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

3. Diversified Learning Contexts

A White Paper Prepared for the Royal College of Physicians and Surgeons of Canada, Future of Medical Education in Canada

Committee Membership
Paul Dagg, FRCPC
Robert F. Maudsley, FRCSC, Dalhousie University

Royal College of Physicians and Surgeons of Canada Secretariat:
Jason Frank, Associate Director, Specialty Standards and Policy, Office of Education
Margaret Kennedy, Assistant Director, Accreditation and Liaison
Jennifer Stewart, Manager, Specialties Unit, Office of Education
Lise Dupéré, Manager, Educational Standards Unit
Rebekah Smith, Policy Analyst, Office of Education

Summary of Key Points

- The concept of diversified learning goes beyond the paradigm of distributed medical education as it speaks to the broader context and models of learning in addition to the physical location of training.
- Diversified learning encompasses the idea training sites and educational models for all residency programs should use a 'competence by design' approach, whereby the competencies and future practice of residents are the primary drivers for the thoughtful selection of where and how residency training will take place.
- Currently, the classic clinical teaching unit (CTU) is the default model and location for residency training, and while a CTU model may be the most appropriate setting for some specialties, it should not be the default for all training programs.
- Diversifying training sites will provide residents with: exposure to a wider variety of careers and practices within their specialty, better prepare them for the realities of practice, enable them to better meet societal needs by training and possibly practicing in more varied sites.

Summary of Recommendations

1. The Royal College, working with Faculties of Medicine need to re-examine and diversify the role of the CTU in PGME with recognition of the diverse approaches to training within broadly defined and innovative CTU's, preceptorships, and possibly even periods of more independent practice with distant supervision. The selection of the site, style of teaching or any other aspect of the learning context should be purpose driven.

2. The Royal College's Specialty Committees should review their specialty training documents and assess whether they can build in more flexibility so that residents are able to train outside in settings that reflect the full diversity of that specialty. The criteria of training need to reflect exposure to the full spectrum of practice where residents are going to work.

a. Specialty specific documents could be revised to focus more on ensuring that residency takes place in an environment where: education is scholarly with a quality and safety focus, there is good supervision, support for the learning mission, and opportunities for reflection, rather than residency taking place in a particular type of training site.

3. 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, which will mean additional costs, enhanced communication tools, and overall a need for greater innovation.

4. 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.

5. 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.

6. The Royal College should facilitate inter-university collaboration and hospital-university dialogue through increased engagement of program managers, including staff in distributed sites, and support professional development for program managers and directors, and site managers and clinical leaders through such means as the annual ICRE.

7. The Royal College's Accreditation Committee should:

   a. Review the accreditation requirements for learning environments and CTUs so that the key elements suggested in this paper are in place at all training sites. Language in standards that supports the exclusive reliance on the CTU need to be reconsidered, with the goal overall being settings that reflect learning need, regardless of structure. Accreditation standards should promote learning in a variety of settings, not just in the academic health science centre or traditional clinical teaching unit.
   b. Revise the accreditation standards to focus on outcomes, both in relationship to various competencies but also in terms of diversity of resident experience and capacity of program graduates to work in the full range of practice settings for that specialty.
   c. Revise the accreditation standards to include a requirement for comprehensive and structured career counseling as a part of residency training. This will help to ensure that residents are familiar with the full range of professional opportunities within their specialty and to assist with the selection of appropriate training.
   d. Review the role of the senior resident, as outlined in the accreditation standards, to determine whether the current definition that each resident "must assume the role of the senior resident" and revise this role to ensure that it is relevant to multiple training sites, not only in the CTU setting.

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3. Diversification des contextes d'apprentissage

Livre blanc préparé pour le Collège royal des médecins et chirurgiens du Canada : L'avenir de l'éducation médicale au Canada

Membre du comité :
Paul Dagg, FRCPC
Robert F. Maudsley, FRCSC, Université Dalhousie

Secrétariat du Collège royal des médecins et chirurgiens du Canada :
Jason Frank, directeur associé, Normes de formation spécialisée et Politiques, Bureau de l'éducation
Margaret Kennedy, directrice adjointe, Agrément et Liaison
Jennifer Stewart, gestionnaire, Unité des spécialités, Bureau de l'éducation
Lise Dupéré, gestionnaire, Unité des normes éducatives
Rebekah Smith, analyste des politiques, Bureau de l'éducation

Sommaire des principaux enjeux

- Le concept de diversification des contextes d'apprentissage va au-delà du paradigme de l'éducation médicale régionalisée, car il s'adresse à des contextes et à des modèles d'apprentissage plus élargis, en plus du milieu réel de la formation.
- La diversification des contextes d'apprentissage englobe l'idée que les lieux de formation et les modèles pédagogiques pour tous les programmes de résidence devraient utiliser une approche de « compétence par conception » où les compétences et les pratiques futures des résidents sont les principaux catalyseurs d'une sélection réfléchie du lieu de formation et de la façon de faire cette résidence.
- Actuellement, l'unité d'enseignement clinique (UEC) classique est le modèle par défaut et le lieu de formation pour la résidence. Bien que cette unité d'enseignement clinique classique soit le modèle le plus approprié pour certaines spécialités, elle ne doit pas être le modèle par défaut pour tous les programmes de formation.
- La diversification des lieux de formation permettra aux résidents de s'exposer à une plus grande variété de carrières et de pratiques dans leurs spécialités, de mieux se préparer quant aux réalités de la pratique, de leur donner les moyens de mieux répondre aux besoins de la société par la formation et, possiblement aussi, la pratique dans des endroits plus diversifiés.

Sommaire des recommandations

1. Le Collège royal, en collaboration avec les facultés de médecine, doit examiner à nouveau et diversifier le rôle de l'UEC dans la formation médicale postdoctorale tout en reconnaissant les diverses approches de formation parmi les UEC largement définies et innovatrices, des préceptorats et même possiblement des périodes de pratique plus indépendantes avec une supervision à distance. La sélection du lieu, du

style d'enseignement ou de tout autre aspect du contexte d'apprentissage devrait être axée davantage sur les objectifs.

2. Les comités de spécialité du Collège royal devraient revoir leurs documents de formation des spécialités et évaluer s'ils pourraient y ajouter plus de souplesse pour que les résidents puissent être formés à l'extérieur dans des endroits qui reflètent la pleine diversité de la spécialité. Les critères de formation doivent être le reflet d'une exposition au champ d'application complet de la discipline dans laquelle les résidents auront à travailler.

    a. Les documents particuliers aux spécialités pourraient être révisés pour que l'accent soit mis davantage sur l'assurance que la résidence se déroule dans un environnement où l'éducation érudite porte un accent sur la qualité et la sécurité, où la supervision, le soutien à la mission d'apprentissage et les occasions de réflexion sont adéquats plutôt qu'une résidence qui se déroule dans un type particulier de lieu de formation.

3. Le Collège royal et les universités doivent reconnaître la complexité d'une approche diversifiée à la FMPD et promouvoir un soutien amélioré pour les directeurs de programmes afin de leur permettre de faciliter une formation des résidents plus régionalisée et plus diversifiée, ce qui se traduit par des coûts supplémentaires, de meilleurs outils de communication et un besoin pour plus d'innovation dans l'ensemble.

4. Le Collège royal devrait revoir toutes les nouvelles politiques qui sont mises en place pour améliorer la qualité de l'éducation afin de s'assurer que les changements aux politiques éducatives n'empêchent pas l'évolution d'un apprentissage diversifié et régionalisé.

5. Le Collège royal devrait soutenir et encourager les nouveaux partenaires de soins de santé dans l'éducation médicale qui, avec les partenaires universitaires, doivent faire valoir, appuyer pleinement et financer la mission éducative dans leurs établissements tout en reconnaissant dans cette démarche des avantages pour la qualité des soins.

6. Le Collège royal devrait encourager la collaboration interuniversitaire et le dialogue hôpital-université en favorisant la mobilisation des gestionnaires de programmes, y compris le personnel des lieux distants. Il devrait aussi appuyer le développement professionnel des gestionnaires et des directeurs de programmes ainsi que des gestionnaires des lieux de formation et des leaders cliniciens par des moyens comme la Conférence internationale sur la formation des résidents (CIFR) qui se tient annuellement.

7. Le Comité d'agrément du Collège royal devrait :

    a. revoir les exigences d'agrément pour les milieux d'apprentissage et les UEC afin que les principaux éléments suggérés dans le présent livre blanc soient mis en place dans tous les lieux de formation. La formulation des normes qui appuient une dépendance exclusive aux UEC devrait être remise en question avec l'objectif d'avoir, dans l'ensemble, des milieux qui sont le reflet des besoins d'apprentissage, peu importe la structure. Les normes d'agrément

devraient promouvoir l’apprentissage dans une variété de milieux et non seulement dans des centres universitaires de sciences de la santé ou dans des unités de formation clinique classiques;

b. revoir les normes d’agrément pour mettre l’accent sur les résultats en lien avec les différentes compétences et avec la diversité des expériences de résidence et la capacité des diplômés à travailler dans la gamme complète de milieux de pratique qui existent dans la spécialité;
c. revoir les normes d’agrément pour inclure une exigence d’orientation professionnelle globale et structurée dans le cadre de la formation des résidents. Elle permettra d’assurer que les résidents sont au courant de l’éventail complet des occasions professionnelles qui existent dans leur spécialité et qu’ils seront appuyés dans leur choix de la formation appropriée;
d. revoir le rôle du résident en fin de formation décrit dans les normes d’agrément pour déterminer si la définition actuelle qui stipule que « chaque résident doit occuper le rôle de résident en fin de formation » est adéquate, et revoir ce rôle afin de s’assurer qu’il est pertinent dans des lieux de formation multiples et non seulement dans le milieu des UEC.

Diversified Learning Contexts

Introduction

With questions about how to best prepare trainees to meet the needs of society and a move towards more competency-based education in medical training, considering where residents are trained and more broadly, how they are being trained becomes imperative. The purpose of this paper is threefold: 1) To discuss whether the clinical teaching unit (CTU) remains the most effective way to train residents for practice and what alternative sites and methods can offer, 2) To determine what changes would need to be made within the postgraduate medical education (PGME) system to facilitate residency education taking place in more varied contexts, 3) To suggest what education supports would be needed to ensure that residency training in diversified contexts would be at least as effective as the classic setting.

The focus of this paper will go beyond the paradigm of distributed medical education and 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 these ends.

In the context of the Canadian PGME system, diversifying the learning context can include a variety of physical locations for training such as urban, non-urban, rural, academic health science centres, ambulatory settings, in-patient care, or outreach care, to name only a few. In addition it also incorporates the concept of the format of the training, such as 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 postgraduate medical education 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 what characteristics 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 their learning objectives in a reasonable time (provides for efficiency of learning and learning that is relevant)
- The opportunity for learners to be fully engaged in patient care (not just passive learning) up to the level of the learner's 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 they progress through their residency
- Promotes, where possible interdisciplinary learning and care
- Commitment to quality of care and how that is monitored and assessed
- The CanMEDS competencies are modeled by faculty
- There is time dedicated for reflection
- There is a supportive framework/formative environment

Deliberately missing from the above list is: 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 on 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 pre-determined and fitting competencies and training experiences into that context, planning for residency training should involve first establishing what competencies need to be developed and then determining the best location and context to achieve the desired outcomes.

Background & Current status in Canada

The classic 20th century model of teaching postgraduate medical education (PGME) in Canada is the clinical teaching unit (CTU), a concept that was 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 provide a powerful diversity of 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. The CTU model nonetheless has become engrained as the model for PGME in Canada and as the default setting for training residents.

Other models of PGME that exist, such as a preceptorship (where a trainee is immersed in someone's individual practice) have sparked renewed interest and are beginning to reappear,[2] as some disciplines are looking outside of the CTU to enhance residency training and expose residents to more varied practices. Concern about the old apprenticeship model of medical education has led to preceptorships developing a negative connotation, being seen as entirely service oriented experiences with poor quality education. However, as long as the attributes listed in the section above are part of the learning environment, then the particular format, be it a preceptorship, CTU, or other model is not important.

After a period of relative stasis in medical education followed by significant cuts in the early 1990's, the current growth in medical education has come with an increased emphasis on 'distributed medical education' over the last decade with the establishment of programs such as the University of British Columbia's Island and Northern undergraduate programs.[3] Perhaps most notably was the opening of the Northern Ontario School of Medicine (NOSM), which is entirely situated (both undergraduate and postgraduate training) in northern Ontario. The NOSM campus spans 750,000 km^2 and has greater than 70 clinical placement locations. This model has taken medical education into a variety of settings, including "…large urban settings to rural, remote and Aboriginal communities."[4] This has brought a welcome diversity to medical education in Canada but 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 regarding the rationale for training in these sites and the resources necessary 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 issues, rather than deriving from the educational needs first.

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 type 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 (if not all) of training needs to be 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 required competencies. Outside of the resources and training required to implement a diversified approach to medical education, a change in culture will be required, so that distributed sites are not viewed as second-rate education, nor are they simply set-up to try to emulate a CTU. Rather, PGME will need to recognize the advantages and opportunities of varied training sites and capitalize on this diversity in order to produce well-trained physicians capable of meeting societal needs.

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 on board with 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 modeling.[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 limited to the academic health science centre. Broadening the learning context to include a broader range of interprofessional and primary-specialist physician teaching are both important factors in diversifying learning contexts for trainees.

Clearly, one of the driving forces behind the current move to more distributed learning contexts has been the need to better train physicians to better meet the health needs of society, given long standing shortages of 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 the uncoupling 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 postgraduate medical education should occur, residency training should become more responsive and better reflect societal need. [See Addressing Societal Health Needs white paper]

Drivers for Change

Currently, the classic clinical teaching unit (CTU) model is predominant in postgraduate medical education (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 has its own set of challenges. Junior residents are often the ones doing most of the clinical work and thus have limited time for reflection and self directed learning. The CTU in Canada is often conceptualized as existing 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. As Family Medicine programs and family physicians are now rarely present in these settings, this important interaction between specialist and family physicians has been lost. Opportunities for interprofessional education are also limited by the team structure that usually focuses on vertical interaction between trainees and faculty within the same program, but of varying seniority. 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 be detrimental for the team relationships with nursing and allied health that is so important for good quality care.

While the CTU does provide a relatively seamless transition from undergraduate medical education to postgraduate medical education, 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 Continuum of Medical Education white paper]. Indeed, the very nature of practice and the clinical work done in a CTU is often different from that of specialists in practice outside of academic health science centres (AHSCs). For example, chronic disease management in non-acute settings represents a much higher proportion of the clinical work than is seen in CTUs in AHSCs.

Attention to CPD is growing as the nature of medical practice evolves more rapidly with physician's practices changing substantially over the course of their careers, and yet 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 their skills or develop new competencies. If reflection, self assessment and self directed learning are not emphasized in PGME, these skills are less likely to a part of a physician's practice post residency; despite the essential role these skills play in maintaining competency and evolving practice to meet the evolving needs of society.

Notwithstanding the welcome and novel development of the Northern Ontario School of Medicine, the vast majority of postgraduate training in Canada continues to occur in long standing university settings, primarily in cities. This training usually occurs in tertiary hospitals that are increasingly specialized, focusing on acute events and very short lengths of stay, which reflects only a small portion of health care services in Canada. As a result, the clinical experience of residents 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).

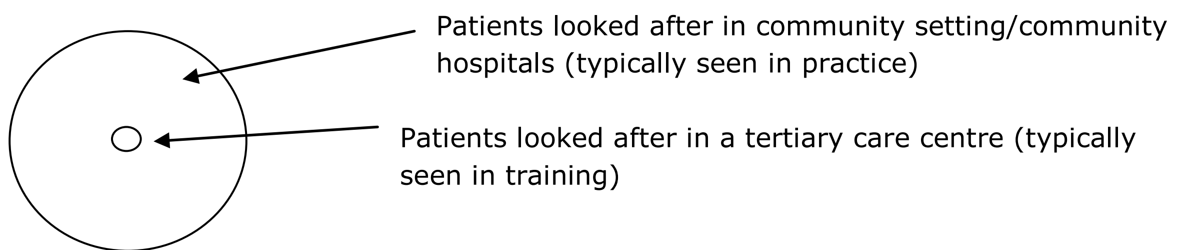

Figure 1: Diagram of patients seen in training settings vs. practice settings.

In designing PGME, attention to effectiveness, relevance, and efficiency of education are important. A learning opportunity may be highly relevant and effective, but if over-taught, can result in an inefficient system. For several reasons, there is an increasing need now 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 of more expertise, and concerns about resident work hours that have resulted in reduced hours available for education and educationally important clinical work.[7] At the same time, there are strong pressures not to extend length of training, 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 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, rather than more closely customizing training to individual needs of residents.

Distribution of physicians in Canada remains a challenging issue despite the fact that it has been identified as problematic for years.[6] The system does not produce enough physicians who go on to practice in small urban and rural or remote settings in Canada. Residents often stay where they train, 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, who after many years in one place have occupational and personal barriers to leaving that community. This has been recognized and is one of the leading drivers behind distributing medical education. However, the amount of distributed specialty education in Canada is currently a fraction in comparison to the training that remains tied to academic health science centres (AHSCs). As long as programs fail to train people outside of urban centres and AHSCs, the residents graduating from those programs are likely to select work only in those or similar locations, while under-serviced areas will remain that way.[8] This approach fails to adequately prepare residents to meet societal health needs. Since 80% of physicians are married to other professionals, who have often established careers during the time their partners are completing residency training, moving post-residency is particularly challenging and highlights the need to carefully examine where physicians are trained.[9]

At the same time, despite challenges with the current CTU model, it is important to note that there are significant strengths to this model, in particular 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. Returning to the criteria elucidated earlier in this paper 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, clinical teaching units (CTUs) should be thoughtfully chosen as a training site, rather than being the default format 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 centered in large academic health science centres without ever providing a definition of what this critical mass is that is 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 maybe low.

Attention must be given specialty by specialty to the future of care in that discipline. Furthermore there should be consideration of whether 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 by developing 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 that specialty with respect to subspecialization 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 and in order to have training programs that better reflect the larger community of medical practitioners in Canada, we need if anything, more movement of 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 about the location or format of that training that are based on past practice. There is a need to challenge the assumption that all components of this training are best delivered in traditional AHSCs.

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 the training done in person. This assumes that, despite graded responsibility, there is a distinct point at which a physician becomes competent for individual, independent practice and that they retain this competence, in most cases until the end of their career. As noted earlier, this creates a major disjunction between postgraduate medical education and continued professional development (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 that is developed 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 more relevant or practical for physicians already in practice. As distributed medical education has evolved in Canada, new web-based or distance learning opportunities have been developed to support this change. Technological developments allow for sophisticated supervision from afar, which 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, which results in Canadian medical education being of predictably high quality, regardless of the school or accredited teaching program, it is important that this is maintained. In addition, the current system creates a relatively predictable supply of new physicians with the intake numbers reflecting output in 4-6 years, depending on the specialty training requirements. Training large groups of residents in one place is efficient for the training organization, but a more diverse approach to learning may allow greater connection between PGME and CPD that could have a profound benefit for the physician work force in Canada. A diversified approach would allow greater flexibility of the work force to evolve after residency is over. 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 re-enter training more readily.

Barriers to Change

As quality control of residency education through accreditation in Canada has become more rigorous and effective, the training requirements as outlined in the Specialty Training Requirements and the Objectives of Training are increasingly complex. Efforts to ensure more exposure to people with chronic disease and 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 that resident out of the traditional academic health science centre (AHSC) in order to ensure that they are comfortable working in a variety of communities and settings. This is not impossible to solve, but if the focus is on rotation-

based education, with the resident still primarily based at the AHSC, these new expectations of training may well tie the resident even more to the AHSC.

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, especially those not traditionally involved in medical education creates understandable concern about maintaining the quality of the education. This concern however, may lead to a bias against education outside of the AHSC, especially in smaller urban centres, with the related perception that the educational experience in those centres is not as good when compared to the AHSC. Apparent objective indicators of quality education, such as the number of rounds, or access to visiting professors, may at first glance reinforce this view. 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 AHSCs, but instead to recognize all training sites offer different experience. 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 AHSC.

The advances in simulation in medical education have the potential to greatly impact on medical education. It is essential that as the infrastructure for simulation is developed, that attention is paid at the outset to 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 distributed education of residents, but also for continuing professional development of physicians and other health staff could have positive outcomes with respect to maintaining competence for health care professionals in practice.

Currently, university hospitals in Canada rely heavily on residents for 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 so will have to adapt to more fluctuation in this supply, without rendering the resident a bystander who is left behind by

systems that have adapted to their absence. A capacity to hire flex staff who can step in to replace work done by residents will need to be developed. At the same time the nurses and other health professionals who move in and out of these positions need to be fully engaged in and understand their essential role in medical education so that the staff is prepared to appropriately engage a resident when they are part of the team.

Diversification of learning has a significant impact on many people within the system and this needs to be addressed. The potential impact of multiple and varied training sites may have a negative impact on residents' lives, given that residents frequently have families who cannot easily move. 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 transport and distance to subspecialty backup. Nonetheless, suburban hospitals may be an alternative for residents who are not able to easily relocate. Another approach is to make the primary training site outside of a major urban centre/academic health sciences centre, only using the latter when necessary for education, and using technology where possible to avoid physical travel to the AHSC. The utility of these approaches will be highly specialty specific and will depend on the nature of 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 in an underserviced area which can lead to trainees ending up in settings where they do not have necessary supports – an area that is critically short of physicians cannot take on the education of residents without substantial new resources. The thoughtful selection of distributed sites is essential in order to avoid placing residents in a particular community because of the population (often politically-drive), when there are limited or no teaching resources. Even though the goal is not to replicate the AHSC 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 the diversification of learning sites will have a large cost associated with it. Therefore, there is a need for careful planning and forethought, with full engagement of all stakeholders for diversified learning to be successful. Equally important, however is recognition that the goal of medical education is 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 responds to the full spectrum of societal need, should move us closer to this end. As the old saw goes: "If you think education is expensive, try ignorance."

Current expectations around the way that doctors expect to practice and be trained may need to be altered to better respond to societal need through diversification of learning. 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 that the learner attended medical school. With anecdotal evidence that that there is a trend for residents to be older at the commencement of medical school and the predominance of two profession families in medicine,[9] the impact on families when residents have to move is substantial. 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 because they are under the auspices of a single program for the duration of their residency.

A system that places greater stress on residents by increasing movement through a diversity of learning opportunities in contrast to a program that leaves residents in one predictable environment, may be less likely to be selected by residents. However, if a postgraduate medical education (PGME) is going to become more responsive to societal needs, more varied experiences during residency may be necessary.

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. A significant change in the system will be challenging without a better understanding of the full costs and an appropriate allocation of funding.

Recommendations

Universities and the Royal College together, need to re-examine and diversify the role of the clinical teaching unit (CTU) in postgraduate medical education (PGME), with recognition of the diverse approaches to training within broadly defined and innovative CTUs, preceptorships, and possibly even periods of more independent practice with distant supervision. In order to do this well, careful attention to standards that are not site or setting specific, but instead speak to an approach to patient care and education that is scholarly with a quality and safety focus, and that occurs with good supervision, support for

the learning mission, and opportunities for reflection, is essential. Finally, the selection of the site, style of teaching or any other aspect of the learning context needs to be purpose driven.

The assumption that training needs to occur primarily in the urban centre, within an academic health science centre (ASHC) 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.

The Royal College needs to encourage the Specialty Committees to review their specialty training documents and assess whether they can build in more flexibility so that residents are able to train outside in settings that reflect the full diversity of that specialty. The criteria of training need to reflect exposure to the kinds of practice where people are going to work.

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, which will mean additional costs, enhanced communication tools, and overall a need for 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 issues related to support and development of new faculty in non-traditional settings around issues such as evaluation, effective clinical teaching, and competency-based education.

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.

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 support professional development for program managers and directors, and site managers and clinical leaders through such means as the annual 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 those issues unique to the distinct needs of distributed sites. Enhanced national networking with people across Canada dealing with these issues can be facilitated through ICRE and similar venues.

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. Language in standards that supports the exclusive reliance on the CTU need to be reconsidered, with the overall goal being settings that reflect learning need, regardless of structure. Accreditation standards should focus on outcomes, both in relationship to various competencies but also in terms of diversity of resident experience and capacity of program graduates to work in the full range of practice settings for that specialty. Accreditation standards should be reviewed to ensure that they promote learning in a variety of settings, not just in the AHSC or traditional CTU setting.

Comprehensive and structured career counseling needs to be a part of residency throughout to ensure that residents are familiar with the full range of professional opportunities within their specialty and to assist with the selection of appropriate training.

The role of the senior resident needs to be re-examined as relevant training at this level may well be better placed in a community setting with greater independence, than in a CTU, where there task is to run the service efficiently. While this may reflect a useful skill, or at least a reasonable proxy of the managerial skills needed in practice, the current expectations under the Royal College's General Standards of Accreditation is that each resident "must assume the role of the senior resident", apparently reflecting only the role in a traditional CTU.[11]

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