"Mind the Gap": Seven Key Issues in Aligning Medical Education and Healthcare Policy

« Attention à la marche » : sept lacunes dans l'harmonisation entre la formation médicale et les politiques de santé

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Abstract

To ensure an adequate supply of physicians for the future, Canadian faculties of medicine have been expanding and modifying physician training at the undergraduate and postgraduate levels with the intention of producing more physicians and addressing long-standing challenges in the Canadian physician workforce. While these medical education initiatives may partly address these goals, the lack of alignment between

health services policy and education policy may well lead to failures and disappointing results. The authors argue that changes in related healthcare policy are required both to support the intended outcomes and to sustain innovations in medical education. From their perspective as medical educators, the authors describe seven key gaps in this alignment, identify those who are in a position to address them and call for ongoing opportunities to identify, discuss and address alignment of policy with other initiatives at the national and provincial levels.

Résumé

Afin d'assurer une disponibilité adéquate de médecins pour l'avenir, les facultés de médecine au Canada ont augmenté et modifié leurs programmes de premier cycle et d'études supérieures dans le but de former davantage de médecins et d'affronter les défis chroniques de la main-d'œuvre médicale au Canada. Bien que ces initiatives permettent dans une certaine mesure d'atteindre les buts visés, le manque d'harmonisation entre les politiques des services de santé et les politiques d'enseignement peut potentiellement mener à des échecs et donner des résultats insatisfaisants. Les auteurs affirment qu'il est nécessaire d'apporter des changements aux politiques de santé pour atteindre les résultats souhaités et pour consolider les innovations en matière de formation médicale. Les auteurs – qui enseignent la médecine – décrivent sept lacunes, identifient les intervenants en mesure d'y pallier et demandent la mise en place de conditions durables pour cerner, discuter et traiter la question de l'harmonisation des politiques avec les autres initiatives aux niveaux national et provincial.

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Current discussions regarding physician shortages in Canada are yielding solutions that involve multiple potential stakeholders, including provincial and federal governments, healthcare systems, licensing bodies and universities. Canadian medical schools are expanding and innovating to train appropriate numbers of physicians, but long-term outcomes of these initiatives may fall short unless gaps in policy between education and those of the supporting sectors are identified and addressed. This paper describes seven such gaps. We write from the perspective of medical educators, and call for new forums for dialogue to analyze and effectively address alignment of policy with medical education initiatives on the national and provincial levels.

Canada has faced an imbalance between its physician supply and its population since the 1990s. Chan (2002) reported a 5.1% drop in the real physician–population ratio, which adjusts for aging of the population and changing physician demographics, between 1993 and 2000. Twenty-five percent of the drop was attributed to increased

time spent in postgraduate training, 22% to decreased intake of international medical graduates, 21% to the drop in enrolment in rotating internships, 17% to an increase in retirements, 11% to reduced enrolment in the classes of 1991 to 1997 and 3% to a loss of Canadian physicians to migration (Chan 2002). Other physician changes include reduced physician hours from those doctors close to retirement age, an increased number of female physicians with families (National Physician Survey 2008) and a younger generation of physicians who, male or female, focus on work–life balance (Buske 2005). Further, increases in the number of physicians entering practice from 2002 to 2006 only kept pace with population growth of 4% during the same period (CIHI 2007a). The aging of the population will continue to increase the requirement for physicians (Denton et al. 2003), and the increased burden of chronic illness is affecting physician caseloads (National Physician Survey 2008). While interprofessional care teams and the development of new allied health professional roles, such as physician assistants, may mitigate some perceived shortages, physician workforce shortfalls are unlikely to be fully addressed through such changes in practice.

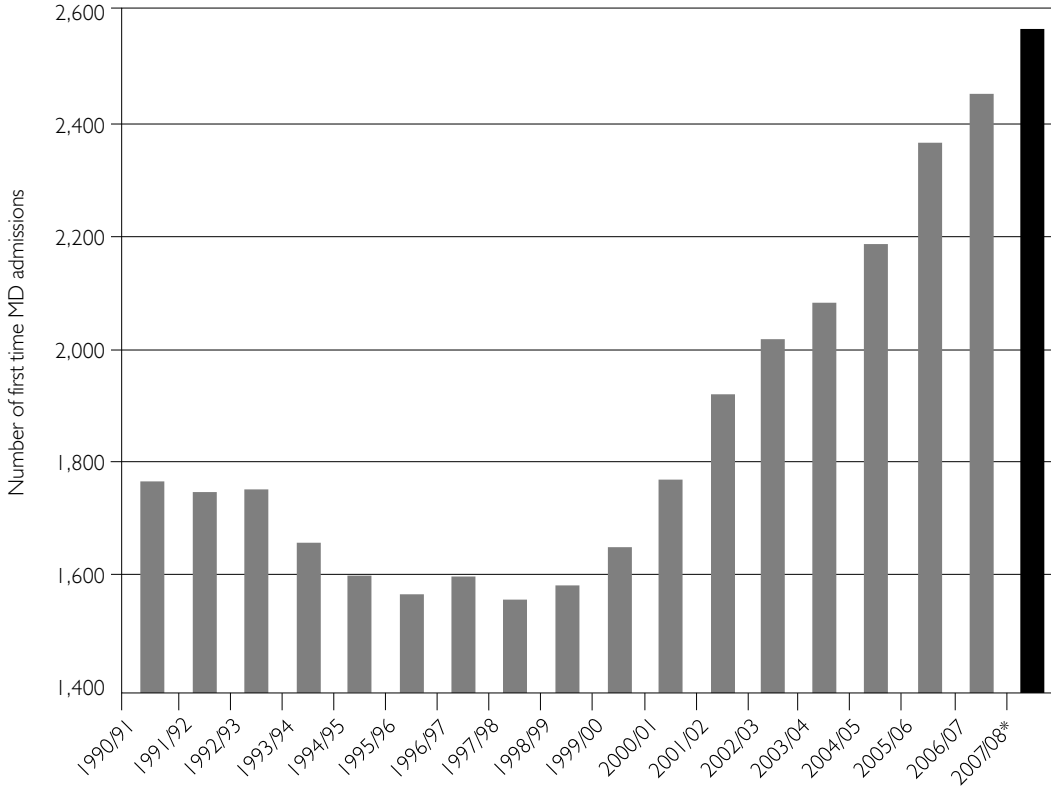
While the number of new doctors required can be debated, there is general agreement regarding the need to increase the number of physicians overall, with particular emphasis on increasing physician supply for chronically underserved urban, rural, northern and Aboriginal populations. Canadian faculties of medicine and federal and provincial governments have responded to the need to train more physicians with planned expansion of both undergraduate and postgraduate medical education capacity. Coincident with this expansion, the Association of Faculties of Medicine of Canada (AFMC) has articulated a framework of social accountability for medical schools (Health Canada 2001) that focuses on the needs of underserved populations. Resulting new models of medical education are designed to address long-standing issues of the Canadian physician workforce. However, these initiatives are placing new pressures on the healthcare system, and may falter because of inadvertent gaps created between education and health services policy, some of which threaten the viability of the new educational initiatives. We argue that the loss of viability is neither necessary nor inevitable, but that we must address these seven key gaps to avoid such inadvertent failures.

1. Increased Demands for Clinical Medical Education

In 2006, 17 faculties of medicine in Canadian universities entered 2,460 students into first-year MD undergraduate programs, up from a low of 1,577 in 1997 (Figure 1) (AFMC 2007). That same year, postgraduate programs entered 2,058 trainees into first-year postgraduate training, an increase from 1,664 in 1996/97 (CAPER 2006), and the number of postgraduate trainees is expected to increase further as expanded undergraduate classes enter postgraduate training. This expanded number of medical trainees accelerates the need for additional clinical settings in which students train

during their third and fourth years, and for the majority of their postgraduate training. As a result, hospitals, health regions, clinics and physicians, not previously engaged in teaching medical students, are being recruited to take both undergraduate students and postgraduate residents. This situation creates the first challenge.

FIGURE 1. First-time admissions to MD programs, Canada, 1990/91–2007/08



Source: AFMC, *Canadian Medical Education Statistics*, 2007.
* Data for 2007/08 are a preliminary estimate.

Publicly funded organizations have a mandate to operate in a cost-effective manner and to allocate resources based on the immediate care needs of their population. While some learners at senior levels contribute to the overall capacity of health services delivery, in general, introducing learners into clinical settings reduces the efficiency of services delivery by all healthcare workers, including physicians (Kirz and Larsen 1986). With supervision requirements for pre-licensure learners increasing because of patient safety agendas, operational efficiencies are further reduced. If education is to be seen as a core healthcare function, a certain element of "operational inefficiency" will need to be acceptable and costed as a part of healthcare as trainee numbers increase. New high-efficiency surgical units designed to reduce waiting lists will have to include trainees in

their mandate, although this requirement is at odds with their stated purpose. As well, financial and administrative support for preceptors is needed, even though ministries responsible for university education are hesitant to develop a funding precedent that might spread to workplace education of other professionals. To resolve this challenge productively, government sectors must cooperate for overall outcomes, but academic programs must also examine their educational programs to ensure the most effective use of clinician teachers and clinical settings. New methods of clinical teaching, using simulation and standardized patients, must be developed and funded to reduce the burden of student learners on the healthcare system.

2. Integration of Internationally Educated Medical Graduates into the Physician Workforce

A second challenge occurs with the assessment and training required of medical schools to integrate internationally educated medical graduates (IMGs) into Canada's physician workforce. Canadian faculties of medicine are responsible for the domestic production of medical doctors (Canadian medical graduates, or CMGs), while the postgraduate programs train both CMGs and IMGs for practice in specific disciplines. In Canada, nearly one-third of licensed physicians are fully or provisionally licensed IMGs; the proportion is higher in some provinces (Audas et al. 2005). In order to increase physician supply, there is pressure to increase the speed of integration of IMGs into the Canadian workforce (Canadian Task Force on Licensure of International Medical Graduates 2004). IMGs entering postgraduate training have quadrupled in the past 10 years: in 1996, 236 IMGs applied to the Canadian Resident Matching Service, and 11 were placed in postgraduate training programs; in 2006, 932 applied and 111 were placed (CaRMS 2006a). Those being called on to assess and retrain IMGs are, in most cases, the same physician educators who are being asked to accommodate the increased numbers of CMGs. These same physicians are also often stretched to deliver clinical services. Thus, federal and regional efforts to integrate IMGs and provincial efforts to increase domestic supply require careful coordination to prevent strain on clinician educators.

The second dimension of the challenge to integrate IMGs into the workforce relates to issues of social justice. The current pool of IMGs in practice in Canada is drawn extensively (43.4%) from the world's poorest nations (Mullan 2005), whose societies would benefit more by retaining their doctors domestically (Eckhert 2002). Canada's role in not only actively recruiting these physicians but also encouraging immigration of professionals who arrive, only to find themselves unable to access licensure to practise, requires debate. The increasingly large number of Canadians studying medicine outside North America and intending to return for postgraduate training, currently estimated to be over 1,500 (Sullivan 2007), and the opening of additional medical schools in

the Caribbean and elsewhere for internationally recruited students, raise important questions about whether to allocate a finite Canadian resource for clinical education to domestically produced medical doctors, Canadians who have accessed training outside North America in part because of limitations in medical school capacity, or new Canadians who have been recruited or encouraged to immigrate from other countries to fill physician workforce shortages. Only one thing is sure: we do not have the capacity to fulfill all these needs. However, there is little public debate about how to balance these competing demands.

3. Lengthened Postgraduate Training

A third challenge is due to the increasing length of postgraduate training, which delays formal entry into the workforce (Chan 2002). While this phenomenon appears to result from student preference, the highly specialized environment of academic teaching centres may model extended training and subspecialization as desirable to trainees. While extension of training produces a negative effect on numbers of practising physicians, senior trainees provide a lower-cost service capacity to the healthcare sector that is not quantified. Reducing time in undergraduate education has been suggested as one pathway to shortening the education time for physicians (Flegel et al. 2008), but there is also a need to explore strategies other than extended accredited training to build special skills desired by postgraduate trainees. To address this challenge, we advocate that university divisions of continuing professional development, professional medical associations and health authorities collaboratively restructure the funding support and expectations for the development of enhanced skills desired by practising physicians and the regions in which they serve.

4. Retention of Physicians

While medical schools may design educational programs to place trainees in underserved settings to enhance the possibility of recruitment, the agreement on national licensing standards, which creates portability of licensure across Canada, facilitates the flow of licensed physicians to desirable practice locations, creating regional physician shortages. Between 1991 and 1999, 19% of physicians moved between provinces or outside the country, with much of the interprovincial movement from "have not" provinces to "have" provinces (Thurber and Buske 2001). Such physician movement, while upholding individual rights, constitutes a fourth challenge to the equitable distribution of physicians across regions within Canada. For example, provinces that gain physicians trained in "have not" provinces currently have no responsibility to reimburse the costs of medical education to the province of training, and there is little appetite in the Canadian setting for "return of service" arrangements. While IMGs

are often recruited to practise in settings that are unable to recruit Canadian graduates, such recruiting is expensive, especially as there is a rapid turnover of IMGs out of underserved areas (Audas et al. 2005). Those small provinces that cannot support training programs in all specialties face further challenges in recruitment of some specialist physicians. We argue that policies are needed to balance individual rights of physicians for mobility with societal rights for access to care. Also, provincial licensing bodies must review their licensure regulations and, where possible, address regional disparities through national collaboration.

Furthermore, in the 1990s, about 9.5% of Canadian physicians moved to locations outside Canada (mainly the United States). During the same period, about 186, or one in nine, Canadian-educated physicians from each graduating class joined the US physician workforce (Phillips et al. 2007). However, the number of physicians who moved abroad decreased by 57% over the last five years, and for the third year in a row in 2006, the number of physicians returning from abroad was greater than the number leaving Canada, suggesting a reversal of the outflow trend (CIHI 2007a). However, the anticipated shortages of physicians in the United States are likely to lead to intensified recruitment of Canadian physicians to the USA (AAMC 2006). Unless these are counteracted with well-thought-out retention strategies, the Canadian physician outflow may again intensify. Increased understanding of the reasons for out-migration and effective strategies for retention are needed, and strategies are likely to cross sectors.

5. Shortages of Physician Supply in Northern and Rural Canada

New medical education initiatives, including a new northern medical school and regional campuses, are attempting to address the challenge of physician shortages in northern and rural areas of Canada. While all medical schools in Canada are located in urban environments with populations over 100,000, these urban-centric faculties are developing new admissions processes to increase recruitment of rural students and advance rural placements. They are also implementing community-based models of clinical education in rural communities and developing regional campuses in underserved areas. Additionally, they seek to enhance postgraduate medical education to address the need for physicians in rural, remote and northern settings. Seven faculties of medicine in Canada are establishing satellite campuses for undergraduate medical education (Kondro 2006), some in areas of physician shortages. At the postgraduate level, the number of rural family medicine residency (postgraduate) positions offered in Canada increased from 36 in 1989 to 144 in 2003, and by 2002, 20% of the 712 Canadian family medicine residency positions were in rural training sites (Krupa and Chan 2005). In many regions of the country, the alignment of university mission with provincial policy to address need has led to the development of a set of strategies aimed at easing these shortages.

While these are positive developments regarding medical education in rural and northern regions, retention is an ongoing challenge. Rural programs achieve excellent retention rates of 70% to 80% following certification (McDonald et al. 2002; Thommasen 2000), but research indicates that extended retention initiatives are weak (Society of Rural Physicians of Canada 2002). For example, in 2000, about 45% of graduates of Université Laval family medicine programs were practising in rural areas two years post-residency. However, in 2002, only about 15% of the class of 1992 from the same university was still in rural areas. There are some practices that suggest how to improve the retention of rural physicians. In Queensland, Australia, factors negatively related to retention included workload/after-hours work, locum access, practice management load and chronic conflict (Hays et al. 1997). A small town in northern Ontario noted that such strategies as implementation of alternative payment plan funding, consensus physician group decision-making and recruitment of 50% more physicians than FTEs required for the population have stabilized physician services there (Orrantia 2005). These findings suggest that multiple strategies must be developed through government, university and local community initiatives to support physicians in small communities across Canada.

Information and communication technology holds great promise to educate future health professionals in rural and northern communities and to support them in practice. High-speed internet connections and video conferencing systems are increasingly available in northern and rural areas of Canada, but the lack of integrated planning between telehealth networks intended for service delivery to patients and university networks designed to educate students and link physicians represents an undeveloped opportunity. Under current arrangements, in order to train physicians in rural areas, medical schools establish and manage regional campuses and distribute programs using high-speed video conferencing networks designed for education, while academic health centres develop high-speed network applications for telehealth services delivery. Joint planning could achieve a more collaborative use of resources and lead to increased support for the development and stabilization of a rural workforce.

6. Shortage of Generalists

Traditionally, Canada has had strong postgraduate educational programs in family medicine, with approximately 30% of graduates selecting a career in that specialty (CaRMS 2003). However, an alarming decline in these traditional choices occurred during the 1990s, as the number of graduating medical students choosing family medicine declined from 44% in 1992 to 25.5% in 2004 (CaRMS 2004). In response, the College of Family Physicians of Canada funded Family Practice Interest Groups at every medical school to increase student interest in choosing family medicine. This initiative may be responsible in part for the recent reversal in the decline (Kerr et al. 2008). The selection of

family medicine residencies increased to 27.6% in 2005 and to 31.7% in 2006 (CaRMS 2005, 2006b).

In order to ensure that students choose such specialties as family practice, general paediatrics, general internal medicine and general surgery, changes to the healthcare system must enhance the role and stature of generalists, not reduce it. Health authorities need to counter the perception of coercion of family physicians into primary care reform that discourages medical students from choosing this discipline (Scott et al. 2007). Medical schools must be able to find and recruit generalist physicians as faculty in tertiary care teaching settings, requiring that healthcare systems offer improved roles and recognition to generalists in these settings. Health regions and specialist associations must critically assess the current trend towards subspecialization in terms of its consequent strains on healthcare resource planning. Finally, physician professional organizations and governments must reward and recognize generalist expertise.

7. Shortages of Aboriginal Physician Workforce

Canada's needs in Aboriginal healthcare comprise the seventh challenge. Despite 4.4% of people reporting Aboriginal ancestry (Statistics Canada 2003), according to recent estimates there are only 150 Aboriginal physicians practising in Canada out of a total complement of about 62,000 (Romanow 2002; Sullivan 2005). Health status of Aboriginal people in Canada is dismal, and increasing the number of Aboriginal healthcare workers has been seen as one way to address the health needs of our founding peoples. In 2001, Aboriginal students made up only 0.7% of the first-year class (Dhalla et al. 2002). Since then, several medical schools have implemented high school and undergraduate outreach programs and facilitated admissions processes for Aboriginal applicants, and the number of Aboriginal students studying medicine is climbing every year. Unfortunately, these initiatives falter because of high dropout rates prior to medical school enrolment. As of 2001, 48% of Aboriginals 15 years old and over had less than high school education (versus 31% for Canada's total population), and only 4% obtained a university degree, compared to 15% in the total population (Mendelson 2006).

Attention has recently turned to a pipeline approach to the development of an Aboriginal physician workforce (Acosta and Olsen 2006), involving sectors of early childhood, K–12 education, premedical education, medical education and new clinical placements. Best practices from the United States and Canada should be examined to develop a national plan, supported by federal funding. Canada must be willing to support enhanced access for Aboriginal Canadians to a very competitive area of training. This approach may raise difficult issues for our multicultural society. At the same time, practising physicians and physicians in training must increase their skills in supporting

the health of Aboriginal peoples, requiring the recruitment of new faculty and the development of new curriculum and clinical settings.

Conclusions

While some of the workforce challenges identified in this paper have existed for a long time, the recent changes in educational programs described here offer the potential to address them. However, these educational innovations will have limited success unless policy changes both upstream and downstream are implemented to support the intended outcomes. Specifically, policy implementation must address retention of physicians within Canada and rural areas, migration across provinces, IMG recruitment, IMG integration into practice, integration of health professions education into healthcare settings and increasing the number of successful Aboriginal medical students. Further, all partners must acknowledge an impending crisis in human resources for physician education, currently stretched by a number of colliding issues: (a) increased service demands, (b) requirements for more clinician educators and (c) more oversight responsibilities to integrate IMGs into the Canadian physician workforce. Importantly, we caution that although this paper notes the stresses on physicians arising from initiatives to address physician shortages, other initiatives (to develop nurse practitioners, physician assistants, midwives and other allied health professionals) all call on these same physician educators. Therefore, a balance between short-term and longer-term strategies must be sought collaboratively to reduce the effect. Although both health and education are provincial responsibilities, the federal government has a role to play in "leveling the playing field" to ensure cooperation between provinces on issues that cut across provincial boundaries, as well as underscoring collective responsibility for Aboriginal health.

We have outlined the challenges, and in some cases suggested possible policy or educational direction. But there is currently no ongoing venue for different sectors to meet to discuss and debate these issues, our final challenge. While the Task Force Two Report (2006) brought together education with government, and the recent conference on health and human resources sponsored by the Canadian Institute for Health Information (CIHI 2007b) provided opportunities for presentation and discussion across sectors, ongoing formal collaboration is required for real action. A desirable first step is the development of an annual national conference on the physician workforce, appropriately structured for information, debate and policy recommendations. A second possible step would be dissemination of the outcomes of such a conference through a special issue of this journal. The eventual creation of a national institute of health professions workforce planning – integrating federal and provincial governments, educational institutions and other stakeholders – would provide an effective forum for development and alignment of policy and educational initiatives.

A complex medical education system operating in a complex environment of healthcare to address complex issues of physician resources requires collaboration, innovation and discussion. New partnerships must be forged, with increased understanding of the challenges for all stakeholders. Every challenge outlined above requires multisectoral partnership and collaboration in order to produce effective solutions. No one community, level of government, university or healthcare delivery organization can independently address these challenges. In the end, our success in addressing physician human resource issues in Canada will depend on our ability to work together thoughtfully and collaboratively.

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