Decreasing supply of family physicians and general practitioners

Serious implications for the future

Audrey Dianne Thurber, MA Nicholas Busing, MD, CCFP, FCFP

ABSTRACT

OBJECTIVE To document a decrease in the supply of family physicians (FPs) and general practitioners among Canadian graduates of medical schools since rotating internships ceased to serve as a route to national licensure.

DESIGN Review of data from the Association of Canadian Medical Colleges, the Canadian Post-M.D. Education Registry, and the Canadian Institute for Health Information to track final training fields and eventual types of practice of graduates of Canadian faculties of medicine from 1987 to 1997.

SETTING Canadian faculties of medicine and residency training programs.

MAIN OUTCOME MEASURES Number of Canadian medical graduates entering family medicine training programs from 1991 to 1998, number of Canadian graduate physicians exiting from these training programs, and proportion of each graduating class (1987 to 1994) practising as FPs or GPs in Canada in 1997.

RESULTS In 1993, 890 physicians (51% of graduates) were trained as FPs or GPs. By 1994, although the proportion remained at 40%, the number of Canadian graduates entering family medicine had dropped to 646, and by 1998, to 619.

CONCLUSIONS A deficit of FPs is already noticeable in the practice environment. For the way in which medical care is delivered in Canada, with FPs serving as first contact for patients, the authors conclude that the number of graduating FPs in Canada will not be sufficient to provide the primary care services Canadians need.

RÉSUMÉ

OBJECTIF Documenter une baisse de l'effectif des médecins de famille et des omnipraticiens parmi l'ensemble des diplômés canadiens des facultés de médecine depuis que les stages d'internat ont cessé d'être le cheminement vers un permis d'exercice national.

CONCEPTION Une étude des données de l'Association des facultés de médecine du Canada, du système informatisé sur les stagiaires post-m.d. en formation clinique et de l'Institut canadien d'information sur la santé pour retracer les disciplines de formation définitive et les types éventuels d'exercice des diplômés des facultés de médecine canadiennes de 1987 à 1997.

CONTEXTE Les facultés de médecine canadiennes et les programmes de formation postdoctorale.

PRINCIPALES MESURES DES RÉSULATS Le nombre de diplômés en médecine canadiens inscrits aux programmes de formation en médecine familiale de 1991 à 1998, le nombre de médecins diplômés canadiens qui complètent ces programmes et la proportion de chaque promotion (1987 à 1994) qui exerce à titre de médecins de famille ou d'omnipraticiens au Canada en 1997.

RÉSULTATS En 1993, un total de 890 médecins (51% des diplômés) étaient formés en tant que médecins de famille ou omnipraticiens. Dès 1994, quoique la proportion se soit maintenue à 40%, le nombre de diplômés canadiens qui s'inscrivaient en médecine familiale avait chuté à 646, et en 1998, à 619.

CONCLUSIONS Il est déjà possible de constater un manque de médecins de famille dans le contexte de la pratique. Compte tenu des modalités de prestation des soins de santé au Canada, selon lesquelles les médecins de famille servent de premiers contacts pour les patients, les auteurs en viennent à la conclusion que le nombre de médecins qui obtiennent leur diplôme en médecine familiale ne sera pas suffisant pour offrir les services de soins de première ligne dont les Canadiens ont besoin.

This article has been peer reviewed.
Cet article a fait l'objet d'une évaluation externe.
Can Fam Physician 1999;45:2084-2089.

The main determinant of the number and proportion of family physicians (FPs) and general practitioners in practice in Canada is the number of graduates of Canadian faculties of medicine who complete training in family medicine or specialty training programs in Canada. Although other factors, such as the number of FPs emigrating from Canada, the number of graduates of foreign medical schools entering family medicine or general practice in Canada, the number of practising FPs leaving family medicine to enter specialty training, and the age and rate of retirement of FPs and specialists, affect the eventual ratio of FPs to specialists in practice, it is the number of entry positions in family medicine and the choices of Canadian medical graduates that mainly affect the number of new physicians entering family medicine.

Because the number of first-year postgraduate entry positions in each faculty of medicine in Canada is determined by the particular faculty of medicine and the provincial government department responsible for funding residency training, the ratio of family medicine to specialty entry positions can be planned and controlled. The total number of new physicians graduating from Canadian medical programs will be ultimately determined by the number of places available in Canadian medical schools.

Since 1994, entry into family practice in all provinces has been primarily through certification in family medicine after 2 years of training in a family medicine program. Gradually since 1977, provincial licensing authorities, starting with Alberta, have increased the required prelicensure training from a 1-year rotating internship to a minimum of 2 years plus family medicine or specialty certification as standard requirements for portable licensure. The gradual phasing out of rotating internships and the resulting shift to direct entry into family medicine or specialty training has meant that the number of entry positions leading to general or family medicine and the choices of those entering postgraduate training ultimately determine the number and proportion of new Canadian medical graduates who will become FPs.

In order to understand the supply of Canadian graduate FPs, we examined the number and proportion of Canadian medical graduates who entered family medicine and rotating internship training programs between 1991 and 1998, who exited these programs between 1990 and 1998, and who are currently in family medicine or general practice (by year of graduation, as listed on the Canadian Institute for Health Information's [CIHI] Southam Medical Database [SMDB] master file as of December 1997).

Ms Thurber *is Director of CAPER, the Canadian Post-M.D. Education Registry.* **Dr Busing** *is Professor and Chair of the Department of Family Medicine in the Faculty of Medicine at the University of Ottawa, Ont.*

METHOD

Data on residency training was supplied by the Canadian Post-M.D. Education Registry (CAPER) database, which is managed by the CAPER Policy Committee comprising representatives from Canadian medical organizations (including the College of Family Physicians of Canada) and the federal/provincial/territorial ministries of health. The CAPER is incorporated within the Association of Canadian Medical Colleges, and data are provided by the offices of postgraduate medical education at the 16 faculties of medicine.

Individual records of each resident and fellow in training are submitted annually and combine to form the database of linked individual records. Data tables for each faculty are verified by postgraduate deans at the faculties of medicine each year. The CAPER database holds data from 1988 to 1998. The policies of CAPER forbid release of information on individuals, but data on groups are released in response to requests from any of the organizations or government departments that participate in funding and managing CAPER. Crosstabulations to produce these data were prepared using SPSS 8 software.

Data pertaining to physicians in practice, provided by the CIHI, originate with the SMDB. This data set has been used since the 1970s as an accurate source of information on physicians in Canada. The data set includes all physicians active in Canada, regardless of how many hours they worked.

The CAPER data give a count (made on November 1) of physicians entering and participating in residency training each year, but there are always entries and exits from training throughout the year. As noted, data from the SMDB used by CIHI to give figures on physician emigration report physicians, not services. We know that the number and type of services provided by individual physicians vary greatly. None of this important information is captured in the data we used in this paper. The paper, therefore, should be appreciated in terms of general trends over time.

RESULTS

Canadian medical graduates entering training

Table 1[1] shows us how many Canadian graduates entered family medicine training programs from 1991 to 1998 and how many entered rotating internship programs from 1991 to 1993. Beginning in 1994, entry to family medicine was the only training option in Canada for anyone wishing to pursue a career in family medicine or general practice. In 1991 and 1992, more than half the physicians who began training in rotating internships would eventually enter family medicine or general practice, even if only for a few years before entering a specialty. This can be seen by comparing the data in **Tables 1** and **2**.[1] For example in 1991, 572 physicians entered rotating internships and in 1992, 348 (60%) physicians exited them directly to become GPs.

When rotating internships were phased out, family medicine positions were not increased nationally to compensate for the loss. From 1994 on, about 40% of new graduates (from shrinking graduating classes) entered training that would lead to eventual practice in family medicine. This shift toward a decreasing number of general (family medicine) entry positions has taken place against a backdrop of cuts to entry positions at medical schools that have been well documented by Eva Ryten.[2] Since 1980, 15% fewer students have entered Canadian faculties of medicine, and 18% fewer Canadian permanent residents (students we expect to stay in Canada) have entered medical programs. Therefore, fewer Canadian graduates have been available to enter either family medicine or specialty training programs.

Table 1. Field of training of Canadian medical graduates at entry to Canadian postgraduate programs, 1991 to 1998

	POSTGRADUATE PROGRAM				
YEAR OF ENTRY	ROTATING INTERNSHIP	FAMILY MEDICINE	SPECIALTY	TOTAL	% IN FAMILY MEDICINE
1991	572	615	449	1636	38
1992	533	646	510	1689	38
1993	153	667	795	1615	41
1994		646	953	1599	40
1995		656	1014	1670	39
1996		638	973	1611	40
1997		642	878	1520	42
1998		619	912	1531	40

Data from CAPER.[1]

Canadian medical graduates exiting training

Table 2 and show the number of physicians with Canadian medical degrees who exited family medicine and speciality training programs and the proportion of FPs or GPs and specialists in the exit cohorts between 1990 and 1998. Only physicians exiting training for the first time were included in the data given here. Those who had received a medical degree 9 or more years before exit were not included in the data, as they were assumed to have previously practised in Canada. This data set gives a slight overestimation of the proportion of new FPs entering practice because physicians retiring from family medicine practice to enter specialty training were not included.

From 1990 to 1993, between 945 and 890 Canadian graduate physicians left rotating internships or family medicine training programs. These physicians had completed the 1 or 2 years of training required for licensure as GPs or FPs. By 1994 and up to the present, the number leaving training at the completion of family medicine requirements dropped to fewer than 700. Note that the 622 family physicians exiting training in 1994 (**Table 2**) came from the 646 who entered family medicine training in 1992 (**Table 1**). The licensure requirement of 2 years' family medicine training resulted in an immediate decrease of more than 25% (890 in 1993 down to 650 in 1994) in new practitioners.

Canadian medical graduates practising by year of graduation

Another way of looking at the question of trends in the number of FPs and GPs graduating in Canada is to examine (by year of graduation) the number practising in Canada in 1997 who had received their medical degrees in Canada between 1987 and 1994 (as listed on the CIHI SMDB master file in December 1997). **Table 3**[3] shows us that, by 1997, there were 632 family physicians practising in Canada who had received Canadian medical degrees in 1994. This is consistent with the data in **Table 1**, which show that

Table 2. Field of training of Canadian medical graduates at exit from Canadian postgraduate programs, 1990 to 1998

YEAR OF EXIT	ROTATING INTERNSHIP	FAMILY MEDICINE	TOTAL (Rotating internship and family medicine) N (%)	SPECIALTIES N (%)	TOTAL N
1990	383	537	920 (51)	878 (49)	1798
1991	399	539	938 (53)	828 (47)	1766
1992	348	597	945 (54)	805 (46)	1750
1993	284	606	890 (51)	872 (49)	1762
1994	28	622	650 (45)	781 (55)	1431
1995		654	654 (45)	784 (55)	1438
1996		692	692 (47)	789 (53)	1481
1997		682	682 (43)	901 (57)	1583
1998		694	694 (44)	886 (56)	1580

Data from CAPER.[1]

only 646 Canadian graduates had entered training in 1992. Family physicians who exited training in 1996 (after 2 years' training) would have received medical degrees in 1994. (Specialists who received medical degrees in 1994 would not exit training until 1998 or later.) The absolute numbers of FPs and GPs practising in 1997 are indicative of the portion from each graduating class who entered family medicine or general practice.

Until 1990, family medicine or general practice was the final practice field of well over half (57% to 61%) of each class of Canadian graduates who took up practice in Canada. The total practice pool, including those who received their medical degrees outside Canada, is not weighted as heavily in that direction because a larger proportion of graduates of foreign medical schools practising in Canada are in specialty practice.

Trends in emigration to the United States have resulted in more specialists than FPs taking up active practice in the United States. This has meant that a higher proportion of Canadian graduate GPs and FPs actually went into practice in Canada than completed training in Canada. Of all Canadian graduates since 1956 active in the United States in 1997, 20% are in family medicine or general practice (American Medical Association masterfile, 1997). Since 1995, however, more than 50% of the Canadian physicians emigrating to the United States are FPs.[4] A continuation of this trend would further decrease Canada's supply of FPs.

DISCUSSION

From three perspectives, there is evidence of decreasing numbers and proportions of Canadian medical graduates becoming FPs or GPs. Between 1991 and 1998, the number of Canadian graduates entering training for family medicine or general practice dropped from approximately 801 to 619, a 23% drop. The number of physicians exiting this training between 1990 and 1998 dropped from 920 to 694 (25%). Looking at the full practice pool, we find that the number of FPs and GPs dropped steadily from 864 of the 1987 Canadian medical graduates to 632 of the 1994 graduates, a 27% decrease (**Figure 1**).

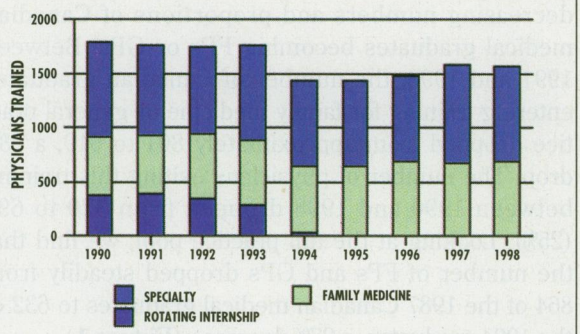
Supply side

Data in this paper are limited to Canadian medical graduates. Immigration, however, has made an important contribution to overall physician supply in Canada. Has it been especially important for family medicine? The short answer is no. Up to now, physicians who graduated abroad have contributed proportionately more physicians to our supply of specialists than to our supply of FPs. Canadian Institute for Health Information data from 1997[3] show that 28 108 (51%) of all 55 243 practising physicians were FPs or GPs. Only 46% of foreign medical graduates were FPs. According to CIHI data, our own medical graduates have supplied 78% of the FPs and GPs currently practising in Canada.

If this pattern continues, we cannot expect new immigrant physicians to increase our supply of FPs. Recently, however, some provinces have stepped up recruitment of foreign physicians to provide needed family medicine services to Canadians. These efforts certainly could lead to an increase in the proportion of foreign FPs relative to specialists in Canada. It would be most unfortunate if a failure to plan ahead means that we cannot supply our own physicians from the excellent training programs we have designed to educate FPs specifically for the needs of Canada's diverse and unique population.

Emigration could also affect the supply of FPs in Canada. Although many new FPs are said to be leaving certain regions of Canada, this is not yet reflected in national data from CIHI. We are certainly aware, however, that Canada-trained FPs are appreciated in

Figure 1. Physicians leaving postgraduate medical training, 1990 to 1998: *Since 1994, when rotating internships were phased out, the number of physicians completing family medicine training has never increased to make up for the loss of the 1-year trained FPs.*



the United States, which has a potential market 10 times the size of Canada. Family medicine training programs in the United States are just beginning to catch up with the demand of health maintenance organizations for versatile generalists. The number of Canadian FPs emigrating has remained relatively stable in the last 3 years. According to CIHI data,[3] 280 FPs moved abroad in 1995, 292 in 1996, and 250 in 1997. This represents less than 1% of the practice population. If our young physicians find practising abroad is particularly attractive, however, the negative effect on Canada's physician resources is cause for concern.

Retirement from practice is another aspect of FP supply that must be considered. According to data from the Canadian Medical Association's masterfile,[4] between 1995 and 1998, an average 2% of FPs have retired each year. In 1998, 572 FPs retired; we expect the number of retirees to increase gradually as the large number of physicians who entered the work force in the 1960s begin to retire by 2010. Surely we cannot continue to deliver medical care with the same mix of primary care physicians, specialists, and health care workers that we have in the past.

Demand side

Looking on the demand side, do we expect the requirements for FP services to change in Canada? According to Statistics Canada data for 1997-1998,[5] the population was increasing at 1% annually. The age structure is very important: currently, 12% of the population is older than 65 and, in 20 years, that proportion will increase very steeply to 18%. Saskatchewan has the oldest population at this time with 15% of Saskatchewan residents older than 65. Saskatchewan is already experiencing difficulty meeting the health care needs of its population using Canadian medical graduates with access to care through FPs. Already, the number of FPs per 100 000 population in Canada has dropped from 101 in 1993 to 93 in 1997 (an 8% drop) during a time when the population increased by 4%. In Ontario, one of the fastest growing provinces, there were only 86 family physicians per 100 000 population in 1997.

These projected population trends tell us there will be no decrease in the need for family medicine services in the future. Given both the decreasing supply of all physicians graduating in Canada and the decreasing supply of FPs specifically documented in this paper, government and educators must be alerted that we are not even keeping up with population growth. How family medicine services will be provided and by whom are questions that must be brought to public discussion rather than be answered by default. Initiatives, such as primary care reform and new forms of reimbursement for FPs, are already upon us. They attempt to stretch the resources we now have.

Table 3. Canadian medical graduates active in Canada in family medicine or general practice

YEAR OF GRADUATION	NO. OF PHYSICIANS IN ACTIVE PRACTICE	NO. OF PHYSICIANS IN FAMILY MEDICINE OR GENERAL PRACTICE N (%)
1987	1511	864 (57)
1988	1524	850 (56)
1989	1441	855 (59)
1990	1451	890 (61)
1991	*	835
1992	*	828
1993	*	640
1994	*	632

Data from Canadian Institute for Health Information (December 1997).[3]
**Because many future specialists were among this group, the ultimate number of graduates who will practise in Canada cannot be determined.*

Key points

- In 1994, rotating internships were phased out. There was no increase in family medicine residency positions to compensate.
- In 1993, 890 physicians (51% of graduates) were trained as family physicians and general practitioners. By 1998, only 619 physicians (40% of graduates) were entering family or general practice. This is a drop of nearly 25%.
- Against this backdrop of decreased supply are projected the problems of increasing numbers of physicians retiring and an increasingly aged population.
- The traditional 50:50 ratio of family physicians and general practitioners to specialists is also being changed as a result of cuts to training programs.

Points de repère

- En 1994, on abandonnait graduellement les stages d'internat. Il n'y a eu aucune hausse de postes de résidents en médecine familiale en contrepartie.
- En 1993, un total de 890 médecins (51%) étaient formés à titre de médecins de famille et d'omnipraticiens. En 1998, seulement 619 médecins (40% des diplômés) s'inscrivaient en médecine familiale ou en pratique générale, ce qui représente une baisse de près de 25%.
- À un effectif réduit viennent s'ajouter les problèmes anticipés d'un nombre accru de médecins qui prennent leur retraite et du vieillissement à la hausse de la population.
- Le ratio traditionnel de 50:50 de médecins de famille et omnipraticiens et de spécialistes a également changé à la suite des coupures aux programmes de formation.

Delivery of medical care

A decrease in the proportion of FPs has implications for the way medical care is delivered in Canada. With a 50:50 FP-specialist mix, we have relied on FPs to serve as first contact with the medical care system and to provide referral to specialists. This is not the only model, but it has served Canada well and is generally accepted as being less expensive than a system in which patients have direct access to specialists. Canadians have come to expect a FP to be their first contact for medical care. If changes in this approach to health care delivery are being considered, discussion should be open and should begin very soon. Changes that would place less reliance on FPs would have implications for our educational programs, both for physicians and other health workers, and would require a change in Canadians' expectations.

CONCLUSION

Although other factors will contribute to adjustments in the eventual FP-specialist mix of the Canadian practice pool, the initial postgraduate training field chosen by Canadian graduates has by far the most impact. The number of entry-level family medicine positions is determined by the Canadian faculties of medicine in collaboration with the provincial governments that fund the positions. The number of Canadian medical graduates and their choices ultimately determine how many physicians enter these positions.

Family medicine is a popular career choice of new Canadian graduates. In the 1997 Canadian Resident Matching Service (CaRMS), all 453 family medicine positions were filled. Family medicine positions however, made up only 37% of the positions offered in the match. (Laval University, Sherbrooke University, and the University of Montreal do not submit their training positions into the CaRMS match.) If current trends in the proportion of Canadian graduates entering family practice continue, there will not be enough new graduates entering family medicine to maintain the traditional 50:50 practice ratio of FPs to specialists in Canada.

Correspondence to: *A. Dianne Thurber, Canadian Post-M.D. Education Registry (CAPER), 774 Echo Dr, Ottawa, ON K1S 5P2*

References

1. Canadian Post-M.D. Education Registry. CAPER Annual Census of Post-M.D. trainees, 1990 to 1998. Ottawa, Ont: CAPER; 1998.
2. Ryten ER. Enrolment in MD programs at Canadian universities in 1996/97: just how much downsizing has occurred? ACMC Forum 1997;30:3-7.
3. Canadian Institute for Health Information. Supply, distribution and migration of Canadian physicians, 1997. Ottawa, Ont: Canadian Institute for Health Information; 1997.
4. Canadian Medical Association. Canadian Medical Association masterfile. Ottawa, Ont: Canadian Medical Association; 1998.
5. Statistics Canada. Social trends in Canada seminar. Ottawa, Ont: Statistics Canada; 1999 Catalogue no. IOH0052.