# Canada's Health Care Providers

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# Contents

# Acknowledgements

The Canadian Institute for Health Information wishes to acknowledge and thank the many individuals and organizations who contributed to the development of this report.

We would particularly like to express our thanks to the Expert Group who provided invaluable advice throughout the development process, including reviewing a draft of the report. Members included:

- **Dr. Tom Ward**, (Chair), Deputy Minister, Nova Scotia Department of Health
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It should be noted that the analyses and conclusions in this report do not necessarily reflect those of the individual members of the Expert Group or the organizations they are affiliated with.

The editorial committee for the report was Kira Leeb, Jeanie Lacroix, and Jennifer Zelmer. Core members of the project team also included: Matthew Alexander, Dalila Bakhti, Brent Barber, Janet Brown, Paulina Carrión, Shelley Drennan, Patricia Finlay, Jeff Green, Cheryl Gula, Sharon Gushue, Roberta Hood, Marc Lalonde, Anne Lauzon, Sarah Lenz, Christina Mathers, Karen McCarthy, Christa Morley, Bruce Petrie, Lise Poirier, Marie Pratte, Indra Pulcins, Francine Anne Roy, Paul Sajan, Karin Schoeberle, Jill Strachan, Serge Taillon, Linda Turner, Scott Young, and Patricia Yow.

CIHI would also like to thank members of the Institute for Work & Health (particularly Dee Kramer, Kathy Knowles Chapeskie, Mickey Kerr, Mieke Koehoorn, and Jane Bartram) for their contributions to the chapter, *The Health of Health Care Providers* and Dr. Linda O'Brien-Pallas, for her contributions to the chapter, *Planning for the Future: The Supply of Health Care Providers*.

This report could not have been completed without the generous support and assistance of many other individuals and organizations—including many health professional associations and the federal, provincial, and territorial Ministries of Health—who compiled data, undertook research discussed in the report, and/or provided financial support.

# Highlights

## Who's Who in Health Care

### What we know:

- Over 1.5 million people across the country worked in health care and social services in 2000. That's about one in 10 employed Canadians.

- Nursing is the largest health profession. In 2000, more than 232,000 RNs worked in nursing in Canada. That's 754 per 100,000 Canadians, up almost 10 RNs per 100,000 from 1999 but about the same as 5 years earlier. Although most RNs (64% in 2000) work in hospitals, employment in community health is gradually increasing.

- In 2000, CIHI counted more than 57,800 physicians in clinical and non-clinical practice in Canada, an increase of 5.3% compared to five years before.

- Canadians use different types of health services and can access many different health providers. According to a 1998/99 Statistics Canada survey, 85% of women and 72% of men had consulted with a general practitioner in the past year. And, 40% of those surveyed had seen 3 or more health care providers including general or family practitioners, eye specialists, other medical doctors, dentists or orthodontists, chiropractors, physiotherapists, social workers or psychologists, and speech/audiology/occupational therapists.

- Canada's health care team includes a wide range of regulated, unregulated, and informal or volunteer caregivers. The largest groups of unregulated health care providers are family members, friends, and community volunteers. According to Statistics Canada, 2.1 million adult Canadians provided support for one or more seniors in 1996.

## Becoming A Health Care Provider

### What we know:

- Canada's universities and community colleges offer a wide range of health care training programs. There are now over 150 different health programs being offered across the country.

- In 1998/99, Statistics Canada reported that about 38,000 students were enrolled in full-time and part-time undergraduate health professional programs. Over three-quarters (76%) were women. This mix has changed over time. In medicine, for instance, female enrolment has increased steadily in recent years. Women graduates have outnumbered male graduates since 1996.

- The numbers and mix of students graduating from training programs has changed over time. For example, more physical therapy, occupational therapy, and dental hygiene students graduated in 2000 than in 1988, but there were fewer graduates from medicine and dentistry programs.

- Training requirements are changing for many health professions. For example, Canada's nursing associations are moving towards a Bachelor of Science in Nursing (BScN) degree as a minimum requirement for entry into nursing practice.

- Medical and dental programs have higher average undergraduate tuition than other types of programs, although fees vary significantly from program to program.

- Regulatory approaches for health care providers differ across Canada. Midwives and massage therapists, for instance, are regulated in only some provinces. Others, such as licensed practical nurses, practice under a certification framework in some jurisdictions and a licensure framework in others.

- More than 30 health professions are now regulated under legislation in at least one province or territory.

- Life long learning is an important component of professional life for many health professionals. Some health professional associations require proof of continuing education activity to maintain the right to practice. For example, pharmacists in many jurisdictions now need 15 to 20 hours of continuing education credits each year to maintain their licenses.

### What we don't know:

- What is the number of training positions in relation to the number of qualified applicants for health education programs?

- How will changes in the number of available places in health professional training programs (e.g. medical schools with an emphasis on practice in rural and remote areas) affect the numbers and distribution of health professionals in the future?

- To what extent are health care providers receiving appropriate learning opportunities to maintain and improve their skills and adapt to the changing health care environment?

- How many Canadians are working in unregulated health professions and what are the standards of practice for these professions?

- What impact will changes in regulatory models and professional scopes of practice have on the supply and distribution of health professionals, on our ability to meet future health care needs, on how professionals organize and provide services, and on the quality of care?

## Planning for the Future: The Supply of Health Care Providers

### What we know:

- Ensuring the right numbers of health care providers with the right mix of skills and training are available where and when needed is a complex task and depends on many factors, such as trends in demographics, health status, technology, practice patterns, and the organization and delivery of health services.

- Canada's health workforce is retiring earlier and the average age is increasing (from 39.1 years for Canadians in health occupations in 1994 to 40.8 years in 2000).

- Part-time work is more common in the health sector than in other areas. According to Statistics Canada's Workplace and Employee Survey, 52% of workers in health care have full-time positions, compared with 74% of all Canadians working outside of health.

- The American Medical Association estimates that about 9,800 graduates from Canadian medical schools are currently active (e.g. employed, training or teaching) in the United States. New research by CIHI suggests that California, New York, and Texas have been the most popular destinations for Canadian doctors who move south.

- Until recently, graduates from medical schools in the United Kingdom or Ireland were the largest single group of immigrants to Canada. In the last decade, however, there were more South African trained physicians immigrating than doctors from any other country or region.

- Across the country, large amounts of time and money are being spent to recruit and retain health professionals. Many different strategies are being used. Recent research projects have evaluated the effectiveness of some of these strategies.

### What we don't know:

- What is the right mix of health human resources at regional, provincial and national levels to meet health care needs?

- Given demographic, workforce, health, health care, and other trends, will the current combination of health care providers continue to meet the health needs of the current and future Canadian population?

- How many regulated and unregulated health care providers move each year and what is the impact of their migration on health care services?

## Teamwork in Health Care

### What we know:

- The skills and roles of health professionals vary across the country and often overlap. They also change over time. For instance, many different health care providers sometimes help mothers and their babies with childbirth.

- Even within the same profession, roles and skills may vary. For instance, being a family doctor in an urban area is very different from practicing in a rural or remote area. More family physicians in Northern Ontario, for example, report that they provide emergency medical services (60.8%) than physicians based in Toronto (24.4%).

- The mix of health care providers and how they organize their practices also differs. For example, a 2001 survey by the College of Family Physicians of Canada found that 25% of family physicians worked in "solo" as opposed to group practices. That's down from 31% in 1997.

- As part of primary care reform, there's a growing interest in having doctors, nurse practitioners, and others working together in teams to deliver services.

- To encourage collaborative practice, some health professional training programs include interdisciplinary courses.

### What we don't know:

- What are the effects of different types of health care teams on the availability and quality of health services in Canada?

- What impact will changes in professional scopes of practice have on the supply and distribution of health professionals, on our ability to meet future health care needs, on how professionals organize and deliver services, and on the quality of care?

- How do different combinations of health care providers, in a variety of contexts, affect quality of care, cost-effectiveness, and patient and provider satisfaction?

## Working in Health Care

### What we know:

- Health care workers in Canada have been much less likely to be unemployed than those in all other occupations. The average unemployment rates for health care workers have been between 1.3% and 2.6% for the last 13 years, while rates for all workers fluctuated between 7% and 11% over the same time period. Health care workers also tended to stay with the same employer longer and were more likely to have more than one job.

- About one in six Canadians in health occupations (16%) worked some paid or unpaid overtime each week in 2000. Those who did spent, on average, an extra seven hours on the job per week. The likelihood of working overtime varies somewhat between different groups of health professionals and with time.

- The ways in which health care providers are paid vary considerably according to the profession and location of practice. Often, care providers are paid through a mix of different public and private payment systems.

- While fee-for-service is still a very common payment model for physicians, an increasing number of doctors are also being paid in other ways. In 1999/00, over 20% of Canadian physicians received some payments for clinical care through alternative payment plans.

- For Canadians in health occupations, earnings vary considerably from profession to profession and, in some cases, from region to region. For example, the minimum annual salary of general duty RNs (not including paid overtime) ranged from just over $32,000 for nurses working in Quebec to more than $43,000 for those in Nova Scotia in September 2001, according to data from the Canadian Federation of Nurses Unions.

- According to Statistics Canada Workplace and Employee Survey, more than four in five Canadians (90%) employed in occupations other than health were satisfied or very satisfied with their job in 1999. That compares to 85% of those in health occupations.

### What we don't know:

- How do different characteristics of the worklife of health professionals—such as job tenure, pay and benefits, workload, and other working conditions—contribute to the job satisfaction or dissatisfaction of Canadians working in health care?
- How and why do they differ between health care providers?
- How are they linked to the ability to recruit and retain health professionals?
- What effects do they have on the quality of care and patients' satisfaction with that care?
- How have changes in how and where health care is delivered and in technology affected the work of health professionals?
- What services are being provided by physicians who are not paid on a fee-for-service basis?

## The Health of Health Care Workers

### What we know:

- Overall, in 1998/99, Canadians working in health care (95%) were about as likely as others (96%) to say that their health was good or excellent.
- People who work in health care are one-and-a-half times more likely to miss work because of illness and disability than workers in other sectors. On average, 7.2% of Canadians in full-time health occupations were absent for health reasons each week in 2000. That compares to 4.8% for all other workers.
- In 1998, among large industries, Canadian health and social service workers had the fourth highest rate of workplace injuries resulting in lost time. Together they had more than 36,000 lost-time injuries—about three for every 100 workers.
- Health care workers, particularly nurses, are vulnerable to musculoskeletal injuries from lifting and moving patients. They may also be subject to other workplace hazards, such as accidental needlestick injuries, infection, illness, stress, and physical and verbal abuse.
- Stress or job strain is also an important issue for health care workers. According to recent data from the National Population Health Survey, physicians experience the least amount of strain, while nursing aides, orderlies, and attendants experience the highest levels.

## What we don't know:

- How frequent are specific types of work-related health problems in Canada's health care sector?

- How have organizational changes in health care affected the performance of health care workers other than nurses? How have the changes affected the quality of their working lives? And what organizational changes are effective in improving workplace health?

- What are the relative contributions of work environment, lifestyle, organizational practices and policies, and other factors to the health of nurses and other health professionals?

# Introduction

Health care providers and administrators are the backbone of our health care system. They are trained to promote good health, to care for and comfort the sick, and to work to improve the delivery of health care.

How do we ensure that the right number of providers, with the right mix of skills, are available to provide appropriate health services, where and when needed—both now and in the future? How are changes in demographics and the health status of Canadians affecting health professionals, the need for their services, and how they might best work together? What about changes in technology and the organization and delivery of health services? In this context, what are the best strategies for training, recruiting, retaining, and funding people working in health care?

From coast to coast governments have identified these and other related challenges as top priorities. For example, recent meetings of First Ministers and Health Ministers have highlighted the need to address health human resources as part of overall action plans for renewing and sustaining the health system. Similarly, health organizations and professional associations frequently speak out about the importance of these issues. And news about nurses, physicians, and other health professionals is regularly in the public eye.

*Canada's Health Care Providers*—a new type of focused special report for CIHI—is intended to serve as a consolidated reference about what we know and don't know about Canada's health care providers. We hope that it will support and stimulate the many important policy discussions and public debates now underway across the country.

**Bringing Together Health and Health Care**

People are at the centre of the model of health and health services shown below. Also identified in the model are issues or factors that can be associated with how we develop health problems; that relate to diseases, injuries, illnesses, or other health problems; and that are pertinent to the consequences of diseases. Health professionals are active throughout, promoting health, preventing disease, and caring for those who are injured or ill.


Source: Canadian Institute for Health Information

# About This Report

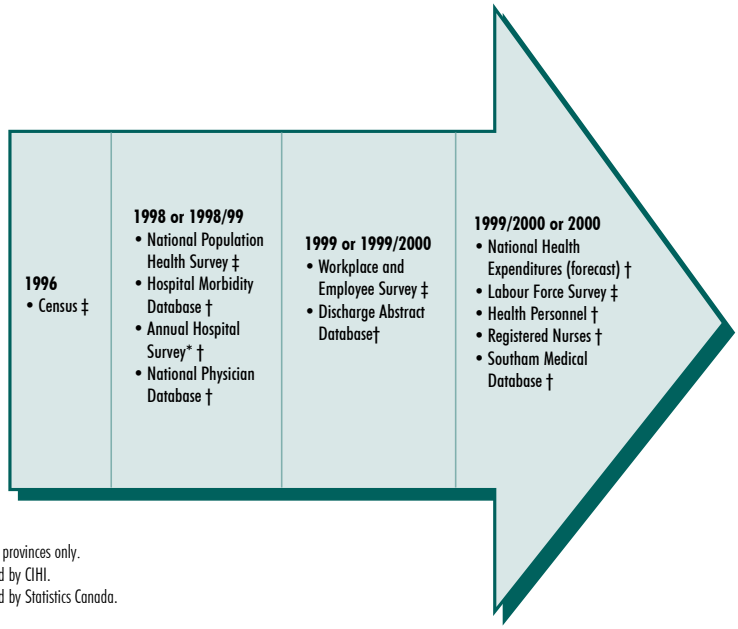
*Canada's Health Care Providers* draws on new data and analysis from CIHI, as well as research produced at local, regional, provincial, national, and international levels to explore what we know and don't know about regulated, unregulated, and informal care providers. It is designed to complement CIHI's regular series of detailed reports on the supply, distribution, and migration of doctors, nurses, and other health professionals, as well as the annual reports on health care in Canada.

This report is divided into three parts:

- **Part A: The Health Care Team** explores factors that affect how many health care providers we have and need, as well as how the team is organized. It also covers the changing context in which health care providers work and focuses on data and research related to the education and regulation of heath care providers.
- **Part B: Working in Health Care** focuses on how teams are evolving in different parts of the system and also examines the health and worklife of health care providers; the environments within which their work takes place; and their working conditions.
- **Part C: Conclusions and Emerging Issues** provides highlights of the major findings of the report and discusses key remaining information gaps.

**Where the Data Come From**

Most recent completed data year for national health data holdings at CIHI and Statistics Canada (as of September 2001). Data from previous years are also generally available.




* Selected provinces only.
† Collected by CIHI.
‡ Collected by Statistics Canada.

The report also includes a ***Fast Facts*** section, located at the back of the report. It provides an updated range of comparative data on health human resources across the country and over time. Throughout the text, a distinctive icon (shown on right) identifies parts of the report for which related regional or provincial/territorial data are included in the *Fast Facts* section.

*Canada's Health Care Providers* includes a wide range of information from many different sources. But we can only include what exists. In many areas, important information gaps remain. For example, we know much more about the supply, distribution, health, and worklife of nurses and physicians than we do about other regulated care providers. And we know relatively little about unregulated, family, and volunteer caregivers. Over time, we hope to continue to work with our partners across the country to fill priority health human resources information gaps. To further discussion, each chapter concludes with a section that provides relevant illustrative examples of what we know, what we don't know, and what's happening on the chapter's focus area.

## For More Information

Highlights and the full text of this report are available free of charge in English and in French on the CIHI web site: www.cihi.ca. You can also visit the web site to sign up to receive updates to this and other reports in CIHI's health reports series.

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## It's Your Turn

We welcome comments and suggestions on this report and on how to make future reports more useful and informative. For your convenience, a feedback sheet is provided at the end of this report. You can also email comments to healthreports@cihi.ca.

# Part A
# The Health Care Team

# Chapter 1
# Who's Who in Health Care

# Who's Who in Health Care

Over 1.5 million people across the country worked in health care and social services in 2000. That's about one in 10 employed Canadians. Many provide care directly to patients. Others serve in support roles, teach, do research, manage health programs, or have other responsibilities. In this report, we cover a broad range of health care providers, including regulated and unregulated providers, as well as family and volunteer caregivers.

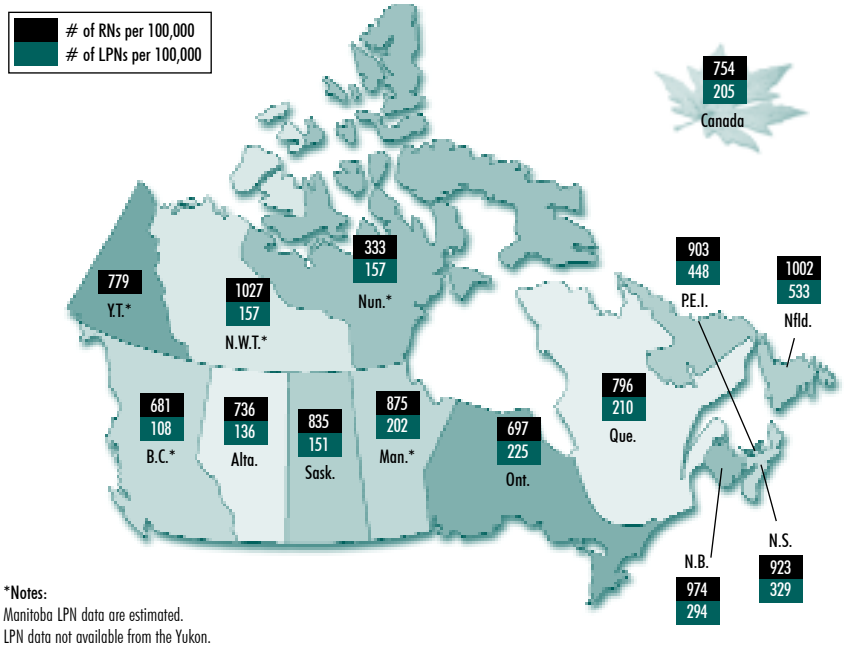
## Nursing

Nursing is the largest health profession. Nurses work in a wide range of settings—from crisis care in busy emergency rooms to acute care on hospital wards. They may assist new mothers in their homes or promote public health policies such as smoke-free public places. They also do research in universities, work in home care, and much more. There are three regulated nursing groups: registered nurses (RNs), licensed practical nurses (LPNs)*, and registered psychiatric nurses (RPNs).

In 2000, more than 232,000 RNs (754 per 100,000 Canadians) worked in nursing in Canada. That's up almost 10 registered nurses per 100,000 Canadians from 1999. But, it's about the same as five years earlier. Although most RNs (64% in 2000) still work in hospitals, the number employed in community health is gradually increasing. Information about LPNs and RPNs is more limited. However, we know that in 2000 there were more than 63,000 LPNs and 5,000 RPNs working in Canada. Registered psychiatric nurses are only licensed in the four western provinces.

### Nurses Across the Country

In 2000, 754 registered nurses (RNs) per 100,000 Canadians and 205 licensed practical nurses (LPNs) per 100,000 Canadians were employed in nursing. But nursing to population ratios varied across the country, as the map below shows.




*Notes:
Manitoba LPN data are estimated.
LPN data not available from the Yukon.
LPN data for Northwest Territories and Nunavut cannot be separated for the two territories. Accordingly, the same ratio (calculated using combined population figures) is reported for both jurisdictions.
British Columbia LPN data are from 1999.

Sources: Registered Nurses Database, CIHI; Health Personnel Database, CIHI

* Licensed practical nurses are also known as registered practical nurses and registered nursing assistants in different parts of the country.

## Physicians

After nursing, medicine is the second largest regulated health profession. In 2000, CIHI counted more than 57,800 physicians in clinical and non-clinical practice in Canada. That represents an increase of 5.3% compared to five years before. During this period the number of specialists grew more (7.4%) than did the number of family doctors (3.2%). As of 2000, specialists account for just under half of all physicians (49.6%).

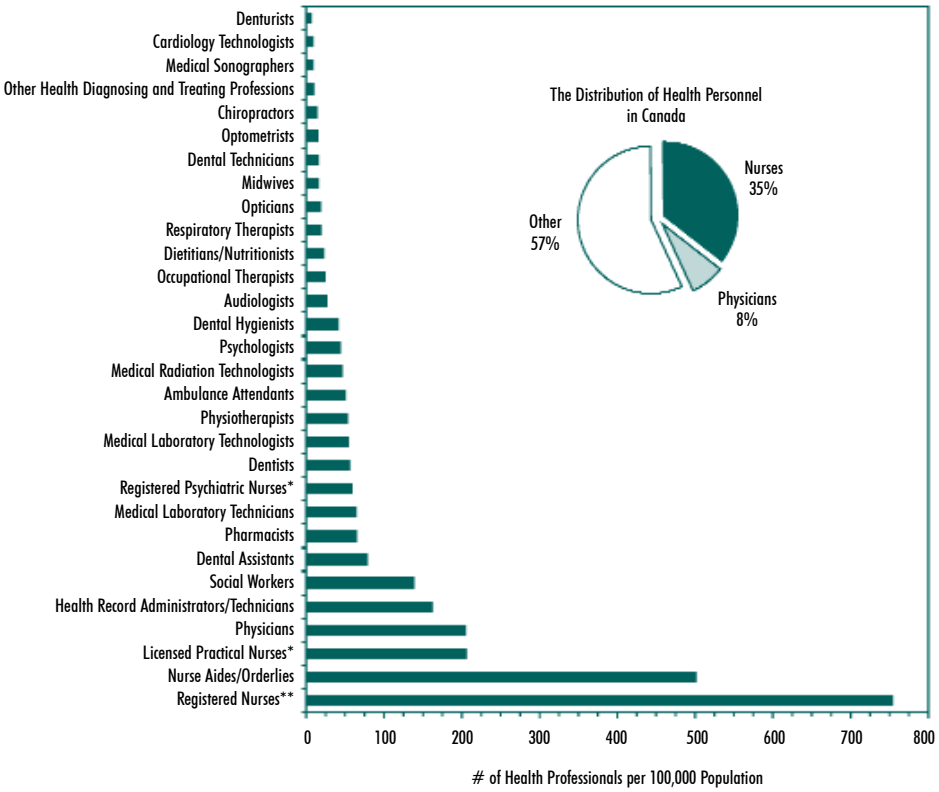
Growth patterns differed across the country. Between 1996 and 2000, Alberta is estimated to have had the largest growth in the total number of physicians (12.2%†). Nova Scotia (8.8%), Saskatchewan (6.5%), British Columbia (5.9%), and Manitoba (5.8%) also saw substantial growth. In Ontario, Quebec, New Brunswick, and Prince Edward Island, the increases were smaller. And, while physician numbers were stable in Newfoundland, they fell by 12.8% in the Yukon and by 11.4% in the Northwest Territories/Nunavut.

## Other Health Professions

Although nursing and medicine are the two largest groups of regulated health care providers, there are dozens of others working across the country. Some—such as pharmacists, chiropractors, and dentists—are regulated under legislation. Many more are not. Examples include health care managers, home care support workers, and many practitioners of complementary and alternative medicine.

### Sharing Health Care Professionals

Together, registered nurses (RNs), licensed practical nurses (LPNs), and registered psychiatric nurses (RPNs) account for more than one-third of all health care workers. The rest come from a wide variety of occupations. The chart below shows the number of health professionals per 100,000 Canadians in 2000 for selected professions.




**Note:** Registered Psychiatric Nurses are only registered in British Columbia, Alberta, Saskatchewan, and Manitoba; therefore the ratio for this group is calculated using the population of these four provinces only.

Sources: Labour Force Survey, Statistics Canada except where noted.
* Health Personnel Database, CIHI ** Registered Nurses Database, CIHI

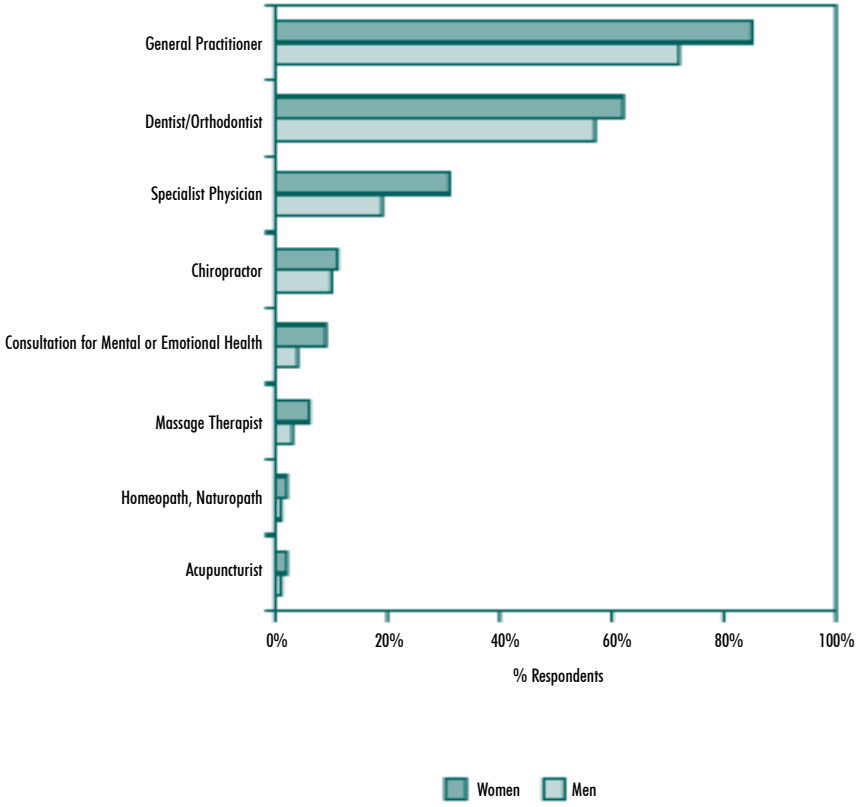
† Due to recently identified reporting issues, this estimate was under review at the time of publication.

The 1998/99 National Population Health Survey asked Canadians aged 12 and older about their use of several different types of care providers. Most (85% of women and 72% of men) said that they had consulted with a general practitioner in the past year. Consultations with other types of providers were less common.

Over the year, Canadians may use the services of a mix of different health professionals. Two in five of those surveyed (40%) had seen three or more different types of health care providers including general practitioners/family physicians, eye specialists, other medical doctors, dentists or orthodontists, chiropractors, physiotherapists, social workers or psychologists, speech/audiology/ occupational therapists, and complementary and alternative providers, in the year prior to the survey. Just over 5% reported seeing between five and 10 providers.

### Seeking Care

Most Canadians aged 12 and older (81%) said that they had consulted a general practitioner or specialist at least once in the year prior to the 1998/99 National Population Health Survey. The graph below shows the proportion who reported having consulted selected types of health care providers, including complementary and alternative practitioners. Note: Consultations for mental or emotional health may occur with a variety of professionals, including family doctors, psychiatrists, psychologists, social workers, and counselors.




Source: National Population Health Survey, Statistics Canada

## Caring for Ourselves

In some cases Canadians seek care from formal care providers, but for minor problems they often treat themselves. For example, about a third (31%) of respondents to the 1998/99 National Population Health Survey reported having had a sore throat, cold, or the flu in the previous month. When they first developed symptoms, most (58% of men; 67% of women) treated themselves.[1] Their common options were over-the-counter medication (67% of men and 73% of women) and cutting down on activities or resting more (54% and 65%).

What did the others do? About a fifth (23% of men and 17% of women) ignored their condition. Fewer went to a clinic, community health centre, or physician's office. At 11%, women were more likely than men (7%) to seek care. And less than 1% of Canadians went to the emergency room when symptoms first appeared.[2]

## The Other Members of the Team

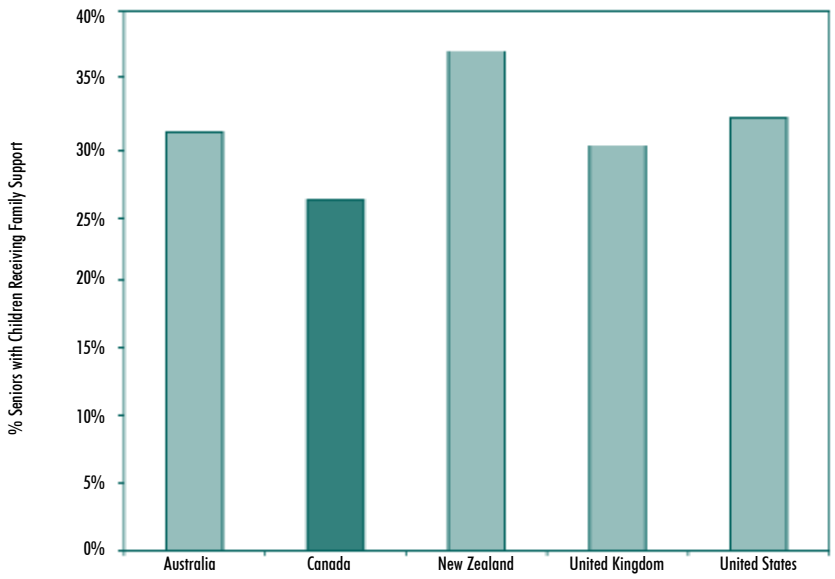
Family members, friends, and community volunteers also provide services, on an informal basis, to people who are injured, ill, or disabled for short or long periods of time.

According to Statistics Canada, 2.1 million adult Canadians provided support for one or more seniors with long-term health problems in 1996.[3] Eighty percent of caregivers were family members, including spouses or partners, adult children, siblings, and extended family. Most (61%) were women. They were more likely to help around the house, assist with personal care, and provide emotional support. Home maintenance and repair was more likely to be done by male caregivers. Female caregivers helped an average of five hours per week; male caregivers spent three hours per week on average.

Many respondents felt that caregiving was a chance to strengthen relationships with the person they were providing care to or to 'give back' to either the person they were caring for or to life in general. In contrast, others experienced guilt, disrupted sleep patterns, and changes in social activities, including feeling that they did not have enough time for themselves. Some also reported extra expenses and lost income from delaying employment or education. For both men and women, competing demands, including full-time employment and a variety of other care responsibilities, increased the social, psychological, and economic impact of caregiving on their lives.

### Family Caregivers: An International Perspective

In Canada in 1999, 26% of seniors who had children reported that their children often helped them when they were ill. Rates in other countries surveyed by the Commonwealth Fund ranged from 30% to 37%.




Source: The Commonwealth Fund 1999 International Health Policy Survey

### Respite Care in Canada

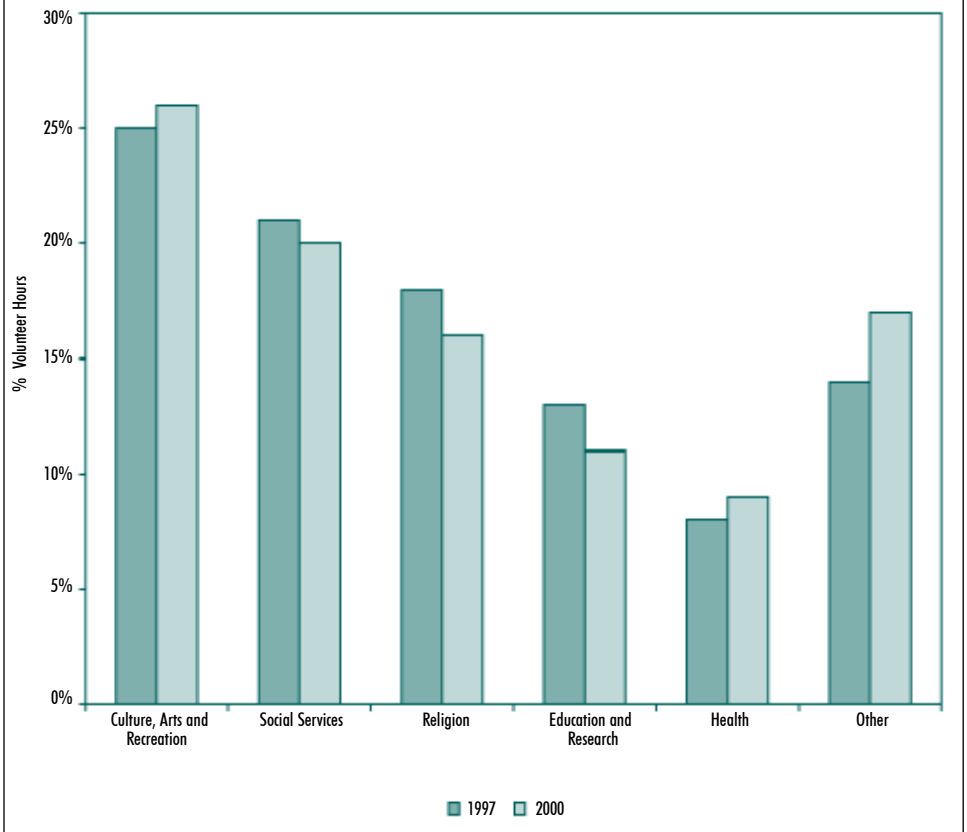
In a recent survey,[4] unpaid family caregivers and volunteers indicated, among other things, a need to be recognized, to be respected, and to receive training. They also asked for respite care options. The Canadian Association for Community Care (CACC) began a national study on respite care in the mid 1990s.[5] Early results emphasized the need for this type of service. However, they also found that the services that were available, were underused. Researchers suggested that this occurred mostly because caregivers were not aware of the services available. In Phase II of the project, CACC set up respite care programs in Ste-Therese de Blainville, Winnipeg, and Nanaimo. Evaluations suggested that respite care programs need to be integrated with other kinds of care programs and that caregivers need to be recognized as legitimate clients.

Recent surveys confirm that many Canadians continue to care for others. For example, more than three-quarters of Canadians (77%) reported providing one-to-one unpaid help to others in 2000.[6] That's up from 73% in 1997. Of those who provided help in 2000, 42% cared for the sick or elderly.

In addition to acting as caregivers for friends and family, Canadians also volunteer their time through groups or organizations. A recent Statistics Canada survey found that health organizations benefited from about 9% of the 1.05 billion hours that Canadians volunteered in 2000.[6] That's a slightly larger share of total hours than three years earlier (8% in 1997)—but of a smaller pie. Canadians volunteered a total of 1.11 billion hours in 1997.

### Volunteering Up in Health Care

Data from national surveys on volunteering in 1997 and 2000 show an increase in the percentage of hours that Canadians reported volunteering with health organizations. Some other sectors, however, experienced decreases.




Source: Hall M, McKeown L, Roberts K. (2001). *Caring Canadians, Involved Canadians: Highlights from the 2000 National Survey of Giving, Volunteering and Participating*. Statistics Canada, Catalogue 71-542-XIE.

## For More Information

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[2] Canadian Institute for Health Information. (2000). *Health Care in Canada 2000: A First Annual Report*. Ottawa: CIHI.
[3] Housing, Family, and Social Statistics Division, Statistics Canada. (1999). *Eldercare in Canada: Context, Content, and Consequences*. Ottawa: Statistics Canada.
[4] Human Resources Development Canada. (2001). *Canadian Home Care Human Resources Study, Preliminary Results*. Ottawa: HRDC.
[5] Canadian Association for Community Care. (1998). National Respite Care Project, Executive Summary. www.cacc-acssc.com/
[6] Statistics Canada. (2001). *Caring Canadians, Involved Canadians: Highlights from the 2000 National Survey of Giving, Volunteering and Participating*. Ottawa: Statistics Canada.

# Chapter 2
# Becoming a Health Care Provider

# Becoming a Health Care Provider

Medicine and healing are ancient arts, traditionally carried out by specific people in a community. In the past, knowledge about how to keep healthy and how to care for the sick passed from person to person down the generations. Some of these traditions persist today. But formal education systems for health professionals also evolved over time. Today, most people working in health care (87%)* have at least some post-secondary education.

For many health professions, formal education is only the first step on the road to becoming a health care provider. Some have to pass further tests, undertake more supervised clinical practice, or take other steps before being licensed to practice.

## Part One: Learning to Provide Care

Each year, thousands of Canadians—young and old—sign up to train as health professionals. They can choose from dozens of university, college, and other programs across the country.

These programs vary in length from a few weeks to many years. Some programs—such as pharmacy and optometry—require students to have completed some undergraduate studies before entering. Other programs (e.g. nursing and dental assisting) allow students to enter right from high school. Regardless, many programs have related foundation courses. For example, whether you enter medicine or massage therapy you are likely to start with courses such as biology, physiology, anatomy, and pathology. Clinical training is also an important part of the training process and takes place both in the classroom and in supervised practice settings. Many programs also include training in other areas such as research methods, business administration, and ethics.

### The Next Generation

Some health care educational programs are available across the country. Others are offered only in a few locations. For example, one province may host a training program on behalf of a number of jurisdictions, perhaps because there are not enough students to justify several separate programs. The chart below shows the number of graduates in 1988 and 2000 of selected health care professions which were regulated in all ten provinces in February 2000 and which provinces/territories provided basic training programs as of the 2000/01 school year.

| | # '88 grads | # '00 grads | NF | PEI | NS | NB | QC | ON | MB | SK | AB | BC | NU | YT | NT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chiropractors[1] | 134 | 239 | | | | | ✓ | ✓ | | | | | | | |
| Dental Hygienists[2] | 349 | 640 | | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| Dentists | 504 | 459 | | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| Licensed Practical Nurses | 2,589 | 2,817 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ |
| Occupational Therapists | 368 | 583 | | | ✓ | | ✓ | ✓ | ✓ | | ✓ | ✓ | | | |
| Optometrists | 100 | 95 | | | | | ✓ | ✓ | | | | | | | |
| Pharmacists | 722 | 876 | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| Physical Therapists | 444 | 623 | | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| Physicians | 1,781 | 1,578 | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| Registered Nurses[3,4] | 9,246 | 5,116 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |

[1] The first graduating class from the Université du Québec à Trois-Rivières program was in 1998.
[2] Year 2000 statistics not available; 1997 statistics presented.
[3] Includes diploma, basic baccalaureate, and post-RN baccalaureate programs.
[4] Year 2000 statistics not available; preliminary 1999 statistics presented.
Note: In 1999, 15 diploma schools did not report.

Sources: Graduate data (except Physicians, Registered Nurses): Health Personnel Database, CIHI.
Physician graduate data: *Canadian Medical Education Statistics - 2000*, Association of Canadian Medical Colleges, 2000.
Registered Nurse graduate data: Policy, Regulation & Research Division, Canadian Nurses Association, 2001.
Training programs: Human Resources Development Canada - www.canlearn.ca, 2001.

* Does not include those with Trade Diplomas and Certificates.

### Preceptors Wanted

Students in health programs spend a lot of time in the classroom. But they also spend considerable time—between one third and one half of their programs—in clinical placements. These placements are supervised, often by clinical professionals (or "preceptors") who perform this role on a voluntary basis.[1]

Some programs have had challenges recruiting preceptors. For example, two recent reports identified, among other things, competing demands (e.g. time spent training students vs. time available to spend with patients) and the costs associated with training students as barriers to finding preceptors.[2,3] A number of approaches have been suggested to deal with these challenges. For example, a study of nurse preceptors in a large Toronto teaching hospital in 1995 found that preceptors were more committed to their role when the associated benefits, rewards, and supports were substantial.[4]

Over time, training requirements have increased for many professions. This is perhaps in response to the growth in the body of professional knowledge, technology, or other factors. For example, the University of Toronto granted Canada's first Doctor of Dental Surgery degrees in 1889. The 25 successful candidates completed four months of instruction and passed an examination. Today, candidates for the same degree must have at least three years of university to be admitted to the program. Then there are another four years of courses before graduation.

Nursing offers a more recent example. Until the 1960s, most nurses received their basic training in hospital-based nursing schools. Training then gradually switched to colleges and universities across the country.

For several decades, the most popular program has been a two or three year community college diploma. That's now changing. Canada's nursing associations are aiming to move towards a Bachelor of Science in Nursing (BScN) degree (generally four years) as a minimum requirement for new nurses entering into nursing practice. These recent changes in educational requirements for nurses would only affect those entering the profession. Nurses with diplomas who are already practising would likely not be required to complete a degree to continue to practice. Already, students in Saskatchewan, New Brunswick, Nova Scotia, Newfoundland, and Prince Edward Island must complete a BScN university degree since no diploma programs remain in these jurisdictions. Students in British Columbia, Alberta, Manitoba, Ontario, Quebec, and the territories can still choose a diploma or degree program. Ontario will join the group offering only a BScN university degree in 2005.

Additional specialized training is also available. For example, Registered Nurses can take graduate degrees at a university or train towards one of 11 possible specialty certifications. These certifications are voluntary and are not usually required for nurses to work in nursing roles. In contrast, legislation in Alberta, Ontario, and Newfoundland allows nurses with specific types of advanced training to be recognized as "nurse practitioners".[†] They can provide an extended range of services, such as ordering specific tests, diagnosing common ailments, and prescribing certain drugs.

## Tomorrow's Health Care Providers

Graduates from today's training programs are tomorrow's health care providers. The numbers and types of graduates will have substantial effects on the future of our health system. So will where and how they choose to practice.

[†] Nova Scotia has also made recent changes to its Nursing Act that would introduce Nurse Practitioners, but these changes in the legislation were not passed at the time of publication.

## Types of Graduates

The numbers and mix of students graduating from training programs has changed over time. For example, more physical therapy, occupational therapy, and dental hygiene students graduated in 2000 than in 1988. Over this same period, the number of graduates from medicine and dentistry programs has dropped.

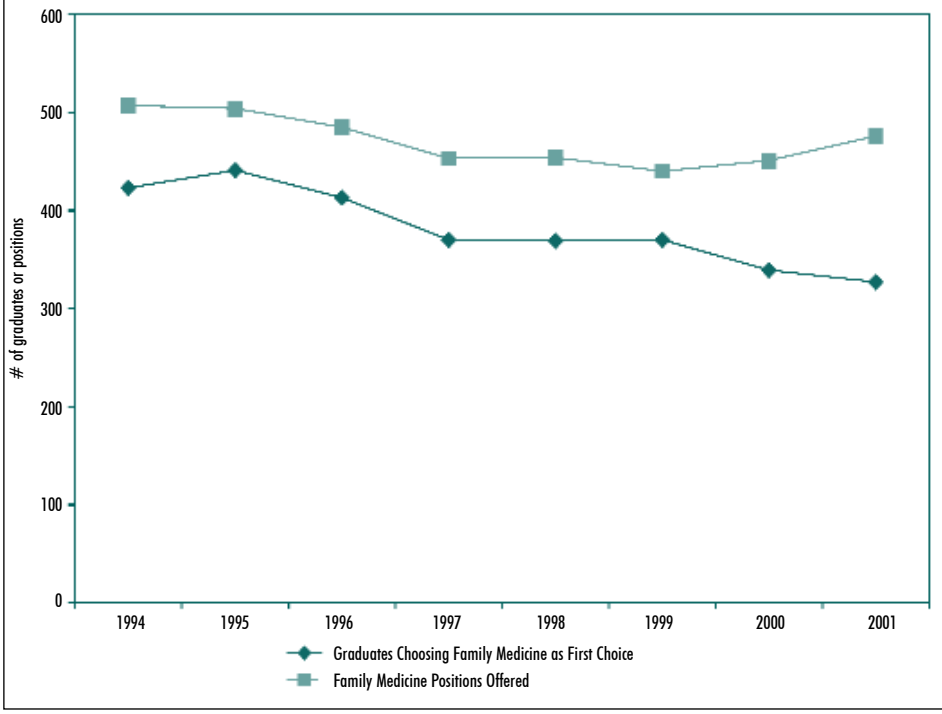
Further changes are likely in the future. Nursing, medicine, and some other professions are likely to see more graduates in the near future as several provinces have recently announced increases in the number of training spaces available in these areas.

Each year, many health programs across the country receive more applications than they have spaces available. This means that simply meeting the minimum entry requirements does not guarantee that you will be accepted into the program. For example:

- The University of Toronto receives nearly 700 Pharmacy applications each year; only about a quarter (180 applications) are accepted.[5]
- In 2000, only 24% (78 out of 319) of those who applied to the Optometry program at the University of Montreal were accepted.[6]
- Since the 1996/97 school year, the number of applications to medicine has exceeded the number of spaces available by almost 13 to one.[7‡]
- In 1999, 5,729 students were admitted to nursing programs, whereas over 12,000 applications were received.[8‡]

### Choosing Family Medicine

Each year graduating medical students choose specialties. According to the Canadian Resident Matching Service, more family medicine places have been offered recently, but fewer medical students selected family medicine as their first choice.




Source: Canadian Resident Matching Service, Residency Match Report

Matching applicants and training positions is also a challenge within some professions. For example, students graduating from medical school must choose whether or not to specialize. Within medicine there are more places available to train in family medicine than in any other specialty. However, the number of available spaces has exceeded the number of candidates specifying this as their first preference for many years. On the other hand, according to the Canadian Resident Matching Service, candidates applying as a first preference to specialize in dermatology, ophthalmology, and plastic surgery outnumbered the spaces available by more than 2 to 1 in 2001.

‡ Given the number of education programs available across Canada, some applicants apply to more than one program. As a result, the number of applications is higher than the number of unique individual applicants.

In contrast, no applicants listed general pathology, medical microbiology, or thoracic surgery as their first choice.

## Demographic Shifts

Today, more women than men work in health care. The characteristics of students enrolled in university programs suggest that this pattern will continue. In 1998/99, Statistics Canada reported that about 38,000 students were enrolled in full-time and part-time undergraduate health professional programs. Over three-quarters (76%) were women. Part-time students were particularly likely to be female. Eighty-nine percent were women, compared with 72% of full-time students.

The overall patterns also apply for most professions. But in some, the mix is changing. For example, medicine has historically been a predominantly male profession. In 1958, only 5.3% of medical graduates were women. Since then, female enrolment has increased steadily. Women graduates first outnumbered men in 1996.

### Preferences of Medical Graduates

Each year, a pan-Canadian service matches medical school graduates to available residency positions. The table below shows the number of applicants who listed a given specialty as their first choice in 2001, and the number of available positions for selected residency programs. Note: The difference between the number of applicants and the number of available positions may be smaller after the second phase of the matching process.

| | # 1st Choice Applicants | Quota Offered |
|---|---|---|
| Anesthesia | 76 | 58 |
| Anatomic pathology | 3 | 7 |
| Cardiac surgery | 7 | 8 |
| Community medicine | 10 | 8 |
| Dermatology | 13 | 5 |
| Diagnostic radiology | 63 | 39 |
| Emergency medicine | 30 | 17 |
| Family medicine* | 296 | 415 |
| Rural family medicine | 31 | 61 |
| General pathology | 0 | 3 |
| General surgery | 48 | 61 |
| Internal medicine | 151 | 165 |
| Laboratory medicine** | 10 | 17 |
| Medical genetics | 3 | 5 |
| Neurology | 21 | 16 |
| Pediatric neurology | 1 | 2 |
| Neurosurgery | 11 | 12 |
| Nuclear medicine | 5 | 3 |
| Obstetrics/gynecology | 36 | 49 |
| Occupational medicine | 1 | 1 |
| Ophthalmology | 35 | 16 |
| Orthopedic surgery | 33 | 38 |
| Otolaryngology | 20 | 13 |
| Pediatrics | 88 | 64 |
| Physical medicine and rehabilitation | 11 | 12 |
| Plastic surgery | 26 | 10 |
| Psychiatry | 72 | 81 |
| Radiation oncology | 12 | 17 |
| Thoracic surgery | 0 | 1 |
| Urology | 19 | 15 |
| **Total** | **1,132** | **1,219** |

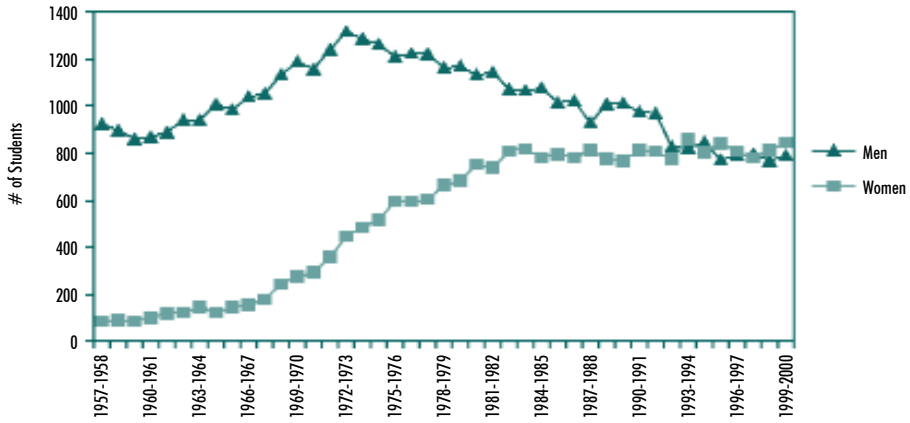
*Includes seven military sponsored positions.
**Includes hematological and neuropathologies.

Source: Residency Match Report 2001, Canadian Resident Matching Service

These trends matter for many reasons, such as sex differences in practice patterns. For example, female doctors are more likely to work as family doctors. They also tend to choose different specialities than men, such as pediatrics and obstetrics/gynecology. In addition, female doctors often work fewer hours per week and have other practice differences compared to their male counterparts (see the *Working in Health Care* chapter for more information).

### Gender Differences in Medical School Enrolment

First year enrolment for men and women in Canadian medical schools has changed over the years. Until the early 1990s, more men than women enrolled each year. In the 1990s, there were similar numbers of men and women enrolling. In 1993/94, women outnumbered men in enrolment for the first time.




Source: Canadian Medical Education Statistics, The Association of Canadian Medical Colleges

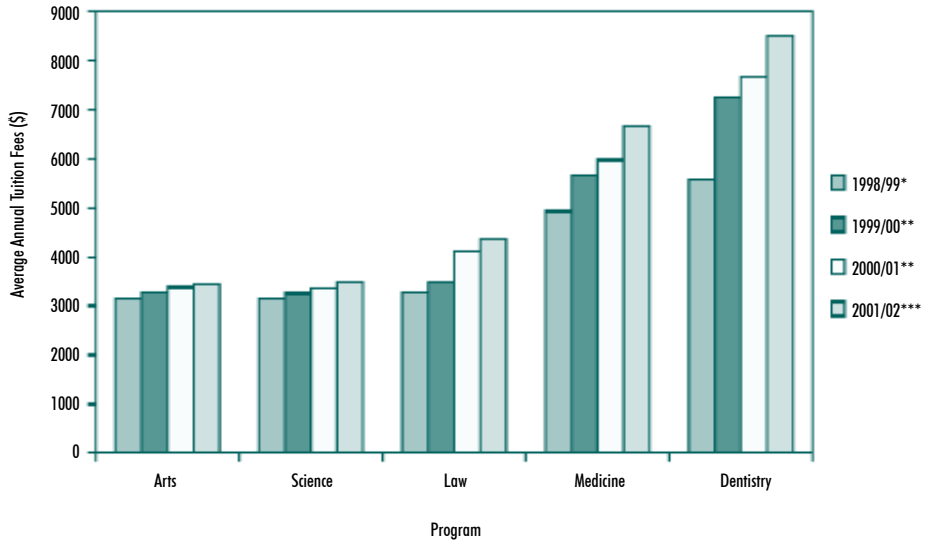
The face of the medical profession is also changing in other ways. For example, the average age of medical students is rising. Between 1977/78 and 1999/00, the proportion of students applying to medical school who were 19 to 28 years old was relatively constant (about 85%). But there were many more applicants over 28 years of age (up from 7.4% to 12.5%). And there were fewer under age 19 (down from 5.3% to 1.9%).[9] As a result, the average age at graduation is higher. This may have a variety of effects, including on how long a typical graduate can be expected to practice medicine.

## Where Students Train Matters

Students training for a profession across the country share many experiences, but there can be important differences from program to program. For example, how much they pay in tuition can vary. So may the length and content of their programs. Some studies also suggest that where students train may affect where they settle and how they practice after they graduate.[10]

### The Cost of Health Education

Average tuition fees are rising at Canada's universities. Medical and dental programs have higher average undergraduate tuition than other types of programs — and they have seen steeper increases since 1998/99. The chart below shows average undergraduate tuition fees per year by program type. Using the most current enrolment data available, averages are weighted by the number of students enrolled at each university per program.




Sources: *Statistics Canada. (1999 August 25). University Tuition Fees. *The Daily*.
** Statistics Canada. (2000 August 28). University Tuition Fees. *The Daily*.
*** Statistics Canada. (2001 August 27). University Tuition Fees. *The Daily*.

## Paying for Health Care Education

In Canada, the cost of educating health professionals is shared. Governments provide core funding to colleges and universities. Students pay tuition, sometimes aided by scholarships and bursaries. Research grants, fees for clinical services, and other activities also partly subsidize some educational programs.[11] And many health care organizations contribute staff time and facilities to support clinical training.

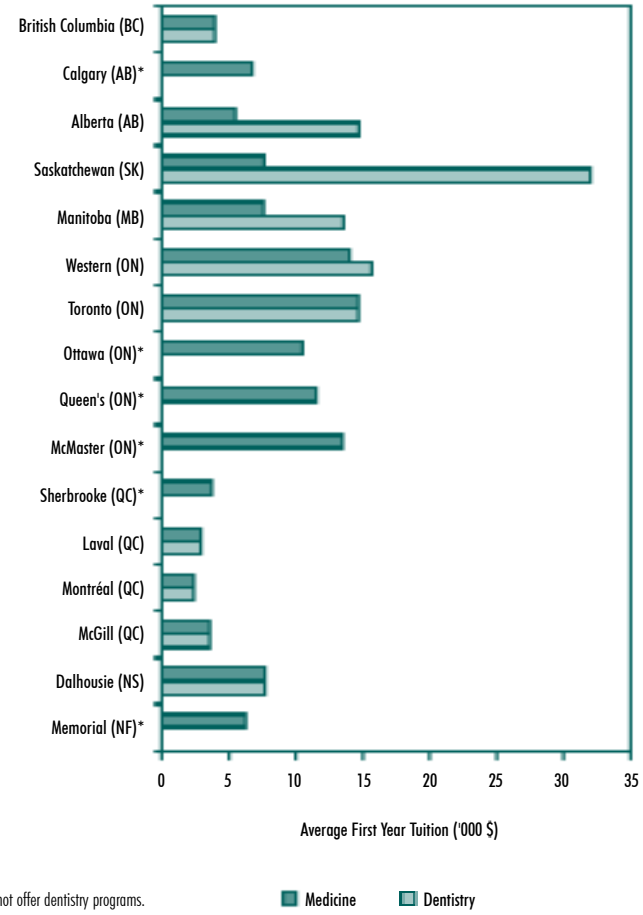
Average annual tuition fees at Canadian universities have increased steadily in recent years.[12] That's true at both the undergraduate and graduate levels and for most types of programs. There are also large differences in fees charged across the country both within and between programs. For example, there is almost a four-fold difference in medical school tuition from one university to another and the difference is even greater for dentistry programs.

Why are the differences between provinces so large? In part, they may be explained by provincial tuition policies. Some provinces—such as British Columbia—have had legislation in place for several years that freezes tuition for Canadian students. Others—such as Ontario—have recently "deregulated" tuition for selected programs, including medicine and dentistry. Under this policy, universities set their own (often higher) fees.

In 1995 (before tuition deregulation), students in undergraduate health professional programs (not including dentistry and medicine) had more debt when they graduated on average, than those graduating with other degrees or diplomas. However, two years later these health professional graduates had decreased their debts by a greater amount than their non-health counterparts.[13]

### How Fees Compare

Average 2001/02 tuition fees for Canadian residents entering their first year of dentistry or medicine differ considerably across the country, as shown below. Students may also be required to pay additional non-tuition fees. These fees vary from program to program. Notes: Quebec universities charge lower fees to residents of the province than to other Canadians. This chart shows fees for Quebec residents. The University of Saskatchewan provides an $18 000 scholarship (renewable for three additional years at the same level of funding) to the top 15 Saskatchewan residents who are admitted to the College of Dentistry each year. A variety of scholarship programs also exist at other institutions.




*These universities do not offer dentistry programs.

Source: Compiled by CIHI based on tuition information on University web sites.

## Location of Programs

Where students train may also affect where they practice once they graduate. For example, research suggests a link between where physicians are brought up, where they study, and where they practice.[10,14] For example, doctors who train in rural or remote areas or who specialize in rural medicine are more likely to work in these settings.

In parts of the United States, Norway, and Australia, expanding rural training programs has been successful in recruiting and retaining doctors in rural areas.[15] This approach is also being tried in Canada. The first new medical school in Canada in 30 years will open in Northern Ontario in 2004. The main campus will be at Laurentian University in Sudbury. Some of the clinical placements will be in Thunder Bay. Likewise, the University of Northern British Columbia (UNBC) and the University of British Columbia (UBC) have proposed a Northern Medical Program. It would start no later than 2004, and students would receive a UBC degree. Half of their studies would be at UNBC in Prince George, and the other half would be at UBC.[16]

Related strategies are also being tried for other professions. For example, the Saskatchewan Indian Federated College recently began offering a one-year program to help aboriginal students prepare for nursing. In the future, the college intends to offer a full nursing degree program.[17]

### Who is Regulated Where?

More than 30 health professions are currently regulated in at least one province/territory. The table below summarizes the status of regulation as of February 2000. Already, some changes have occurred. For example, British Columbia recently became the first province to regulate Chinese Medicine Practitioners. These practitioners will be regulated by the mandate of the College of Acupuncturists of British Columbia.

| | NF | PE | NS | NB | QC | ON | MB | SK | AB | BC | YT | NT | NU |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dental Hygienists | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | + | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Dentists | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | # | ✓ | ✓ | ✓ |
| Licensed Practical Nurses/Nursing Assistants | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Physicians** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Optometrists | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Pharmacists | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Registered Nurses | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Chiropractors | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| Denturists | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Psychologists | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| Ophthalmic Dispensers/Opticians | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| Physical Therapists/Physiotherapists | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| Occupational Therapists | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| Dental Technicians/Technologists | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | | | |
| Dietitians and Nutritionists | ✓ | ✓ | ✓ | ✓ | ✓ | - | ✓ | ✓ | ✓ | | | | |
| Certified Dental Assistants | ✓ | ✓ | ✓ | ✓ | | | + | ✓ | ✓ | # | | | |
| Social Workers | ✓ | ✓ | ✓ | ✓ | ✓ | +++ | | ✓ | ✓ | ## | | | |
| Chiropodists/Podiatrists | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| Medical Radiation/Radiological Technologists | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ++ | | | | |
| Hearing Aid Practitioners/Acousticians | ✓ | | ✓ | | ✓ | | + | | ✓ | ✓ | | | |
| Medical Laboratory Technologists | | | | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | |
| Naturopathic Physicians | | | | | | ✓ | ✓ | ✓ | ^ | ✓ | | | |
| Respiratory Therapists | | | | | ✓ | ✓ | ✓ | | ✓ | + | | | |
| Speech Language Pathologists and Audiologists | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ^ | | | | |
| Dental Therapists | *** | | | | | | | ✓ | | | ✓ | ✓ | |
| Midwives | | | | | ✓ | ✓ | ^ | ^ | ✓ | ✓ | | | |
| Registered Psychiatric Nurses | | | | | | | ✓ | ✓ | ✓ | ✓ | | | |
| Osteopathic Physicians | | | | | | ✓ | === | x | == | == | | | |
| Acupuncturists | | | | | ✓ | | | | ✓ | ✓ | | | |
| Emergency Medical Technicians-Paramedics/Ambulance | | ✓ | | | | + | + | + | ✓ | + | | | |
| Massage Therapists | | | | | | ✓ | | | | ✓ | | | |
| Certified Combined Laboratory Technologists | | | | | | | | | ✓ | | | | |

Notes:

| | | | |
|---|---|---|---|
| ✓ | regulated | ## | regulated under Social Workers Act |
| ^ | legislation forthcoming | + | not self-regulating |
| ** | includes both family physicians and specialist physicians | ++ | not Electroneurophysiologists |
| *** | under review | +++ | self-regulated under Ministry of Com. & Social Ser. |
| x | legislation to be repealed | - | Dietitians - yes; Nutritionists - No |
| # | regulated under Dentist Act | == | regulated by College of Physicians and Surgeons |
| | | === | Osteopathy Act repealed |

Source: Health Canada, Health Promotion and Programs Branch, February 2000.

## Part Two: Beyond Schooling

For many health professions, receiving a degree or diploma is only the beginning. Many graduates need to pass a licensure exam or meet other requirements to practice independently. For professions regulated under legislation, it may be illegal to do certain types of work (e.g. surgery) or to use professional titles (e.g. dietitian) unless these requirements are met.

### Regulating Health Professions

Governments regulate many of the things that people do in their daily lives or in their jobs, particularly if there is a potential risk of harm to the public. You need a license to drive a car. You need a permit to put an addition on your house. And a surgeon who removes your appendix needs a license to practice medicine. In fact, more than 30 health professions are now regulated under legislation in at least one province or territory. And the list continues to grow.

## Understanding Regulation

Regulation of occupations can be in the form of certification, licensure, or registration. With certification, people who meet certain requirements can get a certificate that allows them to use a particular title. For example, in some provinces, only people with specific qualifications can call themselves a physiotherapist, dental hygienist, or dietitian. People who are not certified can do similar work but do not have the legal right to use these titles.

Under licensure, only those with a license can legally do certain types of work.[18] For example, only certain licensed health providers can give prescription drugs to patients. Anyone else who does so can be charged with an offence under the law.

Some jurisdictions or professional associations may also require or ask that members of occupational groups register, even though the occupation is not regulated under a certification or licensure framework. For example, prior to 1990, the Alberta Dental Association maintained a voluntary register of dental hygienists in Alberta. However, in the fall of 1990, the *Dental Disciplines Act* was established and required all practising dental hygienists in Alberta to register with the Alberta Dental Hygienists Association.[19]

Regulatory approaches differ across Canada. All provinces and territories require that some groups, such as physicians and dentists, have licenses to practice. But there is less consistency for several other groups. Many, such as midwives or massage therapists, are regulated in only some jurisdictions. Others, such as licensed practical nurses, practice under a certification framework in some jurisdictions and a licensure framework in others.[20]

Until recently, most health professions that required a license to practice defined their own distinct "scope of practice". Scopes of practice set out the services that members of an occupation perform and the methods they use[18] (for more information on scopes of practice, see the *Teamwork in Health Care* chapter).

Recently, there has been a move towards "task-based" regulatory models. Under this approach, only tasks judged to carry serious risks of harm if performed incorrectly require a license. In 1993, Ontario became the first province to adopt a "task-based" regulatory model. British Columbia has since followed suit and Alberta is moving towards adopting a similar framework. These "tasks" are called "controlled acts" in Ontario, "reserved acts" in British Columbia, and "restricted activities" in Alberta. Members of one or more professions may be licensed to provide each of the designated acts or activities. Sometimes these acts or activities can also be delegated to others or performed under the supervision of someone licensed to undertake them.[21]

### "Reserved Acts" Model: How It Works In British Columbia

Which members of the health care team are allowed to make a diagnosis, set a broken bone, or give an injection? Legislation in some provinces sets out the tasks—such as these—that carry a risk of harm if done incorrectly and assigns the tasks to specific health occupational groups.

Legislation in British Columbia specifies 12 "reserved" acts. Examples include allergy testing, prescribing and mixing medications, and fitting dentures and hearing aids.

Most of the reserved acts have been assigned to more than one occupational group. For example, making a diagnosis to identify the cause of someone's signs or symptoms can be done by members of several health occupations. Physicians, podiatrists, chiropractors, registered nurses, and naturopathic physicians can all make a diagnosis. However, members of some occupational groups can only do some parts of a reserved act or can only do them in specific ways. Naturopathic physicians, for example, are allowed to make a diagnosis using naturopathic methods. Likewise, physicians, podiatrists, and dentists can all set a broken bone. But a podiatrist can only set a broken bone of the foot or lower leg while a dentist can set a broken jaw or other bone around the mouth. [22]

## Setting Professional Standards

Regulation sets the legal framework for professional practice. Within this framework, many health professions are "self-governing". That is, members of the profession (through a professional college or other body) decide on:

- The skills, knowledge, and judgement needed to hold a certificate or license to practice.
- Standards of practice and codes of ethics specific to the occupation.
- Ways to assess complaints from the public and to discipline members.

Self-governance is permitted with the understanding that the group will act primarily to protect the public's interests rather than the interests of its members.[18] There are pros and cons to this approach.[18] For example, some experts suggest that self-governance may be less costly to the public than other alternatives. Another advantage cited is that it allows members of the occupational group, who may be most knowledgeable about what they do, to set standards for entry and practice. On the other hand, others argue that care must be taken that standards are not set too high as rising entry requirements can lead to fewer practitioners and potentially increase the costs of the services they provide.

## Moving Within Canada

Canada's provinces and territories each regulate health professions. What if you hold a license in one province and want to move to another? For some professions, different regulatory frameworks across the country can make moving complicated.

The 1995 *Agreement on Internal Trade* (AIT) was designed to address this issue. Ministers from all provinces and territories except Quebec also signed a second agreement that builds on the AIT. It promised greater freedom of movement for people who work in regulated occupations by July 1, 2001. The agreement also stated that self-governing professional bodies in the provinces and territories would try to agree on common standards for professional entry and practice. Until then, Ministers agreed to make it easier for people who have credentials in one part of the country to get permission to work in another.[23]

## Moving to Canada from Abroad

Many health professionals migrate to Canada each year. Even if they are licensed to practice in their home country, they must often undergo an extensive process before being allowed to work in a regulated occupation in Canada.[24]

For example, physicians trained in other countries usually have to complete a rigorous licensing procedure before practising medicine in Canada. The first step is often passing an examination set by the Medical Council of Canada. In addition, two to six more years of postgraduate medical training may be required, followed by further examinations.[25] Occasionally, however, exceptions are made to these rules. For instance, hospitals in New Brunswick sometimes hire needed specialists who trained abroad even though they have not completed these steps.[26] Other provinces are also exploring options to fast-track licensure of foreign medical graduates under particular circumstances.

Historically, Canada has relied extensively on foreign-trained medical graduates. Throughout most of the 1970s, 30% of our physicians were educated outside of Canada. Recently, however, the proportion of foreign-trained physicians has dropped. In 2000, CIHI data show that about 23% of Canada's doctors fell into this category. This trend may reflect limits on the number of post-graduate training spaces available and other factors. In 2001, 387 foreign medical graduates applied to the Canadian Resident Matching Service. Of these, 15.5% obtained positions. Together, they accounted for about 5% of all post-graduate training spots[27] (for more information on foreign-trained graduates, see the *Planning for the Future: The Supply of Health Care Providers* chapter).

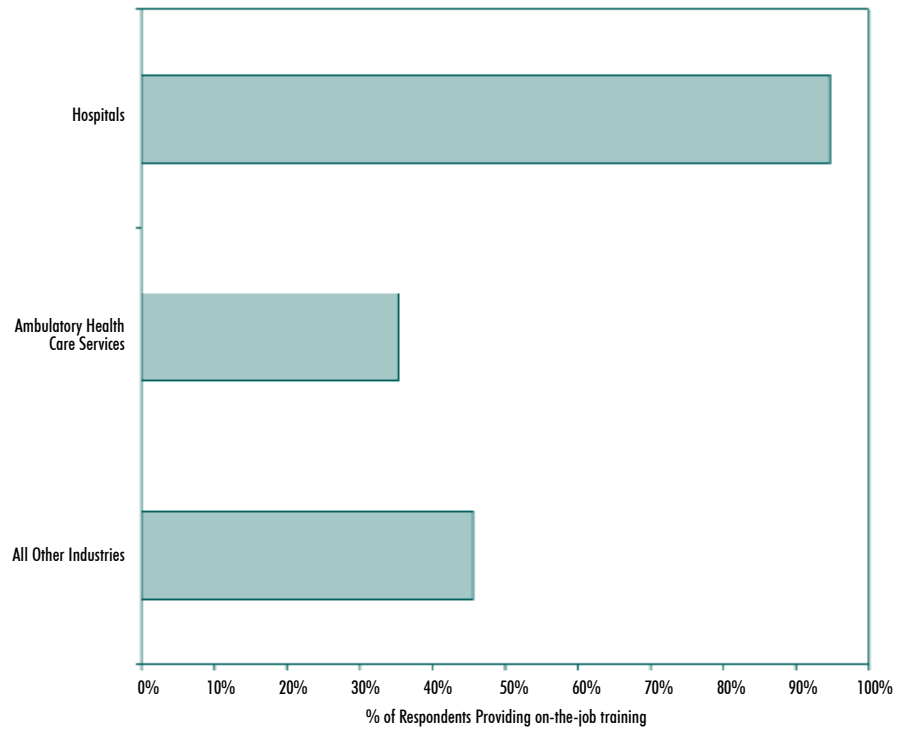
## Part Three: Life-Long Learning

With the rapid explosion of knowledge, keeping up-to-date with best practices and new technologies is a challenge. For example, suppose you graduated with a pharmacy degree in April 2000. One year later, you wanted to catch up on what's new in your field. In that time, roughly 400,000 new references were added to MEDLINE, a database of biomedical journals run by the US National Library of Medicine.[28] Over 10,000 fell into the "Pharmaceutical Preparations" category alone. And this situation is not unique to pharmacy.

In response, many health professional associations are actively encouraging their members to take part in educational activities throughout their careers. Some groups go further. Their members must participate in on-going education in order to maintain their ability to practice. For example, the Royal College of Physicians and Surgeons of Canada introduced their *Maintenance of Certification* program on January 1st, 2001. Fellows must earn 400 credits during five years of active practice by participating in educational activities relevant to their discipline. Each activity receives a certain number of credits per hour based on the College's framework. The program is required for physicians who are either applying for admission or renewing their Fellowship with the College. Whether required by their professional bodies or not, many health professionals regularly renew and upgrade their knowledge and skills.

### On-The-Job Training

Some employers support training for their employees in or outside the workplace. In 1999, nearly all Canadian hospitals (95%) reported providing some type of on-the-job training for their employees. In contrast, training rates in doctors' offices, outpatient care services, medical and diagnostic laboratories, home health care, and other ambulatory care settings were lower. Thirty-five percent of these employers said that their employees received some type of on-the-job training. Notes: Nursing and Residential Care Facilities could not be included in this graph because only a small number of facilities were surveyed, making estimates less reliable.




Source: Workplace and Employee Survey, Statistics Canada

Health care employers sponsor some of this training. Statistics Canada's new Workplace and Employee Survey asks about the extent of on-the-job and classroom training that workers receive. Across all industries, 45% of employers said their employees received some form of on-the-job training in 1999. Examples of topics covered include professional training, team building, leadership and communication, occupational health and safety, and more.

More detailed information is also available for specific professions. For example, the College of Family Physicians of Canada recently asked **family doctors** about different aspects of their medical practices. In an average week, respondents said that they spent 2.7 hours on continuing medical education (CME). This includes taking courses, reading journals, and reviewing audio or video tapes. Family doctors also reported that, in an average year, they spend 1.3 weeks away from their practice for CME purposes.[29]

Some CME occurs at a conference or in a classroom, but there are also other options. According to a survey conducted by the Canadian Medical Association in 2000, over half of **physicians** surveyed were using CD ROMs, the Internet, videos, and audiotapes as part of their continuing medical education. In this survey, male physicians were more likely to access information using these tools than were their female colleagues (65% vs. 52%, respectively).[30]

Other professionals also need to keep up-to-date on recent clinical developments. For example, **pharmacists** in most provinces need 15-20 hours of continuing education credits each year to maintain their licenses.[31] As the new *Mutual Recognition Agreement for the Profession of Pharmacy* is implemented, this requirement is being replaced with a competency assessment and review process.

Like physicians, some pharmacists receive continuing education credits for attending courses. A 2000 survey by the Ontario Pharmacists Association found that three in four hospital pharmacists receive regular pay while attending continuing education courses. This compares with 12% of those working in department or grocery stores and about one-third of those employed by community pharmacy chains.[31] Like physicians, however, pharmacists do not have to physically attend courses to get credits. For example, there were 29 free sources of web-based continuing education accredited in Ontario in 1999.[31]

## Information Gaps

### What We Know

- The location, minimum entry requirements, and average annual tuition for health professional training programs based in universities.
- The number of students enrolled in many health professional programs and the number graduating from these programs.
- The age and sex distributions of students and graduates for some health professions.
- Selected research on the effects of the location of training programs and of different program structures for some professions.
- The proportion of health care employers providing on-the-job training for their employees and information on life-long learning activities for selected professions.
- Which health professions are regulated in which provinces and territories.

## What We Don't Know

- What is the number of training positions in relation to the number of qualified applicants for health education programs?
- What effect will changing tuition costs have on the characteristics of students and graduates?
- How will changes in the number of available places in health professional training programs (e.g. medical schools with an emphasis on practice in rural and remote areas) affect the numbers and distribution of health professionals in the future?
- What is the total cost of training new health professionals, including classroom instruction, clinical practicums, contributions by preceptors and health care organizations, and other costs?
- To what extent are health care providers receiving appropriate learning opportunities to maintain and improve their skills and adapt to the changing health care environment?
- How will changing educational requirements (e.g. a shift away from diploma nursing education towards a university degree) affect the future supply of health professionals and how they provide care?
- How many Canadians are working in unregulated health professions and what are the standards of practice for these professions?
- What impact will changes in regulatory models and professional scopes of practice have on the supply and distribution of health professionals, on our ability to meet future health care needs, on how professionals organize and provide services, and on the quality of care?

## What's Happening

- The Alberta Area Health Education Partnership Program is conducting a study to assess the cost of clinical education for health disciplines throughout the province.
- Final results of the National Family Physician Survey, covering continuing medical education and other topics, will be available in the fall of 2001.

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# Chapter 3
# Planning for the Future: The Supply of Health Care Providers

# Planning for the Future: The Supply of Health Care Providers

"Are there enough health professionals in Canada? Will they be there when I need them?"—two seemingly simple questions with answers that are complex and not fully understood.

Each of us makes decisions every day—such as whether to smoke, what to eat, and how much to exercise—that affect how likely we are to need different types of health care in the future. Health care providers, organizations, governments, and others also make far-reaching decisions. Examples include how many training spots to fund, what types of health care facilities to build and where, and how to organize health care services.

Health human resources planning takes place in this context. Many factors can affect how many health care providers and what mix will be available or needed in any given area. In turn, they may affect the types and levels of services available. Examples include[1]:

- Population demographics and socio-economic status, e.g. how many people live in the area, how old they are, and their annual income
- Population health needs and behaviours, e.g. how healthy people are and whether they smoke, exercise, or have chronic illnesses
- How health care services are organized and delivered
- How clinical knowledge, practice patterns, and technology evolve
- The geographic distribution and mix of health care providers in the area
- The range of services that particular health care professionals provide
- Participation rates and employment arrangements for individual practitioners, e.g. proportion in clinical practice, full-time versus part-time
- Demographic characteristics of health care providers
- Education, migration, labour market, work environment, and related patterns
- Availability of various types of care, e.g. hospitals, diagnostic technology, and community services
- Societal preferences and levels of service demanded.

## The Recent History of Canadian Physician Supply

The number of physicians in clinical and non-clinical practice per Canadian has fluctuated over time. A number of events have had a significant impact on recent trends. For example, the Royal Commission of 1964 (Hall Report) recommended doubling Canada's physician training capacity in order to ensure relatively stable per capita physician supply. In response, new medical schools opened at the Universities of Calgary (1965), McMaster (1965), and Memorial (1967).

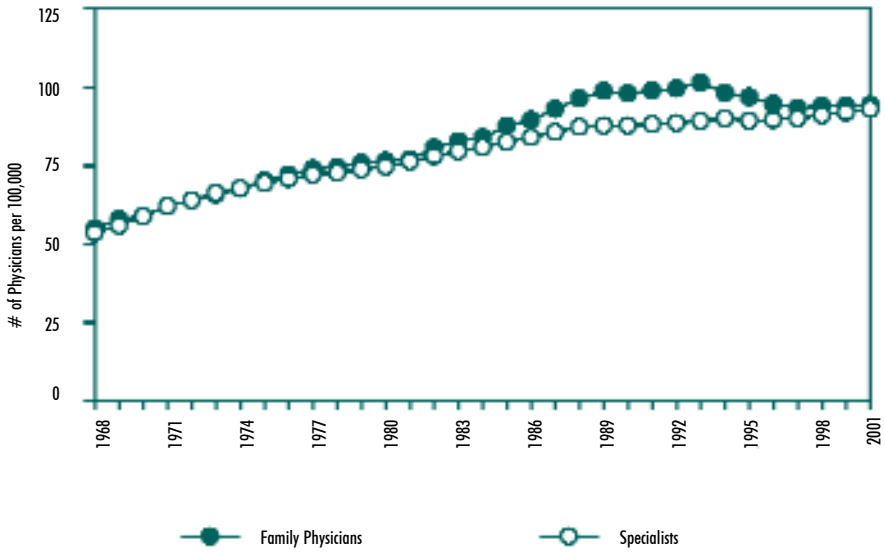
Hall's advice was based, among other factors, on an assumption that baby boom birth rates would continue. They did not, and the number of doctors per person grew faster than expected.

By 1975, doctors trained outside of Canada no longer received "preferred status" for immigration.[2] And three separate reports tabled between 1980 and 1991 recommended decreasing the number of medical school graduates. Between 1993 and 1997, medical school enrolments dropped by 10%. In 1999, enrolments were down 18% from their peak in 1980.[3] The "Barer-Stoddart" report[4] was influential in this decision.[5] It made a wide variety of recommendations on health care, not all of which were implemented. In the context of this advice, the authors suggested that then current physician-to-population ratios should be stabilized.

More recently, questions have again been raised about potential shortages of physicians.[2] Accordingly, provinces have again increased medical school enrolment. And, for the first time in thirty years, a new medical school (specializing in northern medicine) is scheduled to open in 2004.[6] The impact of these new higher enrolment levels will begin to be felt within a decade. The full impact will come after these students complete their residency training several years later.

### Trends in Physician Supply

The number of doctors in clinical and non-clinical practice per person in Canada has varied over time. The graph below shows family medicine and specialist physicians per 100,000 Canadians.




Source: Southam Medical Database, CIHI

## The A-B-Cs of Modeling

To assist with planning for human resource needs, researchers and governments have designed complex mathematical models. These models use many methods to forecast health services needs in the future and the numbers of providers needed to deliver these services. The choice of which method to use is often influenced by what data are available and what questions are being asked. In the past, models that focus on supply-based issues have been used more often for forecasting and planning. There is no one right way to model future health service needs.[7] The best choice may depend on the question being asked, for example,[8]

- How many nurses or physicians are required to continue to serve populations in the way they are currently served?
- How many are required to support the services required to meet all, or a proportion of, the expected needs of the population?
- How many are required to satisfy the expected development and plans for the future provision of health care services?

Some researchers[9] have suggested that these three questions reflect three different approaches: "**utilization-based**", "**needs-based**", and "**effective demand-based**" planning. All three forecast the same overall measure or 'unit of analysis' (e.g. physician consultations, dentist courses of treatment, and nursing hours). But, they are based on different assumptions.

A **utilization-based** approach usually assumes that:

- the current level, mix, and distribution of provider services are appropriate
- the age- and sex-specific resource requirements will remain constant in the future, and
- the size and demographic profile of the population will change over time in ways predicted by currently observed trends in mortality rates, fertility rates (age/sex adjusted), migration patterns, and similar factors.

A **needs-based** approach, on the other hand, is based on three different underlying assumptions:

- all health care needs can and should be met
- cost-effective methods of addressing needs can be identified and implemented, and
- health care resources are utilized in accordance with relative levels of need.

Lastly, under the **effective demand-based** approach, economic considerations are introduced to complement the principles of the needs-based approach. This third approach focuses on ensuring human resources are distributed efficiently (i.e. in ways that have the greatest impact on health needs). But by relaxing the assumption that all needs can and should be met, it focuses on relative levels of need within the entire population with needs.

In some ways, each approach builds on the principles of a previous approach, adding new factors for consideration.[9] For example, O'Brien-Pallas and others[10] have built a dynamic "**system-based**" framework for modeling future human resource needs. Their framework includes:

(1) service use and health professional distribution patterns (utilization-based factors)
(2) population characteristics related to health levels and risks (needs-based factors)
(3) issues, including, economic, social, and political issues, that can influence health spending (effective demand-based factors), and
(4) the population clinical and health status, provider, and system outcomes resulting from the different types of nurse and other health provider utilization.

This model includes assumptions from each of the three approaches outlined earlier. It then places them in the context of assessing needs and outcomes of how services are provided. And it can be used to test the assumptions around resource planning that includes integrated activities.

What you assume matters. For example, researchers[9] used the three different approaches to predict the future need for nurses in Ontario in 2010. They found that they produced different estimates of the number of nurses required. For example, a utilization-based estimate would suggest a midpoint of 83,000 RN full-time equivalents (FTEs). The midpoint for the effective demand-based approach was 70,808 RN FTEs.

Even when the same core approach is used, changes in other assumptions (e.g. rates of population growth or use of particular health services) can have a large impact on forecasts.[8] For example, recent projections of the population per Ontario physician in 2020 by McKendry[3] varied between 610 and 870. The range depended on assumptions about future scenarios of population growth, immigration and emigration of physicians, their retirement rates, and the numbers of doctors being trained. As a result, forecasting exact numbers and types of physicians required, for example, is very difficult. Instead, some researchers suggest that ranges of estimates that depend on different assumptions provide more useful indications of what may be needed in the future.[11]

The results of past projections also offer further insight into the challenges involved. For instance, a series of projections of hospital use made in the 1960s overestimated today's use by 20-50%. Partly this was because assumptions about population growth were off. So were those about how the ways we use hospitals would change.[12]

Since the health care environment is constantly changing, models that make long-range projections are often less accurate than those that project forward only a few years.[10,13] This is largely because, as time passes, the underlying assumptions can become less accurate.

## The Challenge of Planning: Some Examples

Tracking counts of health care providers and their trends can provide important insights for planning. But simple counts don't tell the whole story. Other factors are also important for understanding the current and future supply of health professionals and how it relates to the health needs of Canadians. For example, the Canadian population has grown and aged in recent years and these trends are expected to continue. This may have an impact on the demand for different types of health services. Changes in the health of the population, shifting work patterns of health professionals, reforms of how we organize and deliver health services, and other factors are likely to be as or more important.

### The Health of Canadians

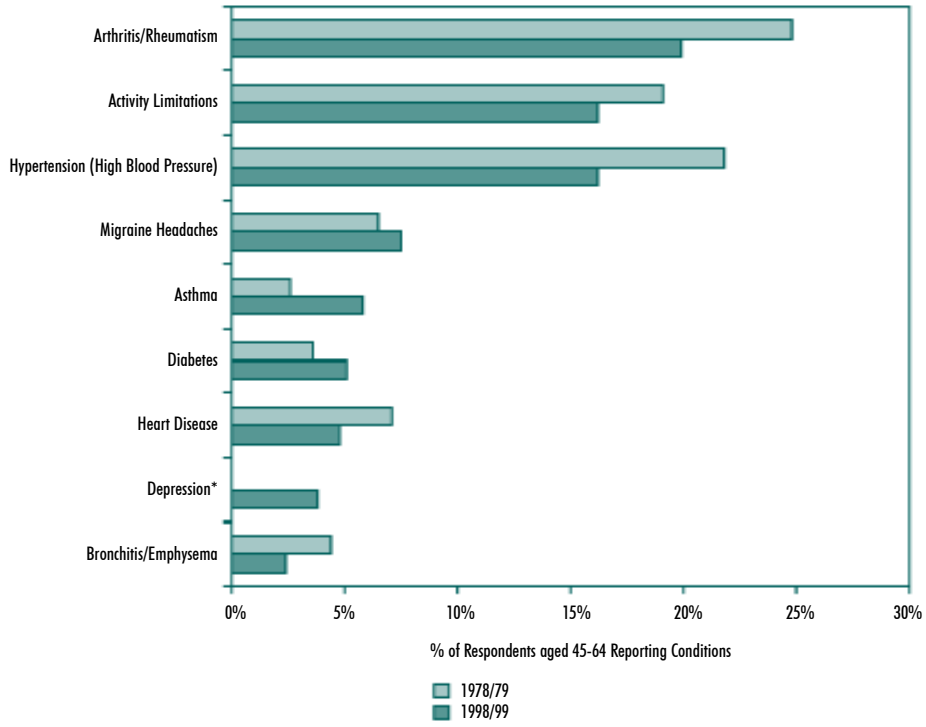
Canada continues to see gradual changes in the health of the population. For example, the life expectancy of Canadians continues to climb. In 1920, life expectancy at birth was 59 years. By the 1950s, it had risen to 69 years and was 79 years in 1997. Compared with other countries, Canada enjoys one of the highest life expectancies. We have been near the top of international rankings for several decades.

However, not all Canadians have the same chances of long and healthy lives. Women tend to live longer than men. There's almost a five-year gap between the sexes. And life expectancy varies across the country. For example, there was a ten-year difference in life expectancy among regions of Quebec in 1996.[14] Reasons for these differences are only partly understood.

According to Statistics Canada,[14] overall, Canadians are not only living longer than before, but they are also living healthier lives. For example, there was a significant drop in the number of women and men between the ages of 45 and 64 suffering from chronic diseases such as arthritis/rheumatism, high blood pressure, and heart disease between 1978/79 and 1998/99. In contrast, the number suffering from other diseases (e.g. asthma and diabetes) increased during the same time period.

**Changing Patterns of Disease**

Canadians are living longer today than ever before. Patterns of disease are also changing. For example, surveys suggest that Canadians aged 45 to 64 were less likely to be diagnosed with certain chronic diseases—such as arthritis or rheumatism, high blood pressure, and heart disease—in 1998/99 than in 1978/79. However, other conditions, including asthma and diabetes, are more likely to be reported today.




*Comparable data for depression are not available for 1978/79.
Source: Statistics Canada (1999). How healthy are Canadians? *Health Reports*, 11(3). Based on 1978/79 Canadian Health Survey and 1998/99 National Population Health Survey, Statistics Canada.

Personal behaviours that influence health have also been shifting. For example, in 1978/79, 37% of adult Canadians (15 years and older) reported being daily smokers. As of 1998/99, the rate had fallen to 24%. And, between 1996/97 and 1998/99, more adult Canadians reported being involved in at least moderate leisure-time physical activities (40% vs. 44%, respectively). Nevertheless, the proportion of adult Canadians who were overweight rose over this period (27% vs. 30%, respectively).

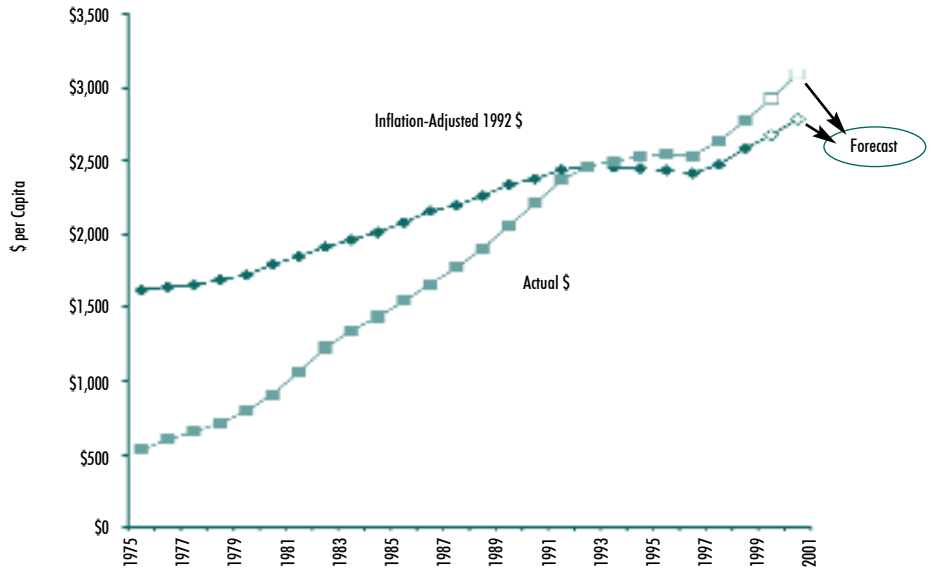
## Health Care in Canada

Health care is changing too. In the 1980s, fiscal pressures and an increased interest in population health led to a number of reviews of the health care system. As a result of these reviews and other factors, the 1990s brought significant changes to health care across Canada. The pace of change differed across the country, but, overall, the patterns of change were similar.

Today, Canadians spend more than $95 billion on health care, according to CIHI estimates.[15] The level of combined public and private spending has changed in recent years. So has how the money was spent. Twenty-five years ago, a much larger share went to hospitals—44.7% in 1975 compared to 31.8% in 2000. Payments to physicians—15.1% in 1975 compared to 13.5% in 2000—used to be the second largest area of spending. They have since been overtaken by retail drug sales (then 8.8%, now second at 15.5%).

### The Growth in Health Care Spending

Canadians saw continued growth in actual and inflation-adjusted health care spending per person in both 1999 and 2000. Figures include spending by both the public and private sectors.




Source: National Health Expenditure Database, CIHI

Along with these spending trends have come changes in how health care is organized and delivered. For example, many provinces have created health regions and given them responsibility for the day-to-day operation of various health services. At the same time, we have seen changes in patterns of care and in the technology used in health care. In some cases, the scope of practice of health professionals and how they work together has also changed (see the *Teamwork in Health Care* chapter for more information).

More changes in health care may also be coming. In Saskatchewan, Quebec, and other parts of the country, results of the latest round of broad re-examinations of health care have recently been released. Like earlier reports, some of these documents will likely have a significant impact on our future health care system—and on those who work in it. So may changes in other areas, such as advances in genomics and other forms of technology, shifting practice patterns, and much more.

## The Geographic Distribution of Providers

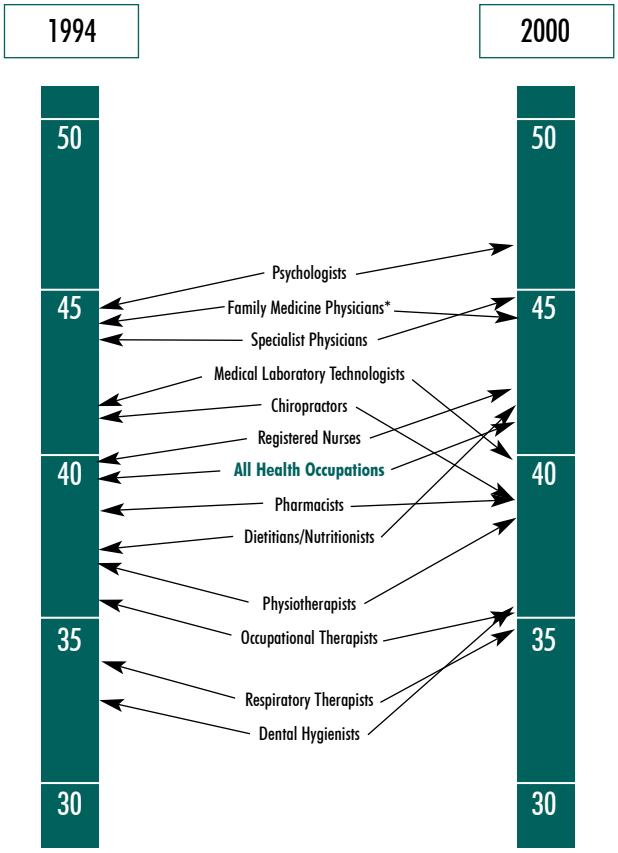
Most Canadians live within five kilometres of a physician.[16] But the distribution of physician services—and other types of care—is not even across the country. For example, there were 94 family doctors per 100,000 Canadians in 2000. Some of the country's health regions had much higher rates—over 140 per 100,000. Others had fewer than half this rate. As this chapter demonstrates, the "right" rate for a particular community depends on many factors, one of which is geography.

Health care in rural and remote parts of Canada presents unique challenges. That's true both for those needing care and for those providing it. Distance to facilities and specialized equipment, peer-support and coverage, and the need for expanded roles and skill sets are only a few of the challenges facing health providers who deliver care in these communities.[17,18]

Some jurisdictions have introduced special incentives to encourage health professionals to work in rural areas. Examples include special funding for rural training or clinical placements, restricting practice locations, and bonuses or other special funding arrangements.[18] Other options are also being explored. For example, some provinces are encouraging expanded roles for nurses to fill gaps in underserved areas. Several are also testing how telehealth technologies can be used to address rural access issues.[16]

### Health Professionals Aging

The average age of workers in most health occupations is increasing. Overall, it rose from 39.1 years in 1994 to 40.8 years in 2000. In some cases, this may be partly explained by fewer people entering the profession or by entrants who are, on average, older than in previous years. The graph below shows the change in average age for selected health professions between 1994 and 2000.




Source: Labour Force Survey, Statistics Canada

## An Aging Workforce

As baby boomers move towards retirement, the average age of Canadians is rising. That trend also holds for health professionals. From 1994 to 2000, the average age of Canadians in health occupations rose almost two years—from 39.1 to 40.8 years.

### Focus on Nurses

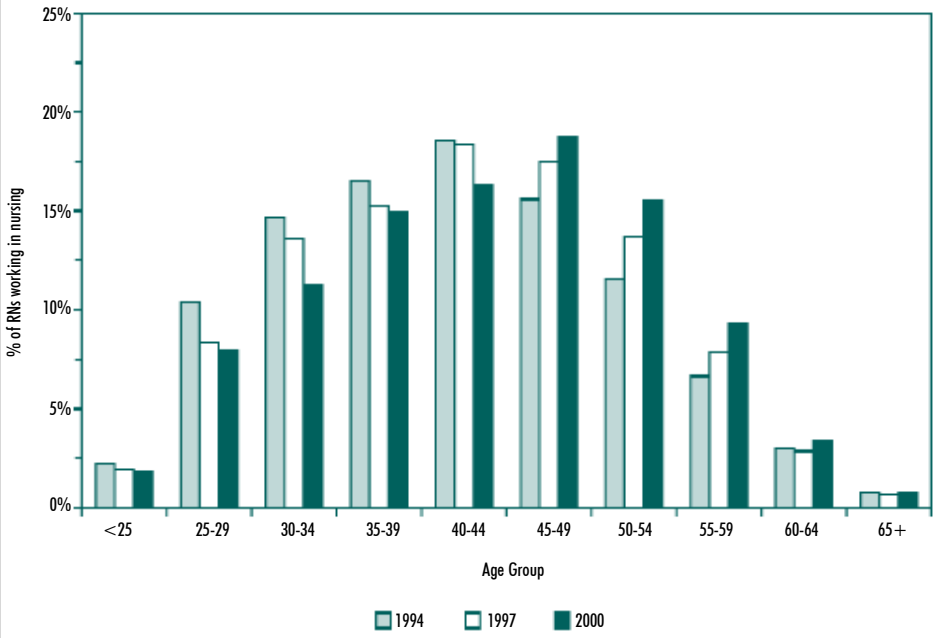
Canada's nurses are getting older and fewer young people are joining the profession. The average age of practicing nurses in 2000 was 43 years. That's up from 41 in 1994. Over this six-year period, the number of RNs employed in nursing aged 50-54 rose 34%.

What's happening? One factor is that RNs graduating from training today are older than before. According to CIHI data, the average age of RNs graduating in the 1950s was 21.7 years. That compares to 26.7 years for those graduating after 1990. Other possible explanations include a drop in the number of RNs being trained in Canada, new RN graduates seeking job opportunities outside of Canada,[19] and departures from the profession (24.5% of hospital RNs under age 30 in British Columbia, Alberta, and Ontario said that they intended to leave the profession within one year on a 1998/99 survey).[20] Furthermore, if the number of students who enroll in RN programs changes, so will the number of future graduates.

Of course, students need teachers. What do we know about the nurses who educate future grads? RNs who indicate that teaching students is their main area of responsibility tend to be older, on average, than those in clinical practice. Their average age in 2000 was nearly 49 years. Meeting the training needs of future students is another consideration in planning for this and other professions.

**Aging Nurses**

The average age of registered nurses (RNs) working in nursing has risen steadily for several years. The graph below shows how the age distribution of RNs changed between 1994 and 2000.




Source: Registered Nurses Database, CIHI

In addition, health professionals, like other workers, are retiring earlier. A Statistics Canada study found that the average retirement age for Canadians employed in health and social services between 1976 and 1980 was almost 65 years. Ten to 15 years later, the average had dropped to just over 62 years.[21]

Both trends are important. For example, many older workers choose to change or decrease their workload.[22] All eventually leave the work force. As a result, aging and early retirement may have impacts on health services available today and tomorrow.

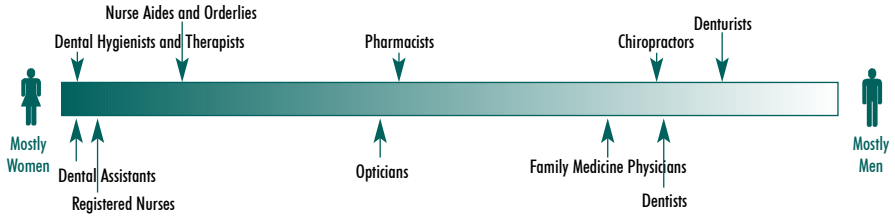
## The Sex Divide in Health Care

Overall, about 80% of all health professionals in Canada in 2000 were female. However, suppose that you picked, at random, one person from each health profession in Canada. Odds are that the doctor, dentist, and paramedic would be men. And the registered nurse, dental hygienist, and physiotherapist would be women. But this mix is changing.

For example, there are more female doctors than ever before. And with increasing numbers of women enrolling in medical school, we will see even more female doctors in the years to come. These trends may have wide-ranging impacts with respect to health services because women tend to have different practice patterns than their male colleagues[23] (for more information, see the *Working in Health Care* chapter).

### The Gender Mix by Health Occupation

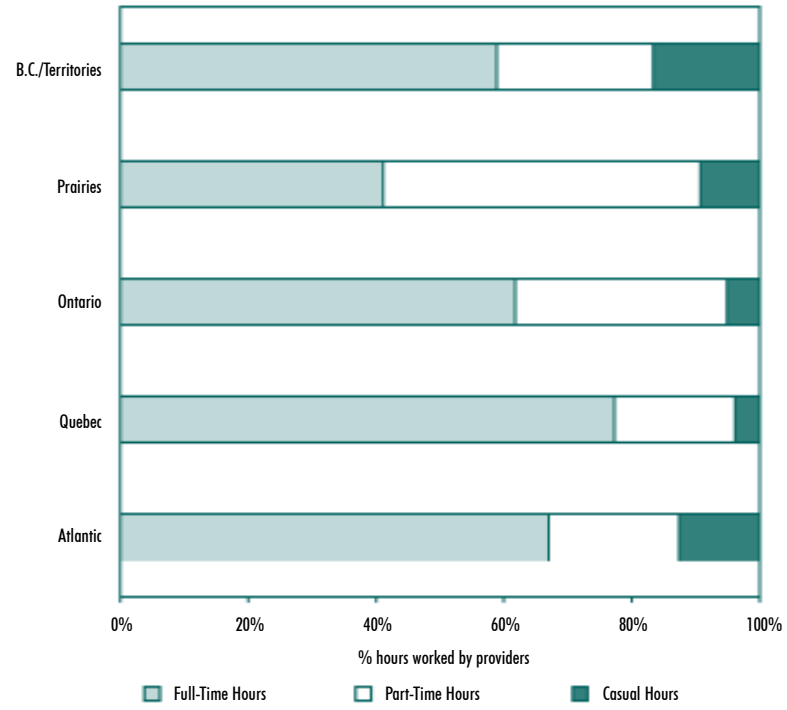
Almost all dental assistants (98%) and dental hygienists (98%) in Canada in 1996 were women. Denturists (16%) and dentists (22%) were at the opposite end of the spectrum. The chart below shows the gender mix for selected health occupations.




Source: 1996 Census, Statistics Canada

### Regional Differences in Nursing Employment Status

The percent of nursing (aides, LPNs, RNs, RPNs) and other* staff working full-time, part-time, and casual hours in 1998 varied across Canada, as results from a survey of a sample of health care employers shows. Quebec respondents reported the highest percent of full-time hours (77.2%) while respondents in the Prairies reported the lowest rate (41.1%). The chart below shows data based on single facilities only. Note: Excludes hours from respondents with unknown employment status.




Source: Kazanjian A, Rahim-Jamal S, MacDonald A, Wood L, Cole C. (2000). *Nursing Workforce Study Volume IV~ Nursing Workforce Deployment: A Survey of Employers*. Vancouver: Centre for Health Services and Policy Research, UBC.

*includes: program assistants, child care workers, personal support workers, patient resource visitors, developmental workers, community health representatives, mental health support workers, youth and family counselors, rehabilitation aides, developmental service workers, etc.

## Full-Time, Part-Time and Casual Work

Most Canadians who are employed have full-time jobs. That's also true in health care, but part-time work is more common than in other sectors. According to Statistics Canada's Workplace and Employee Survey, 52% of workers in health care have full-time positions, compared with 74% of all Canadians working outside of health.[24]

Even within the health sector, however, there are variations. Part-time work is more common in some settings, such as hospitals and other ambulatory health care services (e.g. doctors' and dentists' offices).

Recent job gains have also been distributed differently. Data from the national Workplace and Employee Survey show that the number of full-time permanent employees in health care was up 6.5% between 1998 and 1999. That compares with a 9% increase in employees with other work arrangements (e.g. contract or part-time work).

More detailed information is available for only a few occupational groups, such as registered nurses. RNs can be employed on a permanent or casual basis (casual work usually means that hours are not regularly scheduled and there are fewer or no employee benefits). Some nurses choose regular part-time or casual work. Others do not. A recent study of hospital RNs found that over 40% in British Columbia and over 60% in Alberta who were working on a casual basis were doing so by choice.[20]

In 2000, CIHI data show that casual employment rates for RNs reached a seven-year low. Across the country, some 34,500 RNs (just under 15%) were employed on a casual basis. This is down from 18% in 1999 but is similar to the 15% recorded in 1994. Similar patterns were seen in most parts of the country. Between 1999 and 2000, casual employment dropped in eight of thirteen jurisdictions. Only British Columbia, the Northwest Territories, and Nunavut saw increases. Figures for the Yukon remained stable.

Along with the growth in the number of permanent positions, there has been an increase in the percentage of RNs working full-time. It was just under 55% in 2000, up from 51% in 1999. The 2000 figures are similar to those last seen six years ago.

## Migration and Immigration

Every year, thousands of health care providers move within Canada. Census data suggest that about 4% lived in a different province or territory in 1996 than in 1991. With full implementation of the Agreement on Internal Trade in July 2001, moving across provincial and territorial borders may soon be easier for these and other professionals. The agreement covers 97% of workers in regulated occupations.

### Attracting and Keeping Health Providers

Across the country, large amounts of time and money are spent on initiatives to recruit and retain health professionals. Many different strategies are being used. They range from paying for education and training to community support for providers and their families.

Which strategies work best? Not all have been fully evaluated. And, different approaches may be needed for different situations. Nevertheless, researchers have started to look at the effectiveness of some of the approaches that have been used so far. Their findings include:

- offering money incentives to nurses in Ontario, such as grants and bursaries, seemed to provide only short-term benefits. [25]
- undergraduates or residents who spend part of their training in rural areas are more likely to work there when they start practicing. [26, 27, 28]
- providing a good quality work environment has been shown to be successful in attracting and keeping health care providers.[29, 30]

### Policy Approaches to Attracting and Keeping Health Care Workers

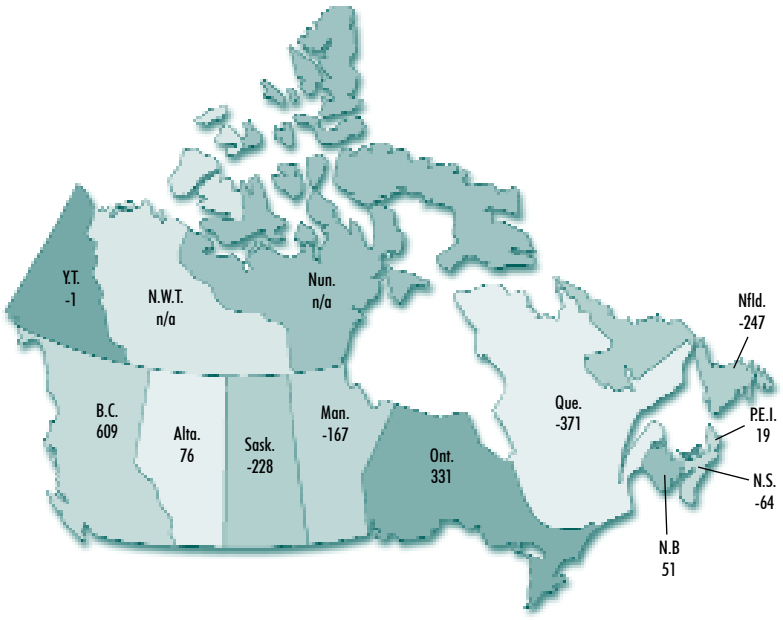
Across the country, a variety of policies have been put in place in an attempt to recruit or retain health care providers. Direct funding/financial incentives are the most commonly used policy instrument in Canada, with all provinces/territories participating. For each province/territory, a check mark (✓) in the table below represents one or more policy approaches in place as of 1999 to recruit and/or retain health care providers.

| Policy Approaches | B.C. | Alta. | Sask. | Man. | Ont. | Que. | N.B. | N.S. | P.E.I. | Nfld. | Y.T. | N.W.T./Nun. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Regulatory/Administrative (e.g. Restrictions on practice location of foreign medical graduates) | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | ✓ | | |
| Direct Funding-Practice Related (e.g. Bonus for practice in under-serviced community) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Direct Funding-Education Related (e.g. Student loans, grants, bursary in return for service) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Education/Training (e.g. Rural training) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | |
| Market-Based Initiatives (e.g. Recruitment tours) | | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | | ✓ | | |
| Other Initiatives (e.g. Spousal support initiatives) | ✓ | ✓ | ✓ | | ✓ | | ✓ | ✓ | | ✓ | | |

Chan B, Barer M. (2000). *Access to Physicians in Underserved Communities in Canada: Something Old, Something New.* In Fifth International Medical Workforce Conference 2000: Papers. Australian Medical Workforce Advisory Committee and Commonwealth Department of Health and Aged Care, 213-242.

### Physician Migration Within Canada

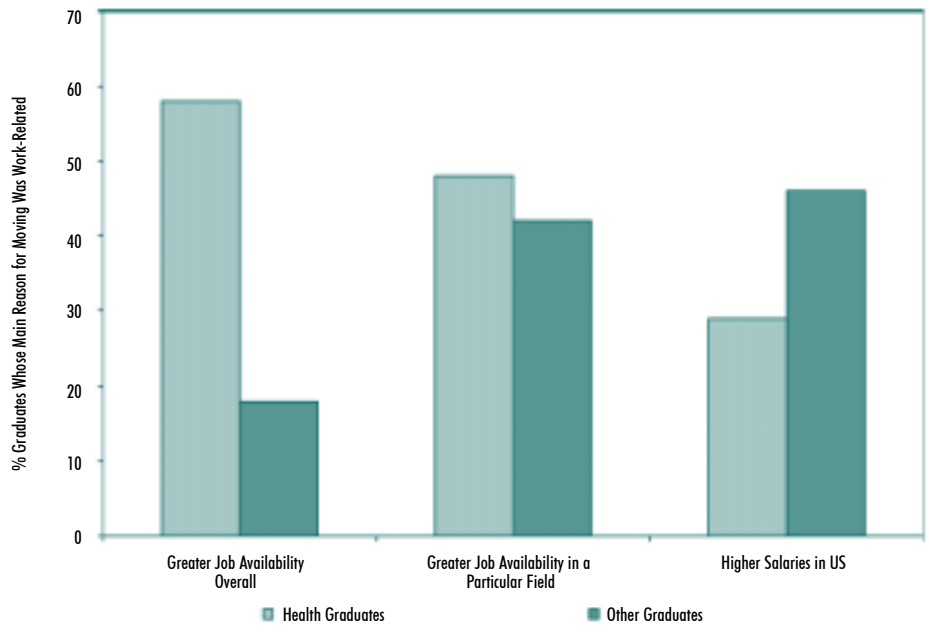
From year to year, provinces and territories gain and lose physicians because of migration within Canada. The map below shows the five-year net migration of clinical and non-clinical physicians (including residents) between 1996 and 2000. The numbers are based on physicians' province/territory of residence at the beginning of each year. Note: Five-year net migration data not available for the Northwest Territories or Nunavut.




Source: Southam Medical Database, CIHI

### Why Health Grads Went South

Over 85% of health grads from the Class of 1995 who moved to the United States did so mainly for work-related reasons. Their main reasons for moving (compared with those of graduates in other fields who moved for work-related reasons) are shown below.




Source: Frank J, Belaire E. (1999). *South of the Border,* Ottawa: Statistics Canada and Human Resource Development Canada.

For most professions, there is very little information on either the numbers or characteristics of people who move within the country. Physicians are an exception. Between 1996 and 2000, physician migration trends within Canada were relatively consistent. Some parts of the country typically lose doctors each year. Others usually see net gains.

## Crossing the Border

Internationally, migration seems to occur in cycles. Each year, hundreds of foreign-trained graduates enter Canada intending to work in health care. Before being licensed to practice, they must usually undergo an extensive certification process (for more information on certification and licensing, see the *Becoming a Health Care Provider* chapter).

The reverse is also true. Some Canadian health professionals decide to leave the country each year. Relatively little is known about who chooses to move, why, how long they stay, and when or if they return, but some results have emerged from recent research.

For example, a recent Statistics Canada study tracked a sample of slightly more than 43,000 college and university graduates from the Class of '95.[19] About 4,600 moved to the United States between 1995 and 1997. When they arrived in the United States, nearly one in five of all the graduates who moved worked in nursing. In total,

health graduates accounted for almost a third (30%) of those who moved. By 1999, just over 20% of them had returned to Canada—a slightly higher rate than that for all other graduates (18%).

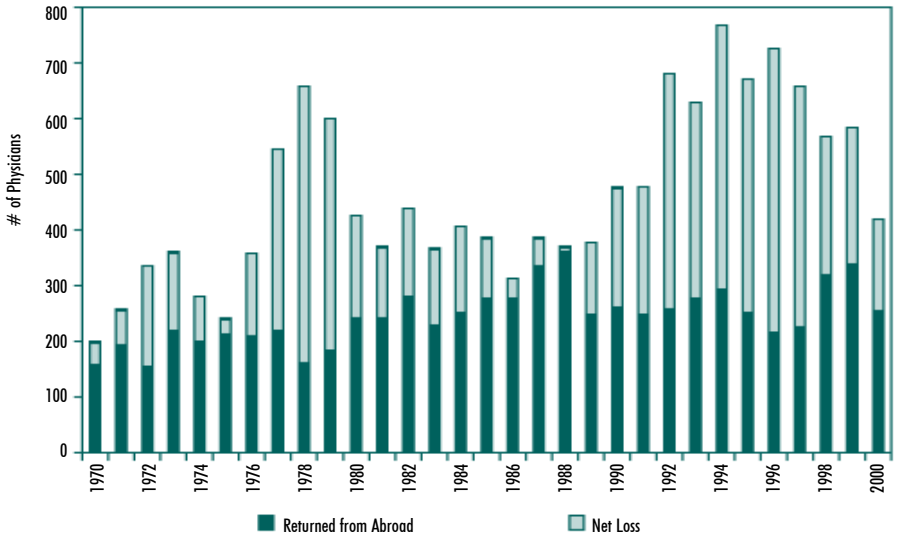
The Registered Nurses Association of Ontario found similar results when they surveyed Ontario RNs who left Canada between 1991 and 2000.[31] Most RNs (69.5%) said that job opportunities were the main reason they left Canada. Family or personal reasons were next (25.5%), followed by pay and benefits (12.9%) and travel and weather (5.5%).

Physician migration has also been studied extensively. The number of physicians leaving Canada and returning home varies from year to year. As a percent of the total number of physicians, the last peak in the cycle was in the mid to late 1970s, followed by a new (lower but longer-lasting) peak in the mid-1990s. A Statistics Canada report based on data that covered this peak period suggested that physicians left Canada at a rate about 10 times higher than all other Canadian emigrant workers; nevertheless, this represents less than 1% of physicians in Canada per year.[32] A study completed in 1995 indicated that a significant number of physicians who moved to the United States had decided they were going to move even before they entered post-graduate medical training.[33]

In 2000, CIHI data show that 420 physicians moved abroad, down about 28% from 1999. Most were male, specialist physicians who had received their MD education within the previous 10 years. In the same year, 256 physicians returned from abroad, down about 25% from the year before. Their characteristics were very similar to those that moved abroad.

### Canadian Physicians on the Move

Each year, some physicians—about 1% of the total supply in recent years—leave Canada. Others return. Over the last 30 years, this movement has ebbed and flowed. The top of the grey bar on the graph below shows how many left each year from 1970 to 2000. The black bar shows how many returned to clinical or nonclinical practice in Canada. The difference represents the annual net loss.

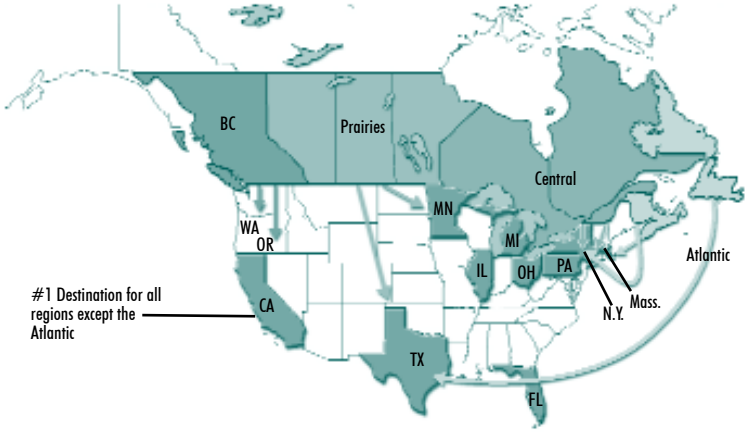



Source: Southam Medical Database, CIHI

The American Medical Association estimates that about 9,800 graduates from Canadian medical schools are currently active (e.g. employed, training or teaching) in the United States. New research by CIHI suggests that California, New York, and Texas have been the most popular destinations for Canadian doctors who moved south. But there are variations in where physicians who come from particular provinces in Canada tend to move to (see map).

## Top 10 US Destinations for Canadian MDs

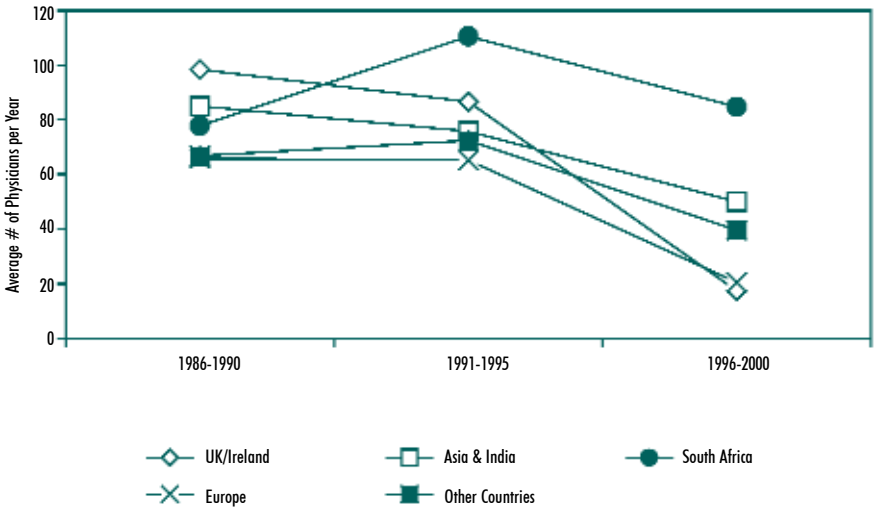
Physicians who left Canada between 1978 and 1999 to move to the United States tended to move to certain states over others. California was the top destination for physicians from all parts of the country, except the Atlantic region. The map below shows the top 10 destinations of Canadian MDs who left over this period and the top three destinations for each region.




Sources: Southam Medical Database, CIHI, and data from the American Medical Association.

## "New" Physicians in Canada

Over time, Canada has attracted physicians from a variety of different countries. The graph below shows the number of physicians who entered Canada by country of MD graduation, averaged over five year periods between 1986 and 2000.




Source: Southam Medical Database, CIHI

Of course, the border is open in both directions. In 2000, 335 doctors became landed immigrants in Canada up from 243 in 1999, but roughly equal to the 339 entering in 1996. Physicians may also enter the country under temporary work visas.

Where do physicians who immigrate to Canada come from? Until recently, graduates from medical schools in the United Kingdom or Ireland were the largest single group of immigrants. In 1985, they were 35% of those who entered. That fell to just over 5% in 2000. Today, there are more South African trained physicians immigrating than doctors from any other country or region. They accounted for 24% of those who entered in 2000, up from under 9% in 1985.

Each of these trends, as well as others, will likely affect future demands for different types of health services, and hence, requirements for various health care providers.

# Information Gaps

## What We Know

- The number of physicians and selected demographic, practice pattern, workload, and migration information.
- The number of registered nurses and selected demographic and employment characteristics.
- The number of professionals in selected non-nursing/non-medical occupations.

## What We Don't Know

- What is the right mix of health human resources at regional, provincial and national levels to meet health care needs?
- Given demographic, workforce, health, health care, and other trends, will the current combination of health care providers continue to meet the health needs of the current and future Canadian population?
- How many regulated and unregulated healthcare providers move each year and what is the impact of their migration on health care services?
- How will the implementation of the Agreement on Internal Trade affect the mobility of health professionals?

## What's Happening

- The Advisory Committee on Health Human Resources (ACHHR) has mandated the Working Group on Allied Health, to develop a coordinated, planning framework to serve as the foundation upon which the information needs for health human resources in Canada will be established.
- CIHI, in collaboration with certain provinces, has established a pilot project to guide the development of the information infrastructure needed to track migration and long-term employment patterns for nurses in Canada.
- *The Nature of Nursing Practice in Rural and Remote Canada* study was launched in May 2001. This three-year research project aims to describe and examine the nature of the registered nursing practice in a variety of different settings in rural and remote Canada.
- A number of provincial initiatives, such as the multi-stakeholder Physician Resource Planning Committee in Alberta, are examining issues and potential solutions in different jurisdictions.

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# Part B
# Working in Health Care

# Chapter 4
# Teamwork in Health Care

# Teamwork in Health Care

From professional sports to banks and insurance, car manufacturing to the military, many industries encourage their employees to work in teams. While not all teams achieve their goals, management experts suggest that:

> *A real team—appropriately focused and rigorously disciplined—is the most versatile unit organisations have for meeting both performance and change challenges in today's complex world.*[1]

Complexity, change, and performance challenges are common in health care. In this context, teams are sometimes seen as a way of tapping the potential and skills of a wide range of health care providers to work towards shared goals.[2] For example, the World Health Organization identified "collaboration within and among the various categories of health workers following agreement on the division of labour" as a key building block in their *Global Strategy for Health for All by the Year 2000*.[3]

Achieving this potential is not easy. True collaboration and effective teams are often difficult to attain. Many authors describe a range of challenges in designing and forming health care teams, aimed at achieving the best possible results.[4,5]

This chapter explores health care teams and some of their challenges. In doing so, it draws on current research and new data from Canada and elsewhere. It concludes with a special focus on primary health care—one of the areas where there continues to be considerable discussion about creating teams of different health care providers.

## What is a Health Care Team?

Definitions of health care teams vary, but there are several common themes. First, simply working together or calling a group a "team" is not enough. Many authors suggest that a true team must share a common purpose and approach to its work. Some also emphasize the need for shared performance goals and complementary skills among team members. For example:

> *A team is a small number of consistent people committed to a relevant shared purpose, with common performance goals, complementary and overlapping skills, and a common approach to their work. Team members hold themselves mutually accountable for the team's results or outcomes.*[2]

Teams are not new in health care. For years, groups of health professionals have worked collaboratively in emergency rooms, surgical suites, rehabilitation programs, and many other settings.[2] Some authors suggest, however, that interdisciplinary teams are potentially becoming the basic building block for organizing and delivering health services.[2]

**Program Management: Re-organizing Around Teams**

Hundreds of thousands of Canadians work in hospitals. In the past, most staff worked in departments structured by professional discipline or function. There was one for social work, another for physiotherapy, and so on.

Since the 1980s, however, many large health organizations have switched to "program management" structures. The ways they designed and introduced this new approach differed from place to place.[6] For example, some defined programs by patient group. Others chose to use diseases or health problems, patient needs, types of service, or broad medical specialties.[6]

Regardless of the approach taken, the new structures rely heavily on teams. The programs typically bring together different types of health care providers with a goal of delivering high-quality patient-focused care.[7] As a result, there is often more of a focus on cross training and collaboration than in the past.[6] Some institutions have also introduced new clinical leader positions or other ways of ensuring professional leadership, standards, and linkages are maintained.[6]

What does program management mean for patient care and the worklife of hospital staff? These changes come in a time of fiscal restraint, shifting practice patterns, and other changes. In this context and given the variety of approaches used, specific impacts are difficult to identify. Nevertheless, a number of Canadian researchers have explored the issue. [e.g. 8, 9, 10, 11, 12, 13] Most studies focus on specific programs or institutions and highlight both positive results and challenges in moving to the new model.

## Forming Health Care Teams in Canada

In Canada, as in many other countries, there is considerable interest in encouraging health care teams. A 1996 inventory found dozens of projects underway across the country, both large and small.[14] Some involved reviews of professional scopes of practice or changes in regulatory models. Others focused on interdisciplinary education, public education and awareness, and much more.

As this range of activities suggests, teams form in different ways, for different reasons. Many factors influence how they are organized. Governments and professional bodies set some parameters through laws, regulations, and how services are financed. How many and what types of providers are available, information flows, and the workplace environment may also matter. Likewise, patient and community needs and expectations are important. So are many other factors, including providers' education, skills, and preferences.

# Members of the Team: Who Does What in Health Care?

Over time, a complex mix of health professions has evolved. Some roles are distinct. Others are shared. "Scopes of practice" define the services that members of an occupation perform and the methods they use.[15] Each profession tends to specialize in certain areas, although skills and roles vary across the country and often overlap.

## What Services Family Doctors Provide

Even within the same profession, scopes of practice can vary. For instance, being a family doctor in Toronto is very different from practicing in a rural area. As an example, the table below shows the percent of family physicians in Northern Ontario, in Toronto, and across the country who reported offering selected medical services and clinical procedures to their regular patients and/or other patients in 2001.

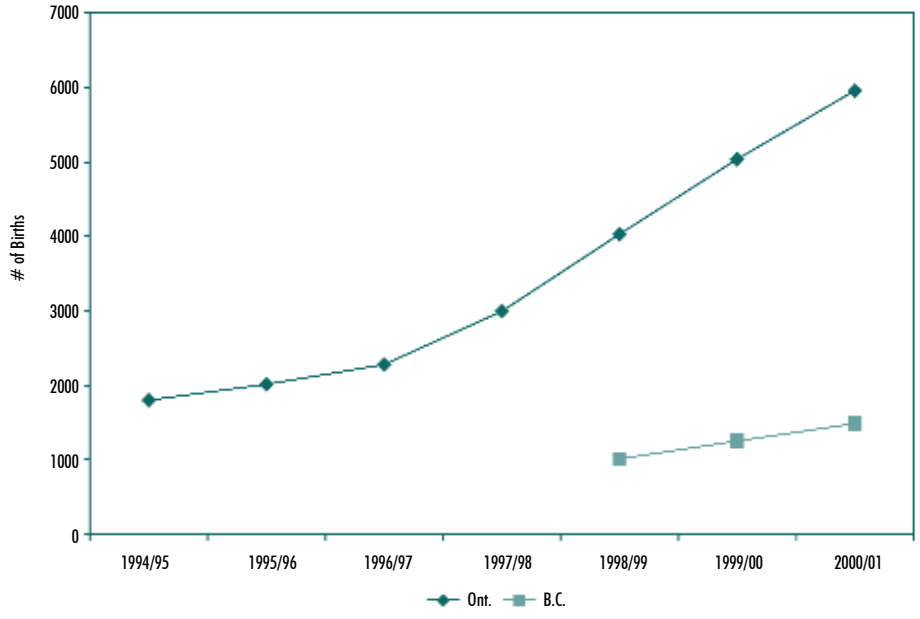
| | Northern Ontario* | Toronto | Canada |
|---|---|---|---|
| Chronic Disease Management | 91.2% | 81.5% | 85.2% |
| Psychotherapy/Counselling | 86.4% | 86.6% | 84.6% |
| Palliative Care | 82.8% | 49.3% | 69.3% |
| Obstetrical Care | 76.7% | 63.9% | 64.0% |
| Emergency Medicine | 60.8% | 24.4% | 49.2% |
| Substance Abuse/Addiction Medicine | 56.0% | 33.7% | 40.0% |
| Anesthesia | 8.1% | 2.3% | 5.2% |
| Pap Smears | 87.9% | 84.4% | 86.8% |
| Casting/Splinting | 61.5% | 16.7% | 45.4% |
| Skin Biopsy | 73.6% | 31.9% | 55.0% |
| Suturing | 84.6% | 65.5% | 80.9% |

* Includes the Northwestern Ontario and Algoma, Cochrane, Manitoulin, and Sudbury District Health Councils.

Source: The College of Physicians of Canada. (2001). National Family Physician Workforce Survey. Ontario: The College of Family Physicians of Canada

## Births Attended by Midwives in British Columbia and Ontario

In some provinces, such as British Columbia and Ontario, midwifery services are publicly funded. The chart below shows how the number of publicly funded hospital and home births attended by midwives in these provinces has changed over time. Data from Ontario shows midwife attended births are increasingly occuring in the hospital. For example, over the last seven years, midwife attended hospital deliveries increased from 61% to 72%. Note: The first midwifery graduating class in Ontario entered the profession in 1996. In British Columbia, the first midwives were regulated in 1998.




Sources: Ontario Midwifery Program, Ontario Ministry of Health and Long-Term Care, and Children's and Women's Health Centre of British Columbia

For example, many different health care providers sometimes help mothers and their babies with childbirth. In an emergency, paramedics and others are trained to help, but physicians attend most births in Canada. Family physicians and obstetricians are most likely to provide this type of care. Not all family physicians, however, provide this service. For example, rural family doctors are more likely than their big city counterparts to do so. In 2001, 64% of family doctors working in Toronto said that they provided obstetrical care, according to a survey by the College of Family Physicians of Canada. That compares with 77% of those working in Northern Ontario.*

In some parts of the country, there are other options. Midwives have recently become licensed to manage planned home births and hospital births in some jurisdictions. The modern midwife combines knowledge of obstetrics with traditional midwifery skills and arts. Ontario, Quebec, Manitoba, and British Columbia now fund midwifery services from the public purse. Doulas are another option. Some mothers also seek care from Doulas who are unregulated care providers that receive training to assist women in childbirth. Their main role is to provide emotional and physical support for mothers. Doula services are typically out-of-pocket expenses.

* Includes family doctors in the Northwestern Ontario and Algoma, Cochrane, Manitoulin, and Sudbury District Health Councils.

There are many similar examples of overlapping scopes of practice in health care. For instance, family physicians and nurse practitioners can both perform many primary health care functions. A 2000 report from the Ontario College of Family Physicians suggested that although some services should only be provided by doctors, many could be shared. Examples include physical exams, health education, monitoring patients with chronic illnesses, and coordinating community health resources.[16] Registered nurses and licensed practical nurses also have some common tasks.

Where overlapping scopes of practice exist, what happens if different types of providers substitute for each other? Many studies—both in Canada and elsewhere—have documented situations where such care can be safe and of high quality, although the strength of the evidence varies for different occupational groups and roles. In addition, there is less evidence on the cost-effectiveness of different types of role substitution in the Canadian context.[17]

## Who Does What? A Perspective from Ontario

Primary health care involves a wide range of different services, many of which can be provided by more than one type of health professional. In 2000, a physician–nurse practitioner team summarized their view on shared and separate functions for family physicians (FP) and nurse practitioners (NP) for the Ontario College of Family Physicians (see table below). (The list of services was adapted from work by the Subcommittee on Primary Care of the Provincial Co-Ordinating Committee on Community and Academic Health Science Centre Relations.)

| Service | FP | NP |
|---|---|---|
| **Health Assessment** | | |
| • History taking | ✓ | ✓ |
| • Physical exam | ✓ | ✓ |
| • Lab/diagnostic evaluation | ✓ | ✓ |
| **Illness Prevention** | | |
| • Periodic exam | ✓ | ✓ |
| • Primary prevention | ✓ | ✓ |
| • Secondary prevention | ✓ | ✓ |
| • Tertiary prevention | ✓ | ✓ |
| **Health Promotion** | | |
| • Lifestyle counseling | ✓ | ✓ |
| • Determinants of health | ✓ | ✓ |
| **Education & Support for Self-Care** | | |
| • Health education | ✓ | ✓ |
| • Telephone advice | ✓ | ✓ |
| **Diagnosis & Treatment of Episodic Illness & Injuries** | | |
| • Acute minor illness | ✓ | ✓ |
| • Acute minor injury | ✓ | ✓ |
| • Acute complex illness | ✓ | |
| • Acute complex injury | ✓ | |
| **Diagnosis & Treatment of Chronic Illness & Injuries** | | |
| • Initial diagnosis & treatment | ✓ | |
| • Treatment adjustment unstable | ✓ | |
| • Monitor stable condition | ✓ | ✓ |
| **Primary Reproductive Care** | | |
| • Birth control counseling | ✓ | ✓ |
| • STD screening & treatment | ✓ | ✓ |
| • Pregnancy diagnosis | ✓ | ✓ |
| • Options counseling | ✓ | ✓ |
| • Ante natal care to 32 weeks | ✓ | ✓ |
| • Ante natal care > 32 weeks | ✓ | |
| • Labour & delivery | ✓ | |
| • Immediate maternal care | ✓ | |
| • Immediate newborn care | ✓ | |

| Service | FP | NP |
|---|---|---|
| **Palliative Care** | | |
| • Home visits | ✓ | ✓ |
| • Individual & family support | ✓ | ✓ |
| • Initial treatment | ✓ | |
| • Treatment adjustment unstable | ✓ | |
| • Monitor stable condition | ✓ | ✓ |
| **Primary Mental Health Care** | | |
| • Stress management | ✓ | ✓ |
| • Adaptation to illness | ✓ | ✓ |
| • Acute/chronic psychiatric illness | | |
| ◦ Initial diagnosis & treatment | ✓ | |
| ◦ Treatment adjustment unstable | ✓ | |
| ◦ Monitor stable condition | ✓ | ✓ |
| **Coordination & Provision of Rehabilitative Services** | | |
| • Referral to rehab services | ✓ | |
| • Participate in planning & follow-up | ✓ | ✓ |
| • Education & advocacy | ✓ | ✓ |
| • Develop care map | ✓ | ✓ |
| **Coordination of & Referral to Other Health Care Services** | | |
| • To community resources | ✓ | ✓ |
| • To medical specialists | ✓ | ✓ |
| • To hospital for admission | ✓ | |
| **Supportive Care** | | |
| • In hospital | ✓ | ✓ |
| • At home | ✓ | ✓ |
| • In long-term care facilities | ✓ | ✓ |

Source: Way DO, Jones L, Busing N. (2000). Implementation Strategies: "Collaboration in Primary Care - Family Doctors and Nurse Practitioners Delivering Shared Care". Toronto: Ontario College of Family Physicians.

Another view is that, while skills and roles may overlap, different professions have unique perspectives on and expertise in health and health care.[2] For example, physicians' education may tend to emphasize diagnosing and treating diseases. As a result, they have detailed pathophysiological knowledge.[18] Nurses may focus more on the patient (and family) as a whole, including how s/he responds to health conditions and care, both physically and psychosocially.[19]

Some researchers suggest that these different perspectives can have widespread effects. For instance, they may affect how health professionals define health problems, weigh and address issues related to patients' quality of life, and approach collaboration with other professions.[20] In addition, each group may tend to be more proficient at certain tasks than at others and may

contribute important insights to the team's approach to care.[21] Even where different groups can both complete similar tasks, their underlying knowledge, skills, or competencies may differ. In this context, several authors have suggested that different types of providers may be best seen as complementary, rather than interchangeable substitutes.[2,19, 21]

### A Changing Context: Evolving Scopes of Practice

Professional scopes of practice change over time. For example, pharmacy first became a self-governing profession in Canada in the 1870s.[22] Today, pharmacists don't just prepare and dispense drugs. Many also act as drug information specialists, providing advice to other health professionals and the public, or have other roles.[23]

Several studies have been done–in Canada and elsewhere–on the impact of pharmacists' clinical advice. For example, a recent international systematic review of the evidence looked at effects of community pharmacists' services on health services utilization, costs, and patient outcomes.[24] It included a total of 25 studies, involving more than 16,000 patients.

Researchers first looked at studies where pharmacists provided advice to patients. They found that this advice generally tended to reduce the use of other health services and to improve patient outcomes for the condition in question. However, it did not seem to affect patients' overall quality of life. Second, researchers focused on studies of pharmacists providing advice to physicians. All studies found that their advice affected how physicians prescribed drugs. Finally, the authors looked for research that compared the effect of pharmacists' interventions with patients and physicians to that of similar services delivered by other health professionals. They found few studies on this topic. As a result, they concluded that there was not enough evidence to compare the impact of services delivered by different types of professionals.

Nursing is another profession where scopes of practice continue to change. Today's nurses have many different roles, some of which are highly specialized. However, this situation has evolved over time. In the mid-1600s, several of Canada's first "trained" nurses immigrated to what is now Quebec City.[25] When they arrived, they performed many functions, from making medicines to serving as administrators and performing surgery.

Nurses' roles have changed gradually over time–and changes continue. For instance, Quebec recently changed its laws to allow nurses to act as surgeon's assistants. This means that they can perform some surgical tasks, such as stitching and closing wounds. Likewise, some jurisdictions have recognized a role for primary care nurse practitioners. These nurses receive advanced training to provide a wide range of primary health care services. Other advanced nursing roles also exist.

As in nursing, a wider range of specialties seem to be developing for many health professions.[26] This often goes hand-in-hand with longer formal education. At the same time, the number of health occupations is increasing. Today, students can choose from dozens of different health training programs.

These trends have the potential to affect who delivers what care and how care providers work together. Why are they occurring? Some experts suggest that many factors are involved, including the growth of knowledge, the introduction of new technologies, and changes in how health care is delivered.[26]

## The Current Skill Mix

In the absence of definitive evidence about what mix of health professionals works best in many different situations,[27,28] a wide variety of approaches have been taken. At the international level, there are large variations among industrialized countries.[29] The mix of health professionals differs significantly, so do their range of skills and activities.

Even within Canada, there are significant variations among provinces and territories. Toronto, Montreal, Vancouver, and other large urban centres are at one extreme. They have a wide range of specialists, sub-specialists, and dozens of different types of health professionals. At the other end are very isolated remote communities. In some cases, indigenous health care workers may be the only health care providers resident in these communities.[17]

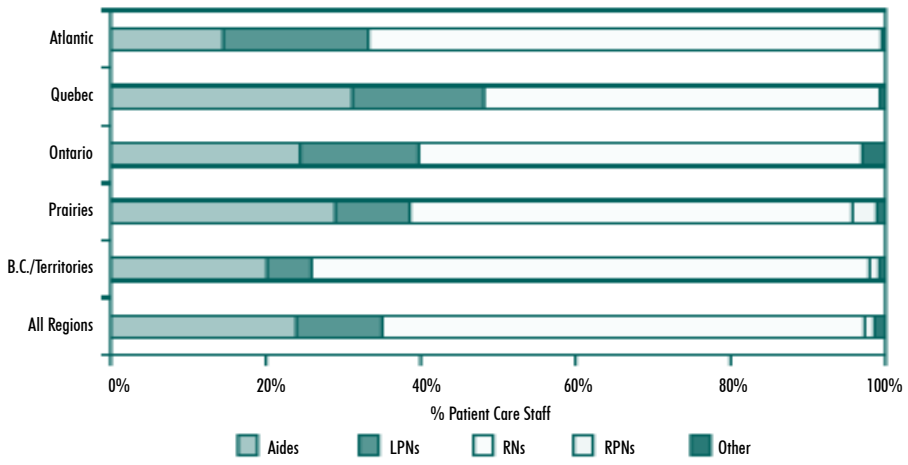
Across the country there were about the same number of general/family physicians (GP/FP) and medical specialists in 2000. The national GP/FP to specialist ratio was 1.0. Among the jurisdictions, the ratio ranged between 0.9 for Ontario and 6.0 for Nunavut.

Large differences also exist for other professions. For example, different combinations of patient care staff work in health care institutions in different parts of the country. Even within the same jurisdiction, specific types of patient care staff are more likely to work in particular areas.

New research is exploring how patient outcomes vary when the mix of staff differs. For example, University of Toronto researchers studied patient, nurse, and system outcomes in 19 Ontario teaching hospitals. They found that patients on units with a higher proportion of regulated nursing staff (RNs and LPNs) tended to have better outcomes when they left hospital. Specifically, they had higher functional independence, less pain, better social functioning, and were more satisfied with obstetrical care. This was true even after controlling for the types of patients cared for on the unit, as well as their health status on admission, age, gender, and complexity of illness. These units also tended to have fewer medication errors and wound infections. The relationship between hospital staff mix and patient outcomes was not, however, seen when researchers followed up six weeks after patients were discharged from hospital.[30]

### The Mix of Patient Care Staff

In 1999, researchers from the University of British Columbia asked a sample of hospitals, long-term care centres, regional health boards, public health units, and other health care employers about the numbers and mix of unregulated aides, licensed practical nurses (LPNs), registered nurses (RNs), registered psychiatric nurses (RPNs), and other providers they employed in the previous year. A summary of their responses is shown below.* Note: Regional distributions include only responses from "single facilities" — those that reported staff from only one facility/agency.




* includes full-time, part-time and casual staff

Source: Kazanjian A, Rahim-Jamal S, MacDonald A, Wood L, Cole C. (2000). *Nursing Workforce Study Volume IV ~ Nursing Workforce Deployment: A Survey of Employers*. University of British Columbia: Centre for Health Services and Policy Research.

## Different Skills for Different Jobs

Patient care providers in different parts of a hospital tend to have different backgrounds. For example, the chart below shows the two most common types of patient care providers in different work assignments, as reported by tertiary/teaching hospitals across the country in 1999. In some cases, more than two groups are indicated because several types of qualifications were equally common.

| | Aide | LPN | RN - Diploma | RN - Diploma & Specialty | RN - Diploma & Post-Basic Degree | RN - Basic Degree | RN - Basic Degree & Specialty | RN - Masters |
|---|---|---|---|---|---|---|---|---|
| Administration | | | | | ✓ | | | ✓ |
| Emergency Room | | | | ✓ | | | ✓ | |
| Extended Care/Long-Term Care | ✓ | | ✓ | | | ✓ | | |
| Critical Care | | | | ✓ | | | ✓ | |
| Maternity/Newborn | ✓ | | ✓ | | | ✓ | | |
| Medical Care | | | ✓ | | | ✓ | | |
| Operating Room | | | | ✓ | | | ✓ | |
| Pediatrics | | | ✓ | | | ✓ | | |
| Mental Health | | | ✓ | | | ✓ | | |
| Surgical Care | | | ✓ | | ✓ | ✓ | | |
| Community/Public Health | | | | | | | ✓ | ✓ |
| Home Care | | | | | | | ✓ | ✓ |
| Other | | ✓ | | | | ✓ | ✓ | ✓ |

**Note:** Registered Psychiatric Nurses are only licensed in the four western provinces so are not shown here.

Source: Kazanjian A, Rahim-Jamal S, MacDonald A, Wood L, Cole C. (2000). *Nursing Workforce Study Volume IV ~ Nursing Workforce Deployment:* A Survey of Employers. University of British Columbia: Centre for Health Services and Policy Research.

## What about Patients and Families?

In Canada and elsewhere, patients and their families and friends play important roles in health care. The World Health Organization has affirmed that:

> *The people have the right and duty to participate individually and collectively in the planning and implementation of their health care.*[31]

Patients and their families may be involved in a variety of ways.[32] For example, they may provide important information to support care decisions, perhaps by describing their symptoms. They may also participate in or make decisions about their care, such as whether or not to have surgery. In addition, many Canadians care for themselves or their families or are involved in other ways (see the *Who's Who in Health Care* chapter for more information).

A number of studies have examined the effectiveness of self-care and informal care. A review by researchers at Laurentian University and the University of Alberta found that, with the appropriate training and supports and in the context of the patient's or caregiver's abilities, these types of care can be effective.[17]

## Making Working Together Work

In today's health care system, many different types of health care professionals work together in a variety of settings. What are the impacts of these teams? What makes them work—or not work?

A variety of research has been done in different areas.[18,33] For example, a recent study in 19 Ontario teaching hospitals found that patients cared for on units where nurses reported better communication among themselves and between nurses and other disciplines tended to have better functional independence scores when they left hospital. Obstetrical patients on these types of units were also more likely to be satisfied with their care.[30]

### Research from Abroad: A Study of Teamwork in English Hospitals

Researchers in many countries are studying health care teams. For example, a recent English study[34] explored how teamwork relates to staff satisfaction and perceptions of the quality of care. The study was based on a 1998/99 survey of staff nurses in 32 English hospitals. Researchers measured "teamwork" by asking nurses about their relationships with ward managers, doctors, nursing aides, clinical nurse specialists, and other hospital departments.

Nurses with higher teamwork scores tended to be more satisfied with their jobs and their profession. They were also more likely to be planning to stay in their current job and to have lower emotional burnout scores. What about quality of care? Over half (53%) of nurses with the highest teamwork scores said that the nursing care on their ward or unit was excellent. That compares with 13% of those with the lowest teamwork scores. In fact, teamwork scores were stronger predictors of nurses' assessments of quality of care than nurse-to-patient ratios, involvement in decision-making, workload, and job satisfaction.

One area that has received considerable attention is the education of health care providers. For decades, some educators have argued that health professionals who will work together in teams must learn the skills to do so.[35] (There is also an argument that training in team skills should not short-change training in profession-specific competencies.[18])

Parts of the health care system are investing in training in team skills. For example, Canadian hospitals were asked about on-the-job training in Statistics Canada's 1999 Workplace and Employee Survey. They reported providing this type of training to 95% of their employees. In 2001, CIHI asked Ontario hospitals what types of training they provided.[36] One of the most common responses was training in team-building, leadership, and communication.

Some educational programs bring students together even *before* they start working. For example, undergraduate health science students at the University of Alberta must now take an interdisciplinary course. This new program means that nurses, pharmacists, physiotherapists, and others sit in the same classrooms and go on team clinical placements.[37]

Does inter-professional education make a difference? If yes, how much? An international systematic review in May 2000 looked at its effects on professional practice and health care outcomes.[38] Given the current state of research, the authors concluded that the jury is still out on possible outcomes.

## Primary Health Care: Are Teams the Future?

Primary health care occurs where you first contact the health care system—often in a physician's office, health clinic, or a community health centre. It can also be a gateway to other types of care.

In Canada, a variety of health care professionals deliver primary health care services. Physician-centred solo and small group private practice remain the leading models of primary health care organization and delivery.[39] However, who is involved, how primary health care is organized, and other factors differ somewhat from place to place.

In part, this variety of approaches reflects the on-going interest in exploring different models of primary health care. For example, there has been, and continues to be, interest in having teams of providers work together to provide care. Canada is not alone in this respect. In 1978, the World Health Organization declared that primary health care relies on a range of health workers "suitably trained socially and technically to work as a health team and to respond to the expressed health needs of the community."[31]

### Inside Doctors' Offices

Most Canadians (81% of those 12 and older in 1998/99) report having contacted a regular doctor at least once in the previous year. A 2001 survey by the College of Family Physicians of Canada found that 25% of family physicians worked in "solo practices". That's down from 31% in 1997. In solo practices, one doctor sees patients, manages the practice, and has other responsibilities. In 2001, solo practices continued to be more common in inner–cities than in rural areas.

Most (74%) family physicians work in group practices. The College survey showed that many of these doctors shared office space (92%), staff (91%), expenses (85%), patient records (82%), and on-call duties (75%) in 2001. More than four in five (82%) group practices shared four or more of these elements. Sharing office space and other expenses can help to minimize overhead costs associated with running a medical office. Sharing patient care can help to ensure that patients receive care when they need it, regardless of whether or not their regular doctor is available.

In some group practices, several doctors work together. Others have taken a broader "interdisciplinary" approach. These practices may include doctors and nurses, as well as a variety of other professionals. For example, the Group Health Centre in Sault Ste. Marie, Ontario brings together physicians, nurse practitioners, dietitians, physical therapists, and other health professionals.[40] It offers a wide range of services, including acupuncture, allergy/flu clinics, audiology, chiropody, counselling, dermatology, emergency and family medicine, geriatrics, obstetrics and gynaecology, breast screening, physical therapy, sports medicine, and much more.

### Experiences with Teams of Providers

In Canada, there have been local and regional primary health care initiatives using interdisciplinary approaches for many years. A recent review found examples across the country.[41]

Some evaluations of primary health care teams have been completed, both in Canada and elsewhere. For example, several researchers have found that nurse practitioners and midwives, working with physicians, can provide safe and high-quality primary health care.[17] And a 1999 international systematic review of the effects of having specialized mental health workers on-site in primary care

settings found 38 randomized trials in the literature.[42] Researchers found some positive effects on diagnosis, prescribing, and/or referrals by primary care providers (at least in the short-term). Canadian researchers have also identified a number of benefits and barriers, from the perspective of both physicians and nurses, in having nurses practicing in extended/expanded roles.[43]

Nevertheless, many questions remain. For example, little is known about the cost-effectiveness of using nurse practitioners to deliver primary health care in Canada.[39] Evaluations of the latest series of primary health care reform projects may provide more answers. For instance, a study of primary health care reform projects in Ontario involving about 220,000 patients is underway.[44] It will evaluate service delivery processes, whether reform goals were met, and other issues.

### Who Cares About Primary Health Care Reform?

In Canada and many other countries, governments are talking about primary health care reform. In September 2000, Canada's premiers and the Prime Minister agreed that improvements to primary health care are crucial to the renewal of health services. They said that primary care reform is, and will remain, a high priority for Canada.[45]

That sentiment also comes through in recent provincial reviews of health care. In 1999, Ontario's Health Services Restructuring Commission recommended a primary health care strategy where services would be delivered through inter-professional primary care groups (PCG).[46] A technical report prepared for the Commission suggested that half of the total potential "expected improvement in network efficiency" would come from enrolling all provincial residents into effective PCGs.[19] At the same time, the Commission pointed out many significant challenges to achieving primary health care's potential.

More recently, the Commission d'étude sur les services de santé et les services sociaux in Quebec (also known as the Clair Commission) recommended that family doctors join together into group practices to offer 24-hour, 7-day-a-week care for their patients. This primary care network would be the foundation of the health and social services system.[47] Similarly, Saskatchewan's Commission on Medicare (the Fyke Commission) recommended the development of an integrated system for the delivery of primary health care services. This system would include a range of health care providers.[48]

# Information Gaps

## What We Know

- Proportion of family doctors who work in solo and group practices and the range of services that they provide.
- Evaluation results from selected local and regional interdisciplinary initiatives in primary health care, hospitals, and other settings.
- Comparisons of scopes of practice for selected professions.
- Current mix of health providers working in selected settings.

## What We Don't Know

- What are the effects of different types of health care teams on the availability and quality of health services in Canada?
- How do collaborative practice, personnel substitution, and multi-skilling affect the satisfaction and worklife of health care providers?
- What impact will changes in professional scopes of practice have on the supply and distribution of health professionals, on our ability to meet future health care needs, on how professionals organize and provide services, and on the quality of care?
- How do different combinations of health care providers, in a variety of contexts, affect quality of care, cost-effectiveness, and patient and provider satisfaction?
- What strategies are most effective in promoting collaboration among members of health care teams?

## What's Happening

- Provincial reports and commissions are recommending integrated models of primary care services delivery (e.g. Fyke Commission, Clair Commission).
- A number of pilot and demonstration projects to evaluate such models have been initiated across the country, some of which are funded through the federal government's Health Transition Fund.
- A collaborative effort involving the medical profession, governments, and others is underway to develop a *Human Resource Strategy for Physicians in Canada*.
- In the fall of 2001, Canada is hosting the International Medical Workforce Conference. This conference will examine, as one of the themes, alternative approaches to physician resource planning.

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# Chapter 5
# Working in Health Care

# Working in Health Care

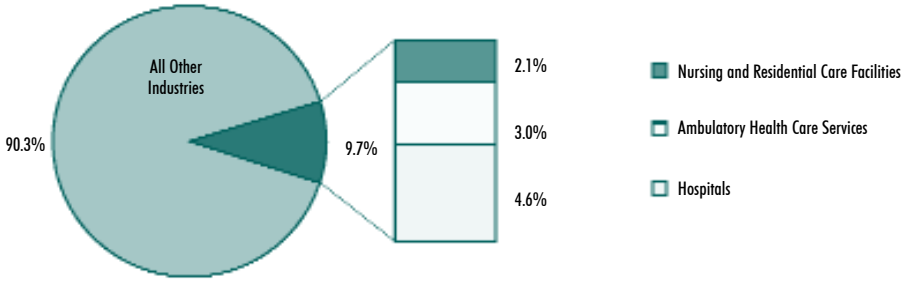
Clinics, client homes, remote Northern nursing stations, teaching hospitals in large cities, universities—these are only a few of the many settings where Canadian health providers are employed. Most still work in hospitals, but this is changing over time. For example, fewer than one in ten registered nurses (9%) worked in home care or community health agencies in 1994. Six years later, 12% had jobs in these areas. Similarly, a recent Canadian Physiotherapy Association (CPA) survey found that more than a third (43%) of CPA's members now work in private practice settings, such as rehabilitation and sports injury clinics, up 5% from 1995.[1] Others continue to work in hospitals and similar facilities.

In this changing context, this chapter focuses on the career paths and worklife of Canadians employed in health care. For example, how often do they change employers? How long are their working days? How—and how much—are they paid? And, what do they think about their jobs? Questions about the health of health care workers are addressed in the next chapter.

These questions are obviously important to those working in health care. But they also matter to health care employers and policy makers who are attempting to plan for, recruit, and retain the right mix of health workers to provide care and other services. And, in some cases, new research is suggesting that they may also be related to how patients fare.

### Where Do Health Care Employees Work?

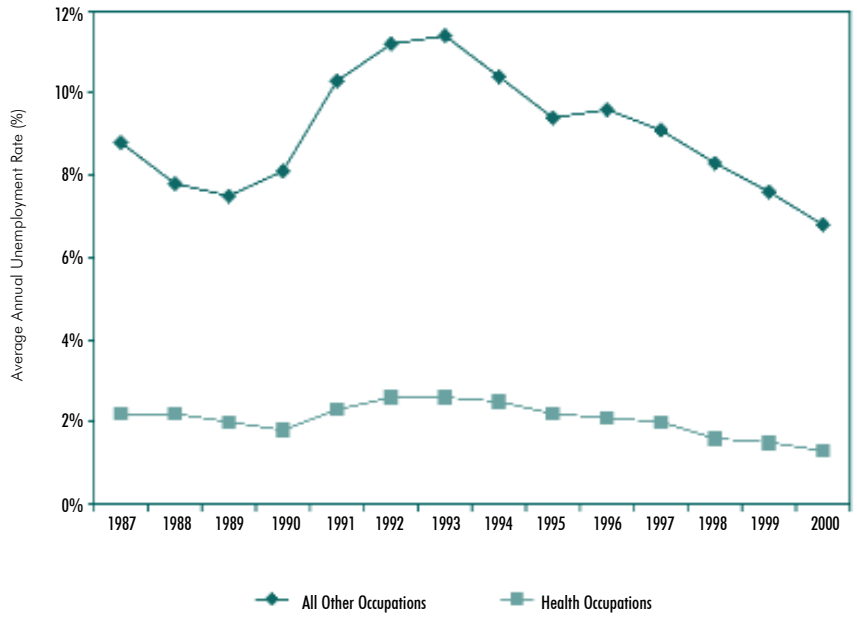
In 1999, hospitals employed about half of all Canadians who worked in one of the three main types of health care settings surveyed. The rest worked in ambulatory health care settings or nursing and residential care facilities.




Source: Workplace and Employee Survey, Statistics Canada

### Unemployment Less Likely for Health Workers

Since 1987, average annual unemployment rates for Canadians in health occupations have been consistently lower than those for workers in all other occupations.




Source: Labour Force Survey, Statistics Canada

## Changing Jobs in Health Care

Every month, many Canadians quit or lose their jobs. Others find new ones. According to Statistic Canada's Labour Force

Survey, since 1987, health care workers have been much less likely to be unemployed than those in all other occupations. Their average annual unemployment rates were between 1.3% and 2.6% for the last 13 years. Rates for all workers fluctuated between 7% and 11% over the same time period.

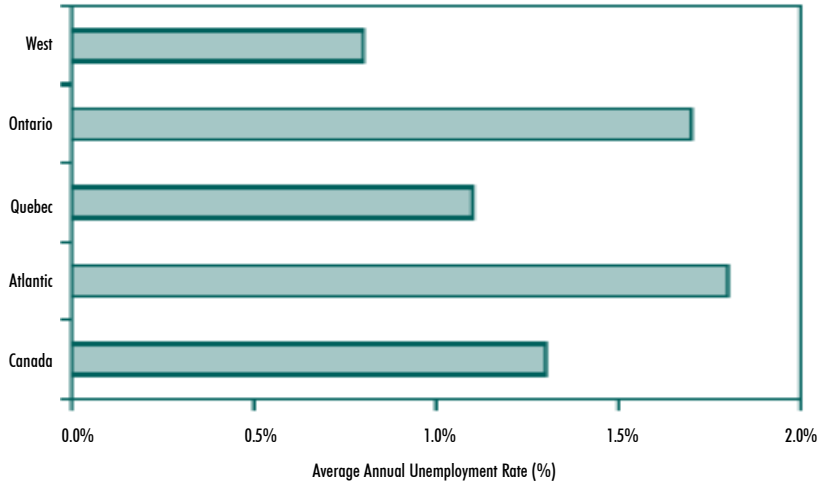
Similar patterns are seen across the country. For example, the average annual unemployment rate for Canadians in health occupations was 1.3% in 2000. The Atlantic region had the highest rate, but still under 2%.

Unemployment rates do, however, vary among different health occupations. In 2000, the unemployment rate for technical and assisting occupations in Canada was three times higher (1.9%) than the rate for professional occupations in health (0.6%). The latter category includes registered nurses and nurse supervisors.

Once in a job, Canadians in health occupations tend to stay longer with the same employer than do workers in general. In 2000, 13% had been with their employer (in the same or other jobs) for a year or less. At the other extreme, 15% had 20 years or more "tenure". The average tenure was 118 months—just under a decade. That compares with 96 months for all Canadian workers.

## Health Unemployment Across Canada

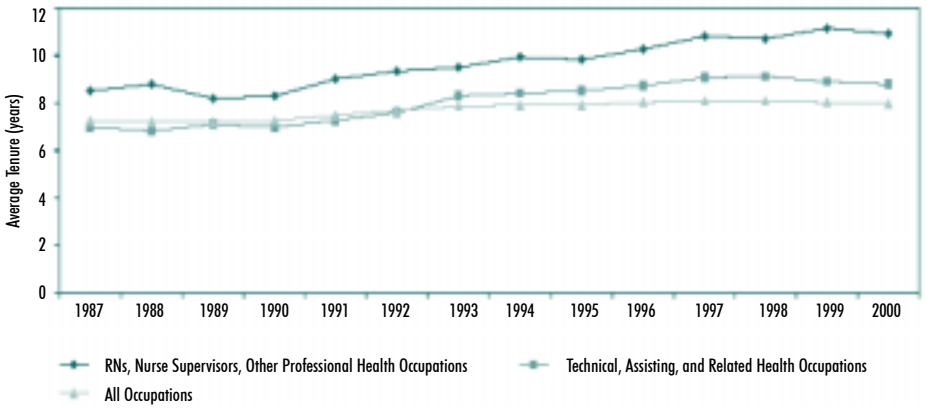
The average annual unemployment rate for Canadians in health occupations was 1.3% in 2000. Rates varied somewhat from region to region across the country, as shown below, but all were below 2%. Data for the territories are not available.




Source: Labour Force Survey, Statistics Canada

## Staying Longer with the Same Employer

Average job tenure – the number of consecutive years worked for one's current or most recent employer – has increased since the late 1980s. That's true both for Canadian workers in general and for those in health occupations. Throughout this period, average tenure was higher for RNs, nurse supervisors, and those in other professional health occupations than for other health workers.




Source: Labour Force Survey, Statistics Canada

## The Work Day for Health Professionals

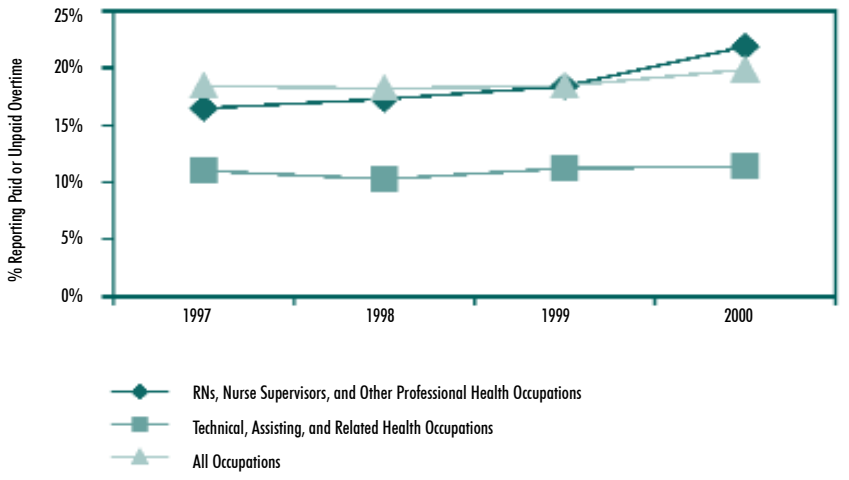
On average, Canadians usually spent 36.7 hours per week working in their main job—the job where they worked the most number of hours in 2000. Health workers spent, on average, slightly less time at their main job (34.1 hours). Why the difference? One explanation is that health professionals were more likely to work part-time than others were. For example, more than a quarter (26%) worked less than 30 hours per week at their main job in 2000. That compares to 18% for Canadian workers overall.[2]

While most Canadians have only one job, some have several. Health professionals were more likely to have multiple jobs (8%) in 2000 than other workers in general (5%). This gap widened over the early to mid-1990s. In 1987, only 5% of Canadians in health occupations and 4% of all workers had more than one job. By 1996, 9% of health care workers were in this position. That compares to 5% of all workers. Since then, rates for health care workers have been relatively stable, fluctuating between 8.0% and 8.6%.[2]

In addition, about one in six Canadians in health occupations (16%) worked some paid or unpaid overtime each week in 2000. Those who did spent, on average, an extra seven hours on the job per week. Over half (60%) who worked overtime were paid or received time in lieu for at least some of their extra hours. In contrast, non-health workers were somewhat more likely to work overtime. One in five (20%) reported working some paid or unpaid overtime. They spent an average of nine extra hours at work.[2]

**Working Overtime**

About one in six Canadians in health occupations reported working some paid or unpaid overtime each week in 2000, as shown below. The likelihood of working overtime has varied somewhat between different groups of health professionals and with time.




Source: Labour Force Survey, Statistics Canada

## Focus on Physicians

Annual surveys by the Canadian Medical Association show that the average number of hours that physicians work per week changes somewhat from year to year.[3] In 2001, they reported an average of 53 hours (excluding time on-call). That's down from 54 hours in 1999, but up by about six hours from 1993. Throughout this period, physicians reported spending about the same amount of time (or slightly less) on direct patient care, but time spent on other duties rose.

Average hours worked varies from physician to physician. For example, physicians aged 45-54 reported working more hours per week than younger and older physicians did.[3] Likewise, on average, male doctors reported working more hours each week (55 in 2001) than females did (49). These differences may, at least in part, be due to age, specialty, and other variations between the sexes.

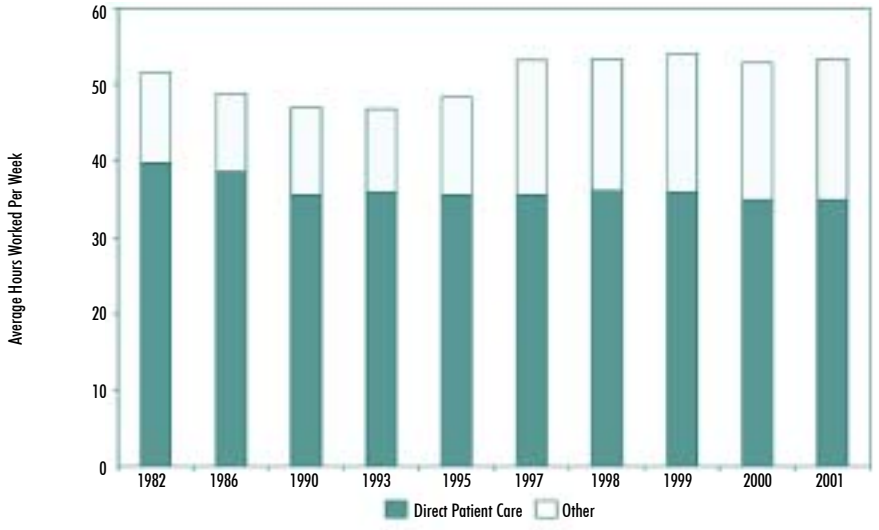
Whether physicians practice in urban or rural settings also influences the number of hours they typically work. Urban doctors reported working slightly longer hours—54 versus 49—not counting time spent on-call. However, 37% of rural physicians said that they spent more than 40 hours per month attending to the needs of on-call patients. That compares with 26% of urban physicians.[3]

Another way of understanding physician workload is to look at doctors' levels of activity over time. This approach uses fee-for-service claims by doctors to construct an 'activity ratio'. A ratio of one represents what a "typical" full-time doctor billed (technically, between the 40th and 60th percentiles), adjusted for differences between provinces and specialties.

Using this measure, doctors working full-time in 1998/99 provided, on average, more care than those in 1989/90 did. This trend holds true for both male and female doctors. However, throughout this period, female doctors tended to have lower activity ratios when compared to their male counterparts. Childbearing and other family responsibilities, particularly between the ages of 30 and 50, may explain part or all of this sex divide.

## How Physicians Spend Their Work Time

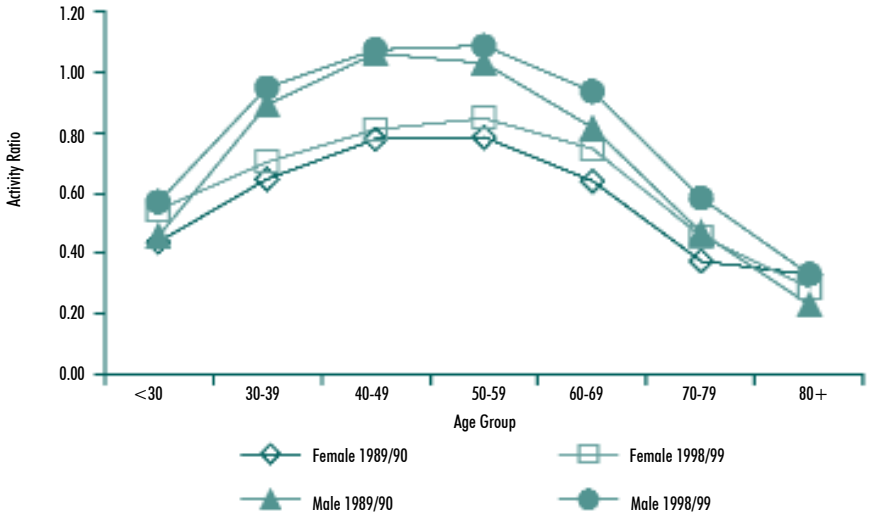
For more than a decade, the Canadian Medical Association has asked physicians about how they spend their work time. The graph below shows the results—the average number of hours worked per week by full and part-time Canadian physicians between 1982 and 2001, excluding time spent on-call. Annual averages range from a low of just under 47 hours in 1993 to a high of 54 hours in 1999. Most of this time was spent on direct patient care. Other activities included indirect patient care (e.g. other phone calls or charting), administration, research, teaching, continuing medical education (CME), or other activities. Figures prior to 1993 are based on census surveys of all physicians (including family doctors and specialists) in Canada; later figures come from sample surveys.




Source: Physician Resource Questionnaire, Canadian Medical Association

## Physicians Are Working More

"Activity ratios" compare the relative amount of work two groups of physicians do, as measured by fee-for-service activity, taking into account which provinces they practice in and which specialties they practice. A ratio of 1.0 represents a "typical" full-time physician in fee-for-service practice. Using this measure, Canadian physicians paid on a fee-for-service basis in 1998/99 appear to be more active, on average, than those in 1989/90.




Source: National Physician Database, CIHI

## Paying Those Providing Care

The ways in which health care providers are paid vary considerably according to the profession and location of practice. Often, care providers are paid through a mix of public and private payment systems. For example, some chiropractic, dentistry, podiatry, optometry, and physiotherapy services are covered under certain provincial/territorial health insurance plans or other public programs. Others are not fully insured or are subject to limitations. For instance, chiropractic services are eligible for government funding in Ontario and the western provinces.[4] However, there may be limits on the number of visits or total dollars paid by the provincial insurance plan.

Other providers also receive funds from multiple sources. For example, physiotherapy services in a hospital may be paid through the hospital's global budget. Private insurers, worker's compensation boards, employers, or patients themselves often cover part or all of the costs of these services in private clinics.[5] In some cases, they may also pay for some physiotherapy services in hospital clinics.[6]

### How Doctors are Paid

CIHI data show that almost $13 billion was spent on physician services in Canada in 2000. The vast majority (98.6%) came from the public purse.

Most health professionals receive the bulk of their pay as a salary, but physicians are paid in a variety of different ways. Since Medicare started, most Canadian doctors have billed their province or territory for each service they provide to patients. Fee-for-service arrangements remain by far the most common type of payment for doctors.

CIHI data show that in 1998/99, the average fee-for-service gross payments for family doctors in Canada who receive payments over $50,000 was $178,320.* However, from province to province the range was from a low of $142,103 in Nova Scotia to a high of $198,991 in Prince Edward Island. Similar provincial variations are evident within medical and surgical specialties. Gross payments do not include any alternative forms of payments physicians might receive such as salary or through sessional work. They also do not reflect physicians' actual income as they must pay practices expenses, including staff and office costs, out of their earnings.

While fee-for-service is still the most common form of payment, increasing numbers of doctors are also being paid in other ways. For example, almost 90% of family physicians surveyed by the Canadian College of Family Physicians in 2001, said they received some proportion of their earnings in the form of fee-for-service payments. Other, less common, mechanisms included salaries (14.9%) and capitation (1.9%).

* Figure reflects totals in the 10 provinces only. It has been revised from data originally published in the CIHI publication *Average Payment per Physician, Canada, 1996/97 to 1998/99* based on updated estimates.

In 1999/00, over 20% of Canadian physicians received some payments for clinical care through alternative payment plans. Examples include:

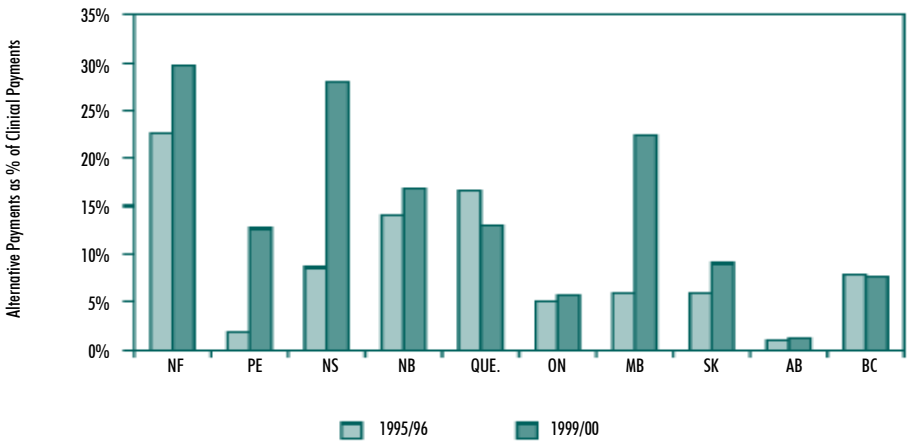
- Salaries
- Hourly or daily sessional payments (e.g. to fund services in emergency departments, psychiatric clinics, and care in rural areas in some jurisdictions)
- Monthly payments for clients rostered with a physician group (known as "capitation")
- Annual budgets negotiated for a group of physicians, usually associated with an academic medical centre (sometimes called "block funding")
- Contractual funding to regional boards for clinical services; the boards have discretion regarding specific uses of the funds
- Some combination of these and other options (known as "blended" models)

Together, about one billion dollars each year is spent through alternative payment plans for physician services. But use of these approaches varies considerably across the country. In 1999/00, CIHI data show that it was lowest in Alberta. Alternative payment plans only accounted for 2% of the province's public spending on physician services. Newfoundland had the highest level at 30%.

While many Canadian physicians are partly paid through public alternative payment plans, a smaller percentage receives payments *mainly* through these arrangements. Most of the rest are still primarily

## The Growing Popularity of Alternative Payment Plans

Between 1995/96 and 1999/00, the share of spending on physician services that flowed through alternative payment plans increased in all provinces except Quebec and British Columbia.



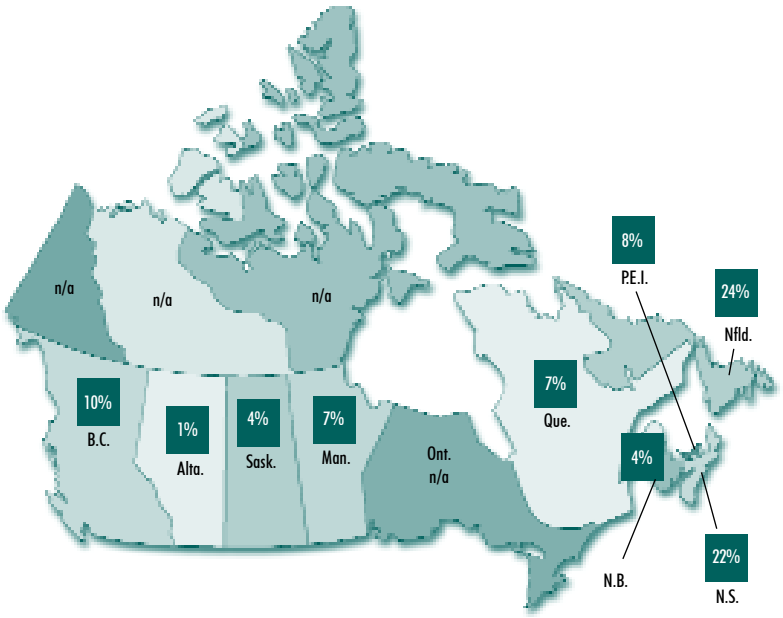

**Note:** Data from the territories not available.

Source: Information obtained from provincial Ministries of Health from nine provinces (except Ontario). Ontario information is based on calculations on macro-level expenditure from the National Health Expenditure Database, CIHI.

## Doctors With "Mainly" Alternative Funding

In most provinces, alternative payment plans were the "main" source of funding for 10% or fewer physicians in 1999/00. Exceptions are Newfoundland, where many rural family doctors receive salaries, and Nova Scotia, mostly due to block funding arrangements that cover relatively large numbers of physicians. The variation across the country is shown below.

Note: Estimates were not available for Ontario and the territories.




% Physicians with Mainly Alternative Funding

Source: Information obtained from provincial Ministries of Health from nine provinces.

paid through provincial fee-for-service plans. Many physicians also report receiving at least some revenue from charging patients for 'de-insured' or 'uninsured' services. In some provinces, these services—which may include completing forms, circumcision of baby boys, and travel health advice—are not covered by public health insurance plans.

In their 2001 survey, the Canadian Medical Association asked physicians how they preferred to be paid. Nearly 35% said they preferred fee-for-service. However, others said they preferred to be salaried (24%) or to receive a blend of payment options (27%).[3]

### How Much General Duty RNs Earn

Many of Canada's nurses work on hospital wards and in other settings under contracts negotiated by their unions. Minimum and maximum salaries (excluding overtime) for general duty registered nurses compiled by the Canadian Federation of Nurses Unions for the year 2001 are shown below. The date that the latest increase became effective is also listed.

| Union Name | Annual Income | | Latest Increase Effective |
|---|---|---|---|
| | Minimum | Maximum | |
| Newfoundland/Labrador Nurses' Union | $37,716 | $46,953 | 1/5/01 |
| Prince Edward Island Nurses' Union | $37,733 | $45,981 | 1/4/01 |
| Nova Scotia Nurses' Union | $43,572 | $51,123 | 1/11/01 |
| New Brunswick Nurses' Union[1] | $38,727 | $47,132 | 1/7/01 |
| Fédération des infirmières et infirmiers du Québec | $32,252 | $48,049 | 1/1/01 |
| Ontario Nurses' Association[2] | $39,975 | $58,968 | 1/4/00 |
| Manitoba Nurses' Union | $41,225 | $48,600 | 1/4/01 |
| Saskatchewan Union of Nurses | $39,970 | $48,564 | 1/4/01 |
| United Nurses of Alberta[3] | $43,297 | $52,275 | 1/4/01 |
| British Columbia Nurses' Union | $43,123 | $55,900 | 1/10/01 |

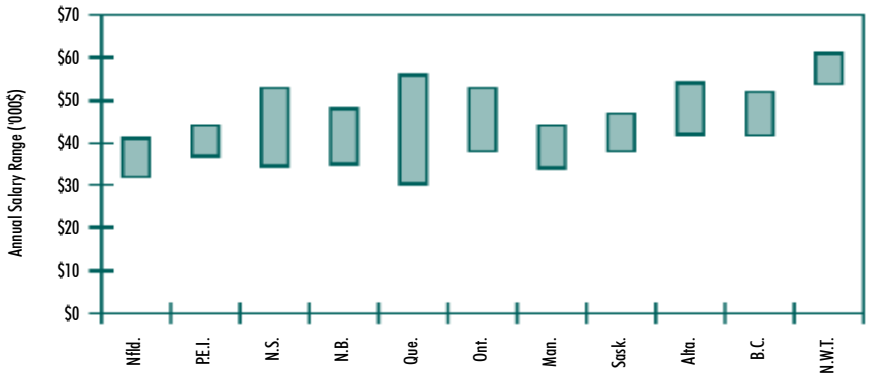
**Note:** Figures have not been adjusted for other differences in working conditions or the cost of living.

[1] There are two wage increases in 2001: 0.5% January 1, 2001 and 1% July 1, 2001.
[2] No wage increases for 2001; therefore the wages remain at the 2000 level for this table. The Ontario Nurses' Association contract expired 31/03/01.
[3] Two wage increases in 2001. The new UNA contract expires 31/03/03.

Source: Canadian Federation of Nurses Unions

### Physiotherapy/Occupational Therapy Salaries Compared

Salaries of clinical physiotherapists and occupational therapists vary from coast to coast. The graph below shows minimum to maximum annual salary range for therapists practicing full-time in the public sector by province and for the Northwest Territories in 2000.




Source: Francis & Associates, *Personnel Placement for Canadian Health Professionals Survey*, 2000. As presented in Physiotherapy in Manitoba, Canadian Physiotherapy Association, Manitoba Branch, 2001.

## Salaries for Health Professionals

Once in a job, how much individuals are paid depends on many things. Their level of education, training, and skills may matter. So may their responsibilities, seniority, where they work, and other factors.

For Canadians in health occupations, earnings vary considerably from profession to profession and, in some cases, from region to region. For example, in September 2001, the annual starting salary of general duty RNs (not including paid overtime) varied from a low of just over $32,000 for nurses working in Quebec to more than $43,500 for those in Nova Scotia, according to the Canadian Federation of Nurses Unions.[8]

How much do these variations in salaries affect where health professionals choose to work? The evidence is not clear. But a recent study released at the Premier's conference in Victoria called for provinces and territories to consider solutions that aim to increase the number of health care workers in their own jurisdictions while not recruiting workers from other parts of the country.[9]

Overall, data from the Statistics Canada's Labour Force Survey show that between 1997 and 2000 average weekly earnings for full-time health workers increased by 4%. This compares to an increase of 6.8% for those working full-time in non-health occupations. Among professional occupations in health, pharmacists, dietitians, and nutritionists had the largest percent growth (+14.4%). In contrast, physicians, dentists, and veterinarians had the smallest (+0.5%).

### Unionization and Health Care in Canada

Labour unions and employer groups negotiate the salaries and working conditions of most health care workers. According to the Labour Force Survey, workers in health care and social assistance had the fourth highest industry unionization rate. These rates are significantly higher than those in the United States. For example, more than 85% of those in nursing and therapy occupations and around 60% of health technologists are unionized in Canada. Unionization rates for these occupations are less than 20% in the U.S.[11]

Regular salaries are one way of recognizing the work that employees do. Other options also exist. For example, Statistics Canada's 1999 Workplace and Employee Survey estimates that about one in six ambulatory health care service employers (e.g. physicians' and dentists' offices or outpatient care centres) offer individual incentives—such as bonuses, commissions, or stock options—to some employees. Across industries other than health care, more employers offered individual incentives (30%) or merit/skill-based pay rewards (17%).

## Job Satisfaction in Health Care

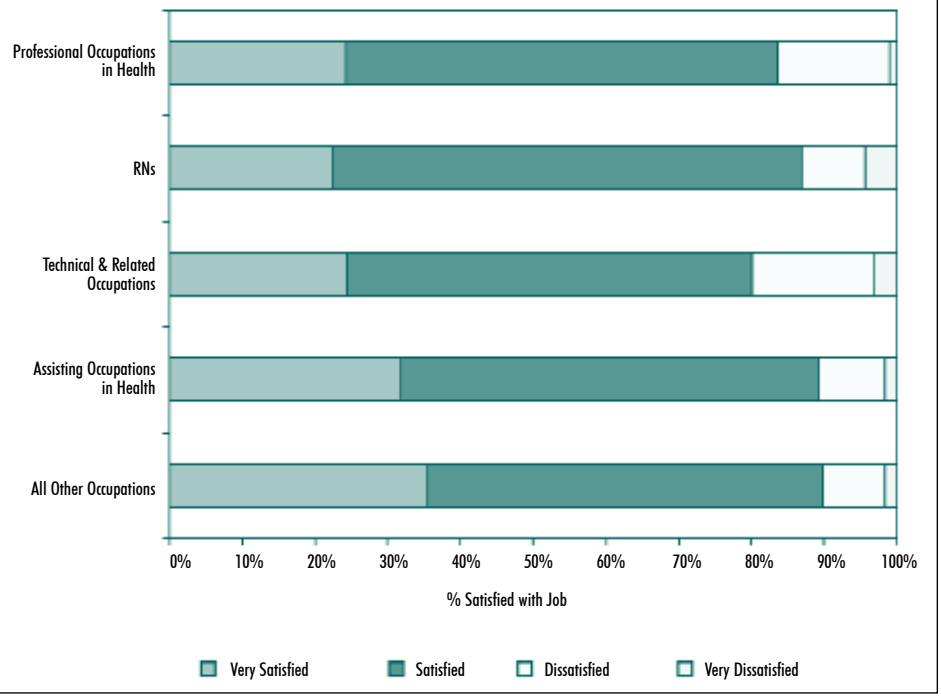
According to Statistics Canada's Workplace and Employee Survey, more than four in five Canadians (90%) employed in occupations other than health were satisfied or very satisfied with their current job in 1999. That compares to 85% of those in health occupations.

### What Nurses Think

A 1998/99 study compared satisfaction levels among RNs in acute care hospitals in five countries.[12] In all countries, most hospital RNs surveyed said that they were satisfied with their current jobs. But between 17% in Germany and 41% in Pennsylvania were dissatisfied. At 33%, Canadian nurses surveyed (from Alberta, British Columbia, and Ontario) fell in the middle.

### Overall Job Satisfaction

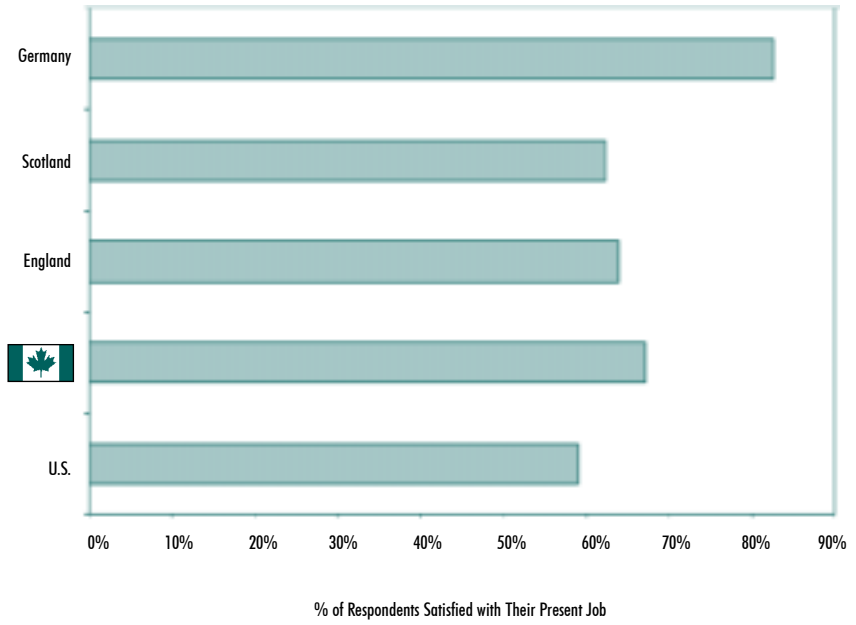
Most health care providers reported being satisfied or very satisfied with their current jobs in 1999. Overall satisfaction levels for four groups of health providers (RNs include head nurses and supervisors) are shown below.




Source: Workplace and Employee Survey, Statistics Canada

### Job Satisfaction of Hospital Nurses: An International Perspective

A 1998/99 survey of RNs in acute care hospitals in five countries found that most were satisfied with their present jobs. But levels of satisfaction varied from country to country, as shown below. Note: The Canadian sample included nurses from Alberta, British Columbia, and Ontario. The United States sample included only nurses from Pennsylvania.




Source: Aiken LH, Clarke SP, Sloane DM, Sochalski JA, Busse R, Clarke H, Giovannetti P, Hunt J, Rafferty AM, Shamian J. (2001). Nurses' Reports on Hospital Care in Five Countries. *Health Affairs*, 20(3), 43-53.

Statistics Canada's 1999 Workplace and Employee survey included a broader range of nurses. They interviewed nurse supervisors and registered nurses working in ambulatory health care services, hospitals, nursing homes, and residential care facilities across the country. Only 13% of these nurses said that they were dissatisfied or very dissatisfied with their current job.

Results from the two surveys were closer for satisfaction with pay and benefits. In the Statistics Canada survey, about 67% of nurses reported being satisfied or very satisfied with their pay and benefits. Results were similar for other types of health care providers. In the international study, 69% of Canadian hospital RNs surveyed said that their salaries were adequate.[12]

## What Physicians Think

As is the case with nurses, many studies of physician satisfaction have focused on particular groups within the profession. For example, researchers from McMaster University recently compared job satisfaction for Ontario family physicians in 1993 and 1999.[13] In both years, researchers asked the same doctors how satisfied they were with 16 aspects of their practice on a 5-point scale (1 = very dissatisfied to 5 = very satisfied). Average overall satisfaction in 1999 was 3.3 points. That's down from 3.6 points in 1993. What else did this study show? Physicians were most satisfied with aspects of their practices under their own control (although even these ratings had dropped from 1993). The study also found that many physicians felt they had had minimal consultation about changes in the health care system. And they felt that these changes had had a negative impact on the quality of health care services available to their patients.

## In More Detail

Whether in health care, construction, education, or elsewhere, many factors can influence job satisfaction. For example, several studies suggest that working large amounts of overtime and having little input into the decision-making process are associated with lower job satisfaction for at least some groups of health care providers, such as nurses.[14,15] Findings from recent studies on workload include:

- Many **hospital nurses** in a 1998/99 international study reported taking on more patient assignments in the last year.[12] That was true for 83% of those surveyed in Pennsylvania, 64% in Canada (nurses from British Columbia, Alberta, and Ontario), and 44% in Germany.† And just over a third (34%, 35%, and 37% respectively) said that there were enough RNs to provide high quality care.
- When 31 **head nurses in a hospital setting** in Canada were asked about their workload, two-thirds felt their workload was overwhelming either generally or at times. The main reasons given for feeling overwhelmed included the complexity of their work, caring for patients who are very ill, dealing with demands from many sources at the same time, and the weight of responsibility for the lives of their patients.[16]
- In a 2001 study undertaken by Human Resource Development Canada, **pharmacists** reported higher workloads over the last five to 10 years.[17] And, in a recent survey by the Canadian Pharmacists Association, an overwhelming majority of pharmacists (96%) believe there is a shortage of people in their profession.[18]
- In a 2000 survey by their professional association, fewer than a third (32%) of Manitoba's **physiotherapists** reported being satisfied with caseload demands.[19] Of the subset working in the public sector, only 27% agreed.
- Over 60% of **home support staff** from across the country surveyed in 2001 thought that increases in workload were a problem for recruiting workers.[20]

How do workload and work pressures affect health care providers? Researchers from the University of Toronto recently conducted a study of patients and staff from 19 urban teaching hospitals in Ontario. They found that nurses who felt higher levels of job pressures also report lower job satisfaction. And they found that job satisfaction was associated with some patient outcomes. For example, higher levels of job satisfaction among nurses were associated with higher levels of satisfaction with nursing care for medical-surgical patients and better pain outcomes for women after childbirth.[21]

† Although nurses from Scotland and the United Kingdom participated in other aspects of this study, they were not asked these questions.

**Health Professionals' Perceptions About Providing Quality Patient Care**

The quality of patient care can be measured in many ways. Several recent surveys have asked RNs and doctors for their opinions. For example, a 1998 survey polled over 17,000 hospital nurses in Alberta, British Columbia, and Ontario.[12,22] More than four in five said that they would recommend the hospital in which they work if a family member or friend needed care. Even more said that the quality of care on their unit was good or excellent. And, in all provinces, over 80% said the same about the quality of care on their last shift, even though many reported leaving tasks undone at the end of the shift. For example, nearly half of nurses surveyed indicated that they had not completed all care planning. Likewise, 30% or more had not been able to provide all backrubs or skincare and 22% had left oral hygiene undone.

Another recent survey compared physicians' opinions in five countries–Australia, Canada, New Zealand, the United Kingdom, and the United States.[23] It focused on what generalist and specialist doctors thought about their ability to provide quality care between 1995 and 2000. In all countries, opinion was divided. Canadian doctors were most likely to feel their ability to provide quality care had declined. 59% of generalists and 67% of specialists agreed. In contrast, Australian doctors were most positive–only 38% of generalists and 41% of specialists felt their ability to provide quality care had declined.

## Information Gaps

### What We Know

- Unemployment rates, job tenure, number of hours worked, and unionization rates for Canadians in health care occupations.
- How satisfied employees of health care organizations (in general and some specific groups) are with their jobs overall and with specific aspects of their jobs.
- How much selected health professionals are paid and how this varies across the country.
- Selected studies on relationships between features of health professionals' working lives and job satisfaction and patient care.

### What We Don't Know

- How do various characteristics of the worklife of health professionals—such as job tenure, pay and benefits, workload, and other working conditions—contribute to the job satisfaction or dissatisfaction of Canadians working in health care?
- How and why do they differ between health care providers?
- How are they linked to the ability to recruit and retain health professionals?
- What effects do they have on the quality of care and patients' satisfaction with that care?
- How have changes in how and where health care is delivered and in technology affected the work of health professionals?
- What services are being provided by physicians who are not being paid on a fee-for-service basis?

## What's Happening

- The Canadian Health Services Research Foundation, along with key partners recently released a policy synthesis paper entitled *Commitment and Care: The Benefits of a Healthy Workplace for Nurses, their Patients and the System*.
- Researchers from the Institute for Clinical and Evaluative Sciences (ICES) are exploring possible links between job satisfaction for nurses and patient outcomes or mortality. Others at the Faculty of Nursing at the University of Toronto Nursing Research Unit are looking at possible relationships between unmanageable workloads and patient care and nurses' health. Researchers at Laval University are conducting a participative action-research study to identify new dynamics of workplace organizational factors that can improve the quality of life for health care personnel.
- In October 2000, the federal and provincial/territorial Ministers of Health approved a National Nursing Strategy for Canada. One key strategy for 2000/2001 was to improve the quality of worklife for nurses.

## For More Information

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# Chapter 6
# The Health of Health Care Workers

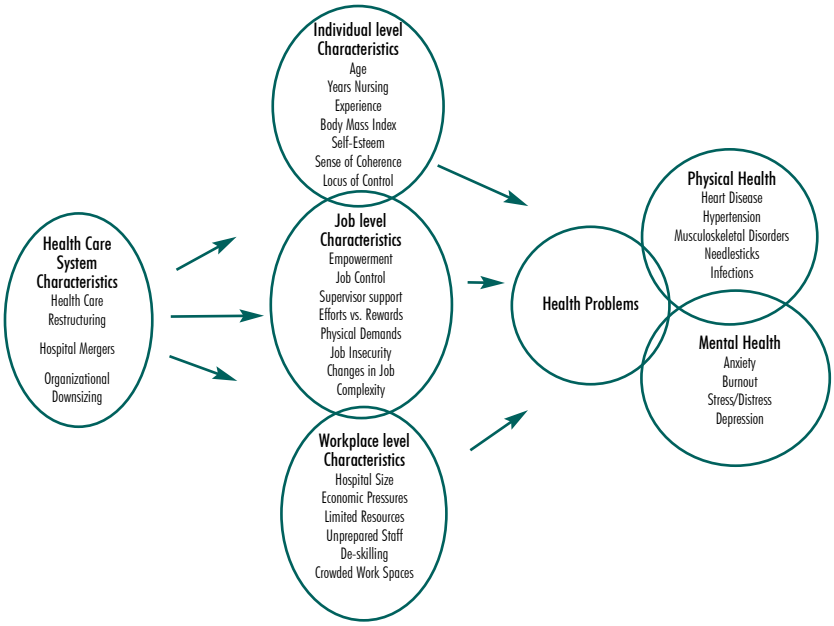
# The Health of Health Care Workers*

*"A healthy workplace is one in which workers will be able to deliver higher-quality care and in which worker health and patients' high-quality care are mutually supportive."*[1]

Our work can affect our health—for good and for ill. And our health can affect how and whether we work. The link between work and health is widely acknowledged but is complex and not always well understood.[2]

**Determinants of Nurses' Health**

Health is affected by many factors. Researchers have designed a theoretical framework (shown below) indicating some of the factors that may contribute to the overall health of nurses.




Source: Kerr MS, Laschinger HK, Shamian J, O'Brien Pallas LL, Thomson D, Koehoorn MW, LeClair S, McPerson D, Aiken L, Sochalski J. (2000). Monitoring the Health of Nurses In Canada. Funded by the Canadian Health Services Research Foundation, Open Competition Grant #RC1-0632-06.

This chapter explores what we know and don't know about the health of health care workers. The nature of their jobs—caring for people under stress, lifting patients, giving needles, stitching wounds, and working in a changing environment—can expose them to specific health risks. The chapter focuses on these risks, particularly for nurses, the largest profession in the health care sector and one for which more information exists.

* **CIHI would like to thank the Institute for Work & Health for their substantial contributions to this chapter.**

## How Healthy Are Health Care Workers?

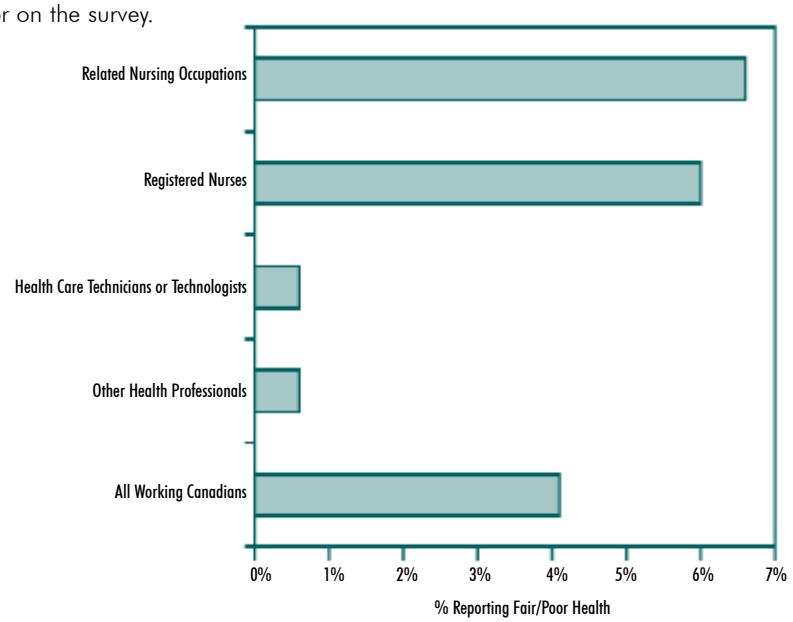
Overall, Canadians working in health care are about as likely as others to say that they are in good health. On the 1998/99 National Population Health Survey, more than nine in 10 (95%) Canadians including those working in health care rated their health as good or excellent.

Nevertheless, health care workers are more likely to miss work because of illness and disability than those in other sectors. This gap has existed for more than a decade, even though absenteeism rates varied from year to year. Why the fluctuations? Research suggests that several factors may contribute to these variations. Examples include the age of the work force, physical demands of the work place, changing workload, changing rates of injury and illness, and stress and burnout levels.[3,4,5,6]

On average, 7.2% of Canadians in full-time health occupations were absent for health reasons each week in 2000. They lost an average of more than two weeks of work (11.8 days) in the year because of illness or disability. Within the health care sector, nurses and assisting occupations are more likely than those in other occupations to suffer from illness and disability.[7]

### How Health Care Providers Rate Their Own Health

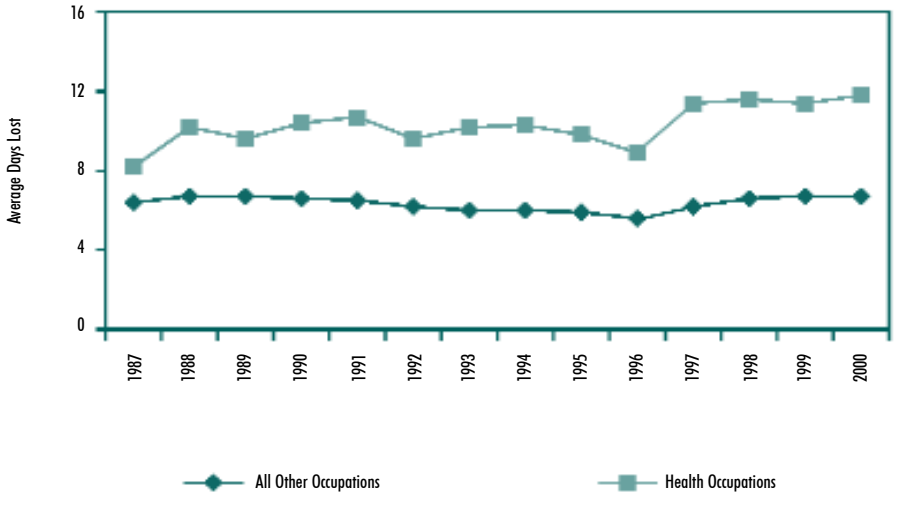
Overall, health care providers were about as likely as other working Canadians to rate their own health as good to excellent on the 1998/99 National Population Health Survey. What about the opposite end of the spectrum? The graph below shows what percentage of working Canadians overall and in selected health occupations rated their health as fair or poor on the survey.




Source: National Population Health Survey, Statistics Canada

### Trends in Absenteeism

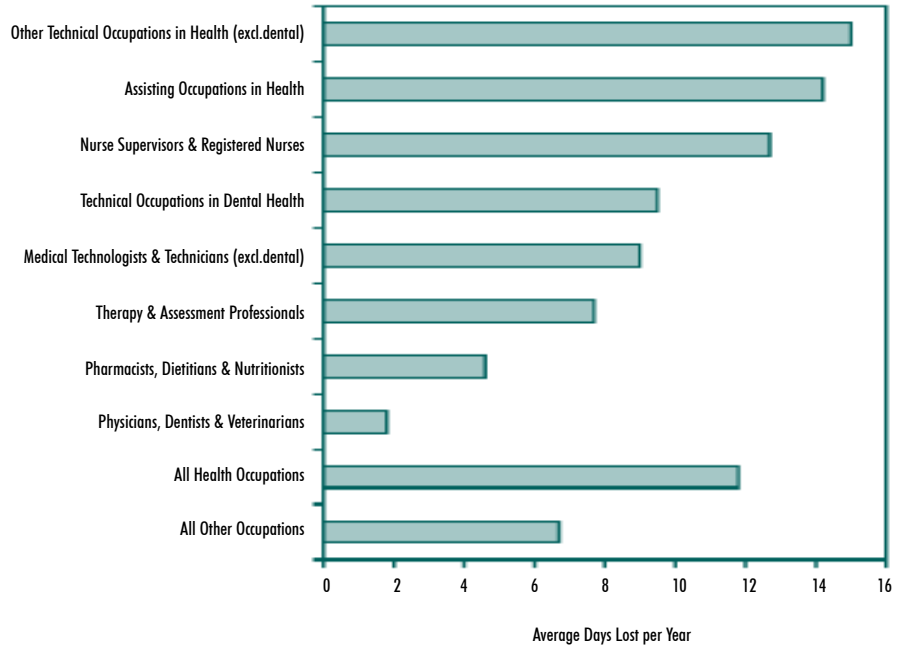
Since at least 1987, the average number of days of work that Canadians in health occupations lost due to illness or disability is almost twice that for workers in general. The graph below is based on averages for full-time workers.




Source: Labour Force Survey, Statistics Canada

### Lost Work Days Due to Illness or Disability

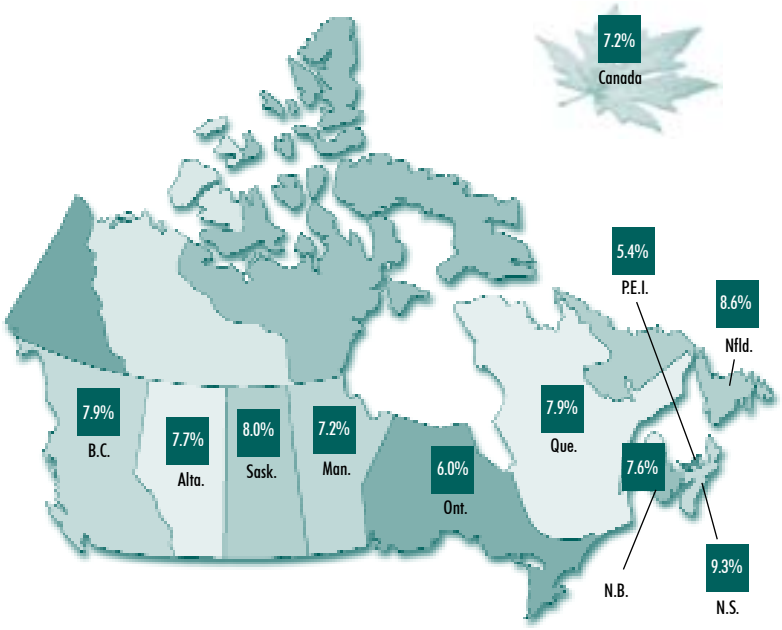
Compared to other workers, Canadians in health occupations are more likely to miss work due to illness or disability. They also tend to be absent for more days, on average. The chart below compares the average number of lost workdays due to illness or disability for full-time employees in 2000.




Source: Labour Force Survey, Statistics Canada

### Regional Variations in Absenteeism

Absenteeism rates vary across the country. In 2000, an average of 7.2% of full-time workers in health occupations missed work each week due to illness or disability. Provincial rates varied from a low of 5.4% in Prince Edward Island to a high of 9.3% in Nova Scotia. Data are not available for the territories.




Source: Labour Force Survey, Statistics Canada

Only 4.8% of all other workers were absent from work each week in 2000 and they only missed an average of 6.7 days in the year. People who work in health care are one-and-a-half times more likely to miss work because of illness and disability than workers in other sectors.

Across the entire health sector, these missed days add up. Suppose that we could reduce the average absenteeism in health care to that of all Canadian workers. That would mean the equivalent of more than 13,700 "extra" full-time employees on the job in 2000, including almost 5,500 RNs. That's more than the number graduating from diploma programs across the country each year.

## Injury and Illness at Work

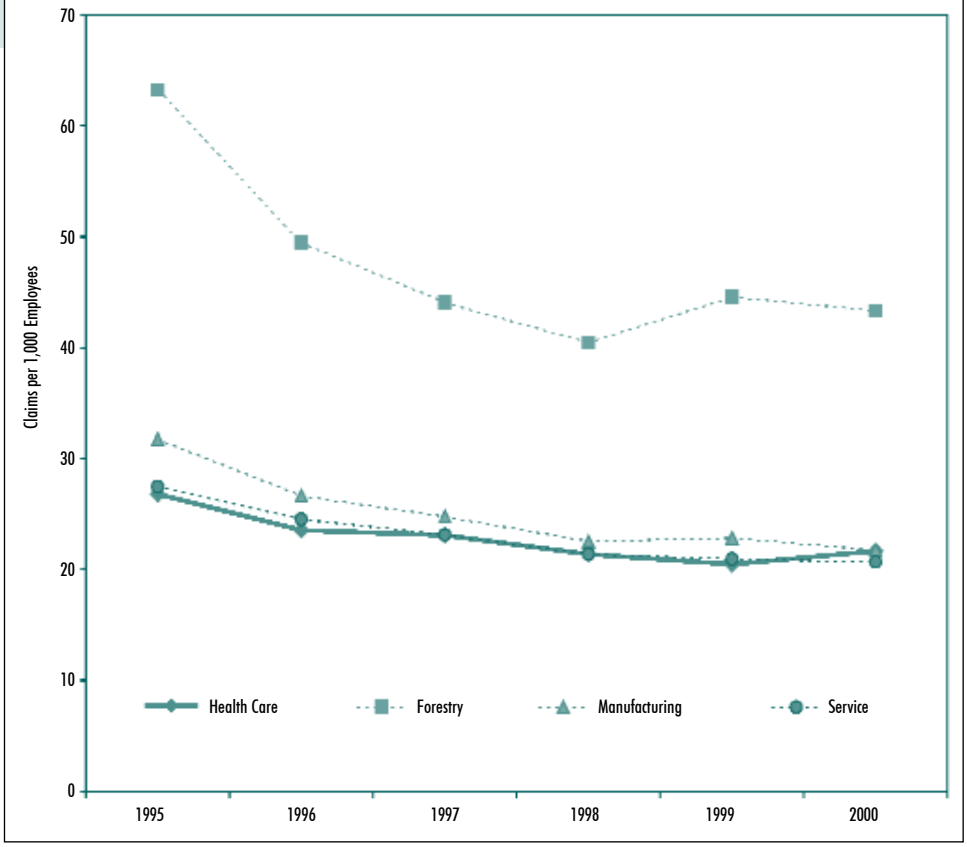
Different types of work are associated with different types of job-related health risks. Health care workers are particularly vulnerable to musculoskeletal injuries from lifting and moving patients.[3] But they are also a high-risk group for accidental needlestick injuries, infection, illness, stress, and workplace abuse and violence.[3] There are high burnout rates, feelings of job insecurity especially among less experienced nurses,[8] and work-family conflict.[9] In 1998, among large industries, Canadian health and social service workers had the fourth highest rate of workplace injuries resulting in lost time. Together they had more than 36,000 lost-time injuries—about three for every 100 workers.[7]

### Lost-Time Claims: Healthcare and Other Industries

Injuries and illnesses among health care workers result in high rates of compensation and disability claims. This is a major cost to the health care system. Over the last 10 years, there has been an overall decline in compensation claims rates for work-related injuries in Ontario. Yet claim rates among health care workers have fallen only slightly over this period of time. And they actually rose slightly in 2000.

**Frequency of Claims in Ontario**

Ontario's Workplace Safety Insurance Board (WSIB) compensates workers for job-related injuries and illnesses in Ontario. Between 1995 and 2000, the rate of lost time claims per 1,000 employees fell less quickly in health care than in several other sectors, such as forestry, manufacturing, and the service industry.




Source: Workplace Safety Insurance Board, Ontario

According to the 1998/99 National Population Health Survey, 5.6% of Canadians working in health care occupations (including doctors, nurses, specialists, technologists and technicians, and support workers) reported having work-related injuries in the year prior to the survey. This compares to only 3.6% of Canadians working in all other industries outside of the health sector reporting work-related injuries. Nurses, the largest group of health workers, suffer from some of the highest rates of on-the-job injuries within the health sector.[7]

## Musculoskeletal Injuries

Employees in the health care sector, particularly nurses, are at higher risk for back problems and other soft tissue sprains and strains compared to other workers.[3] For example, between 1994 and 1998 the Workers' Compensation Board of British Columbia accepted 35,751 time loss claims from health care workers (those working in hospitals, nursing homes, and social service-related workplaces).[10] Thirty-six percent of these claims were for back strains and a further 37% were for strains other than the back. Back strain injuries only accounted for approximately 25% of time loss claims for all workers in British Columbia for the same time period.[11]

Studies from other provinces find similar results:

- A study of three **Quebec** hospitals found that accidents involving muscular effort accounted for a large portion of missed work (70%) and lost days (77%).[12]
- In **Manitoba**, the rate of back injuries was highest for nurses working on orthopaedic, medicine, neurology, spinal, and surgery wards. Over 60% of back injuries reported in this study occurred in the first two hours of an eight-hour shift.[13]
- And research in **Ontario** examining compensation claims for nurses in 134 acute care hospitals found that nurses had more lost time injuries and musculoskeletal injuries than other hospital workers.[14] Although claim rates decreased during the study's 10-year follow-up period, nurses continued to have higher rates when compared to other hospital workers.[14]

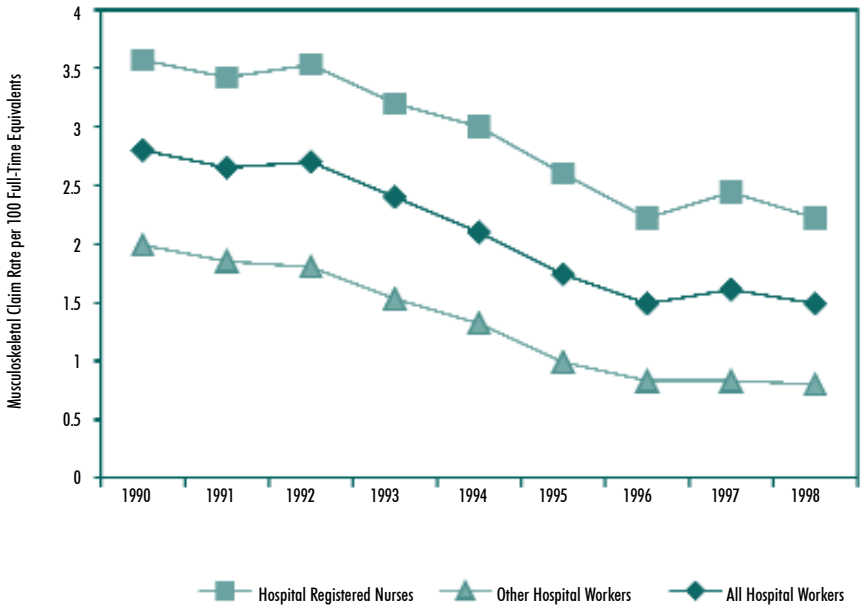
Physiotherapists[15,16,17] and laboratory workers[18] are also at risk for musculoskeletal injuries affecting the back, hands, and wrists. Research in Canada[15] and abroad,[16,17] suggests the daily activities of physiotherapists—such as handling patients, working in awkward positions, and working in the same position for long periods of time—may contribute to such injuries.

There is increasing recognition that musculoskeletal injuries are related to multiple risk factors. A four-year study of health care workers in a large acute care hospital in **British Columbia** found that there is an increased risk for these injuries when there are lower levels of job control and during periods when there were high levels of sicktime within the department. Other factors that increase risk include rising physical demands, low supervisor support, previous musculoskeletal injury, and less job experience.[18]

Why are these types of injuries higher in health care? A study from **Manitoba** offers some insight. It showed that nurses are lifting and transporting patients by themselves; trying to prevent patients from falling, bending, and twisting; turning patients by themselves, and pushing and pulling equipment.[13]

### Likelihood of Musculoskeletal Injury Claims

Between 1990 and 1998, the likelihood that a worker would file a claim with the Ontario WSIB for a musculoskeletal injury resulting in time off work decreased. But, throughout this period, the claim rate for nurses was higher than the average for all hospital employees or other hospital staff in 134 acute care facilities.




Source: Shamian J, O'Brien-Pallas L, Kerr M, Koehoorn M, Thomson D, Alksnis C, Aiken L, Hogg-Johnson S, Shannon H, Sochalski J. (1999-2001). *Effects of Job Strain, Hospital Organizational Factors and Individual Characteristics on Work-Related Disability Among Nurses.*

## Stress and Burnout in Health Care

Across the country, about two in 10 workers aged 15 to 64 reported high levels of "job strain" in 1994/95.[19] Stress or job strain (high demand and low control in the workplace) is also an important issue for health care workers. More recent data from a sample of those working in health care who responded to the 1998/99 National Population Health Survey suggest that there is a gradient across medical occupations.[20] Physicians experience the least amount of strain, while nursing aides, orderlies, and attendants experience the highest levels.

Meanwhile, 11% of those working in nursing assistant occupations and 9% working as health care technicians and technologists reported consulting a health professional for mental health reasons in the year prior to the 1998/99 survey. In contrast, only 7% of Canadians aged 15 and over—4% of men and 9% of women—reported contacting a health care professional for mental health reasons.

### A Changing Health Care Landscape

The recent changes within Canada's health care system have created a changing workplace for health care providers. For example, there have been reductions in the number of hospital beds and in nurses in management positions. And, in the mid-1990s, there were cuts in nursing and related staff.

How have these changes affected the health of health care workers? One study surveyed 730 hospital employees in 1995, 1996, and 1997—a period when the hospital was undergoing rapid changes.[21] They found that, among other things, employees' perceptions of job demands had increased and their perceptions of teamwork had decreased over the study period. Other studies report that nurses are working with more complex patients,[22] have fewer available resources,[23] and have reduced opportunities to take time off for education, training, and placements as a result of health care restructuring.[3] And some have voiced their concern that these changes have affected their ability to provide quality care.[23]

Several studies have focused on the health of health care workers in particular situations. For example, a number examined the general health of health care workers during a three-year restructuring period at a large **Ontario** hospital.[21,24,25] Researchers found that a decline in health was predicted by work interfering in family life, the amount of influence employees had over their jobs, the hours worked, and the increase in workload.[24] Other changes in health included increases in burnout, depression, and anxiety.[21]

Another study surveyed 1,891 nurses from six acute care hospitals in **Quebec** in 1994. According to this study, nurses reporting psychological distress and emotional exhaustion were also more likely to report problems with the psychological demands of work, low job control, a lack of workplace social support, and high job insecurity.[26]

### The Health of Home Care Workers

Nurses working for home care agencies are experiencing similar health-related problems as their counterparts working in acute-care hospitals. For example, results of a study of 892 employees of three not-for-profit home-care agencies have shown that these employees experience high levels of stress, tiredness, and exhaustion.[27] The managers, nurses, and therapists in these settings are experiencing work-related stress. And, healthcare providers who work for home care agencies and visit clients in their homes also suffer from sprains or strains, dislocations, fractures, and bruises as a result of lifting or moving clients, bending or straining, accidental falls, repetitive motion injuries, and even motor vehicle accidents.

## Hazards in the Work Place

Musculoskeletal injuries, stress, and burnout may be common health risks for health care workers. However, some workers are also regularly exposed to a number of other hazards while at work. These hazards include infectious diseases like tuberculosis;[28] numerous irritants and chemicals, such as nitrous oxide;[29] and latex allergies.[30]

Health care workers can also be injured and infected by used needles. A Canadian annual survey began in September 1985 to track exposure to the Human Immunodeficiency Virus (HIV) in the workplace.[31] Between 1985 and 1996, 626 workers reported that they had been exposed to HIV. Sixty percent of exposures were due to needle stick injuries. Nurses have been exposed more than any other occupation. Likewise, a recent survey of nurses in Ontario found that just over 60% had been stuck by a needle sometime during their career, and about 13% were injured by needles each year.[32]

**A Different Type of Hazard.....**

A survey of over 9,000 registered nurses practicing in 216 hospitals in Alberta and British Columbia found that a significant number of nurses had reported that they had experienced violence in the workplace in their last five shifts they had worked.[33] In this study, hurtful attitudes or remarks–such as insults, humiliation before the work team, or coercion–were most common. They were reported by 38% of RNs in both British Columbia and Alberta. In addition, 21% in British Columbia and 17% in Alberta were spit on, bitten, hit, pushed, or otherwise physically assaulted. Verbal sexual harassment–repeated, unwanted intimate questions or remarks of a sexual nature–was reported by 8% of RNs in both provinces. Patients were the source of the vast majority of all types of assaults. However, data from Alberta and British Columbia suggest that over a quarter (26% and 28%) of hurtful attitudes or remarks originated from other members of the care team; of these, half were from doctors and half were from nursing co-workers.

Another study on workplace violence in six long-term care facilities funded by the Workers' Compensation Board of British Columbia found that compensation claims resulting from acts of force or violence increased tenfold in the 1990s.[34] They also found that claims by care aides related to acts of force or violence outnumbered claims from every other group of employees in long-term care by a ratio of almost 10 to one. The study reported that the majority of aggression in long-term care is against those who have direct patient contact.

## Information Gaps

### What We Know

- How health care workers and others rate their own health overall.
- How often health care workers and others miss work due to illness and disability, and how this has changed over time.
- Rates of workers' compensation claims for injury and illness by Canadians working in health care.
- Local and provincial research on the frequency of specific work-related health problems, including stress and burnout, and risk factors for these problems.

## What We Don't Know

- How frequent are specific types of work-related health problems across Canada's health care sector?
- How have organizational changes in health care affected the performance of health care workers other than nurses? How have the changes affected the quality of their working lives? And what organizational changes are effective in improving workplace health?
- What are the relative contributions of work environment, lifestyle, organizational practices and policies, as well as other factors to the health of nurses and other health professionals?

## What's Happening

- Researchers at the Nursing Research Unit at the University of Toronto, in collaboration with scientists from the Institute for Work & Health, have initiated a study to look at the link between workloads and patient care outcomes. They are also exploring the effects of job strain, hospital organizational factors, and individual characteristics on work-related disability among nurses.
- Scientists at the Institute for Work & Health and the University of British Columbia are working together to identify health care employees at higher risk for illness and injury by tracking 50,000 employees in over 300 work places in the British Columbia health care sector between 1985 and 1999.
- The University of Toronto and the Institute for Work & Health are comparing the occurrence of occupational asthma, burnout, and job strain among medical radiation technologists and physiotherapists.
- The Quebec government (Ministry of Health and Social Services) is developing a prevention and treatment program for health and social service workers with a goal of saving $32 million in absenteeism costs over a three year period. The plan hopes to target stress and burnout which account for an estimated 40% of disability costs among health and social service workers in the province.

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# Part C
# Conclusions and Emerging Issues

# Conclusions and Emerging Issues

Finding the balance between changing health care needs and the right number of health care providers, with the right mix of skills, working in the right places is an enduring challenge. For example, more than fifty years ago, an article in the Canadian Medical Association Journal warned "general physicians are working too long hours with insufficient holidays."[1] Likewise, a Royal Commission in 1964 discussed the state of Canada's health care providers. In that report, Hall outlined some of the challenges involved in planning for the future:

> *Any assessment of what the future holds for the major elements that make up the health services complex…must take account of four factors which are related to social change in general, and changes in the health services complex in particular…The first of these is population change in terms of size…The second important factor…is the rate of technical discovery and development. The third factor…is the increasing demand for services rather than material goods. The role which government plays in the operation of modern industrial societies is the fourth factor…*[2]

In the same year, John F. McCreary, the Canadian Public Health Association's Donald Fraser Memorial Lecturer, noted that:

> *We have seen profound changes in medical care. We have seen knowledge related to medicine grow by leaps and bounds; we have seen the ability to diagnose and to treat effectively and dramatically increase; we have also seen the power of the physician to harm as well as to help his patient increase greatly…For the first time, because of the vastly increased powers put into our hands by the advances in medicine, we are subject to censure and blame when things go wrong. The attitude of the people toward medicine has changed quite as much as has medicine itself. They know very much more about medicine, they appreciate what it has to offer and they want it. They consider that they have a fundamental right to good medical care.*[3]

Almost 40 years later, profound changes continue to affect health professionals. For example, the size and demographics of the population in general and of health care providers in particular continue to shift. The health status of the population is also changing, as are the ways that we organize and deliver health care. Technologies and drugs that were relatively new in Hall's day, such as x-rays, antibiotics, and insulin, are now standard care. But new innovations, such as those based on tele-technology and genomics, continue to emerge. Over time, we are also seeing shifts in educational and regulatory requirements, professional practice, and how health care providers work together.

And yet, the more things change, the more they stay the same. The state of the health workforce continues to be identified as a top priority. For example, looking ahead to the need to provide input into the Commission on the Future of Health Care in Canada, Canada's premiers decided to focus their energies and resources on four issues at their 42nd Annual Conference in August 2001. Two of the four were related to health human resources.

Many others are also actively involved with this issue, including health, labour, and education departments of government; health care providers and their professional associations and unions; regulatory authorities; health care organizations; colleges and universities; and researchers. The decisions of each of these groups and others can have fundamental effects on the future of health care providers and health care itself. Some results are seen in the short term. But others, such as increasing enrolments in medical schools, can take a decade or more for effects to begin to appear.

In some cases, today's decision-makers have much better information than in the past with which to make their choices. For instance, we now know how many regulated health care providers work in Canada and how this mix is shifting over time with changes in educational requirements, enrolment, and other factors. We also know more about the worklife (e.g. average job tenure), working conditions (e.g. extent of overtime worked), and health of health care providers (e.g. absenteeism rates) and how the environment in which they work is changing. In selected areas, we also have other important information, such as how many doctors leave Canada each year and how many return; how the composition of health care teams vary across the country; and what recruitment and retention strategies are being used.

**What's New in This Report**

This report draws on data and analysis from CIHI, as well as research produced at local, regional, provincial, national, and international levels. In many cases, it is the first time that this information has been reported. This allows us to take a fresh look at a range of topics and expand on or update previous work. Examples of new or updated information include:

- How tuition fees for selected health care programs, such as medicine and dentistry, compare across Canada.
- The extent to which some health professionals are exposed to workplace hazards such as needlestick injuries.
- How salaries for people working in the same health care occupation (e.g. RNs, Physiotherapists, Occupational Therapists) differ across Canada.
- The use of continuing medical education among family physicians, and how their practice settings and the scope of their practice vary.
- The percent of employees working part-time and full-time in the health care industry compared to other industries, and how this has changed in recent years.
- How long health care employees stay with an employer and how likely they are to be unemployed compared to people who work in other industries in Canada.
- Top 10 destinations for Canadian physicians who move to the United States.
- New estimates on alternative payments (i.e. other than fee-for-service) to physicians.
- How physician 'Activity Ratios' have changed over time.
- How the number of deliveries attended by midwives has changed in Ontario and British Columbia in recent years.

But there is still much that we don't know. For example, we know little about unregulated professionals, including those who manage the health care system. For these types of groups, membership in professional associations is often voluntary and not all providers participate. As a result, we may not even know exactly how many people are working in a given occupation, how this is changing over time, and what types of services they are providing.

Many other questions also remain unanswered. For example, what are the most effective strategies for training, recruiting, retaining, and funding health professionals? What effect do changes in professional scopes of practice, collaborative practice, and the structure and composition of the health care team have on the supply and distribution of health professionals? On our ability to meet future health care needs? On how professionals organize and provide services? On patient and provider satisfaction? On access to care? On quality of care?

### Listening for Direction

In early 2001, CIHI and four other organizations conducted a broad cross-Canada consultation on priority health services and policy issues.[4] Health human resources emerged as **the** dominant theme for the next two to five years, according to policy-makers, managers, and clinical organizations. Examples of questions raised include:

- Why have existing forecasting models for healthcare professions failed to precisely identify future surpluses and shortages; what additional data and method might improve their accuracy?
- What are the implications of changing delivery models for professional regulation, licensure, collective agreements, scope of practice, and the composition and operation of the healthcare team?
- What are the implications of professional regulation, licensure, collective agreements, scope of practice, and the composition and operation of the healthcare team on the prospects for changing delivery models?
- What incentives and strategies will improve the recruitment and retention of healthcare professionals?
- What incentives and strategies will improve the recruitment, retention, and leadership capacity of health system managers and policy makers?
- How can the particular health human resource needs of rural and remote regions and of particular marginalized and under-served groups be met in a sustainable and cost-effective fashion?
- What are the implications of globalization and free trade agreements for forecasting models, regulation and licensure, recruitment and retention, and overall mobility of healthcare professionals?

These and many other questions continue to present challenges. A fuller understanding depends on a broad range of timely, reliable, systematic, and comparable data and analysis that will fill these and other important information gaps.

We have come a long way, but there is a long way still to go. Our hope is that this report represents a step forward on the journey towards better information about those providing care in Canada—one that will support better decisions by all of us.

### Want to Know More?

In addition to this report, CIHI has a regular series of reports that contain more detailed information on a range of related topics. These include:

- Health Care in Canada: An Annual Report
- Health Personnel in Canada
- Full-Time Equivalent Report (from the National Physician Database or NPDB)
- Average Payment per Physician (from NPDB)
- National Grouping System Categories Report (from NPDB)
- Reciprocal Billing Report (from NPDB)
- Supply and Distribution of Registered Nurses in Canada
- Supply, Distribution, and Migration of Canadian Physicians
- National Health Expenditure Trends

## For More Information

[1] Johnston WV. (1948). General practice in the changing order. *Canadian Medical Association Journal*, 59, 167-170.
[2] Canada. Royal Commission on Health Services. (1964). *Royal Commission on Health Services*. Ottawa: Queen's Printer.
[3] McCreary JF. (1964). *Education of Health Personnel*. Presented at the 55th annual meeting of the Canadian Public Health Association. Moncton: New Brunswick.
[4] Gagnon D, Ménard M. (2001). *Listening for Direction: A National Consultation on Health Services and Policy Issues*. Ottawa: Advisory Committee on Health Services of the Conference of Federal/Provincial/Territorial Deputy Ministers of Health, Canadian Coordinating Office for Health Technology Assessment, Canadian Health Services Research Foundation, Canadian Institute for Health Information, Institute of Health Services and Policy Research of the Canadian Institutes of Health Research.

# Appendix: Fast Facts

## Health Professionals per 100,000 Population†

| | Physicians - 2000 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total Physicians | GP/FP | Specialists | Registered Nurses 2000 | Chiropractors 2000 | Dental Hygienists 2000 | Dentists 2000 | Dietitians 2000 | LPNs 2000 | Medical Laboratory Technologists 2000 | Medical Radiation Technologists 2000 |
| **NF** | 172 | 106 | 66 | 1,002 | 6 | 13 | 30 | 23 | 533 | 59 | 49 |
| **PE** | 128 | 75 | 52 | 903 | 5 | 31 | 43 | 36 | 448 | 75 | 49 |
| **NS** | 201 | 101 | 100 | 923 | 7 | 44 | 48 | 40 | 329 | 79 | 53 |
| **NB** | 152 | 90 | 63 | 974 | 6 | 33 | 35 | 33 | 294 | 81 | 62 |
| **QC** | 214 | 106 | 108 | 796 | 13 | 49 | 54 | 26 | 210 | 37 | 50 |
| **ON** | 180 | 85 | 95 | 697 | 23 | 56 | 60 | 19 | 225 | 60 | 45 |
| **MB** | 181 | 92 | 89 | 875 | 18 | 49 | 49 | 23 | 202 | 83 | 52 |
| **SK** | 154 | 91 | 62 | 835 | 16 | 27 | 34 | 22 | 151 | 91 | 43 |
| **AB** | 166 | 86 | 80 | 736 | 23 | 43 | 54 | 20 | 136 | 61 | 48 |
| **BC** | 195 | 106 | 88 | 681 | 18 | 44 | 65 | 21** | 108* | 59 | 42 |
| **YT** | 136 | 116 | 20 | 779 | 30 | 50 | 60 | .. | .. | 53 | .. |
| **NT** | 112 | 69 | 43 | 1,027 | .. | 30 | 71 | .. | 157 | 41 | .. |
| **NU** | 25 | 21 | 4 | 333 | | | | | | | |

| | Midwives 2000 | Occupational Therapists 2000 | Optometrists 2000 | Pharmacists 2000 | Physiotherapists 2000 | Registered Psychiatric Nurses 2000 | Respiratory Therapists 1998 |
|---|---|---|---|---|---|---|---|
| **NF** | .. | 25 | 6 | 96 | 37 | .. | 14 |
| **PE** | .. | 24 | 8 | 86 | 34 | .. | 12 |
| **NS** | .. | 26 | 7 | 100 | 45 | .. | 24 |
| **NB** | .. | 27 | 12 | 75 | 53 | .. | 26 |
| **QC** | 1 | 35 | 16 | 77 | 43 | .. | 29 |
| **ON** | 2 | 29 | 10 | 72 | 43 | .. | 15 |
| **MB** | 2 | 37 | 8 | 78 | 46 | 89 | 17 |
| **SK** | .. | 22 | 11 | 109 | 52 | 103 | 11 |
| **AB** | 1 | 32 | 10 | 96 | 54 | 38 | 28 |
| **BC** | 1 | 30 | 8 | 80 | 57 | 54 | 13 |
| **YT** | .. | 20 | 10 | 86 | .. | | .. |
| **NT** | .. | 10 | .. | 43 | .. | .. | 6 |
| **NU** | | | | | | | |

**Notes:** † Data are preliminary as of November 2001 and are subject to change. Rates per 100,000 population.
With the exception of physician and registered nurse data, personnel per 100,000 ratios for the Northwest Territories include Nunavut Territory data.
* Data for 2000 British Columbia LPNs are estimates.
**B.C dietitions include dietitions and nutritionists
.. Not Available.
Note: due to updated population estimates frequencies may differ slightly from past publications.

**Source:** Southam Medical Database, CIHI.
Health Personnel Database, CIHI.
Registered Nurses Database, CIHI.

# Average Age by Health Occupation (in years), Canada, 1994 to 2000

| Occupations | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|
| Ambulance Attendants | 34.7 | 33.9 | 34.7 | 36.4 | 37.3 | 37.1 | 37.1 |
| Audiologists | 35.6 | 38.2 | 36.1 | 36.1 | 38.6 | 37.6 | 37.9 |
| Cardiology Technologists | -- | 38.8 | 37.2 | 37.4 | 42.0 | 44.8 | 39.2 |
| Chiropractors | 41.0 | 40.4 | 41.1 | 40.0 | 40.5 | 41.2 | 38.6 |
| Dental Assistants | 30.5 | 32.4 | 32.2 | 32.8 | 33.8 | 34.0 | 33.0 |
| Dental Hygienists | 32.5 | 33.6 | 32.9 | 33.9 | 33.1 | 35.0 | 35.2 |
| Dental Technicians | 37.2 | 37.3 | 36.3 | 37.0 | 37.8 | 40.7 | 37.8 |
| Dentists | 42.9 | 42.4 | 43.1 | 42.4 | 41.7 | 44.1 | 44.7 |
| Denturists | 38.3 | 48.3 | 44.4 | 42.0 | 42.1 | 47.8 | 45.8 |
| Dietitians/Nutritionists | 37.0 | 38.8 | 37.0 | 39.3 | 41.2 | 39.5 | 41.4 |
| General Practitioners* | 43.9 | 42.9 | 41.3 | 42.0 | 42.3 | 43.3 | 43.7 |
| Head Nurses | 41.2 | 42.0 | 43.5 | 43.7 | 43.1 | 44.9 | 44.4 |
| Health Record Administrators/Technicians | 38.5 | 39.3 | 39.7 | 39.9 | 38.8 | 36.7 | 37.7 |
| Licensed Practical Nurses/Registered Nursing Assistants | 40.9 | 40.5 | 40.7 | 41.3 | 40.7 | 42.5 | 42.3 |
| Medical Laboratory Technicians | 37.1 | 39.0 | 39.0 | 38.1 | 39.1 | 38.4 | 39.1 |
| Medical Laboratory Technologists | 41.2 | 40.2 | 39.8 | 40.2 | 39.7 | 39.4 | 39.6 |
| Medical Radiation Technologists | 35.1 | 37.2 | 39.6 | 38.0 | 39.3 | 40.6 | 39.6 |
| Medical Sonographers | -- | 34.2 | 38.4 | -- | 42.3 | 41.2 | 38.8 |
| Midwives | -- | 45.1 | 41.4 | 44.0 | 46.9 | 45.9 | 45.9 |
| Nurse Aides/Orderlies | 38.5 | 39.2 | 39.8 | 40.6 | 40.5 | 40.4 | 40.8 |
| Occupational Therapists | 35.5 | 34.7 | 34.3 | 36.1 | 36.3 | 33.8 | 35.1 |
| Opticians | 37.8 | 35.9 | 33.6 | 37.2 | 34.1 | 40.1 | 37.8 |
| Optometrists | 40.3 | 37.0 | 42.7 | 40.5 | 40.4 | 47.1 | 38.7 |
| Other Health Professional Occupations | 35.6 | 44.5 | 38.8 | 38.4 | 43.0 | -- | 44.1 |
| Pharmacists | 38.2 | 38.4 | 38.8 | 39.4 | 39.3 | 39.4 | 38.7 |
| Physiotherapists | 36.7 | 37.1 | 37.2 | 36.8 | 37.6 | 39.1 | 38.0 |
| Psychologists | 44.2 | 42.6 | 40.7 | 44.8 | 44.8 | 45.3 | 46.2 |
| Registered Nurses | 39.6 | 39.8 | 39.9 | 41.1 | 41.0 | 41.4 | 41.9 |
| Respiratory Therapists | 33.8 | 33.8 | 33.1 | 35.5 | 35.2 | 36.0 | 34.8 |
| Social Workers | 37.4 | 39.5 | 39.3 | 39.6 | 39.8 | 40.7 | 40.8 |
| Specialist Physicians* | 43.3 | 43.0 | 43.3 | 43.5 | 45.5 | 44.8 | 44.8 |
| **All Health Occupations** | **39.1** | **39.4** | **39.5** | **40.2** | **40.3** | **40.7** | **40.8** |

**Note:** -- Too small to be expressed.
* Includes residents and interns
These estimates are based on responses to a survey of a sample of the Canadian population. For more information, on the sampling frame, sample size, and sampling error, please see the technical information about the survey available on Statistics Canada's website.

**Source:** Labour Force Survey, Statistics Canada

# Number of Physicians by Health Region per 100,000 population, 1998

| Health Region | Province | GP/FP Crude Rate | Specialists Crude Rate |
|---|---|---|---|
| Health and Community Services St John's Region | NF | 119 | 157 |
| Health and Community Services Eastern Region | NF | 89 | 10 |
| Health and Community Services Central Region | NF | 96 | 29 |
| Prince Edward Island | PE | 73 | 55 |
| Zone 1 | NS | 85 | 42 |
| Zone 3 | NS | 84 | 32 |
| Zone 5 | NS | 89 | 54 |
| Zone 6 | NS | 126 | 165 |
| Region 1 | NB | 89 | 77 |
| Region 2 | NB | 88 | 82 |
| Region 3 | NB | 83 | 61 |
| Région du Bas-Saint-Laurent | QC | 107 | 80 |
| Région du Saguenay - Lac-Saint-Jean | QC | 96 | 72 |
| Région de Québec | QC | 142 | 168 |
| Région de la Mauricie et Centre-du-Québec | QC | 85 | 65 |
| Région de l'Estrie | QC | 120 | 116 |
| Région de Montréal-Centre | QC | 123 | 209 |
| Région de l'Outaouais | QC | 90 | 57 |
| Région de l'Abitibi-Témiscamingue | QC | 99 | 63 |
| Région de la Côte-Nord | QC | 115 | 53 |
| Région de la Gaspésie-Îles-de-la-Madeleine | QC | 151 | 50 |
| Région de la Chaudière-Appalaches | QC | 99 | 53 |
| Région de Laval | QC | 84 | 64 |
| Région de Lanaudière | QC | 81 | 38 |
| Région de Laurentides | QC | 85 | 41 |
| Région de la Montérégie | QC | 88 | 59 |
| Champlain District Health Council | ON | 105 | 134 |
| Quinte-Kingston and Rideau DHC | ON | 96 | 95 |
| Durham-Haliburton-Kawartha and Pine Ridge DHC | ON | 65 | 42 |
| Toronto District Health Council | ON | 114 | 164 |
| Simcoe-York District Health Council | ON | 77 | 48 |
| Halton-Peel District Health Council | ON | 71 | 49 |
| Waterloo-Wellington-Dufferin DHC | ON | 71 | 52 |
| Hamilton-Wentworth DHC | ON | 91 | 160 |
| Niagara District Health Council | ON | 60 | 57 |
| Grand River DHC | ON | 59 | 35 |
| Thames Valley DHC | ON | 87 | 140 |
| Essex-Kent and Lambton DHC | ON | 56 | 54 |
| Grey-Bruce-Huron and Perth DHC | ON | 77 | 32 |
| Muskoka, Nipissing, Parry Sound and Timiskaming DHC | ON | 94 | 44 |
| Algoma-Cochrane-Manitoulin and Sudbury DHC | ON | 77 | 61 |
| Northwestern Ontario DHC | ON | 81 | 48 |
| Winnipeg | MB | 101 | 143 |
| Regina (D) Service Area | SK | 98 | 75 |
| Saskatoon (F) Service Area | SK | 102 | 132 |
| Chinook Regional Health Authority | AB | 82 | 52 |
| Calgary Regional Health Authority | AB | 88 | 105 |
| David Thompson Regional Health Authority | AB | 76 | 39 |
| East Central Health Authority | AB | 69 | 9 |
| Capital Health Authority | AB | 104 | 125 |
| Lakeland Regional Health Authority | AB | 70 | 7 |
| North Okanagan | BC | 106 | 55 |
| Okanagan Similkameen | BC | 97 | 79 |
| Thompson | BC | 90 | 62 |
| Fraser Valley | BC | 82 | 46 |
| South Fraser Valley | BC | 74 | 44 |
| Central Vancouver Island | BC | 98 | 59 |
| Upper Island / Central Coast | BC | 104 | 41 |
| Northern Interior | BC | 86 | 48 |
| North Shore | BC | 112 | 88 |
| Capital (Victoria) | BC | 145 | 109 |
| Vancouver/Richmond | BC | 150 | 214 |
| Simon Fraser (includes Burnaby) | BC | 88 | 68 |
| **Canada** | | **94** | **91** |

**Notes:**
In some regions, health facilities and personnel provide services to a larger community than the residents of the immediate region. In others, residents will frequently seek care from physicians outside the region where they live. The ratios of physicians to population reflect the number of doctors in a region and have not been adjusted to take these movements into account. The extent to which this affects individual regions is likely to vary.

Figures include civilian physicians (including those that are not providing clinical services, e.g. health research, administration and teaching) and exclude interns and residents. At a regional level, records with invalid, missing, or partial postal codes were excluded from the totals. Reporting is generally based on the region of the physician's office or hospital address (over 80% of cases), not region of residence. Reporting is based on total number of physicians on December 31 of the reference year (full or part time), not full time equivalent figures.

Data are shown for regions with a population of 100,000 or greater.
**General/Family Practitioners Rate:** General practitioners per 100,000 population.
**Medical Specialists Rate:** Medical specialists per 100,000 population.

**Source:** Southam Medical Database, CIHI

# Health Programs Offered in Canadian Universities, Colleges, and Selected Complementary Health Institutions

Acupuncture
Addictions Counseling
Administration of Oral Medication
Advanced Nursing Practice
Advanced Training in Orthopedics
Anesthesia Technology
Applied Biotechnology
Applied Chemistry and Biochemistry Diploma
Applied Health Sciences
Applied Human Nutrition
Assisted Reproductive Technology
Asthma Educator
Audiology
Basic Medical Sciences
Biochemistry
Biology
Biomedical Engineering Technology
Biophysics
Biotechnology Diploma
Cardiovascular Perfusion Technology
Caring for Persons with Dementia (Part-time) Certificate
Chinese Medicine
Chiropody
Chiropractic
Clinical Genetics Technology
College Preparation for Nursing
Community Care Worker
Community Gerontology
Community Health and Human Services
Community Health Representative
Community Health Sciences
Community Nursing
Community Rehabilitation
Community Support Worker Certificate
Complementary Care
Comprehensive Health Care Aide
Continuing Health Care Administration Diploma
Critical Care, Home Care, Primary Care, Mental Health Care, Northern Nursing
Dental Assistant - Level I & II
Dental Hygiene
Dental Laboratory Technology Diploma
Dental Reception Certificate
Dental Specialties
Dental Technician
Dental-Prosthodontic Module Certificate
Dentistry
Denturist
Diagnostic Cytology
Diagnostic Medical Sonography
Dietetics
Dispensing Optician Certificate or Diploma
Drug and Alcohol Counseling
Echocardiography
Electroneurophysiology Technology
Energy Healing Practitioner
Environmental Health and Safety Technology
Epidemiology and Public Health
Exercise Physiology
First Nation Health Management
Fitness and Health Administration
Genetics Technology
Gerontological Nursing
Gerontology
Health Administration
Health and Fitness Studies
Health and Radiation Physics
Health Behaviour
Health Care Aide
Health Care and Epidemiology
Health Care Office Assistant
Health Care Preparation
Health Counseling
Health Education
Health Informatics/Health Information Science
Health Law
Health Management
Health Physiology
Health Policy Management
Health Policy Research and Evaluation
Health Promotion
Health Record Technician
Health Research Methodology
Health Services
Health Studies/Health Sciences
Health Technician
Hearing Aid Practitioner
Holistic Health Practitioner
Home Care/Special Care Aide
Home Health Aide/Long Term Care Aide
Home Support
Homeopathic Medicine and Sciences Program
Hospital Unit Coordinator
Household Science
Immunology
Indian Health Studies
International Health Sciences
Kinesiology
Laboratory Sciences
Management Skills for Health Professionals
Massage Therapy
Maternal Health and Childbirth/Maternal Infant Child Healthcare
Medical and Health Physics
Medical Laboratory Assistant
Medical Laboratory Science
Medical Office Assistant
Medical Radiation Technology
Medical Radiological Diagnostic Technology
Medical Reception
Medical Secretary
Medical Specialties
Medical Technology
Medical Transcriptionist
Medical/Biomedical Sciences
Medicine
Mental Health Studies
Midwifery
Music Therapy
Native Addictions Worker Diploma
Native Community Worker - Healing and Wellness
Naturopathy
Neonatology
Nuclear Medicine Technology
Nurse Practitioner
Nurse Refresher Certificate
Nursing Assistant
Nursing Collaborative Program
Nursing Orderly
Occupational Health
Occupational Health and Safety Technician
Occupational Health Nurse
Occupational Therapy
Office Administration - Dental or Medical
Ophthalmology
Optometry
Oral Health Sciences
Orthotic/Prosthetic Technician
Paraclinical Sciences
Paramedic
Pathology
Personal Care Attendant
Personal Support Aide
Pharmacology
Pharmacy
Pharmacy Assistant
Pharmacy Technician
Physical Education
Physiotherapy/Physical Therapy
Podiatry
Policy and Practice in Health and Social Services
Practical Nursing (RPN and LPN)
Pre-Dentistry Program
Pre-Medicine Program
Pre-Optometry
Pre-Pharmaceutical Sciences Program
Pre-Rehabilitation Sciences Program
Psychiatric Nursing
Psychology/Health Psychology
Public Health Inspector
Public Health Sciences
Pure Health Sciences
Qigong Instruction
Radiation Therapy
Radiological Technology
Reflexology
Rehabilitation Assistant
Rehabilitation Medicine
Reiki Practitioner
Resident Care Attendant and Home Support Worker
Residential Aide
Respiratory Therapy
Shiatsu Therapy
Sleep Medicine Technology
Social Service Worker - Gerontology
Social Service Worker Certificate
Social Work
Special Care Counseling
Speech and Language Assistant
Speech and Language Therapy
Substance Abuse Counseling
Surgical Specialties
Toxicology
Ultrasound Technician
Visually Impaired Adult Programs
Workplace Wellness and Health Promotion

**Source:** Association of Universities and Colleges of Canada, www.aucc.ca , Association of Canadian Community Colleges, www.accc.ca, Alternative Medicine College of Canada, www.alternativemedicinecollege.com, Homeopathic College of Canada, www.homeopathy.edu

# Bachelors, Masters, and Doctoral Degrees in Health Awarded at Canadian Universities by Field of Study

## Bachelors Degrees

| | 1977 | 1980 | 1985 | 1990 | 1995 | 1996 | 1997 | 1998 |
|---|---|---|---|---|---|---|---|---|
| Basic Medical Sciences | 267 | 143 | 178 | 328 | 405 | 427 | 434 | 461 |
| Dental Specialties | ¨ | 3 | 2 | 4 | 3 | 2 | 6 | 6 |
| Dentistry | 459 | 488 | 503 | 491 | 433 | 412 | 426 | 425 |
| Epidemiology and Public Health | ¨ | ¨ | 66 | 60 | 100 | 194 | 176 | 185 |
| Medical Specialties | ¨ | 289 | 21 | 40 | 30 | 24 | 26 | 31 |
| Medical Technology | 41 | 22 | 27 | 47 | 59 | 45 | 65 | 51 |
| Medicine | 1,935 | 1,744 | 1,912 | 1,785 | 1,770 | 1,683 | 1,598 | 1,630 |
| Nursing | 1,450 | 1,474 | 1,997 | 2,608 | 3,133 | 3,336 | 3,731 | 3,316 |
| Optometry | 98 | 59 | 105 | 108 | 100 | 100 | 94 | 101 |
| Other Health Professions | 14 | 4 | 11 | 91 | 95 | 149 | 129 | 238 |
| Paraclinical Sciences | 29 | 56 | 76 | 137 | 137 | 118 | 135 | 153 |
| Pharmacy | 719 | 668 | 634 | 817 | 797 | 839 | 689 | 791 |
| Rehabilitation Medicine | 685 | 809 | 866 | 1,083 | 1,313 | 1,304 | 1,328 | 1,232 |
| **Total Health Professions** | **5,697** | **5,759** | **6,398** | **7,599** | **8,375** | **8,633** | **8,837** | **8,620** |

## Masters Degrees

| | 1977 | 1980 | 1985 | 1990 | 1995 | 1996 | 1997 | 1998 |
|---|---|---|---|---|---|---|---|---|
| Basic Medical Sciences | 104 | 135 | 202 | 297 | 372 | 400 | 414 | 455 |
| Dental Specialties | 8 | 10 | 21 | 22 | 17 | 16 | 17 | 20 |
| Dentistry | 3 | ¨ | ¨ | ¨ | 1 | ¨ | 4 | 5 |
| Epidemiology and Public Health | 26 | 84 | 152 | 140 | 227 | 269 | 259 | 277 |
| Medical Specialties | 12 | 14 | 25 | 68 | 85 | 110 | 89 | 122 |
| Medical Technology | ¨ | ¨ | ¨ | 1 | 2 | 21 | 22 | 29 |
| Medicine | 4 | ¨ | ¨ | ¨ | ¨ | ¨ | ¨ | ¨ |
| Nursing | 67 | 76 | 117 | 186 | 223 | 208 | 238 | 225 |
| Optometry | 2 | 1 | 3 | 3 | 10 | 3 | 2 | 4 |
| Other Health Professions | ¨ | ¨ | ¨ | 5 | 25 | 37 | 35 | 50 |
| Paraclinical Sciences | 53 | 53 | 71 | 88 | 114 | 96 | 102 | 70 |
| Pharmacy | 17 | 24 | 30 | 25 | 198 | 98 | 85 | 55 |
| Rehabilitation Medicine | 60 | 102 | 88 | 157 | 251 | 234 | 308 | 302 |
| Surgical Specialties | 7 | 5 | 14 | 20 | 13 | 13 | 24 | 11 |
| **Total Health Professions** | **363** | **504** | **723** | **1,012** | **1,538** | **1,505** | **1,599** | **1,625** |

## Doctoral Degrees

| | 1977 | 1980 | 1985 | 1990 | 1995 | 1996 | 1997 | 1998 |
|---|---|---|---|---|---|---|---|---|
| Basic Medical Sciences | 62 | 87 | 104 | 138 | 199 | 208 | 255 | 252 |
| Dental Specialties | ¨ | ¨ | 2 | 3 | 8 | 7 | 9 | 7 |
| Dentistry | 1 | ¨ | ¨ | ¨ | ¨ | ¨ | ¨ | ¨ |
| Epidemiology and Public Health | 3 | 5 | 8 | 26 | 32 | 45 | 36 | 51 |
| Medical Specialties | 11 | 12 | 18 | 47 | 57 | 72 | 64 | 77 |
| Medical Technology | ¨ | ¨ | ¨ | 1 | 6 | 3 | 3 | 7 |
| Medicine | 2 | ¨ | ¨ | ¨ | 6 | 3 | 2 | ¨ |
| Nursing | ¨ | ¨ | ¨ | 1 | 3 | 1 | 13 | 12 |
| Optometry | ¨ | ¨ | ¨ | 1 | ¨ | 2 | 1 | 2 |
| Other Health Professions | ¨ | ¨ | ¨ | ¨ | 1 | 3 | 10 | 4 |
| Paraclinical Sciences | 19 | 25 | 26 | 48 | 66 | 73 | 56 | 62 |
| Pharmacy | 6 | 3 | 13 | 24 | 24 | 35 | 31 | 26 |
| Rehabilitation Medicine | ¨ | 2 | 1 | 2 | 2 | 2 | 6 | 2 |
| Surgical Specialties | 1 | 3 | 3 | 2 | 4 | 3 | 6 | 7 |
| **Total Health Professions** | **105** | **137** | **175** | **293** | **408** | **457** | **492** | **509** |

**Note:** ¨ Not Available.
**Source:** Association of Universities and Colleges of Canada, www.aucc.ca

## Total Health Spending on Physicians and Other Health Professionals by Province/Territory and Canada, 2000 (Current Dollars)

| | 2000 (Forecast) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Physicians ($'000,000) | Other Professionals ($'000,000) | Total ($'000,000) | Physicians ($' per capita) | Other Professionals ($' per capita) | Total ($' per capita) | Physicians (% Public) | Other Professionals (% Public) |
| NF | $186.8 | $93.8 | $1,600.6 | $346.65 | $174.03 | $2,970.57 | 99.7% | 14.1% |
| PE | $39.1 | $34.0 | $388.8 | $281.11 | $244.93 | $2,798.83 | 99.5% | 10.9% |
| NS | $364.7 | $228.5 | $2,680.0 | $387.61 | $242.80 | $2,848.05 | 99.3% | 10.5% |
| NB | $263.9 | $207.2 | $2,217.3 | $348.84 | $273.82 | $2,930.63 | 99.0% | 5.7% |
| QC | $2,410.3 | $2,235.6 | $20,748.2 | $326.94 | $303.24 | $2,814.29 | 98.6% | 12.1% |
| ON | $5,663.4 | $4,472.0 | $37,311.3 | $485.32 | $383.23 | $3,197.38 | 98.6% | 7.6% |
| MB | $475.6 | $358.1 | $3,929.5 | $414.31 | $312.99 | $3,423.24 | 97.4% | 13.4% |
| SK | $382.6 | $305.2 | $3,161.2 | $373.79 | $298.13 | $3,088.24 | 99.0% | 18.9% |
| AB | $1,031.1 | $1,366.2 | $9,887.3 | $344.03 | $455.82 | $3,298.82 | 98.2% | 10.0% |
| BC | $1,942.3 | $1,914.9 | $12,708.7 | $477.96 | $471.23 | $3,127.33 | 99.0% | 11.9% |
| YT | $11.6 | $13.8 | $122.5 | $378.86 | $449.88 | $3,994.05 | 100.0% | 21.0% |
| NT | $16.2 | $11.6 | $206.5 | $385.09 | $274.90 | $4,907.99 | 100.0% | 45.7% |
| NU | $10.6 | $7.9 | $164.9 | $382.10 | $285.25 | $5,953.73 | 100.0% | 48.1% |
| **CA** | **$12,798.3** | **$11,248.8** | **$95,126.9** | **$416.20** | **$365.81** | **$3,093.55** | **98.6%** | **10.2%** |

**Note:** Current dollars measure actual expenditures in a given year.

Health dollars are used to purchase health care goods and services, to provide capital investment, to administer public and private insurance plans and public health programs, and to fund research. These uses are grouped into seven major categories, including expenditure on physicians' services and other professionals' services. These categories do not include remuneration of health professionals on the payrolls of hospitals or public sector health agencies. These are included in the appropriate category (e.g. hospital spending).

Forecasts - Are estimates based on a mix of actual data from past events and key economic indicators of future events. Forecasts are calculated using econometric modeling or are based on the intentions of certain economic entities.

**Source:** National Health Expenditure Database, CIHI

## Average Wages of Full-Time and Part-Time Employees in Professional Health Occupations and Technical, Assisting, and Related Health Occupations, by Province, 2000

| Professional Health Occupations † | | | |
|---|---|---|---|
| Province | Average Hourly Wage Rate | Average Weekly Wage Rate | Median Hourly Wage Rate |
| NF | $19.89 | $733.54 | $19.97 |
| PE | $20.72 | $664.95 | $22.00 |
| NS | $21.47 | $721.91 | $22.25 |
| NB | $21.02 | $723.92 | $21.79 |
| QC | $22.16 | $738.96 | $22.00 |
| ON | $23.91 | $793.55 | $25.00 |
| MB | $22.14 | $786.01 | $22.10 |
| SK | $21.49 | $721.36 | $22.79 |
| AB | $23.12 | $760.52 | $24.00 |
| BC | $24.17 | $802.32 | $25.00 |
| **CA** | **$23.04** | **$769.86** | **$23.00** |

| Technical, Assisting, and Related Health Occupations | | | |
|---|---|---|---|
| Province | Average Hourly Wage Rate | Average Weekly Wage Rate | Median Hourly Wage Rate |
| NF | $11.66 | $406.30 | $12.36 |
| PE | $13.60 | $454.13 | $14.00 |
| NS | $13.19 | $457.50 | $11.65 |
| NB | $13.31 | $453.90 | $13.05 |
| QC | $15.05 | $478.86 | $14.09 |
| ON | $16.19 | $518.21 | $15.00 |
| MB | $13.87 | $466.00 | $12.41 |
| SK | $14.24 | $483.92 | $13.64 |
| AB | $15.60 | $525.16 | $14.00 |
| BC | $19.14 | $631.51 | $18.06 |
| **CA** | **$15.66** | **$510.14** | **$14.58** |

**Note:** Data are not available for the territories; therefore totals do not include the territories.
† Professional health occupations include nurse supervisors and registered nurses.
These estimates are based on responses to a survey of a sample of the Canadian population. For more information, on the sampling frame, sample size, and sampling error, please see the technical information about the survey available on Statistics Canada's website.

Provincial averages may differ because of differences in the mix of health professionals, as well as variations in salaries and other factors.

**Source:** Labour Force Survey, Statistics Canada

## Average Number of Full-Time and Part-Time Employees in Professional Health Occupations and Technical, Assisting and Related Health Occupations, by Province, 2000

| Professional Health Occupations † | | |
|---|---|---|
| **Province** | **Full-Time ('000)** | **Part-Time ('000)** |
| **NF** | 7.1 | 0.7 |
| **PE** | 1.4 | 0.4 |
| **NS** | 10.0 | 2.7 |
| **NB** | 8.5 | 1.7 |
| **QC** | 71.3 | 21.3 |
| **ON** | 111.5 | 34.5 |
| **MB** | 11.6 | 2.8 |
| **SK** | 9.6 | 2.8 |
| **AB** | 26.2 | 10.2 |
| **BC** | 43.7 | 12.9 |
| **CA** | **300.9** | **90.0** |

| Technical, Assisting and Related Health Occupations | | |
|---|---|---|
| **Province** | **Full-Time ('000)** | **Part-Time ('000)** |
| **NF** | 5.6 | 1.3 |
| **PE** | 1.7 | 0.6 |
| **NS** | 11.1 | 3.2 |
| **NB** | 7.6 | 2.3 |
| **QC** | 72.0 | 33.8 |
| **ON** | 89.4 | 43.3 |
| **MB** | 15.1 | 5.2 |
| **SK** | 11.9 | 3.5 |
| **AB** | 26.9 | 10.0 |
| **BC** | 33.5 | 11.5 |
| **CA** | **274.8** | **114.7** |

**Note:** Canada totals do not include the territories.
† Professional health occupations include nurse supervisors and registered nurses.
**Source:** Labour Force Survey, Statistics Canada
These estimates are based on responses to a survey of a sample of the Canadian population. For more information, on the sampling frame, sample size, and sampling error, please see the technical information about the survey available on Statistics Canada's website.

## Number of RNs by Place of Work, Canada, 1997-2000

| | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|
| **Hospital** | **145,467** | **142,043** | **142,752** | **148,366** |
| Hospital (general, maternal, paediatric, psychiatric) | 137,933 | 134,927 | 135,691 | 141,332 |
| Mental Health Centre | 3,912 | 3,586 | 3,606 | 3,636 |
| Nursing Stations (outpost or clinic) | 956 | 938 | 863 | 805 |
| Rehabilitation/Convalescent Centre | 2,666 | 2,592 | 2,592 | 2,593 |
| **Nursing Home/Long Term Care** | **27,828** | **26,987** | **26,685** | **26,094** |
| **Community Health** | **25,561** | **26,194** | **27,610** | **28,830** |
| Home Care Agency | 9,818 | 9,992 | 9,055 | 8,644 |
| Community Health/Health Agency | 15,743 | 16,202 | 18,555 | 20,186 |
| **Other Place of Work** | **28,312** | **29,380** | **29,140** | **28,655** |
| Business/Industry/Occupational Health Office | 3,298 | 3,407 | 3,549 | 3,621 |
| Private Nursing Agency/Private Duty | 2,096 | 2,084 | 1,991 | 1,739 |
| Self-employed | 1,641 | 1,793 | 1,893 | 1,858 |
| Physician's Office/Family Practice Unit | 5,865 | 5,881 | 5,729 | 5,622 |
| Educational Institution | 5,329 | 5,007 | 4,926 | 5,023 |
| Association/Government | 3,484 | 3,581 | 3,755 | 3,889 |
| Other | 6,599 | 7,627 | 7,297 | 6,903 |
| **Not Stated** | **2,645** | **3,047** | **2,263** | **467** |
| **Canada** | **229,813** | **227,651** | **228,450** | **232,412** |

**Source:** Registered Nurses Database, CIHI

# Percent of Canadians Aged 12 or Older Who Reported Contact in Previous 12 Months With a Physician, Dentist, or Orthodontist, 1994/95, 1996/97, and 1998/99

| | Unadjusted Percentage Who Contacted Physician | | | Age-Adjusted Percentage Who Contacted Physician | | |
|---|---|---|---|---|---|---|
| | 1994/95 | 1996/97 | 1998/99 | 1994/95 | 1996/97 | 1998/99 |
| | % | | | % | | |
| **Both sexes** | | | | | | |
| Total | 80 | 80 | 81 | 80 | 80 | 81 |
| 12-14 | 75 | 75 | 71* | … | … | … |
| 15-24 | 77 | 76 | 77 | … | … | … |
| 25-44 | 79 | 77 | 79 | … | … | … |
| 45-64 | 80 | 82 | 83* | … | … | … |
| 65+ | 90 | 90 | 91 | … | … | … |
| **Males** | | | | | | |
| Total | 74 | 73 | 74 | 74 | 73 | 74 |
| 12-14 | 68 | 70 | 73 | … | … | … |
| 15-24 | 69 | 68 | 68 | … | … | … |
| 25-44 | 71 | 68 | 70 | … | … | … |
| 45-64 | 75 | 77 | 77 | … | … | … |
| 65+ | 90 | 89 | 89 | … | … | … |
| **Females** | | | | | | |
| Total | 86 | 87 | 87 | 86 | 87 | 87 |
| 12-14 | 84 | 79 | 68* | … | … | … |
| 15-24 | 85 | 85 | 87 | … | … | … |
| 25-44 | 86 | 87 | 88 | … | … | … |
| 45-64 | 85 | 87 | 88* | … | … | … |
| 65+ | 89 | 90 | 91* | … | … | … |
| **Province** | | | | | | |
| NF | 77 | 79 | 85* | 77 | 80 | 85 |
| PE | 83 | 80 | 87* | 83 | 80 | 86 |
| NS | 83 | 82 | 82 | 83 | 82 | 82 |
| NB | 79 | 80 | 80 | 79 | 80 | 80 |
| QC | 76 | 76 | 77 | 76 | 76 | 77 |
| ON | 83 | 82 | 83 | 83 | 82 | 83 |
| MB | 81 | 80 | 83 | 81 | 81 | 83 |
| SK | 80 | 80 | 83 | 80 | 79 | 83 |
| AB | 79 | 79 | 79 | 79 | 79 | 79 |
| BC | 81 | 82 | 80 | 81 | 82 | 80 |

| | Unadjusted Percentage Who Contacted Dentist or Orthodontist | | | Age-Adjusted Percentage Who Contacted Dentist or Orthodontist | | |
|---|---|---|---|---|---|---|
| | 1994/95 | 1996/97 | 1998/99 | 1994/95 | 1996/97 | 1998/99 |
| | % | | | % | | |
| **Both sexes** | | | | | | |
| Total | 56 | 58 | 60* | 56 | 58 | 60 |
| 12-14 | 78 | 81 | 84 | … | … | … |
| 15-24 | 62 | 64 | 65 | … | … | … |
| 25-44 | 59 | 62 | 62* | … | … | … |
| 45-64 | 52 | 56 | 59* | … | … | … |
| 65+ | 38 | 38 | 40 | … | … | … |
| **Males** | | | | | | |
| Total | 55 | 56 | 57 | 55 | 56 | 57 |
| 12-14 | 79 | 81 | 83 | … | … | … |
| 15-24 | 61 | 60 | 63 | … | … | … |
| 25-44 | 56 | 58 | 57 | … | … | … |
| 45-64 | 52 | 55 | 56* | … | … | … |
| 65+ | 41 | 36 | 42 | … | … | … |
| **Females** | | | | | | |
| Total | 57 | 61 | 62* | 57 | 61 | 62 |
| 12-14 | 77 | 80 | 85 | … | … | … |
| 15-24 | 62 | 67 | 67 | … | … | … |
| 25-44 | 63 | 66 | 67* | … | … | … |
| 45-64 | 52 | 58 | 62* | … | … | … |
| 65+ | 36 | 40 | 38 | … | … | … |
| **Province** | | | | | | |
| NF | 38 | 40 | 44* | 36 | 39 | 43 |
| PE | 55 | 57 | 57 | 54 | 57 | 56 |
| NS | 53 | 53 | 55 | 53 | 53 | 55 |
| NB | 49 | 49 | 51 | 49 | 49 | 52 |
| QC | 49 | 51 | 53 | 49 | 51 | 53 |
| ON | 63 | 66 | 66 | 63 | 66 | 66 |
| MB | 53 | 56 | 58 | 53 | 57 | 59 |
| SK | 43 | 45 | 49 | 43 | 46 | 49 |
| AB | 55 | 54 | 57 | 54 | 53 | 56 |
| BC | 59 | 62 | 63 | 59 | 62 | 63 |

**Source:** Adapted from Health Reports: How Healthy Are Canadians?, Statistics Canada, (1999). Based on 1994/95, 1996/97, and 1998/99 National Population Health Survey, cross-sectional sample, Health file.

**Notes:** At the time of the analysis, bootstrap programs were not available for comparisons of age-adjusted rates over time. Consequently, comparisons between 1994/95 and 1998/99 were based on unadjusted rates. Because there was very little difference between the unadjusted and adjusted rates, reliance on the comparison of unadjusted rates is unlikely to have led to incorrect inferences. Because of rounding, detail may not add to totals.
The Territories have been excluded.

These estimates are based on responses to a survey of a sample of the Canadian population. For more information, on the sampling frame, sample size, and sampling error, please see the technical information about the survey available on Statistics Canada's website.

… Not Applicable.
* Significantly different from 1994/95.

We welcome comments and suggestions on *Canada's Health Care Providers*, and on how to make future reports more useful and informative. Please complete this feedback sheet or email ideas to healthreports@cihi.ca. or fill out the form online.

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## Instructions

For each question, please put an "X" beside the most appropriate response. There are no right or wrong answers, we are only interested in your opinions. Our goal is to improve future reports. Individual responses will be kept confidential.

1. How did you obtain your copy of *Canada's Health Care Providers*?
   - ❑ It was mailed to me
   - ❑ From a colleague
   - ❑ Through the Internet
   - ❑ I ordered my own copy
   - ❑ Other, please specify _____

2. To what extent have you read through the report?
   - ❑ I have read through the entire report
   - ❑ I have read certain chapters and browsed through the entire report
   - ❑ I have browsed through the entire document

3. Please indicate how useful you found each of the following sections of the report by putting an "X" in the ***most appropriate*** category:

| | | | | |
|---|---|---|---|---|
| Who's Who in Health Care | ❑ Very useful | ❑ Somewhat useful | ❑ Not useful | ❑ Did not read |
| Becoming a Health Care Provider | ❑ Very useful | ❑ Somewhat useful | ❑ Not useful | ❑ Did not read |
| Planning for the Future: the Supply of Health Care Providers | ❑ Very useful | ❑ Somewhat useful | ❑ Not useful | ❑ Did not read |
| Teamwork in Health Care | ❑ Very useful | ❑ Somewhat useful | ❑ Not useful | ❑ Did not read |
| Working in Health Care | ❑ Very useful | ❑ Somewhat useful | ❑ Not useful | ❑ Did not read |
| The Health of Healthcare Workers | ❑ Very useful | ❑ Somewhat useful | ❑ Not useful | ❑ Did not read |
| Fast Facts | ❑ Very useful | ❑ Somewhat useful | ❑ Not useful | ❑ Did not read |

4. How satisfied are you with the following aspects of the report?

| | | | | | |
|---|---|---|---|---|---|
| a. | Clarity/readability | ❑ Excellent | ❑ Good | ❑ Fair | ❑ Poor |
| b. | Organization/format | ❑ Excellent | ❑ Good | ❑ Fair | ❑ Poor |
| c. | Use of figures | ❑ Excellent | ❑ Good | ❑ Fair | ❑ Poor |
| d. | Quality of analysis | ❑ Excellent | ❑ Good | ❑ Fair | ❑ Poor |
| e. | Level of detail presented | ❑ Too much | ❑ About right | | ❑ Too little |
| f. | Length of the report | ❑ Too long | ❑ About right | | ❑ Too short |

5. The overall goal of ***Canada's Health Care Providers*** is to serve as a consolidated reference about what we know and don't know about Canada's health care providers. It is intended to support and stimulate the many important health care policy discussions and public debates now underway across the country.

   How successful were we in meeting our overall goal?
   - ❑ Very successful
   - ❑ Successful
   - ❑ Somewhat Successful
   - ❑ Not at all Successful

6. Would it be worthwhile for CIHI to produce future reports on this topic?

❑ Yes ❑ No

7. How do you plan on using the information presented in this report?

8. How would you improve this report?

9. Do you have any suggestions for future reports?

## Reader Information

10. Where do you live?

❑ Newfoundland
❑ Nova Scotia
❑ New Brunswick
❑ Prince Edward Island
❑ Quebec
❑ Ontario
❑ Manitoba
❑ Saskatchewan
❑ Alberta
❑ British Columbia
❑ Northwest Territories
❑ Yukon
❑ Nunavut
❑ Outside of Canada (please specify country): _____

11. What is your main position or role?

❑ Health services manager or administrator
❑ Board member
❑ Health care provider
❑ Hospital staff
❑ Researcher
❑ Policy analyst
❑ Elected official
❑ Student
❑ Other, please specify _____

12. How/where did you hear about this report?

❑ Newspaper
❑ Radio
❑ Television
❑ CIHI website
❑ Link from another website
❑ List server/broadcast e-mail
❑ Trade magazine
❑ Newsletter
❑ Colleague
❑ Other, please specify _____

13. If you would like to participate in an e-mail survey about this report at a later date, please provide us with your contact information:

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e-mail address: _____

Organization: _____

*Thank you for your feedback.*