

## **The Supply and Migration of Canadian Physicians, 1970-1995: Why We Should Learn to Love an Immigrant Doctor\***

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Over twenty years ago, Robert Evans (1976) argued that the health care industry in Canada required major restructuring in order to restrain rising costs. A central cause of the problem was the oversupply of physicians which tended to generate greater utilization of services. The optimal solution involved a combination of closing some medical schools, increasing the use of intermediate-level practitioners, and continuing to "import" foreign-trained physicians. But given the general political climate, and the power of doctors' organizations in specific, he acknowledged that "restriction of immigrants is probably the only feasible second-best approach" even though this simply deferred the hard question of the appropriate "output" of Canadian medical schools. It was in these terms, and voiced with a measure of regret, that he explained "Why No One Loves an Immigrant Doctor" (Evans 1976).

Two decades later, the spectre of an impending shortage of physicians has reemerged (Ryten et al 1998). Attention centres not only on the persistent underservicing of rural areas, but also on an absolute shortage aggravated by emigration to the United States. Nor is this concern over outmigration tempered by the prospect of increased levels of immigration. Given the

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commitment within the profession to "self-sufficiency" -- that is, for Canada to "produce" all of its own physicians in its own medical schools -- the potential supply of foreign-trained doctors continues to meet stern resistance.

This paper examines the trends in the supply, income and migration of Canadian physicians over the past 25 years. The number and the incomes of Canadian physicians increased steadily until restrictions on provincial health care spending after 1991 brought the growth in both to an abrupt halt. But as economic conditions within the profession declined, the rate of emigration increased. In this new economic and policy environment, we suggest that it is an opportune time to rejoin the issue of immigration as a vehicle for addressing the provision of health care services in Canada.

### The Supply of Canadian Physicians

In 1964, the Hall Royal Commission recommended that the capacity for medical training in Canada increase to meet an anticipated growth in population. Three new medical schools emerged. Within a decade, the annual number of medical school graduates nearly doubled and the country's stock of physicians expanded by over 67 per cent. Whether this increase was warranted is open to question. Evans (1998) notes that it was based on erroneous population forecasts which expected the baby-boom rate of population increase to persist. As the pace of actual population growth slowed, the number of physicians per 1,000 population steadily increased from 1.3 in 1964 to 1.9 in 1981.

More persuasive in the "too-many-doctors" view was the argument of "supply-induced demand": that the utilization of physician services grew apace with the increased number of physicians. While patients choose when to make an initial visit, they rely upon the advice of their physician for subsequent medical care. Physician behaviour also had implications for other costs; as health care planners and hospital administrators discovered, a "bed built was a hospital bed filled" (Evans 1984, 1976). Accordingly, the increase in health care expenditures far exceeded the growth in population.

The force of these arguments notwithstanding, the irony was that despite an apparent oversupply of physicians, several areas remained acutely under-served. Given the longstanding proclivity of doctors to concentrate in larger urban centres, many rural areas experienced difficulty in recruiting and retaining general practitioners and particularly specialists. There was no compelling evidence that merely increasing the number of physicians would remedy the problems of their geographical maldistribution; instead, it merely exacerbated over-servicing in major urban areas (Bolduc et al 1996).

The early 1990s, however, marked a shift in public health care expendi-

tures. With the widespread preoccupation of provincial governments with deficit reduction, and with the general failure of user-fees and other demand-side initiatives, the number and earnings of physicians became the target of various "cost containment" measures.<sup>1</sup> Provincial initiatives sought to address the fees, incomes, and number/location of physicians:

- **Fee schedules.** Negotiations between the province's government and its medical association over fee-for-service payments became more "one-sided" with some governments choosing a "take it or leave it approach" or unilaterally imposing fee schedules (Deber et al 1994). The general result was a much slower rate of growth in fees.
- **Utilization rates.** Several provinces (New Brunswick, Newfoundland, Quebec) placed absolute "caps" on their overall health care budgets or total payments to physicians. Others (Ontario, British Columbia) limited individual physician incomes and/or the rate of increase in aggregate physicians billings. By 1992, all six provinces east of Manitoba began experimenting with "nonlinear" compensation schemes for physicians wherein practitioners billing above a certain threshold received only a percentage of the normal fee. The strictest limitations were imposed in Quebec, where general practitioners receive only 25 per cent of their annual billings above a threshold of \$180,000 (Ferrall et al 1998).
- **Number and location of providers.** In a report commissioned by the provincial deputy ministers of health, Barer and Stoddart (1991) recommended reductions in the number of health care providers, including a 10 per cent decrease in medical school enrolment and less "reliance on graduates of foreign medical schools in the longer term." In 1993, Ontario obliged by cutting 75 places in its medical schools and other provinces responded similarly. To discourage physicians from locating in the "wrong places," Ontario also attempted to reduce fees by 75 per cent for five years for new graduates in family medicine, pediatrics, and psychiatry who established practices in areas that the Ministry of Health judged to be "overserved." When this met with the threatened withdrawal of services, the plan was abandoned in favour of a prohibition on physicians educated outside of the province from entering fee-for-service practice (Deber et al 1994). In Quebec, differential fees designed to affect a more desirable geographic distribution of physicians met with some success (Bolduc et al 1996).

The impact of these initiatives on the income of physicians became apparent

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1. User fees were generally dismissed as counterproductive; the gains from discouraging unnecessary office visits tended to reenter health costs with a vengeance (Deber et al 1994).

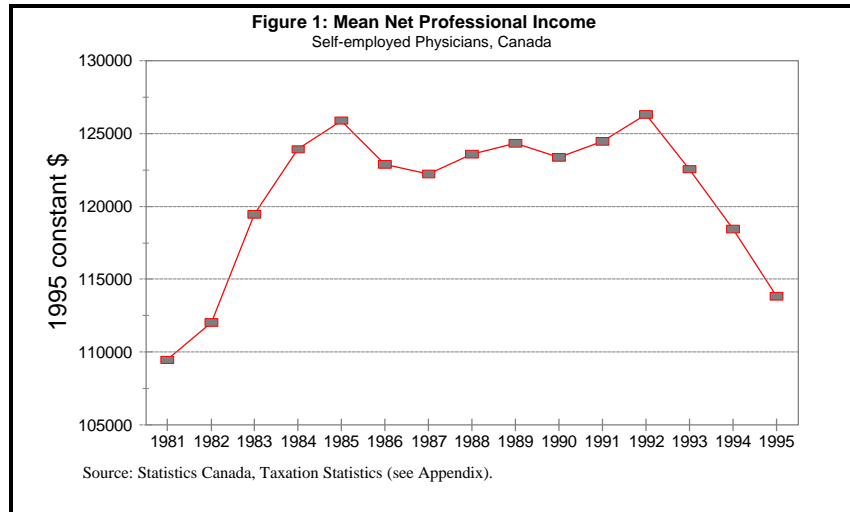


FIGURE 1 Mean Net Professional Income, Self-Employed Physicians, Canada

by 1993. Figure 1 displays the mean pre-income tax, net professional earnings (expressed in 1995 constant dollars) of all self-employed physicians between 1981 and 1995. After suffering a substantial erosion in real earnings during the 1970s, Canadian physicians enjoyed a steady improvement in average income from \$109,471 in 1981 to \$126,322 in 1992. But in the subsequent three years, real earnings fell substantially such that by 1995 most of the gains physicians had made during the 1980s were dissipated.

The reduced "output" of medical schools coupled with falling incomes has given new currency to warnings by medical associations of a shortage of physicians. Recent health care policies have brought profound changes in the profession, and rekindle the debate over the supply of physicians. But before the dynamics to supply can be understood fully, it is necessary investigate more thoroughly the relationship between incomes and migration.

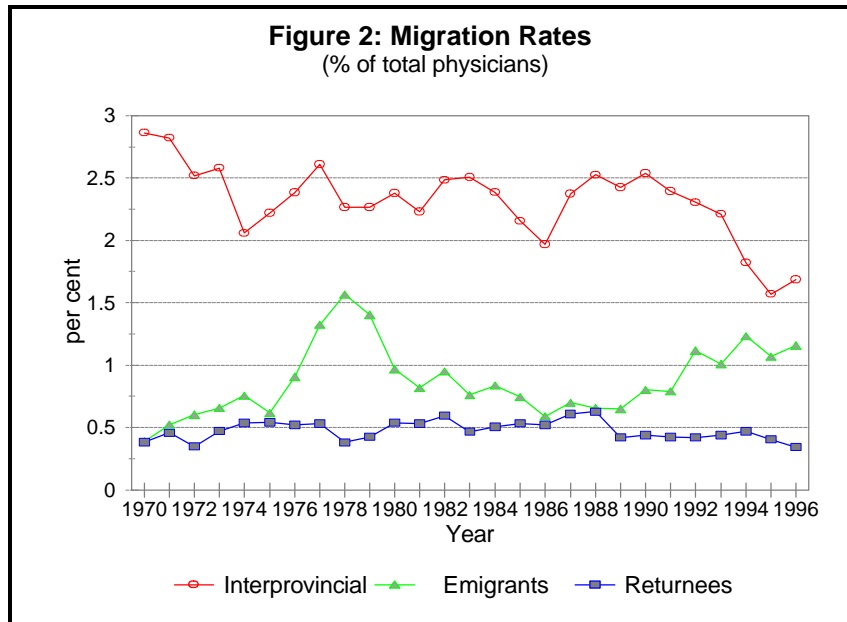


FIGURE 2 Migration Rates (% of total physicians)

### Interprovincial and International Migration of Canadian Physicians

As efforts to contain health care costs after 1991 reduced the real income of physicians, it indirectly affected their pattern of migration. Between 1970 and 1990, roughly 2.5 per cent of the stock of active physicians moved between provinces each year. By 1995, however, this rate had fallen to 1.5 per cent. In other words, roughly 500 fewer doctors were moving between provinces each year. Figure 2 summarizes the rate of interprovincial gross migration (that is, total movers within the country), the rate of emigration from Canada, and the rate of “returnees” from abroad.<sup>2</sup>

Moreover, different degrees of conviction among governments to curtail health care expenditures have yielded large variations between provinces in hospital capacity, fee structures, and global caps on total funds paid to physicians (Farrell et al 1998). In the past the Atlantic region, Quebec, Manitoba

2. Migration data is for “active civilian physicians” provided by the Canadian Institute for Health Information. Rates of migration are expressed as a percentage of the number of active physicians at the beginning of the year. See Appendix.

and

Saskatchewan typically experienced net outmigration; flows into and out of Alberta were fairly balanced; while Ontario and British Columbia received a net inflow. Since 1990 this pattern has been modified by provincial deficit reduction; in particular, following the election of the Klein Government in Alberta, the province has witnessed a net outmigration of physicians to other provinces (Figure 3a and 3b).

As domestic opportunities diminished, emigration has increased significantly. Following the dramatic "spike" in emigration in 1978, the outflow of Canadian physicians steadily fell such that by 1988 it was almost matched by the return flow from abroad (Figure 2). Six years later, however, the rate of emigration had doubled: in 1994, 777 physicians (or 1.5 per cent of the country's stock of active physicians) left the country.

The departure of Canadian physicians to the United States was facilitated by a relaxation in American licencing and immigration laws after 1962. Restrictions were increased after 1977, but with the rapid expansion of Health Management Organizations (HMOs), the United States once again became more receptive to foreign-trained physicians (Noether 1986; Evans 1998). Ryten et al (1998) tracked the "Class of 1989" and found that seven years later 11 per cent of the 1,722 graduates of Canadian medical schools were practising outside of the country. Outmigration was particularly acute among specialists: of doctors practising in the country, 56 per cent were in general or family practice and 42 per cent were specialists; while of those

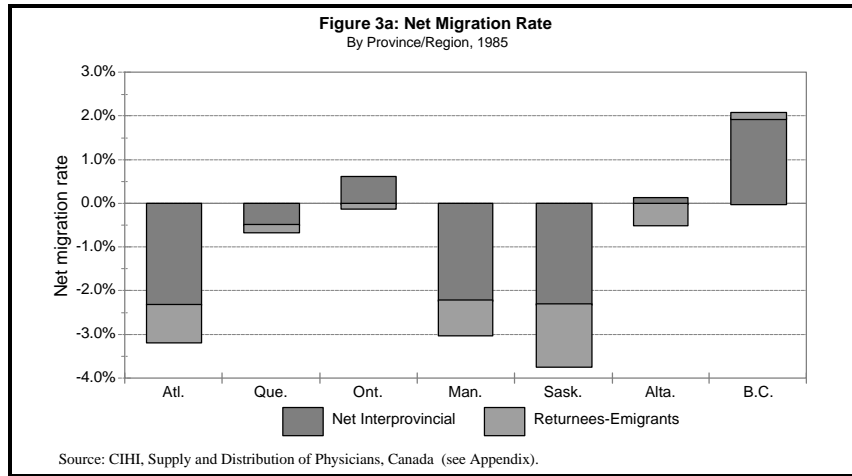


FIGURE 3a Net Migration Rate by Province/Region, 1995

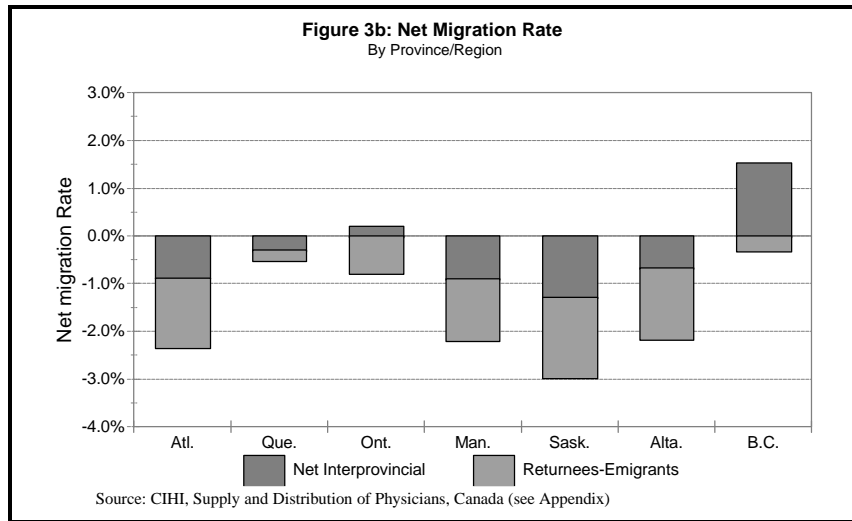


FIGURE 3b Net Migration Rate by Province/Region

outside the country, only 27.5% were in general or family practice and 72.5% were specialists.

International migration tends to amplify provincial gains and losses. Figures 3a and 3b compare the net migration rates for Canadian provinces

or regions in 1985 and 1995.<sup>3</sup> The capacity of certain regions to recruit and retain physicians depends on relative conditions in other regions, whether domestic or international. Thus it comes as no surprise that net losers in terms of interprovincial migration also experience a substantial outflow of physicians to the other countries. In the Atlantic region and the Prairie provinces, the net international outflow (emigrants less returnees) now exceeds the net interprovincial outmigration. The cumulative effect is substantial: Saskatchewan, for instance, loses approximately 3 per cent of its stock of physicians each year.

The traditional human-capital model of migration treats the decision to move as an investment that has an immediate cost but yields a positive expected future return. Despite expressions of discontent with involuntarily long hours of work, or inadequate social infrastructure, research capacity or social amenities, discussion invariably settles on relative income as the chief determinant of migration.<sup>4</sup> Differences in fee structures and billing opportunities have resulted in large variations in average physician income between provinces: in 1995, average net professional income varied from over \$130,000 in PEI to under \$95,000 in Alberta. Examined over a twenty-five year period, provincial migration rates are highly correlated with differences in average income (Grant and Oertel, 1998).

In light of the apparent relationship between migration and earnings, provincial regulatory bodies are left in the unenviable position of having to maintain a sufficient level of remuneration to attract and retain physicians while, at the same time, attempting to reduce total health care expenditures. This throws into sharp relief the efficacy of producing more domestically-trained physicians while seeking to reduce global health care expenditures at the same time.

### The Case for Foreign-Trained Physicians

Whether or not Canada is presently facing a shortage of physicians, how future supply is met is a distinctly separate issue. A consistent feature of health care policy in Canada over the past 25 years has been a resistance to "immigrant" physicians or "graduates of foreign medical schools" (GOFMs). Given the high cost of training medical practitioners domestically, the sustained opposition to "importing" medical human capital appears ill con-

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3. "Net Interprovincial" refers to the net gains (that is in-movers minus out-movers) from other provinces or regions. Returnees/Emigrants refers to the returnees from abroad less emigrants. Both rates are expressed as a percentage of the number of active physicians in Canada at the beginning of the year.
  4. For a recent analysis of interprovincial migration in Canada see Oberg et al. (1994).



ceived.

Evans (1976) attributes the traditional hostility towards GOFMs to the political difficulty of cutting the number of places in medical schools, or the more dramatic step of closing medical schools. This was not only a potentially unpopular alternative with voters, but one strenuously resisted by vested interests in the medical profession. While existing physicians should, in theory, be indifferent between the source of increased supply, the powerful socialization process within a self-regulating profession mitigates against displacing home-grown with foreign-trained physicians.

After the Hall Commission of 1964 had projected a shortage of physicians, Canada's "point system" for assessing potential immigrants assigned physicians the maximum 15 points for occupation demand. But when an oversupply of physicians was first acknowledged, curtailing the rate of immigration proved to be the only politically-feasible stop gap. By 1972, a federal government study spoke of a surplus of general practitioners, internists, neurologists, and obstetricians. Subsequently, the immigration tap was turned off: modifications to the points system in 1975 assigned physicians no points for occupational demand, virtually disqualifying an assessed applicant who could not produce evidence of a concrete job offer (Roos et al 1976). Accordingly, the annual number of immigrants arriving in Canada with the 'intended occupation' of physician fell from over 1,300 in 1969 to under 530 after 1976 (Figure 4), or less than one per cent of the stock of Canadian physicians. Immigrant physicians have been almost exclusively used to address under-servicing in specific regions or specialties. Newfoundland, Manitoba and Saskatchewan have historically relied upon GOFMs to offset partially the loss of physicians to other provinces and countries. For instance, by 1996, there were more GOFM's practising in Saskatchewan than there were domestically trained doctors.

Evans (1976) likens the barriers faced by GOFMs to a protective tariff: they tend to limit a country's access to lower-cost supply, reduce domestic competition, raise the incomes of domestic suppliers, and imposed higher costs on consumers. This welfare loss is accompanied by a substantial income transfer from the public to private practitioners in the form of subsidies to medical education.

This is not to suggest that the question of quality is an unimportant or trivial one. The marked difference in the cost of acquiring domestically- and foreign-trained physicians, however, represents a substantial loss in economic welfare, sufficient to warrant greater investigation of the barriers to immigration and accreditation.

## Conclusion

With recent provincial attempts to curb health care expenditures, the pattern

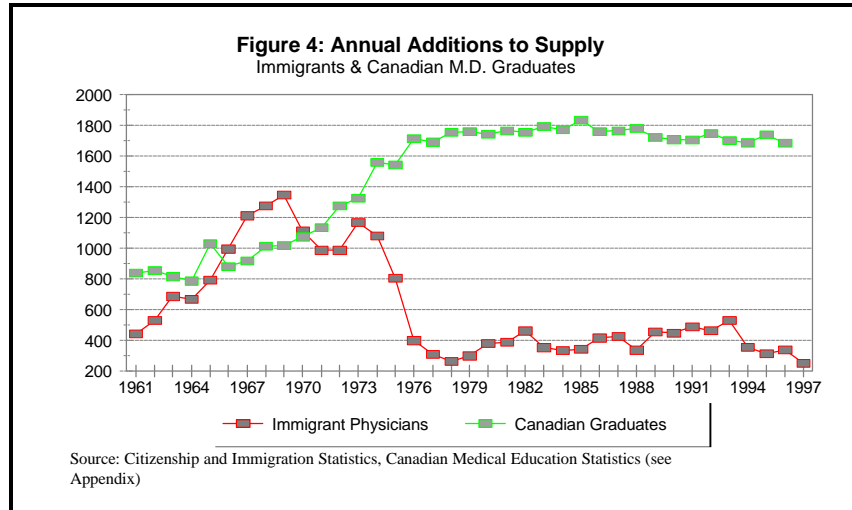


FIGURE 4 Annual Additions to Supply, Immigrants and Canadian M.D. Graduates

of supply and migration of Canadian physicians has changed. Access to billing numbers and less generous fee schedules have reduced interprovincial movements and made international opportunities relatively more attractive. At the same time, provinces that have traditionally faced a net outflow of physicians have come to rely increasingly upon immigration to meet the need for physician services.

If Canada faces a current or impending shortage of physicians -- and the evidence of such is far from clear -- then it faces two distinct policy options in order to augment supply. The first option, proposed by the Canadian Medical Association and consistent with the goal of self-sufficiency, is to increase the number of places in medical schools. But as a corollary, this would require higher fees in order to retain physicians and dampening the outflow to other countries. Public regulatory bodies are thus placed in the unenviable position of having to provide special inducements to attract physicians to particular regions, to place constraints on their movement to "overserved" urban centres, or to reduce departures to other countries.

The alternative is to review the barriers faced by foreign-trained physicians in gaining entry to the country and in obtaining accreditation in Canada. The long queue of foreign-trained physicians seeking entry into Canada remains a largely untapped source of human capital. If Evans is now correct in asserting that "we are entering a new policy environment in which explicit policy choices are possible" (1998: 759) then it is appropriate to reexamine the full menu of policy choices and, specifically, to weigh the cost of Canada's goal of self-sufficiency against the benefits of easing restrictions

on foreign-trained physicians.

### References

- Barer, M.L. and G.L. Stoddart. 1991. *Toward Integrated Medical Resource Policies for Canada*. Ottawa: Federal/Provincial/Territorial Conference of Deputy Ministers of Health.
- Bolduc, D., B. Fortin and M.-A. Fournier. 1996. "The Effect of Incentive Policies on the Practice Location of Doctors: A Multinomial Probit Analysis". *Journal of Labor Economics*, 14: 703-32.
- Deber, R.B., S.L. Mhatre and G.R. Baker. 1994. "A Review of Provincial Initiatives", in A.G. Blomqvist and D.M. Brown (eds.). *Limits to Care: Reforming Canada's Health System in an Age of Restraint*. Toronto: C.D. Howe Institute.
- Evans, R.G. 1976. "Does Canada Have Too Many Doctors? -- Why Nobody Loves an Immigrant Physician". *Canadian Public Policy*, 2: 147-60.
- \_\_\_\_\_. 1984. *Strained Mercy: The Economics of Canadian Health Care*. Toronto: Butterworth.
- \_\_\_\_\_. 1998. "New Bottles, Same Old Wine: Right and Wrong in Physician Supply". *Canadian Medical Association Journal*, 158: 757-9.
- Ferrall, C., A.W. Gregory and W. Tholl. 1998. "Endogenous Work Hours and Practice Patterns of Canadian Physicians". *Canadian Journal of Economics*, 31: 1-27.
- Grant, H.M. and R.R. Oertel. 1998. "The Determinants of the Migration of Physician in Canada, 1970-1995". Department of Economics Working Paper. Winnipeg: University of Winnipeg.
- Noether, M. 1986. "The Growing Supply of Physicians: Has the Market Become More Competitive?". *Journal of Labor Economics*, 4: 503-37.
- Osberg, L., D.V. Gordon and Z. Lin. 1994. "Interregional Migration and Interindustry Labour Mobility in Canada: A Simultaneous Approach". *Canadian Journal of Economics*, 27: 58-80.
- Roos, N.P., M. Gaumont, and J.M. Horne. 1976. "The Impact of the Physician Surplus on the Distribution of Physicians across Canada". *Canadian Public Policy*, 2: 169-91.
- Ryten, E., A.D. Thurber and L. Buske. 1998. "The Class of 1989 and Physician Supply in Canada". *Canadian Medical Association Journal*, 158: 723-8.

### Appendix

#### Data on the Income and Migration of

## Canadian Physicians

### Income Data

There are three sources of information on the earnings of Canadian physicians:

- Revenue Canada reports the annual income and other taxation information for all "Self-Employed Medical Doctors and Surgeons" (*Taxation Statistics*, annual, Table 3). This covers all physicians who self-employment earnings, or roughly 70 per cent of all Canadian physicians. The chief exclusion is salaried physicians. Our calculation of average net professional income is simply the total for the country divided by the number of tax filers. Unpublished provincial-level data was obtained by special request to Revenue Canada.
- The Canadian Institute for Health Information (CIHI) provides provincial-level data on the average payments received by fee-for-service physicians (*Average Payment per Physician Report: Canada, 1989/90 to 1993/94* (Ottawa: 1998)). The data derives from the National Physician Database (formerly managed by Health Canada) and is based on fee-for-service claims submitted to provincial medical insurance programs (again, the chief exclusion is salaried doctors). Despite the conceptual differences between the CIHI's definition of "fee-for-service" and Revenue Canada's "self-employed" physicians, coverage is similar in magnitude. This data has the virtue of providing separate figures for physicians by area of specialization but has the obvious shortcoming that it refers only to gross payments without corresponding information on physicians' operational costs. The CIHI also estimates average payments received by "full-time equivalent" fee-for-service physicians. This includes all physicians earning more than the 40th percentile earner for their province and area of specialization -- an obviously arbitrary cut off point.

The ranking of provinces in terms of the average payments received by fee-for-service physicians is similar but not identical to the ranking by average net professional income. The CIHI notes that expenses tend to be higher in Ontario and the western provinces compared to Quebec and the Atlantic provinces. The one significant divergence in the two sources is the ranking of Alberta, which reports extremely low average net professional income and above average payments received by fee-for-service physicians.

- Health Canada, *National Health Expenditures in Canada, 1975-1993* (Ottawa 1994) reports total health care expenditures on physicians (including both fee-for-service and salaried). No attempt, however, is made to report disaggregated expenditures on physicians by area of specialization, by type of earnings, or by province. Management of this

database has been assumed by CIHI.

Despite these conceptual differences, all three measures display similar trends over time (see Appendix Table 1). In particular, each indicates a decline in physicians' income over the period after 1991. Because of the greater reliability and consistency of Revenue Canada taxation data over time, we report the average net professional income of all self-employed Canadian physicians in Figure 1.

### Supply and Migration Data

The CIHI collects and publishes annual data on the number of active physicians in Canada, and their movement between provinces and abroad (*Supply and Distribution of Physicians, Canada. Selected Years 1961 to 1995* (Ottawa 1997));

TABLE 1 A Comparison of Income Data on Physicians from Various Sources (1995\$)

	1990	1991	1992	1993	1994	Change 1992-94
Revenue Canada (calendar year)						
Mean Net Professional Income, Self-Employed Physicians 6.2%	123,381	124,451	126,322	122,547	118,442	--
CIHI (fiscal year ending in)						
Mean Total Payments Received by Fee-for-Service Physicians						
- Specialists	193,889	192,127	196,240	193,911	192,093	-2.1%
- General Practitioners	135,493	134,647	140,760	140,946	138,075	-1.9%
- All Physicians	160,541	159,153	164,852	163,940	161,304	-2.2%
- Full Time Equivalents	243,868	240,929	244,136	239,895	234,243	-4.1%
Health Canada (calendar year)						
Mean Total Expenditures on Physicians	206,892	209,030	207,346	202,408	--	--

and *International and Interprovincial Migration of Physicians, Canada: 1970 to 1995* (Ottawa 1997)). Special tabulations of inter-provincial migration by gender and area of specialization were also requested by the authors. The migration of Canadian physicians to and from abroad is also reported, but no attempt is made to identify the receiving country. "Returnees" refers to Canadian physicians returning from positions abroad.

Much of the movement of physicians between provinces involves interns and residents taking up or leaving training positions; however, the movement of all physicians, of general practitioners, of specialists and of interns/residents displays a similar pattern over time and between provinces. In Figure 2 we report the movement of all physicians expressed as a percentage of active physicians in the country at the beginning of the year. Data in

Figures 3a and 3b refers to the percentage of active physicians in the province/region at the beginning of the year that moved to a different province/region during the year. We include the Atlantic Provinces as a single region because of the unusually large movement of interns and residents within the Atlantic region due to the fact that only Nova Scotia and Newfoundland have medical schools.

The number of Canadian medical school graduates is published by the Association of Canadian Medical Colleges, Canadian Medical Education Statistics.

Finally, Citizenship and Immigration Canada publishes annual data on the number of immigrants by "intended occupation-physician" (*Citizenship and Immigration Statistics*, annual). Individual-level data with the names suppressed is available on request from the "LIDS" database managed by Citizenship and Immigration Canada. The "Longitudinal Immigration Data Base" (IMDB managed by Statistics Canada) links immigration records to employment and income records from Revenue Canada. We make reference in this paper to only the published data in the *Citizenship and Immigration Statistics*.