



# DEMOGRAPHICS AND CANADA'S PHYSICIAN SUPPLY

by Nadeem Esmail

In late October, the Canadian Institute for Health Information (CIHI) released a report on the physician workforce in Canada which found, among other things, that Canada's physicians are ageing, and that women now make up a larger share of the physician workforce than in years past (CIHI, 2007). These changes may make the shortage of physicians in Canada more acute over time even if the physician-to-population ratio remains constant or grows slightly. In fact, despite recent increases in medical school admissions, Canada's physician-to-population ratio is poised to fall in the coming decade unless there is a

significant addition of foreign-trained doctors (Esmail, 2006a).

Understanding this dynamic and dealing with it proactively will be essential if Canadians are to avoid an even greater shortage of physicians in the future.<sup>1</sup>

## Age, Sex, and Supply

In 2006, 33.3% of Canada's physician workforce was female, up from 30.9% in 2002. In addition, 48.6% of physicians under the age of 40 were female, which suggests that females will make up an even larger portion of the physician workforce in the future (CIHI, 2007).



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This conclusion is supported by the fact that females made up more than half of all first year medical students and medical graduates in Canada in the early part of this decade (Buske, 2005).

To be clear, there is nothing wrong with a greater representation of females in the physician workforce. Indeed, women in Canada may see this as a positive development as it will give them greater access to a female caregiver. However, from a physician supply perspective, the feminization of the physician workforce in Canada will mean that more physicians may be required

in the future, just to maintain the current level of services delivered, let alone expand them.

**In 2006, 33.3% of Canada's physician workforce was female, up from 30.9% in 2002.**

Female physicians, in comparison to their male counterparts, tend to provide fewer services per week to patients and tend to work fewer hours per week as well. According to the *2004 National Physician Survey*<sup>2</sup>, female physicians spent an average

of seven fewer hours per week on professional activities in comparison to male physicians. That difference was less pronounced among specialists (~4 hours) than it was among family physicians (8 hours) (Buske, 2005). Similarly, Watson *et al.* (2006) found that, on average, female general practitioners (GPs) held workloads equivalent to 68% of their male counterparts' in 2001, while Slade and Busing (2002) found that female GPs worked fewer hours and delivered fewer clinical procedures per week than their male counterparts in 1997/98.

**Family physicians younger than 54 provided fewer office assessments in 2001 than their peers in the same age groups did in 1992.**

The fact that physicians in Canada are ageing in concert with the general population will also have important implications for the future physician supply. In 2006, 19.2% of Canada's physicians were 60 or older, and 47.3% were 50 or older (CIHI, 2007).<sup>3</sup> In light of this fact, two issues must be considered: first, older individuals tend to work less than when they were younger, and second, younger physicians are working less than physicians in the past did when they were younger.

Watson *et al.* (2006) found that family physicians younger than 54 provided fewer office assessments

in 2001 than their peers in the same-age groups did in 1992.<sup>4</sup> The same was true for work hours: GPs aged 54 and younger worked fewer hours per week than their counterparts in 1993. As Buske (2005) notes, "[b]oth national and provincial studies have shown that younger physicians today do not work the same hours or bill the same volume of services as did the same group 20 years ago..." (2005: 7). However, thus far, the decreased work hours and volume of services performed by younger physicians has been mitigated to some extent by the fact that older physicians in Canada are working longer hours and providing more services than their peers did 10 years ago (Watson *et al.*, 2006).<sup>5</sup>

This increased work effort of older physicians may have important additional consequences when these individuals decide to retire. In 1992, a GP nearing retirement carried a workload slightly smaller than that of a new physician (under age 35), while in 2001, a GP nearing retirement (aged 65 or older) carried a workload 1.6 times that of new physicians. That difference grew to 2.1 times when potential early retirees (aged 55-64) were compared with new physicians in 2001 (Watson *et al.*, 2006). Watson *et al.* conclude that "the coming wave of physician retirements could cause unprecedented annual rates of shrinkage in [General Practitioner/ Family Practitioner] service volumes" (2006: 1626). Similarly, Buske (2005) predicts

that younger physicians may build smaller practices—in terms of the number of patients they take—than their older counterparts. As a result of the ageing physician population, physician retirements are likely to increase in the coming years (for example, see Kermode-Scott, 2004).

It is clear that the shifting demographics of the physician workforce will have important consequences for future physician supply. Indeed, it is entirely possible that a greater physician-

to-population ratio will be required in the future in order to deliver the same volume of services that Canadians enjoy today. And the volume of services being delivered today in Canada is already insufficient to meet demand (for example, see Esmail, 2006a; Statistics Canada, 2004; and Statistics Canada, 2006).

### Where To From Here?

What is the solution to this problem? First, it should be recognized that the current and looming shortages of physician services in Canada are





not the result of a market failure or the result of happenstance. Rather, they are the direct result of government intervention in the health care marketplace. Without restrictions on extra billing (allowing physicians to charge patients a price above the standard fee set by the provincial health program or to require payments in addition to those set out or provided by the provincial health program), physician activity (such as annual activity limits, and billing caps and restrictions), and the training of medical practitioners, and without the prohibition of cost sharing for medically necessary services (where patients are required by the provincial health program to pay a fee or portion of the charge for the service consumed), a shortage would not have occurred (Esmail, 2006a). Removing these restrictions and implementing cost sharing for publicly insured services, as well as increasing private competition in the delivery and financing of health care, should be the ultimate goal of governments as these changes would improve access to health care in Canada (Esmail, 2006a; Esmail and Walker, 2007).

However, there are beneficial solutions that can be implemented even within the current policy regime. First, the government must do no more policy harm. Specifically, current discussions on changes to the core structure of how physician services are remunerated— which often accompany proposals for primary health care reform in

Canada's provinces<sup>6</sup>—should be shelved. The current fee-for-service regime, where physicians are paid for each service or treatment delivered, gives physicians the incentive to provide a higher volume of services than if they were paid an annual salary or paid on a capitation basis (an annual fee for each patient registered with their practice). Moving away from fee-for-service funding for physician services will necessarily mean fewer services are delivered per physician (Esmail and Walker, 2007), which is the opposite of what is required today and will be required in the future.

**Removing all restrictions on the volume of services that are publicly funded would increase the number of services that are available to Canadians today.**

In the short term, it is critical to understand what economists call the “labour-leisure tradeoff” in order to mitigate the reduction in supply that may result from these changes in demographics. Put simply, the labour-leisure tradeoff is the balance between time for labour and time for all other activities, as determined by each individual based on the value of their labour and the value of the time they have to do all other things. If the relative value of their labour rises, they are likely to commit more time to work rather than non-labour activities and vice versa. Recognizing

this basic economic concept leads to two important short-term solutions.

Incomes of both general practitioners and specialists are currently restricted in a number of ways. For example, there are limits on the number of patients who can be treated in certain time periods, and on the total annual billings of physicians. Such restrictions reduce the supply of services delivered by active physicians by reducing their earning potential or the value of their labour beyond a certain limit. Removing all restrictions on the volume of services that are publicly funded would increase the number of services available to Canadians today from the current stock of physicians, and would encourage physicians to deliver more services in the future.

At the same time, the value of non-labour time appears to be higher for younger physicians and female physicians than for their older, male counterparts. Indeed, medical students appear to be gravitating increasingly towards specialties that offer more regular work schedules, more leisure time, and higher earnings, which may reflect their desire to choose a different balance between professional and personal commitments than previous cohorts (Simoens and Hurst, 2006; CIHI, 2006).<sup>7</sup> Similarly, the relationship between work hours and the presence and age of children suggests that female physicians with younger children place greater value on non-labour time than their colleagues with older children or no

children; conversely, male physicians with no children place a higher value on non-labour time than their colleagues with children (Martin, 2003). The work patterns discussed above also suggest that younger and female physicians place a higher value on non-labour time.

**Doctor shortages would be mitigated over the long-run as students could expect sufficient returns on their education by attracting patients with unmet health needs.**

Obviously, increasing the earning potential of physicians will have some impact on the labour/non-labour tradeoff these younger and female physicians are making. However, these physicians' desire to practice less than current physicians suggests that annual activity limits may be less of a barrier to work for the next generation of physicians than previously. Increases in the value of fees billed for services may be another monetary tool that could be employed to the benefit of patients.<sup>8</sup> Additionally, a reduction in the rate of taxation for middle and upper income earners would have a similar effect on physician work effort.

Of course, as the amount of time committed to non-labour activities decreases, the value of the remaining time rises, and, as a result, there will be some point beyond which

mechanisms other than increasing the value of labour will be more cost-effective. Reducing the cost of labour time—the cost of spending time at work—may be yet another avenue by which the impact of changing demographics could be mitigated. Options for policy makers in this area include providing compensation for daycare services for female physicians with children, and finding ways to provide better access to locum tenens (temporary substitute) coverage for physicians desiring a vacation.

Over the long term, the simplest solution to the problem of a reduced supply of physicians and physician services is to gain additional physicians. But the number of additional physicians, or indeed the number of physicians, period, should not be determined by governments and their funding decisions. Rather, the number of physicians should be determined by patients' needs and students' decisions. For provincial governments, this would mean fully deregulating tuition levels and admissions requirements for postgraduate training, thus freeing medical schools and teaching hospitals to determine their own admission levels.<sup>9</sup> Such a change would allow students to decide whether or not a career in medicine is worthwhile, given that their earning potential would not be artificially restricted. Doctor shortages would be mitigated over the long-run as students could expect sufficient returns on their education by attracting patients with

unmet health needs and patients who may be willing to change doctors, for example.<sup>10</sup>


**If the decision on whether or not to become doctors had been left to Canadians, it is likely that there would be more doctors serving Canadians.**

Of course, if governments had not intervened in physician training in the first place, this article would have been one of general interest, rather than concern for future physician supply. Training would have already begun adjusting automatically to reflect changing conditions in the workforce. If the decision on whether or not to become doctors had been left to Canadians, it is likely that there would be more doctors serving Canadians (Simoens and Hurst, 2006; Esmail, 2006a).

## Conclusion

The shifting demographics of Canada's physician workforce may mean that, in the future, more physicians will be required to deliver the same volume of services being provided today. Dealing with this dynamic requires removing governmental restrictions on income so as to encourage a greater supply of services from the current and future stock of physicians. It may also require increasing physicians' earnings and fees, and reducing the

costs of working. As well, over the long-term, removing governmental restrictions on the training of physicians will result in a more dynamic physician supply that is better able to respond to changes in patient demand and the labour-leisure tradeoffs of individual physicians.

When it comes to physician training and services, governments must allow the market to work, rather than trying to manage it to the detriment of patients and taxpayers alike. 



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## Notes

- 1 Shortages can only occur when prices are not permitted to adjust. Prices will naturally rise in any functioning market where goods or services are in short supply relative to demand, thus encouraging new supply and reducing demand simultaneously. The outcome is equilibrium of supply and demand (no shortage or excess). In the Canadian health care marketplace, such adjustment is impossible because of restrictions on both the prices and the supply of medical services. Without restrictions on extra billing, physician activity, the training of medical practitioners, and the prohibition of cost sharing for medically necessary services, a shortage would not have occurred.
- 2 The *2004 National Physician Survey* was a survey of all Canadian physicians practicing in early 2004. The survey was undertaken by the Canadian Medical Association, the College of Family Physicians of Canada, and the Royal College of Physicians and Surgeons of Canada (CIHI, 2006).
- 3 According to the *National Physician Survey*, 16.2% of family practitioners were 60 or older compared to 22.4% of specialists (CIHI, 2007). This suggests that retirements in the coming years may be felt more in the specialist supply than in the supply of family doctors. At the same time, female medical graduates tend to gravitate towards family medicine, pediatrics, and obstetrics/gynaecology, while male graduates gravitate towards surgical specialties (Buske, 2005). This also suggests that the future supply of specialist physicians may be of particular concern.
- 4 The differences between same-age cohorts were larger among females than they were among males.
- 5 Watson *et al.* (2006) note that the volume of services physicians are providing in



at least two age cohorts are neither increasing nor decreasing over time: those aged 45-54 in 2001 provided roughly the same number of services in total as those aged 35-44 in 1992. This was also the case with those aged 55-64 in 2001 when compared with those aged 45-54 in 1992. Elderly cohorts in either time period delivered fewer services in total than their younger counterparts did.

- 6 In 1997/98, GPs working in multidisciplinary clinics, which are often considered in discussions of primary care reform in Canada's provinces, reported fewer weekly work hours on average when compared to GPs in solo or family practitioner group practices, and reported delivering fewer clinical services than GPs in family practitioner group practices (Slade and Busing, 2002).
- 7 According to the 2004 *National Physician Survey*, "the largest predictor of satisfaction with current professional life" for both family physicians and specialist physicians "was satisfaction with the balance between professional and personal commitments" (CIHI, 2006: 6, 8).
- 8 Allowing physicians to bill extra for services (i.e., charging patients a price above the standard fee set by the provincial health program, or requiring patients to make payments in addition to those set out or provided by the provincial health program) would also be a solution. However, extra billing is prohibited by the *Canada Health Act* and so is not a policy solution that could be implemented by provincial governments unless they were willing to give up all or a portion of their share of federal transfers for health and social services (Esmail, 2006b).
- 9 McArthur (1999) notes that postgraduate trainees can increase the number of services that a facility delivers in a cost-effective manner as they are able to deliver (in later years of training) near-physician care at a substantially lower

cost than fully trained physicians. He recommends that teaching hospitals be required to pay for all patient care provided, including the care provided by physicians (who currently bill the provincial health plan and are "free" to hospitals, and, therefore, are used more often than postgraduates who are paid by the hospital), giving them the responsibility of determining the allocation of service delivery between lower-cost trainees and higher cost but more capable teaching staff. The outcome of this shift in the financing of teaching hospitals would inevitably be more postgraduate training positions at Canada's teaching hospitals, some of which may be privately financed. This author recommends a similar shift in the responsibility for determining the optimal allocation of trainee resources, but to individual teaching physicians instead of institutions.

- 10 Simoens and Hurst (2006) found that nations that have traditionally relied on largely unregulated markets for physician training or that have only recently begun controlling medical training have experienced higher levels and growth rates of their physician-to-population ratios than nations, including Canada, that have controlled intake for many years.

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