense of attainment of competencies.** Much of contemporary medical education is oriented toward the amount of time spent in an aspect of training rather than the abilities actually acquired. Aspects of physician credentialing, such as eligibility for certification exams, also tend to focus on time spent on specific experiences.
- 4. The need to promote learner centredness.** Current education theory and practice suggests that trainees need to take increasing responsibility for their progress and development. Curricula need to be more flexible to meet learner needs and tailored to individual paths to practice.

CRITICISMS OF CBME

The following are some of the challenges posed by CBME that are typically raised by its critics.⁸⁻¹⁰ We include a response to each of these challenges.

- 1. CBME is criticized for promoting reductionism.**
Competence does not equal a list of learning objectives or reductionist tasks; rather, competence is a broad objective that necessitates an integration of knowledge, skills and behaviours in practice.
- 2. CBME is perceived by some to be overly concerned with training to meet a threshold minimum level of competency and not with promoting excellence.**
We feel that CBME facilitates the development of excellence by setting the targets for competence at the appropriate levels, explicitly identifying milestones for each competency. Furthermore, once competence is achieved, CBME allows time to be used as a resource for the pursuit of excellence.
- 3. CBME presents challenges in the areas of the teaching and learning process, implementation, and assessment.** For the on-the-ground users of CBME (teachers, program directors, curriculum planners, service chiefs and learners), practical issues of implementation can be intimidating. As residents have a dual role as learners and service providers, the concept of time-free training in pure CBME becomes an issue. It may cause major disruption of services if residents are progressing through residency at different rates. Second, switching over to a time-free process would take tremendous resources, and rolling out a time-free competency-based curriculum for every training program in medical schools across Canada may not be realistic. Third, there is a potential for missing hidden competencies and for not allowing the time needed for residents to form their professional identity. Finally, although procedurally oriented disciplines may be more amenable to CBME as individual procedures can be assessed, it may be more difficult to assess progression of competence in complex diagnostic specialties. For these reasons, we feel that

the adoption of a competency-based approach within a time-based system may be more appropriate for most parts of the majority of residency programs.

4. CBME promotes self-direction for the learning process, but not necessarily for the designation or definition of specific competencies. Thus, although learners may have more freedom to decide how to learn in a CBME model, they may have less freedom in deciding what to learn as competencies become codified.¹⁰ To address this concern, the competencies and milestones selected must be flexible enough to address the future or current needs of the learners as well as societal needs.

RECOMMENDATIONS

Competence is not a long list of learning goals or reductionist tasks; it is a broad series of outcomes or abilities that integrate knowledge, skills and behaviours in practice for a specific context. The compelling promise of CBME lies in its focus on outcomes and on ensuring the competence of graduates. Ideally, the competencies and milestones should be across the continuum of medical education, from medical school admission into continuing professional development.

To address the criticisms outlined previously, the authors propose the following recommendations.

1. That the Royal College advocate for a CBME approach to curriculum planning that focuses on outcomes and explicitly defines essential domains of competence across the continuum of education.
2. That the Royal College emphasize competencies as an organizing framework for educators to design learning experiences that stress observable abilities.

3. That the Royal College establish a clearly defined process for delineating the competencies.

As yet, there is an incomplete understanding and acceptance of and buy in to CBME by teachers, learners and educational administrators. Faculty — and, in particular, program designers — will need to be educated about the concept and principles of CBME. Faculty must be trained in the broad aspects of CBME: program planning, teaching and supervision methods, and, most important, assessment strategies.

4. That the Royal College facilitate the adoption of a competency-based approach to PGME by adapting accreditation standards and providing appropriate faculty development.
5. That the Royal College explore with deans, funders and educators their perspectives on the feasibility of CBME hybrid residency programs and address any concerns that may be raised.
6. That the Royal College dismiss the notion of competency-based training as the antonym to time-based training and, instead, advocate for the view of time as a resource to be used to attain competence and achieve excellence.

The major logistical and financial challenges to designing and implementing CBME in its pure state suggest that hybrid versions may be both more acceptable and more feasible.

7. That the Royal College advocate for a hybrid model of training for residency programs where the measurement of success is not based on time but rather is measured by whether or not competence is attained. This hybrid model would emphasize a competency-based approach within a time-based system.

8. That the Royal College promote a curriculum with flexible time periods as a means of focusing on developing the learner's abilities. However, there should be enforced minimum and maximum times allowed for progression.

Assessment of competence will need to change as all competencies will have to be demonstrated and observed in the workplace. Opportunities for direct observation will be needed, as will the development of novel formative and summative assessment tools (e.g., encounter cards, portfolios, multi-source feedback) and more effective ways of assessing qualitative factors.

9. That the Royal College collaborate with educators, deans and other stakeholders to develop reliable competency-based assessment tools and support the necessary faculty development to appropriately apply these tools.

10. That the Royal College collaborate with Specialty Committees to establish a repository for teaching and assessment tools and strategies and to identify crosscutting competencies that can be adapted to different specialties.

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8. Assessment



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Assessment



Acknowledgements

Richard Hodder (1946 – 2012) was a contributing author for this paper. A major driving force in Canadian medical education for many years, he was consistent and persistent in his vision of a better process for preparing physicians for Canada and the world. The other participants in this paper acknowledge his many contributions.

ABSTRACT

This paper provides a broad analysis of assessment policy and practice as viewed through the lens of Canadian postgraduate medical education. Its intent is to stimulate discussion, inform Royal College decision making and provide the groundwork for an evaluation of Canadian postgraduate medical assessment that is practical and flexible, reflective of current best practices, and capable of responding to societal health needs well into the twenty-first century.

The modernization of Canada's assessment framework must be done with the acknowledgment of the realities of the current postgraduate landscape, including the fact that there are now multiple entry points into the system. It must also build on CanMEDS, which identifies the different roles that define a competent practising physician.

Ultimately, however, the resulting system must be robust and adaptable, and, at the same time, it must maintain Canada's high national standards for certification. The paper posits that a competency-based assessment framework would provide the necessary breadth and flexibility, and it goes on to outline some of the general principles under which such a framework might be established.

INTRODUCTION

It must be acknowledged from the outset that medical education is by nature a continuum that spans undergraduate, postgraduate and (in-practice) continuing professional development (CPD). As such, postgraduate training and assessment cannot be addressed in isolation. Nor must the end of postgraduate training — as marked by the national certification examination — be considered the pinnacle of competence. Rather, it should be viewed as a milestone in career-long professional development. By inference, any observations and recommendations arising from this paper have direct and tangential implications for the breadth of medical education and assessment. Indeed, it might well be argued that any new system of postgraduate assessment will fail to meet its full potential if it is implemented in isolation.

Competence, as required of a medical professional, is defined by more than simply the sum of an individual's knowledge and technical skills. Through the development of the CanMEDS competency framework,¹ a measure of success has already been achieved in identifying the different roles that define the competent practising physician. The challenge remains to find a complementary assessment framework that integrates the diverse values implicit in CanMEDS, while at the same time motivating the authentic assessment of competence, supporting decisions regarding promotion or certification and capturing the essence of competent clinical practice.

In concert with other papers in this publication, this document recognizes the key strengths and weaknesses in the existing system of postgraduate assessment and, in the process, challenges practices that are outdated or ineffective while it justifies and supports those that work well. Although a comprehensive and specific examination of the assessment literature is impractical in the context of a brief review, evolving trends and methodologies are identified. Finally, recommendations for change are offered, with an emphasis on assessment policy over



the more granular implementation of specific assessment methodologies. Specifically, adoption of rigorous assessment programs that can provide global judgements based on integrated and aggregated data (both quantitative and qualitative) from multiple inputs over longitudinal periods will provide a more valid assessment of competence than the mere adoption of a “new” assessment instrument. Inevitably, success or failure will hinge more on our ability to foster a “culture of assessment” within Canadian residency programs than on any specific method or technology.

BACKGROUND

Canada’s PGME system for specialists comprises more than 600 training programs in 67 disciplines, administered through 17 Canadian medical schools under the jurisdiction of the Royal College. Beyond the specialist domain, dozens of Family Medicine training programs are administered in a parallel fashion by the College of Family Physicians of Canada (CFPC). While the Royal College embraces many mandates, foremost among them is the commitment to ensure the highest standards of postgraduate education — and, implicitly, the competence of Canada’s specialist physicians — to the benefit of the general public. Arguably, our professional autonomy hinges on the Royal College’s ability to demonstrate this competence both in certification and in practice.

Individual training programs operate under shared Objectives of Training and Standards of Accreditation, overseen by the Specialty Committees, universities and the Royal College. There is, however, a great deal of inter-site and interdisciplinary variation in how these objectives and standards are applied, particularly with respect to in-training assessment.

The In-Training Evaluation Report (ITER) — mandated by the Royal College and structured to reflect the CanMEDS framework — serves as the formative assessment

backbone for all Royal College programs. While long accepted as the benchmark for formative, in-training assessment, the operational deployment of the ITER is seriously flawed in that it is rarely populated with reliable or objective data, allows faculty to focus on restricted performance domains and is often completed long after the training experience has ended.² Further, the ITER rarely provides information to learners that is truly meaningful in identifying their strengths and weaknesses, informing their conceptualization of developing competencies or directing their future learning. Finally, it has been suggested that the structure of the ITER may actually lead to a distorted view among faculty and learners of the CanMEDS roles, masking their integrated nature and holistic philosophy.³

While the majority of Royal College programs do employ some form of structured (written and/or oral) in-training examinations, assessment is heavily weighted towards the Medical Expert Role.⁴ In comparison, relatively little assessment is based on well-documented supervision or observation of clinical practice in an authentic working environment. In an effort to bridge assessment gaps, programs frequently and misguidedly employ surrogates of competence (e.g., a demonstrated facility in presenting rounds being equated with an ability to communicate effectively with patients).

Canada’s Program Directors (PDs) are by and large aware of these assessment deficiencies and they have expressed the desire for a more robust, practical and preferably shared national framework for assessment.⁵ However, most PDs, although clearly dedicated clinicians and teachers, have neither the time nor the expertise to independently identify and develop the necessary tools.

The Royal College, while highly prescriptive through its standards of accreditation, has been relatively less supportive of practical national initiatives relating to in-training assessment, providing guidelines,⁶ but little practical support for their implementation. Instead, the

Royal College’s resources are heavily concentrated on the annual production and psychometric evaluation of centralized, terminal (summative) examinations. Although not without value, these examinations, like much in-training assessment, focus primarily on the lower levels of Miller’s pyramid (i.e., knowledge and its theoretical application), rather than on the more complex competencies required of a practising physician. Since 1992, with the goal of improving content validity and reliability, Royal College specialty examinations have followed a “comprehensive” format, whereby the written and oral components are offered together and considered as a whole. Positioned at the end of training, they are of no formative value, offer only scant, if any, remedial direction to unsuccessful candidates and are incongruent with the idea of competence as a continuum. Worse, by redirecting the efforts of senior residents, high-stakes terminal examinations may actually have a negative impact on exposure to and attainment of higher-order competencies in the final year of training. Finally, studies comparing certifying examination performance and practice outcomes are few in number; those that do exist show, at best, only modest correlations.⁷⁻⁹ Recognizing that the Royal College has a mandate to uphold the highest standards for specialist physicians in Canada, it is imperative that an appropriate exit assessment of competence is developed to ensure that all specialists are prepared to safely and competently enter independent practice. This will ensure the Royal College is able to play a key role in the collaborative relationship with Medical Regulatory Authorities.

The Royal College continues to develop its Maintenance of Competence (MOC) Program for fellows in practice. While allowing fellows to set learning goals, record activities and describe outcomes, only a small minority (13 per cent in 2010) participate in the self-assessment component (section 3).¹⁰ Recognizing the limits of self-assessment and the low percentage of voluntary participation, the current MOC process, at best, constitutes a weak proxy for the ongoing assessment of competence.

DRIVERS FOR CHANGE

Given its commitment to improve “the health and care of Canadians by leading in medical education, professional standards, physician competence and continuous enhancement of the health system,”¹¹ it is incumbent on the Royal College to ensure that its educational policies and programs are reflective of current knowledge and best educational practices.

Although successful in realigning training objectives and accreditation standards to reflect the CanMEDS framework, training programs under the Royal College’s jurisdiction have been slow to implement a robust, parallel structure that is capable of assessing these diverse yet ultimately integrated competencies. An understandable but often disproportionate focus on the Medical Expert Role persists, despite evidence to suggest that major determinants of ongoing competence lie in a more holistic view of CanMEDS.

While arguably paramount, societal demands for increased accountability regarding specialist competence must be balanced against the need for efficient use of training time and resources. Implicit in this is the mandate that assessment be continuous and broad, and that it benchmark competence and identify any need for learner remediation in a timely fashion. Movement toward a competency-based model for medical education is both necessary and desirable, carrying with it the demand for a complementary system of competency-based assessment.^{12,13}

Since the 1990s, national physician resource deficits have combined with an effective globalization of PGME to dramatically shift the landscape for specialist certification in Canada. Unlike the essentially linear, single-stream model of the past, learners now enter, leave and re-enter our postgraduate system at many points along the continuum, often carrying with them qualifications from outside



Canada. Increasingly, specialist physicians trained outside of the Canadian system are seeking validation of their training in order to obtain employment. Provincial health authorities, seeking to fill vacancies, are adding their own leverage to these demands. The Royal College must address this issue, ensuring that it fulfills the mandate to establish the standards for specialist practice, regardless of entry route.

Although the primary goal in the summative assessment of any physician specialist must be the determination of competence for practice, it is essential that, in the case of foreign-trained physicians, the assessment methods take into account an inevitable diversity of knowledge, experience, skills, language and cultural values. As a stand-alone entity, our system of terminal examinations does this poorly. It remains the responsibility of the Royal College — both to itself and to the Canadian public — to modernize its system of assessment, ensuring that any new framework is robust and adaptable, while maintaining high national standards for certification.

POSSIBLE SOLUTIONS

It is incumbent on the Royal College that the type, scope, frequency and timing of assessment are such as to ensure the competence of every certificant. A competency-based assessment (CBA) framework meets this requirement regardless of the chosen training model (time-based versus competency-based versus hybrid). The characteristics of CBA have recently been well reviewed by Holmboe and colleagues.¹³ The following are some general principles under which such a framework might be established:

In-training assessment must take a more prominent role in determining competence.

- While multiple strategies and settings have been described for assessing each of the CanMEDS roles, performance in the workplace reflects the pinnacle

of performance hierarchies and, as such, carries considerable validity and relevance. Authentic assessment of roles such as Professional or Health Advocate outside of the clinical setting is particularly challenging.

Competence must be defined in pragmatic and operational terms for all situations.

- While the CanMEDS framework provides clear reflection on the essence of competence, the greater challenge will be to implement an assessment framework that captures the integrated nature of the CanMEDS roles in practice. Systems such as the current ITER — by identifying these roles in isolation — risk losing validity from the learner’s perspective, and may ultimately prove to be less than the sum of their parts. In-training assessment should, therefore, be based around real clinical work that reflects the important professional activities and developmental milestones of the specialty in question. Different activities draw variously on the CanMEDS roles; however, within any specialty, the full range of these roles will be reflected in the scope of professional work done by its practitioners. The challenge is to enable assessment to be guided — but not constrained — by CanMEDS. Grounding assessment in real clinical work can help to maintain this precarious balance.

Assessment must become more learner driven, learner focused and formative.

- Formative assessment — fully integrated into all aspects of clinical teaching and supervision — should take priority over summative assessment. Feedback, reflection and guided self-assessment are essential to this modality. Simple but effective documentation will be one of the keys to success; the relative absence of such documentation is one of the major weaknesses of our current system and practices. As the quantity and quality of formative information grows, the demand for and reliance on summative methods is further diminished.

Effective means for providing timely, constructive feedback must be found and incorporated within the framework.

- Early identification of the learner experiencing difficulty is both an advantage and responsibility of this approach. Implicit in this is the requirement that opportunities for remediation be provided and that effective mechanisms exist for terminating training in the event of repeated unsuccessful attempts.

Assessment methodologies must be improved and of greater variety.

- Methods should be chosen to reflect the competencies identified, rather than the converse. Similarly, assessment must be described in terms of these competencies, not in terms of the tools employed. While it may be helpful to develop new tools and methods of assessment, it is perhaps more important that we find better ways to apply the existing tools and methods to optimize their effectiveness and meaning.

Multiple observers or points of view must ideally be incorporated.

- This may include the perspectives of supervisors, medical or administrative staff, other learners, patients and families. The resulting assessment will be more meaningful, less physician centred and more in line with societal needs. Selected workplace assessments may be performed “backstage”, with the learner unaware, thus mitigating any Hawthorne effect while reflecting additional dimensions of performance. Valid and reliable assessment of complex competencies is highly dependent on having multiple independent observations of performance by a large number of observers. This is easier to achieve in our clinical context when the observations can be brief and simple. In the future, we will base decisions about competence far less on highly structured occasional assessments and much more on the aggregates of multiple assessments in multiple contexts by multiple observers over a continuum of time

in workplace settings. This aggregate should be done on a regular basis, using a defined methodology, by a designated individual or (more ideally) a committee charged with making decisions on the learner’s progress.

Qualitative methodologies and narrative information will play a much greater role in assessment.

- While quantitative measures will always have an essential role to play in assessing competence, they alone are insufficient to meet future challenges. Modern conceptualizations of assessment validity have moved beyond the mere statistical description of test performance to complement our richer appreciation and understanding of qualitative methods.¹⁴ Qualitative and narrative data are often much more appropriate for true competency-based assessment, and this type of assessment tends to generate useful data more easily in the workplace setting. Qualitative and narrative data have also been shown to be a better predictor of overall and long-term competence than most of the available quantitative data. The incorporation of these data into an assessment framework will require a shift in our general way of thinking about, conducting and reporting our assessment activities. The key to success will be to maintain a balance between qualitative and quantitative methodologies, with each occupying its useful place and the one complementing the other.

Centralized examinations should no longer necessarily be positioned at the end of training.

- Recognizing the Royal College’s public mandate (responsibility) to ensure the competence of qualifying specialist physicians, its sole reliance on end-of-training examinations must be reconsidered. Instead of trying to be a one-time final test of overall competence (which has never really been possible), centralized examinations should form part of the overall assessment strategy and should be better integrated into training. These examinations should concentrate on what can be well tested in a centralized format, complementing in-training assessments rather than repeating, replacing or

compensating for them. Where appropriate, centralized examination components might even be administered iteratively over the course of training.

Success — either at various stages of training or at the time of certification — should be determined by meaningful demonstration of competent performance on each of the required components.

- Success should no longer be determined by average or combined performances. A weak performance in a key area of competence should preclude success until competence in that area has been achieved and demonstrated.

HOW WILL CHOICES BE MADE AND JUSTIFIED?

Any changes to a system of assessment will need to be justifiable, directed toward application of knowledge/clinical competence, and it is not just a question of statistical validity and reliability, although these are obviously very important. Our current understanding of assessment validity (of which reliability may be considered a contributor) looks well beyond these traditional parameters to more qualitative factors.¹⁵

In choosing a method of assessment, it is useful to consider the utility index proposed by Van der Vleuten.¹⁶ He identified five factors that must be considered:

1. **Validity (V)**
2. **Reliability (R)**
3. **Educational Impact (on learning and learners) (E)**
4. **Acceptability (to learners, to assessors, to society) (A)**
5. **Cost effectiveness (material and human resources) (C)**

The resulting utility index (U) is described as a product, $U = V \times R \times E \times A \times C$, meaning that a weakness in any one variable alone will greatly affect the usefulness of the entire system. Considering the elements in this index can inform our decision making when we are setting priorities for assessment and planning for future needs.

INTERNATIONALLY TRAINED PHYSICIANS

Internationally trained specialists and learners need to be able to access our system of assessment so that they can seek certification according to national standards of competence. These individuals present three particular challenges from an assessment point of view.

1. Many of these individuals will be experienced practitioners who are actively in practice, but also many years removed from training. As such, while they may be very competent to practise their discipline or specialty, they may well have difficulty succeeding in our current centralized end-of-training examinations.
2. A shift towards centralized examinations that are administered iteratively or are more highly integrated into postgraduate training may pose a challenge in terms of accessibility for physicians already in-practice.
3. There will be no available useful in-training assessments for this group. This will become more problematic as in-training assessments play a much more important role in future certification processes and decision making.

The solutions to these difficulties remain to be found; however, they will likely be based on, at least, the following:

1. The availability of opportunities for repeated assessment in the context of clinical practice in order to obtain reliable and valid information on the fundamental components of competence.

- 2. The requirement for alternatives to centralized examinations. These alternatives will assess the required competencies to the same national standard, but they will use different and appropriate methods.

BASIC REQUIREMENTS FOR SUCCESS IN IMPLEMENTATION

Implementation of any or all of the above initiatives will require specific action on the part of the Royal College. This action could potentially include the following:

- Re-allocation of emphasis and resources away from the centralized terminal examination system and toward a more robust system of in-training assessment.
- Development of a shared national framework for assessment that is supported by the Royal College and adapted/disseminated to specific training programs via the existing network of Specialty Committees and university affiliations. Assessment strategies for specific specialties or programs will require deliberate, individualized planning and considerable support.
- Establishment and support of a Royal College-led network of education/assessment experts who act as resources for the Specialty Committees and individual programs and who guide the selection, adaptation and implementation of specific assessment modalities within the new framework.
- Development and support of a practical online portfolio in which the experiences and assessment components of individual learners might be documented. This portfolio would incorporate both formative and summative assessments, supporting valid decision making regarding learner promotion and/or certification. Ideally, the chosen format should integrate well with an

undergraduate and in-practice portfolio, thus providing greater continuity in personal/professional development over an individual's entire career.

- De-emphasis and/or replacement of the current system of ITERs as the benchmark for promotion in favour of periodic milestone-based reports that are captured via a learner's cumulative portfolio.
- Development of close and formal collaboration between the national assessment bodies (Royal College, CFPC, Collège des médecins du Québec and Medical Council of Canada), the respective accredited training programs nationwide, and the medical residents' associations will be essential to success in meeting the assessment and certification needs of practising international physicians.

BARRIERS TO CHANGE

Canadian PGME is a complex network that is overseen by three colleges and delivered by hundreds of individual programs nationwide. Each of these programs has its particular circumstances, challenges and resources. Therefore, major systemic changes will demand wide consultation, will be resource intensive and will tend to occur slowly. Should these changes also have an impact on or seek to integrate with undergraduate education or CPD, the complexities would multiply considerably. Even if restricted to the domain of PGME, major changes to the assessment model will require the support of not only the Royal College, but also the CFPC, faculties of medicine, Specialty Committees and programs.

The Royal College has, through better accreditation standards and some limited educational initiatives, identified the need for more diverse and robust in-training assessment for training programs; however, relatively little has been done to support this development. Residency Program Committees (RPCs), meanwhile, have come to understand the need for better in-training assessment, but

they lack the resources, faculty buy in and commitment and expertise to proceed effectively. Contributing to this is the reality that university support and recognition for teaching continues to lag behind that which is allocated for research or clinical care. Incentives to recruit, engage and retain experienced educators are lacking in many cases. As a result, most program directors and RPCs remain insufficiently resourced — in terms of both time and expertise — to independently implement major changes in assessment philosophy or methodology. Success will hinge on the ability of universities, teaching hospitals and training programs to develop a culture wherein trainee assessment is system integrated, well resourced, time protected, professionally rewarded and considered the norm.

Any new framework for assessment must take into account the dual role Canadian residents play as both learners and service providers, recognizing and respecting the overarching goals of public service and patient safety implicit in this model. More so than at any other time in history, resident duty hours and their impact on education are under a microscope.

While evolving time constraints may not, in reality, be a barrier to change, the challenge will be to find efficient, integrated processes for in-training assessment, while simultaneously strengthening our definitions of competence. For their part, funding agencies and programs will need to find flexibility in dealing with those residents who have not yet achieved competence for independent practice within the prescribed time frame.

Assessment methodology may actually pose the least significant barrier to change. Suitable methods already exist to assess virtually all dimensions of medical competence, with some Canadian residency training programs taking a leadership role in both their development and application. For most, however, existing habits and methods remain deeply ingrained, including the problematic philosophy that Medical Expert is the only worthy focus for learner assessment. In addition to lacking scope, most of the assessment methods currently in use are insufficiently discriminating, lack a sufficiently valid

structure for integration as a program or are administered too late in training to have a meaningful impact on learner remediation. A minority of faculty and learners have experience or comfort with cutting-edge assessment methodologies. Clearly, an extensive support network for faculty development and learner orientation would be required to effect change.

From the postgraduate (and potentially CPD) perspective, the Royal College is well situated to direct the development of an overarching assessment framework, as well as to support, in a top-down fashion, the identification, adaptation and support of its component methodologies. Ideally, one might envision a network of educational experts that is funded by the Royal College and charged with system design. These experts would also collaborate with other bodies, as follows: the Specialty/ Sub-Specialty Committees to choose and adapt specific assessment tools; universities for faculty development; and individual programs for system implementation.

POTENTIAL BENEFITS

The following are some of the potential benefits of developing an overarching assessment framework:

- higher standards of public service and patient safety through assured and ongoing professional competence, as defined in the broadest possible terms;
- better matching of physician training and output to societal needs, and more efficient use of resources to achieve this result;
- better longitudinal integration of assessment, documented competence and CPD from undergraduate through to postgraduate and in-practice; and
- more precise and timely identification of learners in difficulty, thus better facilitating their remediation.

CONCLUSIONS

Redesigning the assessment framework for Canada’s postgraduate training programs is a challenging yet necessary task. Modern, more holistic insights into the true nature of competence — combined with an evolving model of medical training and a justifiable emphasis on patient safety — demand significant change in our approach to assessment. Recent developments in our understanding of assessment validity, including the role of qualitative methods, will help re-focus our priorities toward authentic, continuous and more formative in-training assessment and away from terminal tests of knowledge. While most of the necessary assessment tools and strategies already exist and are readily adaptable, the dispersed and heterogeneous nature of Canadian postgraduate training programs will mandate a concerted effort by the universities and regulatory/certifying bodies, including the Royal College. Keys to effecting change include both a firm commitment of resources and an explicit recognition of the value of teaching and meaningful assessment.

RECOMMENDATIONS

1. The Royal College should direct significant resources toward improving centralized and shared resources for in-training assessment. As well, the following are essential to achieving the goal of competence by design: support of technological platforms for individualized training, trainee remediation and program comparison across the medical education continuum.
2. The Royal College should recruit and support a national network of experts in education and assessment that is charged with designing a comprehensive, practical postgraduate assessment framework. This framework would include both a menu of specialty-adaptable assessment methodologies and a portfolio-based system for individual documentation and, ultimately, credentialing.
3. The Royal College should re-examine the nature and timing of its certifying examinations, in particular their impact on learning and remediation.
4. The Royal College should explore avenues for better integrating undergraduate, postgraduate and CPD in terms of both training and assessment. To this end, the Royal College should initiate a process of consultation and discussion among the various stakeholders, including the CFPC and universities.
5. Any new model/framework of assessment should be relevant and sufficiently flexible to address the unique circumstances of internationally trained physicians and non-certified specialists in-practice, providing a potential route for certification that is both fair and reflective of the Royal College’s single high standard.

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9. Faculty Development Re-imagined



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Faculty Development Re-imagined

The authors are grateful to Allyn Walsh, CCFP, McMaster University, Karen Leslie, FRCPC, University of Toronto and Gisele Bourgeois-Law, FRCSC, University of British Columbia for their thoughtful critiques of this manuscript.



Acknowledgements

Kristin Sivertz (1951-2011) was a contributing author for this paper. A major driving force in postgraduate Canadian medical education for many years, she was an active clinician, faculty member and consistently engaged in improving the health care system throughout all her work. The other participants in this paper acknowledge her many contributions.

ABSTRACT

Postgraduate medical education is changing. Faculty development will be a key to meeting the needs of an evolving education environment that includes competency-based education and distributed learning. This policy paper proposes a new conceptualization of professional development — defined by the CanMEDS/CanMEDS-Family Medicine (CanMEDS-FM) framework — that directly integrates faculty development. This proposal requires all physicians to develop and maintain competencies (via traditional and emerging faculty development activities) relevant to their education environment and aligned with their clinical, administrative, and education practice. Opportunities for the Royal College to influence these proposed changes are suggested.

Health Advocate, Scholar and Professional. This is a tall order, particularly for physicians who may have limited access to resources to help them maintain or further develop these competencies. The CanMEDS/CanMEDS-FM framework is also a means of articulating the educational goals of residency education, while the educational process (including the roles of front-line teachers, educators, program directors, etc.) remains the ongoing challenge facing medical schools.

The PGME system has changed considerably over the past 20 years. Traditionally, residency training was centralized at distinct academic centres. Today, residents may receive a portion of their training outside of tertiary care teaching hospitals. This trend toward a distributed model of training means that there is an expanded pool of physicians responsible for PGME. We anticipate this trend to continue and to even accelerate in the future.

The delivery of quality PGME necessitates supporting and equipping a broader group of physicians with a constellation of competencies. Classically, “faculty” development models have focused almost exclusively on the university-based faculty member’s role as teacher. However, given the complexity of PGME that now occurs via both traditional (e.g., tertiary hospital-based) and newer (e.g., distributed sites) models, it is timely that we consider widening the lens through which we view the essential role of faculty development. Whether in a rural setting with a medical resident or in a community hospital with an allied health colleague, all physicians in-practice have many opportunities to serve as teachers, at least some of the time. Moreover, physicians must maintain and enhance other Roles (e.g. Communicator, Collaborator, Manager, Professional) that are integral to the education process.

INTRODUCTION

The Royal College of Physicians and Surgeons of Canada is a leader in change initiatives pertaining to the delivery of postgraduate medical education (PGME) in Canada. The implementation of a competency framework (CanMEDS/CanMEDS-Family Medicine [CanMEDS-FM]) is having a ripple effect across the continuum of medical education.¹ The social contract between the profession of medicine and society at large exchanges professional autonomy for the guarantee of competent physicians who serve the public good.²

With the introduction of CanMEDS/CanMEDS-FM, articulation of physician competency has become more explicit. There is now an expectation that all physicians in Canada demonstrate competency in all seven of the Roles: Medical Expert, Communicator, Collaborator, Manager,

The intent of this particular policy paper is to propose that the Royal College promote faculty development as an important component of professional development to accommodate the realities of a changing PGME system.

We propose a broad re-conceptualization of professional development. The key elements of this re-conceptualization are as follows:

- Faculty development should be considered equally critical to professional development in comparison to other discipline-specific forms of professional development (e.g., traditional continuing medical education that emphasizes Medical Expert competencies).
- Professional development should be defined using the CanMEDS/CanMEDS-FM framework and should include all of the Roles, capturing traditional and important emerging faculty development initiatives.
- All physicians in-practice should be required via Maintenance of Certification programs to participate in professional development initiatives across all of the relevant CanMEDS Roles (including faculty development initiatives) as they relate to their practice profiles.

SCOPE OF THIS PAPER

First, we recognize that these recommendations will have an impact across the medical education continuum (from undergraduate education to physicians in-practice.) Second, this paper addresses the educational responsibilities (and needs) of all physicians in-practice, rather than only focusing on academic physicians in traditional university settings. Finally, this paper should be viewed as addressing an enabling theme within the series; the impact of a re-envisioned professional development program will support (and make possible) the recommendations stemming from the other papers.

BACKGROUND

There are many definitions of faculty development. It is conventionally understood to mean “preparation [of academic faculty] for teaching”.³ In many institutions, this comprises a variety of workshops, seminars and, occasionally, longitudinal or certificate programs focused on teaching and learning strategies.^{3,4} However, in a 2006 review of faculty development initiatives, Steinert and colleagues⁵ assert that faculty development can be more broadly defined than as training in teaching skills. Faculty development encompasses other elements of professional competence required for a physician to practice medicine, including teaching, administration, leadership and scholarship.⁶ This paper supports both a broader conceptualization of faculty development and a broader requirement for physician engagement in faculty development.

Taking this broader view allows us to move away from a traditional view of “teacher training” for academic faculty at higher education institutions toward making faculty development relevant to all physicians in all areas of practice. Bringing faculty development initiatives to all physicians (instead of to a select cohort) may lead to an expanded impact upon patient care,⁷ personal practice management, interprofessional health care education and traditional clinical medical education.

CURRENT STATUS IN CANADA

Current accreditation guidelines from the Liaison Committee on Medical Education (LCME), Royal College, College of Family Physicians of Canada and Collège des médecins du Québec mandate that faculty development programs be available to all faculty members at every medical school in Canada. These general standards of accreditation require that there are adequate resources to ensure appropriate teaching and assessment of learners as defined within the Educational Directives of the LCME and the CanMEDS/CanMEDS-FM framework.

In 2012, all 17 faculties of medicine had an office or centre for continuing education, while only 13 faculties had a distinct office or centre for faculty development. The 17 offices/centres of continuing education were led by 12 associate deans and 4 assistant deans; while the offices/centres of faculty development were led by 6 associate deans and 3 assistant deans (the other offices/centres have leadership below the decanal level). Individual faculties of medicine support their faculty through conference travel funding; lightened teaching loads for junior faculty members; programs to acquaint faculty with institutional goals; and workshops on teaching skills, the CanMEDS/CanMEDS-FM competency framework, leadership and management, research, and leadership/administrative skills.^{8,9} However, assessment of teacher performance is an area that is inadequately addressed in many Canadian medical schools.

Data from a Royal College 2008 CanMEDS implementation survey of residency program directors indicated that the following Roles are most difficult to teach and assess in PGME: Health Advocate, Collaborator and Manager.¹⁰ Barriers to adoption included the following: faculty time and workload, teacher engagement, educational expertise, and lack of teaching materials.¹¹ Trends from 2011 in Maintenance of Certification activities suggest that the Roles identified above are under-represented. Less than one-third of the 130,000 learning activities that were voluntarily coded by the submitting physicians related to Health Advocate (30 per cent), Collaborator (33 per cent) or Manager (23 per cent).¹² (Learning activities could be coded for multiple CanMEDS Roles. By comparison Medical Expert represented 68% of learning activities.) These data sources may suggest that the educational activities of physicians in-practice are not aligned with the needs facing PGME.

Historically, the Royal College has not been a leader in traditional faculty development efforts. However, in the past five years, the Royal College has placed an increasing emphasis on faculty development initiatives to meet the

needs of postgraduate medical educators. Examples include the following:

- **CanMEDS Train-the-Trainer program:** 8 programs with 380 participants;
- **Exam boards:** 35 basic modular workshops over 10 years, as well as numerous ad hoc sessions held during exam development meetings;
- **Annual specialty chairs workshops on core education topics;** and
- **International Conferences on Residency Education:** held annually since 2008 with over 5,800 total attendees.

In addition to faculties of medicine, other key players in educational activities for physicians in-practice include individual academic departments, hospitals and hospital departments, the College of Family Physicians of Canada, the Canadian Association for Medical Education, the Association of Faculties of Medicine of Canada (AFMC), the Canadian Medical Protective Association, the Canadian Medical Association and national specialty societies.

CURRENT CHALLENGES AND DRIVERS FOR CHANGE

Definition

The first challenge involves defining “faculty development.” The term creates a false perception that only physicians with a faculty appointment in a university setting require professional development.

Design

The scope of, support for and philosophy of faculty development varies from institution to institution, ranging from teaching skills to research, administration and

leadership skills. In addition, individual physicians within those institutions have specific and varying education needs depending on their previous experiences and the clinical and academic contexts in which they function. Within the institutions, there are also inconsistent approaches to identifying the observed educational needs of individual faculty members. Taken together, this reality creates challenges for the delivery of effective and tailored faculty development initiatives.

In addition, it is challenging to assess physician performance in the faculty development domains (e.g., teaching, leadership, research, mentorship). Added to this is the fact that there is an inconsistent approach across educational settings to how, or even if, faculty are assessed in these domains. In addition, few universities mandate faculty development, even for those teachers with a demonstrated need (i.e., remediation) or those just commencing their teaching career.

Access

In institutions across the country, there is variable access to faculty development opportunities. This is true for a variety of reasons. There is a limited availability of mentors and medical educators to foster excellence across the faculty development domains. This limited availability is even more pronounced for senior-level physicians who require advanced development and mentoring. As well, only some universities offer longitudinal certificate training or graduate programs.

Distributed medical education also presents challenges to physicians located at sites that are removed from a home medical school, where faculty development is typically centred.

Another access challenge is that front-line faculty developers are disconnected across Canada. While the AFMC does support a Committee of Faculty Development Deans/Directors, many front-line faculty developers are not part of this committee. In addition, the faculty development programs that do exist are often not widely advertised (or accessed) outside of their local centres;

this leads to missed opportunities for greater impact. This disconnection means that faculty developers are continually “reinventing the wheel” locally to address their individual needs.

Resources

There are limited incentives for physicians in-practice to actively seek out faculty development initiatives. In fact, there are often disincentives, as follows:

- Participants have to invest a significant amount of time (and resources) to access existing faculty development opportunities.
- Few universities will protect time for faculty to participate in faculty development.
- Faculty development opportunities are typically not supported by provincial funding organizations, many of which have a narrow funding perspective that is focused only on learners (as opposed to teachers).
- Faculty development is poorly recognized/rewarded within academic and community institutions.

In many institutions, Offices of Continuing Education (continuing medical education and continuing professional development) and Faculty Development are funded in different ways. This may result in competition for resources or differences in the perceived value of the offerings made by the respective units.

Finally, participants in continuing education programming typically have to pay registration fees (used to support programs and administrative infrastructure); however, faculty development programming is typically offered free to participants (making programs and administrative infrastructure resource-intensive). These fiscal disparities may have a negative impact on educational programming/mandate if the two offices are inappropriately merged.

RECOMMENDATIONS

The challenge of making faculty development appealing and accessible to all physicians may prove to be a significant barrier to the widespread implementation of education innovations in general and to the recommendations in this e-book in particular. Recognizing this, we propose the following recommendations to support physicians in-practice.

1. The Royal College should adopt internally a broader definition of professional development and should consider faculty development as a core component of the maintenance and continued improvement of competence for all physicians in-practice.

Adoption of this broader definition would ensure alignment of the profession of medicine with other health care professions, specifically, and other professions, generally. Promoting faculty development for all physicians, regardless of university appointment, would partially address the needs stemming from changes in PGME. It should be stressed that this recommendation does not suggest that faculty development be subsumed by continuing professional development portfolios.

2. The Royal College should use the CanMEDS/CanMEDS-FM framework to define and categorize professional development activities.

All physicians, regardless of context, should be actively engaged in professional development to maintain and enhance their abilities in all of the CanMEDS Roles. Effective patient care (the primary goal of medicine) is dependent upon the integration of the Intrinsic Roles¹³

with the Medical Expert Role. By using the CanMEDS Framework to categorize professional development activities for all physicians, the activities associated with broadly conceived faculty development (e.g., teaching, management, leadership, scholarship, collaboration, communication, professionalism) are aligned with professional development activities specific to the Medical Expert Role. Attending to this broader spectrum of competencies would be expected to both improve patient care and enhance physicians' abilities to teach young doctors, their colleagues, allied health workers, and patients both inside and outside of major academic centres.

A proposed model for professional development using the CanMEDS framework is shown in [Table 1](#).

3. Professional development in multiple CanMEDS domains should be a mandatory component of Maintenance of Certification for all physicians in-practice.

Current models of Maintenance of Certification emphasize the Medical Expert Role, which is the typical domain of continuing medical education/continuing professional development. While this emphasis should be maintained, there is currently no required demonstration of professional development related to the Intrinsic Roles.

All physicians, regardless of their education (university-based versus community-based) or clinical context, should be required to demonstrate Maintenance of Competence across all CanMEDS Roles. (The CanMEDS Framework describes competent practice, hence, the need to demonstrate ongoing maintenance of such competence.) While all physicians should

Table 1. Conceptualization of Professional Development Mapped to the CanMEDS/CanMEDS-FM Physician Competency Framework

CanMEDS Role	CFPC Four Principles of Family Medicine	Sample Professional Development Topics for the Physician In-practice
Medical Expert	Principle 2: The family physician is a skilled clinician	<ul style="list-style-type: none"> • Tele-health care • Physician self-assessment • Physician 360° review • Maintaining specialty-specific diagnostic and therapeutic knowledge and skills (e.g., conventional CME) • Practice-based/workplace-based learning
Communicator	<p>Principle 1: The doctor patient relationship is central to the role of the family physician</p> <p>Principle 2: The family physician is a skilled clinician</p>	<ul style="list-style-type: none"> • Interpersonal communication training • Complex topics: bad news, consent, disclosure • Crucial conversations: end of life care
Collaborator	<p>Principle 3: Family medicine is community-based</p> <p>Principle 4: The family physician is a resource to a defined practice</p>	<ul style="list-style-type: none"> • Negotiation and conflict management/resolution • Crucial conversations • Team dynamics • Intradisciplinary care • Interprofessional care • Relationship-centred care • Communities of practice
Manager	<p>Principle 3: Family medicine is community-based</p> <p>Principle 4: The family physician is a resource to a defined practice</p>	<ul style="list-style-type: none"> • Leadership skills: facilitation to run a committee • Change management • Practice assessment • Information technologies • Practice management • Quality management • Patient safety • Cost efficiency
Health Advocate	<p>Principle 3: Family medicine is community-based</p> <p>Principle 4: The family physician is a resource to a defined practice</p>	<ul style="list-style-type: none"> • Policy development • Media relations skills • Health Intelligence Units • Barriers to care • Special populations • Social determinants of health
Scholar	<p>Principle 2: The family physician is a skilled clinician</p> <p>Principle 4: The family physician is a resource to a defined practice</p>	<ul style="list-style-type: none"> • Teaching skills • Curriculum development • Assessment • Program evaluation • Research/scholarship • Lifelong learning • Personal learning plans • Teaching dossiers
Professional	Principle 1: The doctor patient relationship is central to the role of the family physician	<ul style="list-style-type: none"> • Ethics • Ongoing service to the profession • Physician wellness • Mentoring • Behaviours

demonstrate Maintenance of Competence across the spectrum of Roles, the extent and degree of activity for each Role should be tailored to an individual’s clinical and educational contexts.

This recommendation serves a number of purposes. First, physicians in-practice will have the opportunity to develop and be recognized for new competencies in their professional practice. Second, the growing demand for professional development offerings will promote increased collaboration and synergy across the often isolating gaps that exist between various providers (e.g., university-wide education offices, academic departments, national specialty societies). Third, elevating the importance of education-related competencies will increase the pool of engaged clinician-teachers. Finally, focusing resources and attention toward education-related competencies will improve the clinical environment (where the predominance of PGME occurs) and might ultimately enhance patient care.

4. The Royal College should champion a flexible accreditation process to facilitate easy access to rigorous Maintenance of Certification credits.

To facilitate an expanded model of Maintenance of Certification, the accreditation process should not be impaired by challenges (e.g., administrative access, administrative cost) to achieving accreditation.

Performance rather than attendance should be used as the method to assess and accredit learning. Rather than simply documenting exposure to concepts, Maintenance of Certification should emphasize the actual application of concepts.

5. The Royal College should amend the general standards of accreditation to require all residency training programs to demonstrate that residents actively engage in the process of professional development.

Too frequently there is a disconnect between the lifelong learning requirements expected of physicians in-training versus physicians in-practice. Introducing residents early in their careers to the requirement to “maintain and enhance professional activities through ongoing learning” (Scholar key competency) will ensure a more congruent and integrated approach to learning throughout physicians’ professional lives.

6. The Royal College should facilitate a commitment among all Canadian Deans of Medicine to promote professional development — specific to medical education — for all faculty members.

Adopting a shared endorsement for specific education training for faculty members will promote a more cohesive standard across Canada. Engaging deans (and representatives of other education organizations) will also promote the value of medical education within academic circles.

7. The Royal College should facilitate a national network that connects faculty development programs via a national clearing house of resources and education opportunities.

A national clearing house of professional development resources and opportunities would be a valuable asset for physicians across Canada. Assuming equitable access to such programs, a national network would provide access to physicians in under-supported areas, increase the visibility of existing faculty development programs

and leverage opportunities to develop a greater breadth of resources, rather than simply duplicating programs. Additionally, the resulting network would promote cross-fertilization of ideas and strengthen existing faculty development programs.

8. The Royal College should offer strategic faculty development programs specific to PGME education needs where there are no available programs.

The Royal College has been effective at providing the framework and structure for PGME (e.g., CanMEDS, accreditation standards) and the Maintenance of Certification Program for physician in-practice. Only recently, as articulated previously, has there been an investment in the implementation of these frameworks. Providing strategic faculty development will enable local, front-line educators to implement national Royal College programs.

9. The Royal College should lead the development of a cadre of Clinician Educators.

Clinician Educators are clinicians with formal medical education training who provide consultative expertise to clinician teachers and curriculum and residency directors and who produce scholarship around educational themes.¹⁴ The development of a Royal College Clinician Educator Area of Focused Competence (AFC) would provide a rigorous, recognizable certification in medical education for interested physicians and could potentially support a train-the-trainer model of dissemination in medical education theory and skill. The process used to develop this diploma should not inhibit the development of high-quality programs by other institutions. In fact, collaboration among other education organizations/bodies should be encouraged to ensure the realization of an effective pan-Canadian strategy.

Particularly with the impending transition toward a competency-based education approach, all residency training programs should endeavour to have at least one Clinician Educator per program.¹⁵ In the interim, faculties of medicine should coordinate the resources of existing Clinician Educators, such that all programs have access to skilled resources.

Similar diplomas in fields such as health administration and leadership would be complementary to the PGME needs served by a Clinician Educator AFC.

The Royal College should expand the scope, variety and number of education fellowships (i.e., monetary awards) to support physicians engaged in education training. Additionally, such fellowships would strengthen the academic credibility of medical education training within universities.

The Royal College should actively influence the academic medical culture to achieve parity of recognition between medical education and traditional research.

CONCLUSIONS

To meet the changing needs of PGME, this policy paper proposes a re-conceptualization of professional development that directly incorporates faculty development. All physicians in-practice should be required to participate in professional development initiatives as defined by the CanMEDS/CanMEDS-FM framework, including participation in initiatives broadly defined as faculty development. Improving the abilities of physicians in education-related competencies will enable the proposals stemming from other papers in this e-book.

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SUGGESTED READINGS

Hatem CJ, Lown BA, Newman LR. 2009. Strategies for creating a faculty fellowship in medical education: report of a 10-year experience. *Academic Medicine*. **84** (8): 1098–1103.

An in-depth look at both the curricular content and process of three well-established, year-long medical education fellowships in which single cohorts of medical teaching faculty participate in extended faculty development activities. This paper provides a useful starting point for those who develop and conduct educational faculty development activities in medical schools and academic medical centres.

McLean M, Cilliers F, Van Wyk JM. 2008 Faculty development: yesterday, today and tomorrow. *Medical Teacher*. **30** (6): 555-84.

This paper offers a new definition of faculty development that aligns with the personal and professional development of teachers, clinicians, researchers and administrators to meet the goals, vision and mission of their institution in terms of its social and moral responsibility to the community it serves.

Steinert Y, Mann K, Centeno A, Dolmans D, Spencer J, Gelula M, Prideaux D. 2006. A Systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEME Guide No. 8. *Medical Teacher*. **28** (6): 497-526.

This systematic review of the faculty development literature describes the qualities of effective faculty development, including the use of experiential learning, provision of feedback, effective peer and colleague relationships, well-designed interventions following principles of teaching and learning, and the use of a diversity of educational methods within single interventions.

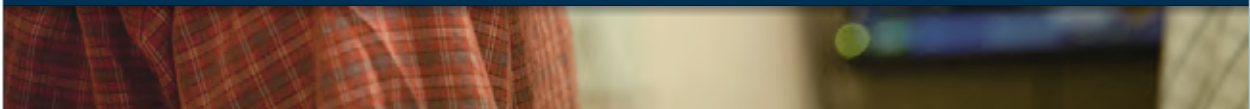
Steinert Y. 2011. Faculty Development for Postgraduate Education – The Road Ahead. Part of The Future of Medical Education in Canada Postgraduate Project. Last retrieved March 23, 2013 from the AFMC website:

http://www.afmc.ca/pdf/fmec/21_Steinert_Faculty%20Development.pdf.

In this discussion paper linked to the AFMC Future of Medical Education-Postgraduate project, the author asserts that faculty development plays a critical role not only in the development of teaching and learning, but also in the promotion of change and innovation and the enhancement of organizational capacities, and that this is essential in PGME. For faculty development to be effective, it should address both individual and organizational needs and be integrated into the local context. It should also be grounded in a theoretical framework and build on best practices in the field.



10. The Continuum of Medical Education



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The authors acknowledge Jonathan Sherbino, FRCPC, McMaster University, for his thoughtful contributions to this manuscript.

ABSTRACT

The continuum of medical education includes four distinct periods of learning: pre-admission to medical school, undergraduate education, postgraduate education and professional development. During each of these periods of learning there are also a number of transitions, generally recognized as follows: entry into medical school, movement from pre-clinical to clinical within the undergraduate medical program, movement from undergraduate to postgraduate (residency) and, finally, movement from residency into practice with ongoing practice maturation and career development and shifts. Some literature exists around these transitions in the continuum of medical education, and educational and medical organizations have examined how the transitions could be modified to facilitate the individual's navigation through to practice. However, more work needs to be done in this area, as well as in how to encourage and facilitate lifelong learning among those in practice.

This white paper examines these transition periods in greater detail. We identify several drivers that currently exist in the medical education system that support changing the way individuals move through the system, and we also note several barriers to that change. In addition, we offer solutions to mitigate the stress inherent in these transitions. Finally, the paper concludes with several recommendations that both the literature and experience suggest should be considered.

INTRODUCTION

The continuum of medical education includes four distinct periods of learning: pre-admission to medical school, undergraduate education, postgraduate education and professional development. In Canada, these periods have fairly rigid demarcations that are governed by distinct accreditation, examination/assessment processes and governing organizations. During each of these periods of learning there are also a number of transitions, generally as follows: entry into medical school, movement from pre-clinical to clinical within the undergraduate medical program, movement from undergraduate to postgraduate (residency) and, finally, movement from residency into practice. These transitions require the individual to reform his/her way of being and identity in fundamental ways¹ as she/he assumes new roles and meets new expectations. For most, these transitions are critically intensive learning periods in which physicians engage with the particularities of their new setting and establish working relationships with other doctors and professionals.²

While the existence of these transitions is acknowledged, different degrees of attention has been paid to them and the ways that they can be best managed to optimize physician success. Lack of attention to transitions in other high-risk professions such as aviation has been linked to increased risk in the form of adverse outcomes.² Most recently, in 2012, the Association of Faculties of Medicine of Canada's report entitled *The Future of Medical Education in Canada: A Collective Vision for Postgraduate Medical Education in Canada* identified a need to ensure effective integration and transition along the educational continuum, particularly noting that all of these transitions are key opportunities for learning, but that they must be managed more effectively.³

This white paper will examine the transitions that physicians undergo and will consider the support that physicians receive as they navigate through the medical education continuum. It will identify the problems that physicians

have as they proceed along the continuum to become independent practitioners, as well as what happens when they make significant changes to their roles over the course of their practice years. Recognizing that formal education tends to focus on the achievement of successful evaluation at the end of formal training, rather than on the competencies required to maintain one's competence throughout a life time of practice, we will propose solutions — along with potential barriers — to changing the status quo along, as well as the benefits of making those changes. We will conclude with recommendations to facilitate physician change. It is hoped that the paper can provide a framework for others who are examining these transitional periods.

BACKGROUND

Transitions into Medical School and from Pre-clinical to Clinical Undergraduate Education

The initial transition into medical school and then from pre-clinical to clinical in undergraduate education can be difficult for many students as they cope with understanding their new roles and responsibilities, adjusting to a very different culture, learning and then performing clinical skills, and learning the logistics of clinical settings.⁴ Others have commented on the difficulties medical students face related to professional socialization and workload as well as the realization of deficiencies in their knowledge and the organization of that knowledge.⁵ Undergraduate educators recognize that students entering these programs have different competencies and experiences and they are developing programs to help students achieve common entry standards. To help undergraduates begin their clerkship program, most schools have implemented transition courses that cover the content relevant to the key

elements of workplace learning, including the roles and expectations of clerks, stress management, and procedural skills.⁶ Unfortunately, most of these courses do not include practise in clinical settings; instead these courses favour didactic sessions and hands-on exercises. In addition, while some schools have implemented successful near-peer mentoring systems to ease this transition,⁷ few schools include practise in clinical settings as part of their transition course.⁸

Transition from Undergraduate to Postgraduate Training

In the transition from undergraduate to postgraduate training (residency training), studies suggest that higher levels of preparedness appear to be associated with specific types of curriculum (i.e., problem-based learning),⁹ as well as with clinical experiences that include higher levels of hands-on experience, patient contact and clinical exposure, particularly with patients who are acutely unwell.⁹⁻¹⁵ Conditions within institutions, particularly those where there are good interpersonal workplace and relationship experiences, are also noted to effect smoother transitions,¹⁶ as does the degree to which the junior physician can be integrated into the team.¹⁷ For disciplines such as surgery, preparatory courses have been demonstrated to increase task-specific competence and confidence.¹⁸⁻²⁰ In some cases, workshops on physician wellness during relocation and preparedness for residency have also been seen to be effective.²¹ Discipline- and site-specific orientation programs are also helpful.²²

Undergraduate programs need to ensure that students have meaningful exposure to patients in a high-quality environment to ensure their optimal transition. Postgraduate programs need to ensure that their orientations are complementary, particularly noting the additional challenges faced by trainees who are encountering a new university and site.

Transitions within Postgraduate Training

There can be transitions during residency as physicians leave general programs and enter sub-specialty training. Certainly, the final period of training — as the physician conceptualizes and finalizes arrangements to enter practice — is often marked by major decision points related to finding and selecting job opportunities. In addition, for some physicians, the initial period of practice is often as difficult as the previous transitions.^{1,23-26} Studies of physicians’ first year in practice have described the personal transformations physicians experience as they come to terms with their identity in their new role with the related new expectations.^{1,24,26} While it may be difficult, this transition is eased by support from friends and colleagues.²⁵⁻²⁷ Additional sub-specialty training appears to improve confidence.²⁵ For some, the final certifying examinations are a signal that they are now independent practitioners. In reality, however, these certifying examinations should be a signal that the physician is now entering a new phase of learning.

Transitions During Practice

The transitions that physicians experience during the course of practice are not as well documented. These transitions may occur in response to a community or personal need (i.e., narrowing the practice to a very focused area); scientific advances that require additional training and supervision by those who have acquired the expertise; the assumption of new roles as researcher, administrator or educator; the pursuit of advanced degrees; a move to a new community, province or country; re-entry into practice following a leave; the leaving of a practice; or the identification of a need for remedial training. These transitions may be occurring at the same time as other life transitions (marriage, children, divorce or retirement). They may also be part of the natural stages of a career: breaking in, fitting in and getting out.²³

Further, as the health care system and expectations change, physicians must adapt to workplace changes. Physicians who were more successful in their moves to a new city identified the following as key facilitators: the support provided by institutional structures that integrated the newcomer, the presence of collegial relationships within the workplace, and the presence of family and friends who mediated the adjustment period.²⁸ The literature about general practitioners who transition from practice in another country to a rural practice in Canada shows that the learning curve can be steep as physicians adapt to differences in diseases and their management and systems of care, while ensuring that their families are comfortable in the new setting.²⁹⁻³¹ In response to the transitions experienced by physicians new to the country, Canadian studies have encouraged the establishment of formal orientation and mentorship programs to help physicians establish themselves in practice.^{30,31} For many physicians, mentorship is an informal process and can provide challenges when the mentor is also in an evaluative role or has a conflict of interest.³² There is less known about the factors that facilitate successful transitions in practice. It is likely that these are dependent on how substantial the learning tasks are, the support available from colleagues, family and friends, the time available for reflection, personal ability, and motivation.

The transition into practice and within practice marks the first time that formal curriculum and assessment procedures are largely left in the hands of the physician. In previous transitions, standards for competence were established by the school, Medical Council of Canada, and the Royal College of Physicians and Surgeons of Canada, or the Collège des Médecins du Québec, or the College of Family Physicians of Canada. They occur within training programs that are marked by continuous feedback along with interim and final examinations. For the practising physician, standards are less explicit and they emerge from clinical practice guidelines, local and national standards of care, and the actions of the regulatory authorities. Stimuli for learning at the independent practitioner level emerge from service with learning tied intimately to patient needs

and perceptions of what is needed. Unfortunately, while lifelong and self-directed learning are important principles for undergraduate and postgraduate trainees, these skills are rarely well developed within these structured environments. Further, when physicians enter practice, there is an absence of high-quality feedback to drive learning.^{33,34} Unfortunately, the worst self-assessment accuracy appears to be among physicians who are, at the same time, the least skilled and the most confident.³⁵

DRIVERS FOR CHANGE

Currently, a number of drivers for change exist within the medical education system. Patient safety is a concern, particularly with clinical clerks and junior residents who may be inadequately supervised or poorly prepared to care for acutely ill patients within complex and stressful work environments.^{2,13} The need for structured support for individuals is being recognized. In addition, it has been noted that when residency programs and their associated institutions offer an inconsistent and ad hoc approach to the transition period, it can cause undue stress, reduce productivity and effectiveness, and delay full integration into the workplace. Medical schools are recognizing their responsibility to support their students and trainees during the transition periods and to prepare them to be lifelong learners. For example, undergraduate programs have developed courses to prepare their graduates for the clerkship,^{6,8,21} and residency programs are beginning to initiate more intensive orientation programs.^{6,18-20} Other residency programs might benefit from a similar approach by offering a structured orientation/transition with lighter workloads so that trainees can assimilate more comfortably. Similarly, university continuing professional development (CPD) units, provincial medical associations, regulatory authorities and health care institutions might consider how best they can support new certificants by offering formal courses and mentorship programs and by ensuring that initial workloads are lighter.

The skills of lifelong learning need to be incorporated throughout medical education,³⁶ and particularly in residency and CPD. The Royal College has a curriculum for lifelong learning that is applicable to postgraduate training and CPD, as well as to those already in practice. Within its five core elements, this training helps the learner do the following: recognize the importance of information literacy; know his/her practice; scan so that new perspectives can be added and old ideas abandoned; learn from his/her practice in a systematic fashion; and identify and incorporate tools to assess his/her own practice. This curriculum, if more widely adopted, has the potential to help residents prepare for practice.

At the CPD level, there is an increasing recognition that the types of CPD programs being offered by either universities or national specialty societies are sub-optimal. Most CPD programs consist of short courses and conferences or rounds. While this approach supports additive and cumulative learning, it is rarely robust enough to enable individuals to develop new skills and behaviours.³⁵ Further, the timing and formats of these CPD programs may not match the immediate needs of individual learners. On the other hand, it can be challenging to find supportive mentors and supervised opportunities to enable major skills development.

The introduction of certificates, diplomas and master's programs may be a helpful way to formalize instruction and develop new competencies within some disciplines, as this approach is likely to formalize both the curriculum and assessment. Examples of such curricula currently exist in sleep medicine, patient safety, psychotherapy and medical education.

Health organizations and provincial governments responsible for delivering care that is accessible, of high quality and sustainable are unable to meet the demands they have when their physician resources are poorly organized and inadequately trained to meet the needs of the population. Regulatory authorities and medical

associations faced with health professional recruitment and retention problems increasingly acknowledge the need to provide more support to practitioners to help ensure that care is safe and effective.

POTENTIAL SOLUTIONS

The literature suggests a need for two overall directions to support transitions: improving the skills for lifelong learning and increasing the structured support for physicians in transitional phases.

The skills of lifelong learning can be taught. Indeed, as noted earlier, the Royal College has introduced a curriculum for lifelong learning and this should be introduced to residents early in their training program. This curriculum is designed to help the physician recognize the importance of guiding his/her own learning through active reflection, data seeking and change management practices. Similar efforts are being undertaken in the United Kingdom, wherein postgraduate trainees are introduced to a portfolio approach to learning in which Foundation (PGY1 or 2) trainees are responsible for creating a portfolio that contains evidence of assessments, reflection on the data and a plan of action.³⁸ This will be carried into practice as the National Health Service introduces its frameworks for revalidation, which require physicians to document their learning and their plan of action and to discuss it with appraisers.

The MAINPORT system can be introduced in residency as a mechanism to support trainees to conceptualize their learning and document their efforts to attain the necessary competencies in identified areas. This approach will require faculty development, technologic infrastructure, new standards for accreditation, and new learning objectives at the specialty- and rotation-specific levels.

For the practitioner, lifelong learning skills will also need to be enhanced. Recognizing how little data and feedback

practising physicians receive about their practices, efforts will need to be made to ensure that system support is available to train physicians to enter high-quality data into electronic records and to develop algorithms for efficient and accurate data retrieval so that physicians can use those data to inform, create and, ultimately, act upon their learning plans.

Structured support for pre-determined amounts of time may be helpful to physicians during periods of transition. The majority of North American medical schools have implemented orientation/transition experiences to help students enter clerkship.⁸ More formalized orientations to residency and to practice could also be developed. These orientations might capitalize on the learnings of those physicians who entered residency or practice one to three years earlier, with a particular focus on the tacit knowledge required to learn about the uniqueness of their workplace and the health system as well as the hidden curriculum. Those responsible for rotation, work and call schedules should ensure that both workload and expectations are appropriate given the stressors associated with undertaking these new roles and responsibilities. Ensuring that transitioning physicians have time for reflection and have access to supportive colleagues will be helpful. Buddy/peer support programs and mentorship programs may also be useful.^{32,39-41}

As physicians prepare for practice in the latter part of their residency program, specific training requirements in areas like time and practice management may be helpful. It may also be appropriate to consider moving the certification exams to earlier in the program so that the physicians can better prepare for entry to practice. An earlier examination would also permit the final stage of graduated responsibility (i.e., the point at which physicians assume an independent role) to occur within the context of the residency program. This could permit a re-definition of the chief residency experience, as mandated for all specialty residency programs, to facilitate the acquisition of consultancy skills to better prepare learners for independent practice. In

addition, physicians changing the focus of their practice might also be required to demonstrate formal evidence of the new required competencies.

BARRIERS TO CHANGE

Residency training is a very structured experience that leaves little latitude for trainees to determine many aspects of their training other than through the relatively limited number of available electives. Specialty- and rotation-specific learning objectives, as well as the types and timing of assessments, are very specific within each training program. Further, the system of accreditation that ensures that educational procedures and processes are at a very high standard also restricts flexibility. Even the “academic half day” — an integral component of most training programs — reinforces the image that learning is something that one does in a “classroom,” not in response to perceived learning needs. It does not prepare the trainee for learning in practice. By having the certification examination in such close proximity to the end of training, the examination marks the end of the training. The time currently available after the examinations are complete is insufficient for physicians to begin the new learning required for the next phase.

While physicians will have similar competencies at the end of training, they may not be prepared to be lifelong learners who actively seek out data about their practice and performance, interpret those data, and develop an action plan. Indeed, one of the real challenges of being a lifelong learner is that of data acquisition. Practising physicians receive very little feedback about their work. A few will participate in multi-source feedback exercises every five years, depending on their jurisdiction. Some will have a practice audit. Others will receive feedback through institutional audit systems or through participation in the self-assessment programs offered by their national specialty societies or the United States counterpart. The absence of routine and consistent feedback about

professional behaviours and clinical outcomes makes it difficult for physicians to develop and follow a learning plan. Even when physicians identify learning needs, there are few structures available and little help offered. Learning is ad hoc and physicians must draw on whatever resources they themselves can locate. In some cases, physicians are able to obtain mentored supervision for new skills development. National specialty conferences provide an opportunity for updating and “tweaking” knowledge, but rarely for the development of new skills. Indeed, courses are generally short and have to appeal to large numbers to be financially sustainable; therefore, they rarely focus on individual needs that might address specific learning tasks.

In addition, it may be difficult for physicians who require remediation because potential supervisors are already over-committed with undergraduates and postgraduate trainees. Relatively few potential supervisors are willing to commit the time and effort required to assess, monitor and ensure that the remedial physician is fit for practice. Regulatory authorities and university CPD offices are only now beginning to consider the roles they might play in supporting a physician who may be considered to be at risk based on complaints or other assessment data.

System changes will be required to address the needs of practising physicians. New funding or the reallocation of existing funding will be needed to change the resource base for CPD, particularly if meaningful support in the form of mentorship and supervised practice are to be available when needed. Provincial regulatory authorities and the Royal College/College of Family Physicians of Canada will have to work together to determine optimal expectations for license renewal, revalidation and certification maintenance.

Improving our ability to facilitate lifelong learning will require changes in several areas. Faculty will have to be trained to change their approach to teaching about learning, use and assess portfolios, and act as good role models. These expectations will need to be supported

through the accreditation standards. Practising physicians will need better data on which to make changes to their practices. Currently, our health care systems are not set up to regularly and routinely tell physicians how well they are doing and where they need to focus their learning. Funding will be needed to develop the data, as well as the systems required to extract those data. Current administrative databases do not have sufficiently robust systems to extract the data needed to guide physician learning.

Support for transitional periods will require resources to design programs, determine standards and supervise/mentor physicians through the transitions. Currently, as medical schools have expanded and larger cohorts of students have entered clinical work, capacity in the system is strained. This will make it difficult to add new expectations.

POTENTIAL BENEFITS

Changes that ensure more consistent support for transitions should mean better integration of physicians within the health care system and, ultimately, physicians who are better able to meet the health care needs of the population. Taking an earlier and more systematic approach to lifelong learning and regarding it as a foundational skill will benefit physicians as they transition from residency to practice and as their practices evolve. Preparing residents for transition into practice can reduce the stress associated with the first few years of practice when several other life events also occur (e.g., choosing a life partner, buying a house, beginning a family). Conceptualizing transitions within the career of a physician can provide medical schools, medical associations and specialty societies with a framework for providing supports for physicians, particularly around issues related to work–life balance. Breaking down some of the artificial boundaries between undergraduate, postgraduate and continuing education allows for more flexible training options for students and physicians. In an ideal world, there should be many more opportunities for practising physicians to return to residency-type training to learn new skills and knowledge in concentrated, intense study periods. Raising

the profile and importance of transitions in training and practice can stimulate innovations in training to address these issues. We should be considering graduated fellowships and licensing to more directly address the phenomena of transitioning into practice.

RECOMMENDATIONS

1. Provide opportunities for the acquisition of lifelong learning skills early during the education program. This will permit the practise and development of the generic and applied skills necessary for independent practice, including, but not limited to, information literacy, raising and answering questions, continuous practice improvement techniques, feedback-seeking behaviour, self-monitoring of practice, and comparison to recognized standards of care.
2. Develop systems to provide feedback data to practising physicians and assist them in interpreting and using those data to create individualized learning plans that can be implemented and can potentially have an impact on patient care.
3. Identify the appropriate structures and expectations for transitional periods. This may require new courses that are common to all. Mentorship and other supervised training may also be needed. Additional attention to the role of the manager toward the end of training (i.e., after the certification examinations) would facilitate the assumption of duties as an independent practitioner.
4. Standardize “transitions” training within clerkship and residency programs.

- 5. Stimulate innovations in transitions training within the clerkship and residency programs. The Royal College specialty certification examinations should be completed sooner (e.g., six months before the training program finishes). This would allow for a formal junior staff period at the end of training, with supervision and mentoring that would enable a more graduated transition into practice.
- 6. Call for more research to understand professional practice transitions and develop and test transitional support systems.
- 7. The Royal College needs to ensure that MAINPORT and CPD requirements support evidence-based learning and assessment activities across the CanMEDS roles.

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