

ISSUE BRIEF

Canada's Generalist Training: Are There Lessons for the United States?

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A discussion featuring

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Canada's Generalist Training

A stubborn specialist-to-generalist imbalance in the U.S. health workforce continues to concern policymakers looking at its import for a reconfiguring health marketplace. With the imbalance persisting as health care moves from fee-for-service to managed care, largely in ambulatory settings, policymakers are considering various ways of addressing it. Whether they tinker with current Medicare graduate medical education (GME) policy or take an entirely new approach, such as having an "incentivized" all-payer fund, they are struggling with designing, enacting, and implementing change in a fairly entrenched system.

Seven years ago, the Council on Graduate Medical Education set a national goal for at least half of all medical school graduates to begin careers in primary care fields: family medicine, general internal medicine, and general pediatrics. At the time, only 27 percent did. Since then, the proportion of generalists has gradually inched up, so that 37 percent of medical school graduates entered a generalist career in 1997. Even in the midst of an overall physician surplus, however, the primary care fields remain far from saturated.

The United States government and medical experts have expressed concern about physicians' apparent preference for careers in the congested specialty fields. Between 1965 and 1992, the proportion of physicians in general practice declined from 51 percent to 35 percent. Despite repeated expressions of concern by government agencies and health care experts, this imbalance in physician preference persists.

The Medicare Payment Advisory Commission (MedPAC) is seeking methods to rectify this disparity. MedPAC is currently addressing what Medicare's policy should be regarding medical education payments as it prepares GME funding policy recommendations for its report to the Congress in August 1999. The report will outline how and whether medical payments to hospitals for Medicare GME, as well as other federal policies on GME, should be changed.

Policymakers in the United States, striving to alter federal incentives to shift U.S. GME from a specialty-oriented to a generalist model, have only to look across their northern border to see a system that produces the balance of physicians the United States is seeking. Medical educators in both countries generally acknow-

ledge that, although the two systems are differently organized and financed (Table 1), the quality of Canadian GME is comparable to that of the United States. The relative output of nonspecialist physicians, however, is much higher. While Canada has a physician-to-patient ratio similar to that of the United States, its proportion of generalists to specialist physicians is 50-50. As a result, the U.S. primary care physician workforce pales in comparison to Canada's generalist population.

Addressing the premise that the U.S. medical education system is inappropriately skewed toward specialty medicine, this Forum session is intended to compare and contrast the U.S. and Canadian GME systems, including how each system is organized and financed. While the United States is unlikely to adopt the Canadian GME System (just as this country has not embraced the Canadian health delivery and payment approach), the model provides various lessons. One is full integration of primary care and GME. Another is the use of incentives to achieve desired policy goals.

BACKGROUND

The United States and Canada both are concerned with disparities in access to health care services for some segments of their populations. However, in Canada this is largely a problem of attracting physicians

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Table 1
Organization and Financing of GME in Canada and the United States

	Canada	United States
Decision Regarding GME Specialty Mix and Program Size	Medical school deans	Hospital CEOs, program directors, department chairs
Accreditation	RCPSC and CFPC, medical school programs	ACGME (RRCs), hospital programs
Certification	RCPSC and CFPC	Specialty boards
Licensure	Provincial authorities	State medical boards
Funding Source:		
Resident Salaries	Ministries of health	Hospital patient care revenues
Faculty Salaries	Ministries of education, practice plan	University funds, hospital funds, practice plan
Hospital Overhead	Ministries of health, global hospital budgets	Hospital patient care revenues, Medicare IME

Source: Michael Whitcomb, "Organization and Financing of Graduate Medical Education in Canada," *Journal of the American Medical Association*, 268, no. 9 (September 12, 1992): 1107.

Note: Only the predominant ways of organizing and financing GME are compared. CEO indicates chief executive officer; RCPSC, Royal College of Physicians and Surgeons of Canada; CFPC, College of Family Physicians of Canada; ACGME, Accreditation Council for Graduate Medical Education; RRC, Residency Review Committee; and IME, indirect medical education adjustment.

to locate in geographically remote, rural, or climatically inhospitable areas. It is not a problem of availability of generalist physicians. In the United States, in addition to issues relating to geographical maldistribution of physicians, the undersupply of primary care physicians comes into play.

From a historical perspective, there are some similarities between the medical education system in Canada and the United States. For example, in undergraduate training, Canada's 16 medical schools and the United States' 125 medical schools are accredited by both the Liaison Committee on Medical Education (LCME) and the Canadian Accreditation Committee, which sits jointly with the LCME. In addition, by the time most Canadians finish medical school, they will have sat through at least part one of the U.S. national boards and perhaps through parts two and three as well. As a result, it appears that the end product at graduation is almost indistinguishable, from one country to another, as far as knowledge and skills are concerned.

However, obvious differences appear in postgraduate training, both in structure and funding. The Canadian system has a primary care orientation from beginning to end; the American system does not. Furthermore, the accepted structure of seeking care in Canada is for the patient to go to a primary care physician first, while, in America, many patients think first of self-referral to a non-primary care specialist. This formalized, first-line care and referral role gives primary care physicians in Canada a balance of power in the physician community.

In addition, the Canadian reimbursement system strongly reinforces the generalist system by paying only a nonspecialist fee to a specialist for providing a primary care service. This primary care orientation is reinforced by the primary care emphasis of Canadian medical education. And finally, unlike the case in the United States, all the provinces in Canada are able, through direct budgeting of GME, to influence the specialty mix in GME training programs.

REGULATORY CAPACITY AND CONSOLIDATION

The number of players in every aspect of medical education and workforce planning is far smaller, both absolutely and relatively, in Canada than in the United States (Table 2). The main difference, however, is that the structure of medical education in Canada seems to reinforce the primary care paradigm. This is particularly evidenced by the presence of a prominent department of family medicine in every Canadian medical school, the resulting strong appeal of this specialty to Canadian medical students, more equitable incomes of family physicians compared to specialists, and a higher regard for the profession of generalist medicine. Furthermore, through their direct budgetary influence over the specialty mix in GME training programs, the Canadian provinces appear to have fostered a greater emphasis on education that, unlike the situation in the United States, gives Canada's medical schools a greater role in GME than teaching hospitals.

Another area of significant difference is the organizational unification in Canada of training program accreditation and specialist certification into single bodies (that is, the Royal College of Physicians and Surgeons of Canada [RCPSA] for all specialties and the College of Family Physicians of Canada [CFPC] for family physicians). In this regard, the United States could hardly provide a greater contrast. In the United States, the 24 specialty boards that set specialty certification requirements, which the training programs are obliged to meet, are autonomous. In addition, the American Board of Medical Specialties (ABMS) is primarily a coordinating organization, while the accreditation function is under an entirely separate organization, the Accreditation Council on Graduate Medical Education (ACGME).

Another key difference between the two countries is the existence of a national health insurance system in Canada. Canada has a predominantly publicly financed, privately delivered health care system that is best

Table 2
Medical Education Organizational Structures in Canada and the United States

Canada	United States
16 medical schools	125 medical schools
10 provinces and 2 territories	50 states + D.C. and Puerto Rico
All post-M.D. programs under control of university	Nearly all post-M.D. programs hospital-based but not under control of university with which program is affiliated
RCPSA accredits/certifies all specialties and CFPC accredits/certifies all family medicine training/specialists	Numerous specialty boards plus separate accrediting bodies
Family medicine the only primary care specialty; all others, including internal medicine and pediatrics, consultant specialties	Family medicine a relatively small field and not the only route to primary care
Post-M.D. training funded via university with provincial government approval	Each program funded separately
ACMC-coordinated, centralized database for all post-M.D. trainees—system can track career/specialty choice location	No one centralized database; difficult to link training to practice

described as an interlocking set of ten provincial and two territorial health insurance plans. This system, known to Canadians as “Medicare,” provides access to universal, comprehensive coverage for medically necessary hospital inpatient and outpatient physician services. The single-payer attribute of Canada’s public insurance has enabled the provinces and territories to control the growth of health expenditures in the public sector more successfully than in the private sector. In addition, the comprehensive funding of both ambulatory and inpatient care may contribute to the greater ease of teaching in ambulatory settings in Canada. The absence of apparent problems with ambulatory teaching in Canada is just one more contrast with the U.S. system, in terms of logistics and the financing of ambulatory medical education.

QUALITY CONTROL

It is important to distinguish between accreditation, which refers to the analysis and evaluation of programs, and certification, which applies to the documentation and appraisal of individuals. In Canada, responsibility for both the accreditation of GME programs and the certification of individuals is assumed by a single organization. The CFPC accredits family medicine programs and certifies individuals as family physicians. The RCPSC accredits specialty programs and certifies individuals as specialists. Currently, there are 55 specialty and subspecialty qualifications available in Canada, in addition to certification in family medicine by the CFPC. In addition, the RCPSC Accreditation Committee has developed a comprehensive set of regulations outlining the general policies of accreditation. The RCPSC has also relied on the various specialty committees, of which there is one for every specialty and subspecialty recognized by the college, to develop supplementary requirements for the approval of hospitals relating to programs in the individual specialties. While policy issues are considered by the specialty committee as a whole, the “core committee” acts as the consulting body to the accreditation committee in matters concerning the accreditation of programs in the specialty.

In the United States, the ACGME has the responsibility for accrediting programs in all specialties, while the task of certifying individuals is the responsibility of the 24 specialty boards which comprise the ABMS. In the United States, the ABMS is presently the umbrella organization for its 24-member boards offering more than 100 specialty and sub-specialty qualifications. The ACGME has developed a coherent program of policies and standards for GME and oversees the accreditation of residency programs in 26 recognized specialties and 74

related subspecialties. Authority to review and accredit residency programs is delegated by the ACGME to the Residency Review Committees (RRC), of which each recognized specialty has its own. The essential components for programs in each specialty are outlined by the RRCs in the United States and by the Specialty Committees in Canada that cover all aspects of a residency program. The systems for accrediting postgraduate medical education programs in the United States and Canada, while similar in purpose, differ in both philosophy and practice. While these differences do exist, it is clear that the educational principles underlying the two systems continue to be held in common.¹

Given the much larger size of the accreditation system in the United States, the cost of the U.S. system is predictably much greater. In comparing the two systems, on a cost-per-program basis, the ACGME’s 1998 budget was \$12 million and the two Canadian colleges’ 1998 budget was \$600,000. The financing of the two systems is quite different, however. The ACGME finances its operations primarily through two sources: a yearly capitation assessment on each accredited program, based on the number of residents enrolled, and a fee for survey visits, which is paid by the program or by its sponsoring institution. The five sponsoring organizations also pay an annual contribution. In Canada, the cost of accreditation is born by the two colleges and is paid out of general revenues, which are primarily membership fees paid by individual physicians.

SOURCES OF GME FINANCING

There are major differences in the GME financing systems in Canada and the United States. In Canada, all university education is highly subsidized by the provincial governments. Education, like health, is a provincial jurisdiction. The Canadian government likes to point out that 37 percent of educational payments come from the federal government, but the other 63 percent come from the provincial governments. In addition, in Canada, tuition fees are fixed by the government and are the same for any Canadian. Consequently, there is virtually no student indebtedness, and the average debt of a graduating Canadian medical student is not a high profile subject as it is in the United States. In the United States, tuition is relatively low in state-supported schools, but living expenses force many students in U.S. public schools to incur significant debt. Furthermore, GME financing in Canada is through explicit provincial budget lines, rather than being commingled with clinical services and clinical research, as in the United States. The provincial ministries of health fund

the majority of GME positions. Furthermore, the number and distribution of GME positions by postgraduate year is a matter of negotiation between the government and the medical school. Moreover, in Canada, house-staff salaries and benefits are determined by negotiation between the government and the provincial house staff association. A small number of GME positions (approximately 15 percent of total positions) are funded from sources other than the Ministry of Health.

The arrangements that govern non–ministry-funded positions vary among provinces. In some, no restrictions apply to the use of nongovernment funds. In others, only government sources may fund GME positions and nongovernment funds may be used to support specific specialty positions, subject to government approval. Government funds for the salaries of university faculty, including medical school faculty who teach house staff, are provided by the Ministry of Education. Although the GME budget provided by the Ministry of Health generally does not include funds to support the salaries of faculty who supervise and teach house staff, in some provinces the Ministry of Health provides funds to pay family physicians who teach in community family medicine training sites. Revenue from providing patient care has become a main source for paying the salaries of clinical faculty. Clinical faculty members submit bills for patient care services to the government, just as they would in private practice. Because of the global financing of hospitals and universities, medical schools find it financially as easy to train in ambulatory settings as in inpatient locales. This contrasts with the constant cries of U.S. medical schools about the financial and administrative difficulties of shifting training out of the inpatient hospital settings prevalent in the United States.

In the United States, the majority of GME funding comes from inpatient revenue and faculty physician billing. About 30 percent of funding comes from the federal government, largely through Medicare; inpatient revenues from a variety of payers and sources cover the rest. Medicare, however, pays set payments for services, regardless of the hospital. Medicare then makes explicit payments to teaching hospitals to cover its “share” of the cost of training residents. Medicare pays for its share in two ways: (a) the direct medical education (DME) payment and (b) the indirect medical education (IME) adjustment. DME represents those costs directly attributable to the education of residents, including salary, fringe benefits, office space, administrative and clerical support, a share of the cost of faculty, and allocated overhead. MedPAC figures for 1997 indicate

that DME expenditures were about \$2.2 billion. The amount of DME varies from institution to institution, and national standardization of DME payments is a component of many reforms. The IME adjustment is meant to reimburse teaching hospitals for their higher inherent operation costs, such as more indigent care, more complex and severe cases, and increased diagnostic testing. The IME adjustment allows teaching hospitals to support their broader mission. In fiscal year 1997, according to MedPAC figures, this was about \$4.6 billion. The federal government, mainly through the two Medicare payments, IME and DME, is the only explicit payer of graduate medical education.

The role of state government in supporting medical education is well-established. Since the late 1940s, states have subsidized loan and scholarship programs as financial incentives for medical students and physicians in training, and most states have provided some level of institutional support for medical education. Most states also elect to provide some level of support for GME. Second to Medicare, Medicaid is the largest payer of GME, providing teaching hospitals close to \$2 billion annually. Although Medicare has a statutory requirement to support GME, state Medicaid programs have no such formal obligation. On average, Medicaid GME payments represent less than 10 percent of a state’s total Medicaid fee-for-service inpatient hospital payments.²

PHYSICIAN WORKFORCE

The health care workforce theme in the United States is particularly significant, given the current health reform debate about the need for increased numbers of primary care providers, the maldistribution of physicians, and the appropriate balance between generalists and specialists in the physician ranks. While federal policymakers have focused on only limited aspects of the health care workforce, the list of issues that most concern analysts looking at the health care work force is very broad. The list includes but is not limited to (a) the adequacy of supply of various health professionals, (b) the geographic distribution of health professionals, (c) potential oversupply and poor distribution of specialty physicians, (d) the costs associated with educating health professionals, (e) the impact that changes in the health care delivery system may have on the financing of health professionals education, and (f) the competency testing of health care professionals.³

Workforce concerns in the United States are complicated by the fact that the responsibility for determining and legislating policy on these issues is not vested

in a single body but is distributed among many parties and levels of government (that is, federal, state, county, and local governments; third-party payers, such as insurance companies and managed care organizations; professional associations; and educational institutions, such as academic health centers that train the health care workforce and determine the educational foundation of practitioners).

The supply and character of the health care workforce available to meet the demand for health services at any given time are also determined by many factors. These include the geographic location of practitioners, the number and type of students in health professions education programs, the number and capacity of educational facilities in both the United States and abroad, the number of foreign-trained practitioners that have immigrated to the United States, the retention rates for health care professionals, the degree of labor force participation, the average age of retirement, and the level of productivity of professionals.

In the mid-1960s, the government determined that there was a shortage of physicians in the United States. Largely as a result of subsequent policy and program innovations, the number of medical schools in the country increased by 50 percent and the number of students doubled between 1961 and 1995. By 1981, the Graduate Medical Education National Advisory Commission was predicting an oversupply of physicians. And, in fact, the number of physicians in this country more than doubled between 1965 and 1994, increasing from under 300,000 to nearly 700,000 in that period, while the population increased by only 45 percent. The resulting ratio of 261 physicians per 100,000 population is significantly greater than that in other industrial countries. Since the advisory commission's 1981 warning, the number of medical school graduates has remained relatively stable (16,000 graduates of allopathic medical schools and 1,700 graduates of osteopathic medical schools per year). The number of residency positions, however, has increased dramatically.⁴

As Canada has developed its generalist-based GME system, the United States has struggled to convert its specialty-oriented GME model. As care has moved from inpatient to outpatient settings, GME in the United States has retained its inpatient teaching hospital focus, reinforced by Medicare GME. Within the last decade, a number of studies and reports have called for the production of more primary care physicians in the United States, and various academic health centers (such as the University of New Mexico and the Univer-

sity of Washington) have responded. Indeed, in recent years, the primary care residency match has reflected increased interest on the part of medical students in entering primary care careers. Nonetheless, the flow of medical school graduates into specialties in the United States continues to predominate.

Various questions have arisen on the road to primary care-specialist parity, some of them related to the trend toward managed care. One concerns the efficacy of the "gatekeeper" model—whether the use of a primary care physician as a decision maker serves the best interests of the patient and provides the best-quality health care. Another relates to the expansion in the scope of practice of other health care providers—whether physician assistants, nurse practitioners, and other such nonphysician providers may be able to provide primary care services more efficiently and cost effectively than physicians.

Comparing U.S. and Canadian GME is somewhat analogous to evaluating apples and oranges, because the two countries have different health systems (or, more accurately, Canada has a defined health system and the United States has a pluralistic structure). However, analysts do reach several conclusions when they make the comparison. Canada produces a physician workforce that reflects a 50-50 mix of generalists to specialists. The unit costs per physician are much less than in the United States. The locales in which the workforce are trained correlate closely with the ambulatory sites in which Canadian physicians provide care to the population. While there are some problems with maldistribution because Canadian physicians—like their U.S. counterparts—tend to prefer metropolitan areas over rural and frontier areas, the workforce seems to be a better fit with the health care needs of Canadian people than is the case in the United States. These assumptions lead to intriguing questions for federal policymakers attempting to improve or reform Medicare GME provisions.

THE FORUM SESSION

This session will compare and contrast the U.S. and Canadian GME systems and provide insight into policies affecting the organization and financing of the U.S. GME system. The meeting will explore how the Canadian GME system produces family physicians and specialists who are considered to be as well-trained and as highly qualified as their counterparts in the United States. It will also feature commentary on the minor problem of specialty physician imbalance in Canada

and the relevancy of the Canadian experience with GME to the debate on GME reform in the United States.

Norman B. Kahn, Jr., M.D., was recently appointed vice president of education and scientific affairs, American Academy of Family Physicians (AAFP). Previously, Dr. Kahn served as the director of the AAFP's Division of Education. After an internship and residency in family practice at San Francisco General Hospital, he had a rural practice in California for four years. He also directed both a community- and university-based family practice residency program, as well as a network of university-affiliated programs. A prolific writer and presenter, he will discuss both the training and service aspects of the U.S. GME system.

Nadia Mikhael, M.D., F.R.C.P.C., this spring became the director of education at the Royal College of Physicians and Surgeons of Canada. In her new role, she is responsible for the accreditation process of the 55 specialty training programs in the 16 Canadian medical schools, the credentialing of all candidates for specialty certification in Canada, the 43 specialty examination processes in both English and French, and the educational research and development activities of the Royal College. A fellow of the College of American Pathologists and the American Association of Pathologists, she most recently was chair of and a professor in the Department of Pathology, University of Ottawa. She will discuss the administration of GME in Canada, including the training requirements of the RCPSC, general standards of accreditation, regulations on residency requirements, and certification.

Mamoru Watanabe, M.D., emeritus professor and faculty dean of medicine at the University of Calgary, will discuss Canada's physician workforce planning and policies and the current state of physician supply in Canada. Dr. Watanabe's work involves analysis of workforce data that permit forecasting and exploring trends as well as exploration of the issues and factors that influence physician needs and supply.

Stephen Gray, M.D., is a medical policy consultant with the British Columbia Ministry of Health. His responsibilities include policy and planning functions for national, regional, and provincial health and human resources. He is a member of the Federal Provincial Territorial Advisory Committee on Health Human Resources and the National Advisory Committee on Postgraduate Medical Training. Dr. Gray will discuss the relationship between government and physicians in Canada (focusing on topics such as methods of payment

and organization of care) as well as GME funding and levers to affect change.

This briefing, followed by a roundtable discussion between participants and presenters, will address the following questions:

- Do the two systems require fundamentally different numbers and proportions of primary care physicians, or are the Canadian requirements only superficially greater because of Canada's more structured generalist model?
- Why did Canada adopt generalist medicine as its model? Is it the difference in terms of its pipeline of general practitioners?
- Should the United States consider further movement towards a consortium or system of medical education built upon one or more medical schools and affiliated teaching hospitals, health maintenance organizations, and other ambulatory training sites involved in GME?
- Should there be more direct U.S. accountability of the financing of GME so that all parties (for example, medical schools, training program directors, and the public) clearly know what funds are being provided for GME?
- Are medical educational institutions in the United States and Canada producing the health professionals needed for an effective and productive workforce in the 21st century?
- Why is half of Canada's physician population in a clearly defined specialty of generalist care? Which Canadian variations or similar structures and themes could be adopted in the United States and which could not?
- How closely are the independent actions of 125 medical schools and more than 7,000 residency programs in the United States coordinated to produce a national physician supply that is aligned with health care needs and decisions about national expenditures for health care?
- What proportion of Canadian medical school graduates cross into the United States for their postgraduate medical education, and vice versa?
- Do the provincial governments in Canada determine the numbers of residencies that they will fund in any province, and do they do so in each specialty? In other words, do they determine the numbers of, for example, dermatology, internal medicine, or pediatrics residencies that they will fund?

- There are two elements in the environment that seem particularly important distinctions in the United States and Canada: the medical malpractice environment and the greater heterogeneity of the U.S. population. How do these two factors affect what the United States would be able to do?

ENDNOTES

1. Josephine M. Cassie, Judith S. Armbruster, Ian M. Bowmer, and David C. Leach, "Accreditation of Postgraduate Medical Education in the United States and Canada: A Comparison of Two Systems," paper presented at the 1998 Annual Conference of the Association for Medical Education in Europe, August 30–September 2, 1998.
2. Tim Henderson, "Financing Medical Education by the States," Forum for State Health Policy Leadership, National Conference of State Legislatures, August 1998.
3. Association of Academic Health Centers, *Health Workforce Issues for the 21st Century*, ed. Paul F. Larson, Marian Osterweis, Elaine R. Rubin (Washington, D.C.: Association of Academic Health Centers, 1994).
4. Forum on the Future of Academic Medicine, Association of American Medical Colleges, "The Physician Workforce," issue paper; accessed at <http://www.aamc.org/about/progemph/forum/issues.htm>, March 1, 1999.