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The Practicing Physician Community in Canada 1989/90 to 1998/99

Workforce and Workload
as Gleaned Through Billing Profiles
for Physician Services



Canadian Institute
for Health Information

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Executive Summary

This report “The Practicing Physician Community in Canada: Workforce and Workload as gleaned through Billing Profiles for Physician Services”, focuses on physicians who practice clinical medicine and bill fee for service (FFS). It does not provide a head count of physicians, regardless of their activities, who are licensed in Canada. It should, therefore, be relevant to the current dialogue addressing adequacy of physician availability for clinical service needs, timely access to required services, waiting periods, etc. The issue in the current physician workforce debate should be around the effective supply of physicians for clinical needs, not on a hypothetical available supply since many physicians have responsibilities outside of clinical care areas in administration, teaching, research and in other business ventures. There are many factors that influence physician workload, workflow and output, such as gender, age, specialty, size of community, place of graduation, clinical demands, number of physicians, as well as personal considerations. It is important to understand how the sum of these factors yields an effective physician workforce.

There are several methods that attempt to arrive at a measure of effective physician workforce. A calculated fulltime equivalent (FTE) count, physicians who bill above a certain threshold or with reasonable frequency are examples that allow an estimate of effective supply. What is clear is that at any one time there may be up to 15 to 20% of FFS physicians who are “inactive” from provision of clinical services, either temporarily or permanently even though they do maintain FFS activities at other times. Unless this knowledge is factored into any discussion that predicts the number of future physicians that Canada needs, trains, recruits, etc., the projections may remain off target.

The FFS physician per population is decreasing since its peak in 1993/94, and the average workload appears to be increasing. Generally speaking, when physician numbers increase, average workloads decrease and conversely workloads tend to increase when physician numbers or physician per population decreases. While such trends may be part of the explanation for increasing workloads among primary care physicians and surgical specialists, the trend in medical specialties suggests that the health care sector may also be experiencing an increased demand for services, adding further workload demands.

There is a change in the demographics of FFS physicians over the past decade. Physicians are growing older, and the gender mix is changing with increasing number of women physicians in the workforce. The overall percentage of FFS physicians who are graduates of medical schools outside of Canada is decreasing. This pattern may however change in the future given changes in recruitment and accreditation policies relative to International Medical School Graduates (IMG’s). There is also a changing mix in the distribution both by specialty and geography. The number of FFS physicians in primary care and surgical specialties decreased while the number of medical specialists increased. There is also a decreasing number of physicians in urban centres or Census Metropolitan Areas (CMAs) and an increasing number in smaller Census Agglomeration (CAs) and rural sites.

All of these changing forces will have an impact on workload and affect effective physician supply.

- The workload or activity ratio is highest among surgical specialties. Surgical specialties are made up largely of male physicians and as their numbers decrease due to retirement and decreasing output from medical schools, the workload on the remaining surgeons is likely to escalate.
- The activity ratio for female physicians is about 80% of that of their male colleagues and it is not difficult to predict the impact as the percent of women in the workforce increases dramatically over the next decade. The impact will be greater in areas of practice with a greater percentage of women, such as Primary Care.
- The age group in which activity levels peak is between ages 50–59, although this varies by gender. In 1998/99, 33% of FFS physicians were aged 40–49 years, the largest proportion of any age group. Over the next decade, as this cohort becomes the 50–59 age group, there is an expectation that their workload will increase slightly or remain unchanged. Beyond that, as they age and become the age group 60–69, there may be a 10–15% decrease in their activity and output. This decrease cannot be fully compensated by the younger physicians since there are at least 25% less physicians who are under 40 years of age. Also, a larger percent of the younger cohorts are women, whose activity ratio is less than their male counterparts.
- The highest activity ratios are seen among graduates of medical schools outside of North America, whose numbers are declining each year. Should they become replaced, upon their retirement, by graduates of Canadian medical schools there may be a 10% drop in activity and output.
- The impact of decreasing graduates from non-Canadian medical schools will be greater in rural communities that have been traditionally dependent on such graduates to meet their clinical needs.

This report does not include the activities of physicians who are remunerated under alternate payment systems. While their numbers have been relatively small, this growing group may begin to impact on the numbers of FFS physicians reported through NPDB. As the health care system changes and differs from what we have experienced to date, making predictions and forecasts may be somewhat risky but, nevertheless, current trends and evidence may be useful for policy makers as they chart their future course.

Highlights

- Not all physicians are available “fulltime” during the year. That is, they do not bill in each quarter. There are 15 to 20% of physicians who bill provincial health plans on a fee-for-service (FFS) basis who are absent from FFS activities for at least 3 months during part of the fiscal period. This situation is more frequent with women physicians and with physicians practicing in rural communities, with population less than 10,000.
- Between 1993/94 and 1998/99, the number of FFS physicians per population decreased by 4.4%. More specifically, there were 7.8% fewer primary care physicians and 1.3% fewer specialists.
- The distribution of physicians between the three broad categories of specialties is changing. Between 1989/90 and 1998/99, the percent of physicians in primary care dropped from 57.2% to 55.1% and from 15.8% to 15% for surgical specialists. The percent of physicians in medical specialties increased from 27% to 29.9%.
- Since 1989/90, the proportion of women has increased steadily and in 1998/99, reflected 26.7% of the physician workforce. While the proportion of women in all the three broad specialties has increased steadily since 1989/90, the proportion is higher among primary care physicians (31.4%), somewhat lower among medical specialists (25.1%), and lowest among surgical specialists (12.6%) in 1998/99.
- Over the past decade, the proportion of FFS physicians who were graduates of Canadian medical schools increased. In 1998/99, 80% of female physicians and 70% of male physicians were graduates of Canadian medical schools.
- FFS physicians are growing older. In 1998/99 there were more FFS physicians in the age group 40–49 (33%) and less in the age group 30–39 (25%) a reverse situation from a decade ago.
- A higher percentage of women are in the younger age groups. In 1998/99, 56% of physicians below the age of 30 were women. In the 30–39 and 40–49 year age groups, women accounted for 42% and 31% of physicians respectively.
- The distribution of physicians by community size has also experienced changes. Between 1993/94 and 1998/99 the number of FFS physicians in Census Agglomeration (CAs) (communities with population between 10,000 and 100,000) and rural areas (communities of less than 10,000) increased by 1% and 0.9% respectively. However, in Census Metropolitan Areas (CMAs) (communities greater than 100,000) the number of physicians has decreased by 0.6% from its peak in 1995/96. This is true for both male and female physicians.
- About 15% of female and 18% of male FFS primary care providers, 5% of surgical specialists, and 3% of medical specialists practice in rural communities.

- Twenty three percent of medical schools graduates from outside of North America practice primary care in rural communities compared to 16.7% of graduates of Canadian medical schools. The percent has increased for graduates of schools from the United States of America (USA) and outside North America since 1995/96, with a dramatic increase noted in 1998/99. In primary care, rural communities are more reliant on graduates of schools outside of North America, 23% compared to 18 and 17% in CAs and CMAs, respectively.
- The workload or activity ratio of physicians has increased since 1993/94 in each of the three major specialty areas: primary care, medical and surgical specialties. The decrease in physician per population may be partly responsible for this in primary care and surgical specialties, but in medical specialties the increasing workload is more likely related to increasing demand for services. The workload was heaviest in surgical specialties, followed by medical specialties and primary care.
- Between 1993/94 and 1998/99, the greatest increases in workload in primary care were noted in Ontario, Alberta and Quebec.
- The activity ratio of women FFS physicians was about 75–80% of their male counterparts and is age-dependent. The difference between genders is greatest during the peak activity years and diminishes at the early and later years of the physicians' career.
- Between 1989/90 and 1998/99, the activity ratios increased for all age groups for both male and female physicians.
- Activity ratios also differ by community size and type of practice. In primary care, activity ratios were higher in CAs and rural communities, but the biggest increase in activity ratios since 1997/98 occurred in CMAs. In medical specialties, the ratio was highest in CAs, followed by CMAs while the biggest increase was in rural communities. In the surgical specialties, the highest activity ratios were in CAs and CMAs where the highest increases have also occurred. The increases in activity ratios in CMAs, CAs and rural communities are more prominent among women physicians.

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Introduction

The Canadian Institute for Health Information (CIHI) maintains two databases on physicians, the Southam Medical Database (SMDB) which contains demographic, practice and migration information obtained from Southam Communications and the National Physician Database (NPDB) which contains demographic, practice and service utilization data obtained from the provincial/territorial medical insurance programs. Although the NPDB currently contains data on fee-for-service physicians, subsequent phases of development will capture data on physicians reimbursed under non-fee-for-service arrangements and physicians engaged in non-clinical practice.

CIHI publishes various reports from these two databases, that permit longitudinal tracking of physicians and to view trends over time—nationally, provincially, by specialty or by a number of specific characteristics such as age, gender, medical school of graduation, etc. Each database provides a different perspective or orientation useful for specific purposes or questions, but no single database suits all purposes, and often, a combination or linking of two or three databases including databases that are external to CIHI, is required to illuminate the issues under investigation.

Physician can be counted by various methods using the NPDB:

- Total FFS physicians: a subset of practitioners who bill the provincial medical plans on a fee-for-service basis;
- Physicians who bill over a threshold such as \$50,000;
- Physicians who are 1 FTE or greater: physicians who are at or above the 40th percentile in their billing practice; and
- Physicians who bill at least once during each quarter.

These latter three categories may be interpreted as those who are in “full-time” practice, and may exclude those who may be in partial practice.

The NPDB also computes a total full-time equivalents (FTE) based on billing profiles and this number includes those in the lower billing category. From the FTE and FFS numbers, one can generate a ratio of FTE/FFS, referred to as an activity ratio, a measure of the average workload of physicians.

In addition to FFS physicians, there are a number of physicians who are non-FFS. Some are clinically active physicians who are salaried or paid through alternative reimbursement plans. Finally, there are physicians who are not in clinical practice, but involved in research, education, and/or administration or in private sector endeavours. The focus of much of the workforce dialogue has been on the number of physicians needed for practice, but the needs in other legitimate areas of physician activities should also be addressed.

This main focus of this report is to examine fee-for-service physician demographic and practice characteristics and in particular, changes in physician activity levels between 1989/90 and 1998/99.

The report begins with a description of general information on the NPDB and the SMDB as well as a comparison of the data on total physicians in active practice by type of discipline/specialty from both the SMDB and the NPDB to ensure that the NPDB data, given that they represent only fee for service, are representative of the physician population in general. A description of the status of physicians under alternatively funded payment programs in terms of number of physicians and expenditures is also provided.

The next section examines the demographic and practice changes of the fee-for-service physicians on the NPDB. The last section describes various workload indicators by broad specialty groups, province, gender, age, place of graduation and community size.

Relationship Between NPDB and SMDB

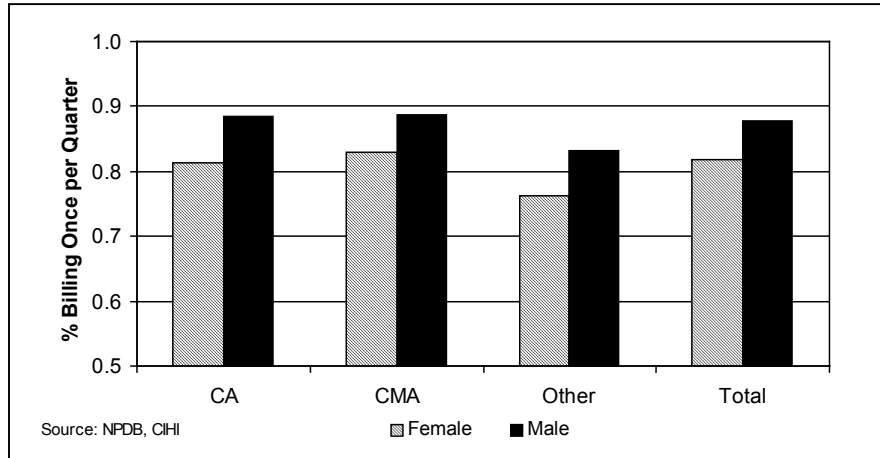
A comparison of the numbers based on different databases is useful in understanding the different objectives and methodologies involved in the count. It is important to point out, however, that numbers are not entirely comparable since the SMDB reports physicians on December 31st of each year, while the NPDB reports on FFS physicians who bill for services during a 12 month period. The most recent data from the NPDB is for the period April 1998 to March 1999, while the latest the SMDB report is December 1999, so it is important to note that any recent change identified by the SMDB may only be reflected by the NPDB in the next reporting year. The NPDB categorizes physicians based on the specialty provided by the province under which the physician provides the majority of their services, whereas the SMDB categorizes physicians by their latest certification. Depending on the subgroups, numbers of physicians can be varied, so it is important to understand how the numbers are derived and what they represent if they are to be interpreted for planning purposes.

The total number of physicians reported by the SMDB includes diagnostic and therapeutic radiologists and laboratory physicians. Since they are not on a FFS arrangement, they are excluded from the NPDB calculations. Also, the SMDB identifies Public Health, Occupational Health and Emergency Medicine as Medical specialists, but in the NPDB, they are identified as non-specialists since there are provincial variations in categorization of this group of physicians. If the SMDB is adjusted for these differences, there is a remarkable concordance between the numbers reported by the SMDB and the NPDB (Table 1).

Table 1. Comparisons Between Databases

	SMDB*	NPDB-FFS	Each Quarter
Number of Physicians	1998	1998/99	1998/99
Primary Care	29,264	27,660	23,575
Medical Specialties	15,303	15,016	13,095
Surgical Specialties	7,735	7,551	6,582
All Physicians	52,302	50,227	43,252
Indexed to SMDB			
Primary Care	1.00	0.95	0.81
Medical Specialties	1.00	0.98	0.86
Surgical Specialties	1.00	0.98	0.85
All Physicians	1.00	0.96	0.83
Indexed to NPDB-FFS			
Primary Care		1.00	0.85
Medical Specialties		1.00	0.87
Surgical Specialties		1.00	0.87
All Physicians		1.00	0.86
Source: CIHI			
*Adjusted for physicians not included in NPDB			

The NPDB reports the number of physicians who receive payments at least once per quarter, excluding physicians who were not in “full-time” practice during the 12-month period. The “once per quarter” numbers are less than that reported as FFS physicians by the NPDB and the SMDB. Comparative data suggests that there are anywhere from 14 to 17% of physicians who are in “part-time” practice during the year, the percentages being higher in primary care (Table 1). To determine whether there are gender differences, and geographic locations and specialties where “part-time” practice is more likely to occur, the numbers of male and female physicians were compared by community size. Census agglomerations (CA) and census metropolitan areas (CMA) are defined by Statistics



Canada to include the labour market area of urbanized cores. CMAs have populations greater than 100,000 and CAs between 10,000 and 100,000. Areas designated as “Other” refer to non-CAs and non-CMAs or rural communities with populations of less than 10,000.

Figure 1. Proportions of Physicians Billing at Least Once per Quarter by Gender, Canada, 1998/99

Female physicians, and those who live in communities of less than 10,000 people, are less likely to bill in each quarter (Figure 1). This is true for primary care providers as well as medical and surgical specialists. In rural communities, differences of 20% or more between those who are FFS and those who bill once per quarter, are noted for female primary care physicians, female and male medical specialists and surgical specialists in 1998/99.

Female physicians, and those who live in

Effects of Alternative Payments on Estimates of Physician Supply and Workload

Estimates from the NPDB of the number of physicians, full-time equivalents and activity ratios are based on physicians in fee-for-service clinical practice. During the 1990s there has been a significant move to alternative modes of payment in some provinces. Alternative payments are not reported systematically in the administrative databases of most provinces and therefore have not been available to the NPDB. The migration of physicians from fee-for-service to alternative payment modes has affected trends analysed in this paper, especially in respect to FTE indicators. This section provides aggregate estimates of physicians and FTEs who practice in alternative payment modes. Its purpose is to providing an insight into areas where the analysis based on fee-for-service practice might understate effective physician supply or growth rates.

CIHI has developed estimates of alternative payments for 1995/96 and 1999/2000 (the latest estimates are considered to be the most reliable). Provinces vary with respect to the percent of clinical remuneration provided through alternative payment modes (Figure 2). Newfoundland, Nova Scotia and Manitoba have the highest percent of payments through alternative modes, with percentages in 1999/2000 ranging from 20% to 30%. Alberta and Ontario have the lowest percentages.

The CIHI analyses indicate that, nationally, over 20% of physicians participate in alternative payment plans; most also bill fee-for-service. A smaller percentage, estimated at 7.8% in the nine provinces excluding Ontario, receive most or all remuneration for clinical care through alternative payment modes (reliable estimates are not presently available for Ontario). Physician supply and workload indicators may be affected in two different but complementary ways:

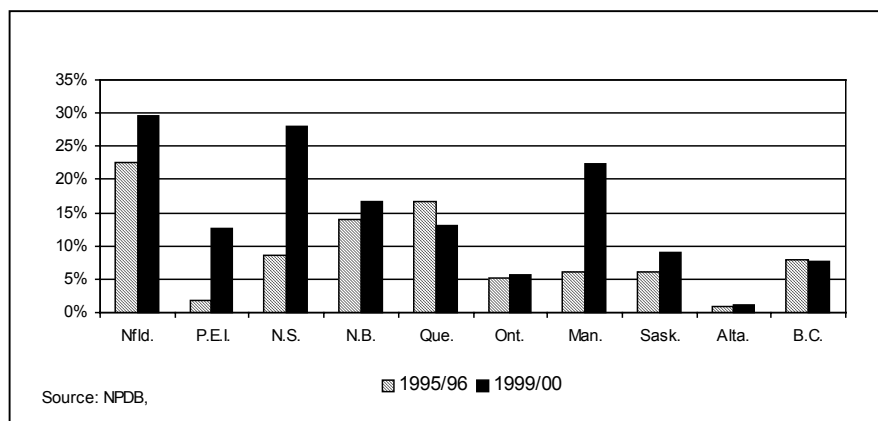


Figure 2. Alternative Payments as a Percentage of Clinical Payments by Province, 1995/96 and 1999/2000

- Physicians who practice only in alternative modes would not be included in the NPDB counts of physicians providing clinical care. Many of these physicians would be in salaried practice (e.g. a number of rural physicians in Newfoundland and in under-serviced areas of the prairie provinces; salaried psychiatrists in certain provinces). Others would be practicing in academic medical centres that are funded through annual budgets (block funding), especially in Ontario and Nova Scotia.

- Physicians who practice in both fee-for-service and alternative modes would be included in the NPDB physician counts, but their activities remunerated through alternative modes would not be included in FTE counts. This will lower estimates of physician FTEs and activity ratios, relative to actual levels if all clinical activities are taken into account. Uncounted FTEs also will tend to create the appearance of reduced FTE supply or lower rates of growth over time in provinces that have increased the percentage of clinical remuneration made through alternative payments.

Physician Supply

Figure 3 shows the percentage of physicians in each province who are considered to carry out most of their clinical practices in alternative payment modes. This percentage would provide an indication of the potential undercount of fee-for-service physicians in the NPDB,

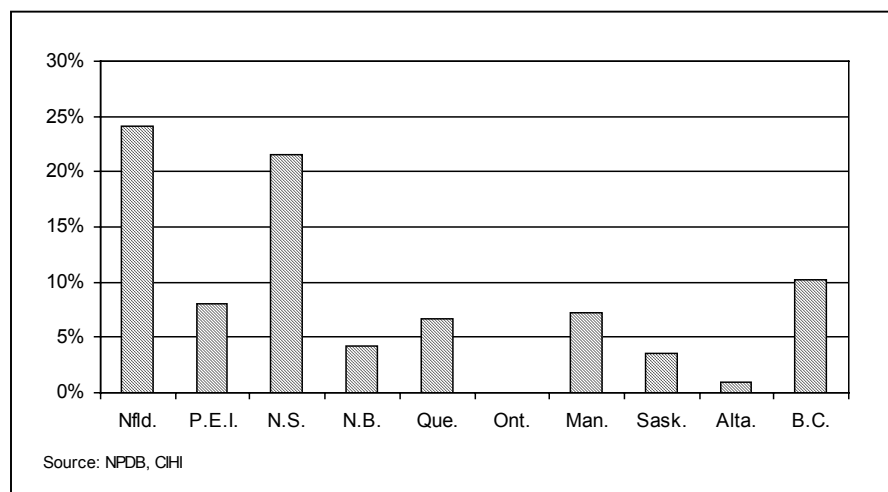


Figure 3. Percentage of Clinical Physicians with Mainly Alternative Funding by Province, 1999/2000

although the match would not be precise because some of the physicians would have occasional fee-for-service billings. The data are for 1999/2000, one year after the latest year for which the NPDB physician counts are provided in this paper. The percentages would be most relevant when used in conjunction with measures of physician supply that

focus on physicians who carry out clinical practice throughout most of the year, such as those who bill in all four quarters or those who exceed billing thresholds. Newfoundland, Nova Scotia and British Columbia are the provinces that have the greatest potential to show an undercount of physicians in the NPDB, with 10% of physicians in British Columbia and over 20% of physicians in Newfoundland and Nova Scotia receiving most remuneration through alternatives to fee-for-service.

Full Time Equivalents

Physician full time equivalents were re-estimated by combining estimates from fee-for-service practice with estimates based on physicians and amounts paid in alternative remuneration modes. The FTE methodology could not be replicated exactly because estimates of alternative payments to individual physicians were not available. Instead, estimating techniques that are believed to provide reasonable approximations of the results of the FTE methodology were used. A more significant departure from the FTE methodology was the decision to count funded FTE positions or physicians receiving full-time salaries in remote rural areas as one FTE.

Estimates of fee-for-service and total clinical FTEs per 100,000 population are provided in Figure 4. The distribution by province shows a

different pattern than the distribution of fee-for-service FTEs. The provinces of Newfoundland, Ontario, Quebec, British Columbia and Nova Scotia rank highest, with similar numbers of FTEs per 100,000 population when both fee-for-service and alternative payments are taken into account (the spread between the lowest and highest of these five provinces is 10 physicians per 100,000 population, while the spread between the top three is 3 physicians per 100,000).

In the ten provinces, the number of FTEs per 100,000 increases by 10.3% when estimates of FTEs in alternative modes of remuneration are included¹.

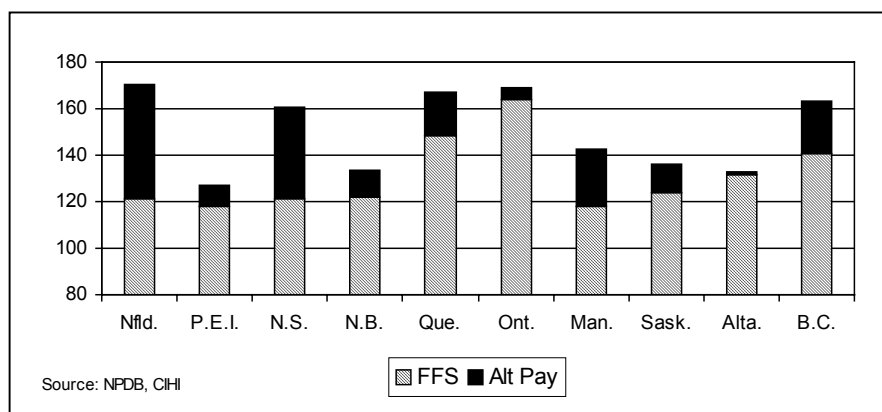


Figure 4. Total FTE's per 100,000 Population by Province, 1999/2000

¹ These estimates and Figure 4 use revised FTE counts with benchmarks indexed to 1995/96. The workforce paper used original estimates with benchmarks indexed to 1985/86 in order to obtain a consistent time series throughout the period included in the analysis. There were 154 FFS FTEs per 100,000 in the ten provinces during 1998/99 using benchmarks indexed to 1985/86 and 148 using benchmarks indexed to 1995/96. Figure 4 Fee-for-service FTE's are from CIHI's Full-time Equivalent results for 1998/99. Alternative payment FTE's were estimated from data supplied by all provinces except Ontario. Ontario Alternative payment FTE's were estimated from data in Public Accounts.

National Physician Database and the Southam Medical Database

The National Physician Database (NPDB) contains information on demographic and practice characteristics of FFS physicians in Canada. Physician fee for service claims data are submitted to CIHI by the provincial medical care plans and are used to produce various indicators on physician activity levels, such as total payments, total services, average payment per physician and a full-time equivalent (FTE) physician measurement. Although there are plans to collect data on non-fee for service physicians (alternative reimbursement programs), the current data set is limited to fee for service physicians.

Physician specialty designations on the NPDB are assigned by the provincial medical care plans and grouped within the NPDB to a national equivalent. Of the two specialties, latest acquired certified specialty and plan payment specialty, the later is used for the purposes of this report.

In three provinces, Nova Scotia, Quebec, and British Columbia, data for Public Health Specialists are reported in the Family Medicine figures. For all provinces, uncertified specialists and Community Medicine are also grouped with Family Medicine except in Ontario, where Community Medicine, Public Health, Occupational Medicine and Pediatric Cardiology are received as Internal Medicine Specialties. Internal Medicine includes the sub-specialties such as Cardiology, Gastroenterology, Haematology, Rheumatology, Genetics and Medical Oncology. Psychiatry includes Neuropsychiatry. Neurology includes EEG specialists, and Physical Medicine includes specialists in Electromyography. Specialists in the double specialty of Ophthalmology/Otolaryngology are included with the Ophthalmologists.

For the purposes of this report, the total number of FFS physicians in Canada include primary care providers and specialists. Primary care providers, as defined by the NPDB, are slightly greater in number than the combined numbers of family physicians and general practitioners reported by the SMDB and are sometimes referred to as "non-specialists". Due to non-uniform provincial definitions, physicians practicing public health, occupational medicine and emergency medicine are not categorized in the specialty category and are included with primary care providers in the NPDB.

Southam Medical Data Base (SMDB), counts all active physicians in Canada including those who are not in a FFS arrangement, such as those who are in salaried positions, on alternate payment plans and those whose primary responsibilities are in administration, academic institutions or in the private sector. The NPDB, therefore, provides a perspective that is of importance since it reflects the activities of physicians in the provision of healthcare services, an area receiving increasing attention by decision makers, the public and the media. The concern shared by all regarding the adequacy of the physician workforce in Canada, at the present time and in the near future, is related primarily to the issue of access to healthcare services, although the lack of physician availability may be impacting on other sectors as well. While not perfect, the NPDB may be the best indicator of physician workload and output available in Canada at this time.

The first period of physician activities reported by the NPDB was for the fiscal period from April 1, 1983 to March 31, 1984 (1983/84). The current report extends the annual reporting periods to April 1, 1998 to March 31, 1999 (1998/99), identified in the graphs and tables as 98/99.

The total FFS physicians reported in this publication reflects the numbers in the ten provinces since, at the present time, data from the three territories are not available to CIHI. For purposes of this report, the longitudinal studies cover the period 1989/90 to 1998/99. In a few instances, the period covered begins with the year 1983/84 or 1984/85. In analyses that include population considerations, the population reported by Statistics Canada in October of each year is used, for example, for the reporting period 1983/84, the population reported for October 1983 is used.

Fee-for-Service (FFS) Physicians in Canada

The total number of FFS physicians in the 10 provinces in Canada rose steadily from approximately 39,400 physicians in 1984/85 to just over 50,000 in 1993/94 (Figure 5). Between 1994/95 and 1998/99, the number of FFS physicians remained relatively stable.

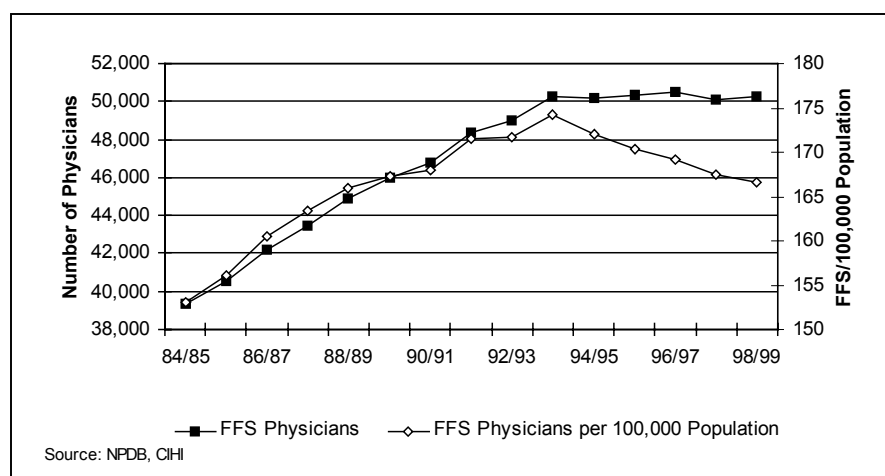


Figure 5. Total Number and Number FFS Physicians per 100,000 Population, All Physicians, Canada, 1984/85 to 1998/99

Physician growth was slightly greater than population growth from 1985/86 to 1989/90. The population growth was greater, however, after 1993/94. The numbers of FFS physicians per population dropped 4.4% from its peak of 174.3 per 100,000 in 1993/94 to 166.7 in 1998/99. The 1998/99 ratio is similar to the ratio achieved in 1989/90.

Although the total number of FFS physicians has remained stable since 1994/95 (Figure 5), the number of FFS primary care providers has continually declined since its peak in 1993/94 and the number per population has dropped 7.8% from approximately 99.6 per 100,000 to 91.8 in 1998/99 (Figure 6).

The situation differs among medical and surgical specialists. The total number of FFS surgical specialists, which include general surgery, thoracic and cardiovascular surgery, neurosurgery, orthopedic surgery, ophthalmology, otolaryngology, plastic surgery, urology and obstetrics and gynecology, increased between 1985/86 and 1995/96, but less than population growth, resulting in a continuous decline in FFS surgeons per population from

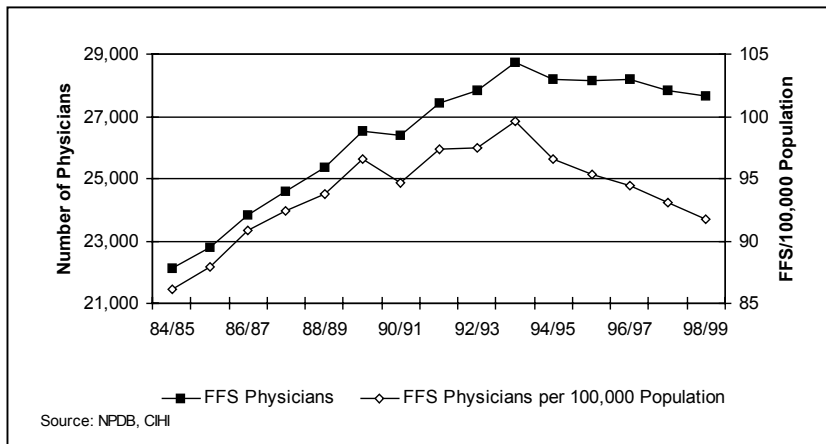


Figure 6. Total Number and FFS Physicians per 100,000 Population, Primary Care Physicians, Canada, 1984/85 to 1998/99

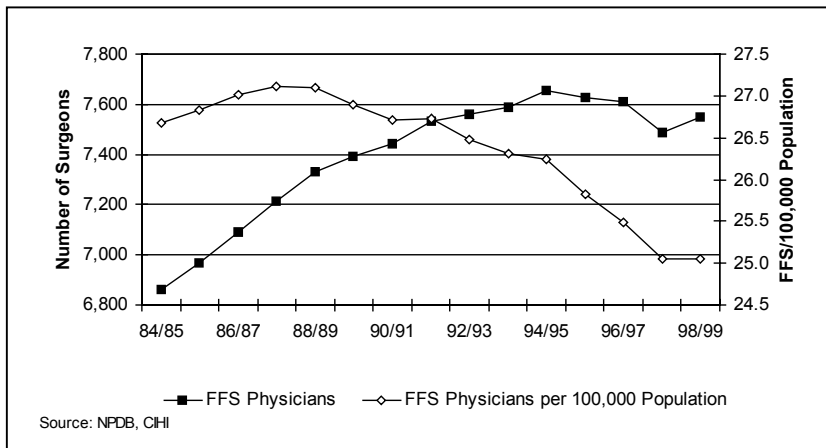


Figure 7. Total Number and FFS Physicians per 100,000 Population, Surgical Specialists, Canada, 1984/85 to 1998/99

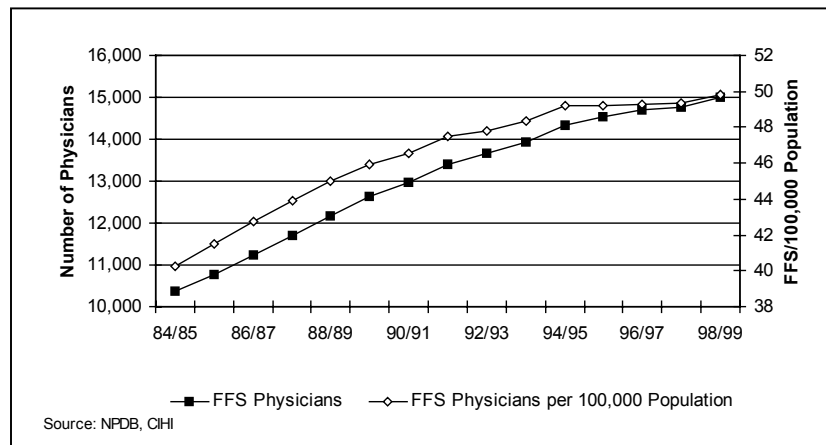


Figure 8. Total Number and FFS Physicians per 100,000 Population, Medical Specialists, by Province, Canada, 1984/85 to 1998/99

1988/89 to 1998/99 (Figure 7). Since 1995/96, the number of FFS surgeons dropped, with a slight increase noted in the last reporting period. The number of FFS surgeons per population diminished between 1988/89 and 1998/99, from about 27.1 to 25 per 100,000, a decline of 7.7 %.

The total number of FFS medical specialists, which include internal medicine and it's sub-specialties, neurology, dermatology, pediatrics, psychiatry, physical medicine and rehabilitation, and anesthesia, increased steadily from 1985/86 to 1998/99, although with a somewhat slower growth rate since 1995/96 (Figure 8). When examined in relation to population growth, the number of FFS medical specialists per population increased between 1985/86 and 1995/96, but then remained stable until 1998/99.

Analysis of growth rates of FFS primary care physicians in Canada by provinces indicates that between 1989/90 and 1998/99 the most rapid growth of primary care physicians, not adjusted by population, was noted in Prince Edward Island, New Brunswick and British Columbia (Figure 9). The numbers declined in

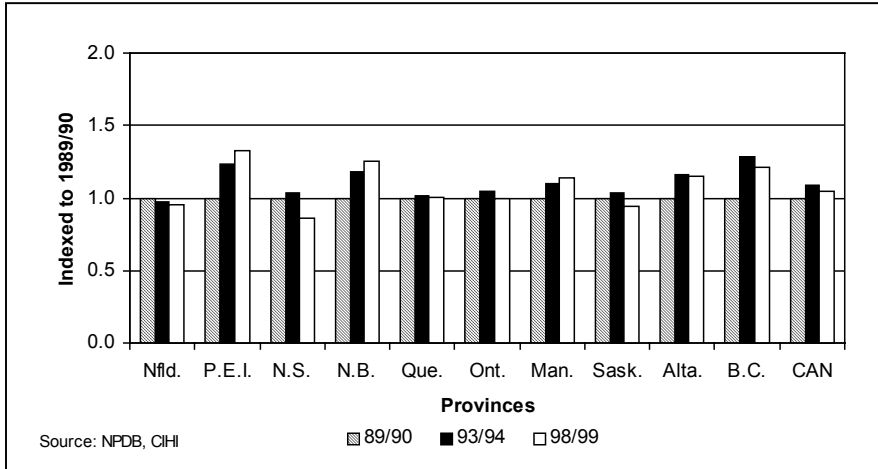


Figure 9. Changes in the FFS Primary Care Physicians Population Indexed to 1989/90, by Province, Canada, 1989/90, 1993/94 and 1998/99

Newfoundland, Nova Scotia and Saskatchewan during this period.

Among medical specialists, the numbers increased in almost all provinces except Nova Scotia, with the most dramatic change noted in Prince Edward Island (Figure 10). In the surgical specialties, the numbers appeared to be relatively stable in all provinces except for New Brunswick, Manitoba, Ontario and Newfoundland (in the last reporting period) where the numbers have shown gradual increases (Figure 11).

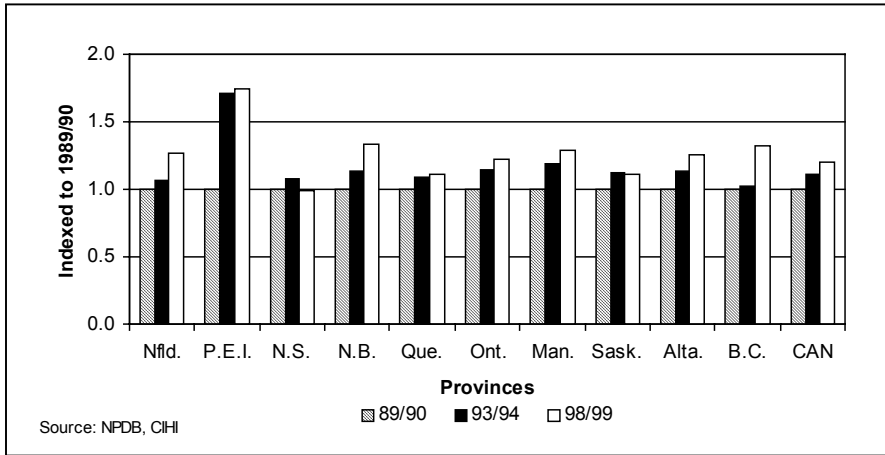


Figure 10. Changes in the FFS Medical Specialist Population Indexed to 1989/90, by Province, Canada, 1989/90, 1993/94 and 1998/99

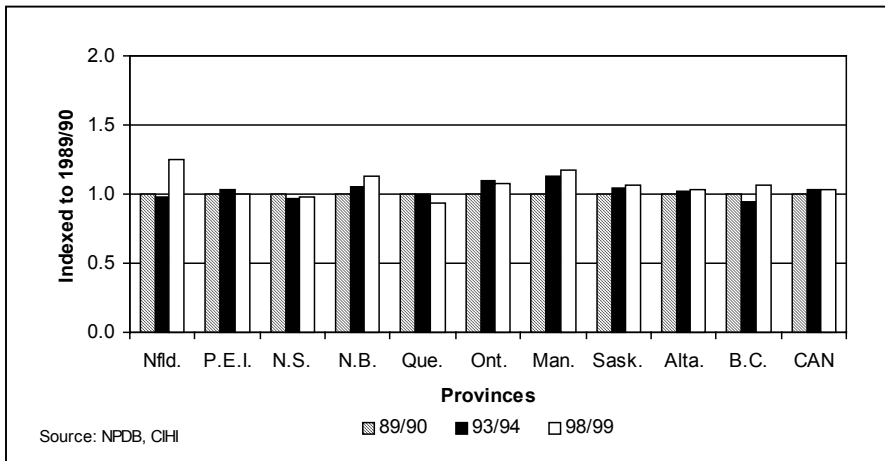


Figure 11. Changes in the FFS Surgical Specialist Population Indexed to 1989/90, by Province, Canada, 1989/90, 1993/94 and 1998/99

Examination of the growth of medical subspecialties between 1994/95 and 1998/99 shows various increases in all except Anaesthesia (Figure 12). The greatest increases were in Neurology, Paediatrics, Dermatology and Physical Medicine. In the surgical subspecialties, the most dramatic increase was noted in Cardiovascular and Thoracic Surgery followed by modest continual increases in Neurosurgery (Figure 13). The most dramatic decrease occurred for General Surgery.

Medical Subspecialties	
IM	Internal Medicine
NE	Neurology
PS	Psychiatry
PE	Pediatrics
DE	Dermatology
PM	Physical Medicine
AN	Anesthesia

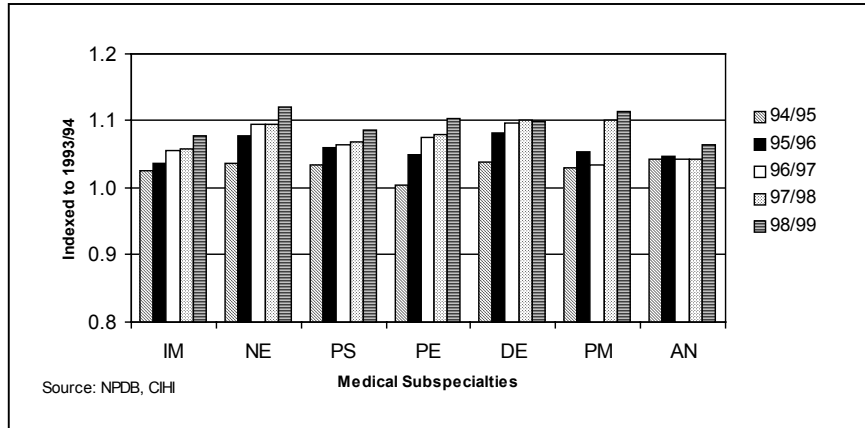


Figure 12. Changes in the FFS Medical Subspecialist Population Indexed to 1993/94, by Subspecialty, Canada, 1994/95 to 1998/99

Surgical Subspecialties	
GS	General Surgery
CV	Cardiovascular Surgery
UR	Urology
OR	Orthopedic Surgery
PL	Plastic Surgery
NS	Neurosurgery
OP	Ophthalmology
OT	Otolaryngology
OB	Obstetrics/ Gynecology

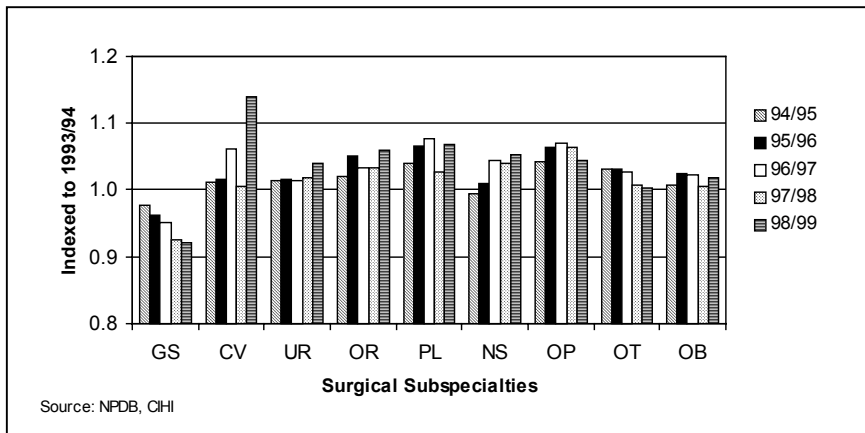


Figure 13. Changes in the FFS Surgical Subspecialist Population Indexed to 1993/94, by Subspecialty, Canada, 1994/95 to 1998/99

Changing Distribution and Demographics of FFS Physicians

Specialty Mix

Since the number of FFS physicians has been relatively stable since 1993/94, it is useful to review the changes in the relative share of the total pool of three groups of physicians—primary care providers, medical specialists and surgical specialists. Primary care physicians as categorized by NPDB, represented 57.2% of all FFS physicians in 1989/90. The percentage decreased slightly each year and in 1998/99, primary care physicians

represented 55.1% of FFS physicians (Figure 14).

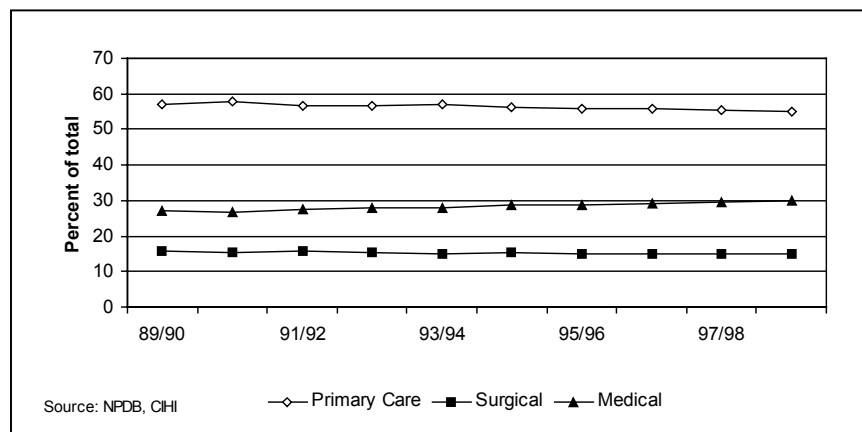


Figure 14. Percent of FFS Physicians by Broad Specialty, Canada, 1989/90 to 1998/99

The percentage of FFS surgical specialists also decreased from 15.8% in 1989/90 to 15% of all FFS physicians in 1998/99 (Figure 14). The percentage of FFS medical specialists, on the other hand, increased from 27 to 29.9% of all physicians between 1989/90 and 1998/99 (Figure 14).

Gender

Overall, the number of male FFS physicians decreased gradually between 1993/94 and 1998/99, while the number of female physicians increased steadily (Figure 15).

The percent of FFS women physicians increased from 19.2% in 1989/90 to 26.7% in 1998/99. The

percent of women has increased in all three broad specialty groups (Figure 16). In 1998/99, 31.4% of primary care physicians, 25.1% of medical specialists and 12.6% of surgical specialists were women.

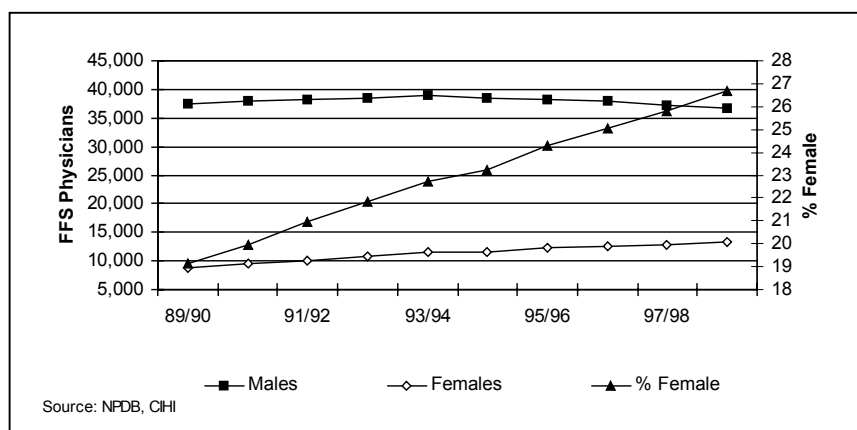


Figure 15. Number of FFS Physicians by Gender and Percent of Female Physicians, Canada, 1989/90 to 1998/99

Distribution of Specialty Groups Within Gender

There is a gender difference in the distribution of FFS physicians in the three broad specialty groups. In 1998/99, approximately 65% of female physicians compared to 52% of male physicians were in primary care. In the medical specialties, the distribution converged towards a similar percentage, about 28% of women physicians and 30% of male physicians. In the surgical specialties, there was marked gender differences. While 18% of male physicians are surgical specialists, only 7% of female physicians were in this category.

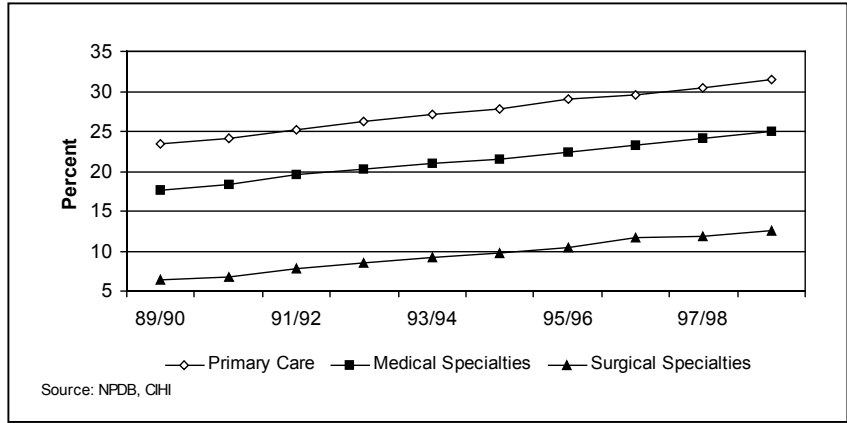


Figure 16. Percent of Female FFS Physicians by Broad Specialty, Canada, 1989/90 to 1998/99

Place of Graduation

Since, 1989/90 there has been a gradual increase in the number of MD graduates of Canadian medical schools (Figure 17). The percent of graduates of Canadian medical schools increased from just over 74% of all FFS physicians in 1989/90 to about 76.5% in 1998/99. The percent of Canadian graduates is higher among female FFS physicians (around 80%) as compared to just over 70% for male FFS physicians. When analyzed by province of practice, the highest percentage of Canadian graduates was found in Quebec, Prince Edward Island and New Brunswick, with the lowest in Saskatchewan and Newfoundland (Figure 18).

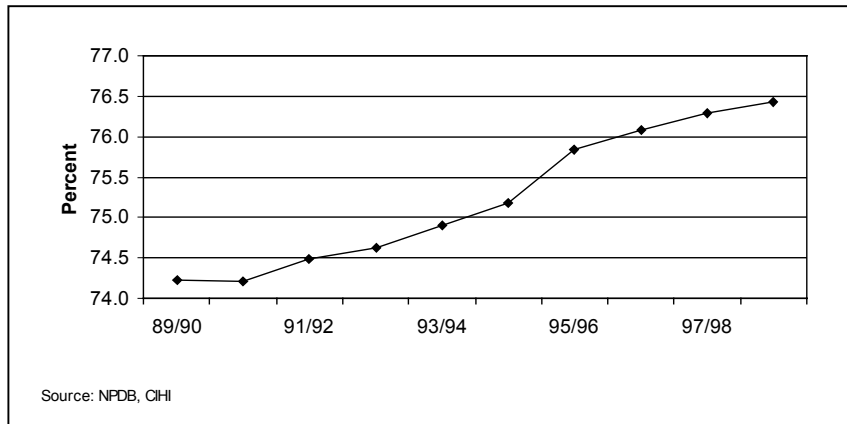


Figure 17. Percent of FFS Physicians who are Graduates of Canadian Medical Schools, Canada, 1989/90 to 1998/99

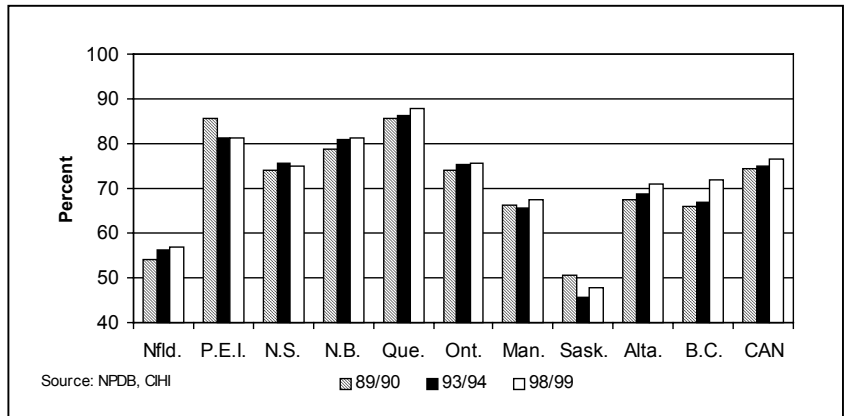


Figure 18. Percent of FFS Physicians who are Graduates of Canadian Medical Schools by Province, 1989/90, 1993/94 and 1998/99

The distribution of physicians by broad specialties differs among graduates of different medical schools (Figure 19). About 57% of graduates of Canadian medical schools were in primary care, compared to 34% of graduates of USA medical schools and 52% of graduates of medical schools outside of North America. A higher percent of USA graduates

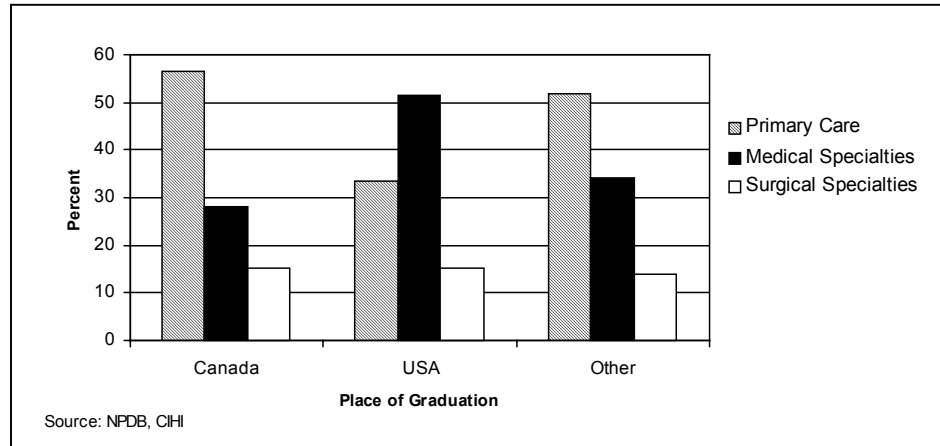


Figure 19. Percent of FFS Physicians by Broad Specialty and Place of M.D. Graduation, Canada, 1998/99

were in medical specialties—51% compared to 34% of graduates outside of North America and 28% of Canadian graduates. A similar percentage of Canadian and USA graduates were in surgical specialties and slightly less among graduates of schools outside of North America.

Age

The age distribution of FFS physicians is also changing. There are greater proportions of physicians in the 40–49 and 50–59 year age groups than there were in the previous decade (Figures 20 and 21). The proportion of physicians in the 30–39 age group however, has decreased continually since 1989/90.

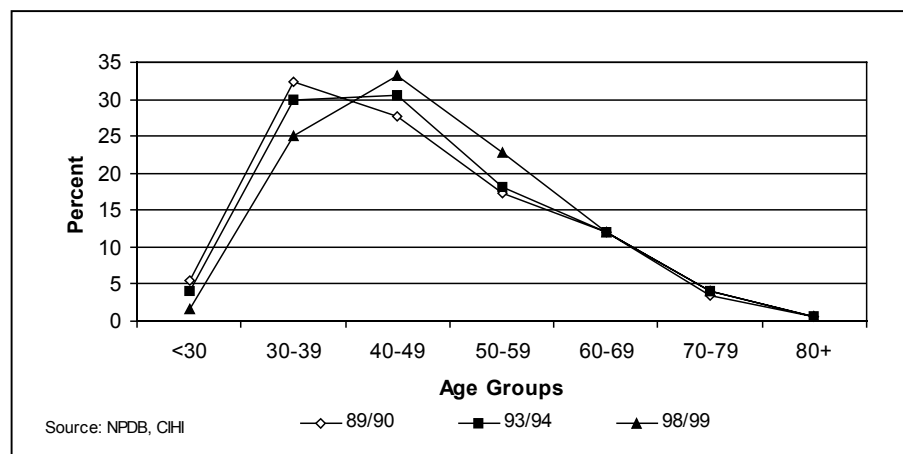


Figure 20. Percent of FFS Physicians by Age Group, Canada, 1989/90, 1993/94 and 1998/99

When the age distribution is examined by broad specialties, the primary care physician providers were younger on average than medical specialists, who in turn were younger than the surgical specialists (Figure 22). Changes over the past decade indicate that both for primary care givers and medical specialists physicians are moving into the older age groups. The distribution of surgical specialists over time, on the other hand, indicates a more stable pattern with a slight movement towards the younger age categories.

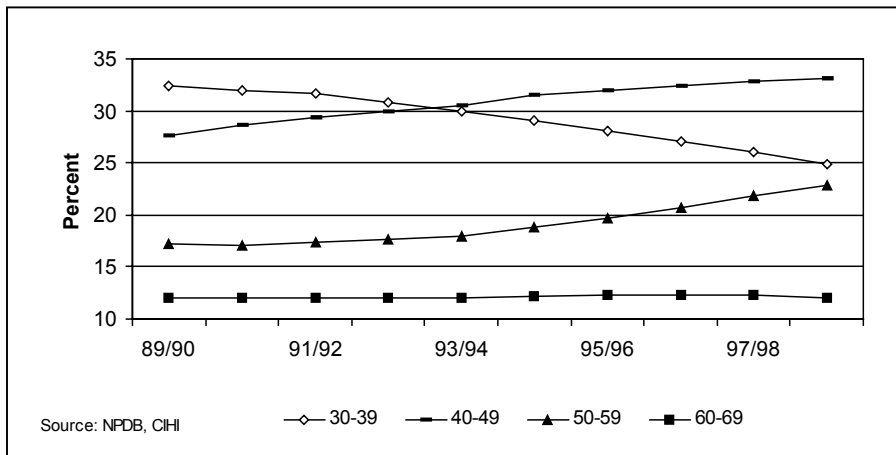


Figure 21. Percent of FFS Physicians by Age Group, Canada, 1989/90 to 1998/99

When the physician distribution by age in 1998/99 is analyzed by gender, the largest percentage of male FFS physicians were in the age group 40–49, while for female FFS physicians the largest group was 30–39 and 40–49 years. Analysis of women FFS physicians as a percent of different age groups in 1998/99 indicated that 55% of physicians less than 30, 42% between ages 30–39, and 31% between ages 40–49 were women (Figure 23). Almost 85 to 90% of physicians in age groups above 50 were men. As physicians above the age of 50 begin to retire, the overall percent of women will, therefore, change more rapidly than it has in the past.

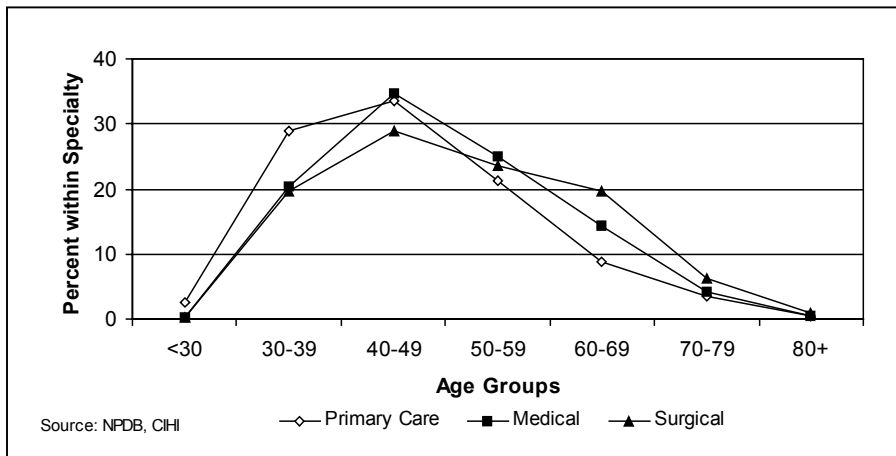


Figure 22. Percent of FFS Physicians by Age Group and Broad Specialty, Canada, 1998/99

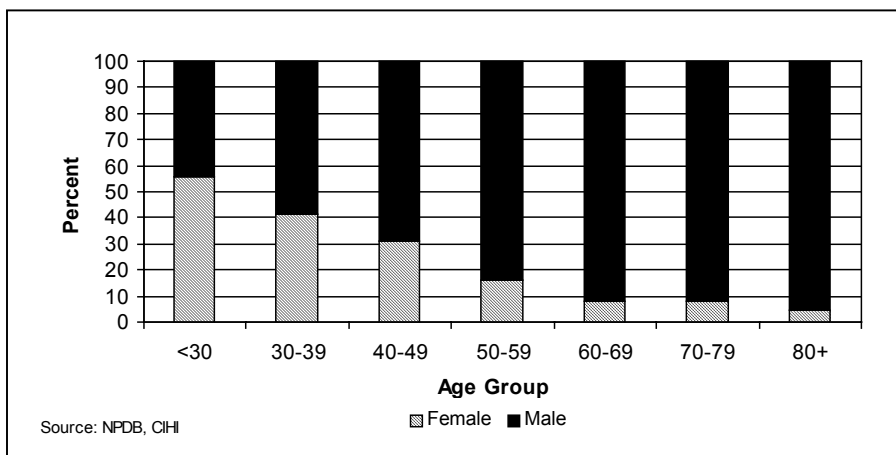


Figure 23. Percent of FFS Physicians by Age Group and Gender, Canada, 1998/99

The age distribution differs among graduates of different medical schools. A greater percentage of graduates of Canadian medical schools were in the younger age groups as compared to graduates of USA medical schools. In age-groups over age 60, graduates of medical schools outside of North America account for a greater proportion of physicians than either Canadian graduates or U.S.A. graduates (Figure 24).

There was a higher percent of younger physicians in rural communities as compared to CMAs and CAs with a corresponding higher percentage of older physicians in urban communities (Figure 25). The oldest groups of physicians work in CMAs.

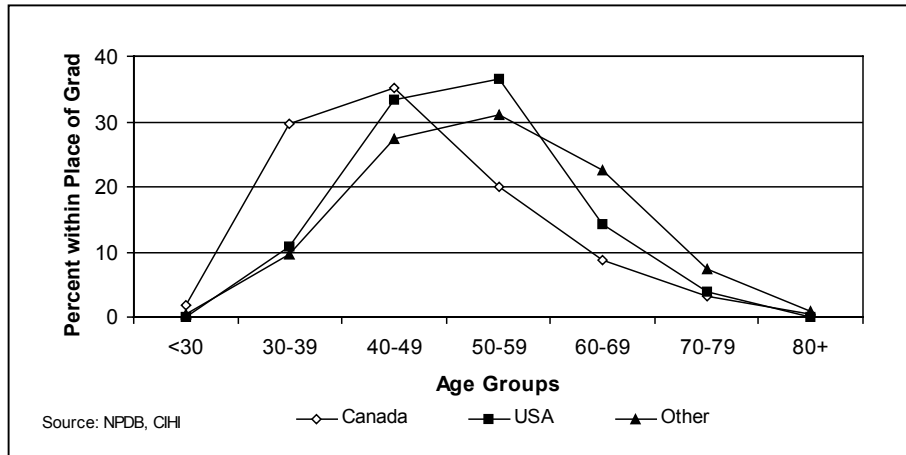


Figure 24. Percent of FFS Physicians by Age Group and Place of Graduation, Canada, 1998/99

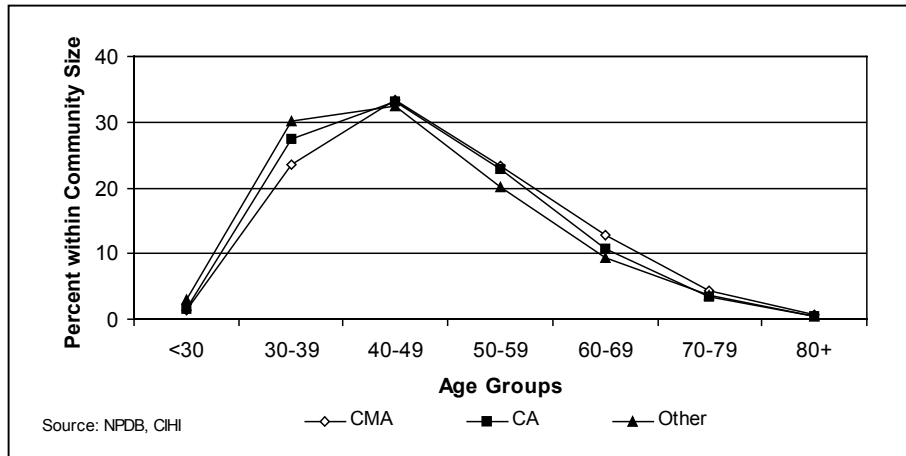


Figure 25. Percent of FFS Physicians by Age Group and Community Size, Canada, 1998/99

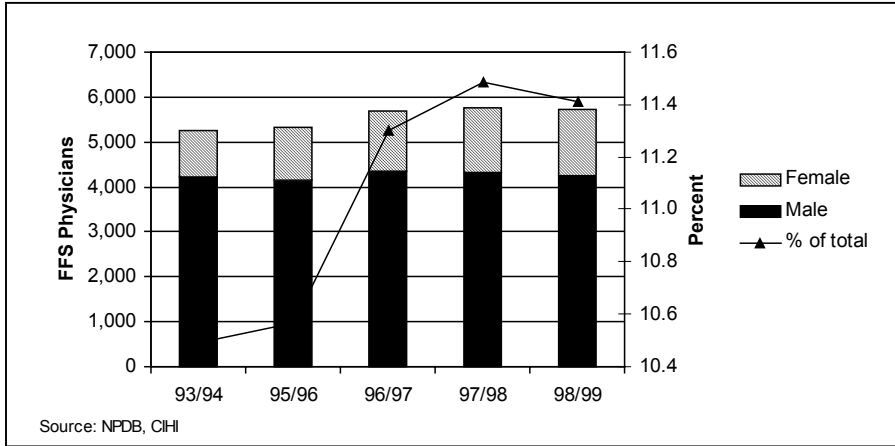


Figure 26. Number of FFS Physicians in Other (non-CA, CMA) Areas by Gender Showing Total Proportions, Canada, 1993/94 to 1998/99

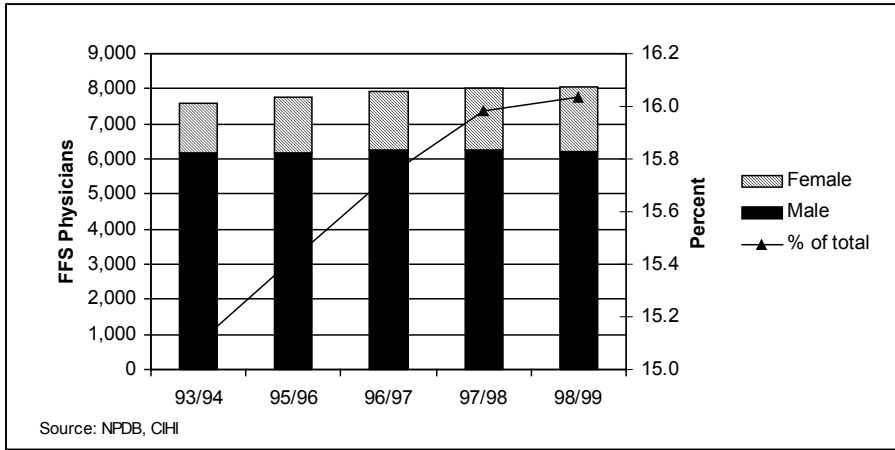


Figure 27. Number of FFS Physicians in CA Areas by Gender Showing Total Proportions, Canada, 1993/94 to 1998/99

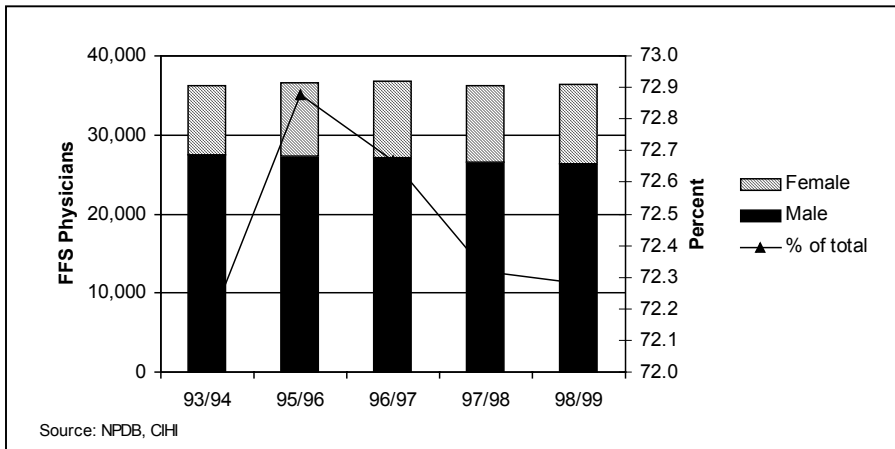


Figure 28. Number of FFS Physicians in CMA Areas by Gender Showing Total Proportions, Canada, 1993/94 to 1998/99

Community Size

The distribution of FFS physicians by community sizes, in rural and urban locations, also indicates changes in the years from 1993/94 to 1998/99. There is an increase of both male and female FFS physicians in rural areas, designated here as non-CAs, non-CMAs, or communities of less than 10,000 population (Figure 26). The percentage of FFS physicians in rural areas increased from 10.5% to 11.4% of all physicians during this period. Similarly, the number of both male and female FFS physicians increased in CAs, or communities between 10,000 and 100,000 population, the percent increasing from 15.0% to 16.0% (Figure 27). Consequently, the percentage of FFS physicians in CMAs where the population was above 100,000 decreased in recent years (Figure 28).

Analysis by gender and disciplines indicates that 15% of female FFS primary care physicians and 18% of male FFS primary care physicians in 1998/99 were practicing in rural locations (Figure 29). The increase in percent specialists for both male and female physicians in rural communities was also striking and in 1998/99, 5% of all FFS surgical specialists were located in rural communities (Figure 30). For medical specialists, the equivalent percentage is about 3% (Figure 31).

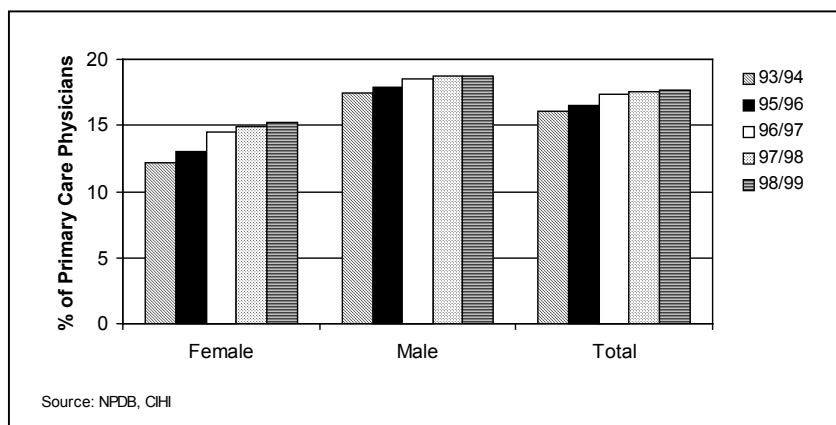


Figure 29. Percent of FFS Primary Care Physicians in Other (non-CA, CMA) Areas by Gender, Canada, 1993/94 to 1998/99

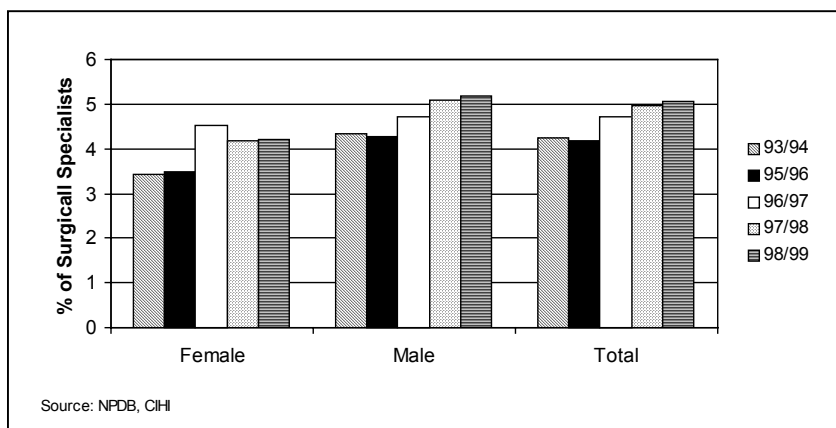


Figure 30. Percent of FFS Surgical Specialists in Other (non-CA, CMA) Areas by Gender, Canada, 1993/94 to 1998/99

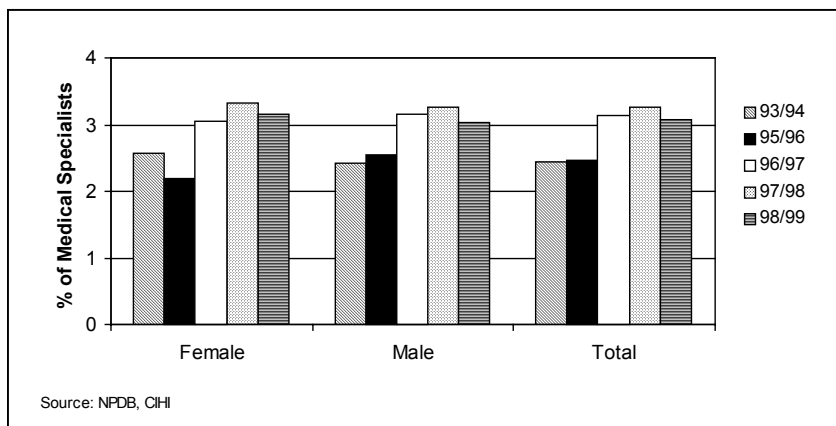


Figure 31. Percent of FFS Medical Specialists in Other (non-CA, CMA) Areas by Gender, Canada, 1993/94 to 1998/99

Geographic Distribution

There is variability in the distribution of graduates of Canadian and non-Canadian medical schools by community size (Table 2). In 1998/99, about 16.7% of primary care physicians who are graduates of Canadian medical schools were located in rural communities. On the other hand, 21.7% of graduates of USA medical schools and 22.5% of primary care physicians who are graduates of schools outside of North America were located in rural communities. Among medical specialties, a higher percent of USA graduates were located in rural communities, followed by graduates from non-North American schools. In the surgical specialties, a higher percent of graduates of medical schools from USA and outside North America were located in rural communities.

Table 2. Distribution of FFS Physicians by Community Size and Place of Graduation

Place of Graduation	Number of Physicians					% by place of graduation				% by community size			
	CMA	CA	OTHER	UNK	TOTAL	CMA	CA	OTHER	TOTAL	CMA	CA	OTHER	TOTAL
FFS Primary Care Physicians in Canada 1998/99													
Canada	14,205	3,830	3,631	67	21,733	65.4	17.6	16.7	100.0	79.2	80.4	74.3	78.6
USA	80	21	28		129	62.0	16.3	21.7	100.0	0.4	0.4	0.6	0.5
Outside North America	3,053	865	1,139	9	5,066	60.3	17.1	22.5	100.0	17.0	18.2	23.3	18.3
Unknown	592	47	90	3	732	80.9	6.4	12.3	100.0	3.3	1.0	1.8	2.6
Total	17,930	4,763	4,888	79	27,660	64.8	17.2	17.7	100.0	100.0	100.0	100.0	100.0
FFS Medical Specialists in Canada 1998/99													
Canada	9,238	1,273	313	19	10,843	85.2	11.7	2.9	100.0	72.9	69.0	67.9	72.2
USA	171	15	11	1	198	86.4	7.6	5.6	100.0	1.3	0.8	2.4	1.3
Outside North America	2,718	504	110	10	3,342	81.3	15.1	3.3	100.0	21.4	27.3	23.9	22.3
Unknown	550	53	27	3	633	86.9	8.4	4.3	100.0	4.3	2.9	5.9	4.2
Total	12,677	1,845	461	33	15,016	84.4	12.3	3.1	100.0	100.0	100.0	100.0	100.0
FFS Surgical Specialists in Canada 1998/99													
Canada	4,426	1,104	259	23	5,812	76.2	19.0	4.5	100.0	77.7	76.3	67.8	77.0
USA	42	12	4		58	72.4	20.7	6.9	100.0	0.7	0.8	1.0	0.8
Outside North America	962	304	104	2	1,372	70.1	22.2	7.6	100.0	16.9	21.0	27.2	18.2
Unknown	268	26	15		309	86.7	8.4	4.9	100.0	4.7	1.8	3.9	4.1
Total	5,698	1,446	382	25	7,551	75.5	19.1	5.1	100.0	100.0	100.0	100.0	100.0
Total FFS Physicians in Canada 1998/99													
Canada	27,869	6,207	4,203	109	38,388	72.6	16.2	10.9	100.0	76.8	77.1	73.3	76.4
USA	293	48	43	1	385	76.1	12.5	11.2	100.0	0.8	0.6	0.8	0.8
Outside North America	6,733	1,673	1,353	21	9,780	68.8	17.1	13.8	100.0	18.5	20.8	23.6	19.5
Unknown	1,410	126	132	6	1,674	84.2	7.5	7.9	100.0	3.9	1.6	2.3	3.3
Total	36,305	8,054	5,731	137	50,227	72.3	16.0	11.4	100.0	100.0	100.0	100.0	100.0

From a community perspective, rural communities are more dependent on graduates of medical schools outside of North America. In 1998/99, about 23% of rural FFS primary care physicians were graduates of medical schools outside North America, compared to 18 and 17% for CAs and CMAs respectively. For medical specialists, both CAs and rural communities rely on graduates of medical schools outside of North America to a greater degree than CMAs. The percent of surgical specialists who were graduates of medical schools outside North America was highest among rural communities, representing 27% of surgical FFS specialists, compared to 21% in CAs and 17% in CMA.

A greater percentage of primary care physicians who are graduates of medical schools outside of North America were located in rural communities (Figure 32). Since 1995/96, the percent of physicians in rural communities increased at a rate greater than that for Canadian graduates.

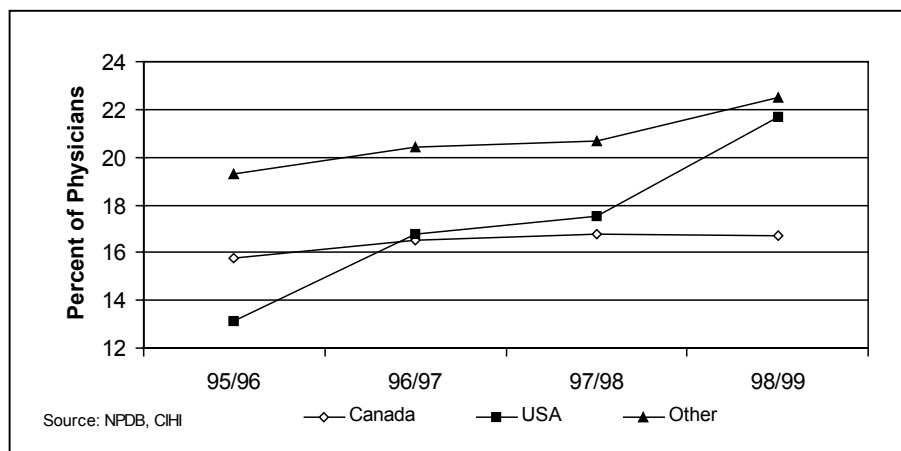


Figure 32. Percent of Primary Care Physicians in Rural Canada by Place of Graduation, Canada, 1995/96 to 1998/99

In 1996, 62% of the Canadian population resided in CMAs, 15.8% in CAs and 22.2% outside of CMAs and CAs. In 1998/99, 64.8% of primary care physicians were located in CMA, 17.2% in CAs and 17.7% outside of CMAs and CAs (Table 2). The percentages for surgical specialists were 75.5%, 19.1% and 5.1% and for medical specialists 84.4%, 12.3% and 3.1%, respectively. If distribution of physicians across the three community sizes is expected to reflect population distribution, clearly medical specialists are least well distributed.

Workload Indicators

Population per Physician

Although the ratio FFS physicians per population is an expression of the status of physician workforce, the inverse ratio, population per FFS physician, an average number of persons that could be served by a single physician, may be viewed as a rough indicator of the potential workload for physicians. Although the ratio in a given year may be difficult to interpret, the changes over time may lead to a more significant reflection of the trends impacting on the system.

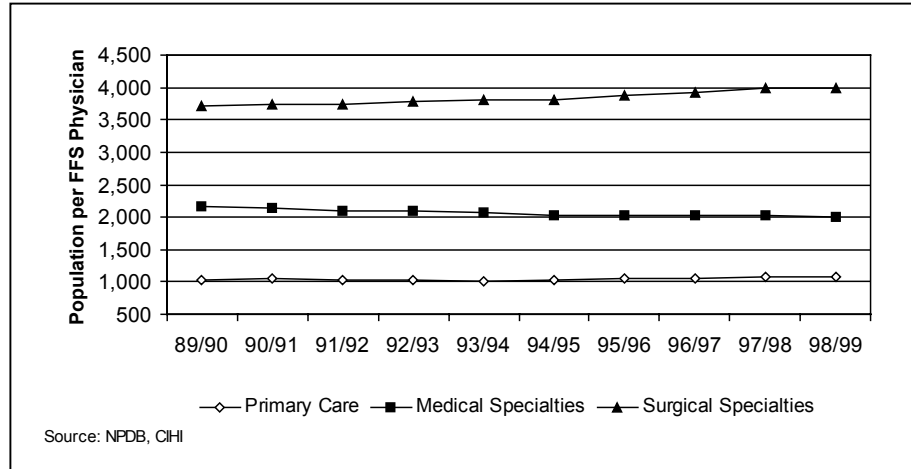


Figure 33. Population per FFS Physician by Broad Specialty, Canada, 1989/90 to 1998/99

As suggested in the previous analyses, it is important to view the data by broad specialty groupings

since the impact is different for each group. The population per FFS surgical specialist has been increasing from 1990 to 1999, dropping for FFS medical specialists and relatively unchanged for FFS primary care physicians (Figure 33). The changes, relative to one

another is more apparent when the data are indexed to 1989/90 as the base year (Figure 34). The population per surgeon in 1998/99 is greater by about 7.4%, compared to 1989/90, up 5% for primary care providers and down by 7.8% for medical specialists.

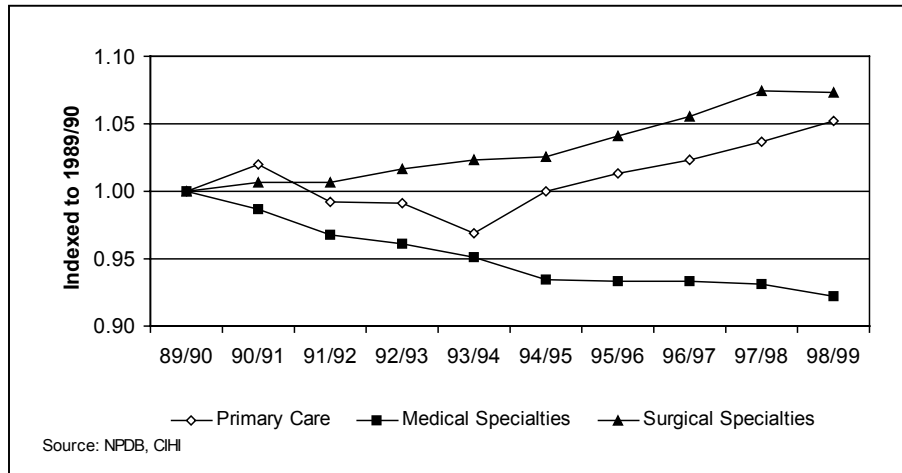


Figure 34. Population per FFS Physician Indexed to 1989/90 by Broad Specialty, Canada, 1989/90 to 1998/99

Analysis of FFS Physicians by Benchmarks

The NPDB reports FTEs based on a benchmark year. Using 1985/86 as a base year to which increases or decreases in payment schedules are benchmarked, the 40th to 60th percentile for each discipline, based on billing profiles, was chosen as the threshold identified as “within” the benchmark with others falling “below” or “above” the threshold. Longitudinal studies are useful in viewing how changes in physician numbers, population

growth, service demands, etc. have impacted on the distribution of FFS physicians by benchmarks, as one of the indicators of workload.

In the ten provinces, since the early 1980’s there has been a gradual increase in the number of FFS primary care providers above the benchmarks.

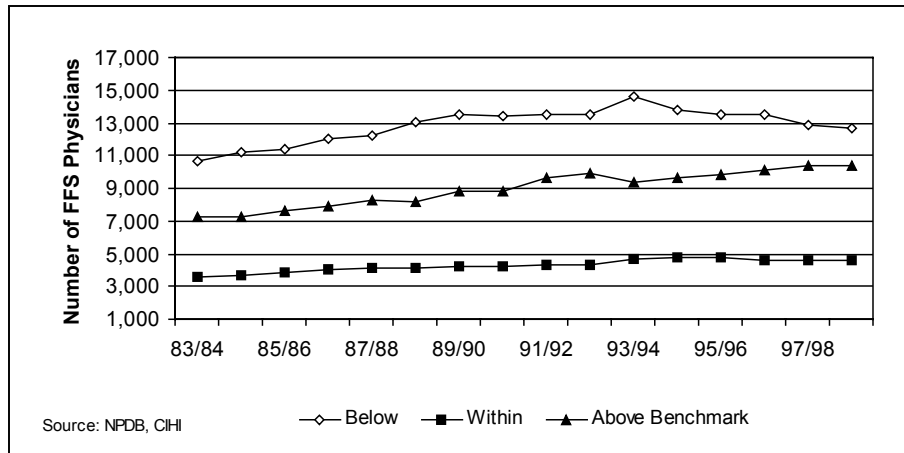


Figure 35. Number of FFS Primary Care Physicians by FTE Benchmarks, 10 Provinces, 1983/84 to 1998/99

Between 1994/95 and 1998/99, there was a decrease in the number of physicians below the lower benchmarks, accompanied by increases in above and within benchmark categories (Figure 35). This suggests a heavier workload for increasing numbers of primary care physicians.

In the surgical specialties, the number of FFS surgeons in the ten provinces above benchmark increased continuously between 1983/84 and 1991/92 and then remained stable until 1998/99. Since 1989/99, the number of physicians below and within the benchmarks have decreased (Figure 36). The increasing workload of surgical specialists may be related in part to the decreasing number of FFS surgical specialists per population, more demand or increased needs.

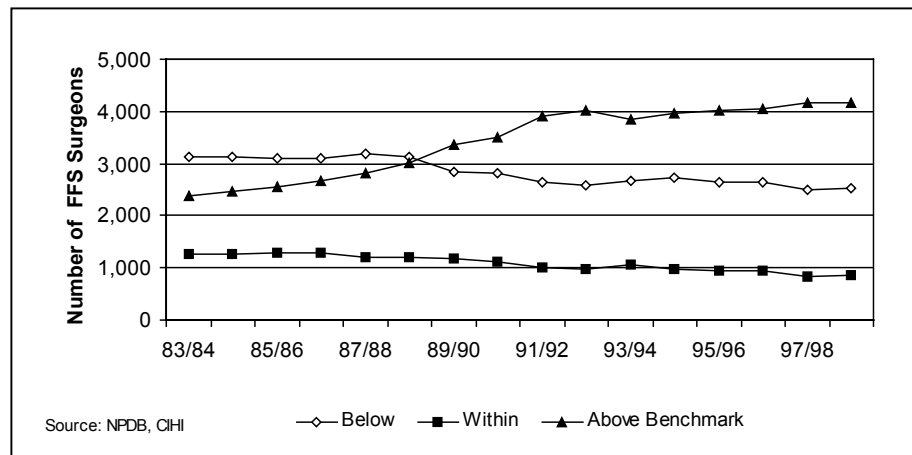


Figure 36. Number of FFS Surgical Specialist by FTE Benchmarks, 10 Provinces, 1983/84 to 1998/99

In the medical specialties, the number of FFS medical specialists in the ten provinces above benchmark increased continuously since 1983/84 (Figure 37). The number below benchmark also increased gradually from 1983/84 to 1991/92, although at a slower rate, and it has remained relatively static from 1991/92 to 1998/99.

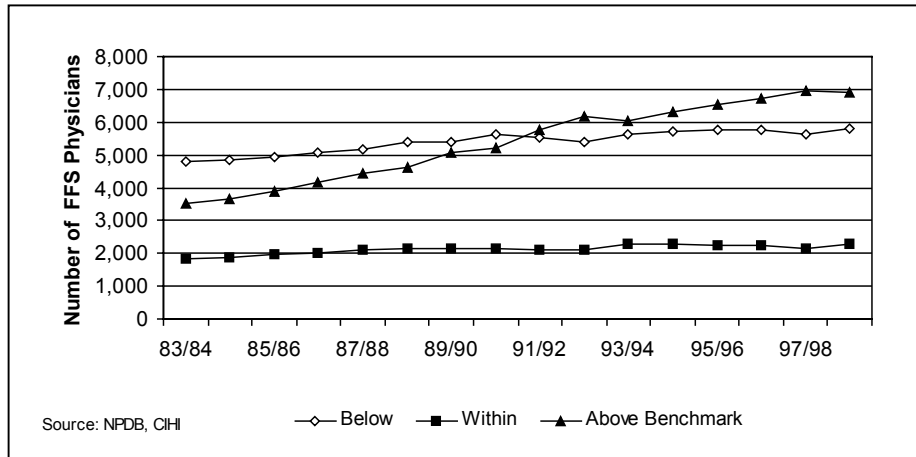


Figure 37. Number of FFS Medical Specialist by FTE Benchmarks, 10 Provinces, 1983/84 to 1998/99

Since the number of medical specialists has increased each year, it may be difficult to attribute the increasing workload to decreasing medical specialists per population as in the case of surgical specialists, but the increasing workload may be a reflection of an increased demand for medical services.

Activity Ratios

In addition to counting FFS physicians by benchmarks, NPDB calculates FTE physicians by specialties nationally and by individual provinces. The FTE calculation, based on physician's billing data, is standardized on a national basis adjusting for inter-provincial differences in fee levels, allowing comparisons to be made across the provinces and territories. The calculations of FTE physicians are also standardized to a base year, 1985/86, making it possible to follow changes over time. Physicians within the benchmark, established as 40th–60th percentile in 1985/86, are counted as one FTE, those below the 40th percentile are expressed as a fraction of an FTE proportional to the lower benchmark, and those above the 60th percentile are calculated on a log-linear relationship of the upper benchmark.

The total FTE per specialty or discipline is an indicator of the total services delivered by the group of physicians who deliver services in that category or discipline. Those services are delivered by a defined number of FFS physicians. The FTE/FFS ratio, termed activity ratio, has been used as a measure of an average workload per physician. The changes in FTE over time in relation to the number of FFS physicians and the FTE/FFS ratio is an indicator of workload measure.

Broad Specialty

For all physicians, the total FTE count diverged from the FFS physician count between 1989/90 and 1993/94, during a period when FFS physicians were increasing (Figure 38). Since 1994/95, FTE physician counts have converged towards the FFS physician counts, especially in the last two years. This is during a period when the FFS physician numbers stabilized, and when FFS physicians per population decreased (Figure 5). Since 1994/95, the activity ratio increased.

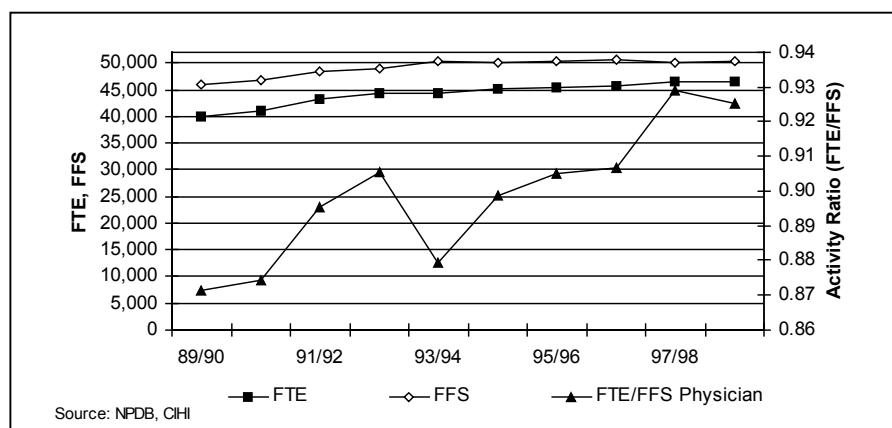


Figure 38. Physician Activity Ratios of All Physicians, Canada, 1989/90 to 1998/99

A very similar pattern is noted for the subset of primary care providers, with a sharp increase in activity ratios since 1993/94 (Figure 39), a period when FFS primary care providers per population decreased (Figure 6). For surgical specialists, as the number of FFS surgical specialists and FFS surgeons per population decreased, total FTE and activity ratios rose, especially in the last two reporting years (Figure 40).

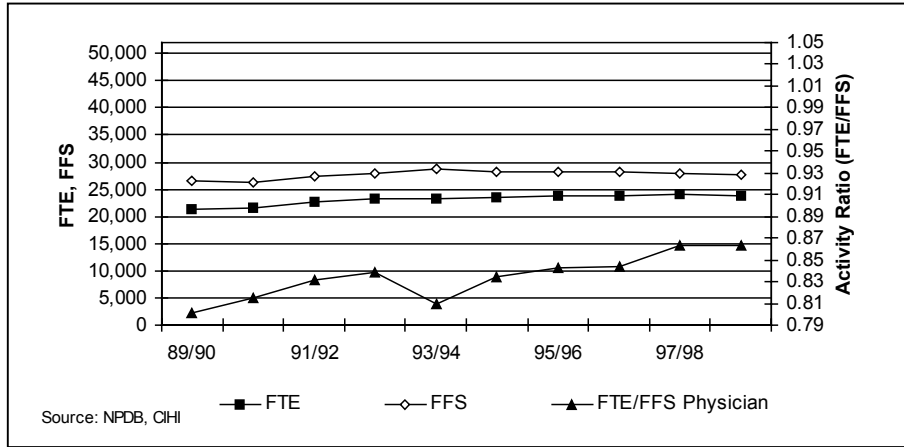


Figure 39. Physician Activity Ratios of Primary Care Physicians, Canada, 1989/90 to 1998/99

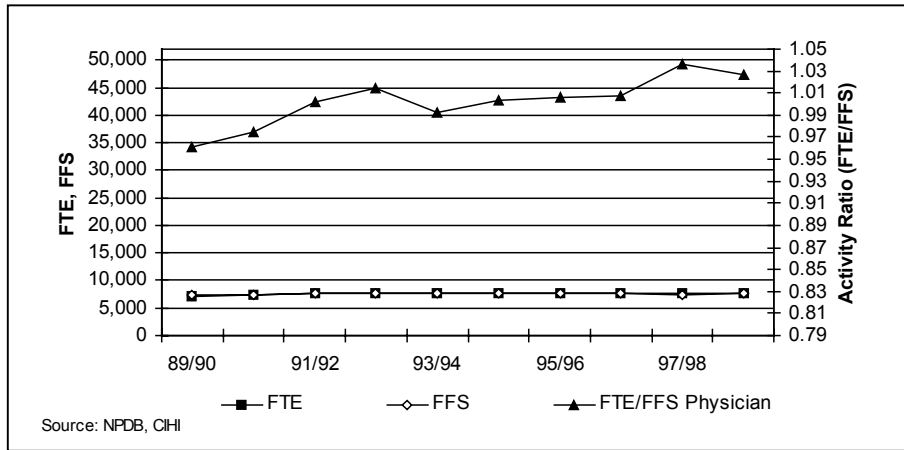


Figure 40. Physician Activity Ratios of Surgical Specialists, Canada, 1989/90 to 1998/99

For medical specialists, the FTE count has converged towards FFS counts continuously since 1989/90, in spite of increasing FFS medical specialists. This convergence was accompanied by a rise in the activity ratio between 1989/90 and 1998/99 (Figure 41).

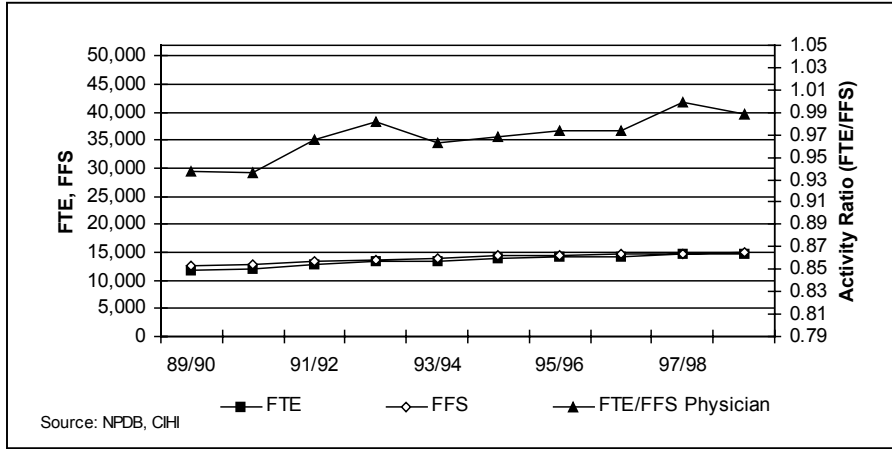


Figure 41. Physician Activity Ratios of Medical Specialists, Canada, 1989/90 to 1998/99

These data indicate that, although the rate of change in FFS physicians and FFS physicians per population differs by specialty groups, the total FTE or workload for each group increased in the last few years, with an increase in activity ratios across all disciplines.

The activity ratio is influenced by a number of factors besides broad specialty groups such as age, gender, place of graduation, location of practice.

Province

Activity ratios vary across the provinces (Figure 42). The highest ratios for all physicians are noted in Ontario, New Brunswick, and Prince Edward Island. The most striking increases between 1989/90 and 1998/99 are in Ontario and Quebec.

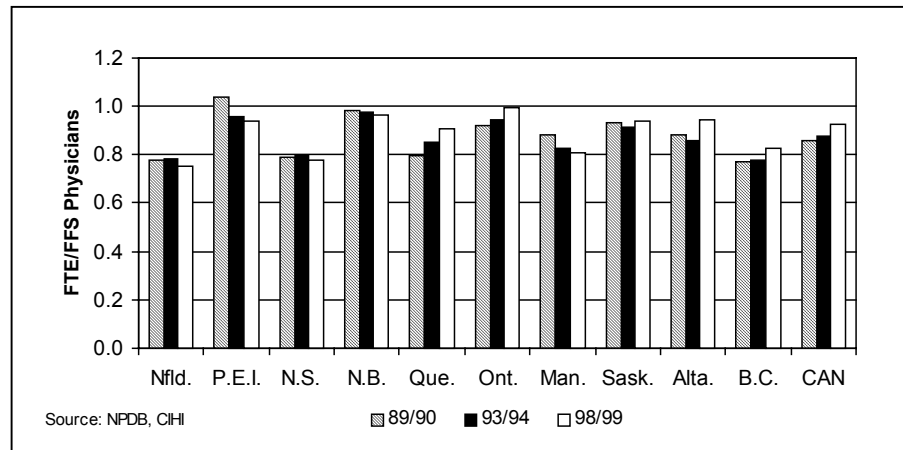


Figure 42. Physician Activity Ratios by Province, All Physicians, 1989/90, 1993/94 and 1998/99

In primary care, activity ratios are highest in Prince Edward Island, New Brunswick and Ontario (Figure 43). When viewed over three time periods, Ontario has shown the greatest increase during that period, followed by Quebec. In some provinces such as New Brunswick, Prince Edward Island, Newfoundland and Manitoba, the activity ratios of primary care physicians decreased over the past decade.

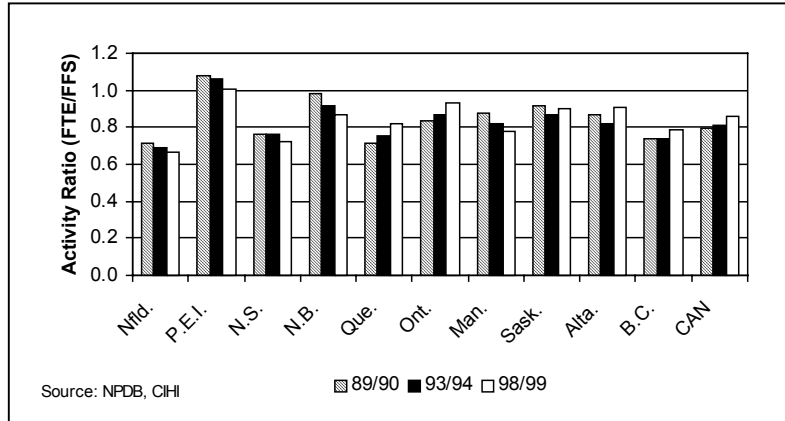


Figure 43. Physician Activity Ratios by Province, Primary Care Physicians, 1989/90, 1993/94 and 1998/99

The activity ratio of medical specialists is highest in New Brunswick, Ontario and Saskatchewan (Figure 44). Provinces showing increases over time include Quebec, New Brunswick, Ontario, Saskatchewan, Alberta and British Columbia.

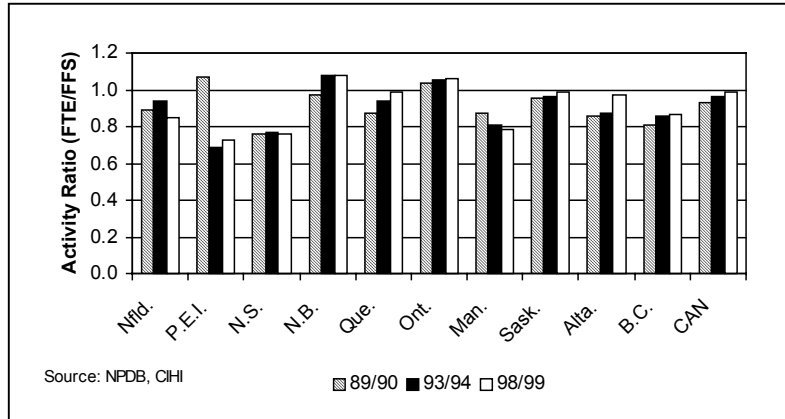


Figure 44. Physician Activity Ratios by Province, Medical Specialists, 1989/90, 1993/94 and 1998/99

In the surgical specialties, New Brunswick, Alberta, Ontario and PEI had the highest ratios (Figure 45). The activity ratios of surgical specialists increased over the last decade in almost all provinces.

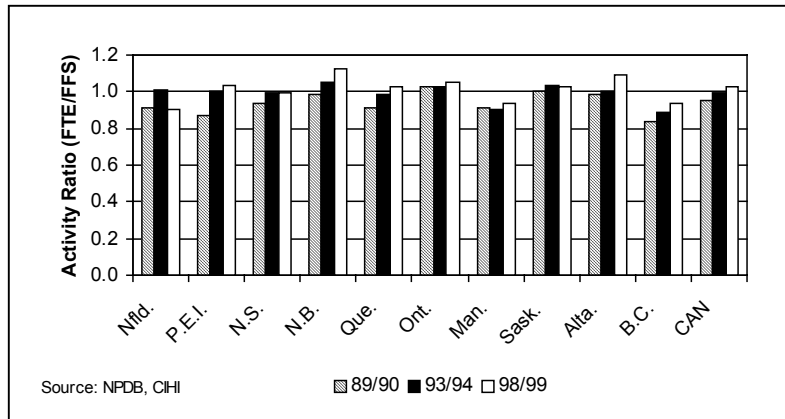


Figure 45. Physician Activity Ratios by Province, Surgical Specialists, 1989/90, 1993/94 and 1998/99

Gender

The activity ratios of women physicians are approximately 75–80% of male counterparts (Figure 46) and the ratios have increased for both male and female physicians since 1989/90.

Age

The peak activity ratios for all physicians are seen between the ages of 50–59, followed by ages 40–49 and 60–69 (Figure 47). Activity ratios for all age groups, except 40–49, increased between 1989/90 and 1993/94.

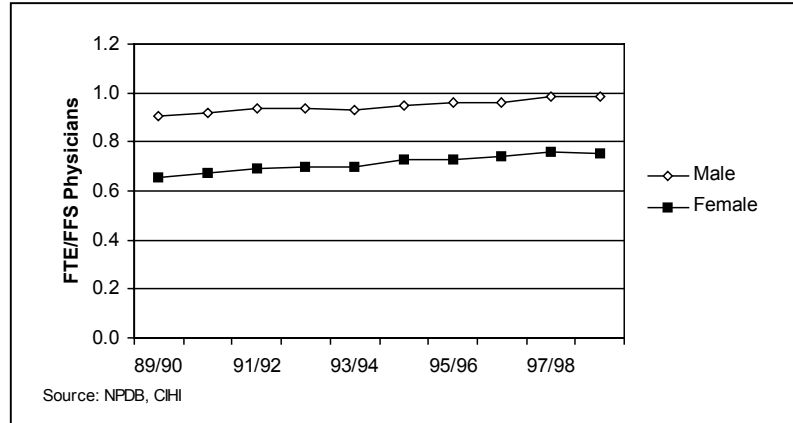


Figure 46. Physician Activity Ratios by Gender, Canada, 1989/90 to 1998/99

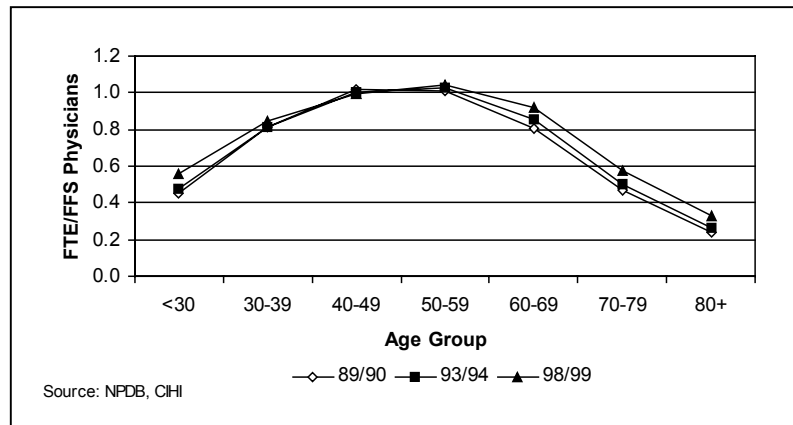


Figure 47. Physician Activity Ratios by Age Group, Canada, 1989/90, 1993/94 and 1998/99

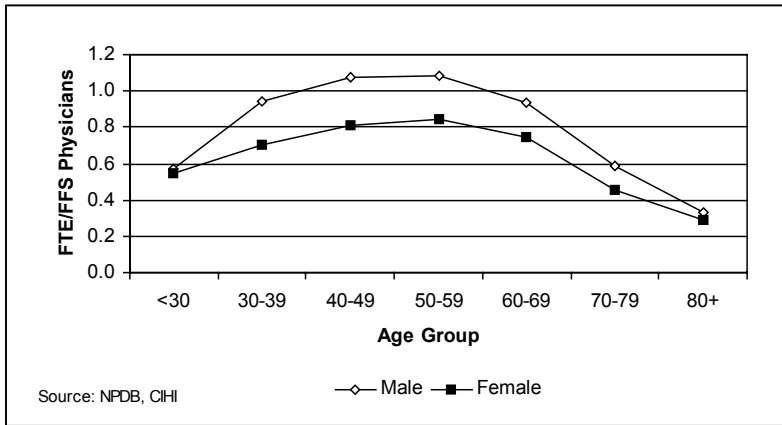


Figure 48. Physician Activity Ratios by Age Group and Gender, Canada, 1998/99

Analysis by gender indicates that activity ratios in 1998/99 for male physicians are highest between 40–49 and 50–59, while for female physicians the peak activity is between 50 and 59 (Figure 48). The differences in activity ratios between men and women diminishes towards the extremes of age groups with little or no difference noted for physicians in the age group less than 30 and those over 80. Activity ratios for both men and women physicians have shown an increase for all age groups since 1989/90, with the most noticeable change in women physicians in the age group 60–69 (Figures 49 and 50).

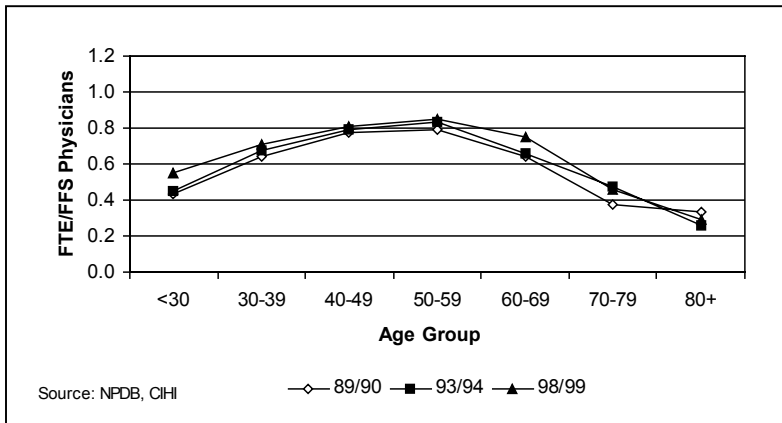


Figure 49. Physician Activity Ratios of Female Physicians by Age Group, Canada, 1998/99

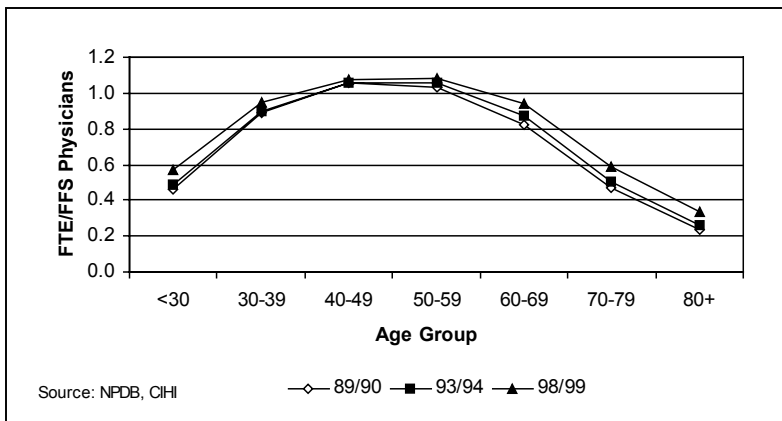


Figure 50. Physician Activity Ratios of Male Physicians by Age Group, Canada, 1998/99

Examination of activity ratios by age groups and broad specialties, indicate that surgical specialists have the highest activity ratios for all age groups below 60 followed by medical specialists and primary care physicians (Figure 51). Above the age of 60, medical specialists have the highest ratios. When viewed over time, activity ratios have increased for almost all age groups over the past decade for primary care physicians and surgical specialists. In medical specialties, the increase in 1998/99 was most prominent for physicians over 60.

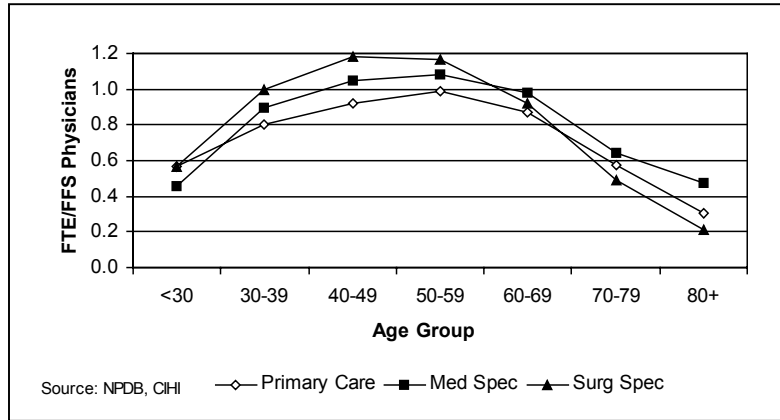


Figure 51. Physician Activity Ratios by Age Group for Broad Specialties, Canada, 1998/99

Place of Graduation

The activity ratio varies with medical school graduates from different countries. Graduates of schools outside of Canada and the USA consistently demonstrate the highest activity ratios, while USA graduates show the lowest (Figure 52). Still, all three groups are characterized by generally increasing activity levels throughout the 1990s. In addition, activity levels increased for all age groups and for males and females alike.

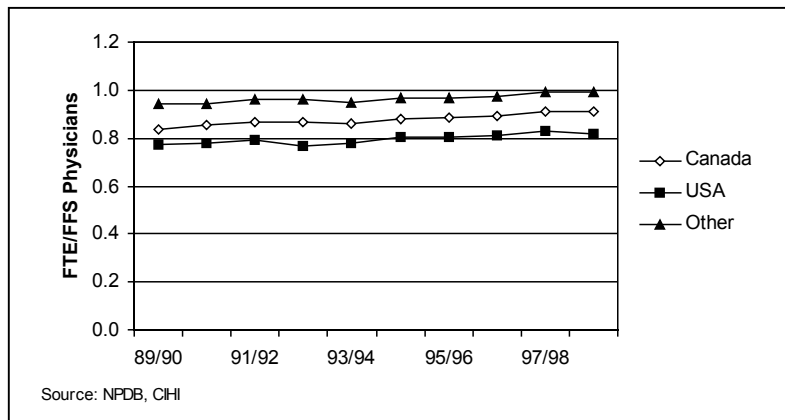


Figure 52. Physician Activity Ratios of All Physicians by Place of Graduation, Canada, 1989/90 to 1998/99

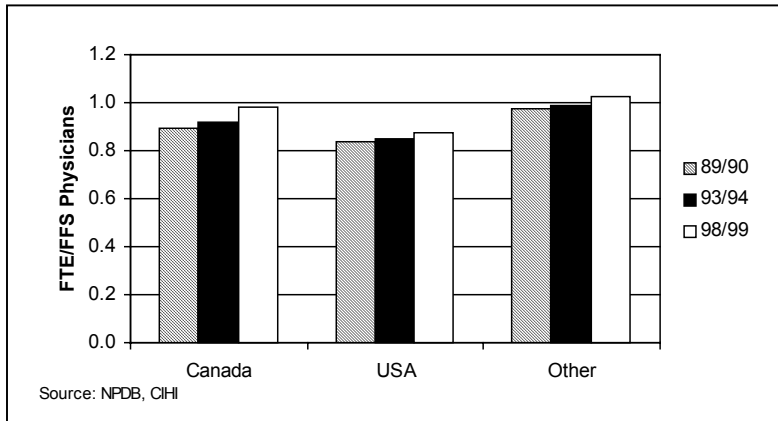


Figure 53. Physician Activity Ratios of Male Physicians by Place of Graduation, Canada, 1989/90, 1993/94 and 1998/99

Analysis by gender indicates that both male and female graduates of all schools are increasing their activity (Figures 53 and 54), and the differences noted with medical school of graduation are consistent for both male and female graduates.

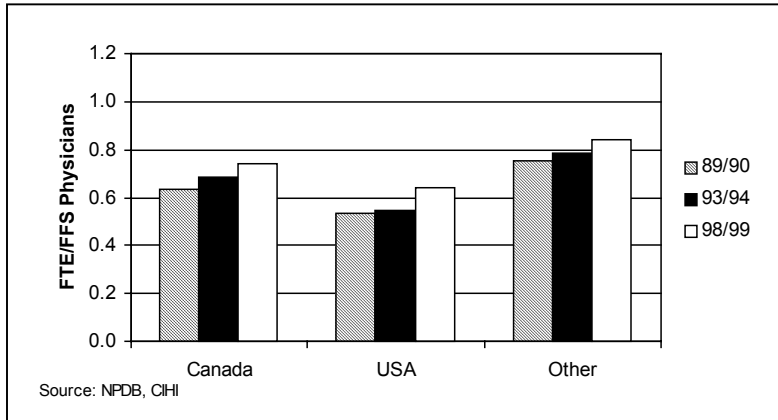


Figure 54. Physician Activity Ratios of Female Physicians by Place of Graduation, Canada, 1989/90, 1993/94 and 1998/99

Community Size

The activity ratios also vary depending on community size. When the activity ratios of all physicians are analyzed by community size, the activity ratios are highest in CAs, followed by CMAs (Figure 55).

Amongst primary care providers, the ratio was highest in CAs and lowest in CMAs (Figure 56). Family physicians in areas other than CAs and CMAs, in rural communities with populations of less than 10,000, have the second highest ratios after physicians in CAs. Since 1993/94, the activity ratios increased in CAs and CMAs, with the greatest increase occurring in CMAs.

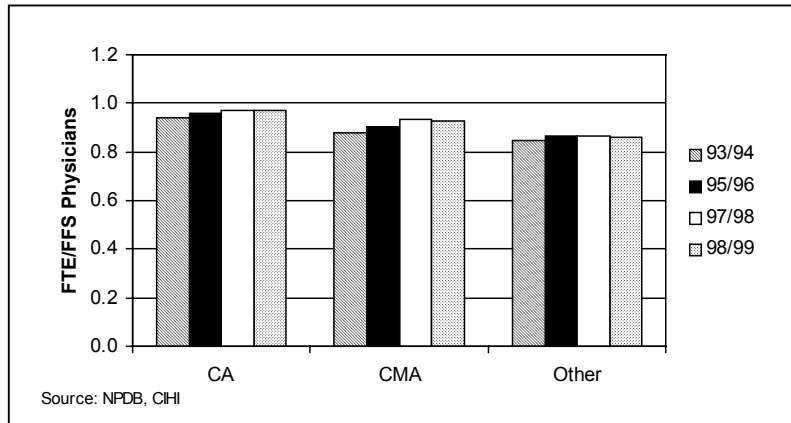


Figure 55. Physician Activity Ratios of All Physicians by Community Size, Canada, 1993/94 to 1998/99

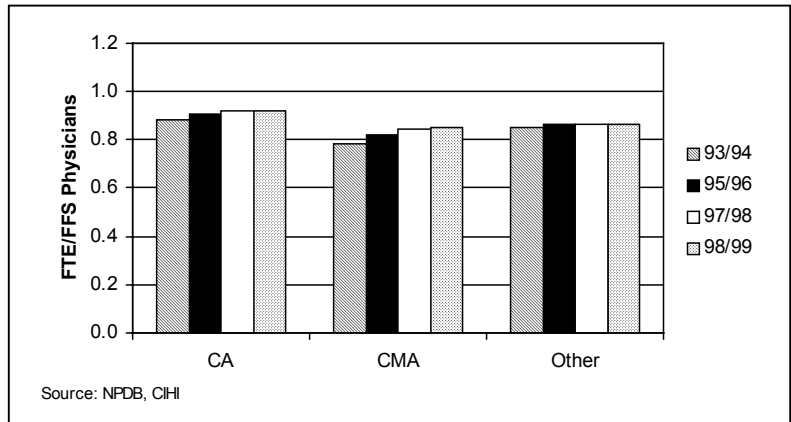


Figure 56. Physician Activity Ratios of Primary Care Physicians by Community Size, Canada, 1993/94 to 1998/99

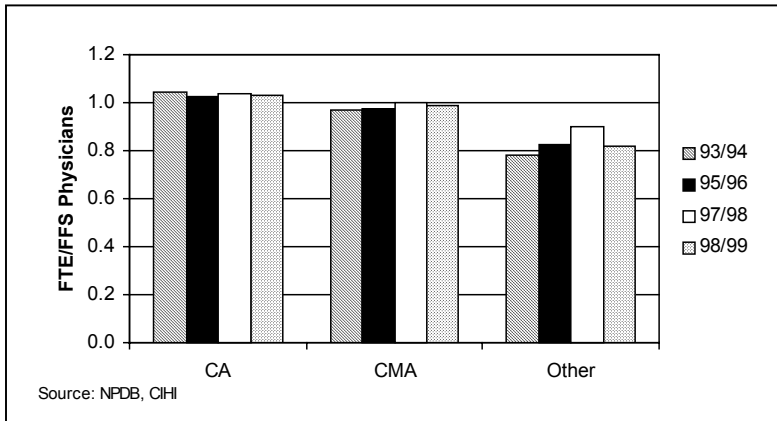


Figure 57. Physician Activity Ratios of Medical Specialists by Community Size, Canada, 1993/94 to 1998/99

The highest activity ratios for medical specialists were consistently found in CAs, followed by CMAs, with the lowest ratios outside of these two groups of communities (Figure 57). The activity ratios for surgical specialists were highest in CAs and CMAs (Figure 58).

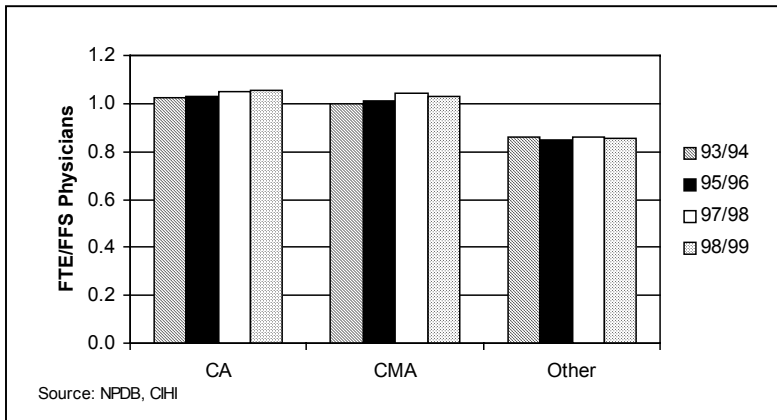


Figure 58. Physician Activity Ratios of Surgical Specialists by Community Size, Canada, 1993/94 to 1998/99

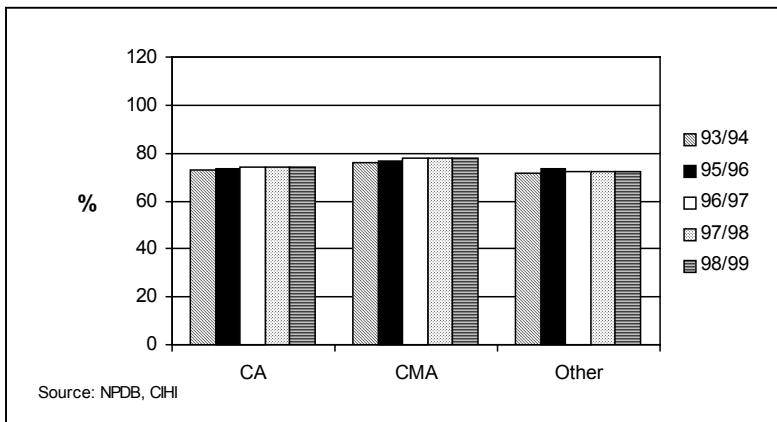


Figure 59. Physician Activity Ratios by Community Size, All Female Physicians as a Percent of All Male Physicians' Activity, Canada, 1993/94 to 1998/99

A comparison between male and female physician activity ratios shows some interesting differences by community size. For all female physicians in 1998/99, the activity ratio was about 74% that of male physicians in CAs, about 78% in CMAs, and 72% outside of CAs and CMAs (Figure 59). The situation was similar for the subgroup of female primary care providers and the equivalent percentages are 73%, 78% and 71% respectively (Figure 60). The activity ratio for female medical specialists was higher, about 75% of male physicians in CA, 80% in CMA, and 78% in other regions outside of CAs and CMAs (Figure 61). In areas outside of CAs and CMAs, the percentage was higher in 1993/94 and has dropped each year to 78% in 1998/99. In the case of female surgical specialists, the activity ratios were about 87% of their male colleagues in CAs and CMAs, and in smaller communities it was close to 107% of their male counterparts in 1993/94 (Figure 62). The percentage fell since then and is about 95% in 1998/99. The gender differences, therefore, are influenced by broad specialty categories and by community size.

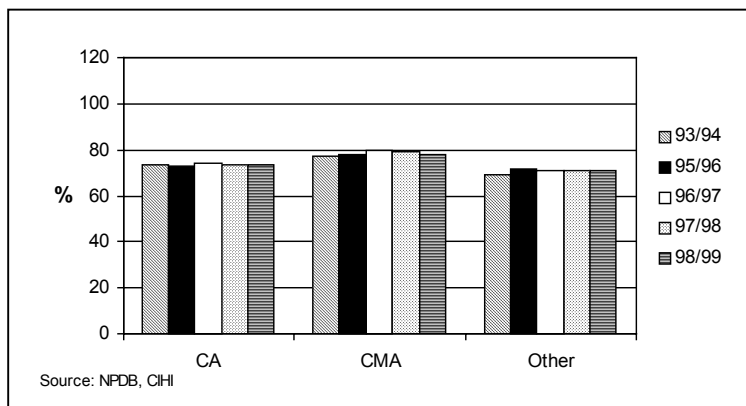


Figure 60. Physician Activity Ratios by Community Size, Female Primary Care Physicians as a Percent of All Male Primary Care Physicians' Activity, Canada, 1993/94 to 1998/99

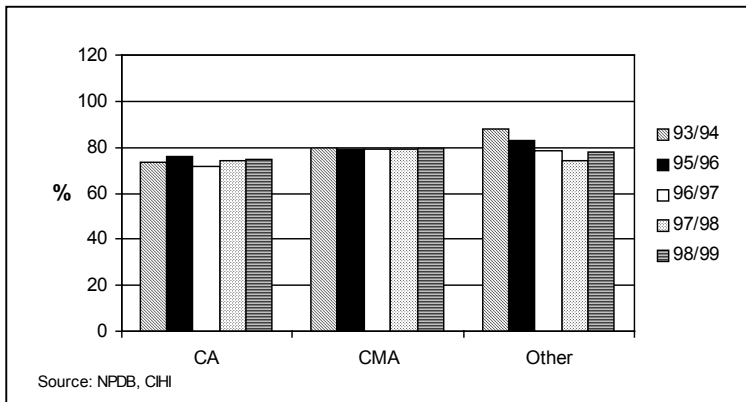


Figure 61. Physician Activity Ratios by Community Size, Female Medical Specialists as a Percent of All Male Medical Specialists' Activity, Canada, 1993/94 to 1998/99

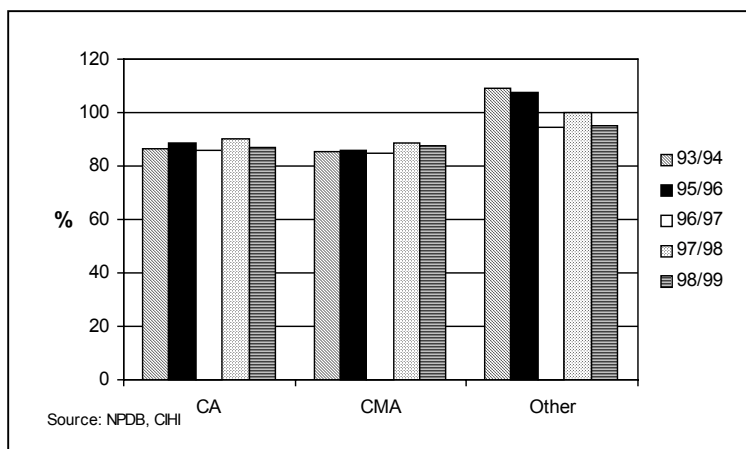


Figure 62. Physician Activity Ratios by Community Size, Female Surgical Specialists as a Percent of All Male Surgical Specialists' Activity, Canada, 1993/94 to 1998/99

A comparison of activity ratios by community size and place of graduation in 1998/99 indicates that for primary care and medical specialties, graduates from schools outside of North America have the highest activity ratios for CAs, CMAs and areas outside of CAs and CMAs (Table 3). For surgical specialists, graduates of medical schools outside of North America also show the highest activity ratio in CMAs, but graduates of Canadian medical schools have the highest ratios in CAs. Outside of CAs and CMAs, surgical specialists who are graduates of USA medical schools have the highest activity ratios.

Table 3. Activity Ratio of Physicians by Community Size and Place of Graduation

Place of Graduation	CMA	CA FTE/FFS	OTHER*	TOTAL
FFS Primary Care Physicians in Canada 1998/99				
Canada	0.83	0.91	0.86	0.85
USA	0.76	0.90	0.81	0.79
Outside North America	0.95	0.97	0.89	0.94
Total	0.85	0.92	0.86	0.86
FFS Medical Specialists in Canada 1998/99				
Canada	0.97	1.00	0.80	0.97
USA	0.79	0.79	0.67	0.78
Outside North America	1.06	1.11	0.84	1.06
Total	0.99	1.03	0.82	0.99
FFS Surgical Specialists in Canada 1998/99				
Canada	1.03	1.06	0.88	1.03
USA	1.00	1.02	0.97	1.01
Outside North America	1.03	1.02	0.80	1.01
Total	1.03	1.05	0.85	1.03
Total FFS Physicians in Canada 1998/99				
Canada	0.91	0.96	0.85	0.91
USA	0.81	0.89	0.79	0.82
Outside North America	1.01	1.02	0.88	0.99
Total	0.93	0.97	0.86	0.93
* Non CMA, CA				

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