

Health Personnel Trends in Canada

1995 to 2004

H e a l t h P e r s o n n e l D a t a b a s e



Canadian Institute
for Health Information

Institut canadien
d'information sur la santé

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Note to the Reader

Before reading the profession-specific chapters, readers are encouraged to read the following information.

The HPDB publication contains information on 23 professions. Each profession is covered in an individual chapter of this report. The layout of the chapters is consistent and they use comparable terminology.

The reader is advised to consult the Methodological Notes for interpretation of the information in the chapters. In addition, the reader is encouraged to read the section below, which outlines key concepts and variables used consistently within the profession-specific chapters. This should complement the Methodological Notes section; it is not intended as a replacement.

Interpreting the Data: Key Concepts and Variables

The following information provides the basic concepts that define the data provided in this publication.

Data Year

Refers to data year. HPDB data reflect data as of December of the given year, unless otherwise noted by data providers.

Province/Territory

Unless otherwise noted, the province/territory in which health personnel are registered with an association or regulatory body.

Regulated and Unregulated Health Personnel

The definition of what constitutes a regulated or an unregulated health personnel group was adopted from information available at the Canadian Information Centre for International Credentials' (CICIC) Web site at www.cicic.ca.

During Phase I collection, data providers were asked to define the data being provided in terms of whether it was collected under one of two regulatory environments: regulated or unregulated. With the exception of physician, nursing and Statistics Canada survey data, all data providers were asked to provide data that reflected the definitions outlined in the table below.

Table 1. Regulated and Unregulated Personnel

| | Regulated | Unregulated |
|---|--|--|
| Definition | <p>A regulated health profession is one that is covered by provincial/territorial and/or federal legislation and governed by a professional organization or regulatory authority.</p> <p>The regulatory authority governing the profession has the authority to set entry requirements, license qualified applicants and ensure practice requirements are met and/or maintained.</p> <p>Licensure/registration with the regulatory authority is a condition of practice.</p> | <p>An unregulated health profession is one for which there is no legal requirement or restriction on practice with regard to licensure/registration.</p> <p>Registration with a provincial/territorial or national professional organization is voluntary and not a condition of practice.</p> |
| Type of Data Requested from Data Providers (and subsequently presented in this report, as applicable) | <p>If the health profession is subject to regulation in a specific jurisdiction, the following information was requested from the data provider</p> <p>TOTAL number of REGISTERED: All individuals who are registered/licensed with your organization. The count may include individuals in all registration categories (i.e. active, inactive, honorary, etc.).</p> <p>TOTAL number of REGISTERED, ACTIVE: All registered/licensed individuals who are legally able to work under the title of the specified health profession. Individuals may or may not be currently employed in the profession.</p> <p>TOTAL number of REGISTERED, ACTIVE-EMPLOYED: Personnel that are registered/licensed with your organization, and currently working in the specified health profession.</p> | <p>If the health profession is not subject to regulation within a specific jurisdiction, the following information was requested from the data provider:</p> <p>TOTAL number of REGISTERED: All individuals who are registered with the organization. The count may include individuals in all registration categories (i.e. active, inactive, honorary, etc.).</p> |



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The Health Human Resources department at CIHI appreciates the contributions and the continuous support of the following organizations and individuals, without whom this publication would not be possible:

- The registrars, executive directors and their teams from the provincial and territorial organizations who took time to prepare, submit and verify data for this publication. Without their effort, commitment and collaboration, a national health personnel database for Canada could not exist.
- The participating universities and colleges, as well as the Association of Canadian Medical Colleges (ACMC) for providing education data for this publication.
- The individuals from the national professional organizations who completed the Phase II survey on behalf of their professions and reviewed and provided invaluable feedback on the profession-specific sections of the publication.
- Statistics Canada for Census and Labour Force Survey data and methodological information.
- Health Canada for the table outlining the current regulatory environment for health personnel.

We also wish to extend our thanks and gratitude to all health personnel caring for and improving the lives of Canadians.

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Introduction

The Canadian Institute for Health Information (CIHI) is an independent, not-for-profit organization that plays a central role in the development of Canada's health information system. CIHI's mandate is to provide accurate and timely data and information to support sound health policy and effective management of the Canadian health system, and to promote public awareness of the factors affecting good health.

To meet this mandate, CIHI's core functions include the coordination and promotion of national health information standards and health indicators, the development and management of health databases and registries, the funding and facilitation of population health research and analysis, the coordination and development of education sessions and conferences and the production and dissemination of health information research and analysis.

The Health Human Resources team at CIHI is pleased to present *Health Personnel Trends in Canada, 1995–2004*. This publication presents the most recent information from the Health Personnel Database (HPDB) at CIHI.

Health Personnel Trends in Canada, 1995–2004 reflects an evolution in the products and services available from the Health Personnel Database at CIHI. The latest publication from the HPDB attempts to maintain continuity with previous editions while providing additional information to enhance the value and utility of the publication.

The focus of the publication continues to be the provision of aggregate, supply-based trend information, by province and territory and by year, for 23 selected health personnel groups. This is complemented, wherever possible, by including contextual information provided by a variety of sources, including professional associations, regulatory authorities, individual educational institutions and Statistics Canada.

Expanding on the standard tables and analysis familiar to the *Health Personnel Trends in Canada* series, the current publication includes (for selected health personnel groups):

- An examination of personnel trends, by profession, primarily using data from administrative sources from across Canada, which are further complemented by Census data and the Labour Force Survey, as applicable;
- Information on the regulatory environment by province or territory and profession;
- Census data on average age and gender for the health personnel groups, where available and relevant;
- An examination of the critical path for entering the health workforce, including proposed changes to education and/or training requirements; and
- Recommended reading (research completed or in progress and recommended by the professionals themselves) for health human resource planners.

The publication contains information on 23 health personnel groups in Canada:

| | | | |
|---|---|--|---|
| Audiologists (new this year) | ✓ | Occupational therapists | ✓ |
| Chiropractors | ✓ | Optometrists | ✓ |
| Dental hygienists | ✓ | Pharmacists | ✓ |
| Dentists | ✓ | Physicians | ✓ |
| Dietitians | ✓ | Physiotherapists | ✓ |
| Health information management professionals (formerly known as Health record professionals) | ✓ | Psychologists | ✓ |
| Licensed practical nurses | ✓ | Registered nurses | ✓ |
| Medical laboratory technologists | ✓ | Registered psychiatric nurses | ✓ |
| Medical physicists | ✓ | Respiratory therapists | ✓ |
| Medical radiation technologists | ✓ | Speech-language pathologists (new this year) | ✓ |
| Midwives | ✓ | Social workers | ✓ |
| Nurse practitioners (new this year) | ✓ | | |

The primary purpose of *Health Personnel Trends in Canada, 1995–2004* is to provide a baseline indication of changes in the number of health personnel (selected groups) over a 10-year period. The intent of this publication is not to reflect the entire health workforce in Canada. Due to limited data availability, various health personnel groups important to the health system and the health of Canadians are absent from this publication.

CIHI is constantly seeking to improve the comprehensiveness of the HPDB. Potential data and information providers with questions about inclusion in this publication should contact:

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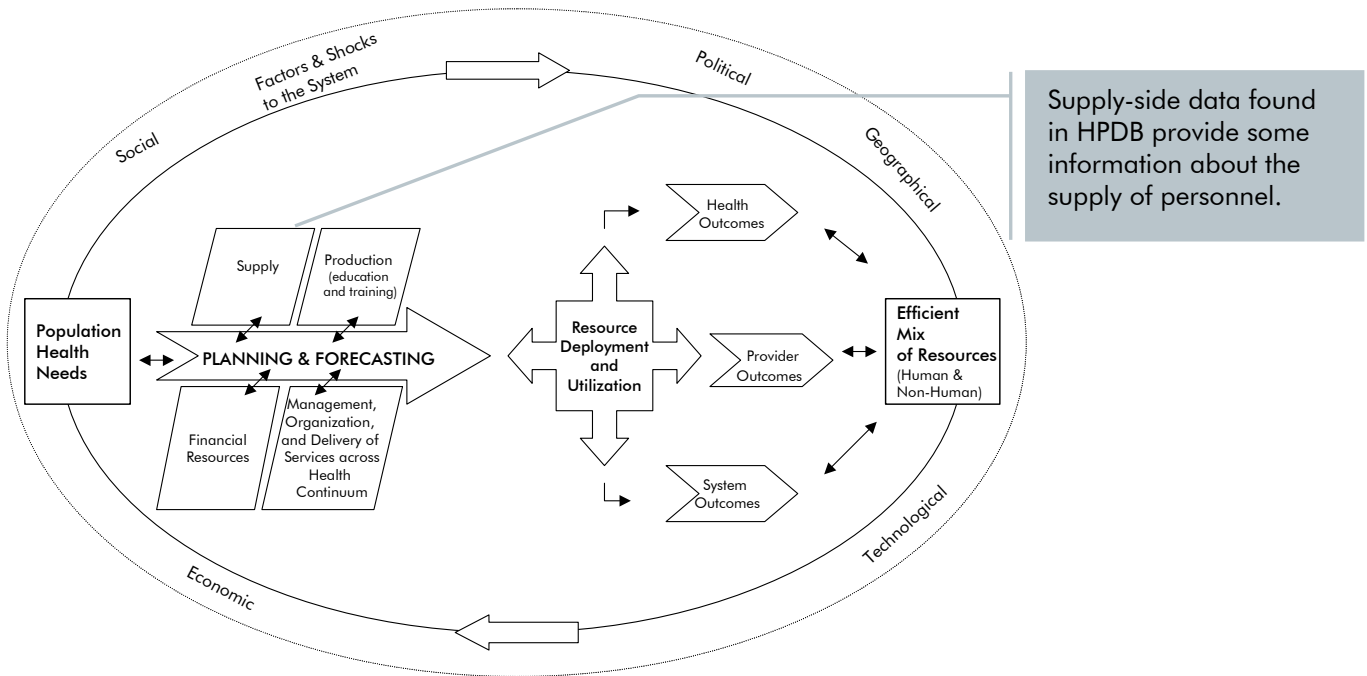


Health Human Resources Information— An Overview

Framework for Analysis of Health Human Resources

Many analytical frameworks and models have been developed in an effort to understand the complexity of inputs, outputs and interactions that define health human resources (HHR) in Canada.¹ These frameworks provide a basis for identifying the necessary data needed for effective analysis of the complex factors that affect the supply and demand of HHR. The framework developed by O’Brien-Pallas, Tomblin Murphy, Baumann and Birch is one such example (Figure 1).

Figure 1. Health Human Resources Conceptual Framework



O'Brien-Pallas, Tomblin Murphy, Baumann, Birch, 2001 (adapted from O'Brien-Pallas & Baumann, 1997)

1. For the purposes of this report, “health human resources” refers to the range of human resources (people) who work in the health system and care for the health of Canadians.

Many of the elements required to meet the information-based functions of managing HHR—monitoring and evaluation, planning and research—can be identified through the model. The model also clearly illustrates the interplay between supply-side factors (factors influencing the supply of health personnel) and the demand-side factors (factors influencing the demand for health personnel), all within the context of a complex environment. The supply-side data presented in *Health Personnel Trends in Canada, 1995–2004* provide a general indication of the trends in health personnel in Canada.

Sources of Health Personnel Supply-Side Data

In general terms, there are currently two potential sources of HHR data in Canada: administrative sources and survey sources. Often the initial purpose and mandate for collection of data, whether from administrative or survey sources, are not for health human resources management.

Administrative Sources

Data from administrative sources are collected as a function of some administrative process—collecting membership fees, communicating with members and issuing licences to qualified registrants are some examples of these processes. Administrative sources comprise primary-data collectors and secondary-data collectors, both of whom may collect data for commercial and/or non-commercial purposes.

Primary-data collectors represent organizations that collect data directly from health personnel, typically for administrative reasons. Examples of primary-data collectors include the Canadian College of Physicists in Medicine (data on medical physicists), the College of Physicians and Surgeons of British Columbia (data on physicians) and the University of Western Ontario (data on students and graduates).

Secondary-data collectors obtain data from primary data collection sources and use the data for a variety of purposes, both commercial and non-commercial. One example of a non-commercial secondary collector is the Canadian Institute for Health Information. CIHI obtains data from the Canadian College of Physicists in Medicine, for example, for inclusion in the HPDB. Other organizations, such as Scott's Directories, collect publicly available data from primary collectors (such as the College of Physicians and Surgeons of British Columbia) and use this information to publish the Canadian Medical Directory.

Survey Sources

Survey data are collected via ongoing or one-time survey instruments. Many entities survey health personnel for commercial and non-commercial purposes. In Canada, the most comprehensive surveying efforts are completed primarily through non-commercial interests, and research and statistical organizations. In general, surveys of health personnel are either directed at a specific personnel group (for example, physicians) or capture health personnel information as a by-product of surveying a subset of the general population. Only rarely has collecting the information needed for the management of HHR been a design feature of national surveys.

The most recognized, comprehensive national surveys that collect data on health personnel are the Labour Force Survey (LFS) and the Census, both from Statistics Canada. More details on both surveys are available in the Methodological Notes section. In general, neither survey was specifically designed to address the data and information needs of HHR management, and issues around the categorization of health professionals (LFS and Census) and sample-size issues (LFS) limit the usefulness of the data on health professionals that are available.



Despite these challenges, and in the absence of a comprehensive administrative HHR information system in Canada, these two surveys offer an important overview of the entire health workforce in Canada.

Examples of national health personnel (group-specific) surveys include the National Physician Survey (NPS) and the National Survey of the Work and Health of Nurses (NSWHN).

National Physician Survey

The National Physician Survey was first conducted in 2004. The overall goal of the NPS is to produce a comprehensive database documenting what physicians in Canada are doing in their practice of medicine, including the types of health care service they provide, their practice settings and the communities they serve. The survey also asks physicians about their planned practice changes (e.g. reduce/expand scope of practice, increase/decrease work hours). The NPS is an ongoing survey carried out by The College of Family Physicians of Canada, the Canadian Medical Association, and The Royal College of Physicians and Surgeons of Canada with support from the Canadian Institute for Health Information and Health Canada. For further information please visit the NPS Web site (www.nps-snm.ca).

National Survey on the Work and Health of Nurses

CIHI, in collaboration with Statistics Canada and Health Canada, is undertaking a National Survey of the Work and Health of Nurses (NSWHN). The survey will be administered to a sample of registered nurses (RNs), licensed practical nurses (LPNs) and registered psychiatric nurses (RPNs) from across Canada. The survey will help to identify relationships among selected health outcomes, the work environment and work–life experiences. The survey was administered via telephone by Statistics Canada in October 2005. For further information, please consult CIHI's Web site at www.cihi.ca/nswhn.


Types of Information Systems: Mature and Immature

The publication *Health Personnel Trends in Canada, 1995–2004* is based on data from the HPDB maintained at CIHI. The data maintained in the HPDB (counts of personnel, by province, for 23 health professional groups in Canada) are derived from administrative sources (professional associations and regulatory and licensing authorities).

Despite representing one of the only national sources of such information, better data are required for value-added analysis and modelling activities. For many health personnel groups, outside of physicians and nurses, national standards for data collection do not exist and there are data gaps in areas such as demographics, education and training and practice information. To address these gaps, CIHI is currently developing five new databases in the areas of occupational therapy, physiotherapy, pharmacy, medical laboratory technology, and medical radiation technology.

The HPDB is one example of a health information system maintained by CIHI. The system is considered an immature supply-based information system. Some of the characteristics associated with immature and mature systems are presented in Table 1. The table illustrates that the health human resources information systems at CIHI are at various stages of evolution.

Table 1. Characteristics of Immature and Mature Supply-Based Information Systems

| | Immature System | Mature System |
|--------------------------|--|---|
| Information Needs | Limited range of desired information needs are met. The range of variables available for analysis is limited, and the level of data aggregation limits flexibility of the system to address changing information needs (for example, anonymized individual record level data are not available). | A wide range of variables available for analysis designed to address clearly articulated information needs. Unit of analysis is sufficiently discrete to meet changing information needs (for example, anonymized individual record-level data are stored). |
| Standards | General lack of data standards (standardized, comparable data are unavailable or available under conditions of less rigorous verification and validation; information on quality of data is limited). | Clearly articulated data standards (standardized, comparable data are available based on documented system and data-submission specifications). Rigorous editing, verification/validation routines and elaborate data-quality evaluations are possible. |
| Analytical Outputs | Only simplistic outputs possible. Basic descriptive (often referred to as “elevator statistics”—numbers went up, numbers went down) analysis with very little value-added information. | Advanced analytical activities such as trending analysis, forecasting, and sophisticated value-added research are possible. |
| Integration | Limited integration or linkage-enhancement opportunities (functionally impossible to link to other systems to enhance value of information). | Integration/linkage with other existing systems in order to enhance the information available (quantity and/or quality) is possible. |
| Technical Infrastructure | Simple architecture (paper files or “flat” electronic files; no relational database). | Relational databases are the norm. |
| CIHI Example(s) | <p>Health Personnel Database (HPDB). Health Personnel Trends in Canada series</p> <p>The limitations of use attached to the health personnel data in this publication, in particular for groups outside of physicians and nurses, reinforces the need for future work in health human resources information development in Canada.</p> | <p>National Physician Database (NPDB); Scott’s Medical Database (SMDB); Regulated Nursing Databases.</p> <p>Advanced, policy-relevant outputs are possible, including forecasting analyses (for example, <i>Bringing the Future into Focus: Projecting RN Retirement in Canada</i>) and in-depth examinations of the workforce implications of policy decisions (for example, <i>From Perceived Surplus to Perceived Shortage: What Happened to Canada’s Physician Workforce in the 1990s?</i>).</p>  <p>Visit www.cihi.ca.</p> |



Strengthening the Information Base for Health Human Resources Planning

“Health information systems are, and will be, complex and difficult to design and implement. Their development can only come in an evolutionary mode, with incremental changes as opportunities or pressures can be exploited for progress.”²

There is currently very little standardized national data on health human resources (HHR) in Canada, except for physicians, registered nurses, licensed practical nurses and registered psychiatric nurses. For most health personnel groups, outside of physicians and nurses, national standards for data collection do not exist and there are significant data gaps.

While general counts, population ratios and limited demographic, education and expenditure information are of value, they only provide part of the picture. HHR management requires the consideration of a multiplicity of different factors, such as information on the activity levels of different health professionals and additional demographic and practice-pattern information.

For many of the health personnel groups included in this publication, this information does not exist or does not exist in a format that is readily accessible and comparable across Canada. Although national minimum data sets do exist for regulated nurses and physicians, this is not the case for many of the professions in this publication.

The good news is that in recent years a great deal of attention has been focused on enhancing HHR management information. Various provincial and territorial ministries of health are engaged in the development of provincial and territorial registries or HHR databases. These systems are leading to the development of data standards for select health professions within those provinces and territories, and to an improved information base.

CIHI has always maintained a strong focus on health human resources data development, and is actively engaged in knowledge-sharing and collaboratively working with stakeholders on related initiatives to ensure a consistent and comparable approach to data development wherever possible.

In addition to enhancing existing health human resources databases, CIHI has undertaken two initiatives specifically aimed at strengthening the evidence base for HHR management, which are described in greater detail below.

Guidance Document for the Development of Data Sets for HHR Management

In 2004, CIHI undertook an initiative to identify national, priority information needs for HHR management. The initiative comprised reviewing existing literature, conducting focused workshops with key stakeholders and engaging stakeholders in an open consultation process. The results of this initiative are outlined in *The Guidance Document for the Development of Data Sets to Support Health Human Resources Management in Canada, February 2005* (the report can be found at www.cihi.ca).

The Guidance document outlines seven priority information needs of supply-based HHR management in Canada: demographics, education/training, geographical distribution, migration, non migration–related attrition, employment/practice characteristics and productivity.

2. Martin B. Wilk, Chairman, National Health Information Council. Excerpt from *Health Information for Canada*. (1991). Report of the National Task Force on Health Information.

Priority national indicators and associated data elements for these seven information needs are outlined in the document.

The findings in the report represent a critical first step and starting point for the development of data sets to support HHR management efforts. The document is intended to serve as a tool for individuals and organizations across Canada as they begin to develop or enhance information systems to support HHR management. Readers are strongly encouraged to consult this document.

Health Human Resources Databases Development Project

Another initiative CIHI is engaged in to strengthen the evidence base of HHR management is the Health Human Resources Databases Development Project (HHR DDP).

The HHR DDP will help to address existing information gaps by developing new national, supply-based databases and reporting systems for five regulated health professions: occupational therapy, pharmacy, physiotherapy, medical radiation technology and medical laboratory technology. Currently information for these five professions is captured within the HPDB; however, with the development of the new databases, more detailed information will be available for these five professions.

The project is being funded by Health Canada, and includes phased development over a five-year period from 2004 to 2009. CIHI will be developing and maintaining the five new national HHR databases. Success of the project is contingent on the support and commitment of other key stakeholders, which include, but are not limited to, national professional associations and regulatory bodies, provincial and territorial professional associations and regulatory bodies, provincial and territorial ministries of health and Health Canada. CIHI is working in partnership with these key stakeholders to strengthen the evidence base on which HHR management is undertaken.

The HHR DDP will result in the creation of five new databases to support HHR monitoring and evaluation, planning, research and policy activities by providing a new source of timely, quality information. For more information on the HHR DDP, please write to hhrddp@cihi.ca.

Future Directions

CIHI is committed to strengthening the evidence base for HHR management information. The Guidance document and the HHR DDP are two initiatives that demonstrate CIHI's commitment. Readers are encouraged to keep up to date on CIHI initiatives by consulting the Web site at www.cihi.ca. If you have any questions, or require further information, please direct queries to:

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Web site: www.cihi.ca



Health Personnel in Canada—An Overview

Regulated and Unregulated Health Personnel

Health personnel in Canada can be categorized based on whether or not their activities are subject to legislation or regulation (that is, regulated and unregulated health personnel). This distinction has significant implications in terms of health personnel data presented in this publication. The regulatory framework in Canada is complex, with considerable variation between provinces and territories and even within the same health personnel group. Readers interested in a summary of regulation related to health personnel in Canada are encouraged to obtain a copy of the publication *Canada's Health Care Providers* from www.cihi.ca, and to visit the Canadian Information Centre for International Credentials' Web site at www.cicic.ca.



Visit www.cihi.ca for more information.

In general, a regulated health occupation is one that is controlled by provincial/territorial or federal legislation and governed by a professional organization or regulatory authority. Provincial/territorial or federal legislation empowers a specific organization (such as the College of Physicians and Surgeons of British Columbia) with the authority to set entry requirements and standards of practice; to assess applicants' qualifications and credentials; to certify, register or license qualified applicants; and to discipline licensees.³ From the perspective of collecting data on health personnel, regulated health occupations present an opportunity for more complete data because employment in a particular health occupation is often conditional on registration or licensure with a specific primary data collector. Of the regulated health care provider groups, there is more information available on physicians and the regulated nursing professions than on any other health provider group in Canada.

For unregulated health personnel (formal health care providers and personnel not subject to any provincial or territorial regulations) registration may occur on a voluntary basis or be required by specific employers. However, no legislated requirement exists for registration as a condition of practice. From the perspective of collecting data on health personnel, unregulated health occupations present immense challenges. Any administrative sources of data on unregulated health occupations that do exist may significantly undercount the number of health personnel. If registration is not a condition of practice, health personnel may not register. For most unregulated health occupations, the only current sources of data are from broad-based survey instruments such as the Labour Force Survey and the Census.

The challenges associated with collecting data on regulated health personnel are considerable, evidenced by the fact that only a handful of health personnel groups are currently able to collect standardized data that are comparable across Canada. For unregulated personnel the task is impossible and data simply do not exist because regulatory authorities do not exist to maintain membership lists. Without standardized, comparable data, the utility of indicators such as counts of health professionals or professionals-to-population ratios are limited and subject to misinterpretation.

3. Adopted from the Canadian Information Centre for International Credentials' Web site. Cited January 31, 2006, from <http://www.cicic.ca/factsheets/factsheet2en.stm#2>.

Legislative/Regulatory Environment for Health Personnel in Canada

Table 1 illustrates the results of an interprovincial survey of health professions regulated by legislation (conducted by Health Canada's Health Care Strategies and Policy Directorate).

Table 1. Interprovincial Survey of Health Professions Regulated by Legislation

| Health Profession | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|---|---------------------|-----------------|-----------------|-----------------|------|-----------------|-----------------|-----------------|------------------|------------------|----------------|--------|------|
| Chiropractors | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | | |
| Dentists | Y | Y | Y | Y ^{DA} | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Dental Hygienists | Y ^{DA} | Y ^{DA} | Y ^{DA} | Y | Y | Y | Y ^{DA} | Y | Y | Y | Y | Y | Y |
| Dietitians and Nutritionists | Y ^D | Y ^D | Y ^D | Y | Y | Y ^D | Y ^D | Y ^D | Y | Y | | | |
| Licensed Practical Nurses/Registered Practical Nurses | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Medical Laboratory Technologists | | | Y | Y | Y | Y | Y ² | Y | Y | | | | |
| Medical Practitioners/Physicians | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Medical Radiation Technologists | Y ^{NSR/NH} | Y | Y | Y | Y | Y | | Y | Y ^{NPF} | | | | |
| Midwives | | | | | Y | Y | Y | Y ² | Y ^{NSR} | Y | | Y | |
| Occupational Therapists | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | | | |
| Optometrists | Y ² | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Pharmacists | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Physical Therapists/Physiotherapists | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y ² | | |
| Psychiatric Nurses | | | | | | | Y | Y | Y | Y | | | |
| Psychologists | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | | Y | Y |
| Registered Nurses | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Respiratory Therapists | | | | | Y | Y | Y | | Y | | | | |
| Social Workers | Y | Y | Y ^{NH} | Y | Y | Y ^{NH} | | Y ^{NH} | Y | Y ^{NSR} | | | |
| Speech Language Pathologists and Audiologists | | | | Y | Y | Y | Y | Y | Y | Y | | | |

Source: Health Canada, Health Care Strategies and Policy Directorate.

Notes

The letter "Y" in a cell indicates that legislation is present; the letter X indicates that legislation is under review, being replaced or under redevelopment. Superscript designations identify any variation. A blank cell indicates that no legislation covering the specific health profession exists within an individual jurisdiction.

Y Profession regulated.

Y² Act passed but not proclaimed.

Y^{DA} Regulated under a dental act.

Y^{NSR} Regulated directly by government.

Y^{NH} Regulated under legislation not administered by a health ministry or department.

Y^D Refers to dietitians and not nutritionists

Y^{NPF} Inclusion of electroneurophysiologists under development.

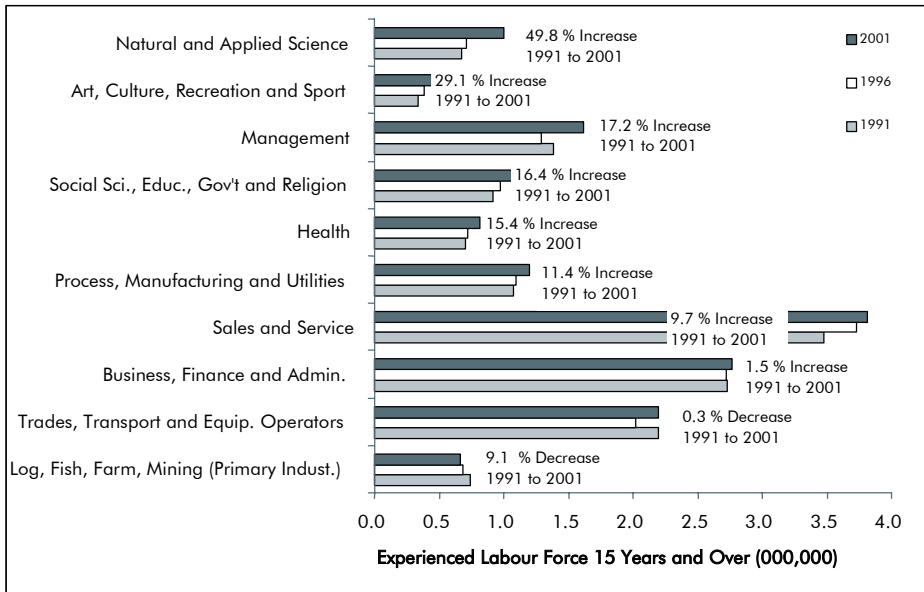
For health professional groups across Canada, many legislative and regulatory changes occurred, or began to occur, during the 10-year period from 1995 to 2004. For example, prior to 1993, the Association of Medical Laboratory Technologists of Ontario maintained a register of medical laboratory technologists in Ontario; however, there was no requirement for medical laboratory technologists to be registered. In December 1993, the *Medical Laboratory Technology Act* (amended by O. Reg 542/95) was established with the requirement that all medical laboratory technologists practising in Ontario be registered with the College of Medical Laboratory Technologists of Ontario. Reflecting the important impact that the regulatory status of health personnel can have on data, the province and year of initial legislation are provided for all personnel groups included in this publication (please see personnel-specific section of publication for details).



Number of Health Personnel in Canada Labour Force by Occupation Group

According to the Census, in 2001, approximately 5.0% of the experienced labour force 15 years of age and over indicated an occupation in health (see Figure 3). This represents over 800,000 Canadians in the health labour force. Census estimates indicate that the overall experienced labour force in Canada (employed or unemployed who worked for pay or in self-employment) increased 9.5%, from approximately 14.2 million in 1991 to approximately 15.6 million people in 2001. The growth rate in health occupations surpassed the rate of growth in the overall experienced labour force, increasing 15.4% between 1991 and 2001.

Figure 1. Experienced Labour Force 15 Years of Age and Over by Occupation and Percent Change (Increase/Decrease) Between 1991 and 2001, Canada, Selected Census Years (1991, 1996, 2001)



Source: Adapted from Statistics Canada's Web Site, cited October 15, 2003, from <www.statcan.ca/english/Pgdb/labor44.htm>.

Note

Experienced labour force: Persons who, during the week (Sunday to Saturday) prior to Census Day (May 15, 2001), were employed or unemployed, who worked for pay or in self-employment since January 1, 2000.
Occupation (historical): Refers to the kind of work persons were doing during the reference week, as determined by their kind of work and the description of the main activities in their job. (Individuals with multiple employment report job at which they worked the most hours.)

Number of Health Personnel

The total number of health personnel in Canada is a difficult number to determine precisely. The 23 health occupations included in *Health Personnel Trends in Canada, 1995–2004* represent some, but by no means all, of the health professions regulated to practise in Canada. In addition, estimating the number of health personnel in Canada based on only regulated health professions excludes unregulated health professionals and informal caregivers.

Figure 2 outlines estimates of the total number of health personnel in Canada from three distinct data sources: the HPDB, the Labour Force Survey (LFS) and the Census.

A common comparable (CC) figure is generated across the three data sets. The common comparable data include the eighteen health professions that are common across the three sources. More detailed information is presented in appendices D and E.

The data indicate that:

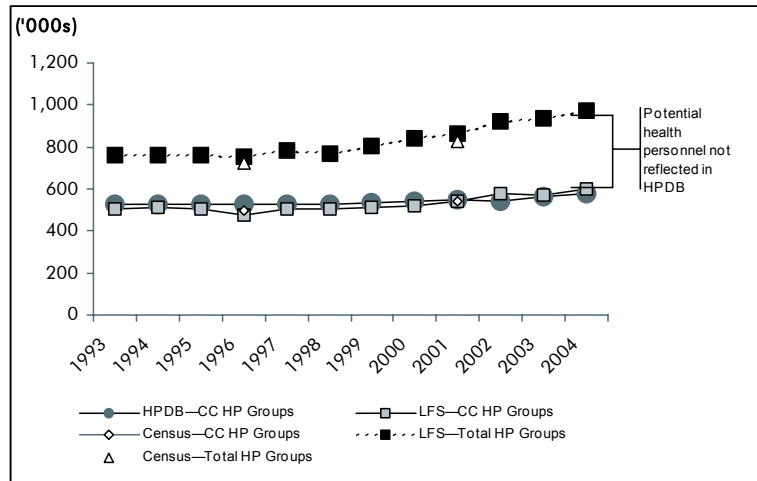
- At a macro level, the CC figure for all three sources is very similar;
- HPDB data increased 5.0%, from 523,649 in 1996 to 549,763 in 2001;
- LFS estimates increased 12.7%, from 479,100 in 1996 to 540,000 in 2001; and
- Census estimates increased 8.5%, from 500,090 in 1996 to 542,370 in 2001.

For additional information on LFS, Census and HPDB comparisons please consult appendices D to F and the Methodological Notes section of this report.

Distribution by Health Occupation

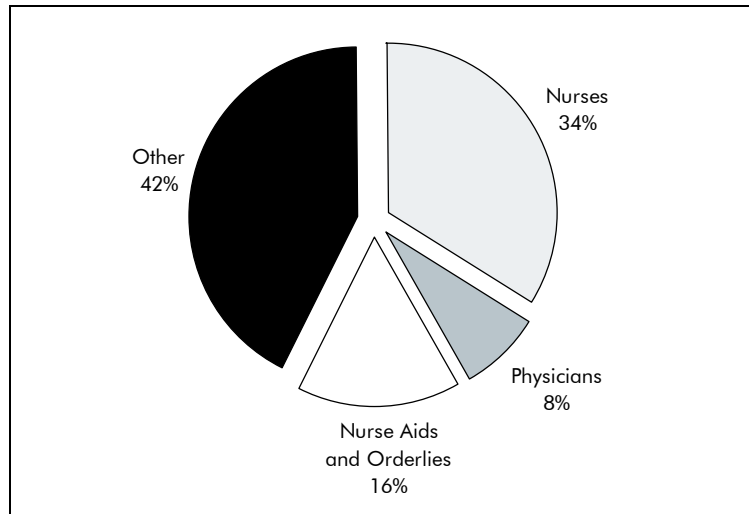
The distribution of personnel by health occupation, based on the 2001 Census, is represented in Figure 3. The regulated nursing professions represent over one third of all health personnel in Canada. The occupations found in the categories “Other” and “Nurses Aids and Orderlies” include both regulated and unregulated components of the health labour force.

Figure 2. Number of Health Personnel



Sources: HPDB/CIHI, LFS/Statistics Canada, Census/Statistics Canada.

Figure 3. Distribution of Personnel by Health Occupation



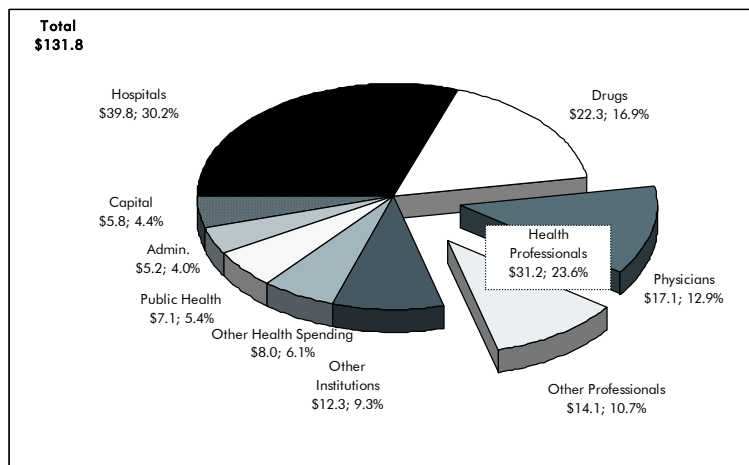
Source: Census (2001), Statistics Canada.

Health Expenditures on Health Personnel in Canada⁴

In 2004, CIHI estimated that total health care spending in Canada amounted to \$131.8 billion or \$4,098 per person or 10.1% of Canada's gross domestic product. From 1975 to 2004, health care spending increased by over \$118 billion. Much of this growth is explained by inflation and population growth as well as real-spending growth in the public and private sectors.

Health expenditure in the National Health Expenditure (NHEX) database is grouped into several major categories: hospitals, other institutions, physicians, other professionals, drugs,⁵ capital, public health, administration and other health spending. In 2004, the largest category of spending was hospitals at \$39.8 billion or 30.2% of total health spending, followed by drugs at \$22.3 billion or 16.9%. The third- and fourth-largest categories of spending were physician services at \$17.1 billion or 12.9% and other professionals' services at \$14.1 billion or 10.7%, respectively (see Figure 7).

Figure 4. Total Health Expenditure by Use of Funds, Canada, 2004^f (\$' billions)



f: forecast

Source: NHEX/CIHI.

In 1990, physician services and other professionals combined accounted for \$15.7 billion or 25.8% of total health care spending. By 2004, expenditures on health professionals had almost doubled to \$31.2 billion. However, their share of total health care spending decreased slightly to 23.6%.

The physician category does not include the remuneration of physicians on the payrolls of hospitals or public-sector health agencies. These are included in the appropriate category; that is, hospitals or other health spending, within the NHEX database. In a special analytical study conducted by CIHI and presented in the 2002 *National Health Expenditure Trends* annual report, it was estimated that physician and nursing compensation and benefits accounted for approximately 70% of total hospital expenditure in 1999–2000.

Physician services and other professionals' expenditures also differ considerably in terms of sources of finance. Physician services are primarily financed by the public sector as determined by the *Canada Health Act* and provincial insurance plans. Other professionals' expenditures are primarily financed by the private sector (private health insurers



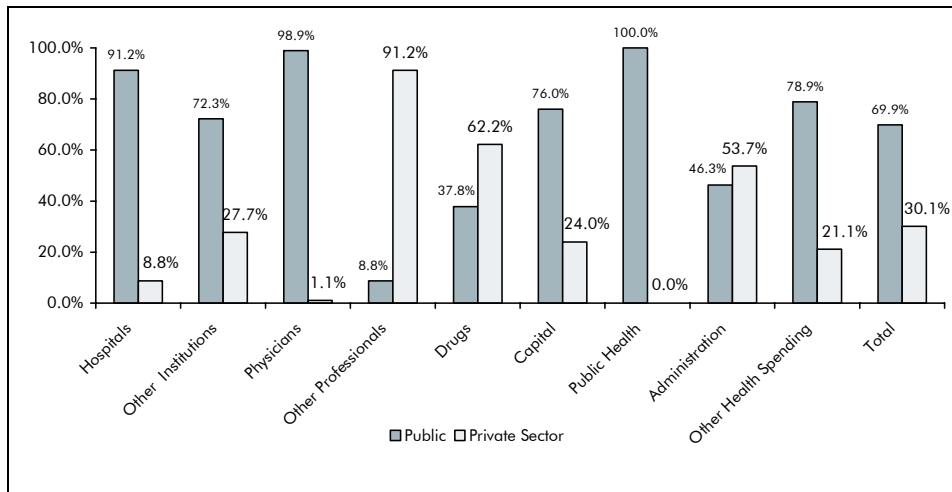
Visit www.cihi.ca for more information.

4. Expenditure data are obtained from the CIHI publication, *National Health Expenditures Trends, 1975–2004*. For the most recent information on health expenditure trends in Canada, please visit <<http://www.cihi.ca/nhex>>.

5. The drug category does not include drugs dispensed in hospitals and generally in other institutions. These are included in the categories of hospitals and other institutions.

and households). In 2004, governments and government agencies financed more than 98% of physician services; whereas the private sector funded over 91% of other professionals' expenditures.

Figure 5. Total Health Expenditure, by Use of Funds, Canada, 2004^f, Public and Private Shares

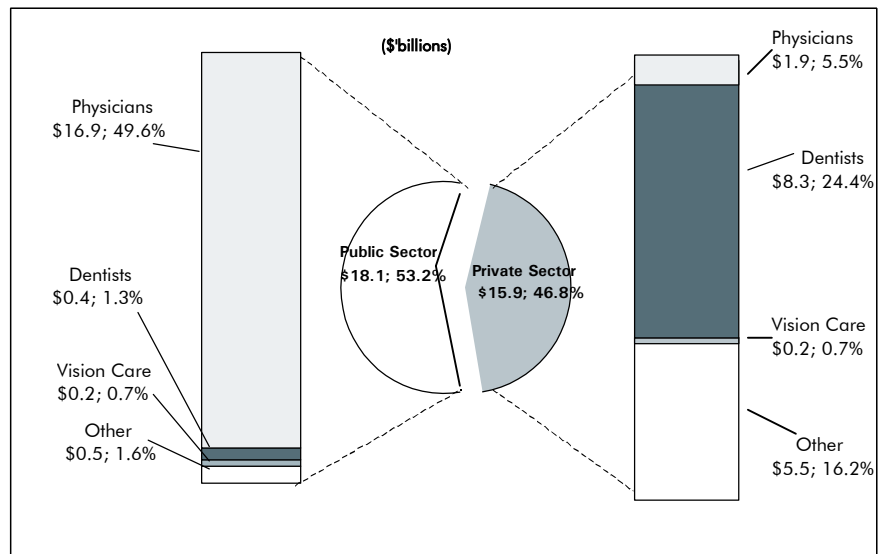


f: forecast

Source: NHEX/CIHI.

Other professional services, which consist of dentists, optometrists, physiotherapists, chiropractors, etc., have primarily been financed by private sources. Although some provincial governments insure some services, they are usually targeted to select populations within each jurisdiction and thus do not account for a large component of public-sector health spending. The private sector includes individual and group health-insurance plans as well as out-of-pocket spending (see Figure 9).

Figure 6. Health Professionals Expenditure by Source of Finance and Type, Canada, 2004^f



f: forecast

Source: NHEX/CIHI.



The NHEX database is a macro-level health-spending database that captures spending from five sectors of finance: provincial, federal and municipal governments, provincial and territorial workers' compensation boards and the private sector. The database also tracks spending for up to 42 uses of funds or categories within each source of finance. Comprehensive health expenditure estimates are released in the annual series *National Health Expenditure Trends*.

For more information on health expenditures please visit www.cihi.ca or contact the NHEX section by telephone at (613) 241-7860 or by email at nhex@cihi.ca.

Footnotes and Symbols

The footnotes were added chronologically and therefore follow the sequence of the years, from left to right. Where the footnote is beside the province or territory or institutional name, the information applies to all years in that row.

Some of the more commonly used symbols are provided below:

- .. Information not available.
- * Number in table suppressed in accordance with CIHI privacy policy; value is from 1 to 4.
- ** Number in table suppressed to ensure confidentiality; value is 5 or greater.
- Blank cells indicate that information does not exist for that particular cell.
- † Indicates the presence of voluntary data or estimated data.
- na Not applicable.
- ^ NWT and Nunavut data are combined.

Please consult the Methodological Notes section for a thorough understanding of the data presented in this report.



Health Personnel Groups



Audiologists

Please note that this is the first year that Health Personnel Trends in Canada is reporting information on audiologists.

Definition

An audiologist is a professional who identifies, diagnoses (restricted in some provinces), treats, and manages individuals with peripheral and central hearing loss or balance problems. Audiologists determine appropriate patient treatment of hearing and balance problems by combining a complete history with a variety of specialized auditory and vestibular assessments. Based upon the evaluation, the audiologist presents, and may implement, a variety of treatment options to patients with hearing impairment or balance problems. Some audiologists dispense and fit hearing aids as part of a comprehensive aural rehabilitative program. Audiology services are integral to a number of comprehensive interdisciplinary assessment/treatment programs. Audiologists are also involved in prevention and research for hearing disorders.

Responsibilities/Activities

The following is an overview of the broad range of services provided by audiologists to all age groups:

- Perform comprehensive evaluation of peripheral and central auditory function using behavioural, electroacoustic and electrophysiologic measures allowing them to accurately identify the presence, configuration, degree and nature of auditory disorders (including auditory processing disorders).
- Cochlear implant assessment, mapping and rehabilitation.
- Determine the most effective treatment/management plan based on the test results obtained.
- Prescribe, fit and dispense a variety of assistive listening devices including hearing aids, cochlear implants, sensory aids, alerting devices and captioning devices.
- Provide counselling and aural rehabilitation to hearing-impaired individuals and their families to maximize the benefits of amplification and sensory devices including cochlear implants.
- Develop, promote and manage newborn hearing screening programs.

- Provide audiologic assessment and intervention for babies identified through newborn hearing screening.
- Screen for speech and language development for the purpose of hearing evaluation and/or the identification of individuals with other communication disorders that may require assessment and/or treatment.
- Collaborate with other professionals including speech-language pathologists, physicians, nurses, teachers, psychologists, occupational therapists and physiotherapists.
- Appropriately refer patients in need of medical consultation.
- Provide education and supervision of students and professionals.
- Participate in research and provide university instruction.

Practice Setting

Audiologists work in a variety of health and education settings, including but not limited to: hospitals, public health units, community health centres, schools, private practice, industrial settings, hearing-aid companies, professional associations, universities and nursing homes.

Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.



Entering the Profession

Education and/or Training

The table and figure below outline the education and/or training requirements necessary to enter practice as an audiologist in Canada.

- Five to seven years of post-secondary education are required. The entry to practice requirement in Canada is a Masters degree or equivalent.



| Typical Length of Program | Province of Education | Education and/or Training |
|---------------------------|--|---|
| 5-7* | Nova Scotia Quebec Ontario British Columbia | Masters degree** or equivalent (including supervised clinical practicum). |

* Three-to-four-year undergraduate degree as a prerequisite.

** Two to three years. The number of years is dependent on the program; there are five university audiology programs in Canada.

Changes to Education and/or Training Requirements**

- Discussions to move the entry-to-practise in Canada to a clinical doctorate in audiology have taken place, although a decision has not been reached at this time. However, this shift has taken place with national professional associations in the United States.

Possible Areas of Certified Specialization**

- Currently there are no areas of specialization in audiology. Some professionals may choose to work with one specific clientele (specific age group, specific service, etc.), but there are no formal programs that provide specialization.

Examination Requirements**

- In the six provinces that have regulatory bodies, there are no mandatory exam requirements; audiologists must have a licence or be registered to practise.
- In the other provinces/territories, where there are no regulatory bodies, most employers require membership in the provincial/territorial association and/or the Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA). In addition to membership,

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Association of Speech-Language Pathologists and Audiologists (see Appendix B for the survey tool).

CASLPA offers a certification designation, and as part of the certification, members must successfully complete a national exam. Please note that this designation through CASLPA is not a mandatory requirement for membership/licensing/registration by any of the provincial regulatory bodies or provincial/territorial professional associations; it is a voluntary certification designation.

Graduate Trends

As indicated earlier, this is the first year Health Personnel Trends is reporting graduate information for audiologists. Currently there are five audiology programs in Canada. Information being reported includes data for 2003 and 2004. Data for 2003 will form the foundation (start-date) for future historical trending analysis of graduates. The number of graduates of audiology programs for 2003 and 2004 is outlined in Table Audi-1. The table indicates the following:

- From 2003 to 2004, the number of graduates increased by 34%.
- With the exception of the University of Montreal, all audiology programs experienced an increase in the number of graduates for this time period.
- The University of Western Ontario experienced the largest increase in the number of graduates, from 16 graduates to 27.

Table Audi-1. Total Number of Graduates From Audiology Programs by School, Province, Canada, 2003–2004*

| School | 2003 | 2004 |
|---|-----------|-----------|
| N.S. | | |
| Dalhousie University | 6 | 7 |
| Que. | | |
| Université de Montréal | 16 | 15 |
| Ont. | | |
| University of Ottawa | 4 | 7 |
| University of Western Ontario | 16 | 27 |
| B.C. | | |
| University of British Columbia ¹ | 22 | 30 |
| Canada | 64 | 86 |

Source: HPDB/CIHI.

Notes

* Information is unavailable prior to 2003.

1. University of British Columbia: includes graduates from the combined audiology and speech sciences program.



Workforce

Primary Data Source: The primary sources of audiologist data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) are associations (in which membership is voluntary) and regulatory/licensing authorities (in which membership is a condition of practice).

Regulatory Environment

The table below indicates the first year in which it became mandatory for audiologists to register with a provincial/territorial regulatory authority as a condition of practice.

- Currently, six provinces require registration with a regulatory body as a condition of practice: New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta.

| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|------|------|------|------|-------|-------|------|------|--------|------|
| First Year of Regulation | NR | NR | NR | 1987 | 1973 | 1994 | 1961 | 1992 | 2002 | NR | NR | NR | .. |

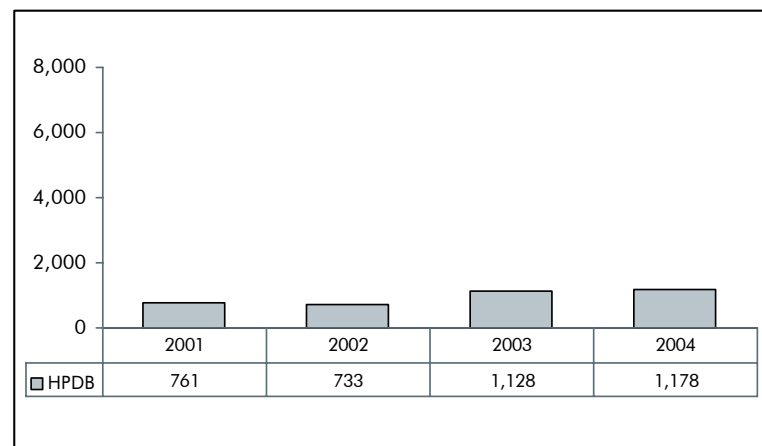
NR = Not regulated.

.. Information not available.

Supply Trends

- Please note that this is the first year that Health Personnel Trends in Canada is reporting information on audiologists.
- “Registered” in this instance refers to registered or licensed audiologists in regulated provinces and members of professional associations in unregulated provinces/territories.
- Please note the information below should be viewed with some caution as the regulatory environment has experienced some changes in recent years (regulation in Alberta in 2002).
- In addition, for the years 2001 and 2002, not all provinces (Saskatchewan, Alberta, Nova Scotia and B.C.), provided information which could account for the noticeably lower numbers of audiologists for 2001 and 2002.
- As shown in Figure Audi-1, the number of registered audiologists in Canada has been fluctuating from a low of 733 in 2002 to a high of 1,178 in 2004.

Figure Audi-1. Number of Audiologists in Canada, 2001 to 2004



Source: HPDB/CIHI.

- The distribution of registered audiologists by province/territory from 2001 to 2004 is outlined in Table Audi-2. The table indicates that in 2004, 39.4% of all audiologists in Canada were registered in Ontario.

Table Audi-2. Number of Registered Audiologists* by Province/Territory of Registration, Canada, 2001–2004

| | 2001 | 2002 | 2003 | 2004 |
|---------------------------|-----------------|------------|------------------|------------------|
| N.L. ^{4,†} | 19 | 17 | 19 | 17 |
| P.E.I. ^{9,†} | 3 | 3 | 3 | 4 |
| N.S. ³ | 50 [†] | .. | 51 [†] | 54 [†] |
| N.B. | 41 | 39 | 43 | 49 |
| Que. ⁸ | 197 | 203 | 208 | 223 |
| Ont. | 406 | 426 | 462 | 464 |
| Man. ⁵ | 43 | 43 | 43 | 51 |
| Sask. | .. | .. | 33 | 35 |
| Alta. ⁷ | .. | .. | 115 | 124 |
| B.C. ¹ | .. | .. | 148 [†] | 154 [†] |
| Y.T. ^{2,†} | 1 | 1 | 1 | 1 |
| N.W.T. ^{6,†} | 1 | 1 | 2 | 2 |
| Nun. | .. | .. | .. | .. |
| Canada[†] | 761 | 733 | 1,128 | 1,178 |

Source: HPDB/CIHI.

Notes

* This data table includes both regulated (membership with a specific data provider is required as a condition of practice) and voluntary membership data (registration with the data provider is not a condition of practice); data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).

† Indicates the presence of voluntary membership data. See additional notes below.

As of 2005, audiologists are regulated in six provinces: New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta.

.. Information not available.

1. British Columbia: 2003 data as of July 1, 2003; 2004 data as of June 29, 2004 (39 audiologists did not indicate employment status; therefore, they are not included in numbers).

2. Yukon: 2003 data from the Yukon Speech Language Pathology and Audiology Association. Yukon audiologists' data as of May 14, 2004.

3. Nova Scotia: 2003 data as of May 21, 2004; 2004 data as of May 17, 2005.

4. Newfoundland and Labrador: 2003 data as of November 15, 2003; 2004 data as of May 17, 2005.

5. Manitoba: 2003 data as of October 23, 2003; 2004 data as of November 10, 2004.

6. Northwest Territories: data as of October 31 of the given year.

7. Alberta: 2004 data as of October 31, 2004.

8. Quebec: data as of March 31 of the given year.

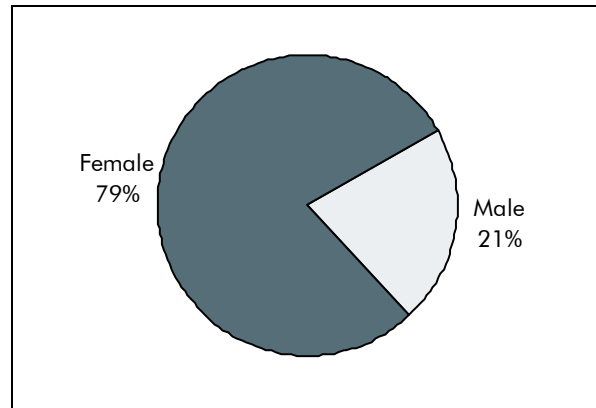
9. Prince Edward Island: 2003 data as of May 7, 2004; 2004 data as of May 17, 2005.



What Else Do We Know?

- In 2003, the HPDB initiated collection of gender data. Analysis of the active registered data for audiologists for 2004 identified that the percentage of female audiologists was 79% (Source: HPDB, CIHI).
- The average age of speech-language pathologists and audiologists in Canada is 39 years. Female speech-language pathologists and audiologists tend to be slightly younger than their male colleagues (38 and 42 years, respectively) (Source: 2001 Census Data, Statistics Canada). Please note that these data include information for both audiologists and speech-language pathologists. For more details on average age and gender refer to Appendix F.

Figure Audi-2. Audiologists by Gender, Canada, 2004



Source: HPDB/CIHI.

Note

This figure does not include Manitoba and Alberta; gender information is not available.

What's Happening?

Listed below are references to key research documents relating to audiologists that are recommended** reading for health human resource planners.

Research Reports

1. *CASLPA 2003 Survey of University Speech-Language Pathology and Audiology Programs*. CASLPA, 2003, available from www.caslpa.ca
2. *CASLPA's 2004 Guidelines for Supportive Personnel Working with Audiologists*. Available from www.caslpa.ca
3. *CASLPA's 2004 Position Paper on the Professional Doctorate Degree in Audiology*. Available from www.caslpa.ca
4. *Commentaires relatifs à l'étude du MÉQ visant à établir les besoins additionnels de diplômés universitaires en orthophonie et en audiologie*. OOAQ, 1996, available from the OOAQ, 235 René Levesque Boulevard East, Montréal, Que., H2X 1N8
5. *Document synthèse sur la considérable pénurie d'effectif en orthophonie et sur la nécessité d recruter immédiatement à l'étranger*. OOAQ, 2000, available from the OOAQ, 235 René Levesque Boulevard East, Montréal, Que., H2X 1N8
6. *Foundations of Clinical Practice for Audiology and Speech-Language Pathology*. CASLPA, 2004, available from CASLPA, Suite 401, 200 Elgin Street, Ottawa, Ont., K2P 1L5
7. *Gap Analysis*. CASLPA Joint Alliance Project, 2004, available from www.caslpa.ca
8. *Guidelines for Use of Supportive Personnel*. CASLPO, available from www.caslpo.com
9. "Knowledge of the Roles of Speech-Language Pathologists by Students in Other Health Care Programs." Published by CASLPA, *Journal of Speech-Language Pathology and Audiology*, Vol. 27, No. 2, Summer 2003
10. *Recruitment and Retention Plan to Improve Access to OT, PT and SLP Services for Preschool Children (2001)*. BC Centre for Ability, Vancouver
11. *Report of Findings: 2005 Membership Survey*. CASLPA, Suite 401, 200 Elgin Street, Ottawa, Ont., K2P 1L5
12. *Results of the School Speech-Language Pathologists Survey, 2003*. OSLA, 2003, available from www.osla.on.ca
13. *Retention and Recruitment Issues in Speech-Language Pathology on P.E.I.* 2002, P.E.I. Speech-Language Pathologists Classification, Professional Level 18 & 19
14. *Scopes of Practice in Speech-Language Pathology and Audiology in Canada*. CASLPA, 1998, available from www.caslpa.ca
15. *Workforce Projection Report, 2002*. OSLA, available from www.osla.on.ca

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Association of Speech-Language Pathologists and Audiologists (see Appendix B for the survey tool).



List of research reports was updated in November 2005.

Research in Progress

1. CASLPA 2005 Survey of University Speech-Language Pathology and Audiology Programs, CASLPA.
2. HEAL's (Health Action Lobby) Potential in Pan-Canadian Health Human Resource Policy and Planning. Contact: HEAL, pfralick@physiotherapy.ca

List of research in progress was updated in November 2005.

Endnotes

Sources

- Figure Audi-1. Calculated from data in Table Audi-2.
- Figure Audi-2. Calculated from data in the Health Personnel Database, CIHI.
- Table Audi-1. Individual schools and universities.
- Table Audi-2. Newfoundland and Labrador Association of Speech-Language Pathologists and Audiologists, Prince Edward Island Speech and Hearing Association, Speech and Hearing Association of Nova Scotia (SHANS), New Brunswick Association of Speech-Language Pathologists and Audiologists, Ordre des orthophonistes et audiologistes du Québec, College of Audiologists and Speech-Language Pathologists of Ontario (CASLPO), Manitoba Speech and Hearing Association, Saskatchewan Association of Speech-Language Pathologists and Audiologists, Alberta College of Speech-Language Pathologists and Audiologists, British Columbia Association of Speech/Language Pathologists and Audiologists, Association of Northwest Territorial Speech-Language Pathologists and Audiologists and Yukon Speech-Language Pathology and Audiology Association.



Chiropractors

Definition

Chiropractors diagnose health disorders involving the body's structure, particularly the spine, and the functioning of the muscle and nervous systems.

Responsibilities/Activities

General duties of a chiropractor include: taking a patient's case history; conducting a physical examination; observing the patient; taking or ordering X-rays and other tests to diagnose the patient's condition; diagnosing disorders of the spine and other body joints; treating patients whose symptoms result from abnormal musculoskeletal conditions or joint mechanics through the corrective manipulation of the spinal column or other joints and through additional treatments such as heat, light and massage; and advising patients on corrective exercises, lifestyle and nutrition.

Practice Setting

Most chiropractors work in private practice.

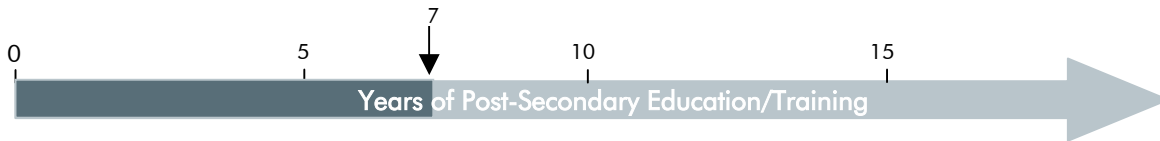
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training

The figure and table below outline the education and/or training requirements necessary to enter practice as a chiropractor in Canada.

- A total of seven years of post-secondary education is required.



| Typical Length of Program | Province of Education | Education and/or Training |
|---------------------------|-----------------------|---|
| 7 | Ontario | 3 years of undergraduate, followed by a 4-year Doctor of Chiropractic degree |
| 7 | Quebec | 2 years of health sciences at cegep (collège d'enseignement général et professionnel), followed by a 5-year Doctor of Chiropractic degree |

Changes to Education and/or Training Requirements **

- There are no expected changes to education and/or training requirements.

Possible Areas of Certified Specialization **

- Radiology
- Sports
- Orthopedics
- Chiropractic sciences
- Rehabilitation

Examination Requirements **

- In order to practise as a chiropractor in Canada, graduates of accredited programs must also pass the examinations of the Canadian Chiropractic Examining Board.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Chiropractic Association (see Appendix B for the survey tool).



Graduate Trends

Currently there are only two chiropractic schools in Canada: the Canadian Memorial Chiropractic College (CMCC) in Ontario and the Université du Québec à Trois Rivières (UQTR) in Quebec. The number of graduates between 1995 and 2004 is outlined in Table Chiro-1. The table indicates the following:

- From 1995 to 2004, the number of students graduating from the CMCC in Ontario increased by 14.8% (from 135 to 155).
- The first graduates of the UQTR completed the program in 1998 (45 graduates). In subsequent years, this number has remained fairly consistent (40 to 45).
- A 10-year snapshot identified that at the CMCC, the percentage of male and female students has shifted over time. In 1995 the proportions were 36% female and 64% male, in 2004 they were 52% female and 48% male.
- For the UQTR, the percentage of male and female graduates in 1998 was 40% and 60%, respectively. In 2004, they were 35% and 65%.

Table Chiro-1. Number of Graduates of Chiropractic Schools by School of Graduation, Canada, 1995 to 2004

| School | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Ont. | | | | | | | | | | |
| CMCC,¹ Toronto | 135 | 152 | 152 | 149 | 154 | 152 | 151 | 151 | 152 | 155 |
| Male | 87 | 95 | 88 | 93 | 101 | 88 | 81 | 82 | 83 | 75 |
| Female | 48 | 57 | 64 | 56 | 53 | 64 | 70 | 69 | 69 | 80 |
| Que. | | | | | | | | | | |
| UQTR,² Trois-Rivières | n/a | n/a | n/a | 45 | 44 | 45 | 42 | 45 | 41 | 40 |
| Male | n/a | n/a | n/a | 18 | 21 | 19 | 8 | 12 | 15 | 14 |
| Female | n/a | n/a | n/a | 27 | 23 | 26 | 34 | 33 | 26 | 26 |
| Canada | 135 | 152 | 152 | 194 | 198 | 197 | 193 | 196 | 193 | 195 |
| Male | 87 | 95 | 88 | 111 | 122 | 107 | 89 | 94 | 98 | 89 |
| Female | 48 | 57 | 64 | 83 | 76 | 90 | 104 | 102 | 95 | 106 |

Source: HPDB/CIHI.

Notes

n/a not applicable.

1. Canadian Memorial Chiropractic College. The CMCC graduates one class per year; the counts reflect students who graduated in May of the year indicated.
2. Université du Québec à Trois Rivières. The first graduating class occurred in 1998.

Workforce

Primary Data Source: The primary sources of chiropractic data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) are regulatory/licensing authorities (in which membership is a condition of practice) and associations (in which membership is voluntary).

Regulatory Environment

The table below indicates the first year in which it became mandatory for chiropractors to register with a provincial/territorial regulatory authority as a condition of practice.

- Chiropractors have been regulated in all provinces in Canada since 1992.

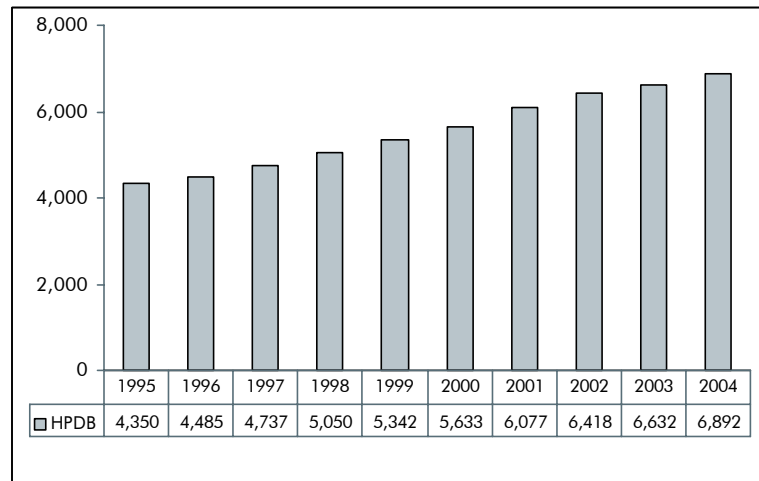
| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|------|------|------|------|-------|-------|------|------|--------|------|
| First Year of Regulation | 1992 | 1962 | 1972 | 1958 | 1974 | 1925 | 1945 | 1943 | 1923 | 1934 | 1986 | .. | .. |

.. Information not available.

Supply Trends

- As shown in Figure Chiro-1, the number of registered chiropractors in Canada grew steadily at an average rate of 5.3% per year from 1995 to 2004. This represents a 58.4% increase in the number of registered chiropractors in Canada over this 10-year period (an increase of 2,542 chiropractors).
- The distribution of registered chiropractors by province from 1995 to 2004 is outlined in Table Chiro-2. The table indicates that 50% of all chiropractors in Canada in 2004 were registered in Ontario.

Figure Chiro-1. Number of Chiropractors in Canada, 1995 to 2004



Source: HPDB/CIHI.

Note
There is no information available for the Northwest Territories and Nunavut.



Table Chiro-2. Number of Registered Chiropractors* by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|-------------------|--------------------------|--------------------------|--------------------------|--------------|--------------|--------------|--------------------------|------------------|--------------------|--------------------|
| N.L. ⁴ | 20 | 20 | 22 | 26 | 33 | 39 | 43 | 46 | 48 | 49 |
| P.E.I. | 3 | 4 | 6 | 6 | 7 | 7 | 7 | 8 | 8 ³ | 8 ³ |
| N.S. | 29 ^{†,2} | 30 ^{†,2} | 35 ^{†,2} | 45 | 51 | 62 | 73 ^{†,2} | 82 | 92 | 93 |
| N.B. | 34 | 36 | 40 | 43 | 46 | 48 | 57 | 58 | 60 | 66 |
| Que. | 845 | 872 | 870 | 918 | 956 | 979 | 1,017 | 1,053 | 1,071 | 1,088 ⁵ |
| Ont. | 2,117 | 2,171 | 2,293 | 2,424 | 2,550 | 2,708 | 2,884 | 3,108 | 3,302 | 3,456 |
| Man. | 170 | 173 | 184 | 176 | 192 | 202 | 251 | 247 | 236 ⁶ | 241 ⁶ |
| Sask. | 131 | 129 | 137 | 145 | 155 | 162 | 183 | 183 | 182 | 182 |
| Alta. | 447 ^{†,2} | 472 ^{†,2} | 499 ^{†,2} | 573 | 620 | 683 | 728 ³ | 772 ³ | 812 ⁷ | 826 |
| B.C. ¹ | 551 | 576 | 647 | 685 | 721 | 734 | 826 | 853 | 812 ^{3,8} | 874 ⁸ |
| Y.T. | 3 ^{†,2} | 2 ^{†,2} | 4 ^{†,2} | 9 | 11 | 9 | 8 | 8 | 9 ⁹ | 9 ⁹ |
| N.W.T. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Canada | 4,350[†] | 4,485[†] | 4,737[†] | 5,050 | 5,342 | 5,633 | 6,077[†] | 6,418 | 6,632 | 6,892 |

Source: HPDB/CIHI.

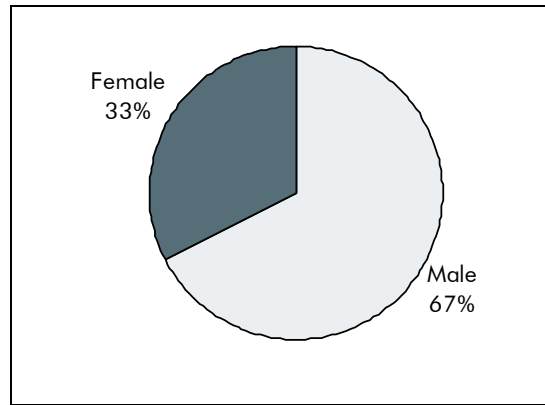
Notes

- * Data provided by individual regulatory licensing authorities (membership is a condition of employment) across Canada unless otherwise stated.
- † Indicates the presence of voluntary membership data or estimated data (all estimated data are accompanied by superscript notes identifying the source of the estimate; that is, CIHI or data provider). See additional notes below.
- .. Information not available.
1. The count includes regular members, new graduates, senior members and special members.
 2. Data are provided by the Canadian Chiropractic Association (CCA). Membership in the CCA is voluntary.
 3. The count represents active licensed chiropractors. Please review methodological Notes for more comprehensive information regarding "registered" and "active registered" health personnel.
 4. The count represents employed active licensed chiropractors. Please review Methodological Notes for more comprehensive information regarding "employed active registered" health personnel. Newfoundland and Labrador 2003 data as of June 25, 2004; 2004 data as of February 1, 2005.
 5. Quebec 2004 data as of January 31, 2005.
 6. Manitoba 2003 data as of July 21, 2004; 2004 data as of April 4, 2005; both counts represent "employed active licensed."
 7. Alberta 2003 data as of September 30, 2004.
 8. British Columbia 2003 data as of June 29, 2004; 2004 data as of April 4, 2005.
 9. Yukon 2003 data as of April 14, 2004; 2004 data as of March 24, 2005.

What Else Do We Know?

- The percentage of females in the chiropractic profession has increased from 16% in 1991, to 28% in 2001 (Source: Census Data, Statistics Canada).
- In 2003, the HPDB initiated collection of gender data. Analysis of the data for 2004 identified that the percentage of female chiropractors was 33% (Source: HPDB, CIHI).
- Looking at the two different data sources (HPDB, Census), we can infer that a gradual increase in the proportion of females in the profession has taken place.
- The average age of chiropractors in Canada is 41 years. Female chiropractors tend to be slightly younger on average than their male colleagues (36 and 42 years, respectively). (Source: 2001 Census Data, Statistics Canada). For more details on average age and gender refer to Appendix F.

Figure Chiro-2. Chiropractors by Gender, 2004



Source: HPDB, CIHI.



What's Happening?

Listed below are references to key research documents relating to chiropractors that are recommended** reading for health human resource planners.

Research Reports

1. *Canadian Chiropractic Resources Databank*.
Canadian Chiropractic Association, 2005,
Contact: Dr. John Tucker, jtucker@ccachiro.org

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Chiropractic Association (see Appendix B for the survey tool).

Endnotes

Sources

Figure Chiro–1. Calculated from data in Table Chiro–2.

Figure Chiro–2. Calculated from data in the Health Personnel Database, CIHI.

Table Chiro–1. Canadian Memorial Chiropractic College (CMCC) and Université du Québec à Trois Rivières (UQTR).

Table Chiro–2. 1995 to 1997: Canadian Chiropractic Association, Newfoundland and Labrador Chiropractic Board, Prince Edward Island Chiropractic Association, New Brunswick Chiropractors' Association, Ordre des chiropraticiens du Québec, College of Chiropractors of Ontario, Manitoba Chiropractors' Association, Chiropractors' Association of Saskatchewan and British Columbia College of Chiropractors.

1998 to 2004: Newfoundland and Labrador Chiropractic Board, Prince Edward Island Chiropractic Association, Board of the Nova Scotia College of Chiropractors, New Brunswick Chiropractors' Association, Ordre des chiropraticiens du Québec, College of Chiropractors of Ontario, Manitoba Chiropractors' Association, Chiropractors' Association of Saskatchewan, College of Chiropractors of Alberta, British Columbia College of Chiropractors and Yukon Government (Department of Community Services).



Dental Hygienists

Definition

Dental hygienists are regulated primary oral health care professionals.

Responsibilities/Activities

Dental hygienists have five primary areas of responsibility: health promotion, which is the process of enabling people to increase their awareness of, responsibility for, control over and improvement to their health and well-being; education, which includes the application of teaching and learning principles to facilitate the development of specific attitudes, knowledge, skills and behaviours; clinical therapy, which includes the primary, interceptive, therapeutic, preventive and ongoing care procedures to help people obtain optimal oral health; research, which involves strategies for systematic inquiry and reporting that supplement, revise and validate dental hygiene practice, and that may contribute to the knowledge base of other disciplines; and administration, which involves managing processes, policies and protocol development around oral health. Dental hygienists also play a leadership role in patient advocacy relative to oral health.

Practice Setting

Dental hygienists are typically found working as part of a dental-care team; however, other employment arrangements are increasingly common, including self-employment. Dental hygiene practice environments include: clinical practice, institutions, public health and community health, home care and other outreach programs, primary health care centres, educational institutions, the military, research, industry, consulting firms, regulatory bodies and professional associations, government and forensic laboratories.

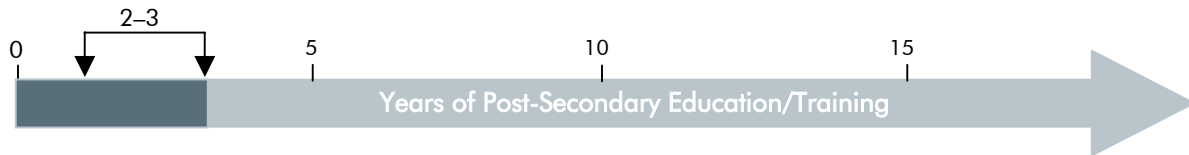
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training

The figure and table below outline the education and/or training requirements necessary to enter practice as a dental hygienist in Canada.

- Two to three years of post-secondary education are required depending on the province/territory of education.



| Typical Length of Program | Province of Education | Education and/or Training |
|---------------------------|---|---|
| 2-3 | Alberta British Columbia Manitoba Nova Scotia Ontario Saskatchewan | Diploma obtained through a college or university program. |
| 3 | Quebec | Diploma obtained at a cegep. |

Changes to Education and/or Training Requirements **

- There are no expected changes to education and/or training requirements.
- More information on requirements to practise dental hygiene is available from the Canadian Dental Hygienists Association (www.cdha.ca) or the Canadian Information Centre for International Credentials (www.cicic.ca).

Possible Areas of Certified Specialization**

- Local anesthetic is a certified specialty in Saskatchewan, Alberta and the Yukon Territory.
- Orthodontics is a certified specialty in Newfoundland and Labrador, Nova Scotia, Ontario, Manitoba and Alberta.
- Residential care is a certified specialty in British Columbia.
- Restorative care is a certified specialty in Newfoundland and Labrador, Nova Scotia, Ontario and Saskatchewan.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Dental Hygienists Association (see Appendix B for the survey tool).



Special Note

- British Columbia—local anesthesia, some orthodontic procedures and some restorative procedures are part of the regular curriculum.
- Quebec—orthodontic procedures and some restorative procedures are part of the regular curriculum.
- Newfoundland and Labrador—local anesthesia is an additional competency, but it does not require certification.

Examination Requirements**

- For licensure or registration in Alberta, British Columbia, Newfoundland and Labrador, Ontario and Saskatchewan, dental hygienists are required to show proof of certification by the National Dental Hygiene Certification Board (NDHCB).
- The NDHCB develops and administers the National Dental Hygiene Certification Examination.

Graduate Trends

There are many schools in Canada that offer a dental hygiene program. Please note that caution should be exercised when interpreting these data because not all schools of dental hygiene reported data. In addition, in recent years, some schools have increased the length of their education/training program. Table DH-1 outlines the number of graduates between 1995 and 2004. The table indicates the following:

- From 1995 to 2004, the number of students graduating from dental-hygiene programs increased by 11% (608 to 677 graduates).
- In 2004, 46% of all dental hygienists trained in Canada were trained in Ontario.

Table DH-1. Number of Graduates of Accredited Dental Hygiene Schools,¹ by School of Graduation, Canada, 1995 to 2004

| School | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|-----------------|------------|----------------|-----------------|----------------|------------|-----------------|-----------------|------------|----------------|
| N.S. | | | | | | | | | | |
| Dalhousie University | 39 | 39 | 40 | 40 | 36 | 38 | 36 | 36 | 41 | 39 |
| Que. | | | | | | | | | | |
| Cégep de Chicoutimi | 30 | 27 | 29 | 31 | 32 | 30 | 24 | 19 | 21 | 18 |
| Cégep Sainte-Hyacinthe | 26 | 34 | 33 | 36 | 29 | 32 | 24 | 24 | .. | .. |
| Cégep Collège Trois-Rivières | 25 | 25 | 26 | 31 | 35 | 29 | 74 | 22 | 26 | 16 |
| Cégep François-Xavier-Garneau | .. | .. | .. | .. | .. | .. | .. | .. | 19 | 29 |
| Collège de l'Outaouais | 17 | 14 | 20 | 20 | 22 | 19 | 14 | 9 | 13 | 5 |
| Collège Maisonneuve | 59 | 58 | 52 | 51 | 53 | 45 | 53 | 45 | 36 | 21 |
| Collège Édouard-Monpetit | 30 | 25 | 47 | 48 | 42 | 38 | 39 | 39 | 28 | 19 |
| John Abbott College | 28 | 36 | 26 | 30 | 27 | 34 | 24 | 27 | 15 | 26 |
| Ont. | | | | | | | | | | |
| Algonquin CAAT | 48 | 47 | 43 | 0 ⁵ | 37 | 49 | 50 | 48 | 50 | 50 |
| Cambrian College of Applied Arts and Technology | 24 ³ | 24 | 23 | 24 | 0 ⁴ | 29 | 25 | 24 | .. | .. |
| Canadian Institute of Dental Hygiene | .. | .. | .. | .. | .. | .. | .. | 71 ⁹ | 70 | 70 |
| Canadore College of Applied Arts and Technology | 16 | 15 | 15 | 13 | 14 | 14 | 16 | 18 | 18 | 0 ⁶ |
| La Cité collégiale | 13 | 18 | 12 | 17 | 0 ⁶ | 15 | 18 | 11 | 20 | 12 |
| Collège Boréal ² | .. | 22 | 21 | 11 | 1 | 15 | 14 | 20 | 17 | 22 |
| Confederation College of Applied Arts and Technology | 16 | 19 | 16 | 18 | 15 | 16 | 18 | 18 | .. | 22 |
| Durham College of Applied Arts and Technology | 23 | 24 | 22 | 17 | 23 | 23 | 22 | 25 | 17 | 23 |
| Fanshawe College of Applied Arts and Technology | 17 | 18 | 25 | 22 | 31 | 22 | 33 | 22 | 24 | 24 |
| George Brown College of Applied Arts and Technology | .. | .. | .. | 67 | 65 | 65 | 65 | 66 | .. | .. |
| Georgian College of Applied Arts and Technology | 14 | 12 | 17 | 13 | 13 | 14 | 16 | 20 | 27 | 22 |
| Niagara College | 33 | 32 | 0 ⁶ | 76 ⁷ | 1 | 36 | 38 | 41 | 45 | 39 |
| St. Clair College of Applied Arts and Technology | .. | .. | .. | 32 | 30 | 26 | 30 ⁸ | 0 ⁶ | 27 | 29 |
| Man. | | | | | | | | | | |
| University of Manitoba | 28 | 25 | 26 | 24 | 25 | 26 | 25 | 28 | 26 | 26 |
| Sask. | | | | | | | | | | |
| Saskatchewan Institute of Applied Arts and Technology | .. | .. | .. | .. | .. | .. | 24 | 24 | 26 | 26 |
| Alta. | | | | | | | | | | |
| University of Alberta | 62 | 60 | 48 | 39 | 38 | 40 | 96 | 51 | 65 | 73 |
| B.C. | | | | | | | | | | |
| Camosun College | 21 | 24 | 24 | 23 | 21 | 22 | 19 | 18 | 19 | 21 |
| College of New Caledonia | 18 | 14 | 23 | 19 | 20 | 20 | 18 | 19 | 18 | 18 |
| University of British Columbia | 2 | 1 | 1 | - ¹⁰ | - | - | - | - | 5 | 9 |
| Vancouver Community College | 19 | 19 | 19 | 16 | 19 | 21 | 20 | 18 | 20 | 18 |
| Canada | 608 | 632 | 608 | 718 | 629 | 718 | 835 | 763 | 693 | 677 |

Source: HPDB/CIHI.

Notes

- .. Information not available.
- This is a comprehensive list of schools offering dental hygiene programs, with the exception of the Canadian Academy of Dental Hygiene, which was accredited in November 2004. The Commission on Dental Accreditation of Canada approves requirements for all dental hygiene programs including those at colleges, universities and private institutions. For more information on these requirements, please visit www.cdha.ca.
 - The program for dental hygienists began in September 1995, with the first graduates in 1996.
 - 1995 includes students registered in a bilingual program. 1995 was the last year for this program.
 - No graduating class, as program requirement changed to two-year, direct-entry program after completion of dental assistant program.
 - No graduating class, as program entry requirements changed, requiring completion of dental assistant program and one year of work experience before entering dental hygiene program.
 - No graduating class, due to a change from one-year to two-year program length.
 - Represents double student intake in previous year.
 - Program changed to a two-year program as of 2001; therefore, there were no graduates in 2002.
 - Program existed before 2002; however, it became accredited in 2002.
 - Diploma program discontinued. As of 1998, only degree-completion available.



Workforce

Primary Data Source: The primary sources of dental hygiene data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) are associations (in which membership is voluntary) and regulatory/licensing authorities (in which membership is a condition of practice).

Regulatory Environment

The table below indicates the first year in which it became mandatory for dental hygienists to register with a provincial/territorial regulatory authority as a condition of practice.

- Dental hygienists have been regulated in all provinces in Canada since 1990. In the territories, the respective territorial governments register/license dental hygienists.

| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|--------|------|------|------|-------|-------|-------|------|--------|------|
| First Year of Regulation | 1969 | 1974 | 1973 | 1950's | 1975 | 1951 | 1952 | 1950 | 1990 | 1952* | 1958 | 1990 | REG |

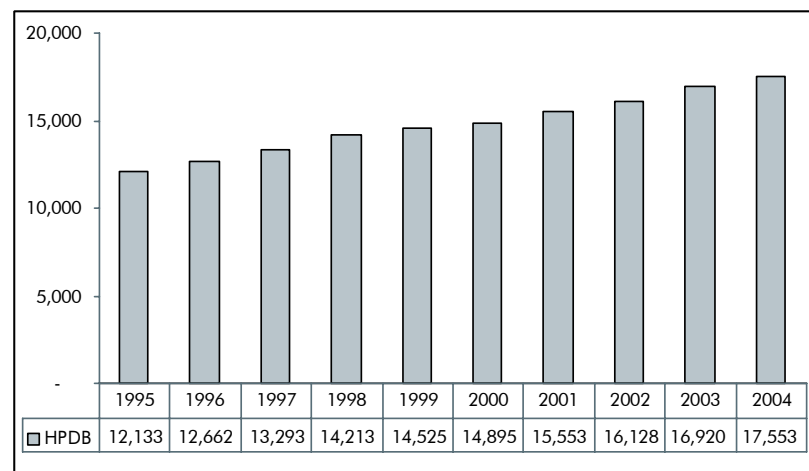
REG = Regulated in 2004 but initial year of regulation is unknown.

* Dental hygiene has been a regulated profession in British Columbia since 1952. The College of Dental Hygienists of British Columbia was formed on March 1, 1995, and dental hygiene has been self-regulated since that time.

Supply Trends

- As shown in Figure DH-1, the number of registered dental hygienists in Canada grew steadily at an average rate of 4.2% per year from 1995 to 2004. This represents a 44.7% increase in the number of licensed dental hygienists in Canada over this 10-year period (an increase of 5,420 dental hygienists).
- The largest increases over this 10-year period have occurred in Alberta (69%), Prince Edward Island (67%) and Newfoundland and Labrador (57%).
- The distribution of registered dental hygienists by province from 1995 to 2004 is outlined in Table DH-2. The table indicates that 45% of all dental hygienists in Canada in 2004 were registered in Ontario and 23% were registered in Quebec.

Figure DH-1. Number of Dental Hygienists in Canada, 1995 to 2004



Source: HPDB/CIHI.

Table DH-2. Number of Registered Dental Hygienists* by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------------|---------------------|---------------------|---------------------|--------|--------|--------|---------------------|--------------------|-------------------|-------------------|
| N.L. | 54 ^{1,7} | 63 ^{1,7} | 68 ^{1,7} | 69 | 69 | 69 | 78 | 82 | 80 | 85 |
| P.E.I. | 30 | 30 | 28 | 33 | 38 | 43 | 46 | 44 | 68 | 50 |
| N.S. | 374 | 396 | 404 | 407 | 420 | 412 | 408 ^{1,7} | 459 | 472 | 492 |
| N.B. | 194 ^{1,7} | 202 ^{1,7} | 210 ^{1,7} | 223 | 240 | 247 | 245 | 246 | 269 | 276 |
| Que. ¹ | 2,951 | 3,105 | 3,292 | 3,458 | 3,565 | 3,620 | 3,667 | 3,691 | 3,788 | 3,975 |
| Ont. | 5,170 | 5,392 | 5,637 | 6,227 | 6,322 | 6,540 | 6,756 ⁹ | 7,101 ⁹ | 7,500 | 7,816 |
| Man. ² | 498 | 513 | 517 | 534 | 550 | 562 | 565 | 591 | 584 ¹⁰ | 599 ¹⁰ |
| Sask. | 232 ^{1,7} | 242 ^{1,7} | 259 ^{1,7} | 282 | 267 | 273 | 300 | 307 | 334 | 336 |
| Alta. ³ | 1,046 ⁸ | 1,101 ⁸ | 1,168 ⁸ | 1,213 | 1,251 | 1,305 | 1,541 | 1,602 | 1,745 | 1,770 |
| B.C. ⁴ | 1,562 | 1,593 | 1,683 | 1,740 | 1,777 | 1,788 | 1,910 | 1,974 | 2,054 | 2,127 |
| Y.T. ⁵ | 12 | 12 | 12 | 12 | 12 | 15 | 16 | 14 | 13 | 16 |
| N.W.T. ⁶ | 10 | 13 | 15 | 15 | 14 | 21 | 21 | 17 | 13 | 11 |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Canada | 12,133 [†] | 12,662 [†] | 13,293 [†] | 14,213 | 14,525 | 14,895 | 15,553 [†] | 16,128 | 16,920 | 17,553 |

Source: HPDB/CIHI.

Notes

.. Information not available.

* This data table includes both regulated membership data (membership with a specific data provider is required as a condition of practice) and voluntary membership data (registration with the data provider is not a condition of practice). Data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).

† Indicates the presence of voluntary membership data or estimated data (all estimated data are accompanied by superscript notes identifying the source of the estimate; that is, CIHI or data provider). See additional notes below.

1. Quebec data as of March 31 of the following year for all years.

2. Manitoba 2001 and 2002 data as of January 15 of the following year.

3. Alberta data as of October 31 of the same year for all years.

4. British Columbia data as of August 31 of the same year for 1996 through 2002.

5. Yukon data as of March 31 of the following year for 1993 through 2000; 2001 data as of February 14, 2001; 2002 data as of November 14, 2002; 2003 data as of April 14, 2004; and 2004 data as of March 24, 2005.

6. Northwest Territories data as of March 31 of the same year for 1993 through 2001; 2002 data as of November 12, 2002; 2003 and 2004 data as of April of the following year.

7. CIHI estimate.

8. The figure includes only those members who were actively practising dental hygiene; it does not include registrants who were out of practice due to maternity or disability leaves during the year.

9. Data include general, specialty, and inactive members. Inactive members are not able to practise; however, they are able to participate in elections.

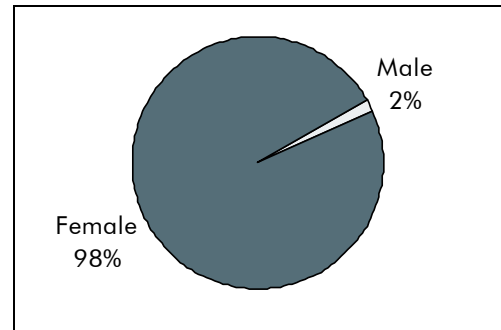
10. Data represent active registered hygienists.



What Else Do We Know?

- The percentage of women in the dental hygiene profession has increased from 96% in 1991, to 98% in 2001 (Source: Census Data, Statistics Canada).
- In 2003, the HPDB initiated collection of gender data. Analysis of the data for 2004 identified that the percentage of female dental hygienists was 98% (Source: HPDB, CIHI).
- Both data sources indicate that the percentage of women dental hygienists has remained constant from 2001 to 2004 (98%).
- The average age of dental hygienists in Canada is 36 years. Female dental hygienists tend to be slightly younger on average than their male colleagues (36 and 40, respectively) (Source: 2001 Census Data, Statistics Canada). For more details on average age and gender refer to Appendix F.

Figure DH-2. Dental Hygienists by Gender, 2004



Source: HPDB, CIHI.

What's Happening?

Listed below are references to key research documents relating to dental hygiene that are recommended** reading for health human resource planners.

Research Reports

1. "A Profile of Non-Practising Dental Hygienists Residing in British Columbia." Gullekson, D., Craig, B. J., *Canadian Journal of Dental Hygiene*, September–October 2005, Vol. 39, No. 5
2. *A Qualitative Study of the Occupational Status and Culture of Dental Hygiene in Canada [thesis]*. Brownstone, E. G., Winnipeg, Man.: University of Manitoba, 1999
3. *Access Angst: A CDHA Position Paper on Access to Oral Health Services*. Canadian Dental Hygienists Association (CDHA): CDHA, March 23, 2003
4. *Dental Hygiene: Focus on Advancing the Profession*. American Dental Hygienists Association, 2005
5. *Dental Hygiene Practice in Canada 2001, A Report Prepared for the Canadian Dental Hygienists Association (CDHA)*. Johnson, P. M., CDHA, Ottawa, September 2002
6. *Distance Delivery Model for Dental Hygiene [thesis]*. Cobban, S., Athabasca, Alta.: Athabasca University, March 2000
7. "Implications of Cognitive Style for Dental Hygiene Education." Isaak-Ploegman, C., Chinien, C., *Canadian Journal of Dental Hygiene*, September–October 2005, Vol. 39, No. 5
8. "Long-Term Disability Claims." Rivard, R., *Canadian Journal of Dental Hygiene*, September–October 2005, Vol. 39, No. 5
9. *Policy Framework for Dental Hygiene Education in Canada 2005*. Canadian Dental Hygienists Association (CDHA), Ottawa, October 2000
10. "Power, Control, and Economics: A Case Study in Professional Ethics." Richardson, F., *Canadian Journal of Dental Hygiene*, May–June 2005, Vol. 39, No. 3
11. *Preparatory Requirements for Dental Hygienists [thesis]*. Keenan, L. P., Edmonton, Alta.: University of Alberta, 1995
12. "Profile of the University of British Columbia's Bachelor of Dental Science in Dental Hygiene Graduates from 1994 to 2003." Imai, P. H., Craig, B., *Canadian Journal of Dental Hygiene*, May–June 2005, Vol. 39, No. 3

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Dental Hygienists Association (see Appendix B for the survey tool).



13. "Quality Assurance Programming in Canada: An Investigation into the Fulfillment of Dental Hygiene Requirements in British Columbia and Ontario." Asadoorian, J., Locker, D., *Canadian Journal of Dental Hygiene*, July–August 2005, Vol. 39, No. 4
14. *The Economic Aspects of Unsupervised Private Hygiene Practice and Its Impact on Access to Care*. Brown, L. J., House, D. R. and Nash, K. D., American Dental Association, 2005
15. *The Political Economy of Dental Hygiene in Canada*. Manga, P., Canadian Dental Hygienists Association, Ottawa, July 2002
16. "Tobacco Use Cessation Services and the Role of the Dental Hygienist—A CDHA Position Paper." Canadian Dental Hygienists Association (CDHA), *Canadian Journal of Dental Hygiene*, 2004; Vol. 38, No. 6, pp. 260–279. Contact: jal@cdha.ca

The list of research reports was updated in October 2005.

Research in Progress

1. A Study of Research Utilization Practices and Critical Thinking Dispositions of Canadian Dental Hygienists
Type of project: Survey
Primary investigators: Sandra Cobban, RDH, MDE; and Dr. J. Profetto-McGrath, RN, PhD.
Contact: Sandra Cobban, University of Alberta, sandy.cobban@ualberta.ca
2. Oral Health Labour Market in Canada Sector Study (Outcome: To develop a labour market strategy for the oral health sector)
Name of organization undertaking the study: Oral Health Care Sector Study Organization
The stakeholders include the following: Canadian Dental Association, Canadian Dental Hygienists Association, Canadian Dental Assistants Association, Denturist Association of Canada and College of Dental Technologists of Ontario
Secretariat for the study: Canadian Dental Association
3. Perceived Competency at Graduation: A Self-Assessment of Graduating Dental Hygiene Students on their Undergraduate Educational Experiences
4. Type of project: Survey
5. Co-investigators: Joanna Asadoorian, RDH, MSc; Salme Lavigne, RDH, MS; and Laura MacDonald, RDH. Contact: Joanna Asadoorian, University of Manitoba, joanna_asadoorian@umanitoba.ca
6. Positive Change in Clinical Dental Hygiene Practice
7. Type of project: Survey
8. Primary Investigator: Joanna Asadoorian, RDH, MSc
9. Contact information: University of Manitoba, Joanna Asadoorian, joanna_asadoorian@umanitoba.ca
10. Utilization of Research by Canadian Dental Hygienists
11. Type of project: Survey
Primary investigators: Dr. Susanne Sunell, RDH, EdD; K. Ohrn, PhD; and Dr. L. Rucker, DDS.
Contact: Dr. Susanne Sunell, University of British Columbia, ssunell@idmail.com

The list of research in progress was updated in October 2005.

Endnotes

Sources

- Figure DH-1. Calculated from data in Table DH-2.
- Figure DH-2. Calculated from data in the Health Personnel Database, CIHI.
- Table DH-1. Individual schools, colleges and universities.
- Table DH-2. The Newfoundland and Labrador Dental Board, Dental Council of Prince Edward Island, Provincial Dental Board of Nova Scotia, New Brunswick Dental Society, Ordre des Hygiénistes Dentaires du Québec, College of Dental Hygienists of Ontario, Manitoba Dental Association, Saskatchewan Dental Hygienists' Association, Alberta Dental Hygienists' Association, The College of Dental Hygienists of British Columbia and the governments of the Yukon and Northwest Territories.



Dentists

Definition

Dentists diagnose, prevent and treat diseases, conditions and disorders of the teeth, mouth and surrounding tissues and structures to contribute to oral health and general well being.

Responsibilities/Activities

The main duties of dentists include: examining patients' teeth, gums and surrounding tissues and structures to diagnose disease and injury, and plan appropriate treatment; restoring and extracting diseased teeth; performing surgical treatments in the mouth and oral-facial complex; cleaning teeth and instructing patients on oral hygiene; designing and fitting prosthetic appliances to replace missing teeth and structures, or writing fabrication instructions or prescriptions for use by denturists and dental technicians; correcting abnormal positioning of the teeth and jaws; and supervising dental hygienists, dental assistants and other staff.

Some dentists specialize in areas such as oral and maxillofacial surgery, orthodontics and dentofacial orthopedics, paediatric dentistry, periodontics, endodontics, prosthodontics, oral medicine and pathology, oral and maxillofacial radiology or public health dentistry.

Practice Setting

Most dentists work in private-practice clinics, hospitals, universities or public health facilities.

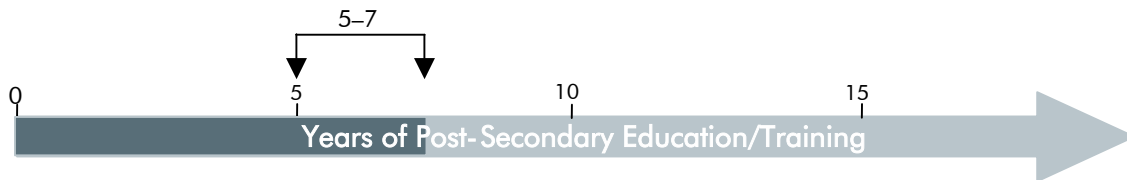
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training

The figure and table below outline the education and/or training requirements necessary to enter practice as a dentist in Canada.

- Five to seven years of post-secondary education are required.



| Typical Length of Program | Province of Education | Education and/or Training |
|---------------------------|---|--|
| 5-6 | Nova Scotia Ontario Manitoba Saskatchewan Alberta British Columbia | 1-2 years of pre-dental university courses, followed by a 4-year university degree program |
| 6-7 | Quebec | Varies depending on the institution: 2 years of cegep, 1 year of pre-dental and 4-year dental program (Université de Montréal) Undergraduate degree followed by 4-year dental program or 2 years of cegep and 5-year Dent-P program (McGill University) 2 years of cegep followed by 4-year dental program (Université Laval) |

Changes to Education and/or Training Requirements **

- There are no expected changes to education and/or training requirements.

Possible Areas of Certified Specialization **

- Dental public health
- Endodontics
- Oral and maxillofacial surgery
- Orthodontics and dentofacial orthopedics
- Oral and maxillofacial radiology

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Dental Association (see Appendix B for the survey tool).



- Oral medicine and pathology
- Pediatric dentistry
- Prosthodontics
- Periodontics

Examination Requirements **

- In order to practise as a general dental practitioner in Canada, graduates of accredited programs must also pass the National Dental Examining Board of Canada (NDEB) examination, except in Quebec.
- In Quebec, graduates are required to pass the examination of the Ordre des dentistes du Québec (ODQ) in order to obtain a permit to practise dentistry in Quebec or the rest of Canada.
- To be eligible for licensure as a specialist in Canada, graduates may be required to take the National Dental Specialty Examination (NDSE), administered by the Royal College of Dentists of Canada (RCDC), which offers examinations in all recognized dental specialties in Canada.

Graduate Trends

Currently, there are 10 schools in Canada that offer a program in dentistry. The number of graduates between 1995 and 2004 is outlined in Table Dent-1. The table indicates the following:

- The number of graduates decreased over this 10-year period, from 554 in 1995 to 439 in 2004, a decrease of 21%.
- The University of Saskatchewan was the only school to have an increase in the number of graduating students (8%) between 1995 and 2004.
- The number of students graduating from dentistry programs in Canada in 2004 (439) increased slightly from 2003 (409), but remains considerably lower than the 2001 peak of 636 graduates.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Dental Association (see Appendix B for the survey tool).

Table Dent-1. Total Number of Dental Graduates by School of Graduation, Canada, 1995 to 2004

| School | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|--------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| N.S. | | | | | | | | | | |
| Dalhousie University | 40 | 39 | 38 | 35 | 31 | 42 | 51 | 43 | 37 | 37 |
| Que. | | | | | | | | | | |
| McGill University | 34 | 28 | 31 | 24 | 26 | 24 | 36 | 36 | 30 | 28 |
| Université de Montréal | 108 | 103 | 92 | 84 | 81 | 87 | 132 | 94 | 12 | 73 |
| Université Laval | 67 | 53 | 51 | 52 | 45 | 43 | 67 | 53 | 37 | 44 |
| Ont. | | | | | | | | | | |
| University of Toronto | 95 | 94 | 77 | 65 | 78 | 79 | 117 | 95 | 78 | 69 |
| University of Western Ontario | 64 | 59 | 61 | 53 | 55 | 57 | 65 | 73 | 61 | 54 |
| Man. | | | | | | | | | | |
| University of Manitoba | 30 | 30 | 25 | 22 | 23 | 26 | 30 | 29 | 23 | 28 |
| Sask. | | | | | | | | | | |
| University of Saskatchewan | 26 | 21 | 20 | 20 | 22 | 22 | 32 | 20 | 48 | 28 |
| Alta. | | | | | | | | | | |
| University of Alberta | 38 | 34 | 35 | 37 | 31 | 33 | 48 | 38 | 34 | 31 |
| B.C. | | | | | | | | | | |
| University of British Columbia | 52 | 53 | 47 | 40 | 43 | 46 | 58 | 49 | 49 | 47 |
| Canada | 554 | 514 | 477 | 432 | 435 | 459 | 636 | 530 | 409 | 439 |

Source: HPDB/CIHI.



Workforce

Primary Data Source: The primary sources of dentist data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) are the Canadian Dental Association, Yukon and Northwest Territory Governments.

Regulatory Environment

The table below indicates the first year in which it became mandatory for dentists to register with a provincial/territorial regulatory authority as a condition of practice.

- Dentists have been regulated in all provinces/territories in Canada since 1988.

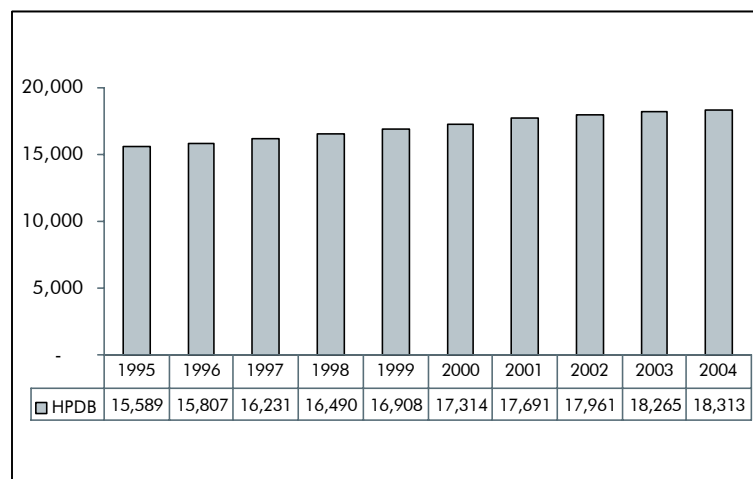
| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|------|------|------|------|-------|-------|------|------|--------|------|
| First Year of Regulation | 1893 | 1891 | 1891 | 1890 | 1869 | 1867 | 1883 | 1906 | 1906 | 1886 | 1958 | 1988 | REG |

REG = Regulated in 2004 but initial year of regulation is unknown.

Supply Trends

- As shown in Figure Dent-1, the number of active registered (licensed) dentists in Canada grew at an average rate of 1.8% per year from 1995 to 2004. This represents a 17.5% increase in the number of active registered dentists over this 10-year period (an increase of 2,724 dentists).
- The largest percentage increases over this 10-year period have occurred in Prince Edward Island (35%), British Columbia (23%), Ontario (22%), Alberta (21%) and Newfoundland and Labrador (20%).
- The distribution of active registered (licensed) dentists by province/territory from 1995 to 2004 is outlined in Table Dent-2. The table indicates that 42% of all dentists in Canada in 2004 were registered in Ontario.
- Ontario experienced substantial growth in the number of licensed dentists from 1995 to 2004, an increase of 1,421 dentists.
- Quebec experienced the smallest percentage increase in the number of licensed dentists from 1995 to 2004 (6%). From 2003 to 2004, the number of licensed dentists decreased by 3% (135 dentists).

Figure Dent-1. Number of Dentists in Canada, 1995 to 2004



Source: HPDB/CIHI.

Table Dent-2. Number of Active Registered Dentists* by Province/Territory, Canada, 1995 to 2004

| | 1995 ¹ | 1996 ² | 1997 | 1998 ³ | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------------|-------------------|-------------------|--------|-------------------|--------|--------|-----------------|-----------------|--------|--------|
| N.L. | 144 | 143 | 150 | 147 | 158 | 164 | 163 | 155 | 163 | 173 |
| P.E.I. | 48 | 48 | 51 | 53 | 57 | 60 | 61 | 62 | 61 | 65 |
| N.S. | 431 | 428 | 430 | 438 | 441 | 449 | 461 | 468 | 498 | 499 |
| N.B. | 247 | 257 | 252 | 256 | 260 | 264 | 266 | 270 | 279 | 280 |
| Que. | 3,707 | 3,779 | 3,816 | 3,886 | 3,922 | 3,981 | 3,994 | 4,022 | 4,055 | 3,920 |
| Ont. | 6,323 | 6,361 | 6,552 | 6,662 | 6,911 | 7,095 | 7,351 | 7,543 | 7,679 | 7,744 |
| Man. | 543 | 526 | 544 | 538 | 553 | 559 | 567 | 565 | 571 | 579 |
| Sask. | 343 | 351 | 345 | 351 | 349 | 348 | 357 | 348 | 378 | 376 |
| Alta. | 1,476 | 1,506 | 1,549 | 1,560 | 1,588 | 1,640 | 1,696 | 1,732 | 1,760 | 1,788 |
| B.C. | 2,276 | 2,354 | 2,479 | 2,524 | 2,586 | 2,659 | 2,663 | 2,721 | 2,755 | 2,807 |
| Y.T. ⁶ | 9 | 8 | 13 | 15 | 16 | 18 | 31 ⁴ | 27 ⁵ | 22 | 30 |
| N.W.T. ⁷ | 42 | 46 | 50 | 60 | 67 | 77 | 81 ⁸ | 48 ⁸ | 44 | 41 |
| Nun. | .. | .. | .. | .. | .. | .. | .. ⁸ | .. | .. | 11 |
| Canada | 15,589 | 15,807 | 16,231 | 16,490 | 16,908 | 17,314 | 17,691 | 17,961 | 18,265 | 18,313 |

Source: Census, Statistics Canada.

Notes

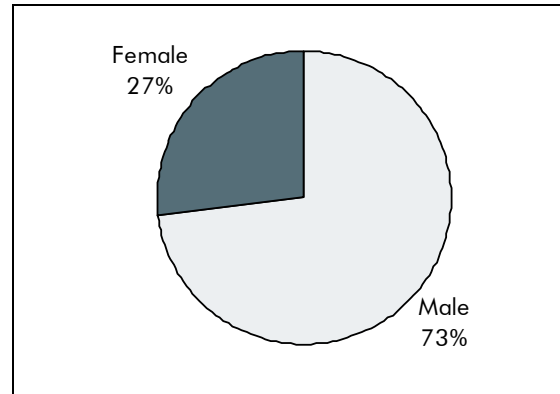
- * This data table includes regulated membership data (membership with a specific data provider is required as a condition of practice); data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).
The CIHI term "active registered dentists" represents licensed general-practice and certified-specialist dentists as reported by the Canadian Dental Association.
- .. Information not available.
1. Data as of July 31, 1995.
 2. Data as of September 30, 1996.
 3. Data as of September 30, 1998.
 4. Data as of February 18, 2002.
 5. Data as of November 14, 2002.
 6. Data provided by the Yukon; 1995 to 2002 data as of March 31 of the following year; 2003 data as of April 14, 2004; and 2004 data as of March 24, 2005.
 7. Data provided by the Northwest Territories; 1995 to 2002 data as of March 31; 2003 data as of April 8, 2004; and 2004 data as of April 1, 2005.
 8. On April 1, 2001, Nunavut began its own registration. Some dentists registered with the Northwest Territories in 2001, but most registered with Nunavut in 2002.



What Else Do We Know?

- The percentage of women in dentistry has increased from 15% in 1991, to 27% in 2001 (Source: Census Data, Statistics Canada).
- The average age of dentists in Canada is 44 years. Female dentists tend to be slightly younger on average than their male colleagues (38 and 47, respectively) (Source: 2001 Census Data, Statistics Canada). For more details on average age and gender, refer to Appendix F.

Figure Dent-2. Dentists by Gender, 2004



Source: Census, Statistics Canada.

What's Happening?

Listed below are references to key research documents relating to dentists that are recommended** reading for health human resource planners.

Research Reports

1. *American Dental Association Dental Workforce Model: 1999–2020*. American Dental Association, Health Policy Resources Centre, 2001, Chicago: American Dental Association, 2001.
2. *Analysis of Dental Workforce, Population Needs, and Policy Options in Wisconsin for the Next 10 Years: Report to the Wisconsin Dental Association*. Beazoglou, T., Bailit, H. and Heffley, D., Farmington, Connecticut: University of Connecticut Health Center, 2001.
3. "Challenges for Dentists and Pharmacists." Cooksey, J.A., Health Resources and Services Administration, Bureau of Health Profession Research Analysis and Activity, *Health Newslink* Fall 1999, Vol. 6, No. 1.
4. "Current Patterns and Future Trends in the Population of the United States: Implications for Dentistry and the Dental Profession in the Twenty-First Century." Murdock, S.H., Hogue, M.N. *Journal of the American College of Dentists*, Winter 1998, Vol. 65, pp. 29–35.
5. *Dental Health Policy Analysis Series: 1999 Workforce Needs Assessment Survey*: Rev. Ed. Chicago: International Communications Research (ICR), American Dental Association, 2000.
6. "Dental Work Force Strategies During a Period of Change and Uncertainty." Brown, L. J., *Journal of Dental Education*, Vol. 65, No. 12, pp. 1404–1416, 2001.

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Dental Association (see Appendix B for the survey tool).

7. *Output and Productivity in Dental Care*. In: Brown, L. J., Nash, K.D., eds., *Studies of Dental Workforce*, Dental Health Policy Analysis Series, Beazoglou, T., Heffley, D. and Bailit, H., Chicago: American Dental Association, 2001
8. "The Role of Patient Waiting Time in the Pricing of Dental Services: The Fee-Provider Density Relation Explained." DeVany, A.S., House, D.R. and Saving, T.R., *Southern Economic Journal*, 1983, Vol. 49, pp. 669–680

Research in Progress

1. Oral Health Labour Market in Canada Sector Study. Co-funded by Human Resources Development Canada. Project Coordinator: Costa Papadopoulos, Canadian Dental Association, cpapadopoulos@cda-adc.ca



Data Tables

Table Dent-3. Total Number of Certified Dental Specialists by Province/Territory, Canada, 1995 to 2004¹

| | 1995 ² | 1996 ³ | 1997 | 1998 ³ | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------|-------------------|-------------------|--------------|-------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| N.L. | 13 | 12 | 11 | 11 | 12 | 13 | 11 | 12 | 14 | 16 |
| P.E.I. | 5 | 5 | 5 | 6 | 6 | 5 | 5 | 5 | 5 | 5 |
| N.S. | 63 | 64 | 65 | 66 | 70 | 71 | 72 | 72 | 73 | 71 |
| N.B. | 23 | 23 | 24 | 28 | 28 | 24 | 25 | 25 | 26 | 26 |
| Que. | 364 | 379 | 377 | 377 | 379 | 372 | 371 | 368 | 377 | 358 |
| Ont. | 824 | 835 | 859 | 873 | 882 | 886 | 884 | 887 | 903 | 909 |
| Man. | 67 | 69 | 74 | 73 | 74 | 76 | 87 | 86 | 86 | 83 |
| Sask. | 33 | 41 | 41 | 43 | 36 | 34 | 38 | 35 | 37 | 36 |
| Alta. | 165 | 164 | 164 | 163 | 161 | 162 | 168 | 163 | 159 | 157 |
| B.C. | 218 | 233 | 263 | 247 | 240 | 243 | 242 | 238 | 238 | 237 |
| Y.T. | .. | .. | 1 | 1 | .. | 1 | 4 | 4 | 6 | 4 |
| N.W.T. | .. | .. | .. | .. | 2 | .. | .. | .. | 1 | 2 |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Canada | 1,775 | 1,825 | 1,884 | 1,888 | 1,890 | 1,887 | 1,907 | 1,895 | 1,925 | 1,904 |

Source: HPDB/CIHI.

Notes

.. Information not available.

1. Table Dent-3 represents a summary of detailed dental specialties found in Tables Dent-4 to Dent-10.

2. Data as of July 31 of the given year.

3. Data as of September 30 of the given year.

Table Dent-4. Number of Specialists Certified in Endodontics by Province/Territory, Canada, 1995 to 2004

| | 1995 ¹ | 1996 ² | 1997 | 1998 ² | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------|-------------------|-------------------|------------|-------------------|------------|------------|------------|------------|------------|------------|
| N.L. | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 2 |
| P.E.I. | .. | .. | .. | .. | .. | .. | 0 | 0 | 0 | 0 |
| N.S. | 5 | 5 | 6 | 6 | 7 | 6 | 6 | 7 | 7 | 7 |
| N.B. | 1 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Que. | 22 | 23 | 19 | 19 | 20 | 20 | 20 | 20 | 23 | 21 |
| Ont. | 72 | 74 | 82 | 84 | 86 | 88 | 88 | 89 | 95 | 96 |
| Man. | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 8 | 9 | 9 |
| Sask. | 1 | 2 | 2 | 3 | 2 | 2 | 2 | 3 | 3 | 2 |
| Alta. | 20 | 18 | 19 | 17 | 18 | 18 | 19 | 17 | 17 | 16 |
| B.C. | 20 | 23 | 29 | 28 | 27 | 27 | 26 | 26 | 26 | 26 |
| Y.T. | .. | .. | .. | .. | .. | .. | .. | .. | 0 | 0 |
| N.W.T. | .. | .. | .. | .. | .. | .. | .. | .. | 0 | 0 |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 0 |
| Canada | 149 | 155 | 168 | 169 | 172 | 173 | 172 | 174 | 184 | 182 |

Source: HPDB/CIHI.

Notes

.. Information not available.

1. Data as of July 31 of the given year.

2. Data as of September 30 of the given year.

Table Dent-5. Number of Specialists Certified in Oral and Maxillofacial Surgery by Province/Territory, Canada, 1995 to 2004

| | 1995 ¹ | 1996 ² | 1997 | 1998 ² | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------|-------------------|-------------------|------------|-------------------|------------|------------|------------|------------|------------|------------|
| N.L. | 2 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 3 |
| P.E.I. | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 2 |
| N.S. | 12 | 12 | 14 | 12 | 15 | 16 | 17 | 17 | 15 | 15 |
| N.B. | 3 | 5 | 5 | 5 | 4 | 3 | 3 | 3 | 3 | 3 |
| Que. | 67 | 73 | 73 | 73 | 70 | 67 | 68 | 68 | 74 | 71 |
| Ont. | 151 | 152 | 156 | 156 | 157 | 160 | 164 | 164 | 164 | 168 |
| Man. | 11 | 11 | 15 | 13 | 11 | 10 | 14 | 14 | 14 | 14 |
| Sask. | 7 | 8 | 8 | 9 | 9 | 8 | 6 | 5 | 6 | 6 |
| Alta. | 21 | 22 | 21 | 22 | 20 | 21 | 21 | 19 | 19 | 20 |
| B.C. | 28 | 32 | 37 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| Y.T. | .. | .. | .. | .. | .. | .. | 1 | 1 | 2 | 2 |
| N.W.T. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 0 |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 0 |
| Canada | 303 | 319 | 332 | 329 | 326 | 324 | 333 | 330 | 339 | 339 |

Source: HPDB/CIHI.

Notes

.. Information not available.

1. Data as of July 31 of the given year.

2. Data as of September 30 of the given year.

Table Dent-6. Number of Specialists Certified in Orthodontics by Province/Territory, Canada, 1995 to 2004

| | 1995 ¹ | 1996 ² | 1997 | 1998 ² | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------|-------------------|-------------------|------------|-------------------|------------|------------|------------|------------|------------|------------|
| N.L. | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 6 |
| P.E.I. | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| N.S. | 15 | 16 | 15 | 15 | 16 | 16 | 15 | 15 | 15 | 15 |
| N.B. | 12 | 11 | 12 | 13 | 13 | 12 | 12 | 12 | 13 | 13 |
| Que. | 114 | 122 | 121 | 121 | 123 | 122 | 122 | 120 | 118 | 113 |
| Ont. | 245 | 251 | 272 | 283 | 283 | 282 | 282 | 282 | 285 | 286 |
| Man. | 20 | 20 | 20 | 22 | 22 | 22 | 26 | 25 | 26 | 28 |
| Sask. | 9 | 11 | 11 | 13 | 10 | 10 | 10 | 10 | 10 | 10 |
| Alta. | 58 | 58 | 56 | 53 | 55 | 57 | 61 | 58 | 59 | 57 |
| B.C. | 84 | 89 | 98 | 93 | 95 | 94 | 96 | 91 | 93 | 95 |
| Y.T. | .. | .. | .. | .. | .. | 1 | 1 | 1 | 2 | .. |
| N.W.T. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Canada | 563 | 584 | 611 | 619 | 623 | 622 | 631 | 620 | 628 | 626 |

Source: HPDB/CIHI.

Notes

1. Data as of July 31 of the given year.

2. Data as of September 30 of the given year.



Table Dent-7. Number of Specialists Certified in Pediatric Dentistry by Province/Territory, Canada, 1995 to 2004

| | 1995 ¹ | 1996 ² | 1997 | 1998 ² | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------|-------------------|-------------------|------------|-------------------|------------|------------|------------|------------|------------|------------|
| N.L. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| P.E.I. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| N.S. | 6 | 8 | 6 | 6 | 5 | 5 | 6 | 5 | 6 | 6 |
| N.B. | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Que. | 43 | 43 | 45 | 44 | 44 | 41 | 40 | 40 | 41 | 41 |
| Ont. | 83 | 85 | 91 | 91 | 91 | 91 | 89 | 90 | 92 | 96 |
| Man. | 7 | 6 | 7 | 6 | 7 | 7 | 8 | 8 | 9 | 9 |
| Sask. | 3 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 1 | 1 |
| Alta. | 14 | 14 | 15 | 17 | 18 | 19 | 18 | 20 | 21 | 21 |
| B.C. | 19 | 19 | 20 | 19 | 18 | 19 | 19 | 19 | 19 | 20 |
| Y.T. | .. | .. | .. | .. | .. | .. | 1 | 0 | 0 | 1 |
| N.W.T. | .. | .. | .. | .. | .. | .. | 1 | 0 | 0 | 1 |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 0 |
| Canada | 179 | 180 | 189 | 188 | 188 | 187 | 189 | 187 | 192 | 199 |

Source: HPDB/CIHI.

Notes

.. Information not available.

1. Data as of July 31 of the given year.

2. Data as of September 30 of the given year.

Table Dent-8. Number of Specialists Certified in Periodontics by Province/Territory, Canada, 1995 to 2004

| | 1995 ¹ | 1996 ² | 1997 | 1998 ² | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------|-------------------|-------------------|------------|-------------------|------------|------------|------------|------------|------------|------------|
| N.L. | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 2 |
| P.E.I. | .. | .. | .. | .. | .. | .. | .. | .. | 0 | 0 |
| N.S. | 13 | 10 | 12 | 12 | 10 | 11 | 12 | 12 | 12 | 12 |
| N.B. | 4 | 4 | 4 | 5 | 5 | 3 | 3 | 3 | 3 | 3 |
| Que. | 44 | 45 | 46 | 46 | 47 | 47 | 46 | 45 | 47 | 45 |
| Ont. | 140 | 144 | 143 | 145 | 148 | 148 | 149 | 151 | 157 | 157 |
| Man. | 9 | 12 | 12 | 11 | 13 | 12 | 15 | 14 | 11 | 11 |
| Sask. | 5 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 8 | 8 |
| Alta. | 23 | 23 | 26 | 27 | 27 | 24 | 26 | 26 | 23 | 23 |
| B.C. | 33 | 34 | 37 | 33 | 31 | 33 | 33 | 33 | 33 | 31 |
| Y.T. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| N.W.T. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Canada | 273 | 280 | 288 | 287 | 289 | 286 | 292 | 293 | 295 | 292 |

Source: HPDB/CIHI.

Notes

.. Information not available.

1. Data as of July 31 of the given year.

2. Data as of September 30 of the given year.

Table Dent-9. Number of Specialists Certified in Prosthodontics by Province/Territory, Canada, 1995 to 2004

| | 1995 ¹ | 1996 ² | 1997 | 1998 ² | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------|-------------------|-------------------|------------|-------------------|------------|------------|------------|------------|------------|------------|
| N.L. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 0 |
| P.E.I. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 0 |
| N.S. | 10 | 11 | 11 | 13 | 15 | 15 | 14 | 14 | 15 | 14 |
| N.B. | .. | .. | .. | .. | 1 | 1 | 2 | 2 | 2 | 2 |
| Que. | 48 | 49 | 47 | 48 | 48 | 47 | 46 | 46 | 46 | 43 |
| Ont. | 58 | 55 | 56 | 56 | 58 | 57 | 55 | 55 | 58 | 57 |
| Man. | 7 | 7 | 6 | 6 | 6 | 7 | 5 | 5 | 5 | 7 |
| Sask. | 3 | 4 | 5 | 4 | 3 | 3 | 4 | 3 | 5 | 5 |
| Alta. | 20 | 20 | 19 | 19 | 17 | 17 | 17 | 17 | 17 | 17 |
| B.C. | 28 | 30 | 34 | 32 | 28 | 29 | 28 | 27 | 25 | 24 |
| Y.T. | .. | .. | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| N.W.T. | .. | .. | .. | .. | 1 | 0 | 0 | 0 | 0 | 0 |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 0 |
| Canada | 174 | 176 | 179 | 179 | 177 | 176 | 171 | 169 | 173 | 169 |

Source: HPDB/CIHI.

Notes

.. Information not available.

1. Data as of July 31 of the given year.

2. Data as of September 30 of the given year.

Table Dent-10. Number of Certified Dental Specialists in Dental Public Health, Oral Pathology and Oral Radiology, Canada, 1995 to 2004

| Specialty | 1995 ¹ | 1996 ² | 1997 | 1998 ² | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|----------------------|-------------------|-------------------|------------|-------------------|------------|------------|------------|------------|------------|-----------|
| Dental Public Health | 69 | 68 | 66 | 66 | 64 | 66 | 67 | 68 | 62 | 50 |
| Oral Pathology | 44 | 41 | 33 | 35 | 36 | 37 | 38 | 38 | 37 | 36 |
| Oral Radiology | 21 | 22 | 17 | 16 | 15 | 16 | 15 | 16 | 15 | 11 |
| Total | 134 | 131 | 116 | 117 | 115 | 119 | 120 | 122 | 114 | 97 |

Source: HPDB/CIHI.

Notes

.. Information not available.

1. Data as of July 31 of the given year.

2. Data as of September 30 of the given year.



Endnotes

Sources

- Figure Dent-1. Calculated from data in Table Dent-2.
- Figure Dent-2. Census, Statistics Canada
- Table Dent-1. Individual universities.
- Table Dent-2. The Canadian Dental Association, governments of the Yukon and Northwest Territories.
- Tables Dent-3. to Dent-10. The Canadian Dental Association (lists specialties).



Dietitians

Definition

Dietitians plan, implement and manage nutrition and food service programs in a variety of settings. Programs are directed at encouraging healthy nutrition outcomes and the prevention of nutritional disorders; providing treatment of nutrition-related diseases and conditions; and ensuring high-quality food-service operations.

Responsibilities/Activities

Dietitians' responsibilities typically include: assessing nutritional status, developing nutrition care plans, monitoring nutrition interventions and counselling clients; assessing the nutritional needs of population groups by consulting with health professionals, community groups and government in planning, conducting and evaluating nutrition education programs and developing educational materials related to nutrition; and administering, directing and supervising nutrition and food-service programs.

Practice Setting

Dietitians are employed in a wide range of settings including educational institutions, hospitals, long-term care facilities, public and community health services, private practice, government and industry.

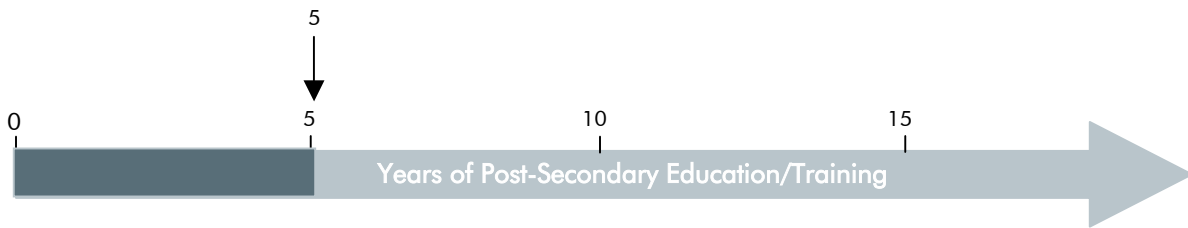
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training

The figure and table below outline the education and/or training requirements necessary to enter practice as a dietitian in Canada.

- A total of five years of post-secondary education is required.



| Typical Length of Program | Province of Education | Education and/or Training |
|---------------------------|-----------------------|---|
| 5 | All provinces | Undergraduate degree in foods and nutrition plus a practicum training program/dietetic internship of approximately 40 weeks, which is integrated into the undergraduate program, or completed as a post-degree program or as a masters practicum. |

Changes to Education and/or Training Requirements**

- There are currently no expected changes to education and/or training requirements in the provinces/territories in which dietitians are regulated or at the national level.

Possible Areas of Certified Specialization**

- There are no areas of specialization at this time.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Dietitians of Canada (see Appendix B for the survey tool).



Examination Requirements **

- The Canadian Dietetic Registration Examination (CDRE) is a requirement of registration with the provincial dietetic regulatory body in all provinces except Quebec.

Graduate Trends

The number of graduates of dietetics programs between 1998 and 2004 is outlined in Table Diet-1. The table indicates the following:

- Nationally, there was a 6.7% increase in the number of graduates from 1998 to 2004.
- Ontario experienced an increase of 53% in the number of graduates between 1999 and 2004 (31 graduates). During the same time period, Quebec experienced a 15.2% decrease in the number of graduates (19 graduates).

Table Diet-1. Number of Graduates of Dietetics Programs¹ by Province/Territory, Canada, 1998 to 2004

| | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------|-------------------------|------------|------------|------------|------------|------------|------------|
| N.L. | .. | 4 | 5 | 4 | 4 | 4 | 4 |
| P.E.I. | .. | 4 | 4 | 5 | 4 | 2 | 7 |
| N.S. | .. | 26 | 27 | 29 | 28 | 31 | 31 |
| N.B. | .. | 14 | 14 | 15 | 16 | 13 | 13 |
| Que. | .. | 125 | 135 | 103 | 113 | 107 | 106 |
| Ont. | .. | 58 | 59 | 65 | 75 | 86 | 89 |
| Man. | .. | 15 | 16 | 14 | 17 | 16 | 17 |
| Sask. | .. | 17 | 18 | 18 | 23 | 27 | 21 |
| Alta. | .. | 36 | 40 | 40 | 38 | 41 | 36 |
| B.C. | .. | 18 | 19 | 24 | 25 | 27 | 26 |
| Y.T. | .. | .. | 2 | 2 | 2 | 1 | 2 |
| N.W.T. | .. | .. | .. | .. | .. | .. | .. |
| Nun. | .. | .. | .. | .. | .. | .. | .. |
| Canada | 330 ² | 317 | 339 | 319 | 345 | 355 | 352 |

Source: HPDB/CIHI.

Notes

.. Information not available.

1. Figures include post-degree interns, university-integrated programs and masters practicum programs. Graduates of masters-level programs that do not include a practicum component are not included.

2. Provincial breakdown unavailable.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Dietitians of Canada (see Appendix B for the survey tool).

Workforce

Primary Data Source: The primary sources of dietitian data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) are regulatory/licensing authorities (in which membership is a condition of practice) and associations (in which membership is voluntary).

Regulatory Environment

The table below indicates the first year in which it became mandatory for Dietitians to register with a provincial/territorial regulatory authority as a condition of practice.

- As of 2004, all provinces had legislation requiring registration with a provincial licensing authority as a condition of practice as a dietitian.

| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|------|------|------|------|-------|-------|-------|------|--------|------|
| First Year of Regulation | 1965 | 1994 | 1998 | 1988 | 1974 | 1994 | 1982 | 1958 | 2000 | 2004* | .. | .. | .. |

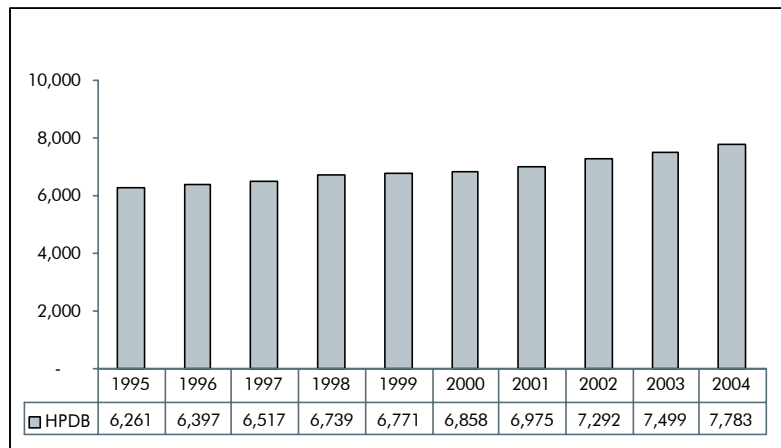
.. Information not available.

* The British Columbia Dietitians' and Nutritionists' Association began registering members prior to 2004 (exact date unknown). The College of Dietitians of British Columbia opened on April 1, 2004, and began registering dietitians as of that date.

Supply Trends

- As shown in Figure Diet-1, the number of registered dietitians in Canada grew steadily at an average rate of 2.5% per year from 1995 to 2004. This represents a 24.3% increase in the number of registered dietitians in Canada over this 10-year period (an increase of 1,522 dietitians).
- The distribution of registered dietitians by province and territory from 1995 to 2004 is outlined in Table Diet-2. The table indicates that in 2004, 33% of all dietitians in Canada were registered in Ontario, and 27% were registered in Quebec.
- Provincially, Ontario had the highest increase in actual number of dietitians (631), while the largest percentage increase over this 10-year period occurred in Alberta (53.4%).

Figure Diet-1. Number of Dietitians in Canada,* 1995 to 2004



Source: HPDB/CIHI.

Note

* Information for the three territories not available for all 10 years.



Table Diet-2. Number of Registered Dietitians* by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------------------------------|----------------|----------------|----------------|----------------|----------------|-----------------|----------------|----------------|-------------------|-------------------|
| N.L. ¹ | 99 | 101 | 102 | 115 | 118 | 123 | 123 | 125 | 138 | 142 |
| P.E.I. ² | 47 | 47 | 46 | 49 | 50 | 50 | 54 | 59 | 61 | 61 |
| N.S. ¹⁰ | 322 † | 318 † | 316 † | 380 | 380 | 360 | 365 | 390 | 405 | 429 |
| N.B. ³ | 210 †,9 | 211 | 217 | 249 | 259 | 262 | 276 | 278 | 306 | 309 |
| Que. ⁴ | 1,924 | 1,892 | 1,893 | 1,848 | 1,856 | 1,901 | 1,916 | 1,968 | 1,968 | 2,090 |
| Ont. ⁵ | 1,929 | 2,047 | 2,145 | 2,142 | 2,153 | 2,202 | 2,256 | 2,316 | 2,488 | 2,560 |
| Man. ⁶ | 263 | 269 | 275 | 282 | 268 | 265 | 289 | 300 | 320 | 322 |
| Sask. ⁷ | 182 | 179 | 191 | 206 | 206 | 222 | 224 | 229 | 242 ¹³ | 251 ¹³ |
| Alta. ¹⁴ | 468 † | 498 † | 520 † | 656 † | 635 † | 619 | 625 | 713 | 725 | 718 |
| B.C. ⁸ | 817 † | 835 † | 812 † | 812 † | 846 † | 845 †,11 | 847 † | 900 † | 825 † | 879 |
| Y.T., N.W.T. & Nun. ^{12, 14} | .. | .. | .. | .. | .. | 9 ¹¹ | .. | 14 | 21 | 22 |
| Canada | 6,261 † | 6,397 † | 6,517 † | 6,739 † | 6,771 † | 6,858 † | 6,975 † | 7,292 † | 7,499 † | 7,783 |

Source: HPDB/CIHI.

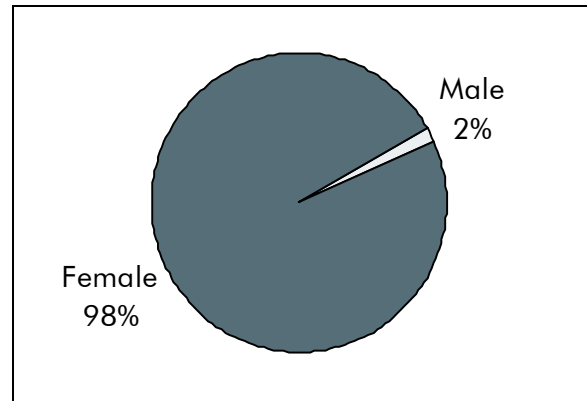
Notes

- * This data table includes both regulated (membership with a specific data provider is required as a condition of practice) and voluntary membership data (registration with the data provider is not a condition of practice); data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).
- † Indicates the presence of voluntary membership data or estimated data (all estimated data are accompanied by superscript notes identifying the source of the estimate; that is, CIHI or data provider). See additional notes below.
- .. Information not available.
1. Newfoundland and Labrador—1995 to 2002 data as of March 31 of the given year.
 2. Prince Edward Island began registering dietitians on April 1, 1995; 2004 data as of August 26, 2004.
 3. New Brunswick—1998 data as of September 30, 1998; 1999 data as of June 9, 1999; 2000 data as of September 9, 2000; 2001 data as of July 15, 2002; 2002 data as of November 15, 2002; 2003 data as of April 25, 2004; 2004 data as of February 6, 2005.
 4. Quebec data as of March 31 of the following year; number includes all retired members, associate members, practising and non-practising members.
 5. Ontario data from the Ontario College of Dietitians. 1998 to 2001 data as of March 31 of the given year; 2002 data as of July 5, 2002; 2003 data as of March 31, 2004; 2004 data as of February 3, 2005.
 6. Manitoba—1995 to 2002 data as of April 1 of the given year; 2003 data as of May 1, 2004; 2004 data as of April 13, 2005. As of January 2005, the Manitoba Association of Registered Dietitians became the College of Dietitians of Manitoba.
 7. Saskatchewan—1998 to 2000 data as of March 31 of the given year; 2003 data as of September 2, 2004.
 8. British Columbia uses the title “registered dietitian/nutritionist” while other provinces use the title “registered dietitian.” 2001 to 2002 data provided as of April 1 of the given year; 2003 data as of June 8, 2004; 2004 data as of January 25, 2005. The College of Dietitians of British Columbia opened April 1, 2004, and registered dietitians as of that date.
 9. Estimate.
 10. Nova Scotia—1998 to 1999 data as of December 24, 1999; 2000 data as of May 6, 2001; 2001 as of March 31, 2002; 2002 data as of February 2, 2003; 2003 data as of March 31, 2003; 2004 data as of March 4, 2005.
 11. There are no regulatory colleges in the territories. Therefore, dietitians are not registered in the territories; as a result, seven of the dietitians working in the Yukon are registered in British Columbia.
 12. Territory data received from Dietitians of Canada. Data include only dietitians practising in the Yukon, Northwest Territories and Nunavut who are members of Dietitians of Canada.
 13. Represents “active registered” dietitians.
 14. 1995 to 2002, and 2004 data as of March 31 of the following year; 2003 data as of June 30, 2004.

What Else Do We Know?

- The percentage of women Dietitians and Nutritionists has decreased slightly, from 95% in 1991 to 93% in 2001 (Source: Census Data, Statistics Canada).
- In 2003, the HPDB initiated collection of gender data. Analysis of the data for 2004 identified that the percentage of female dietitians was 98% (Source: HPDB, CIHI). Readers are cautioned that HPDB data excludes Nutritionists.
- In 2001, the average age of dietitians and nutritionists in Canada is 40 years. Women tend to have a similar average age as their male colleagues (40 and 41 years, respectively) (Source: Census Data, Statistics Canada). For more details on average age and gender refer to Appendix F.

Figure Diet-2. Dietitians by Gender, Canada, 2004



Source: HPDB, CIHI.

Notes

1. Figure does not include British Columbia (gender breakdown not available).
2. Saskatchewan data represents "active registered" dietitians.



What's Happening?

Listed below are references to key research documents relating to dietitians that are recommended** reading for health human resource planners.

Research Reports

1. *Survey of New Graduates of Dietetic Internship/Practicum Training Programs—Studies of 1997, 1998 and 2001 Graduates*. Available from Dietitians of Canada, www.dietitians.ca

List of research reports was updated in June 2005.

Research in Progress

- There is no information available at this time.

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Dietitians of Canada (see Appendix B for the survey tool).

Endnotes

Sources

Figure Diet-1. Calculated from data in Table Diet-2.

Figure Diet-2. Calculated from data in the Health Personnel Database, CIHI.

Table Diet-1. Dietitians of Canada.

Table Diet-2. Provincial dietitians' associations: Prince Edward Island Dietitians Registration Board, Newfoundland Dietetic Association, Nova Scotia Dietetic Association, New Brunswick Association of Dietitians, Ordre professionnel des diététistes du Québec, College of Dietitians of Ontario, Manitoba Association of Registered Dietitians (became the College of Dietitians of Manitoba in January 2005), Saskatchewan Dietitians' Association, College of Dietitians of Alberta, College of Dietitians of British Columbia (2004), British Columbia Dietitians' and Nutritionists' Association (1995 to 2003) and Dietitians of Canada (Northwest Territories, Nunavut and Yukon).



Health Information Management Professionals

Definition

Health information management (HIM) professionals* possess a unique blend of knowledge and skills encompassing biomedical sciences, information science and technology, the legal aspects of HIM and the integration of clinical and financial information. HIM professionals are certified experts in the science and technology of health information management. There are two levels of HIM professionals graduating in Canada today—the diploma graduate and the degree graduate.

Responsibilities/Activities

HIM professionals provide leadership and expertise in data collection and coding classification standards; data quality; record content, retention and destruction; record and systems management; patient access to health information; privacy, security and confidentiality; interpretation and analysis of health data; transition to the electronic health record; and e-HIM (electronic health information management).

Practice Setting

Employment opportunities are found in a variety of settings including acute care within the departments of health records, health information management, decision support, quality management, research and statistics, information systems, utilization management and risk management; government agencies; privacy commissioners' offices; educational institutions; community health clinics; pharmaceutical companies; primary care agencies; home care, mental health and outreach programs; and nursing homes and long-term care facilities.

Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

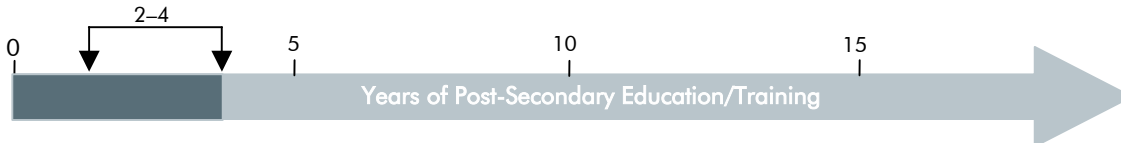
* Referred to as "health record professionals" in *1993–2002 Health Personnel Trends in Canada*.

Entering the Profession

Education and/or Training

The figure and table below outline the education and/or training requirements necessary to enter practice as an HIM professional in Canada.

- A total of two or four years of post-secondary education are required.



| Typical Length of Program | Province/Territory of Education | Education and/or Training |
|---------------------------|---|---------------------------|
| 2 | All provinces/territories (by correspondence) | College diploma |
| 4 | Ontario | University degree |

Changes to Education and/or Training Requirements**

- The profession has been undergoing changes to education and training requirements in the last few years. As of 2001, the profession moved to a diploma and degree profession in HIM.
 - In addition to the education and training requirements, graduates can become certified HIM professionals by becoming members of the Canadian Health Information Management Association (CHIMA). Up until 2000, HIM professionals received either a “certificant” or “associate” level designation, depending on the type of program they graduated from. However, starting in 2001 (as a result of the move to a diploma and degree profession) recognition of the associate-level courses was discontinued and all new active members of CHIMA received only the certificant designation. The associate designation for HIM professionals still exists for those members who graduated from associate-level courses (such as health record technicians) prior to 2001.
- There are no further changes expected to education and/or training requirements. For additional information, please contact CHIMA.

Possible Areas of Certified Specialization**

- Development of certification specialties in data quality, privacy and e-HIM are currently underway.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Health Information Management Association (see Appendix B for the survey tool).



Exam Requirements**

- In order to be a certified HIM professional in all provinces in Canada, you must graduate from a CHIMA-recognized HIM program and successfully complete the CHIMA national certification examination.

Graduate Trends

Currently there are 11 CHIMA-recognized schools in Canada that offer a program in health information management. The information in the tables that follow outlines the number of HIM professionals who graduated and became certificants with CHIMA. It should be noted that the number of graduates who go on to become certified HIM professionals is not necessarily equivalent to the annual number of graduates from each of the educational institutions.

At present, graduates of HIM programs are not required to write the national exam in order to work in the field; however, some employers may require it as a condition of employment. The tables indicate the following:

- Table HIM-1 identifies that from 2001 to 2004, the number of students graduating from the HIM programs and obtaining certificant status with CHIMA increased by 76% (87 to 153).
- Table HIM-2 provides historical data on the number of HIM associates (previously referred to as health record technicians) who graduated between 1995 and 2000. Starting in 2001, CHIMA no longer recognized associate-level HIM programs.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Health Information Management Association (see Appendix B for the survey tool).

Table HIM-1. Number of Health Information Management Graduates Who Became Certificants,¹ by School of Graduation, Canada, 1995 to 2004

| School | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|--|------------|------------|-----------------|----------------|----------------|----------------|-----------------|------------|----------------|------------|
| N.S. | | | | | | | | | | |
| School of Health Record Science ² | 8 | 5 | 9 | 3 | 1 | 0 ⁴ | – | – | – | – |
| Que. | | | | | | | | | | |
| Collège Ahuntsic | 29 | 34 | 41 | 32 | 24 | 34 | .. ⁷ | .. | .. | .. |
| Collège LaFleche | 27 | 23 | 27 ⁵ | 39 | 23 | 14 | .. ⁷ | .. | .. | .. |
| Collège de l'Assomption | 0 | 6 | 1 | 0 | 0 | .. | .. ⁷ | .. | .. | .. |
| Ont. | | | | | | | | | | |
| Algonquin College of Applied Arts & Technology | 22 | 13 | 13 | 1 | 0 ⁴ | – | – | – | – | – |
| George Brown College of Applied Arts & Technology | 10 | 16 | 21 | 7 | 16 | 8 | 22 | 19 | 15 | 21 |
| Man. | | | | | | | | | | |
| Red River Community College | .. | .. | .. | .. | .. | .. | 0 ⁶ | 13 | 0 ⁶ | 8 |
| Sask. | | | | | | | | | | |
| Saskatchewan Institute of Applied Science & Technology | 11 | 8 | 8 | 10 | 7 | 7 | 6 | 10 | 7 | 6 |
| Alta. | | | | | | | | | | |
| Northern Alberta Institute of Technology | 13 | 1 | 0 | 0 ⁴ | – | – | – | – | – | – |
| B.C. | | | | | | | | | | |
| Douglas College | 8 | 14 | 12 | 12 | 1 | 1 | 2 ⁶ | 24 | 4 ⁶ | 17 |
| Canadian Healthcare Association³ | .. | .. | .. | .. | .. | .. | 57 | 124 | 108 | 101 |
| Canada | 128 | 120 | 132 | 104 | 72 | 64 | 87 | 190 | 134 | 153 |

Source: HPDB/CIHI.

Notes

Please note that prior to 2001, graduates would have been classified as "health record administrators," "health record technicians" or "health record practitioners." As of 2001, these designations are no longer used, and all professionals are now referred to as "health information management professionals."

.. Information not available.

– Not applicable

1. Includes only those graduates who applied to CHIMA during the year of graduation and who were accepted as certificants. It is not necessarily equivalent to the annual number of graduates of each institute.

2. Name later changed to the Queen Elizabeth II Health Sciences Centre.

3. CHIMA-recognized home-study program.

4. Discontinued program.

5. CIHI estimate.

6. There are no or few graduates in 2001 and 2003 as students are only taken in every two years.

7. Program no longer recognized by CHIMA.



Table HIM-2. Number of Health Information Management Graduates Who Became Associates,¹ by School of Graduation, Canada, 1995 to 2000

| School | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|--|------------|------------|----------------|----------------|----------------|----------------|
| N.S. | | | | | | |
| School of Health Record Science ² | 4 | 1 | 0 | 1 | 0 ³ | 0 |
| Ont. | | | | | | |
| Algonquin College of Applied Arts & Technology | 3 | 1 | 3 | 0 ³ | 0 | 0 |
| Niagara College of Applied Arts & Technology | 14 | 7 | 0 | 0 | 1 | 0 |
| Fanshawe College of Applied Arts & Technology | 6 | 5 | 8 | 0 ³ | 0 | 0 |
| George Brown College of Applied Arts & Technology | 22 | 35 | 12 | 1 | 0 | 0 ³ |
| Confederation College | 7 | 6 | 12 | 2 | 2 | 0 |
| Man. | | | | | | |
| Red River Community College | 10 | 10 | 0 | 13 | 0 | 16 |
| Sask. | | | | | | |
| Saskatchewan Institute of Applied Science & Technology | 1 | 4 | 0 | 0 | 8 | 0 |
| Alta. | | | | | | |
| Southern Alberta Institute of Technology | 14 | 18 | 12 | 9 | 6 | 13 |
| Northern Alberta Institute of Technology | 0 | 3 | 0 ³ | 0 | 0 | 0 |
| B.C. | | | | | | |
| Douglas College | 4 | 2 | 0 ³ | 0 | 0 | 0 |
| Canadian Healthcare Association | 53 | 39 | 46 | 41 | 42 | 64 |
| Canada | 138 | 131 | 90 | 67 | 59 | 93 |

Source: HPDB/CIHI.

Notes

After 2000, no new associate-level HIM professionals were certified by CHIMA.

1. Includes only those graduates who applied to CHIMA during the year of graduation and who were accepted as associates. It is not necessarily equivalent to the annual number of graduates of each institute.
2. Name later changed to the Queen Elizabeth II Health Sciences Centre.
3. Discontinued program.

Workforce

Primary Data Source: The primary source of health information management professional data in the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) is the Canadian Health Information Management Association (CHIMA), in which membership is mandatory in order to be certified across Canada.

Regulatory Environment

There are no legislated regulatory requirements for HIM professionals at this time; however, membership with CHIMA is mandatory in order to keep the HIM certification. CHIMA is a self-regulating national college. All CHIMA active members must comply with mandatory continuing professional education credits. Some employers require certification with CHIMA as a condition of employment.

Supply Trends

The Canadian Health Information Management Association and the Canadian College of Health Record Administrators (CCHRA) operate under two official charters, but they operate jointly, under the acronym CHIMA. CHIMA is responsible for developing and maintaining education and certification standards, providing membership programs and services and promoting health information management expertise.

- Membership for HIM professionals with CHIMA decreased steadily at an average rate of 3.2% per year from 1995 to 2004. This represents a 25.5% decrease in the number of certified HIM professionals over this 10-year period (a decrease of 842 HIM professionals).
- The distribution of CHIMA members by province from 1995 to 2004 is outlined in Table HIM-3. The table indicates that all provinces experienced a decrease in the number of HIM professionals.



Table HIM-3. Total Number of Certificant and Associate HIM Professionals Who Were Members of the Canadian Health Information Management Association,¹ by Province/Territory, Canada, 1995 to 2004*

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|-------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| N.L. | 52 | 56 | 51 | 49 | 42 | 42 | 38 | 34 | 38 | 33 |
| Certificant level HIM professionals | 17 | 16 | 16 | 15 | 15 | 15 | 20 | 16 | 20 | 16 |
| Associate level HIM professionals | 35 | 40 | 35 | 34 | 27 | 27 | 20 | 18 | 18 | 17 |
| P.E.I. | 21 | 20 | 15 | 13 | 16 | 17 | 15 | 15 | 14 | 17 |
| Certificant level HIM professionals | 9 | 9 | 7 | 6 | 7 | 6 | 6 | 6 | 6 | 7 |
| Associate level HIM professionals | 12 | 11 | 8 | 7 | 9 | 11 | 9 | 9 | 8 | 10 |
| N.S. | 202 | 198 | 184 | 180 | 173 | 167 | 155 | 149 | 142 | 143 |
| Certificant level HIM professionals | 95 | 93 | 90 | 91 | 90 | 86 | 78 | 73 | 68 | 71 |
| Associate level HIM professionals | 107 | 105 | 94 | 89 | 83 | 81 | 77 | 76 | 74 | 72 |
| N.B. | 111 | 111 | 99 | 99 | 99 | 103 | 94 | 99 | 101 | 102 |
| Certificant level HIM professionals | 42 | 40 | 35 | 36 | 38 | 43 | 38 | 42 | 44 | 46 |
| Associate level HIM professionals | 69 | 71 | 64 | 63 | 61 | 60 | 56 | 57 | 57 | 56 |
| Que. | 99 | 105 | 57 | 37 | 28 | 26 | 22 | 18 | 22 | 19 |
| Certificant level HIM professionals | 91 | 98 | 49 | 31 | 24 | 23 | 19 | 16 | 20 | 18 |
| Associate level HIM professionals | 8 | 7 | 8 | 6 | 4 | 3 | 3 | 2 | 2 | 1 |
| Ont. | 1,404 | 1,324 | 1,267 | 1,153 | 1,131 | 1,086 | 1,094 | 1,124 | 1,150 | 1,188 |
| Certificant level HIM professionals | 507 | 485 | 472 | 429 | 426 | 410 | 434 | 484 | 534 | 581 |
| Associate level HIM professionals | 897 | 839 | 795 | 724 | 705 | 676 | 660 | 640 | 616 | 607 |
| Man. | 165 | 154 | 129 | 120 | 110 | 116 | 87 | 99 | 87 | 82 |
| Certificant level HIM professionals | 33 | 31 | 28 | 24 | 24 | 23 | 22 | 35 | 26 | 32 |
| Associate level HIM professionals | 132 | 123 | 101 | 96 | 86 | 93 | 65 | 64 | 61 | 50 |
| Sask. | 267 | 262 | 262 | 265 | 259 | 259 | 224 | 214 | 221 | 230 |
| Certificant level HIM professionals | 131 | 131 | 133 | 137 | 131 | 131 | 118 | 117 | 127 | 135 |
| Associate level HIM professionals | 136 | 131 | 129 | 128 | 128 | 128 | 106 | 97 | 94 | 95 |
| Alta. | 503 | 461 | 442 | 484 | 324 | 308 | 307 | 289 | 279 | 283 |
| Certificant level HIM professionals | 220 | 208 | 198 | 186 | 148 | 140 | 138 | 140 | 142 | 153 |
| Associate level HIM professionals | 283 | 253 | 244 | 298 | 176 | 168 | 169 | 149 | 137 | 130 |
| B.C. | 455 | 431 | 434 | 413 | 388 | 376 | 351 | 342 | 338 | 345 |
| Certificant level HIM professionals | 276 | 270 | 281 | 267 | 245 | 233 | 225 | 235 | 245 | 260 |
| Associate level HIM professionals | 179 | 161 | 153 | 146 | 143 | 143 | 126 | 107 | 93 | 85 |
| Y.T. & N.W.T. & Nun. | 24 | 21 | 25 | 22 | 21 | 22 | 25 | 23 | 22 | 19 |
| Canada | 3,303 | 3,143 | 2,965 | 2,835 | 2,591 | 2,522 | 2,412 | 2,406 | 2,412 | 2,461 |

Source: HPDB/CIHI.

Notes

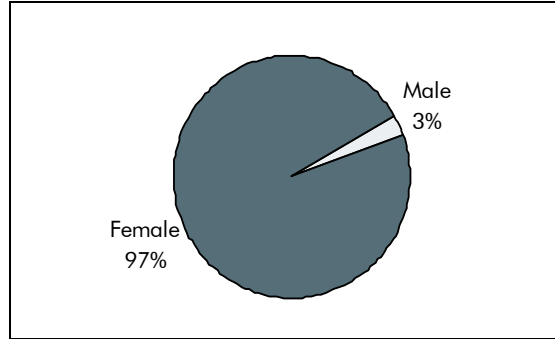
* This data table includes voluntary membership data (mandatory registration with the data provider is not a condition of employment); data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).

1. Membership in CHIMA is voluntary across all provinces/territories except N.B. and N.L., where it is mandatory.

What Else Do We Know?

- In 2003, the HPDB initiated collection of gender data. Analysis of the data for 2004 identified that the majority (97%) of HIM professionals are women (Source: HPDB, CIHI).
- For more details on average age and gender refer to Appendix F.

Figure HIM-1. Health Information Management Professionals by Gender, Canada, 2004



Source: HPDB/CIHI.



What's Happening?

Listed below are references to key research documents relating to HIM professionals that are recommended** reading for health human resource planners.

Research Reports

- There is no information available at this time.

Research in Progress

- CHIMA is in the process of completing a sector study and is working to establish an HIM-specific code in the national occupational classification. Contact: Gail Crook, Executive Director and Registrar, CHIMA, gail.crook@chima-cchra.ca, for further details or visit the Web site at www.chima-cchra.ca.

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

The list of research in progress was updated in October 2005.

** Please note that the information in this section is adapted from a survey completed by the staff at the Canadian Health Information Management Association (see Appendix B for the survey tool).

Endnotes

Sources

- Figure HIM-1. Calculated from data in the Health Personnel Database, CIHI.
- Table HIM-1. 1995 to 2000: Canadian Health Information Management Association (CHIMA).
2001 to 2003: Individual colleges and universities, Canadian Healthcare Association.
2004: Canadian Health Information Management Association (CHIMA).
- Table HIM-2. Canadian Health Information Management Association (CHIMA).
- Table HIM-3. Canadian Health Information Management Association(CHIMA).



Licensed Practical Nurses

Definition

Licensed practical nurses (LPNs) are regulated health professionals who work in partnership with other members of the health care team to provide nursing services to individuals, families and groups of all ages.

Responsibilities/Activities

Licensed practical nurses combine nursing knowledge, skills and judgment when treating health conditions, promoting health, preventing illness and assisting clients to achieve an optimal state of health. They assess, plan, implement and evaluate care for clients throughout the life cycle as disease progresses and through palliative stages.

Practice Setting

LPNs practise in a variety of settings and contexts including, but not limited to, hospitals, homes for the aged, public-health units, community-nursing agencies, private practices, clinics, doctors' offices, industry, schools, adult day-care centres, private homes, community health centres, child-care centres and children's camps.

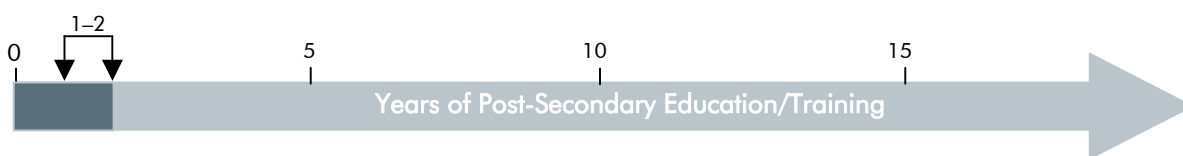
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training Requirements

The figure and table below outline the education and/or training requirements necessary to enter practice as an LPN in Canada.

- One to two years of post-secondary education are required.
- Individuals with equivalency in practical nursing must pass the Canadian Practical Nurses Registration Examination (CPNRE) to work as an LPN in a Canadian province or territory.



| Typical Length of Program (in months ¹) | Province/Territory of Education | Education and/or Training |
|---|--|--|
| 12 | British Columbia, Newfoundland and Labrador, ¹ Nova Scotia and the Yukon ² | Diploma or equivalency.* |
| 12-16 | Alberta ³ | Diploma or equivalency.* |
| 12-18 | Ontario | Certificate or equivalency. ⁴ |
| 13 | New Brunswick, Northwest Territories ⁵ and Saskatchewan ⁶ | Diploma or equivalency.* |
| 14 | Prince Edward Island ⁷ | Diploma or equivalency.* |
| 16 | Manitoba | Diploma or equivalency.* |
| 24 | Quebec | Diploma or equivalency.* |

Notes

Nunavut information not available.

* To obtain equivalency status, you must graduate from an approved practical nursing program and successfully complete the national exam.

1. LPN program taken over four semesters. For equivalency to be granted, a detailed assessment of the educational preparation is completed. Applicants would have to complete any areas of the practical nursing program in which they are deficient.

2. There is a time limit of three years to pass the exam; otherwise, you must show proof of 1,000 hours of work in the past five years to obtain equivalency status.

3. From 48 weeks (delivered over a 59-week period) to 60 weeks; 68 weeks after September 2005.



4. As of 2005, the entry to practise requirement in Ontario has changed to a diploma in practical nursing granted by a college of applied arts and technology in Ontario, or its equivalent in the opinion of the College of Ontario Registration Committee.
5. Northwest Territories and the provinces have a mutual recognition. If an LPN is licensed within Canada, the Northwest Territories approves the LPN to work in the Northwest Territories, providing the applicant completes an application package and provides evidence of good standing and good character.
6. A total of 1,200 work hours in the previous five years plus five continuing-education credits annually are also required to obtain equivalency status.
7. Taken over 16 months. Prince Edward Island obtained equivalency status with the new legislation (2002). It is currently not set up for equivalency designation and has never had anyone apply for status.

Changes to Education and/or Training Requirements**

The following changes in the education and/or training requirements for LPNs are anticipated:

- In Ontario, as of 2005 the entry to practise requirement has changed to a diploma in practical nursing granted by a college of applied arts and technology in Ontario, or its equivalent. See the College of Nurses of Ontario (CNO) Web site at www.cno.org for more information.

Possible Areas of Certified Specialization**

Currently there are no national areas of certified specialization; however, depending on the province and school of graduation, specialization is available:

- Manitoba offers certified specialization in operating room, advanced foot care and dialysis.
- Alberta offers certified specialization in orthopedic, immunization, dialysis and operating room.

Examination Requirements**

- Successfully complete the Canadian Practical Nurses Registration Examination (CRNRE). Please visit www.asitest.ca for further information.

Graduate Trends

Information on numbers of graduates from individual education providers is not currently captured within the Health Personnel Database (HPDB) or within the Licensed Practical Nurses Database (LPNDB) at the Canadian Institute for Health Information (CIHI). However, the LPNDB does collect and report on educational attainment of registrants and offers a historical profile by province/territory. A summary of this information can be found in the What Else Do We Know? section within this chapter, but more detailed information can be found in *Workforce Trends of Licensed Practical Nurses in Canada, 2004*, available from www.cihi.ca.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the LPNDB/CIHI.

Workforce

The HPDB at CIHI utilizes data from the provincial/territorial regulatory authorities for the years 1995 to 2001; whereas 2002 to 2004 data are provided by the LPNDB at CIHI. Since 2002, licensed practical nursing regulatory authorities have submitted a core set of agreed-upon data elements to CIHI on an annual basis; reported indicators from the LPNDB system are based on standardized data that are comparable across Canada. The introduction of LPNDB data reflects a break in the LPN data series reported in the HPDB, and readers are cautioned that 2002 to 2004 data are not directly comparable to those of previous years (1995 to 2001).



Visit www.cihi.ca for more information.

Regulatory Environment

The table below indicates the first year in which it became mandatory for LPNs to register with a provincial/territorial regulatory authority as a condition of practice.

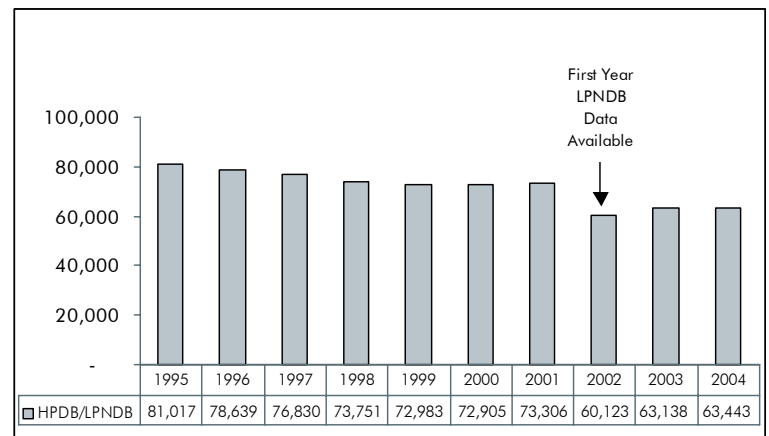
- As of 2001, LPNs were regulated in all provinces and territories in Canada. The term “licensed practical nurse” is used in all provinces/territories except Ontario, where licensed practical nurses are referred to as “registered practical nurses.”

| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|------|------|------|------|-------|-------|------|------|--------|------|
| First Year of Regulation | 1983 | 1959 | 1957 | 1960 | 1974 | 1947 | 1980 | 1956 | 1947 | 1988 | 1987 | 1988 | 2001 |

Supply Trends

- In Figure LPN-1, the 2002 to 2004 data, as indicated by the HPDB, are not directly comparable to the data presented for 1995 to 2001 due to different collection methodologies (see Table LPN-1).
- From 2002 to 2004, the number of LPNs increased by 5.5% (from 60,123 to 63,443).
- The distribution of LPNs by province from 1995 to 2004 is outlined in Table LPN-1. The table indicates that in 2004, 38.6% of all LPNs in Canada were registered in Ontario.

Figure LPN-1. Number of Licensed Practical Nurses in Canada, 1995 to 2004



Sources: HPDB/CIHI, LPNDB/CIHI.



Table LPN-1. Number of Licensed Practical Nurses¹ by Province/Territory of Licensure, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | | 2002 ² | 2003 | 2004 |
|---------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|-------------------|---------------|---------------|
| N.L. | 2,833 | 2,838 | 2,797 | 2,809 | 2,859 | 2,905 | 2,889 | Series Break | 2,759 | 2,719 | 2,710 |
| P.E.I. | 597 | 586 | 631 | 621 | 621 | 634 | 634 | | 593 | 619 | 628 |
| N.S. | 3,244 | 3,160 | 3,220 | 3,209 | 3,214 | 3,266 | 3,369 | | 2,950 | 3,022 | 3,058 |
| N.B. | 2,243 | 2,427 | 2,517 | 2,575 | 2,656 | 2,662 | 2,743 | | 2,333 | 2,429 | 2,556 |
| Que. | 19,283 | 18,572 | 18,082 | 16,617 | 16,405 | 16,246 | 16,203 | | 14,560 | 14,831 | 15,472 |
| Ont. | 36,066 | 35,392 | 34,623 | 33,781 | 33,141 | 33,071 | 32,513 | | 23,827 | 25,730 | 24,467 |
| Man. | 2,737 | 2,580 | 2,488 | 2,582 | 2,483 | 2,540 | 2,627 | | 2,250 | 2,417 | 2,415 |
| Sask. | 2,405 | 2,277 | 2,187 | 2,144 | 2,154 | 2,057 | 2,122 | | 2,011 | 2,056 | 2,131 |
| Alta. | 5,562 | 4,963 | 4,723 | 4,272 | 4,186 | 4,358 | 4,993 | | 4,435 | 4,766 | 5,051 |
| B.C. | 5,871 | 5,667 | 5,385 | 4,964 | 5,092 | 4,987 | 5,045 | | 4,262 | 4,391 | 4,811 |
| Y.T. ² | 80 | 76 | 74 | 66 | 62 | 67 | 69 | | 64 | 60 | 53 |
| N.W.T. ³ | 96 | 101 | 103 | 111 | 110 | 112 | 99 | | 79 | 98 | 91 |
| Nun. | .. | .. | .. | .. | .. | .. | .. | | .. | .. | .. |
| Canada | 81,017 | 78,639 | 76,830 | 73,751 | 72,983 | 72,905 | 73,306 | | 60,123 | 63,138 | 63,443 |

Sources: HPDB/CIHI, LPNDB/CIHI.

Notes

.. Information not available.

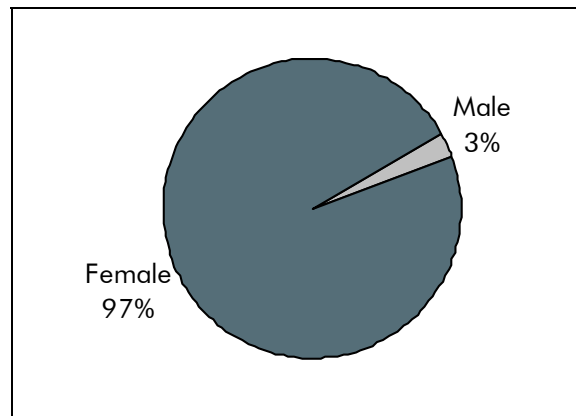
1. Data from 1995 to 2001 represent total registered/licensed LPNs, regardless of activity/employment status. Data since 2002 represent a data series break and reflect those registered, active practicing and employed in practical nursing. The 2002 to 2004 data are not directly comparable to the data presented for 1995 to 2001 due to different collection methodologies. CIHI data will differ from provincial data due to the CIHI collection, processing and reporting methodology. Please review the Methodological Notes for more comprehensive information regarding the collection and comparability of LPNDB data.
2. A Yukon licence is not required if a Canadian licensed practical nurse is eligible for licensure, or is licensed elsewhere in Canada. In 2002, Yukon did not submit employment status; therefore all LPNs in Yukon are considered to have been employed in practical nursing.
3. Northwest Territories: 2000 and 2001 data as of March 31 of the given year.

What Else Do We Know?

The following information is from the CIHI publication, *Workforce Trends of Licensed Practical Nurses in Canada, 2004*. For further details please visit www.cihi.ca.

- Between 2003 and 2004, the number of LPNs employed in practical nursing increased by 0.5%, from 63,138 to 63,443. This rate of increase was less than that for the RN workforce (2.2%), but more than that of the RPN workforce (0.3%).
- Less than half (44.1%) of the LPN workforce has full-time employment, while 35.1% are employed part time and 14.5% work on a casual basis. Rates of casual employment varied for LPNs between 7.8% in Ontario and 36.8% in Newfoundland and Labrador.
- In 2004, 6.9% of the LPN workforce was male. This compares to rates of 5.4% for the RN workforce and 22.7% for the RPN workforce. The highest proportion of male LPNs is in Newfoundland and Labrador, where male LPNs comprise 13.4% of the workforce, more than 6 percentage points higher than the Canadian average.
- The average age of LPNs employed in practical nursing remained unchanged between 2003 and 2004 at 44.4 years. In 2004, 18.0% of the LPN workforce was aged 55 years or older, with 5.2% aged 60 or older.
- Among the 2004 LPN workforce, the average age of LPNs at the time of their initial practical nursing education increased from 23.5 years for those graduating between 1980 and 1984 to 30.8 years for those graduating since the year 2000.
- Where LPNs work varies by province/territory: in 2004, 38.0% of Quebec's LPNs were employed in the Hospital sector, whereas 67.7% of Saskatchewan's LPNs were employed in the Hospital sector.

Figure LPN-2. Licensed Practical Nurses by Gender, Canada, 2004



Source: LPNDB, CIHI.



What's Happening?

Listed below are references to key research documents relating to LPNs that are recommended reading for health human resource planners.

Research Reports

1. *2004 Nursing Work Life Satisfaction Survey*. Calgary Health Region, April 14, 2005, Calgary, Alta., available from www.calgaryhealthregion.ca
2. *Capacité légale de l'infirmière auxiliaire*. Levasseur, D. and Ledoux, G., 2004, available from www.oïiaq.org/publications
3. *Caractéristiques de l'effectif de l'Ordre des infirmières et infirmiers auxiliaires du Québec, 2003–2004*. Lévesque, G., available from www.oïiaq.org/publications
4. *Code de déontologie des infirmières et infirmiers auxiliaires*. OIIAQ, available from www.oïiaq.org/publications
5. *Evaluation Framework to Determine the Impact of Nursing Staff Mix Decisions*. Canadian Nurses Association, January 2005
6. *Licensed Practical Nurses: A Practical Solution to the Nursing Shortage*. Prepared for the Standing Senate Committee on Social Affairs, Science and Technology, Canadian Practical Nurses Association, October 2001
7. *Licensed Practical Nurses Supply Report 2002/03—Newfoundland and Labrador (March 2004)*. Newfoundland and Labrador Health Boards Association, available from www.nlhba.nl.ca
8. *New Times-Bright Future, Primary Health Care: Emerging Roles for LPNs*. College of Licensed Practical Nurses, April 2005, Edmonton, Alta., available from www.clpna.com
9. *PEI Licensed Practical Nurses Competency Project Final Report*. August 27, 2004, Future Learning Inc. 25 Queen Street, Suite 23, Charlottetown, P.E.I., C1A 4A2, contact LPNRB or LPN Association of PEI for copies.
10. *Phase 1 Final Report—Building the Future: An integrated strategy for nursing human resources in Canada*. May 2005
11. *Report on 2004 LPN Utilization Survey*. Published by SALPN, 2310 Smith Street, Regina, Sask., S4P 2P6
12. *The Untapped Resource: Implementing Full Scope of Practice for Licensed Practical Nurses*. Canadian Practical Nurses Association, December 2003
13. *Towards Increased Integration of LPNs into Health Authority Employment Settings*. Four discussion papers prepared by the Health Authorities Professions Act Regulations Review Committee, July–November 2002, Edmonton, Alta., available from www.clpna.com
14. *Workforce Trends of Licensed Practical Nurses in Canada, 2004*. Canadian Institute for Health Information, 2005

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

15. *Work Life Taskforce, Renewing our Commitment to Nurses*. A Report to the Minister of Health, Manitoba Government, April 2001

List of research reports was updated in October 2005.

Research in Progress

1. Systemic Approach to Maximizing Nursing Scopes of Practice, Calgary Health Region, Nursing Research Department, Contact: Dr. Jeanne Besner, jeanne.besner@calgaryhealthregion.ca.
2. Workplace Violence, Contact: Bobbi Stadnyk, University of Saskatchewan, Regina, Sask., bobbianozzi@cableregina.com

List of research in progress was updated in October 2005.



Endnotes

Sources

Table LPN-1. 1995 to 2001 data from HPDB/CIHI; 2002 to 2004 data from LPNDB/CIHI.

Figure LPN-1. 1995 to 2001 data from HPDB/CIHI; 2002 to 2004 data from LPNDB/CIHI.

Figure LPN-2. Calculated from data in LPNDB/CIHI.



Medical Laboratory Technologists

Definition

Medical laboratory technologists (MLTs) perform laboratory tests that assist physicians and other health professionals in the diagnosis and treatment of patients.

Responsibilities/Activities

The duties of a medical laboratory technologist include: performing and interpreting diagnostic tests on blood, tissue and body fluids; cultivating, isolating and identifying bacteria, fungi, viruses and parasites that invade the body; counting blood cells, recognizing abnormalities and reporting changes that have taken place in blood cells; determining blood type and crossmatching for transfusions; and arranging tissue in sections, staining and preparing specimens for examination under the microscope. Specialty areas of medical laboratory technology also include diagnostic cytology; the study of cells taken from the body for the detection of cancer; and clinical genetics, the laboratory investigation into the basis of genetic disease.

Practice Setting

Most medical laboratory technologists work in hospitals or government laboratories, private medical clinics, public health clinics or blood transfusion–service labs.

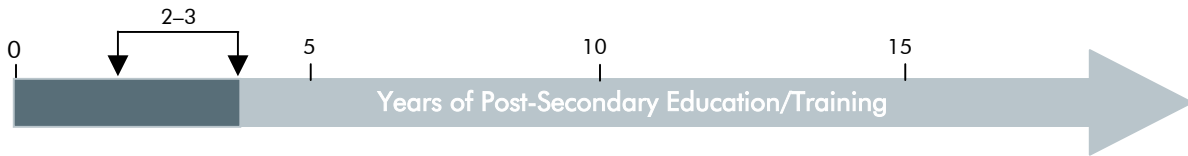
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training Requirements

The table and figure below outline the education and/or training requirements necessary to enter practice as a medical laboratory technologist in Canada.

- Two to three years of post-secondary education are required.



| Typical Length of Program | Province of Education | Education and/or Training |
|---------------------------|--|---|
| 2-3 | Alberta British Columbia Manitoba New Brunswick Newfoundland and Labrador Ontario Quebec Saskatchewan | Graduation from accredited Canadian training program* in Medical Laboratory Science at the community college or university level. |

Note

* High school diploma with an emphasis on biology, computer science, chemistry and math is a prerequisite. Program lengths and other prerequisites also apply to specific educational institutions.

Changes to Education and/or Training Requirements**

- For information please contact the Canadian Society for Medical Laboratory Science (CSMLS) at www.csmls.org.

Possible Areas of Certified Specialization**

- Diagnostic cytology
- Clinical genetics

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Society for Medical Laboratory Science (see Appendix B for the survey tool).



Examination Requirements **

- All provinces, with the exception of Quebec, require CSMLS certification for medical laboratory technologists as part of their licensing process. As part of the CSMLS certification, applicants must successfully pass a national examination. In Quebec, the Ordre professionnel des technologistes médicaux du Québec (OPTMQ) recognizes graduation from a Quebec cegep or the CSMLS certificate as entry-level requirements.

Graduate Trends

In the absence of graduate data from education providers, Table MLT-1 highlights the number of CSMLS certificants (individuals who obtained CSMLS certification) between 1995 and 2004. The table indicates that:

- Overall, there has been a 33% increase in the number of candidates who have obtained CSMLS certification.
- Nova Scotia experienced the greatest percentage increase (115%, an increase of 23 certificants).
- Ontario had the greatest overall increase in the number of certificants (112).

Table MLT-1. Number of CSMLS General Certificate Exam Candidates¹ Who Obtained General Certification by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|--------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| N.L. | 13 | 23 | 17 | 22 | 21 | 17 | 13 | 18 | 19 | 23 |
| P.E.I. | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 2 | 4 |
| N.S. | 20 | 22 | 4 | 1 | 2 | 1 | 3 | 4 | 46 | 43 |
| N.B. | 14 | 17 | 17 | 9 | 7 | 13 | 14 | 14 | 21 | 21 |
| Que. | 181 | 178 | 187 | 208 | 148 | 152 | 142 | 125 | 173 | 168 |
| Ont. | 150 | 151 | 138 | 85 | 57 | 36 | 56 | 83 | 179 | 262 |
| Man. | 23 | 21 | 19 | 0 | 3 | 1 | 7 | 4 | 31 | 30 |
| Sask. | 29 | 19 | 5 | 0 | 10 | 4 | 15 | 13 | 12 | 16 |
| Alta. | 61 | 36 | 26 | 19 | 25 | 24 | 35 | 47 | 100 | 82 |
| B.C. | 52 | 15 | 38 | 17 | 3 | 16 | 52 | 36 | 83 | 75 |
| Y.T. | .. | .. | .. | .. | .. | .. | .. | .. | 0 | 0 |
| N.W.T. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | 3 | 0 |
| No formal program ² | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 2 | 1 |
| Canada | 545 | 482 | 453 | 363 | 276 | 265 | 339 | 344 | 671 | 725 |

Source: HPDB/CHI.

Notes

.. Information not available.

1. Statistics consist of candidates writing the CSMLS national exam for the first time.

2. Includes foreign-trained students deemed eligible to write the CSMLS Certification exam.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Society for Medical Laboratory Science (see Appendix B for the survey tool).

Workforce

Primary Data Source: The primary sources of medical laboratory technologist data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) are associations (in which membership is voluntary) and regulatory/licensing authorities (in which membership is a condition of practice).

Regulatory Environment

The table below indicates the first year in which it became mandatory for medical laboratory technologists to register with a provincial/territorial regulatory authority as a condition of practice.

- As of 2004, it was mandatory for MLTs to register with a regulatory authority as a condition of practice in six provinces: Ontario, Quebec, Saskatchewan, New Brunswick, Alberta and Nova Scotia.
- Membership in the Canadian Society for Medical Laboratory Science (CSMLS) is voluntary.

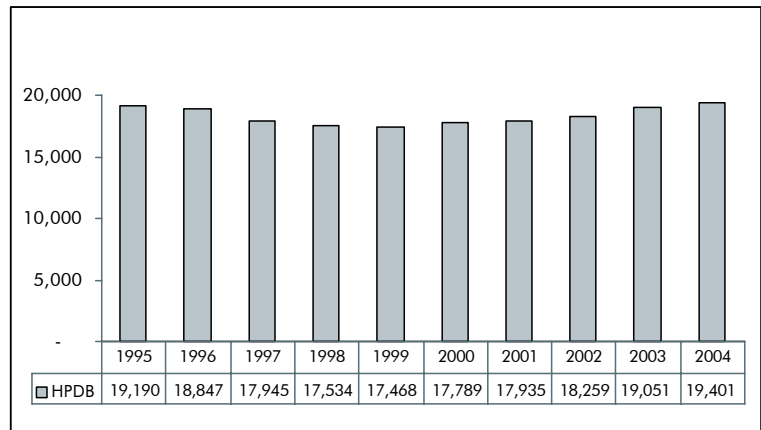
| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|------|------|------|------|-------|-------|------|------|--------|------|
| First Year of Regulation | NR | NR | 2004 | 1992 | 1973 | 1994 | NR | 1996 | 2002 | NR | NR | NR | NR |

NR = Not Regulated as of 2004.

Supply Trends

- As shown in Figure MLT-1, the number of active registered medical laboratory technologists in Canada decreased from 1995 to 1999, before increasing gradually up to 2004. Overall, there was a 1.1% increase in the number of medical laboratory technologists in Canada over this 10-year period (an increase of 211 MLTs). Because registration is only mandatory in six provinces, these statistics may be under representative.
- The distribution of active registered medical laboratory technologists by province from 1995 to 2004 is outlined in Table MLT-2. The table indicates that in 2004, 37.3% of all MLTs in Canada were registered in Ontario, and 18% were registered in Quebec.
- The percentage change between 1995 and 2004 varies from province to province, with only three provinces experiencing positive growth of more than 20% in this profession over this 10-year period: Quebec (47.7%), Newfoundland and Labrador (29.3%) and Alberta (23.3%).

Figure MLT-1. Number of Medical Laboratory Technologists in Canada, 1995 to 2004



Source: HPDB/CIHI.



Table MLT-2. Number of Active Registered* Medical Laboratory Technologists by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|----------------------------|------------------|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|
| N.L. [†] | 304 | 325 | 318 | 313 | 329 | 319 | 349 | 358 | 406 | 393 |
| P.E.I. [†] | 104 | 107 | 102 | 104 | 103 | 105 | 102 | 96 | 116 | 103 |
| N.S. [†] | 847 | 799 | 773 | 750 | 754 | 747 | 792 | 821 | 863 | 875 |
| N.B. ¹ | 649 | 662 | 632 | 623 | 623 | 643 | 647 | 650 | 654 | 652 |
| Que. ² | 2,383 | 2,366 | 2,469 | 2,606 | 2,694 | 2,724 | 2,810 | 2,860 | 2,931 | 3,520 |
| Ont. ³ | 8,247 | 8,139 | 7,684 | 7,351 | 7,166 | 7,023 | 6,846 | 6,934 | 7,215 | 7,246 |
| Man. [†] | 1,039 | 1,010 | 974 | 926 | 938 | 952 | 943 | 952 | 1,010 | 960 |
| Sask. ⁴ | 998 [†] | 951 | 946 | 927 | 954 | 972 | 967 | 962 | 938 | 949 |
| Alta. ^{5,†} | 1,800 | 1,812 | 1,462 | 1,432 | 1,450 | 1,843 ⁶ | 1,995 | 2,149 | 2,207 | 2,219 |
| B.C. [†] | 2,771 | 2,630 | 2,538 | 2,457 | 2,409 | 2,416 | 2,443 | 2,437 | 2,665 | 2,441 |
| Y.T. & N.W.T. [†] | 48 | 46 | 47 | 45 | 48 | 45 | 41 | 40 | 46 | 43 |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Canada [†] | 19,190 | 18,847 | 17,945 | 17,534 | 17,468 | 17,789 | 17,935 | 18,259 | 19,051 | 19,401 |

Source: HPDB/CIHI.

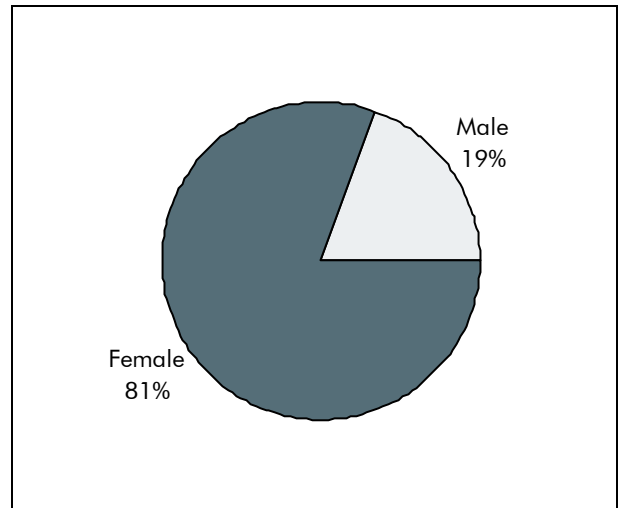
Notes

- * This data table includes both regulated (membership with a specific data provider is required as a condition of practice) and voluntary membership data (registration with the data provider is not a condition of practice); data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).
- † Indicates the presence of voluntary membership data. See additional notes below.
1. New Brunswick data are provided by the New Brunswick Society of Medical Laboratory Technologists (NBSMLT), a regulatory authority in which licensure is mandatory for practice in New Brunswick; individuals granted registration under a legislative "grandfather" clause are not included in these counts.
 2. Quebec data are provided by the Ordre professionnel des technologistes médicaux du Québec (OPTMQ), the provincial regulatory authority since 1973. Data as of March 31. OPTMQ numbers for Quebec are low as their mandatory registration is still being implemented.
 3. Ontario data from 1995 to 2004 are provided by the College of Medical Laboratory Technologists of Ontario, a regulatory authority in which licensure is mandatory to practise in Ontario.
 4. Saskatchewan data from 1996 to 2004 are provided by the Saskatchewan Society of Medical Laboratory Technologists (SSMLT), a regulatory authority in which licensure is mandatory to practise in Saskatchewan.
 5. The Alberta Society of Medical Laboratory Technologists (ASMLT) is a professional organization in which licensure has been mandatory since 2002; however, data before 2002 is voluntary membership data.
 6. Increase may be due to legislation forthcoming and employers beginning to require that MLTs be certified.

What Else Do We Know

- The percentage of women in the medical laboratory technology profession marginally increased from 80% in 1991 to 81% in 2001 (Source: Census Data, Statistics Canada).
- The average age of medical laboratory technologists in Canada is 41 years. Female MLTs are of the same age as their male colleagues (41 years) (Source: 2001 Census Data, Statistics Canada). For more details on average age and gender refer to Appendix F.

Figure MLT-2. Medical Laboratory Technologists by Gender, Canada, 2001



Source: Census, Statistics Canada.



What's Happening?

Listed below are references to key research documents relating to medical laboratory technology that are recommended** reading for health human resource planners.

Research Reports

1. *An Environmental Scan of the Human Resources Issues Affecting Medical Laboratory Technologists and Medical Radiation Technologists, Assessment Strategies for the Advisory Committee on Health Human Resources*, Health Canada, 1998
2. *An Environmental Scan of the Human Resources Issues Affecting Medical Laboratory Technologists and Medical Radiation Technologists (update). Assessment Strategies for the Advisory Committee on Health Human Resources*, Health Canada, 2001, (released 2002)
3. *Clinical Placements for Medical Laboratory Technologists—Costs, Benefits and Alternatives*. Grant, M. and Davis, K., available from www.csmls.org
4. "CSMLS New Graduate Employment Survey 2003," *Canadian Journal of Medical Laboratory Science*, Vol. 67, No. 5
5. *Medical Laboratory Technologists National Human Resources Review—A Call for Action*. CSMLS, April 2001, available from www.csmls.org
6. "Medical Laboratory Technologists National Human Resources Review—Nation-Wide Alert." Davis, K., *Canadian Journal of Medical Technology*, June 2002, available from www.csmls.org
7. *Planning and Education for Medical Laboratory Technologists in Ontario*. Ministry of Health, Province of Ontario, Public Release, spring 2003

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

The list of research reports was updated in October 2005.

Research in Progress

1. *New Graduate Employment Uptake—Ongoing Annual Study by CSMLS*, Contact: Kurt Davis, CSMLS, khDavis@csmls.org, or www.csmls.org

The list of research in progress was updated in October 2005.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at The Canadian Society for Medical Laboratory Science (see Appendix B for the survey tool).

Endnotes

Sources

- Figure MLT-1. Calculated from data in Table MLT-2.
- Figure MLT-2. Calculated using Census Data, Statistics Canada, 2001.
- Table MLT-1. The Canadian Society of Medical Laboratory Science.
- Table MLT-2. The Canadian Society of Medical Laboratory Science, College of Medical Laboratory Technologists of Ontario, Alberta Society of Medical Laboratory Technologists (1995 to 2002), Alberta College of Medical Laboratory Technologists (2003 to 2004), New Brunswick Society of Medical Laboratory Technologists, Saskatchewan Society of Medical Laboratory Technologists, Ordre professionnel des technologistes médicaux du Québec, Nova Scotia College of Medical Laboratory Technologists (2003 to 2004).



Medical Physicists

Definition

Medical physicists are health care professionals with specialized training in the medical applications of physics. The work of medical physicists often involves the use of physical agents, which include X-rays, radioactive materials, ultrasound, magnetic and electric fields, infrared and ultraviolet light, heat and light in diagnosis and therapy.

Responsibilities/Activities

Specific areas of activity for a medical physicist include clinical service, radiation safety, research and development and teaching. **Clinical service:** The roles of a medical physicist in imaging and radiotherapy include administration of quality assurance programs; development of specialized procedures and protocols; and equipment design, specification, acceptance, testing, calibration and troubleshooting. Medical physicists are primarily responsible for the accuracy of the radiotherapy treatments delivered. **Radiation safety:** Medical physicists have expertise in radiation safety. Canadian regulations recognize medical physicists who are certified by the Canadian College of Physicists in Medicine as radiation safety officers for medical facilities employing radiation-emitting devices. **Research and development:** Canadian radiotherapy physicists play a central role in a variety of research areas such as the design and construction of radiotherapy treatment equipment; the use of heat and light in cancer treatment; the theory of radiation absorption and dose calculation; and radiobiology. Canadian imaging physicists are leaders in the development of and improvements to positron emission tomography, magnetic resonance imaging, ultrasound, X-ray and radionuclide imaging and biomagnetic mapping, among other areas. **Teaching:** In Canada, most medical physicists have some affiliation with a university. Many medical physicists teach in graduate and undergraduate medical physics and physics programs. They also teach radiology, radiation oncology and nuclear medicine residents, medical students and radiology, radiotherapy and nuclear-medicine technologists.

Practice Setting

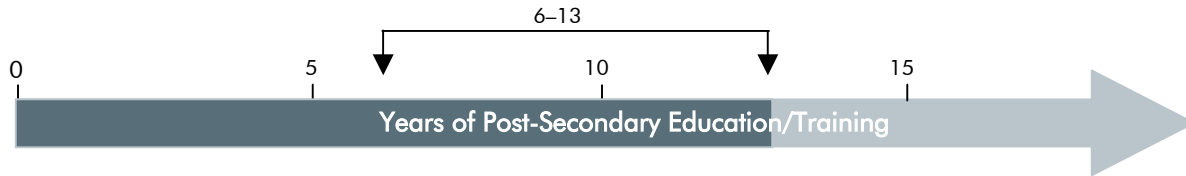
Most medical physicists work in cancer-treatment facilities, hospital diagnostic imaging departments or hospital-based research establishments. Others work in universities, government and industry.

Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training Requirements

- The table and figure below outline the education and/or training requirements necessary to enter practice as a medical physicist in Canada.
- Six to thirteen years of post-secondary education (Master’s or doctoral degree) are required.



| Typical Length of Program | Province/Territory** of Education | Education and/or Training |
|---------------------------|--|---|
| 4 | Ontario Manitoba Alberta British Columbia | Undergraduate degree in physics or engineering physics. |
| 2* + 3 | Quebec | Undergraduate degree in physics. |
| 2*+ 4 | Quebec | Undergraduate degree in engineering physics. |
| 2 | Quebec Ontario Manitoba Alberta British Columbia | Master of Science degree in medical physics or physics. |
| 4-5 | Quebec Ontario Manitoba Alberta British Columbia | Frequently, a PhD degree in medical physics or physics. |
| 2 | Quebec Ontario Manitoba Alberta British Columbia | Frequently, residency training in a clinical setting. |

* 2 years of cegep are a prerequisite.

** This list of provinces/territory may not be comprehensive.



Changes to Education and/or Training Requirements **

- Efforts are currently underway in several provinces to establish Medical Physicists as a regulated profession; this process may result in the development of requirements for entry-to-practice for the profession.

Possible Areas of Certified Specialization**

The Canadian College of Physicists in Medicine certifies the clinical competence of medical physicists in four sub-specialties:

- Therapeutic Radiological Physics
- Diagnostic Radiological Physics
- Nuclear Medicine Physics
- Magnetic Resonance Imaging

The certification process includes specific certification in radiation safety.

Examination Requirements **

- Membership in the Canadian College of Physicists in Medicine requires completion of a rigorous competency examination process. This is a national standard. Employers typically seek medical physicists with this credential, or equivalent.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Organization of Medical Physicists (COMP) (see Appendix B for the survey tool).

Workforce

Primary Data Source: The primary source of medical physicist data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) is the Canadian Organization of Medical Physicists.

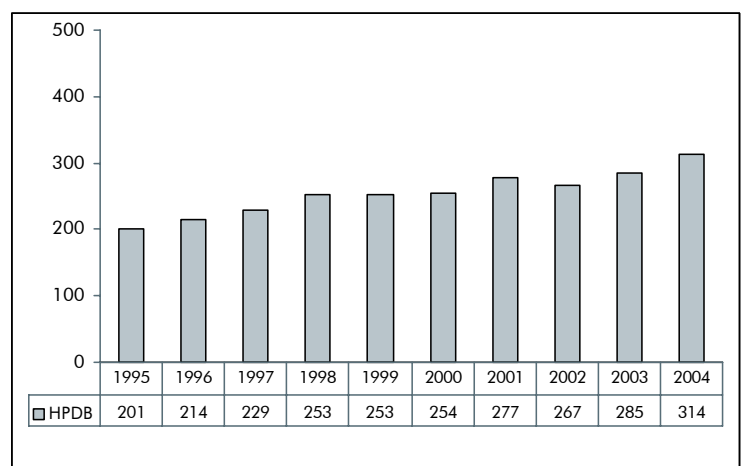
Regulatory Environment

- Although there are currently no regulatory requirements for medical physicists, regulatory agencies may recommend that qualified medical physicists fulfill certain functions. For example, the federal Canadian Nuclear Safety Commission does recommend qualified medical physicists as radiation safety officers for radiation teletherapy and brachytherapy facilities.
- There are also efforts currently underway in several provinces to establish medical physics as a regulated profession.
- Currently, a Canadian College of Physicists in Medicine (CCPM) certification is not a requirement to work in Canada; however, in many jurisdictions a CCPM certification is an employer requirement. Changes to the process for certification with the CCPM are currently being implemented, the most significant of which is the introduction of an oral component to the traditional written examination required for membership with the CCPM. In order to be CCPM certified, you must also be a member of Canadian Organization of Medical Physicists (COMP), which means you have to hold a master of science degree (or higher) in medical physics and be actively practising.

Supply Trends

- As shown in Figure MP-1, the number of active registered medical physicists in Canada grew at an average rate of 5.2% per year from 1995 to 2004. This represents a 56.2% increase in the number of medical physicists in Canada over this 10-year period (an increase of 113 medical physicists).
- The distribution of medical physicists by province from 1995 to 2004 is outlined in Table MP-2. The table indicates that in 2004, 44% of all medical physicists in Canada were registered in Ontario, and 19% were registered in Quebec.
- Given the small numbers of medical physicists in some of the provinces, the provinces that account for the largest percentage increases over this 10-year period—Prince Edward Island, Alberta and Manitoba—represent very small increases in the actual numbers of medical physicists (3, 12 and 6, respectively).

Figure MP-1. Number of Medical Physicists in Canada, 1995 to 2004



Source: HPDB/CIHI.



Table MP-1. Number of Members of the Canadian Organization of Medical Physicists (COMP)* by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|----------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| N.L.† | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 |
| P.E.I.† | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 4 |
| N.S.† | 8 | 9 | 8 | 8 | 8 | 9 | 8 | 8 | 11 | 10 |
| N.B.† | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 5 | 7 | 7 |
| Que.† | 34 | 34 | 39 | 41 | 43 | 41 | 44 | 43 | 43 | 60 |
| Ont.† | 90 | 105 | 107 | 123 | 117 | 118 | 127 | 121 | 133 | 138 |
| Man.† | 10 | 9 | 13 | 13 | 13 | 12 | 15 | 15 | 15 | 16 |
| Sask.† | 7 | 8 | 9 | 11 | 11 | 10 | 12 | 10 | 10 | 10 |
| Alta.† | 18 | 19 | 21 | 25 | 27 | 27 | 29 | 26 | 27 | 30 |
| B.C.† | 26 | 22 | 23 | 23 | 25 | 28 | 33 | 35 | 34 | 36 |
| Y.T., N.W.T. & Nun.† | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Canada† | 201 | 214 | 229 | 253 | 253 | 254 | 277 | 267 | 285 | 314 |

Source: HPDB/CIHI.

Notes

This data table includes voluntary membership data (mandatory registration with the data provider is not a condition of employment); data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).

† Indicates the presence of voluntary membership data.

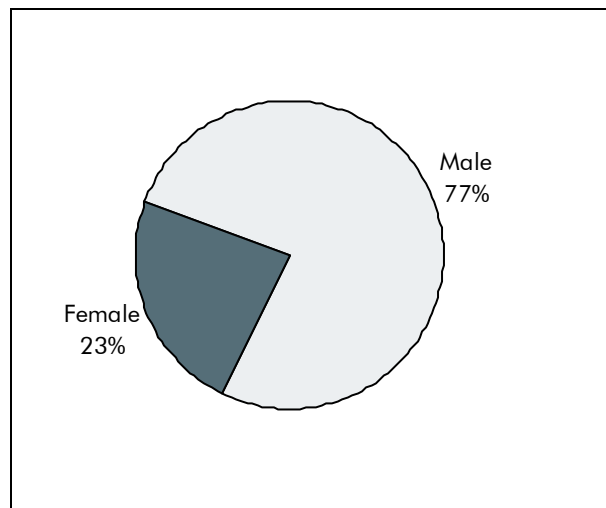
.. Information not available.

* Data provided by the Canadian Organization of Medical Physicists (COMP) and are usually as of August/September of given year. Data represent full members in Canada (excludes retired, students, emeritus and associates).

What Else Do We Know?

- In 2003, the HPDB initiated collection of gender data. Analysis of the data for 2004 identified that 77% of medical physicists were male (Source: Canadian Organization of Medical Physicists, COMP).
- Information on average age is not available at this time.

Figure MP-2. Medical Physicists by Gender, Canada, 2004



Source: COMP.

What's Happening?

Listed below are references to key research documents relating to medical physicists that are recommended** reading for health human resource planners.

Research Reports

1. *Guidelines for the Provision of Physics Services to Radiotherapy*. Council of the Institute of Physics and Engineering in Medicine (IPEM), 2002
2. *Manual of Cancer Services Standards*. 2001, NHS Executive, Health Services Directorate, Wellington House, London, SE1 8UG, UK, available from www.doh.gov.uk
3. "Quality Assurance in Radiotherapy: The Importance of Medical Physics Staffing Levels. Recommendations from an ESTRO/EFOMP Joint Task Group." Belletti, S. et. al., 1996, *Radiotherapy and Oncology*, Volume 41, pp. 89–94
4. *Canadian Strategy on Cancer Control: Human Resources Planning Working Group, Final Report*. January 2002

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

Research in Progress

There is no information to report at this time.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at The Canadian Organization of Medical Physicists (COMP) (see Appendix B for the survey tool).



Endnotes

Sources

- Figure MP-1. Calculated from data in Table MP-1.
- Figure MP-2. Calculated from data in the Health Personnel Database, CIHI.
- Table MP-1. Canadian Organization of Medical Physicists (COMP).



Medical Radiation Technologists

Definition

Medical radiation technologists (MRTs) operate diagnostic-imaging and radiation-therapy equipment to produce images of body structure and function and administer radiation treatment for the diagnosis and treatment of injury and disease. Medical radiation technology encompasses the four disciplines of magnetic resonance, nuclear medicine, radiological technology and radiation therapy.

Responsibilities/Activities

MRTs' duties include operating machines and accessory equipment including plain image, fluoroscopy, mammography, computed tomography (CT) scan, angiography, magnetic resonance (MR), gamma cameras, positron emission tomography (PET) scanners, ultrasound and radiation therapy treatment units to produce images of body structure and function for the diagnosis and/or treatment of disease or injury by radiologists, and/or to plan and deliver radiation treatment. MRTs actively contribute to patient care, record and process patient data, address radiation (or magnetism) safety issues for patients and staff, collaborate as team members with other health care providers and perform quality assurance and quality control protocols on equipment. They may act as radiation safety officers for their institution or clinic.

Practice Setting

MRTs may be employed in hospitals, cancer treatment centres, clinics, research and education facilities and in equipment sales and application.

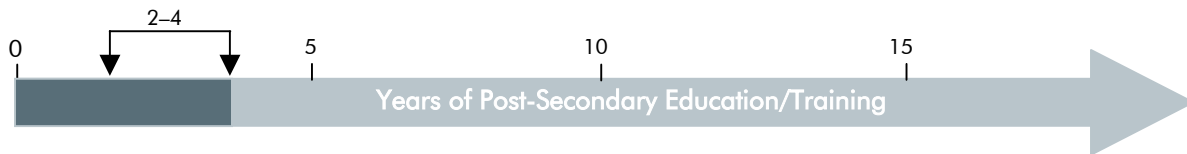
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training

The table and figure below outline the education and/or training requirements necessary to enter practice as a medical radiation technologist in Canada.

- Two to four years of post-secondary education are required.



| Typical Length of Program | Province of Education | Education and/or Training |
|---------------------------|-----------------------------|---|
| 2-3 | All provinces | Diploma education program (varies in duration across Canada). |
| 1* + 3 | British Columbia Ontario | Degree education program. |

* A prerequisite of at least one year (5 credits) of university education, with one full course in each of: biology, mathematics and physics.

Changes to Education and/or Training Requirements **

Please note the above education requirements currently apply to the MRT certification disciplines of nuclear medicine, radiation therapy and radiological technology. The fourth certification, available for magnetic resonance, is currently considered a "second" discipline, meaning that candidates must first qualify in another discipline (nuclear medicine, radiation therapy, radiological technology or ultrasound), and then enter into a program for magnetic resonance certification. It is expected that this certification will move toward an entry-level discipline in the future. Information on the status of individual Canadian MRT programs' transition to degree exit is available from the Canadian Association of Medical Radiation Technology (www.camrt.ca).

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Association of Medical Radiation Technologists (CAMRT) (see Appendix B for the survey tool).



Possible Areas of Certified Specialization**

- The Canadian Association of Medical Radiation Technologists (CAMRT) currently offers certificate programs in the following specializations:
 - Breast imaging
 - Management development
 - Computed tomography (CT)
 - Advanced certification (in the four association disciplines—magnetic resonance, nuclear medicine, radiation therapy and radiological technology)
 - Medical dosimetry (in progress)

Examination Requirements**

- In all provinces except British Columbia and Quebec, there is a requirement that the CAMRT national certification exam must be successfully completed in order to work in Canada.
- In Quebec, the exam of the Ordre des technologues en radiologie du Québec (OTRQ) is deemed equivalent to the CAMRT exam.
- In British Columbia, most employers require membership in the CAMRT (successful certification exam is a prerequisite to membership) in order to work. This requirement also applies to foreign-educated technologists.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Association of Medical Radiation Technologists (CAMRT) (see Appendix B for the survey tool).

Graduate Trends

In the absence of graduate data from education providers, Table MRT-1 represents the number of graduates who passed the CAMRT national certification exam* between 1995 and 2004.

The table indicates the following:

- There has been an increase of 35.7% in the number of graduates who successfully completed the CAMRT national certification exam during this 10-year period.

Table MRT-1. Number of Medical Radiation Technologist Graduates¹ Who Passed the CAMRT National Certification Exam, by Province, Canada, 1995 to 2004*

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|-------------------|------------|------------|------------|------------|------------|------------|------------|------------------------|------------|------------|
| N.L. | 12 | 16 | 14 | 10 | 13 | 13 | 15 | 19 | 19 | 18 |
| P.E.I. | 6 | 0 | 1 | 6 | 0 | 0 | 6 | 6 | 8 | 9 |
| N.S. | 20 | 22 | 11 | 11 | 7 | 10 | 7 | 21 | 16 | 18 |
| N.B. | 15 | 13 | 15 | 10 | 9 | 22 | 26 | 34 | 19 | 23 |
| Que. ² | 189 | 165 | 144 | 153 | 96 | 110 | 133 | 127 ^{†,4} | 193 | 177 |
| Ont. | 223 | 199 | 244 | 253 | 218 | 189 | 246 | 239 | 283 | 350 |
| Man. | 27 | 32 | 28 | 8 | 23 | 22 | 28 | 35 | 25 | 36 |
| Sask. | 22 | 22 | 20 | 13 | 18 | 8 | 21 | 33 | 32 | 29 |
| Alta. | 55 | 64 | 45 | 40 | 45 | 52 | 69 | 87 | 80 | 86 |
| B.C. | 61 | 51 | 61 | 57 | 66 | 72 | 71 | 77 | 81 | 83 |
| N.P. ³ | 0 | 0 | 0 | 0 | 10 | 77 | 39 | 49 | 40 | 26 |
| Canada | 630 | 584 | 583 | 561 | 505 | 575 | 661 | 727[†] | 796 | 855 |

Source: HPDB/CIHI.

Notes

* This data table includes both regulated (membership with a specific data provider is required as a condition of practice) and voluntary membership data (registration with the data provider is not a condition of employment); data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).

† Indicates the presence of estimated data (all estimated data are accompanied by superscript notes identifying the source of the estimate; that is, CIHI or data provider).

1. May include graduates from magnetic resonance, nuclear medicine, radiation therapy and radiological technology.

2. Quebec data for 1995 to 2001 and 2003 to 2004 are from the OTRQ.

3. N.P. denotes non-provincial candidates that may reside in the territories or out of the country.

4. CIHI estimate.



Workforce

Primary Data Source: The primary sources of medical radiation technologist data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) are associations (in which membership is voluntary) and regulatory/licensing authorities (in which membership is a condition of practice).

Regulatory Environment

The table below indicates the first year in which it became mandatory for medical radiation technologists to register with a provincial/territorial regulatory authority as a condition of practice.

- In all provinces except British Columbia, registration with either a provincial regulatory authority or with CAMRT is mandatory.
- In six provinces, registration with a provincial regulatory authority is a mandatory condition of practice for medical radiation technologists.

| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------------|------------|------|-------------------|------|------------|------------|------|------|--------|------|
| First Year of Regulation | NREG | NREG | 1958, NREG | 1958, NREG | 1973 | 1980*/1993*/2004* | NREG | 1983, NREG | 1980, NREG | NR | .. | .. | .. |

.. Information not available.

NREG = Mandatory registration with CAMRT (if year and NREG are present, then regulation with CAMRT and the province is mandatory).

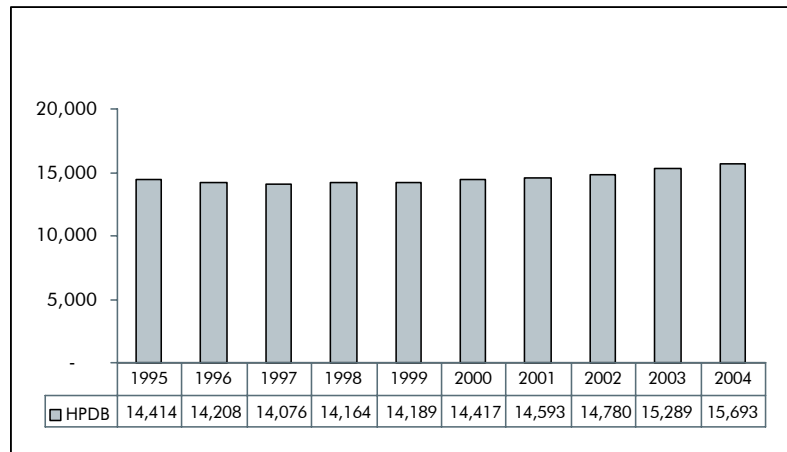
NR = Not regulated.

* 1980—Radiation therapy, radiography; 1993—Nuclear medicine; 2004—Magnetic resonance.

Supply Trends

- As shown in Figure MRT-1, the number of active registered MRTs in Canada grew at an average rate of 1% per year from 1995 to 2004. This represents an 8.9% increase in the number of licensed MRTs in Canada over this 10-year period (an increase of 1,279 MRTs).
- The distribution of active registered MRTs by province from 1995 to 2004 is outlined in Table MRT-2. The table indicates that in 2004, 36.7% of all MRTs in Canada were registered in Ontario, and 25.7% were registered in Quebec.
- Provincially, the largest percentage increases over this 10-year period occurred in Alberta (22.8%), Prince Edward Island (15.4%) and New Brunswick (12.9%).

Figure MRT-1. Number of Medical Radiation Technologists in Canada, 1995 to 2004



Source HPDB/CIHI.

Table MRT-2. Number of Active Registered Medical Radiation Technologists¹ by Province/Territory, Canada, 1995 to 2004*

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| N.L. | 271 | 262 | 265 | 262 | 262 | 262 | 279 | 278 | 293 | 293 |
| P.E.I. | 65 | 65 | 64 | 68 | 68 | 67 | 67 | 70 | 68 | 75 |
| N.S. | 522 | 498 | 515 | 517 | 507 | 502 | 496 | 517 | 528 | 533 |
| N.B. | 443 | 451 | 445 | 454 | 458 | 460 | 463 | 475 | 473 | 500 |
| Que. ² | 3,730 | 3,685 | 3,577 | 3,569 | 3,604 | 3,679 | 3,679 | 3,714 | 3,928 | 4,028 |
| Ont. ³ | 5,384 | 5,260 | 5,197 | 5,257 | 5,263 | 5,306 | 5,388 | 5,476 | 5,616 | 5,775 |
| Man. | 657 | 651 | 616 | 618 | 595 | 586 | 581 | 592 | 603 | 624 |
| Sask. | 418 | 418 | 414 | 420 | 420 | 438 | 450 | 451 | 445 | 429 |
| Alta. | 1,352 | 1,314 | 1,322 | 1,376 | 1,383 | 1,455 | 1,515 | 1,528 | 1,584 | 1,660 |
| B.C. [†] | 1,572 | 1,604 | 1,661 | 1,623 | 1,629 | 1,662 | 1,675 | 1,679 | 1,725 | 1,750 |
| Y.T., N.W.T. & Nun. | .. | .. | .. | .. | .. | .. | .. | .. | 26 | 26 |
| Canada[†] | 14,414 | 14,208 | 14,076 | 14,164 | 14,189 | 14,417 | 14,593 | 14,780 | 15,289 | 15,693 |

Source: HPDB/CIHI.

Notes

* This data table includes both regulated (membership with a specific data provider is required as a condition of practice) and voluntary membership data (registration with the data provider is not a condition of practice); data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).

† Indicates the presence of voluntary membership data.

.. Information not available.

1. Membership in Quebec refers to the Ordre des technologistes en radiologie du Québec; membership for the rest of Canada refers to the Canadian Association of Medical Radiation Technologists.

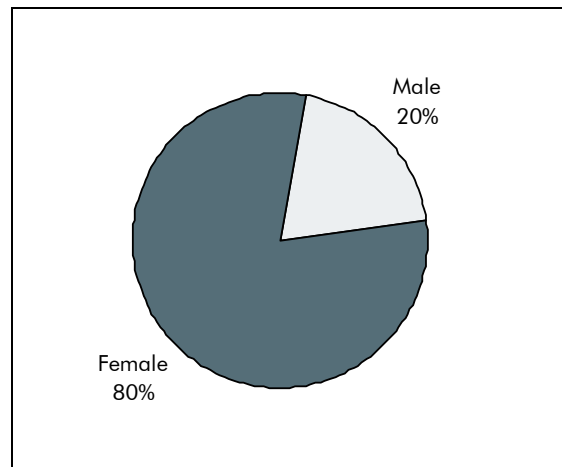
2. Data are provided by the Ordre des technologistes en radiologie du Québec; 2004 data as of March 31, 2005.

3. Data are provided by the College of Medical Radiation Technologists of Ontario and represent active registered members only.

What Else Do We Know

- The percentage of women in the medical radiation therapy profession has remained the same from 1991 to 2001 (80%) (Source: Census Data, Statistics Canada).
- The average age of MRTs in Canada is 40 years. Female MRTs tend to be a similar average age as their male colleagues (41 and 40 years, respectively) (Source: 2001 Census Data, Statistics Canada). For more details on average age and gender refer to Appendix F.

Figure MRT-2. Medical Radiation Technologists by Gender, Canada, 2001



Source: Census, Statistics Canada.



What's Happening?

Listed below are references to key research documents relating to medical radiation technology that are recommended** reading for health human resource planners.

Research Reports

1. *An Environmental Scan of the Human Resources Issues Affecting Medical Laboratory Technologists and Medical Radiation Technologists*. Health Canada, 2001, prepared for the Allied Health Working Group, Federal/Provincial/Territorial Advisory Committee on Health Human Resources, Ottawa, Ont.
2. CAMRT Web site Career Information section, available from www.camrt.ca
3. *Expanded Roles for Medical Radiation Technologists: Data Analysis and Interpretation of the Physician Extender Study*. Lauzon, R. and Gowsell, A., 2005, Ottawa: Canadian Association of Medical Radiation Technologists
4. "Human Resource Planning Issues Affecting Radiation Therapists." Lauzon, R. et. al., 2000, *Canadian Journal of Medical Radiation Technology*, Vol. 31, No. 2, pp. 49–56. See also Erratum: *CJMRT* Vol. 31, No. 4, p. 207
5. "Human Resources Database Study for Medical Radiation Technologists." Lauzon, R., April 2003, Health Human Resources Strategy Division, Health Care Strategies and Policy Directorate, Health Canada (unpublished document)
6. *Imaging the Future*. Curry, L., 2004, report prepared for the Canadian Association of Radiologists, available from www.car.ca
7. *Projet de recherche sur les lavements barytés double contraste : les résultats et la suite*. Report of the Ordre des technologies en radiologie du Québec and the Association des radiologistes du Québec, Crompton, A., 2005, *Écho X* 25: 2 (September), pp. 13–17
8. *Radiation Therapists: An Ontario Based Human Resources Study*. Stone, C., 1998, Toronto, Ont.: The Michener Institute for Applied Health Services
9. *Report of the Task Force on Human Resources for Radiation Services (Ontario)*. Hollenberg, C. H., Chair, 1999, Toronto, Ont.: Ontario Ministry of Health
10. *Standards of Practice*. 1998, Ottawa: Canadian Association of Medical Radiation Technologists
11. *Technologues en radio-oncologie. Document de travail*. Ordre des technologies en radiologie du Québec, Rapport du groupe de travail sur la planification de la main-d'œuvre, January 11, 2000

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Association of Medical Radiation Technologists (CAMRT) (see Appendix B for the survey tool).

12. *Timely Access to Quality Care. The Obligation of Government, The Right of Canadians.* Submission to the Senate Committee on the Health of Canadians, Canadian Association of Radiologists, March 2001

The list of research reports was updated in November 2005.

Research in Progress

1. Advanced Practice in Radiation Therapy (AP4RT) Project (2004). See Web site for details (www.ontarioradiationtherapy.ca). Five pilot projects to field test advanced roles in radiation therapy in Ontario.
2. A Situational Analysis and Recommendations for Internationally Educated Technologists. Canadian Association of Medical Radiation Technologists (2005). Project includes supply and demand studies of MRTs in Canada.

The list of research in progress was updated in November 2005.

Data Tables

Table MRT-3. Number of Registered Medical Radiation Technologists¹ by Province/Territory, Canada, 1995 to 2004*

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| N.L. | 271 | 262 | 265 | 262 | 262 | 262 | 280 | 282 | 299 | 298 |
| P.E.I. | 66 | 66 | 65 | 71 | 70 | 68 | 71 | 73 | 71 | 78 |
| N.S. | 530 | 506 | 524 | 518 | 510 | 503 | 497 | 518 | 529 | 534 |
| N.B. | 446 | 454 | 447 | 464 | 468 | 469 | 470 | 483 | 479 | 506 |
| Que. ² | 3,730 | 3,685 | 3,577 | 3,569 | 3,604 | 3,679 | 3,679 | 3,714 | 3,928 | 4,028 |
| Ont. ³ | 5,384 | 5,260 | 5,197 | 5,257 | 5,263 | 5,306 | 5,388 | 5,476 | 5,616 | 5,775 |
| Man. | 658 | 652 | 617 | 630 | 610 | 601 | 595 | 601 | 611 | 638 |
| Sask. | 419 | 419 | 414 | 420 | 421 | 440 | 454 | 454 | 448 | 431 |
| Alta. | 1,353 | 1,315 | 1,324 | 1,380 | 1,385 | 1,456 | 1,515 | 1,528 | 1,587 | 1,661 |
| B.C. [†] | 1,582 | 1,613 | 1,668 | 1,668 | 1,681 | 1,715 | 1,728 | 1,734 | 1,775 | 1,806 |
| Y.T., N.W.T. & Nun. | .. | .. | .. | .. | .. | .. | .. | .. | 26 | 26 |
| Canada[†] | 14,439 | 14,232 | 14,098 | 14,239 | 14,274 | 14,499 | 14,677 | 14,863 | 15,369 | 15,781 |

Source: HPDB/CIHI.

Notes

* This data table includes both regulated (membership with a specific data provider is required as a condition of practice) and voluntary membership data (registration with the data provider is not a condition of practice); data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).

† Indicates the presence of voluntary membership data.

.. Information not available.

1. Membership in Quebec refers to the Ordre des technologues en radiologie du Québec; membership for the rest of Canada refers to the Canadian Association of Medical Radiation Technologists.

2. Data are provided by the Ordre des technologues en radiologie du Québec; 2004 Quebec data as of March 31, 2005.

3. Data are provided by the College of Medical Radiation Technologists of Ontario and represent active registered members only.

Table MRT-4. Number of Registered Medical Radiation Technologists in the Discipline of Radiography/Radiological Technology by Province/Territory, Canada, 1995 to 2004*

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|
| N.L. | 245 | 235 | 236 | 235 | 234 | 237 | 249 | 251 | 265 | 263 |
| P.E.I. | 63 | 64 | 62 | 67 | 63 | 60 | 64 | 62 | 65 | 71 |
| N.S. | 432 | 414 | 428 | 411 | 405 | 399 | 383 | 391 | 408 | 408 |
| N.B. | 388 | 393 | 382 | 399 | 403 | 398 | 393 | 409 | 396 | 415 |
| Que. ² | .. | .. | .. | .. | .. | .. | 2,991 | 2,999 | 3,130 | 3,201 |
| Ont. ¹ | 4,319 | 4,198 | 4,118 | 4,158 | 4,133 | 4,136 | 4,163 | 4,202 | 4,167 | 4,155 |
| Man. | 580 | 570 | 537 | 543 | 530 | 526 | 509 | 511 | 511 | 537 |
| Sask. | 360 | 355 | 356 | 356 | 356 | 369 | 377 | 369 | 395 | 376 |
| Alta. | 1,128 | 1,093 | 1,101 | 1,151 | 1,153 | 1,187 | 1,208 | 1,226 | 1,354 | 1,410 |
| B.C. [†] | 1,298 | 1,315 | 1,350 | 1,337 | 1,319 | 1,352 | 1,316 | 1,290 | 1,361 | 1,393 |
| Y.T. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| N.W.T. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Canada[†] | 8,813 | 8,637 | 8,570 | 8,657 | 8,596 | 8,664 | 11,653 | 11,710 | 12,052 | 12,229 |

Source: HPDB/CIHI.

Notes

* This data table includes both regulated (membership with a specific data provider is required as a condition of practice) and voluntary membership data (registration with the data provider is not a condition of practice); data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).

† Indicates the presence of voluntary membership data.

Members qualifying in other disciplines are counted in other disciplines.

.. Information not available.

1. Ontario data represent active registered members of the College of Medical Radiation Technologists of Ontario.

2. Quebec data represent active registered members of the Ordre des technologues en radiologie du Québec; 2004 data as of March 31, 2005.

Table MRT-5. Number of Registered Medical Radiation Technologists in the Discipline of Nuclear Medicine by Province/Territory of Residence, Canada, 1995 to 2004*

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------|
| N.L. | 17 | 15 | 16 | 15 | 15 | 14 | 16 | 13 | 17 | 17 |
| P.E.I. | 3 | 2 | 3 | 4 | 5 | 5 | 5 | 6 | 4 | 5 |
| N.S. | 70 | 65 | 66 | 68 | 64 | 62 | 63 | 73 | 75 | 75 |
| N.B. | 32 | 34 | 36 | 36 | 38 | 42 | 43 | 47 | 48 | 53 |
| Que. ² | .. | .. | .. | .. | .. | .. | 395 | 403 | 419 | 424 |
| Ont. ¹ | 572 | 593 | 593 | 604 | 604 | 615 | 638 | 647 | 655 | 663 ³ |
| Man. | 45 | 44 | 44 | 46 | 47 | 45 | 44 | 45 | 44 | 44 |
| Sask. | 27 | 29 | 25 | 27 | 32 | 30 | 33 | 35 | 40 | 38 |
| Alta. | 124 | 120 | 117 | 125 | 121 | 140 | 142 | 151 | 197 | 224 |
| B.C. [†] | 169 | 171 | 178 | 181 | 180 | 186 | 191 | 192 | 207 | 209 |
| Y.T., N.W.T. & Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Canada [†] | 1,059 | 1,073 | 1,078 | 1,106 | 1,106 | 1,139 | 1,570 | 1,612 | 1,706 | 1,752 |

Source: HPDB/CIHI.

Notes

* This data table includes both regulated (membership with a specific data provider is required as a condition of practice) and voluntary membership data (registration with the data provider is not a condition of practice); data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).

† Indicates the presence of voluntary membership data.

.. Information not available.

Members qualifying in other disciplines are counted in other disciplines.

1. Ontario data represent active registered members of the College of Medical Radiation Technologists of Ontario.

2. Quebec data represent active registered members of the Ordre des technologues en radiologie du Québec; 2004 data as of March 31, 2005.

3. In addition to the 663 members, there were 15 (total 678) active certificates of members who were registered in nuclear medicine but who have a primary specialty other than nuclear medicine.



Endnotes

Sources

- Figure MRT-1. Calculated from data in Table MRT-2.
- Figure MRT-2. Calculated using Census Data, Statistics Canada, 2001.
- Table MRT-1. Canadian Association of Medical Radiation Technologists.
- Table MRT-2. Canadian Association of Medical Radiation Technologists, Ordre des technologues en radiologie du Québec and the College of Medical Radiation Technologists of Ontario.
- Table MRT-3. Canadian Association of Medical Radiation Technologists, Ordre des technologues en radiologie du Québec and the College of Medical Radiation Technologists of Ontario.
- Table MRT-4. Canadian Association of Medical Radiation Technologists, Ordre des technologues en radiologie du Québec and the College of Medical Radiation Technologists of Ontario.
- Table MRT-5. Canadian Association of Medical Radiation Technologists, Ordre des technologues en radiologie du Québec and the College of Medical Radiation Technologists of Ontario.



Midwives

Definition

Midwives are independent practitioners who provide a complete range of care to women and their babies during pregnancy, labour, birth and the post-natal period.

Responsibilities/Activities

A midwife is recognized as a responsible and accountable professional who works in partnership with women to give the necessary support, care and advice to women during pregnancy, labour and the postpartum period. This includes being responsible for conducting deliveries on her own and caring for the newborn. This care includes taking preventative measures, promoting normal birth, detecting abnormal conditions in mother and child, accessing medical care or other appropriate assistance and carrying out emergency measures. A midwife also has an important task in health counselling and education, not only for the women in their care, but also for the family and the community. This role often involves antenatal education and preparation for parenthood, and may extend to women's health, sexual or reproductive health and childcare.

Practice Setting

A midwife may practise in any setting including home, community, hospitals, clinics and health units.

Note: These changes reflect an amendment to the International Definition of the Midwife, which was adopted by the International Confederation of Midwives Council in July 2005.

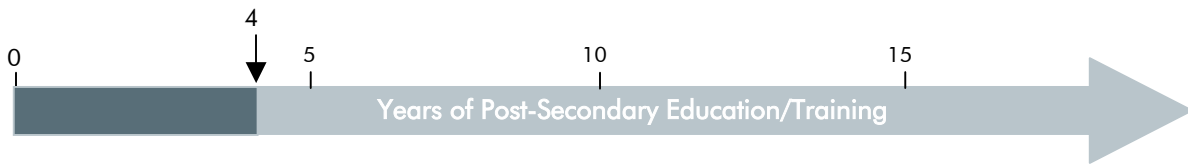
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training

The figure and table below outline the education and/or training requirements necessary to practise as a midwife in Canada.

- A total of four years of post-secondary education is required.



| Typical Length of Program | Province of Education | Education and/or Training |
|--|---|---|
| 4 | Quebec Ontario | Undergraduate degree or equivalent. For applicants without a midwifery degree, equivalency is assessed via processes detailed below. |
| 2–4* for midwives educated outside Canada | British Columbia Manitoba Quebec Ontario | Prior-learning and experience-assessment processes are available in British Columbia, Manitoba and Quebec for foreign-educated midwives. Ryerson University in Ontario offers the International Pre-Registration Program (IMPP) for foreign-educated midwives. |

Note

Foreign-educated midwives usually have at least two to four years of education in their field. In many cases, this includes a nursing certificate plus midwifery or a direct-entry midwifery certificate or degree. While a two-year program would be considered, neither of these routes is typically less than three years in total.

Changes to Education and/or Training Requirements**

- There are currently no expected changes to education and/or training requirements in the provinces/territories in which midwifery is regulated, or at the national level.

Possible Areas of Certified Specialization**

- There are currently no areas of specialization for midwives in Canada.
- Certification for advanced practice is under development in British Columbia.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Association of Midwives (see Appendix B for the survey tool).



Examination Requirements **

Canadian-Educated Applicants

- Currently, the five university midwifery education programs (one at the University of British Columbia, three through a consortium at McMaster, Ryerson and Laurentian universities and one at the Université du Québec à Trois Rivières) administer exams within their programs that are recognized by provincial regulatory bodies.

Internationally Educated Applicants

Each regulated province administers exams at the provincial level for internationally educated midwives.

- British Columbia and Manitoba run annual prior-learning and experience-assessment processes to assess internationally educated midwives.
- Alberta has recently developed exams and will offer them when resources allow.
- Quebec is currently waiting for regulatory changes to be finalized before resuming evaluation of international applicants.
- Ontario uses the International Midwifery Pre-registration Program through the Continuing Education Department of Ryerson University to assess internationally educated midwives.
- The Northwest Territories requires midwives to be assessed by one of the provinces with an assessment process in place.

National examinations are under development at this time for both Canadian and internationally educated applicants.

Graduate Trends

Currently, there are five schools offering a midwifery program in Canada. The number of graduates between 1996 and 2004 is outlined in Table Mid-1. The table indicates the following:

- From 1996 to 2004, the number of students graduating from midwifery programs in Canada increased steadily, from 19 graduates in 1996 to 37 graduates in 2004.
- The University of British Columbia graduated its first class in 2005.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Association of Midwives (see Appendix B for the survey tool).

Table Mid-1. Number of Graduates of Programs for Midwifery, by School of Graduation, Canada, 1995 to 2004

| School | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 ¹ | 2001 | 2002 | 2003 | 2004 |
|---------------------------------------|------|-----------|-----------|-----------|-----------|-------------------|-----------|-----------|-----------------|-----------|
| Laurentian University | .. | 5 | 6 | 10 | 5 | 1 | 2 | 7 | 5 | 5 |
| McMaster University | .. | 6 | 10 | 11 | 11 | 1 | 8 | 18 | 13 | 10 |
| Ryerson Polytechnic University | .. | 8 | 6 | 3 | 12 | 5 | 11 | 8 | 15 | 15 |
| Université du Québec à Trois-Rivières | .. | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 12 ² | 7 |
| Canada | .. | 19 | 22 | 24 | 28 | 7 | 21 | 33 | 33 | 37 |

Source: HPDB/CIHI.

Notes

The University of British Columbia program graduated its first class in 2005.

1. Not many graduates this year due to a change in the length of the program in 1998 from a three-year to a four-year program.

2. Program started at the Université du Québec à Trois Rivières in 2001, and the first class graduated in 2003.

.. Information not available.

n/a Not applicable



Workforce

Primary Data Source: The primary sources of midwife data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) are associations (in which membership is voluntary), and regulatory/licensing authorities (in which membership is a condition of practice).

Regulatory Environment

The table below indicates the first year in which it became mandatory for midwives to register with a provincial/territorial regulatory authority as a condition of practice. The regulatory environment for midwives witnessed considerable change between 1995 and 2004. Although midwifery is regulated in five provinces and one territory, for many years unregulated personnel have practised midwifery in Canada.

| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|------|------|------|------|-------|-------|------|------|--------|------|
| First Year of Regulation | NR | NR | NR | NR | 1999 | 1994 | 2000 | NR | 1998 | 1998 | NR | 2005 | NR |

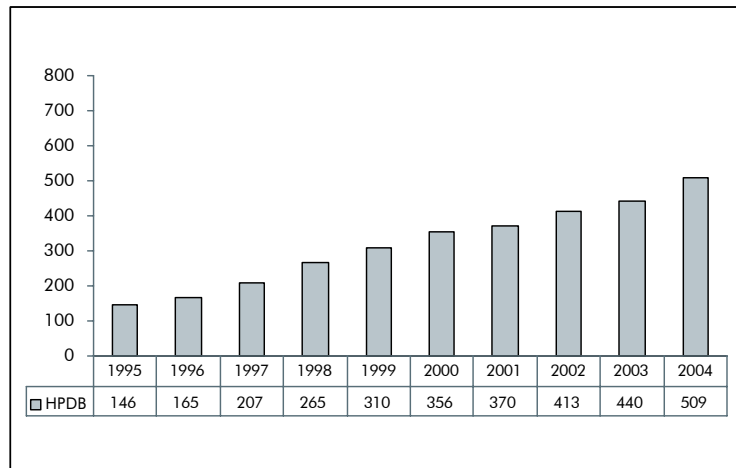
NR = Not Regulated in 2004.

- In 1994, Ontario was the first province to have legislation passed that made registration with a provincial/territorial licensing authority a condition of practice as a midwife. Since that time, four more provinces and one territory have introduced mandatory registration.
- The *Midwifery Profession Act* (Government of NWT) came into force in early 2005. In the NWT, midwives are registered the same way as physicians and dentists; there is a licensing authority through the Government of NWT. This act provides for the licensing, registration and regulation of registered midwives in the NWT.

Supply Trends

- As shown in Figure Mid-1, the number of active registered midwives in Canada grew steadily at an average rate of 15.1% per year from 1995 to 2004. This represents a 248.6% increase in the number of registered midwives in Canada over this 10-year period (an increase of 363 midwives). Part of the consistent increase in the HPDB data (as shown in Figure Mid-1) may reflect changes in legislation requiring registration rather than an actual increase in the number of midwives in the workforce.
- The HPDB data presented in Figure Mid-1 and Table Mid-2 may undercount the number of personnel actively practising midwifery in provinces/territories where regulation requiring licensure as a condition of practice is not in place.
- The distribution of active registered midwives by province from 1995 to 2004 is outlined in Table Mid-2. The table indicates that 53% of all midwives in Canada were registered in Ontario.
- Of the five regulated provinces/territories, Ontario, Quebec, Manitoba and British Columbia have experienced increases in the number of practising midwives, based on each jurisdiction's initial year of regulation. Please note that the Northwest Territories became regulated in 2005; information is not available to identify any year-on-year changes.
- The Alberta registry opened on July 17, 1998. Before this date Alberta counts were voluntary membership data from the Canadian Association of Midwives. The number of active midwives regulated in Alberta decreased by 33% from 1998 to 2004.

Figure Mid-1. Number of Midwives in Canada, 1995 to 2004



Source: HPDB/CIHI



Table Mid-2. Number of Midwives* by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|----------------------------|------|------|------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|
| N.L. | .. | .. | .. | .. | .. | .. | .. | .. | 1 † | 12 †,8 |
| P.E.I. | 1 † | 1 † | .. | .. | .. | .. | .. | 1 † | 0 † | 0 † |
| N.S. | .. | .. | 15 † | .. | .. | 2 † | 2 † | 2 † | 0 † | 4 † |
| N.B. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| Que. ¹ | 35 † | 37 † | 38 † | 43 † | 55 | 62 | 56 | 61 | 61 | 77 |
| Ont. ² | 70 | 87 | 115 | 136 | 165 | 177 | 190 | 219 | 239 | 268 |
| Man. ³ | 5 † | 5 † | 5 † | 7 † | 7 † | 25 | 24 | 26 | 37 | 37 |
| Sask. [†] | 6 | 6 | 6 | 5 | 6 | 5 | 5 ⁷ | 5 ⁷ | 5 | 8 |
| Alta. ⁴ | 28 † | 28 † | 27 † | 24 | 23 | 20 | 22 | 24 | 18 | 16 |
| B.C. ⁵ | .. | .. | .. | 49 ⁶ | 53 ⁶ | 61 ⁶ | 65 ⁶ | 69 ⁶ | 73 | 83 |
| Y.T. | .. | .. | .. | .. | .. | 2 †,8 | 2 † | 2 † | 1 † | 0 † |
| N.W.T. & Nun. [†] | 1 | 1 | 1 | 1 | 1 | 2 | 4 | 4 | 4 ⁹ | 4 ⁹ |
| Canada [†] | 146 | 165 | 207 | 265 | 310 | 356 | 370 | 413 | 440 | 509 |

Source: HPDB/CIHI.

Notes

* This data table includes both regulated membership data (membership with a specific data provider is required as a condition of practice) and voluntary membership data (registration with the data provider is not a condition of practice); data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).

As of 2005, midwives are regulated in five provinces and one territory: Ontario, Manitoba, British Columbia, Alberta, Quebec and the Northwest Territories.

† Indicates the presence of voluntary membership data or estimated data.

.. Information not available.

1. Quebec—2001 data as of October 1, 2001; 2002 data as of September 7, 2002.

2. Ontario—1995 to 2002 data as of January 1 of the following year; 2003 data as of March 31, 2004; 2004 data as of March 31, 2005.

3. Manitoba—2000 data as of June 13, 2000; data from 2001 to 2002 is as of March 31 of the following year; 2003 data as of April 27, 2004; 2004 data as of May 2, 2005.

4. Alberta data as of April 30 of the following year. Alberta registry opened July 17, 1998. Alberta Health and Wellness has indicated that the number of registered midwives in Alberta has decreased significantly.

5. British Columbia—1998 to 2002 data as of March 31 of the following year.

6. Includes conditional registrants.

7. Saskatchewan—2001 to 2002 data as of September of the given year; 2004 data represents registered midwives as of February 1, 2005.

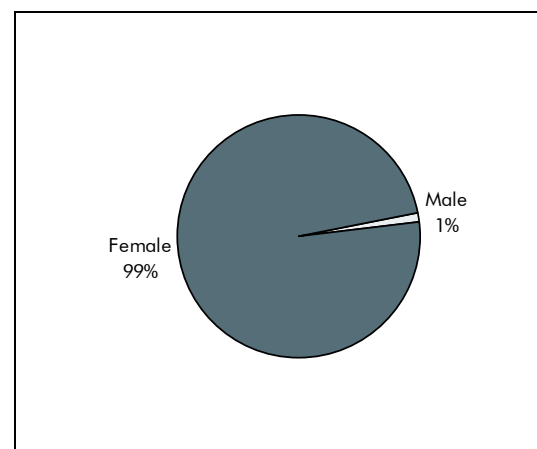
8. Count is from the Canadian Association of Midwives.

9. Represents employed active registered midwives.

What Else Do We Know?

- According to the Canadian Association of midwives almost all midwives are female (99%) (Source: Canadian Association of Midwives).
- Although Census data are collected for this profession, they are reported within a group of health professionals and therefore do not accurately reflect midwife data.

Figure Mid-2. Midwives by Gender, Canada, 2004



Source: HPDB/CIHI.

What's Happening?

Listed below are references to key research documents relating to midwives that are recommended** reading for health human resource planners.

Research Reports

1. *Midwifery in Canada: An Environmental Scan of Professional Data*. Kornelson, J., BC Centre of Excellence for Women's Health, Canadian Association of Midwives, 2003, Contact: admin@canadianmidwives.org

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

Research in Progress

1. Multidisciplinary Collaborative Primary Maternity Care Project (MCP2) funded by the Primary Health Care Transition Fund. Contact: Margo MacNamee, mmcnamee@sogc.com. Partner organizations include Society of Obstetricians and Gynaecologists of Canada, Canadian Association of Midwives, Canadian Nurses Association, College of Family Physicians of Canada, Society of Rural Physicians and the Association of Women's Health and Neonatal Nursing.
2. National Midwifery Assessment Strategy (NAS) Project of the Canadian Midwifery Regulators Consortium to research the most effective and fair way to assess internationally educated midwives who wish to work in Canada. Contact: Wendy Martin, plea@cmbc.bc.ca.

Phase one is complete. Research undertaken included: general review of relevant literature; detailed analysis of literature on targeted topic areas; interviews with midwifery stakeholders across Canada as well as with other key individuals; international questionnaire of nursing, midwifery, pharmacy and medical regulators in 28 countries; focus group with clinical supervisors; and focus groups with internationally educated midwives who completed assessment processes in Canada. Reports are in progress.

Phase two is underway. It will involve completion of data analysis and report writing, as well as the initial development of assessment and communication tools. The latter will include a national Web site providing information to internationally educated midwives; a credential evaluation databank that will be accessed and used by midwifery regulators nationally; and a national written examination. It is also expected that development of a nationally accessible bridging program will be commenced during this phase.

Research in progress updated in October 2005.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Association of Midwives (see Appendix B for the survey tool).



Endnotes

Sources

Figure Mid-1. Calculated from data in Table Mid-2.

Figure Mid-2. Calculated from data in the Health Personnel Database, CIHI.

Table Mid-1. Individual universities.

Table Mid-2. Data provided by the Canadian Association of Midwives and provincial associations: Newfoundland and Labrador Association of Midwives (1995 to 2002), Association of Midwives of Newfoundland and Labrador (2003 to 2004), Prince Edward Island Midwives Association, Association of Nova Scotia Midwives, Midwives Association of New Brunswick, L'Ordre des sage-femmes du Québec (1995 to 2003), College of Midwives of Ontario, College of Midwives of Manitoba, Midwives Association of Saskatchewan, Midwifery Health Disciplines—Alberta Health and Wellness, College of Midwives of British Columbia, Midwives Association of Northwest Territories and Nunavut.



Nurse Practitioners

Please note that this is the first year that Health Personnel Trends in Canada is reporting information on nurse practitioners.

Definition

A nurse practitioner (NP) is a registered nurse (RN) with additional education and experience in health assessment, diagnosis and management of illnesses and injuries, including ordering tests and prescribing drugs.¹

Responsibilities/Activities

NPs provide a range of health services to individuals of all ages, families, communities and groups with a focus on promoting health and preventing illness. They are legislated and regulated to perform comprehensive health assessments, diagnose and treat health problems, order and interpret the results of diagnostic and screening tests such as ultrasound and mammography and prescribe drugs and medication within their scope of practice.

Practice Setting

Working in collaboration with other health care professionals, NPs provide care in diverse health settings, from community clinics and health centres to hospitals, medical practices, nursing homes and home-care settings.

1. Source: Canadian Nurses Association
(cna-aiic.ca/CNA/documents/pdf/publications/Regulation_and_Supply_of_Nurse_Practitioners_in_Canada_e.pdf)

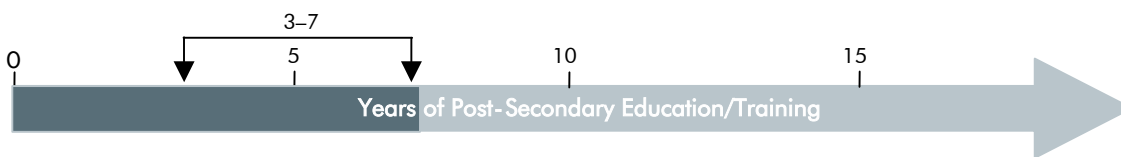
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training

The information below outlines the education and/or clinical experience requirements necessary to enter practice as a nurse practitioner in Canada.

Currently, all provinces and territories, with the exception of P.E.I. and the Yukon have their own education and/or clinical experience requirements to enter practice as a nurse practitioner in Canada. However, for all provinces and territories, as a prerequisite the individual must be a registered nurse.



Depending on the province or territory, a nurse practitioner is required to have:

- A diploma in nursing, plus one to three years of clinical experience; or
- A bachelor's degree in nursing with or without clinical experience; or
- A masters degree in nursing with or without clinical experience; or
- Completion of a nurse practitioner program, such as a post-masters diploma or a primary care nurse practitioner program or certificate.

Changes to Education and/or Training Requirements**

There have been changes to the NP education requirements in the last few years and it is anticipated that there will be more changes in the next few years, as more and more provinces/territories move toward specific requirements for NPs within their jurisdictions. For more information, please review the following report: *The Regulation and Supply of Nurse Practitioners in Canada*, available from www.cihi.ca.

Possible Areas of Certified Specialization**

Currently there are no areas of certified specialization.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the CNA (see Appendix B for the survey tool).



Examination Requirements**

- November 2005 saw the first writing of the Canadian Nurse Practitioner Examination: *Family/All Ages* (CNPE). The Canadian Nurses Association (CNA)—through the Canadian Nurse Practitioner Initiative—led the development of the exam as part of its mandate to develop a pan-Canadian framework to promote the sustained integration of the role of NPs in primary health care across Canada. CNA views the development of a pan-Canadian examination for nurse practitioners as a tool that will help accommodate the licensing and registration of NPs when moving between Canadian provinces and territories (Source: www.cnpi.ca/documents/pdf/CNPE_media_release_e.pdf).
- The Registered Nurses Association of the Northwest Territories and Nunavut and the Saskatchewan Registered Nurses' Association have signed an agreement with the CNA to use the CNPE as the basis for licensure of NPs in their jurisdictions. For more information, please visit www.cnpi.ca.

Graduate Trends

Information on numbers of graduates from individual education providers/programs is not currently captured within HPDB or within the Registered Nurses Database (RNDB) at CIHI. However, CIHI has initiated collection of educational attainment for NPs as part of the RNDB collection and/or as part of a separate data request from provincial and territorial regulatory bodies. The information collected presents a historical profile with 2003 as the base year, and is presented in the *What Else Do We Know?* section of this chapter.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the CNA (see Appendix B for the survey tool).

Workforce

Primary Data Source: The primary source of nurse practitioner data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) is the Registered Nurses Database (RNDB) at CIHI, along with additional information that was obtained directly from provincial and territorial RN regulatory bodies.

Regulatory Environment

The table below indicates the first year in which it became mandatory for nurse practitioners to register with a provincial/territorial regulatory authority as a condition of practice.

- As of 2005, all provinces and territories, with the exception of P.E.I. and the Yukon had NP legislation and regulations either in place or in progress.

| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|------|------|------|------|-------|-------|------|------|--------|------|
| First Year of Regulation | 1997 | NR | 2002 | 2002 | 2003 | 1991 | 2005 | 2003 | 2002 | 2005 | NR | 2004 | 2004 |

NR = Not regulated.

Supply Trends

The collection of information for NPs was initiated by CIHI in 2003. Currently, only data for 2003 and 2004 can be reported. This is a new data source and information is not readily available for all provinces/territories to allow comparison. From the information that is available, the number of licensed NPs by province/territory of registration is outlined in Table NP-1. The table indicates that:

- Between 2003 and 2004, the number of licensed NPs in Canada increased by 21% (where 2003 data are available).
- Between 2003 and 2004, the number of licensed NPs increased by at least 8% in each jurisdiction (where 2003 data are available).
- The number of licensed NPs in Alberta increased by 47.4% between 2003 and 2004 (from 76 to 112).



Table NP-1. Number of Licensed Nurse Practitioners* by Province/Territory of Registration, Canada, 2003–2004

| | 2003 | 2004 |
|--------------------|------------|------------|
| N.L. | 57 | 62 |
| P.E.I. | - | - |
| N.S. | 29 | 34 |
| N.B. | 6 | 14 |
| Que. | - | - |
| Ont. | 552 | 598 |
| Man. | - | - |
| Sask. ¹ | - | 42 |
| Alta. | 76 | 112 |
| B.C. | - | - |
| Y.T. | - | - |
| N.W.T. & Nun. | 5 | 16 |
| Canada | 725 | 878 |

Source: CIHI/RNDB and provincial and territorial RN regulatory authorities.

Notes

- Not applicable.

* Table NP-1 includes only provinces and territories licensing NPs separately from other registered nurses.

1. NP licensure began in Saskatchewan in the 2004 registration year.

What Else Do We Know?

- For more detailed information, please review *The Regulation and Supply of Nurse Practitioners in Canada* released jointly by the Canadian Institute for Health Information (www.cihi.ca) and the Canadian Nurses Association in September 2005. A synopsis of the information in the document is presented below.

Educational Attainment Profile

Table NP-2 highlights the educational attainment of licensed NPs in Canada. The table indicates the following:

- 29.6% of licensed NPs indicated a bachelors program in registered nursing as their initial education, and 21.6% indicated obtaining a masters in nursing as their highest educational attainment in nursing. Please note, however, that the totals presented in Table NP-2 cannot be separated between RN education programs and NP education programs. Please note that for a number of the provinces a Master's or Doctorate is a requirement for licensure as an NP.
- More than one third (33.9%) of those currently licensed as NPs first graduated from nursing school before 1980; almost 40% (37.0%) first graduated in the 1980s, with one quarter (24.0%) beginning their nursing career since 1990.
- At present, the information collected does not indicate when NP licensure was first obtained.

Table NP-2. Educational Attainment of Licensed NPs in Canada, 2004

| | Initial Education in Nursing | Highest Education in Nursing |
|-------------------|------------------------------------|------------------------------------|
| Diploma | 65.3% | 17.7% |
| Baccalaureate | 29.6% | 60.5% |
| Masters/Doctorate | 0.1% | 21.6% |

Source: CIHI/RNDB and provincial and territorial RN regulatory authorities.

Note:

Highest education in nursing includes both RN education programs and NP education programs.

Age Profile

- The average age of licensed NPs was 45 years in 2004; more than one quarter (29.0%) of licensed NPs were aged 50 years or older.

Area of Responsibility

- Of licensed NPs, 83% worked in direct care in 2004, with 4.0% in administration, 5.0% in education and less than 1.0% in research.

Employment Profile

Table NP-3 outlines the employment status of NPs in Canada for 2003 and 2004.

The table indicates the following:

- Overall, approximately 95% of licensed NPs were employed in nursing for both 2003 and 2004. These rates are slightly higher than the overall RN workforce, where typically 91% to 94% of licensed RNs are employed in registered nursing.
- In 2004, 65% of licensed NPs were employed on a full-time basis.
- The unemployment rate for licensed NPs was 5% in 2004 (unemployment rate is calculated as the proportion of NPs with a valid license but not employed in nursing or not stated at the time of registration).

Table NP-3. Employment Status of Nurse Practitioners in Canada, 2003–2004*

| Employment Status | 2003 | | 2004 | |
|---------------------------------------|--------|-----|--------|-----|
| | Counts | % | Counts | % |
| Full-time | 468 | 65 | 573 | 65 |
| Part-time | 115 | 16 | 129 | 15 |
| Casual | 29 | 4 | 29 | 3 |
| Employed—status unknown ¹ | 82 | 11 | 101 | 12 |
| Not employed in nursing or Not stated | 31 | 4 | 46 | 5 |
| Canada (Total) | 725 | 100 | 878 | 100 |

Source: CIHI/RNDB and provincial and territorial RN regulatory authorities.

Notes

* 2003 totals include seven jurisdictions; 2004 totals include eight jurisdictions. Please review Table NP-1 for details.

1. "Employed—status unknown" refers to those NPs who are employed in nursing but failed to state their employment status (full-time, part-time or casual) on their registration forms.



What's Happening?

Listed below are references to key research documents relating to NPs that are recommended** reading for health human resource planners.

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

Research Reports

1. *Advanced Nursing Practice: Opportunities and Challenges in British Columbia*. Schreiber, R. et al. Ottawa: Canadian Health Services Research Foundation, March 2003
2. "Implementing Advanced Nurse Practitioner Roles in Acute Care: An Evaluation of Organizational Change." Cummings, G., *Journal of Nursing Administration*, Vol. 33, No. 3, pp. 139–145, March 2003
3. *Improving the Effectiveness of Primary Health Care Through Nurse Practitioner / Family Physician Structured Collaborative Practice*. Way, D., Jones, L., and Baskerville, N.B. Ottawa, Ontario: University of Ottawa, 31 March 2001 (www.medicine.uottawa.ca)
4. Nurse Practitioner Health Human Resources Planning/Modeling Data Collection Framework (unpublished). Tomblin Murphy, G., O'Brien-Pallas, L. and Birch, S., 2004, document submitted to the Canadian Nurses Association
5. *Practice and Evaluation*. Four studies by the Canadian Nurses Association, available from www.cnpi.ca/practice_and_evaluation/index.asp
6. *Report on the Integration of Primary Health Care Nurse Practitioners into the Province of Ontario (Final Report, June 30, 2003)*. Ontario Ministry of Health and Long-Term Care, 2003, available from www.health.gov.on.ca
7. *The Nature of the Extended/Expanded Nursing Role in Canada: Final Report* (unpublished). Hanrahan, C., Way, C., Housser, C. and Applin, M., Advisory Committee on Health Delivery and Human Resources, March 2001, Consultants: Centre for Nursing Studies and the Institute for the Advancement of Public Policy (Ontario, Saskatchewan and Newfoundland)
8. *The Regulation and Supply of Nurse Practitioners in Canada*. The Canadian Institute for Health Information and the Canadian Nurses Association, 2005, available from secure.cihi.ca/cihiweb/disPage.jsp?cw_page=PG_449_E&cw_topic=449&cw_rel=AR_1263_E

The list of research reports was updated in November 2005.

Research in Progress

The Canadian Nurse Practitioner Initiative (CNPI) is working on NP research. More information can be found at their Web site (www.cnpi.ca).

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the CNA (see Appendix B for the survey tool).

Endnotes

Sources

- Table NP-1. Registered Nurses Database, CIHI, and provincial and territorial RN regulatory authorities.
- Table NP-2. Registered Nurses Database, CIHI, and provincial and territorial RN regulatory authorities.
- Table NP-3. Registered Nurses Database, CIHI, and provincial and territorial RN regulatory authorities.



Occupational Therapists

Definition

Occupational therapy is a health profession concerned with promoting health and well-being through occupation. The primary goal of occupational therapy is to enable people to participate in the activities of everyday life. Occupational therapists have a broad education that equips them with the skills and knowledge to work collaboratively with people of all ages and abilities that experience obstacles to participation. These obstacles may be caused from an impairment of body structure, a change in function or from barriers in the social and physical environment (adapted from the World Federation of Occupational Therapists, 2004).

Responsibilities/Activities

Occupational therapists utilize a systematic approach based on evidence and professional reasoning to enable individuals, groups and communities to develop the means and opportunities to identify, engage in and improve their function in the occupations of life. Occupational therapists use a process involving assessment, intervention and evaluation of progress of the client related to their occupational performance in self-care, work, study, volunteerism and leisure. Occupational therapists may advise on health risks in the workplace, mental-health promotion programs and active-living programs for seniors. Occupational therapists deliver direct professional services but may also perform functions as manager, researcher, program developer or educator.

Practice Setting

Occupational therapists are generally employed in community agencies; health care organizations such as hospitals, chronic care facilities, rehabilitation centres and clinics; schools; social agencies; industry; or are self-employed. Some occupational therapists specialize in working with a specific age group, or with clients who have a specific disability such as arthritis, mental-health problems or spinal-cord injuries.

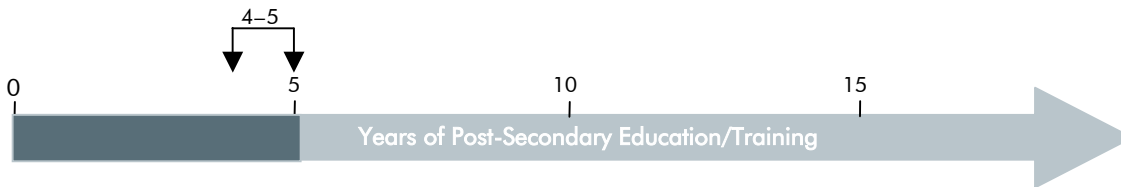
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training

The figure and table below outline the education and/or training requirements necessary to enter practice as an occupational therapist in Canada.

- Four to five years of post-secondary education are required.



| Typical Length of Program | Province of Education | Education and/or Training |
|---------------------------------|---|--|
| 4–5 with 2–4 specifically in OT | Nova Scotia Quebec Ontario Manitoba Alberta British Columbia | Currently, the minimum educational requirement is a bachelor of science degree in occupational therapy. 1,000 hours of fieldwork experience. |

Changes to Education and/or Training Requirements**

- After 2008, occupational therapy education programs must lead to a master’s degree to be eligible for accreditation by the Canadian Association of Occupational Therapists (CAOT).
- Seven occupational therapy education programs in Canada are now offered at the master’s level. For more detailed information, please visit the CAOT Web site at www.caot.ca.

Possible Areas of Certified Specialization**

- There are currently no areas of certified specialization; however, this matter is under development in Quebec and under consideration in several other provinces.

Examination Requirements**

- In order to practise as an occupational therapist in Canada, successful completion of the CAOT national certification examination is required in all provinces except Saskatchewan, Manitoba and Quebec.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Association of Occupational Therapists (see Appendix B for the survey tool).



Graduate Trends

The number of graduates between 1995 and 2004 is outlined in Table OT-1. The table indicates the following:

- The numbers of students graduating from occupational therapy programs in Canada in 1995 and 2004 are comparable (590 and 593 graduates, respectively).
- The University of Alberta experienced a 21% increase (16 graduates) between 1995 and 2004.
- McGill University experienced a 44% decrease (33 graduates) between 1995 and 2004.

Table OT-1. Number of Graduates of Accredited Programs for Occupational Therapy, by School* of Graduation, Canada, 1995 to 2004

| School | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|------------|------------|------------|-----------------|------------|------------|------------|------------|------------------|------------|
| N.S. | | | | | | | | | | |
| Dalhousie University | 35 | 35 | 36 | 36 | 44 | 50 | 45 | 48 | 45 | 42 |
| Que. | | | | | | | | | | |
| McGill University ² | 75 | 56 | 69 | 54 | 56 | 47 | 48 | 46 | 44 | 42 |
| Université de Montréal | 73 | 74 | 75 | 64 | 69 | 65 | 68 | .. | 87 | 79 |
| Université Laval | 52 | 64 | 56 | 12 ¹ | 51 | 53 | 69 | 65 | 49 | 57 |
| Ont. | | | | | | | | | | |
| McMaster University | 56 | 54 | 64 | 58 | 57 | 59 | 57 | 50 | 52 | 47 |
| Queen's University | 32 | 38 | 36 | 35 | 37 | 36 | 34 | 42 | 46 | 39 |
| University of Ottawa | 22 | 28 | 20 | 33 | 21 | 33 | 28 | 42 | 47 | 21 |
| University of Toronto | 63 | 67 | 104 | 63 | 63 | 62 | 67 | 59 | 38 | 52 |
| University of Western Ontario | 42 | 46 | 43 | 44 | 45 | 43 | 44 | 45 | 44 | 48 |
| Man. | | | | | | | | | | |
| University of Manitoba | 31 | 30 | 29 | 29 | 31 | 30 | 27 | 30 | 28 | 35 |
| Alta. | | | | | | | | | | |
| University of Alberta | 75 | 75 | 77 | 70 | 76 | 69 | 78 | 73 | 144 ³ | 91 |
| B.C. | | | | | | | | | | |
| University of British Columbia ² | 34 | 37 | 31 | 34 | 39 | 37 | 36 | .. | 35 | 40 |
| Canada | 590 | 604 | 640 | 532 | 589 | 584 | 601 | 500 | 659 | 593 |

Source: HPDB/CIHI.

Notes

* This is a comprehensive list of schools offering occupational therapy programs.

.. Information not available.

1. First graduating class from the new 3.5-year program.

2. At the master's level, occupational therapy and physiotherapy programs are combined, resulting in a master's degree in rehabilitation sciences.

3. Graduated a double cohort.

Workforce

Primary Data Source: The primary sources of occupational therapy data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) are regulatory/licensing authorities (in which registration is required to practise) and associations (in which membership is voluntary).

Regulatory Environment

The table below indicates the first year in which it became mandatory for occupational therapists to register with a provincial/territorial regulatory authority as a condition of practice.

- As of the year 2000, all provinces had legislation that requires registration with a provincial licensing authority as a condition of practice.
- Please note that the increase in numbers of occupational therapists, as shown in Figure OT-1, may reflect changes in legislation rather than an actual increase in the numbers in the workforce.

| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|---------------------------------|------|--------|------|------|------|------|------|-------|-------|------|------|--------|------|
| First Year of Regulation | 1987 | 1976 | REG | 1997 | 1973 | 1993 | 1971 | 1971 | 1990 | 2000 | .. | .. | .. |

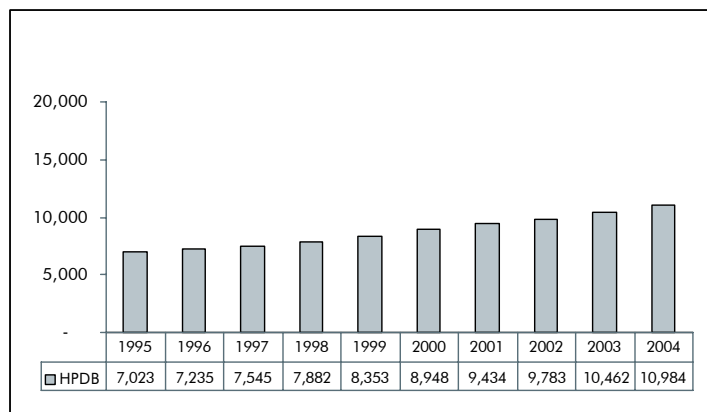
.. Information not available.

REG = Regulated in 2004, but initial year of regulation is unknown.

Supply Trends

- As shown in Figure OT-1, the number of active registered occupational therapists in Canada grew steadily at an average rate of 5.1% per year from 1995 to 2004. This represents a 56.4% increase in the number of active registered occupational therapists in Canada over this 10-year period (an increase of 3,961 occupational therapists).
- The distribution of active registered occupational therapists by province from 1995 to 2004 is outlined in Table OT-2. The table indicates that in 2004, 35.5% of all occupational therapists in Canada were registered in Ontario.
- Provincially, there were significant percentage increases over this 10-year period in Alberta (82.4%), New Brunswick (75.7%), Manitoba (75.1%) and Quebec (71.7%).

Figure OT-1. Number of Occupational Therapists in Canada, 1995 to 2004



Source: HPDB/CIHI.



Table OT-2. Number of Active Registered Occupational Therapists by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------------|----------------|----------------|----------------|----------------|----------------|--------------|----------------|--------------|------------------|------------------|
| N.L. ³ | 92 | 103 | 108 | 111 | 136 | 137 | 137 | 141 | 145 | 146 |
| P.E.I. ⁴ | 36 †,1 | 31 | 27 | 26 | 30 | 34 | 35 | 38 | 34 | 35 |
| N.S. ⁵ | 215 †,1 | 172 | 185 | 187 | 219 | 214 | 239 | 255 | 276 | 283 |
| N.B. | 136 † | 147 † | 170 | 169 | 198 | 208 | 204 | 201 | 228 | 239 |
| Que. ⁶ | 1,821 | 1,968 | 2,087 | 2,192 | 2,348 | 2,487 | 2,618 | 2,749 | 2,877 | 3,126 |
| Ont. ⁷ | 2,641 | 2,668 | 2,754 | 2,854 | 2,997 | 3,196 | 3,375 | 3,540 | 3,803 | 3,905 |
| Man. ² | 253 | 281 | 283 | 290 | 321 | 345 | 363 | 360 | 433 | 443 |
| Sask. ⁸ | 136 | 146 | 168 | 183 | 184 | 203 | 201 | 202 | 211 | 214 |
| Alta. ⁹ | 660 | 674 | 707 | 722 | 787 | 874 | 945 | 1,000 | 1,126 | 1,204 |
| B.C. ¹⁰ | 1,015 † | 1,029 † | 1,040 † | 1,129 † | 1,114 † | 1,234 | 1,299 | 1,275 | 1,309 | 1,366 |
| Y.T. ¹¹ | 9 | 8 | 7 | 9 | 10 | 9 | 9 | 12 | 7 | 10 |
| N.W.T. | 9 | 8 | 9 | 10 | 9 | 7 | 9 †,1 | 10 | 13 ¹² | 13 ¹² |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Canada | 7,023 † | 7,235 † | 7,545 † | 7,882 † | 8,353 † | 8,948 | 9,434 † | 9,783 | 10,462 | 10,984 |

Source: HPDB/CIHI.

Notes

This data table includes both regulated membership data (membership with a specific data provider is required as a condition of practice) and voluntary membership data (registration with the data provider is not a condition of practice). Data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).

† Indicates the presence of voluntary membership data or estimated data (all estimated data are accompanied by superscript notes identifying the source of the estimate; that is, CIHI or data provider). See additional notes below.

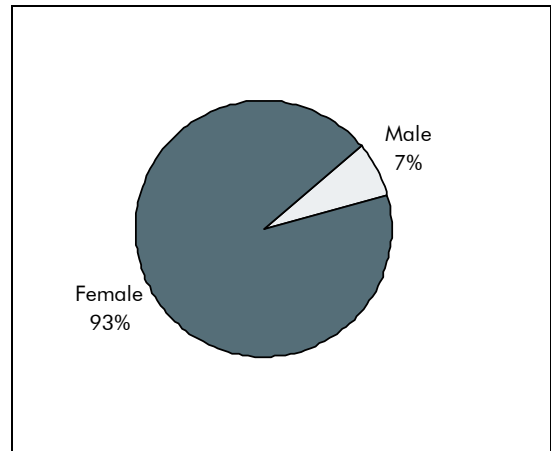
.. Information not available.

1. CIHI estimate.
2. Manitoba: 1995 to 2004 data provided by the AOTM and represent employed active registered occupational therapists; 1995 and 1998 to 2000 data as of June 1 of the given year; 1996 to 1997 and 2001 to 2004 data as of April 1 of the given year. Manitoba has seen a shift in working patterns among their members over the years and data collected by the regulatory body indicate that almost half of the registered members are working in a part-time capacity.
3. Newfoundland and Labrador: 1998 to 2000 data as of February 28 of the following year.
4. Prince Edward Island: 1996 data as of June 30 of the given year; 1997 to 2003 as of April 30 of the given year.
5. Nova Scotia: 1998 data as of September 1998; 1999 data as of December 1999; 2000 data as of May 2000; 2001 data as of February 15, 2001; 2002 data as of September 19, 2002; 2003 data as of March 31, 2004.
6. Quebec occupational therapists are registered members (data as of March 31 of the following year).
7. Ontario: 1995 data represent registered members; 1995 to 2000 data as of July 1; 2001 to 2002 data as of June 30; 2003 to 2004 data as of November 30, all of the given year.
8. Saskatchewan: 1995 to 2002 data as of July 31 of the given year; 2003 data as of May 19, 2004; 2004 data as of March 15, 2005.
9. Alberta: 1995 to 1998 data as of January 31 of the given year; 1999 to 2002 as of June 30 of the given year; 2003 data as of January 1, 2004; 2004 data as of June 23, 2005.
10. Before July 1, 2000, membership in B.C. was voluntary. B.C. data for 1998 and 1999 were provided by the Centre for Health Services and Policy Research. 2000 figures are from the College of Occupational Therapists of British Columbia, which began registry in July 2000. 2000, 2001, 2003 and 2004 data as of June 30 of the following year; 2002 data as of February 28, 2003.
11. Yukon data as of May 1 of each year.
12. Represents registered members. Data as of October 13 of the given year.

What Else Do We Know?

- The percentage of women in the occupational therapy profession has increased marginally, from 89% in 1991, to 90% in 2001 (Source: Census Data, Statistics Canada).
- In 2003, the HPDB initiated collection of gender data. Analysis of the registered occupational therapy data for 2004 identified that the percentage of female occupational therapists was 93% (Source: HPDB, CIHI).
- The average age of occupational therapists in Canada is 36 years. Female and male occupational therapists tend to be the same average age (Source: 2001 Census Data, Statistics Canada). For more details on average age and gender refer to Appendix F.

Figure OT-2. Occupational Therapists by Gender, Canada, 2004



Source: HPDB, CIHI.

Notes

1. British Columbia data is not included in figure (gender breakdown is not available).
2. Ontario data represents "Active registered".



What's Happening?

Listed below are references to key research documents relating to occupational therapists that are recommended** reading for health human resource planners.

Research Reports

1. *A DIALOGUE ON...Occupational Therapy Entry-Level Education in Canada ...The Change to a Professional Master's Degree by 2008*. Prepared for the Canadian Association of Occupational Therapists by D. Parker-Taillon and Associates, November 2003, available from www.caot.ca
2. *Background Paper on Occupational Therapy Human Resource Data: Sources, Utilization, and Interpretative Capacity*. Canadian Association of Occupational Therapists, 2003, Ottawa, Ont. Prepared for the Canadian Association of Occupational Therapists by D. Parker-Taillon and Associates, November 2003, available from www.caot.ca
3. *CAOT Guidelines for the Supervision of Assigned Occupational Therapy Service Components*. Canadian Association of Occupational Therapists, 2003, available from www.caot.ca
4. *CAOT Position Statement: Entry-Level Education of Occupational Therapists in Canada, 2002*, available from www.caot.ca
5. *CAOT Position Statement: Health Human Resources in Occupational Therapy, 2005*, available from www.caot.ca
6. "Gathering Data on Support Personnel: A CAOT Update." Von Zweck, C., 2004, *Occupational Therapy Now*, Vol. 5, No. 6, pp. 24–25
7. "HEAL's Potential in Pan-Canadian Health Human Resources Policy and Planning." Health Action Lobby, 2005. Unpublished document available from www.caot.ca
8. *Integrated Health Human Resources Development: Pragmatism or Pie in the Sky*. Canadian Association of Occupational Therapists, Dietitians Canada Association, Canadian Nurses Association and the Canadian Physiotherapy Association, 1995, Ottawa, Ont., available from the Canadian Nurses Association
9. *Moving Forward with Next Steps in Occupational Therapy Human Resource Planning: Summary Report*. Prepared for the Canadian Association of Occupational Therapists by D. Parker-Taillon and Associates, March 2004, available from www.caot.ca
10. *Position Statement on Support Personnel in Occupational Therapy*. Canadian Association of Occupational Therapists, 2003, available from www.caot.ca
11. *Profile of Occupational Therapy Practice in Canada*. Canadian Association of Occupational Therapists, 2002, available from www.caot.ca

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for interest for the user and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Association of Occupational Therapists (see Appendix B for the survey tool).

12. *Project Summary Report on the Profile of Performance Expectations for Canadian Support Personnel in Occupational Therapy*. Canadian Association of Occupational Therapists, 2003, available from www.caot.ca
13. *Quality Occupational Therapy Services*. Canadian Association of Occupational Therapists, 2004, available from www.caot.ca
14. *Toward Best Practices for Caseload Assignment and Management for Occupational Therapy in Canada, Management Dimensions for the Canadian Association of Occupational Therapists*, 2005, available from www.caot.ca

The list of research reports was updated in November 2005.

Research in Progress

1. *Enhancing Interdisciplinary Collaboration in Mental Health*. Consortium of Health Professions. Proposal submitted to Health Canada, fall 2003. Contact: Darene Toal-Sullivan, dtaolsullivan@caot.ca.
2. *Enhancing Interdisciplinary Collaboration in Primary Health Care: A Change Process to Support Collaborative Practice*. Consortium of Health Professions. Proposal submitted to Health Canada, November 2003. Contact: Donna Klaiman, dklaiman@caot.ca. Project underway. Please see www.eicp-acis.ca.
3. *Health Human Resources Database Development Project*. Canadian Institute for Health Information, www.cihi.ca.
4. *Issue Identification for Workforce Integration of Internationally Educated Occupational Therapists in Canada*. Canadian Association of Occupational Therapists. Contact: Claudia von Zweck, cvonzweck@caot.ca.
5. *Profile of Occupational Therapy Practice in Canada*. Contact: Donna Klaiman, Canadian Association of Occupational Therapists, dklaiman@caot.ca.

The list of research in progress was updated in November 2005.



Endnotes

Sources

- Figure OT-1. Calculated from data in Table OT-2.
- Figure OT-2. Calculated from data in the Health Personnel Database, CIHI.
- Table OT-1. Data provided by individual universities: Dalhousie University, McGill University, Université de Montréal, Université Laval, University of Ottawa, Queen's University, University of Toronto, McMaster University, University of Western Ontario, University of Manitoba, University of Alberta and University of British Columbia.
- Table OT-2. Data supplied by provincial associations: Newfoundland and Labrador Occupational Therapy Board, Prince Edward Island Occupational Therapist Registration Board, College of Occupational Therapists of Nova Scotia, New Brunswick Association of Occupational Therapists, Ordre des ergothérapeutes du Québec, College of Occupational Therapists of Ontario, Association of Occupational Therapists of Manitoba, Saskatchewan Society of Occupational Therapists, Alberta Association of Registered Occupational Therapists, College of Occupational Therapists of British Columbia, Association of Yukon Occupational Therapists and Northwest Territories/Nunavut Occupational Therapy Association.



Optometrists

Definition

Optometrists examine patients' eyes and prescribe treatment when there is a problem.

Responsibilities/Activities

The duties of an optometrist include: diagnosing the presence of vision problems, eye disease or other abnormal conditions by using special tests and instruments; prescribing treatment (excluding surgery) to conserve, improve and correct vision and other ocular disorders; prescribing and fitting eyeglasses and contact lenses; and counselling patients on contact lens use and care, visual hygiene, lighting arrangements, working distances and safety factors. Optometrists frequently serve as the entry point into the eye health care system. As the first point of contact for the identification and diagnosis of eye disease and the ocular manifestations of systemic disease, they routinely encounter conditions that require secondary or tertiary care. Optometrists regularly refer and consult with other health care providers, most prominently ophthalmologists, surgeons and family physicians. Optometrists may prescribe eye medications to treat eye diseases in provinces where there is enabling legislation. Some optometrists have special interests in areas such as fitting visual aids for people with low vision, children's and sports vision and other areas of correcting special vision problems.

Practice Setting

Optometrists work in private practice and in clinics and community health centres.

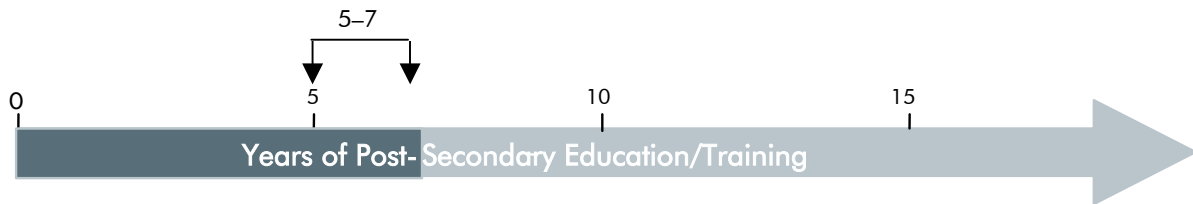
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training Requirements

The figure and table below outline the education and/or training requirements to enter practice as an optometrist in Canada.

- A minimum of five years of post-secondary education is required.



| Typical Length of Program | Province of Education | Education and/or Training |
|---------------------------|-----------------------|--|
| 5-7 | Quebec Ontario | One to three years of college or university as a prerequisite, plus completion of a doctor of optometry program. |

Note

* There are two schools of optometry in Canada (University of Waterloo and Université de Montréal) and fifteen in the United States that are accredited and recognized in Canada. Both programs in Canada are four-year programs accredited by the Accreditation Council on Optometric Education. One to three years of college or university with a mathematics and science orientation are a prerequisite for the program.

Changes to Education and/or Training Requirements**

- There are no anticipated changes in the requirements to practise at this time.

Possible Areas of Certified Specialization**

- Certification for the use of therapeutic pharmaceutical agents in some provinces.

Examination Requirements**

- Upon completion of the optometry education requirements, the graduate is also required to successfully complete a national examination. The examination is administered by the Canadian Examiners in Optometry. For further information please consult the Web site at www.ceo-eco.org.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Association of Optometrists (see Appendix B for the survey tool).



Graduate Trends

Currently there are only two schools of optometry in Canada: the Université de Montréal (Quebec) and the University of Waterloo (Ontario). The number of graduates between 1995 and 2004 is outlined in Table Opt-1. The table indicates the following:

- In the 10-year span from 1995 to 2004, the number of graduates has remained fairly constant with an average of 102 graduates per year.
- The length of the Bachelor of Science in optometry program at the Université de Montréal was extended; this is reflected in the total number of graduates (44) for 2004.

Table Opt-1. Number of Graduates of Optometry Programs by School of Graduation, Canada, 1995 to 2004

| School | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|-------------------------------|------------|------------|-----------|------------|------------|------------|------------|------------|----------------|------------|
| Université de Montréal | | | | | | | | | | |
| B.Sc. (O.D.) | 40 | 40 | 36 | 39 | 39 | 39 | 42 | 39 | 0 ¹ | 44 |
| M.Sc. | 4 | 1 | 1 | 2 | 4 | 1 | 5 | 6 | 3 | 8 |
| University of Waterloo | | | | | | | | | | |
| B.Sc. (O.D.) | 60 | 60 | 58 | 61 | 59 | 56 | 64 | 55 | 59 | 56 |
| M.Sc. | 6 | 2 | 1 | 5 | 6 | 7 | 4 | 2 | .. | .. |
| Doctorate | 0 | 2 | 1 | 2 | 0 | 1 | 1 | 1 | .. | .. |
| Canada | 110 | 105 | 97 | 109 | 108 | 104 | 111 | 103 | 62 | 108 |

Source: HPDB/CIHI.

Notes

.. Information not available.

1. The program length was extended in 2003; therefore, there were no graduates in 2003.

Workforce

Primary Data Source: The primary sources of optometry data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) are the regulatory/licensing authorities (in which membership is a condition of practice).

Regulatory Environment

The table below indicates the first year in which it became mandatory for optometrists to register with a provincial/territorial regulatory authority as a condition of practice.

- Since the 1920s, optometry has been regulated in all provinces in Canada. In the territories, the territorial governments register/license optometrists.

| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|------|------|------|------|---------------|-------|------|------|--------|------|
| First Year of Regulation | 1928 | 1922 | 1921 | 1921 | 1909 | 1919 | 1909 | 1908/ 1909 | 1920 | 1921 | 1959 | 1988 | REG |

REG = Regulated in 2004 but initial year of regulation is unknown.

Supply Trends

- As shown in Figure Opt-1, the number of active registered optometrists in Canada grew steadily at an average rate of 3.5% per year from 1995 to 2004. This represents a 35.8% increase in the number of active registered optometrists in Canada over this 10-year period (an increase of 1,040 optometrists).
- The distribution of active registered optometrists by province and territory from 1995 to 2004 is outlined in Table Opt-2. The table indicates that in 2004, 36% of all optometrists in Canada were registered in Ontario.
- The largest percentage increases over this 10-year period have occurred in British Columbia (91.6%), Alberta (64.2%) and Ontario (50.6%).
- Ontario experienced the largest increase in actual number of optometrists compared to all other provinces; however, this translates into only the third-largest percentage increase of all provinces.

Figure Opt-1. Number of Optometrists in Canada, 1995 to 2004

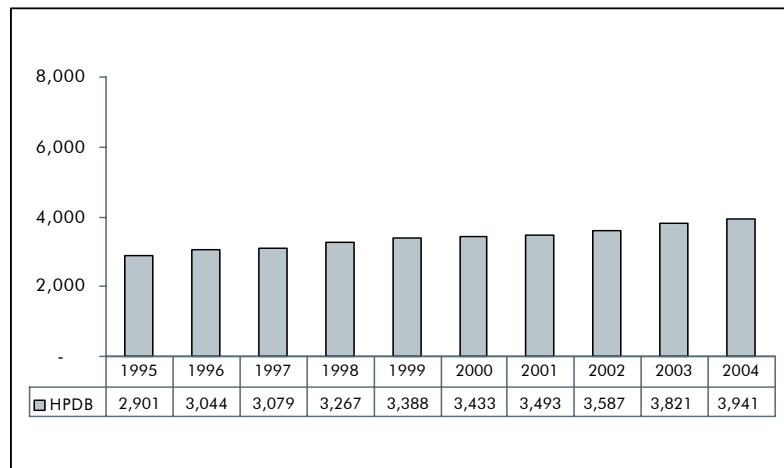


Table Opt-2. Number of Active Registered Optometrists by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------------|--------------------------|--------------------------|--------------|--------------|--------------|--------------|--------------------------|------------------|----------------|----------------|
| N.L. | 34 | 34 | 36 | 35 | 33 | 33 | 35 | 36 | 36 | 39 |
| P.E.I. | 11 | 11 | 10 | 11 | 13 | 11 | 12 ^{†,1} | 14 | 15 | 15 |
| N.S. | 66 | 68 | 68 | 69 | 77 | 70 | 74 | 78 | 82 | 83 |
| N.B. | 83 ^{†,1} | 85 ^{†,1} | 88 | 89 | 92 | 92 | 94 | 94 | 99 | 99 |
| Que. ⁴ | 1,086 ^{†,1} | 1,119 | 1,057 | 1,176 | 1,186 | 1,198 | 1,163 ^{†,1} | 1,198 | 1,181 | 1,199 |
| Ont. | 941 | 1,001 | 1,050 | 1,082 | 1,130 | 1,178 | 1,218 | 1,258 | 1,366 | 1,417 |
| Man. ⁷ | 80 | 80 | 78 | 80 | 83 | 89 | 92 | 89 | 91 | 97 |
| Sask. | 106 | 110 | 108 | 111 | 111 | 109 | 109 ^{†,1} | 107 | 108 | 113 |
| Alta. ² | 226 ^{†,1} | 232 ^{†,1} | 261 | 273 | 303 | 310 | 325 | 339 | 360 | 371 |
| B.C. | 262 ^{†,1} | 298 | 316 | 335 | 355 | 338 | 367 | 369 ⁶ | 479 | 502 |
| Y.T. ³ | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 4 ⁸ | 6 ⁸ |
| N.W.T. ⁵ | 1 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Canada | 2,901[†] | 3,044[†] | 3,079 | 3,267 | 3,388 | 3,433 | 3,493[†] | 3,587 | 3,821 | 3,941 |

Source: HPDB/CIHI.

Notes

The data in this table represent active-registered optometrists. These are individuals who are registered/licensed with the data provider and are legally able to work under the title of the specified health profession. Individuals may or may not be currently employed in the profession. Please consult the Methodological Notes section for further information on registered and active-registered health personnel.

† Indicates the presence of voluntary membership data or estimated data (all estimated data are accompanied by superscript notes identifying the source of the estimate; that is, CIHI or data provider). See additional notes below.

.. Information not available.

1. CIHI estimate. Please review Methodological Notes for more comprehensive information regarding "estimation."

2. Alberta: 2001 data as of September 5, 2001; 2002 data as of August 28, 2002; 2003 data as of April 21, 2004.

3. Yukon: 1995 to 2000 and 2004 data as of March of the following year; 2001 data as of February 14, 2002; 2002 data as of November 14, 2003; 2003 data as of April 14, 2004.

4. Quebec: 2002 data as of November 14, 2003; 2003 data as of March 31, 2004; 2004 data as of February 8, 2005.

5. In the Northwest Territories, ophthalmologists are responsible for the bulk of eye care. For primary eye care, much is delegated by the ophthalmologist to ophthalmic medical assistants who, under supervision, provide refraction services and prescribe for eye glasses.

Ophthalmologists are funded and supported by the territorial health plan, whereas optometrists are not.

6. British Columbia: 2002 data as of October 31, 2002.

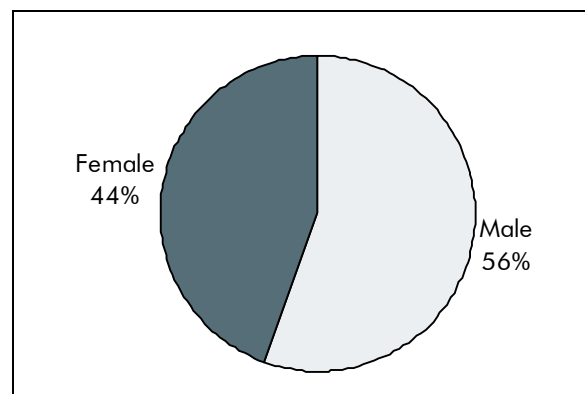
7. Manitoba: data from 1995 to 2004 are as of June of the same year.

8. Data represents registered optometrists. These are all individuals who are registered/licensed with the data provider. The count may include individuals in all registration categories (active, inactive, honorary, etc.). Please review Methodological Notes for more comprehensive information regarding registered and active-registered health personnel.

What Else Do We Know?

- The percentage of female optometrists increased from 38% in 1991, to 45% in 2001 (Source: Census Data, Statistics Canada).
- In 2003, the HPDB initiated collection of gender data. Analysis of the 2004 data identified that the percentage of female optometrists was 44% (Source: HPDB, CIHI).
- The average age of optometrists in Canada is 41 years. Female optometrists tend to be younger on average than their male colleagues (36 and 45 years, respectively) (Source: 2001 Census Data, Statistics Canada). For more information on average age and gender refer to Appendix F.

Figure OPT-2. Optometrists by Gender, 2004



Source: HPDB, CIHI.

Note
Only provinces are included.

What's Happening?

Listed below are references to key research documents relating to optometrists that are recommended** reading for health human resource planners.

Research Reports

There has not been any national human resource research related to optometrists completed in Canada in the past 15 to 20 years. The Canadian Association of Optometrists is attempting to coordinate human resource research.

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Association of Optometrists (see Appendix B for survey tool).

Data Tables

Table Opt-3. Number of Registered Optometrists by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------|--------------------------|--------------------------|--------------|--------------|
| N.L. | 39 | 40 | 37 | 35 | 33 | 35 | 35 | 36 | 36 | 39 |
| P.E.I. | 11 | 11 | 12 | 15 | 16 | 14 | 16 ^{†,1} | 16 ^{†,1} | 15 | 15 |
| N.S. | 66 | 68 | 70 | 75 ⁶ | 78 ⁶ | 78 ⁶ | 80 | 80 | 85 | 86 |
| N.B. ⁸ | 100 ^{†,1} | 102 ^{†,1} | 105 ^{†,1} | 101 ^{†,1} | 101 ^{†,1} | 91 | 94 | 94 | 99 | 99 |
| Que. ⁹ | 1,170 | 1,194 | 1,206 | 1,223 | 1,231 | 1,245 | 1,263 | 1,273 | 1,228 | 1,250 |
| Ont. | 1,046 | 1,103 | 1,165 | 1,194 | 1,240 | 1,268 | 1,296 | 1,326 | 1,414 | 1,465 |
| Man. ² | 91 | 88 | 86 | 84 | 86 | 91 | 94 | 91 | 93 | 100 |
| Sask. | 106 | 110 | 112 | 111 | 111 | 109 | 111 ^{†,1} | 111 ^{†,1} | 108 | 112 |
| Alta. ³ | 288 | 305 | 309 | 323 | 333 | 355 | 371 | 376 | 360 | 371 |
| B.C. | 341 | 416 | 446 | 465 | 476 | 489 | 494 | 485 ⁴ | 479 | 502 |
| Y.T. ⁷ | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 4 | 6 |
| N.W.T. ⁵ | 0 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Canada | 3,263[†] | 3,443[†] | 3,555[†] | 3,632[†] | 3,710[†] | 3,780 | 3,858[†] | 3,893[†] | 3,921 | 4,045 |

Source: HPDB/CIHI.

Notes

The data in this table reflect registered optometrists. These are all individuals who are registered/licensed with the data provider. The count may include individuals in all registration categories (active, inactive, honorary, etc.). Please review Methodological Notes for more comprehensive information regarding registered and active-registered health personnel.

† Indicates the presence of estimated data (all estimated data are accompanied by superscript notes identifying the source of the estimate; that is, CIHI or data provider). See additional notes below.

.. Information not available.

1. CIHI estimate. Please review Methodological Notes for more comprehensive information regarding estimation.

2. Manitoba: data for 1995 to 2004 as of June of the same year.

3. Alberta: 2001 data as of September 5, 2001; 2002 data as of August 28, 2002; 2003 data as of April 21, 2004.

4. British Columbia: 2002 data as of October 31, 2002.

5. In the Northwest Territories, ophthalmologists are responsible for the bulk of eye care. For primary eye care, much is delegated by the ophthalmologist to ophthalmic medical assistants who, under supervision, provide refraction services and prescribe for eye glasses. Ophthalmologists are funded and supported by the territorial health plan, whereas optometrists are not.

6. Data include out-of-province and retired members.

7. Yukon: 2001 data as of February 14, 2002; 2002 data as of November 14, 2003; 2003 data as of April 14, 2004; 2004 data as of March 24, 2005.

8. New Brunswick: 2003 data as of June 30, 2004; 2004 data as of February 10, 2005.

9. Quebec: 2003 data as of March 31, 2004; 2004 data as of February 8, 2005.

Endnotes

Sources

Figure Opt-1. Calculated from data in Table Opt-2.

Figure Opt-2. Calculated from data in the Health Personnel Database, CIHI.

Table Opt-1. 1995 to 1997: Data provided by Statistics Canada.

1998 to 2004: Data provided by the Université de Montréal and the University of Waterloo.

Table Opt-2. 1995 to 1997: data supplied by provincial organizations (Newfoundland Optometric Board, College of Optometrists of P.E.I., Nova Scotia Association of Optometrists, Ordre des optométristes du Québec, Ontario Association of Optometrists, Manitoba Association of Optometrists, Saskatchewan Association of Optometrists, Alberta College of Optometrists, and Board of Examiners in Optometry—British Columbia) and the Government of Yukon Territory (Department of Community Services).

1998 to 2000: Data provided by the Canadian Association of Optometrists, the Government of Yukon Territory (Department of Community Services) and provincial organizations (Newfoundland Optometric Board, College of Optometrists of P.E.I., Manitoba Association of Optometrists and Alberta College of Optometrists).

2001 to 2004: data supplied by provincial organizations [Newfoundland Optometric Board, College of Optometrists of P.E.I. (2001, 2003, 2004), Nova Scotia Association of Optometrists (1998 to 2004), New Brunswick Association of Optometrists (2000 to 2004), Ordre des optométristes du Québec, Ontario Association of Optometrists (2001 to 2002), College of Optometrists of Ontario (2003 to 2004), Manitoba Association of Optometrists, Saskatchewan Association of Optometrists, Alberta College of Optometrists, and Board of Examiners in Optometry—British Columbia (1998 to 2004)], Government of Yukon Territory (Department of Community Services) and the Canadian Association of Optometrists.

Table Opt-3. 1995 to 2004: data supplied by provincial organizations [Newfoundland Optometric Board, College of Optometrists of P.E.I. (2003 and 2004), Nova Scotia Association of Optometrists, New Brunswick Association of Optometrists (1997 to 2004), Association optométristes du Québec (1995 to 1997), Ordre des optométristes du Québec (1998 to 2004), Ontario Association of Optometrists (1995 to 2002), College of Optometrists of Ontario (2003 and 2004), Manitoba Association of Optometrists, Saskatchewan Association of Optometrists, Alberta College of Optometrists, and Board of Examiners in Optometry—British Columbia (1998 to 2004)], Government of Yukon Territory (Department of Community Services) and the Canadian Association of Optometrists.



Pharmacists

Definition

Pharmacists are qualified health professionals who help people to make the best use of their medications and to safely achieve desired health outcomes at home, in the community and in hospitals. Their professional practice emphasizes drug therapy management of diseases and symptoms and the promotion of wellness and disease prevention by incorporating best-care principles that are patient centred, outcomes oriented and evidence based. Pharmacists research and work collaboratively with other health care providers to deliver optimal health care solutions through effective use of health care products and services.

Source: Canadian Foundation for Pharmacy, Pharmacist Definition Working Group.

Responsibilities/Activities

Duties of a pharmacist can include: reviewing medications and collaborating with patients/clients and other health care providers to ensure optimal therapy for their disease states; setting therapeutic goals with patients/clients; reviewing prescriptions for appropriate therapy; compounding pharmaceutical products; dispensing pharmaceuticals to patients or to other health care professionals; educating patients and other health care professionals on the administration, uses and effects of medication, drug incompatibilities and contra-indications; maintaining medication profiles of patients; advising patients/clients on selection and use of non-prescription medication; maintaining a registry of poisons, narcotics and controlled drugs; ensuring proper storage of vaccines, serums, biologicals and other pharmaceutical products to prevent deterioration; ordering and maintaining a stock of pharmaceutical supplies; leading or participating in research into the development of new drugs, improvement of patient/client outcomes, or pharmaco-economic evaluation of drug therapy; formulating and testing new drug products developed by researchers; coordinating clinical investigations of new drugs; controlling the quality of drug products during production; developing informational materials concerning the uses and properties of particular drugs; providing information services about drug products and pharmacotherapy; and evaluating labelling, packaging and advertising of drug products.

Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.



Practice Setting

Pharmacists generally specialize as community, institutional or industrial pharmacists. Community pharmacists own and/or practise in community pharmacies, while institutional pharmacists practise as part of a team of health care professionals serving individual patients in hospitals, long-term care facilities and other such health care institutions. Industrial pharmacists participate in the research, development, manufacturing and sales of pharmaceutical products.

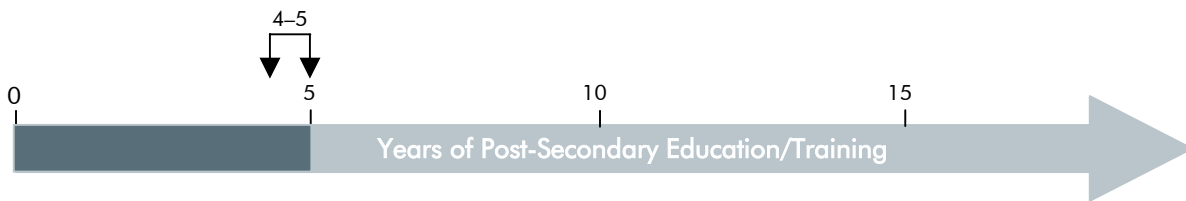


Entering the Profession

Education and/or Training Requirements

The figure and table below outline the education and/or training requirements to enter practice as a pharmacist in Canada.

- Four to five years of post-secondary education are required.



| Typical Length of Program | Province of Education | Education and/or Training |
|---------------------------|--|--|
| 4 | Quebec | Completion of a degree in pharmacy.* |
| 1 (pre-pharm) + 4 | Newfoundland and Labrador Nova Scotia Ontario Manitoba Saskatchewan Alberta British Columbia | Completion of a degree in pharmacy.* |
| Less than 1† | Newfoundland and Labrador Nova Scotia Ontario Manitoba Saskatchewan Alberta British Columbia | Completion of a practical training component (after completion of a degree in Pharmacy). |

* The program must be accredited by the Canadian Council for Accreditation of Pharmacy Programs (CCAPP) or a body recognized by CCAPP, or determined to be equivalent to a CCAPP-recognized program by a provincial pharmacy regulatory authority or determined to be equivalent to a CCAPP-accredited program by the Pharmacy Examining Board of Canada.

† Actual time requirement varies across provinces (generally 24–48 weeks) with a portion accumulated during undergraduate years.

Changes to Education and/or Training Requirements **

- The professional competencies for Canadian pharmacists at entry-to-practice will be reviewed in 2006 (see www.napra.org for more information).

Possible Areas of Certified Specialization**

- The College of Pharmacists of British Columbia has developed a framework for advanced practitioner credentialing for pharmacists in four specialty practice areas: anticoagulation, asthma, diabetes and advanced pharmacotherapy. Work is underway to operationalize the framework in that province.

Exam Requirements**

- All pharmacists wishing to practise in Canada, with the exception of those in Quebec, must pass the Pharmacy Examining Board of Canada Qualifying Exam Parts I and II, as one aspect of the licensing requirements. Each province also typically requires the completion of a jurisprudence exam.
- International pharmacy graduates have additional requirements to ensure acceptability of the educational preparation and language proficiency.

Graduate Trends

The numbers of graduates of schools of pharmacy between 1995 and 2004 are outlined in Table Pharm-1. Caution is exercised when interpreting these data, as not all information is currently available. The table indicates the following:

- In 1995, 58% of those graduating with a degree in pharmacy were women. By 2004, the percentage of women graduating from pharmacy programs in Canada had increased to 77%.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the National Association of Pharmacy Regulatory Authorities (see Appendix B for the survey tool).



Table Pharm-1. Number of Graduates From Schools of Pharmacy,* by Gender and School of Graduation, Canada, 1995 to 2004

| School | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 ³ | 2001 ³ | 2002 ³ | 2003 | 2004 |
|---|------------|------------|----------------------|------------|------------|-------------------|------------------------|------------------------|------------|------------|
| N.L. | | | | | | | | | | |
| Memorial University | 33 | 29 | 34 | 31 | 36 | 38 | 40 | 35 | 32 | 37 |
| Males | 17 | 13 | 17 | 13 | 21 | .. | .. | .. | 9 | 7 |
| Females | 16 | 16 | 17 | 18 | 15 | .. | .. | .. | 23 | 30 |
| N.S. | | | | | | | | | | |
| Dalhousie University | 67 | 63 | 69 | 62 | 62 | 66 | 64 | 62 | 50 | 59 |
| Males | 23 | 19 | 19 | 21 | 20 | .. | 19 | 15 | 10 | 14 |
| Females | 44 | 44 | 50 | 41 | 42 | .. | 45 | 47 | 40 | 45 |
| Que. | | | | | | | | | | |
| Université Laval | 96 | 114 | 120 | 103 | 98 | 145 | .. | .. | .. | .. |
| Males | 33 | 37 | 37 | 28 | 24 | .. | .. | .. | .. | .. |
| Females | 63 | 77 | 83 | 75 | 74 | .. | .. | .. | .. | .. |
| Université de Montréal | 105 | 136 | 107 | 115 | 123 | 149 | 107 | 94 | 120 | 116 |
| Males | 31 | 53 | 37 | 39 | 45 | .. | .. | .. | 27 | 23 |
| Females | 74 | 83 | 70 | 76 | 78 | .. | .. | .. | 93 | 93 |
| Ont. | | | | | | | | | | |
| University of Toronto | 159 | 161 | 0² | 129 | 109 | 122 | 111 | 117 | 119 | 131 |
| Males | 65 | 65 | 0 | 38 | 33 | .. | .. | .. | 43 | 36 |
| Females | 94 | 96 | 0 | 91 | 76 | .. | .. | .. | 76 | 95 |
| Man. | | | | | | | | | | |
| University of Manitoba | 44 | 28 | 49 | 49 | 46 | 42 | 47 | 48 | 47 | 43 |
| Males | 24 | 8 | 27 | 20 | 16 | .. | .. | 15 | 10 | 18 |
| Females | 20 | 20 | 22 | 29 | 30 | .. | .. | 33 | 37 | 25 |
| Sask. | | | | | | | | | | |
| University of Saskatchewan | 73 | 76 | 78 | 74 | 71 | 74 | 75 | 65 | .. | 72 |
| Males | 37 | 31 | 23 | 21 | 27 | .. | .. | .. | .. | 8 |
| Females | 36 | 45 | 55 | 53 | 44 | .. | .. | .. | .. | 64 |
| Alta. | | | | | | | | | | |
| University of Alberta¹ | 102 | 101 | 98 | 96 | 99 | 104 | 104 | 95 | 98 | 93 |
| Males | 47 | 42 | 31 | 35 | 28 | .. | .. | .. | 34 | 20 |
| Females | 55 | 59 | 67 | 61 | 71 | .. | .. | .. | 64 | 73 |
| B.C. | | | | | | | | | | |
| University of British Columbia¹ | 108 | 119 | 119 | 122 | 130 | 136 | 123⁴ | 129⁴ | 127 | 121 |
| Males | 53 | 48 | 41 | 50 | 49 | 44 | 40 | 43 | 52 | 28 |
| Females | 55 | 71 | 78 | 72 | 81 | 91 | 83 | 86 | 75 | 93 |
| Canada⁵ | 787 | 827 | 674 | 781 | 774 | 876 | 671 | 645 | 593 | 672 |

Source: HPDB/CIHI.

Notes

Data provided by the Pharmacy Examining Board of Canada.

* This is a comprehensive list of schools offering pharmacy programs.

.. Information not available.

1. Includes graduates from master's-degree program.

2. No graduating class of 1997 due to a change in program length.

3. Distribution by gender not available from 2000 to 2002.

4. University of British Columbia: 2001 to 2002 data from the College of Pharmacists of British Columbia.

5. Data from all schools is not available from 2001 to 2004.

Workforce

Primary Data Source: The primary source of pharmacist data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) is the National Association of Pharmacy Regulatory Authorities (NAPRA).

Regulatory Environment

The table below indicates the first year in which it became mandatory for pharmacists to register with a provincial/territorial regulatory authority as a condition of practice.

- In Canada, all provinces have been regulated since 1973. In the territories, the territorial governments register/license pharmacists.

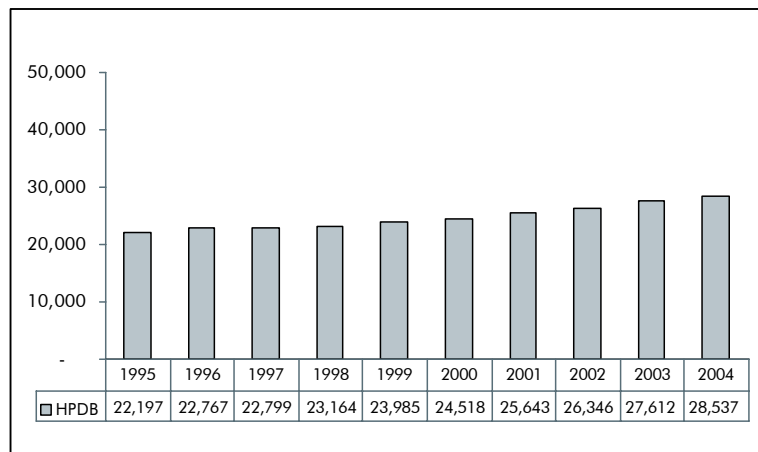
| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|------|------|------|------|-------|-------|------|------|--------|------|
| First Year of Regulation | 1910 | 1905 | 1876 | 1884 | 1973 | 1871 | 1878 | 1911 | 1911 | 1891 | 1986 | 1953 | REG |

REG = Regulated in 2004, but initial year of regulation is unknown.

Supply Trends

- As shown in Figure Pharm-1, the number of active registered pharmacists in Canada grew steadily at an average rate of 2.8% per year from 1995 to 2004. This represents a 28.6% increase in the total number of licensed pharmacists in Canada over this 10-year period (an increase of 6,340 pharmacists).
- The distribution of active registered pharmacists by province/territory from 1995 to 2004 is outlined in Table Pharm-2. The table indicates that 35.3% of all pharmacists in Canada were registered in Ontario.
- As outlined in Table Pharm-2, all provinces and territories, with the exception of Saskatchewan, Northwest Territory and Nunavut experienced a greater-than-20% increase between 1995 and 2004.

Figure Pharm-1. Number of Pharmacists in Canada, 1995 to 2004



Source: HPDB/CIHI.



Table Pharm-2. Number of Active Registered Pharmacists by Province/Territory of Practice, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| N.L. | 484 | 483 | 489 | 491 | 534 | 514 | 526 | 540 | 572 | 585 |
| P.E.I. | 112 | 111 | 113 | 109 | 112 | 119 | 131 | 138 | 149 | 152 |
| N.S. | 788 | 828 | 818 | 907 | 932 | 940 | 931 | 988 | 1,011 | 1,014 |
| N.B. | 478 | 511 | 533 | 539 | 564 | 570 | 554 | 551 | 602 | 613 |
| Que. | 5,342 | 5,387 | 5,148 | 5,096 | 5,457 | 5,670 | 6,141 | 6,238 | 6,323 | 6,615 |
| Ont. | 7,666 | 7,852 | 7,928 | 8,070 | 8,238 | 8,490 | 8,790 | 9,023 | 9,817 | 10,068 |
| Man. | 858 | 914 | 906 | 875 | 940 | 899 | 990 | 1,086 | 1,092 | 1,154 |
| Sask. | 1,043 | 1,049 | 1,080 | 1,081 | 1,100 | 1,108 | 1,129 | 1,080 | 1,142 | 1,170 |
| Alta. | 2,545 | 2,609 | 2,686 | 2,784 | 2,816 | 2,904 | 2,990 | 3,086 | 3,185 | 3,333 |
| B.C. | 2,812 | 2,946 | 3,032 | 3,147 | 3,223 | 3,248 | 3,406 | 3,544 | 3,672 | 3,766 |
| Y.T. | 27 | 30 | 30 | 20 | 22 | 26 | 27 | 31 | 27 | 34 |
| N.W.T. | 42 | 47 | 36 | 45 | 47 | 25 | 23 | 36 | 20 | 23 |
| Nun. | .. | .. | .. | .. | .. | 5 | 5 | 5 | .. | 10 |
| Canada | 22,197 | 22,767 | 22,799 | 23,164 | 23,985 | 24,518 | 25,643 | 26,346 | 27,612 | 28,537 |

Source: HPDB/CIHI.

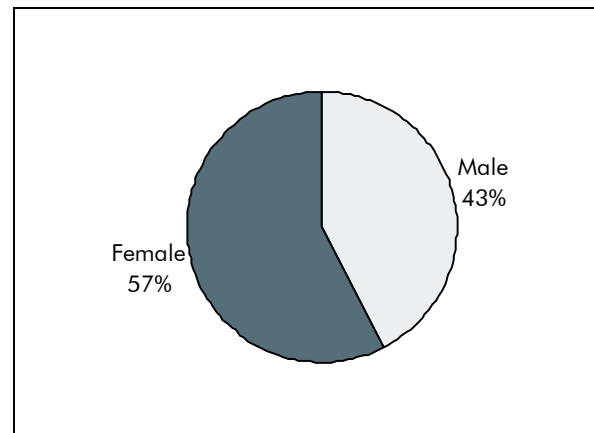
Note

.. Information not available.

What Else Do We Know?

- The percentage of women in the pharmacy profession has increased from 52% in 1991, to 57% in 2001 (Source: Census Data, Statistics Canada).
- The average age of pharmacists in Canada is 41 years. Female pharmacists tend to be slightly younger on average than their male colleagues (38 and 44 years, respectively) (Source: 2001 Census Data, Statistics Canada). For more details on average age and gender refer to Appendix F.

Figure Pharm-2. Pharmacists by Gender, Canada, 2001



Source: Census, Statistics Canada.

What's Happening?

Listed below are references to key research documents relating to pharmacists that are recommended** reading for health human resource planners.

Research Reports

1. *Health Human Resources Strategy*. Health Canada, available from www.hc-sc.gc.ca
2. *Ipsos-Reid Survey: Pharmacist Shortages—A Warning Signal for Canadians*. Canadian Association of Chain Drug Stores (CACDS), November 2001, available from www.cacds.com
3. *Pharmacists and Primary Health Care*. Canadian Pharmacists Association, May 2004, available from www.pharmacists.ca
4. *Submission to the Romanow Commission on the Future of Health Care in Canada*. Canadian Pharmacists Association, 2001, available from www.pharmacists.ca
5. "Update on the Pharmacist Shortage: National and State Data Through 2003." Knapp, K. K., Quist, R. M., Walton, S.M. and Miller, L. M., *American Journal of Health-System Pharmacy* 2005, Vol. 62, pp. 492–499

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for interest for the user and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

List of research reports was updated in October 2005.

Research in Progress

Pharmacy Human Resources in Canada: A Study of Pharmacists and Pharmacy Technicians

The Foreign Credential Recognition Program, Human Resources and Skills Development Canada (FCR-HRSDC) have agreed to fund a pharmacy human resources study that was submitted by the Canadian Pharmacists Association on behalf of the pharmacy sector. The study will entail a comprehensive and coordinated body of work that will gather essential information required for the development of a pan-Canadian human resources strategy for the pharmacy workforce. It is to be completed over a 30-month period and will be managed by the Canadian Pharmacists Association.

List of research in progress was updated in October 2005.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Pharmacists Association (see Appendix B for the survey tool).



Endnotes

Sources

Figure Pharm-1. Calculated from data in Table Pharm-2.

Figure Pharm-2. Calculated using Census Data, Statistics Canada, 2001.

Table Pharm-1. The Pharmacy Examining Board of Canada.

Table Pharm-2. National Association of Pharmacy Regulatory Authorities (NAPRA).



Physicians

Definition

Physicians prevent, diagnose and treat human illness and assist in rehabilitation after the onset of disease or injury. Canadian-trained physicians typically hold a doctor of medicine (MD) degree and, as of 1993, an additional medical specialty certificate requiring at least two years of postgraduate medical residency training.

Responsibilities/Activities

The general duties of physicians include: taking medical history from patients; examining patients; ordering laboratory tests, X-rays and other diagnostic procedures and consulting with other medical practitioners to evaluate patients' health; prescribing and administering medications and other treatments including surgery; and advising patients on health and health care. Physicians train specifically as family physicians or as specialists in laboratory, surgical or medical specialties and activities will vary depending on the type of practice.

Practice Setting

Physicians work in a broad range of settings, including community-based clinics and doctors' offices, hospitals and other institutional health care settings such as nursing homes, laboratories, universities and government.

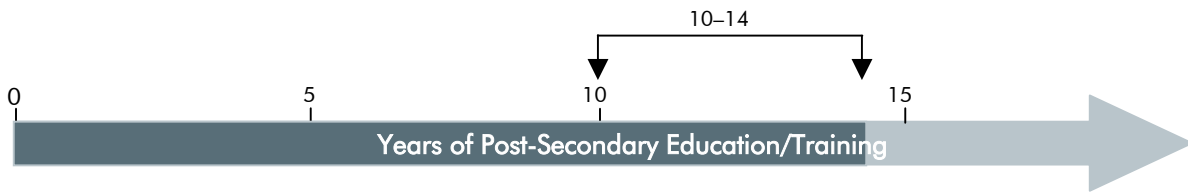
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training Requirements

The figure and table below outline the education and/or training requirements necessary to enter practice as a physician in Canada.

- Ten to fourteen years of post-secondary education are required.



| Typical Length of Program | Province of Education | Education and/or Training* |
|---------------------------|--|----------------------------|
| 4 | All provinces except Prince Edward Island and New Brunswick | Pre-med education. |
| +4 | All provinces except Prince Edward Island and New Brunswick ** | Medical school. |

* In order to practise as a physician in Canada, individuals must meet the registration requirements established by individual regulatory authorities in each individual province/territory. For a useful summary of the requirements to practise in Canada, please visit the Canadian Information Centre for International Credentials' Web site at www.cicic.ca.

** In Quebec, if entering through a cegep, this can take a total of six years rather than eight.



Options:

| Typical Length of Program | Province of Education | Education and/or Training* |
|---------------------------|---|--|
| +2 | All provinces except Prince Edward Island and New Brunswick | Family medicine training (2 years). |
| +3 | All provinces except Prince Edward Island and New Brunswick | Family medicine training in emergency medicine, palliative medical care of the elderly and rural training. |
| +4 | All provinces except Prince Edward Island and New Brunswick | General internal medicine, pediatrics and general pathology (4 years). |
| +5 | All provinces except Prince Edward Island and New Brunswick | Surgical specialties (5 years). |
| +6*** | All provinces except Prince Edward Island and New Brunswick | All other medical specialties and medical subspecialties (6 years). |
| +6 | All provinces except Prince Edward Island and New Brunswick | Cardiology (6 years). |
| +6 | All provinces except Prince Edward Island and New Brunswick | Surgical subspecialties and cardiac surgery (6 years). |

*** Thirteen years if resident does not "overlap" training; subspecialties require six years.

Changes to Education and/or Training Requirements **

- There are no anticipated changes.

Possible Areas of Certified Specialization**

- In Canada, there are over 45 distinct certified physician specialties in addition to a number of available certificates of special competence and accreditation without certification. For details on areas of certified specialization, please visit the Royal College of Physicians and Surgeons of Canada's Web site at www.rcpsc.medical.org.

Graduate Trends

The number of graduates between 1995 and 2004 is presented in Table Phys-1. The table indicates the following:

- From 1995 to 2004, the number of graduates of Canadian medical schools increased by 1% (from 1,739 to 1,757 graduates).
- In 1995, 45.5% of graduates from Canadian medical schools were women; in 2004, 53.4% of graduates were women.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Medical Association (see Appendix B for the survey tool).



Table Phys-1. Number of Graduates of Canadian Medical Schools, by Gender, by School* of Graduation, by Province, Canada, 1995 to 2004

| School | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|--------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| N.L. | | | | | | | | | | |
| Memorial University | 63 | 54 | 55 | 57 | 59 | 60 | 59 | 59 | 62 | 61 |
| Males | 33 | 28 | 20 | 26 | 29 | 33 | 27 | 31 | 29 | 33 |
| Females | 30 | 26 | 35 | 31 | 30 | 27 | 32 | 28 | 33 | 28 |
| N.S. | | | | | | | | | | |
| Dalhousie University | 83 | 85 | 81 | 87 | 81 | 90 | 88 | 87 | 91 | 90 |
| Males | 47 | 41 | 46 | 42 | 39 | 49 | 43 | 41 | 47 | 43 |
| Females | 36 | 44 | 35 | 45 | 42 | 41 | 45 | 46 | 44 | 47 |
| Que. | | | | | | | | | | |
| Université Laval | 129 | 128 | 132 | 133 | 148 | 108 | 106 | 117 | 120 | 130 |
| Males | 56 | 56 | 61 | 59 | 51 | 37 | 37 | 46 | 44 | 53 |
| Females | 73 | 72 | 71 | 74 | 97 | 71 | 69 | 71 | 76 | 77 |
| Université de Sherbrooke | 92 | 101 | 91 | 96 | 90 | 87 | 84 | 91 | 104 | 98 |
| Males | 38 | 30 | 27 | 40 | 37 | 40 | 24 | 36 | 40 | 26 |
| Females | 54 | 71 | 64 | 56 | 53 | 47 | 60 | 55 | 64 | 72 |
| Université de Montréal | 178 | 158 | 161 | 154 | 148 | 160 | 142 | 137 | 153 | 168 |
| Males | 78 | 59 | 61 | 67 | 53 | 57 | 60 | 44 | 61 | 57 |
| Females | 100 | 99 | 100 | 87 | 95 | 103 | 82 | 93 | 92 | 111 |
| McGill University | 146 | 137 | 136 | 127 | 114 | 109 | 105 | 112 | 125 | 132 |
| Males | 85 | 81 | 72 | 61 | 47 | 55 | 52 | 66 | 70 | 76 |
| Females | 61 | 56 | 64 | 66 | 67 | 54 | 53 | 46 | 55 | 56 |
| Ont. | | | | | | | | | | |
| University of Ottawa | 90 | 78 | 80 | 87 | 79 | 84 | 84 | 83 | 91 | 95 |
| Males | 51 | 48 | 42 | 43 | 39 | 37 | 40 | 48 | 39 | 44 |
| Females | 39 | 30 | 38 | 44 | 40 | 47 | 44 | 35 | 52 | 51 |
| Queen's University | 71 | 71 | 73 | 78 | 73 | 75 | 75 | 70 | 81 | 78 |
| Males | 45 | 33 | 35 | 50 | 48 | 46 | 47 | 41 | 49 | 49 |
| Females | 26 | 38 | 38 | 28 | 25 | 29 | 28 | 29 | 32 | 29 |
| University of Toronto | 253 | 242 | 174 | 167 | 181 | 167 | 175 | 164 | 179 | 188 |
| Males | 156 | 149 | 102 | 102 | 102 | 104 | 99 | 86 | 106 | 99 |
| Females | 97 | 93 | 72 | 65 | 79 | 63 | 76 | 78 | 73 | 89 |
| McMaster University | 100 | 100 | 89 | 107 | 97 | 103 | 93 | 101 | 114 | 129 |
| Males | 40 | 34 | 27 | 45 | 31 | 37 | 28 | 41 | 39 | 40 |
| Females | 60 | 66 | 62 | 62 | 66 | 66 | 65 | 60 | 75 | 89 |
| University of Western Ontario | 93 | 95 | 94 | 93 | 98 | 101 | 105 | 98 | 104 | 109 |
| Males | 57 | 56 | 59 | 62 | 57 | 62 | 64 | 57 | 55 | 62 |
| Females | 36 | 39 | 35 | 31 | 41 | 39 | 41 | 41 | 49 | 47 |

(table continued on next page)

Table Phys-1. Number of Graduates of Canadian Medical Schools, by Gender, by School* of Graduation, by Province, Canada, 1995 to 2004 (cont'd)

| School | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Man. | | | | | | | | | | |
| University of Manitoba | 85 | 76 | 69 | 68 | 71 | 74 | 72 | 69 | 74 | 75 |
| Males | 56 | 34 | 49 | 45 | 44 | 49 | 48 | 42 | 50 | 40 |
| Females | 29 | 42 | 20 | 23 | 27 | 25 | 24 | 27 | 24 | 35 |
| Sask. | | | | | | | | | | |
| University of Saskatchewan | 55 | 62 | 55 | 54 | 50 | 58 | 56 | 55 | 54 | 53 |
| Males | 36 | 34 | 31 | 28 | 23 | 32 | 32 | 33 | 27 | 27 |
| Females | 19 | 28 | 24 | 26 | 27 | 26 | 24 | 22 | 27 | 26 |
| Alta. | | | | | | | | | | |
| University of Alberta | 111 | 113 | 112 | 103 | 108 | 105 | 108 | 104 | 104 | 122 |
| Males | 65 | 66 | 61 | 59 | 70 | 58 | 69 | 62 | 54 | 67 |
| Females | 46 | 47 | 51 | 44 | 38 | 47 | 39 | 42 | 50 | 55 |
| University of Calgary | 70 | 67 | 57 | 71 | 72 | 74 | 76 | 77 | 93 | 112 |
| Males | 37 | 30 | 37 | 35 | 30 | 37 | 36 | 38 | 45 | 49 |
| Females | 33 | 37 | 20 | 36 | 42 | 37 | 40 | 39 | 48 | 63 |
| B.C. | | | | | | | | | | |
| University of British Columbia | 120 | 118 | 118 | 122 | 125 | 123 | 109 | 119 | 114 | 117 |
| Males | 68 | 63 | 53 | 64 | 56 | 63 | 60 | 58 | 41 | 53 |
| Females | 52 | 55 | 65 | 58 | 69 | 60 | 49 | 61 | 73 | 64 |
| Canada | 1,739 | 1,685 | 1,577 | 1,604 | 1,594 | 1,578 | 1,537 | 1,543 | 1,663 | 1,757 |
| Males | 948 | 842 | 783 | 828 | 756 | 796 | 766 | 770 | 796 | 818 |
| Females | 791 | 843 | 794 | 776 | 838 | 782 | 771 | 773 | 867 | 939 |

Sources: ACMC (Association of Canadian Medical Colleges).

Note

* This is a comprehensive list of medical schools, with the exception of the Northern Ontario School of Medicine, which opened its doors in August 2005, and is a joint venture between Laurentian University in Sudbury and Lakehead University in Thunder Bay.



Workforce

Primary Data Source: The primary source of physician data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) is the Scott's Medical Database (SMDB) at CIHI (formerly known as the Southam Medical Database).



Visit www.cihi.ca for more information.

The SMDB contains information on physicians in Canada and is maintained by the Business Information Group (BI Group), a division of Hollinger Canadian Newspaper Publications Company (formerly Southam Medical Group, Southam Inc.). The BI Group uses the database to produce the Canadian Medical Directory and mailing lists for commercial purposes. CIHI acquires an annual copy of the database to produce physician supply reports and to respond to client data requests for research and analysis.

SMDB physician counts include all active general practitioners, family practitioners and specialist physicians. For purposes of reporting, SMDB physician specialty classification is based on postgraduate certification credentials achieved in Canada. Physicians designated as family practitioners include physicians who were granted a Certification in Family Medicine by the College of Family Physicians of Canada (CFPC) or the Collège des médecins du Québec (Family Medicine). Certificants of the CFPC are designated either CCFP or CCFP-Emergency Medicine. Specialist physicians include certificants of the Royal College of Physicians and Surgeons of Canada and/or the Collège des médecins du Québec. All other physicians, including general practitioners not certified in Canada, foreign-certified specialists and other non-certified specialists, are included in the family practice counts.

It is recognized that SMDB specialty classification methodologies may not necessarily reflect the services provided by individual physicians. The range of services provided by a physician is subject to provincial and territorial licensure rules, medical service plan payment arrangements and individual practice choices. Therefore, counts may differ from other publications.

For example, specialist physician counts published by other sources may include Canadian-certified specialists as well as non-certified specialists (such as physicians who are licensed as specialists and who may have foreign certification credentials, but who are not currently certified by Canadian institutions). A recent CIHI analytical bulletin reported that, in 2003, "an estimated 1.7% of Canadian physicians are non-certified specialists". Across jurisdictions, this percentage ranged from a high of 13.7% in Newfoundland and Labrador to a low of 0.4% in Ontario.

For further information on the SMDB please consult CIHI's annual publication "Supply, Distribution and Migration of Canadian Physicians" (http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=AR_14_E).

Regulatory Environment

The table below indicates the first year in which it became mandatory for physicians to register with a provincial/territorial regulatory authority as a condition of practice.

- Physicians have been regulated in all provinces in Canada for over a century.

| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|------|------|------|------|-------|-------|------|------|--------|------|
| First Year of Regulation | 1893 | 1871 | 1828 | 1816 | 1848 | 1795 | 1871 | 1885 | 1885 | 1867 | 1958 | 1885 | REG |

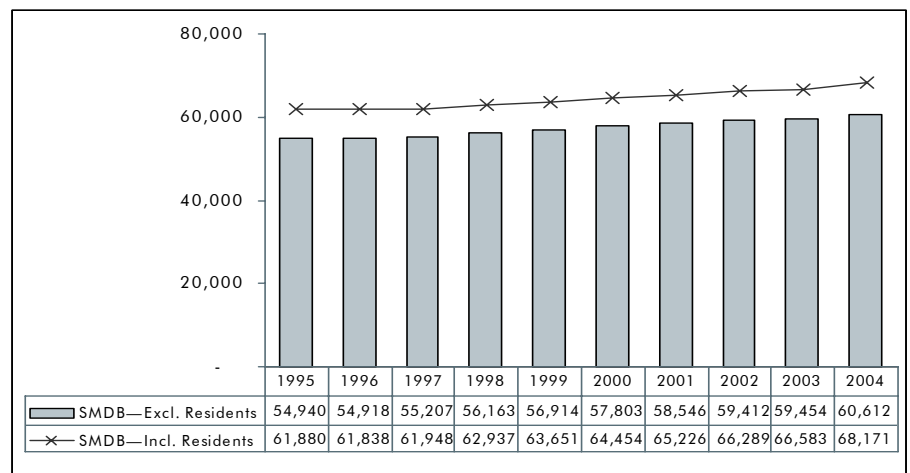
REG = Regulated in 2002, but initial year of regulation is unknown.

Supply Trends

Physician counts include all active general practitioners, family practitioners and specialist physicians as of December 31 of the reference year. "Active" on the SMDB indicates that the physician has an MD and a valid mailing address. The data exclude residents and physicians who are not licensed to provide clinical practice and residents and physicians who have requested of Scott's Directory that their data not be published (see Methodological Notes for details).

- In order to compare results from the various data sources, postgraduate resident physician counts from the Canadian Post-M.D. Education Registry (CAPER) have been added to the SMDB counts when including residents. Figure Phys-1 illustrates the potential differences among the various data sources.
- The number of physicians in Canada, excluding residents, is shown in Figure Phys-1 and Table Phys-3. There was a steadily increasing supply between 1997 and 2004. Growth was generally flat during the period between 1995 and 1997.
- The total number of physicians in Canada increased by 10% from 1995 to 2004 (Source: SMDB, excluding residents). Yukon Territory (39%), Alberta (33%), Prince Edward Island (19%), Nova Scotia (16%), New Brunswick (14%) and British Columbia (13%) exceeded the percent increase seen at the national level over the period 1995 to 2004. In all other provinces, the percent increase was below the national level.

Figure Phys-1. Number of Physicians From Selected Data Sources, Canada, 1995 to 2004



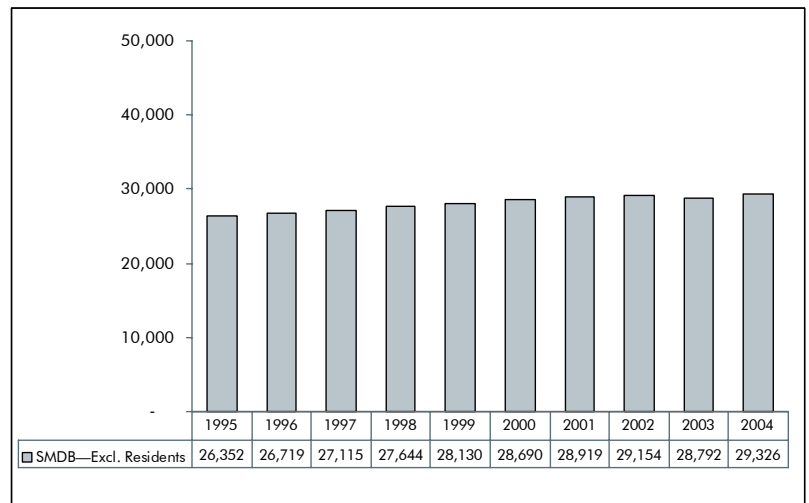
Sources: SMDB/CIHI; CAPER.



“Family medicine” includes certificants of the College of Family Physicians of Canada or the Collège des médecins du Québec (family medicine), general practitioners not certified in Canada, foreign-certified specialists and other non-certified specialists. “Specialists” includes certificants of the Royal College of Physicians and Surgeons of Canada or the Collège des médecins du Québec (see Methodological Notes for details).

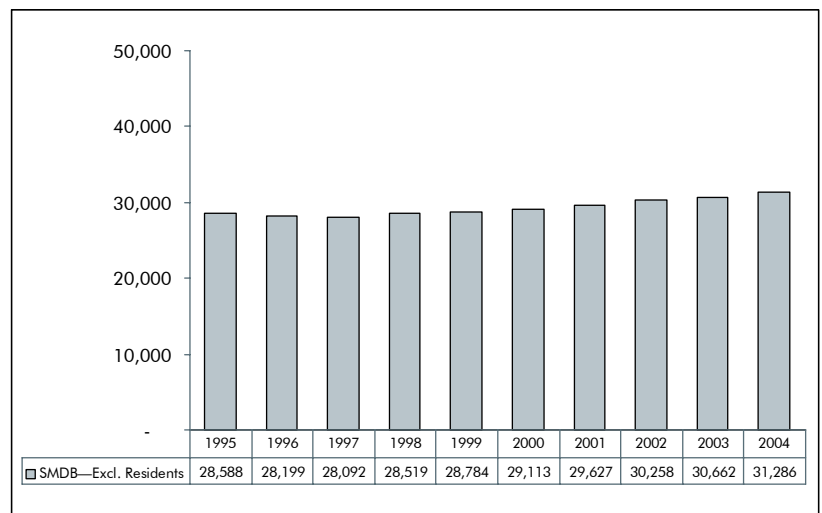
- SMDB data on the number of specialist physicians in Canada (excluding residents) increased gradually from 1995 to 2004. SMDB results indicate an 11% increase in the number of specialist physicians during this 10-year period (see Figure Phys–2 and Table Phys–5).
- SMDB data on the number of family medicine physicians in Canada (excluding residents) decreased from 1995 to 1997, before increasing gradually to 2004. As shown in Figure Phys–3, SMDB results indicate the number of family medicine physicians, excluding residents, increased 9% between 1995 and 2004 (see Figure Phys–3 and Table Phys–4).
- For additional information, please refer to Table Phys–2 for total number of physicians (including residents), by province and territory in Canada from 1995 to 2004, and Table Phys–6 for a summary of physician supply characteristics in Canada from 1995 to 2004.

Figure Phys–2. Number of Specialists Excluding Residents, Canada, 1995 to 2004



Sources: SMDB/CIHI.

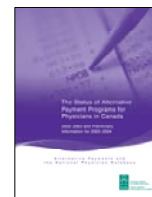
Figure Phys–3. Number of Family Physicians Excluding Residents, Canada, 1995 to 2004



Sources: SMDB/CIHI.

What Else Do We Know?

- CIHI's National Physician Database (NPDB) contains demographic, education and practice-characteristic information, as well as service-utilization data, on fee-for-service physicians in Canada. Publications series titles from the NPDB include: *Alternative Payments and the National Physician Database*, *The Status of Alternative Payment Programs for Physicians in Canada*; *Average Payment per Physician (APP) Report*; *Full-time Equivalent Physicians (FTE) Report*; *National Grouping System Categories Report*; and the *Reciprocal Billing (RB) Report*. Please visit www.cihi.ca or email npdb@cihi.ca for complete information.
- Using empirical data from a variety of sources, the CIHI report *From Perceived Surplus to Perceived Shortage: What Happened to Canada's Physician Workforce in the 1990s?* dissects the various trends affecting the physician workforce in the 1990s in order to understand how this change of perceptions could have occurred. The report addresses four main questions:
 - What happened to the balance between physician supply and demand in the 1990s?
 - How did this drop in the "real" physician-to-population ratio occur?
 - What policies were in place in the 1990s that may have contributed to the drop in physician supply?
 - Why does it "feel like" we have a physician shortage?
- CIHI's SMDB contains data on supply, distribution and migration of Canadian physicians. Key findings of the 2004 report include the following:
 - Between 2000 and 2004, the number of physicians in Canada grew by 4.9%, a rate that has kept pace with population growth.
 - The number of family physicians per 100,000 population increased from 94 in 2000 to 98 in 2004, while the number of specialist physicians per 100,000 population decreased from 93 in 2000 to 91 in 2004.
 - The increase in family physicians and the decrease in specialist physicians are due to the changes in Canada's international medical graduate supply.
 - During the period of 2000 to 2004, the number of family medicine international medical graduates in Canada increased 11.9%, while the number of specialist international medical graduates decreased 9.4%.
 - For the first time since 1969 (the period for which data are available), more physicians have returned to Canada than moved abroad. In 2004, 317 physicians returned to Canada, and 262 moved abroad. In the period between 2000 and 2004, the number of physicians who left Canada declined by 38%. In 2004, 262 physicians left Canada; this is down from 420 physicians who left in 2000, and a significant decrease from the peak of 771 physicians who moved abroad in 1994.
 - In the period from 2000 to 2004, the average age of physicians in Canada increased by one year, from 48 to 49. During the same period, the proportion of physicians under age 40 dropped 13%.



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- Canada’s physician workforce is increasingly female. CIHI’s latest statistics show that the number of female physicians increased by 14% in the last five years, from 16,945 in 2000 to 19,365 in 2004. In contrast, the number of male physicians increased only slightly (0.6%), from 40,841 in 2000 to 41,071 in 2004. In 2004, women accounted for almost one third (32%) of the total supply of physicians, representing a 10% increase since 2000. However, among physicians age 40 and under, women represented nearly half (47%) of the total physician workforce in 2004.
- Among the provinces, Alberta and Prince Edward Island had the largest percentage increase in the number of physicians—the number rose by 19% and 18%, respectively, between 2000 and 2004. Increases also occurred in New Brunswick (9.5%), Newfoundland and Labrador (7%), Nova Scotia (5.4%), British Columbia (4%) and Ontario (4%).
- In 2004, four provinces exceeded the national ratio of 189 physicians per 100,000 population: Quebec and Nova Scotia had the highest ratio, with 213 physicians per 100,000; British Columbia had 196 physicians per 100,000 population; and Newfoundland and Labrador had 192. The provinces with the fewest physicians per 100,000 population were Prince Edward Island (152) and Saskatchewan (154).

What's Happening?

Listed below are references to key research documents relating to physicians that are recommended** reading for health human resource planners.

Research Reports

1. *A Physician Human Resource Strategy for Canada*. Task Force Two, Physician Workforce in Canada: Literature Review and Gap Analysis, Ottawa 2002
2. *From Perceived Surplus to Perceived Shortage: What Happened to Canada's Physician Workforce in the 1990s?* Canadian Institute for Health Information, June 2002
3. *Health Human Resource Planning in Canada*. Physician and Nursing Work Force Issues, Canadian Policy Research Network for Commission on the Future of Health Care in Canada, October 2002
4. *Physician Resource Planning in Canada*. National Ad Hoc Working Group on Physician Resources, September 1995
5. *The Development of a Multistakeholder Framework/Index of Rurality*. CMA, CNA, SRPC, CPhA, February 2003 (contains environmental scan of rural initiatives)
6. *The Practicing Physician Community in Canada, 1989/90 to 1998/99*. Canadian Institute for Health Information, 2001
7. *2004 National Physician Survey: Family Physicians Accepting New Patients: Comparison of 2001 Janus Survey and 2004 National Physician Survey Results (August 2005) and 2004 National Physician Survey Response Rates and Comparability of Physician Demographic Distributions with Those of the Physician Population (May 2005)*. Canadian Institute for Health Information
8. *The National Physician Survey and the Future of Medicine in Canada*. MD Pulse 2005, CMA Leadership Series. Canadian Medical Association, 2005
9. *Geographic Distribution of Physicians in Canada: Beyond How Many and Where*. Canadian Institute for Health Information, Ottawa, 2006

List of research reports was updated in November 2005.

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Medical Association (see Appendix B for the survey tool).



Research in Progress

1. 2007 National Physician Survey: data will be collected from all Canadian physicians, describing practice patterns, practice settings, shared care with other health care providers and use of technology. Contact npdb@cihi.ca for more information.
2. A Physician Human Resource Strategy for Canada, Task Force Two, available from www.physicianhr.ca.
3. The Canadian Taskforce on International Medical Graduate Licensure, available from www.imgtaskforce.ca.

List of research in progress was updated in November 2005.

Data Tables

Table Phys-2. Total Number of Physicians, Including Interns and Residents,¹ by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 ² | 2001 | 2002 ³ | 2003 | 2004 |
|---------------------|---------------|---------------|---------------|---------------|---------------|-------------------|---------------|-------------------|---------------|---------------|
| N.L. | 1,148 | 1,133 | 1,145 | 1,125 | 1,117 | 1,101 | 1,117 | 1,097 | 1,172 | 1,195 |
| P.E.I. | 176 | 170 | 165 | 175 | 180 | 178 | 190 | 191 | 195 | 210 |
| N.S. | 2,086 | 2,093 | 2,113 | 2,172 | 2,226 | 2,268 | 2,265 | 2,332 | 2,351 | 2,401 |
| N.B. | 1,107 | 1,121 | 1,126 | 1,151 | 1,162 | 1,153 | 1,179 | 1,185 | 1,224 | 1,262 |
| Que. ⁵ | 17,227 | 17,322 | 17,306 | 17,542 | 17,641 | 17,761 | 17,799 | 17,740 | 17,505 | 18,267 |
| Ont. | 22,917 | 22,702 | 22,620 | 22,854 | 23,071 | 23,525 | 23,824 | 24,173 | 24,258 | 24,773 |
| Man. | 2,311 | 2,281 | 2,314 | 2,328 | 2,358 | 2,393 | 2,404 | 2,399 | 2,409 | 2,429 |
| Sask. | 1,734 | 1,679 | 1,680 | 1,734 | 1,777 | 1,773 | 1,754 | 1,778 | 1,751 | 1,745 |
| Alta. | 5,203 | 5,199 | 5,228 | 5,481 | 5,693 | 5,749 | 5,932 | 6,448 | 6,656 | 6,874 |
| B.C. ⁶ | 7,864 | 8,030 | 8,135 | 8,268 | 8,321 | 8,458 | 8,664 | 8,838 | 8,954 | 8,896 |
| Y.T. | 44 | 47 | 50 | 45 | 41 | 41 | 54 | 52 | 55 | 61 |
| N.W.T. ⁴ | 63 | 61 | 66 | 62 | 53 | 47 | 37 | 46 | 43 | 51 |
| Nun. | .. | .. | .. | .. | 11 | 7 | 7 | 10 | 10 | 7 |
| Canada | 61,880 | 61,838 | 61,948 | 62,937 | 63,651 | 64,454 | 65,226 | 66,289 | 66,583 | 68,171 |

Sources: SMDB/CIHI, CAPER.

Notes

.. Information not available.

1. Physician counts reflect the summation of data from two distinct sources: The total of "active" physicians from the SMDB and resident (post- MD trainee) counts from the Canadian Post-M.D. Education Registry (CAPER). The CAPER resident data exclude foreign physicians training in Canada by student visa and physician fellows receiving medical training or education beyond initial MD education. These counts will be an over-estimate of the number of physicians (see Methodological Notes for details).
2. Alberta and Yukon: 2000 data do not reflect the annual update from the College of Physicians and Surgeons of Alberta (see Methodological Notes for details).
3. Ontario: 2002 data do not reflect 4 of 12 monthly updates (September–December 2002) from the College of Physicians and Surgeons of Ontario.
4. Caution must be exercised when comparing Northwest Territories data from before 1999 with Northwest Territories data after 1998, since some of the change may be attributable to the creation of the Nunavut Territory.
5. Quebec: 2003 data do not reflect the annual update from the Collège des médecins du Québec (see Methodological Notes for details).
6. British Columbia: 2004 data do not reflect the annual update from the College of Physicians and Surgeons of British Columbia (see Methodological Notes for details).



Table Phys-3. Total Number of Physicians,¹ Excluding Interns and Residents, by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 ² | 2001 | 2002 ³ | 2003 | 2004 |
|---------------------|---------------|---------------|---------------|---------------|---------------|-------------------|---------------|-------------------|---------------|---------------|
| N.L. | 940 | 924 | 931 | 926 | 925 | 927 | 945 | 929 | 975 | 992 |
| P.E.I. | 176 | 170 | 165 | 175 | 180 | 178 | 190 | 191 | 195 | 210 |
| N.S. | 1,731 | 1,744 | 1,763 | 1,828 | 1,868 | 1,898 | 1,885 | 1,943 | 1,958 | 2,000 |
| N.B. | 1,107 | 1,121 | 1,126 | 1,151 | 1,162 | 1,153 | 1,179 | 1,185 | 1,224 | 1,262 |
| Que. ⁵ | 15,151 | 15,232 | 15,306 | 15,472 | 15,582 | 15,770 | 15,866 | 15,800 | 15,518 | 16,145 |
| Ont. | 20,407 | 20,209 | 20,194 | 20,460 | 20,701 | 21,176 | 21,482 | 21,735 | 21,738 | 22,067 |
| Man. | 1,978 | 1,968 | 2,008 | 2,014 | 2,049 | 2,082 | 2,093 | 2,077 | 2,063 | 2,078 |
| Sask. | 1,524 | 1,472 | 1,472 | 1,529 | 1,568 | 1,567 | 1,549 | 1,564 | 1,526 | 1,529 |
| Alta. | 4,481 | 4,468 | 4,509 | 4,755 | 4,962 | 5,014 | 5,154 | 5,637 | 5,801 | 5,953 |
| B.C. ⁶ | 7,338 | 7,502 | 7,617 | 7,746 | 7,812 | 7,943 | 8,105 | 8,243 | 8,348 | 8,257 |
| Y.T. | 44 | 47 | 50 | 45 | 41 | 41 | 54 | 52 | 55 | 61 |
| N.W.T. ⁴ | 63 | 61 | 66 | 62 | 53 | 47 | 37 | 46 | 43 | 51 |
| Nun. | .. | .. | .. | .. | 11 | 7 | 7 | 10 | 10 | 7 |
| Canada | 54,940 | 54,918 | 55,207 | 56,163 | 56,914 | 57,803 | 58,546 | 59,412 | 59,454 | 60,612 |

Source: SMDB/CIHI.

Notes

.. Information not available.

1. Excludes residents and physicians who are not licensed to provide clinical practice and have requested of Scott's Directory (formerly known as Business Information Group and Southam Medical Group) that their data not be published. Data as of December 31 of the given year. Includes "active" physicians in clinical and/or non-clinical practice, including research, teaching or administration. SMDB specialist counts do not include uncertified/foreign-certified specialist physicians and may, therefore, differ from other sources of provincial/territorial physician data that categorize physicians on some other basis (for example, functional specialty, payment specialty, provisional license or other); counts of specialist physicians on the SMDB exclude family medicine and emergency family medicine physicians (counted as family medicine physicians).
2. Alberta and Yukon: 2000 data do not reflect the annual update from the College of Physicians and Surgeons of Alberta and the Government of the Yukon, respectively.
3. Ontario: 2002 data do not reflect 4 of 12 monthly updates (September–December 2002) from the College of Physicians and Surgeons of Ontario (see Methodological Notes for details).
4. Caution must be exercised when comparing Northwest Territories data from before 1999 with Northwest Territories data from after 1998, since some of the change may be attributable to the creation of the Nunavut Territory.
5. Quebec: 2003 data do not reflect the annual update from the Collège des médecins du Québec (see Methodological Notes for details).
6. British Columbia: 2004 data do not reflect the annual update from the College of Physicians and Surgeons of British Columbia (see Methodological Notes for details).

Table Phys-4. Total Number of Family Medicine Physicians,¹ Excluding Interns and Residents, by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 ² | 2001 | 2002 ³ | 2003 | 2004 |
|---------------------|---------------|---------------|---------------|---------------|---------------|-------------------|---------------|-------------------|---------------|---------------|
| N.L. | 606 | 565 | 568 | 560 | 556 | 571 | 599 | 585 | 615 | 623 |
| P.E.I. | 100 | 99 | 95 | 100 | 103 | 105 | 115 | 119 | 121 | 131 |
| N.S. | 930 | 923 | 923 | 947 | 955 | 952 | 959 | 1,007 | 1,038 | 1,081 |
| N.B. | 660 | 662 | 657 | 675 | 686 | 679 | 699 | 700 | 738 | 755 |
| Que. ⁵ | 7,524 | 7,553 | 7,554 | 7,679 | 7,745 | 7,821 | 7,857 | 7,917 | 7,844 | 8,165 |
| Ont. | 10,208 | 9,900 | 9,769 | 9,796 | 9,795 | 9,974 | 10,155 | 10,242 | 10,410 | 10,659 |
| Man. | 1,010 | 990 | 1,002 | 1,011 | 1,044 | 1,062 | 1,081 | 1,073 | 1,075 | 1,079 |
| Sask. | 931 | 878 | 868 | 896 | 944 | 932 | 944 | 966 | 951 | 950 |
| Alta. | 2,452 | 2,397 | 2,375 | 2,511 | 2,620 | 2,608 | 2,692 | 3,020 | 3,151 | 3,200 |
| B.C. ⁶ | 4,080 | 4,143 | 4,186 | 4,258 | 4,256 | 4,339 | 4,445 | 4,541 | 4,629 | 4,544 |
| Y.T. | 39 | 40 | 43 | 39 | 35 | 35 | 50 | 48 | 51 | 55 |
| N.W.T. ⁴ | 48 | 49 | 52 | 47 | 35 | 29 | 24 | 30 | 29 | 37 |
| Nun. | .. | .. | .. | .. | 10 | 6 | 7 | 10 | 10 | 7 |
| Canada | 28,588 | 28,199 | 28,092 | 28,519 | 28,784 | 29,113 | 29,627 | 30,258 | 30,662 | 31,286 |

Source: SMDB/CIHI.

Notes

.. Information not available.

1. Family medicine includes uncertified specialists/general practitioners and family medicine and emergency family medicine specialist physicians. Specialty is based on most recent certified specialty, and data may differ from other sources of provincial/territorial physician data that categorize physicians on some other basis (for example, functional specialty, payment specialty, provisional license or other).
2. Alberta and Yukon: 2000 data do not reflect the annual update from the College of Physicians and Surgeons of Alberta and the Government of the Yukon, respectively.
3. Ontario: 2002 data do not reflect 4 of 12 monthly updates (September–December 2002) from the College of Physicians and Surgeons of Ontario.
4. Caution must be exercised when comparing Northwest Territories data from before 1999 with Northwest Territories data from after 1998, since some of the change may be attributable to the creation of the Nunavut Territory.
5. Quebec: 2003 data do not reflect the annual update from the Collège des médecins du Québec (see Methodological Notes for details).
6. British Columbia: 2004 data do not reflect the annual update from the College of Physicians and Surgeons of British Columbia (see Methodological Notes for details).

**Table Phys-5. Total Number of Specialists, Excluding Interns and Residents,¹
by Province/Territory, Canada, 1995 to 2004**

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 ² | 2001 | 2002 ³ | 2003 | 2004 |
|---------------------|---------------|---------------|---------------|---------------|---------------|-------------------|---------------|-------------------|---------------|---------------|
| N.L. | 334 | 359 | 363 | 366 | 369 | 356 | 346 | 344 | 360 | 369 |
| P.E.I. | 76 | 71 | 70 | 75 | 77 | 73 | 75 | 72 | 74 | 79 |
| N.S. | 801 | 821 | 840 | 881 | 913 | 946 | 926 | 936 | 920 | 919 |
| N.B. | 447 | 459 | 469 | 476 | 476 | 474 | 480 | 485 | 486 | 507 |
| Que. ⁵ | 7,627 | 7,679 | 7,752 | 7,793 | 7,837 | 7,949 | 8,009 | 7,883 | 7,674 | 7,980 |
| Ont. | 10,199 | 10,309 | 10,425 | 10,664 | 10,906 | 11,202 | 11,327 | 11,493 | 11,328 | 11,408 |
| Man. | 968 | 978 | 1,006 | 1,003 | 1,005 | 1,020 | 1,012 | 1,004 | 988 | 999 |
| Sask. | 593 | 594 | 604 | 633 | 624 | 635 | 605 | 598 | 575 | 579 |
| Alta. | 2,029 | 2,071 | 2,134 | 2,244 | 2,342 | 2,406 | 2,462 | 2,617 | 2,650 | 2,753 |
| B.C. ⁶ | 3,258 | 3,359 | 3,431 | 3,488 | 3,556 | 3,604 | 3,660 | 3,702 | 3,719 | 3,713 |
| Y.T. | 5 | 7 | 7 | 6 | 6 | 6 | 4 | 4 | 4 | 6 |
| N.W.T. ⁴ | 15 | 12 | 14 | 15 | 18 | 18 | 13 | 16 | 14 | 14 |
| Nun. | .. | .. | .. | .. | 1 | 1 | 0 | 0 | 0 | 0 |
| Canada | 26,352 | 26,719 | 27,115 | 27,644 | 28,130 | 28,690 | 28,919 | 29,154 | 28,792 | 29,326 |

Source: SMDB/CIHI.

Notes

.. Information not available.

- Specialty is based on most recent postgraduate specialty certification achieved within Canada. SMDB specialist counts do not include uncertified/foreign-certified specialist physicians and may, therefore, differ from other sources of provincial/territorial physician data that categorize physicians on some other basis (for example, functional specialty, payment specialty, provisional license or other); counts of specialist physicians on the SMDB exclude family medicine and emergency family medicine physicians (counted as family medicine physicians).
- Alberta and Yukon: 2000 data do not reflect the annual update from the College of Physicians and Surgeons of Alberta and the Government of the Yukon, respectively.
- Ontario: 2002 data do not reflect 4 of 12 monthly updates (September–December 2002) from the College of Physicians and Surgeons of Ontario.
- Caution must be exercised when comparing Northwest Territories data from before 1999 with Northwest Territories data from after 1998, since some of the change may be attributable to the creation of the Nunavut Territory.
- Quebec: 2003 data do not reflect the annual update from the Collège des médecins du Québec (see Methodological Notes for details).
- British Columbia: 2004 data do not reflect the annual update from the College of Physicians and Surgeons of British Columbia (see Methodological Notes for details).



Table Phys-6. Summary of Physician Supply Characteristics, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 ¹ | 2001 | 2002 ² | 2003 ³ | 2004 ⁴ |
|------------------------------------|--------|--------|--------|--------|--------|-------------------|--------|-------------------|-------------------|-------------------|
| SUPPLY | | | | | | | | | | |
| Number of Physicians | 54,940 | 54,918 | 55,207 | 56,163 | 56,914 | 57,803 | 58,546 | 59,412 | 59,454 | 60,612 |
| Family Medicine | 28,588 | 28,199 | 28,092 | 28,519 | 28,784 | 29,113 | 29,627 | 30,258 | 30,662 | 31,286 |
| Specialists | 26,352 | 26,719 | 27,115 | 27,644 | 28,130 | 28,690 | 28,919 | 29,154 | 28,792 | 29,326 |
| Average age | 46.2 | 46.4 | 46.8 | 47.0 | 47.3 | 47.5 | 47.6 | 47.7 | 48.3 | 48.6 |
| Family Medicine | 44.3 | 44.7 | 45.2 | 45.5 | 45.8 | 46.2 | 46.4 | 46.6 | 47.2 | 47.6 |
| Specialists | 48.3 | 48.3 | 48.5 | 48.6 | 48.8 | 48.8 | 48.9 | 48.8 | 49.5 | 49.6 |
| Gender | | | | | | | | | | |
| Male | | | | | | | | | | |
| Family Medicine | 19,684 | 19,248 | 18,981 | 19,076 | 19,021 | 19,073 | 19,217 | 19,444 | 19,568 | 19,702 |
| Specialists | 21,012 | 21,036 | 21,186 | 21,394 | 21,577 | 21,768 | 21,658 | 21,580 | 21,184 | 21,369 |
| Female | | | | | | | | | | |
| Family Medicine | 8,900 | 8,949 | 9,105 | 9,435 | 9,752 | 10,023 | 10,387 | 10,765 | 11,000 | 11,425 |
| Specialists | 5,339 | 5,682 | 5,928 | 6,250 | 6,553 | 6,922 | 7,260 | 7,573 | 7,602 | 7,940 |
| Unknown Gender | | | | | | | | | | |
| Family Medicine | 4 | 2 | 6 | 8 | 11 | 17 | 23 | 49 | 94 | 159 |
| Specialists | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 6 | 17 |
| Specialty | | | | | | | | | | |
| Family Medicine | 28,588 | 28,199 | 28,092 | 28,519 | 28,784 | 29,113 | 29,627 | 30,258 | 30,662 | 31,286 |
| Specialists | | | | | | | | | | |
| Clinical Specialists | 17,382 | 17,727 | 18,064 | 18,435 | 18,857 | 19,365 | 19,656 | 19,898 | 19,758 | 20,154 |
| Laboratory Specialists | 1,432 | 1,404 | 1,405 | 1,418 | 1,440 | 1,444 | 1,443 | 1,432 | 1,412 | 1,414 |
| Surgical Specialists | 7,466 | 7,518 | 7,582 | 7,730 | 7,776 | 7,826 | 7,769 | 7,781 | 7,584 | 7,724 |
| Medical Scientists | 72 | 70 | 64 | 61 | 57 | 55 | 51 | 43 | 38 | 34 |
| Years Since M.D. Graduation | | | | | | | | | | |
| 1 to 5 | 4,206 | 3,794 | 3,409 | 3,450 | 3,492 | 3,415 | 3,354 | 3,418 | 2,746 | 2,699 |
| 6 to 10 | 8,286 | 8,107 | 7,961 | 7,823 | 7,642 | 7,635 | 7,691 | 7,747 | 7,425 | 7,450 |
| 11 to 25 | 25,250 | 25,649 | 25,831 | 26,107 | 26,384 | 26,551 | 26,786 | 26,836 | 26,873 | 26,904 |
| 26 to 30 | 5,710 | 5,782 | 6,112 | 6,492 | 6,740 | 7,054 | 7,374 | 7,758 | 7,935 | 8,298 |
| 31 to 35 | 4,739 | 4,838 | 4,861 | 4,980 | 5,083 | 5,323 | 5,421 | 5,800 | 6,170 | 6,455 |
| 36+ | 6,748 | 6,746 | 7,032 | 7,309 | 7,571 | 7,823 | 7,913 | 7,849 | 8,304 | 8,805 |
| Unknown | 1 | 2 | 1 | 2 | 2 | 2 | 7 | 4 | 1 | 1 |
| Place of M.D. Graduation | | | | | | | | | | |
| Canadian | | | | | | | | | | |
| Family Medicine | 22,112 | 21,861 | 21,826 | 22,164 | 22,366 | 22,599 | 22,888 | 23,218 | 23,398 | 23,752 |
| Specialists | 19,372 | 19,724 | 20,121 | 20,666 | 21,205 | 21,773 | 22,130 | 22,489 | 22,436 | 23,059 |
| Foreign | | | | | | | | | | |
| Family Medicine | 6,466 | 6,325 | 6,234 | 6,309 | 6,356 | 6,426 | 6,622 | 6,872 | 7,025 | 7,189 |
| Specialists | 6,979 | 6,995 | 6,994 | 6,978 | 6,925 | 6,916 | 6,786 | 6,660 | 6,353 | 6,263 |
| Unknown | | | | | | | | | | |
| Family Medicine | 10 | 13 | 32 | 46 | 62 | 88 | 117 | 168 | 239 | 345 |
| Specialists | 1 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 3 | 4 |
| MIGRATION | | | | | | | | | | |
| Moving Interprovincially(*) | | | | | | | | | | |
| Family Medicine | 381 | 360 | 333 | 351 | 352 | 376 | 418 | 435 | 381 | 421 |
| Specialists | 294 | 306 | 326 | 393 | 442 | 378 | 496 | 434 | 310 | 350 |
| Moved Abroad | | | | | | | | | | |
| Family Medicine | 361 | 370 | 330 | 253 | 182 | 165 | 172 | 145 | 106 | 90 |
| Specialists | 312 | 356 | 328 | 315 | 402 | 255 | 437 | 355 | 214 | 172 |
| Returned from Abroad | | | | | | | | | | |
| Family Medicine | 98 | 92 | 82 | 132 | 112 | 94 | 138 | 103 | 100 | 104 |
| Specialists | 155 | 126 | 145 | 187 | 228 | 162 | 196 | 188 | 140 | 213 |

Source: SMDB/CIHI.

Notes

(*) Interprovincial migration is determined by comparing the province of residence of active physicians in the previous year with the province of residence of active physicians in the given year; represents total volume of interprovincial migration (excluding residents) from all provinces/territories and is not comparable to net interprovincial data presented in other CIHI publications.

1. Alberta and Yukon: 2000 data do not reflect the annual update from the College of Physicians and Surgeons of Alberta and the Government of the Yukon, respectively (see Methodological Notes for details).
2. Ontario: 2002 data do not reflect 4 of 12 monthly updates (September–December 2002) from the College of Physicians and Surgeons of Ontario (see Methodological Notes for details).
3. Quebec: 2003 data do not reflect the annual update from the Collège des médecins du Québec (see Methodological Notes for details).
4. British Columbia: 2004 data do not reflect the annual update from the College of Physicians and Surgeons of British Columbia (see Methodological Notes for details).

Endnotes

Sources

Figure Phys–1. SMDB, CIHI; the Canadian Post-M.D. Education Registry (CAPER).

Figure Phys–2. SMDB, CIHI.

Figure Phys–3. SMDB, CIHI.

Table Phys–1. Association of Canadian Medical Colleges (ACMC).

Table Phys–2. SMDB, CIHI; the Canadian Post-M.D. Education Registry (CAPER).

Table Phys–3. SMDB, CIHI.

Table Phys–4. SMDB, CIHI.

Table Phys–5. SMDB, CIHI.

Table Phys–6. SMDB, CIHI.



Physiotherapists

Definition

Physiotherapists or physical therapists are primary care health professionals who analyze the impact of injury, disease and/or disorders on movement and function. Physiotherapists work in partnership with clients, families, other health providers and individuals in the community to define, achieve and maintain optimal health outcomes.

Physiotherapists' skills are focused on improving, restoring and maintaining functional independence and physical performance; preventing and managing pain, physical impairments, disabilities and limits to participation; and promoting fitness, health and wellness.

Responsibilities/Activities

Physiotherapists treat individuals with illness, injury or disability affecting the musculo-skeletal, cardio-respiratory and/or neurological systems such as fractures, neck and back pain, cerebral palsy or chronic lung and/or heart disease. Physiotherapists treat people of all ages from premature babies to seniors. Individualized physiotherapy treatment plans are developed based on the existing research evidence, a thorough assessment of the condition, environmental factors, lifestyle and patient values. Assessment of function, goals and treatment plan is ongoing. Education of patients, caregivers and other health professionals with regards to injury prevention, ergonomics, fitness, health and wellness is a large focus of the physiotherapist's responsibilities. Physiotherapy treatment plans can include a variety of measures such as manual therapy, prescription of therapeutic exercise programs, education concerning activity and lifestyle, use of therapeutic modalities with the goal of restoring movement and function, gait rehabilitation and improving or maintaining cardio-vascular fitness. Physiotherapists are responsible for maintaining a clinical record on each individual client treated.

Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Physiotherapists are primary health care providers who can contribute to all aspects of the primary health care continuum, from wellness, acute care and rehabilitation to long term or palliative care. The integration of physiotherapists into primary health care models ensures that programs for the management, education and care of Canadians with acute or chronic disease or disability across the lifespan include an essential focus on improving or maintaining mobility and function.

Practice Setting

Physiotherapists work with clients of all ages in a wide variety of private and public settings including private physiotherapy clinics, public out-patient clinics, hospitals, rehabilitation centres, sports facilities, home-care programs, schools, long-term care facilities, community health centres, industry, government, university and research facilities. Many physiotherapists are self-employed. The profile of physiotherapy practice continues to evolve with changing models of health care delivery.

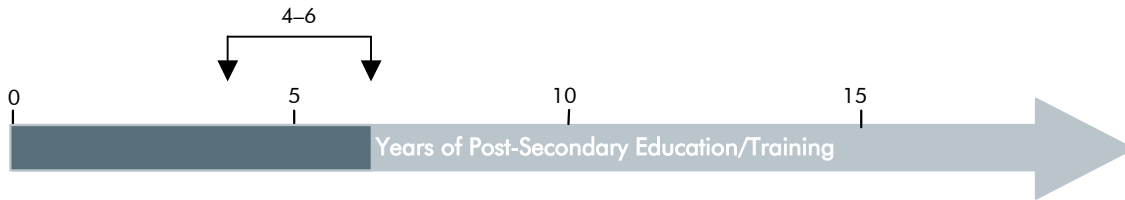


Entering the Profession

Education and/or Training Requirements

The figure and table below outline the education and /or training requirements necessary to enter practice as a physiotherapist in Canada.

- A minimum of four years of post-secondary education is required. An undergraduate degree is the minimum entry to practise. Graduate-level physiotherapy programs are available as well in some provinces, and require a minimum of six years of post-secondary education.



| Typical Length of Program | Province of Education | Education and/or Training |
|---------------------------|---|--|
| 4-5 | Nova Scotia Quebec Ontario Manitoba Saskatchewan Alberta British Columbia | Bachelor's degree in physical therapy/physiotherapy (BMR PT, BSc PT): a bachelor's degree is the entry-to-practise requirement. University of Ottawa* University of Manitoba** Dalhousie University** University of Saskatchewan*** McGill University*** Université de Montréal*** Université Laval*** |
| 4 plus 2 | Ontario Alberta British Columbia | Professional master's or clinical master's (MPT, MSc PT) University of Alberta University of Western Ontario University of Toronto McMaster University Queen's University University of British Columbia These programs have a prerequisite of completion of a related health sciences bachelor's degree. |

* The program is a four-year degree program.

** The program has a prerequisite of a minimum of one year of college (cegep)/university education with specific subject prerequisites followed by a three-year program.

*** The program has a prerequisite of a minimum of two years of college (cegep)/university education with specific subject prerequisites followed by a three-year program.

Changes to Education and/or Training Requirements **

- All Canadian physiotherapy programs plan to offer the master's entry-level credential by the year 2010. Bachelor's programs are at various stages of planning and implementation of the master's degree.

Possible Areas of Certified Specialization**

- Currently, there are no areas of certified specialization of physiotherapists; however, many physiotherapists focus their practice in such areas as: cardiorespiratory, neurosciences, orthopedics, pediatrics, seniors' health, sport physiotherapy and women's health.
- In 2004, the Canadian Physiotherapy Association (CPA) completed the development of guidelines for clinical specialty programs in physiotherapy. CPA is currently in consultation with the provincial physiotherapy regulators to ensure that the specialization assessment requirements for physiotherapists meet regulatory criteria and that standardization and consistency exists in all practice areas going forward for the specialist designation. At the same time, CPA has also begun a process to identify the competencies of the clinical specialist.

Examination Requirements **

Physiotherapy Competency Examination

- Graduates of physiotherapy programs in Canada are required to successfully complete the Physiotherapy Competency Examination (PCE) in order to work in the following provinces: British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Prince Edward Island, Nova Scotia and Newfoundland and Labrador. The only exceptions are New Brunswick and Quebec, where candidates do not need to complete the PCE for licensure.
- The Canadian Alliance of Physiotherapy Regulators (The Alliance) administers the PCE and awards certificates upon successful completion.
- The PCE is designed to determine that Canadian and foreign-educated physiotherapists have acquired minimal entry-level standards of practice. The PCE is designed to determine whether candidates have the knowledge, skills, attitudes and behaviour needed to enter the physiotherapy profession in Canada.
- Physiotherapists who have received their education outside of Canada must first apply to the Canadian Alliance of Physiotherapy Regulators to have their physiotherapy credentials reviewed. Once credentialing is completed, the physiotherapist must successfully complete the PCE in order to work in all provinces except Quebec.

Graduate Trends

The number of graduates from bachelor's program for physiotherapy between 1995 and 2004 is presented in Table Physio-1. The table indicates the following:

- Comparing 1995 to 2004, there was a 5% decrease in the number of graduates (34 graduates). Please note that this decrease is primarily attributed to the effect of the double cohort of graduates from the University of Toronto in 2003 (with the transition from the bachelor's to master's entry level).

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Alliance of Physiotherapy Regulators (see Appendix B for the survey tool).



Table Physio-1. Number of Graduates of Bachelor's Programs for Physiotherapy, by School of Graduation, Canada, 1995 to 2004

| School | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|--------------------------------|------------|------------|------------|------------------|------------|------------|------------|------------|------------|-----------------|
| N.S. | | | | | | | | | | |
| Dalhousie University | 49 | 45 | 48 | 48 | 48 | 45 | 46 | 49 | 47 | 42 |
| Que. | 195 | 191 | 172 | 105 | 157 | 168 | 172 | 155 | 175 | 172 |
| McGill University | 71 | 77 | 49 | 48 | 56 | 52 | 53 | 52 | 50 | 52 |
| Université de Montréal | 59 | 56 | 56 | 49 | 48 | 58 | 51 | 53 | 79 | 64 |
| Université Laval | 65 | 58 | 67 | 8 ¹ | 53 | 58 | 66 | 46 | 46 | 58 |
| Ont. | 262 | 278 | 259 | 324 | 253 | 255 | 278 | 282 | 315 | 242 |
| McMaster University | 51 | 61 | 56 | 60 | 59 | 59 | 56 | 50 | 50 | 52 |
| Queen's University | 38 | 42 | 46 | 40 | 38 | 39 | 39 | 45 | 42 | 42 |
| University of Ottawa | 43 | 48 | 36 | 40 | 35 | 36 | 63 | 62 | 47 | 48 |
| University of Toronto | 71 | 67 | 63 | 120 ² | 63 | 64 | 63 | 62 | 111 | 55 ³ |
| University of Western Ontario | 59 | 60 | 58 | 64 | 58 | 57 | 54 | 63 | 61 | 41 |
| Man. | | | | | | | | | | |
| University of Manitoba | 29 | 32 | 31 | 28 | 33 | 29 | 30 | 34 | 28 | 37 |
| Sask. | | | | | | | | | | |
| University of Saskatchewan | 29 | 28 | 29 | 30 | 30 | 32 | 30 | 30 | 30 | 29 |
| Alta. | | | | | | | | | | |
| University of Alberta | 66 | 66 | 61 | 62 | 63 | 61 | 67 | 63 | 69 | 68 |
| B.C. | | | | | | | | | | |
| University of British Columbia | 35 | 34 | 36 | 36 | 36 | 32 | 41 | 34 | 36 | 38 |
| Canada | 665 | 674 | 636 | 633 | 620 | 622 | 664 | 647 | 700 | 631 |

Source: HPDB/CIHI.

Notes

1. Program credits changed from 96 to 106.
2. Graduated two classes (one from the classic four-year curriculum and the other from the evidence-based three-year curriculum).
3. University of Toronto experienced a decline in the number of graduates from 2003 to 2004 because there was a double cohort of graduates from the Bachelor of Science in physiotherapy and master's programs.

Workforce

Primary Data Source: The primary sources of physiotherapy data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) are associations (in which membership is voluntary) and regulatory/licensing authorities (in which membership is a condition of practice).

Regulatory Environment

The table below indicates the first year in which it became mandatory for physiotherapists to register with a provincial/territorial regulatory authority as a condition of practice.

- Physiotherapists must be registered with a provincial licensing authority as a condition of practice. All provinces had regulatory legislation in place before 1985.
- The Yukon Territory is developing the regulations to accompany the physiotherapy legislation that has been approved.
- In Northwest Territories and Nunavut, the responsibility for the competence of physiotherapists rests with the government.

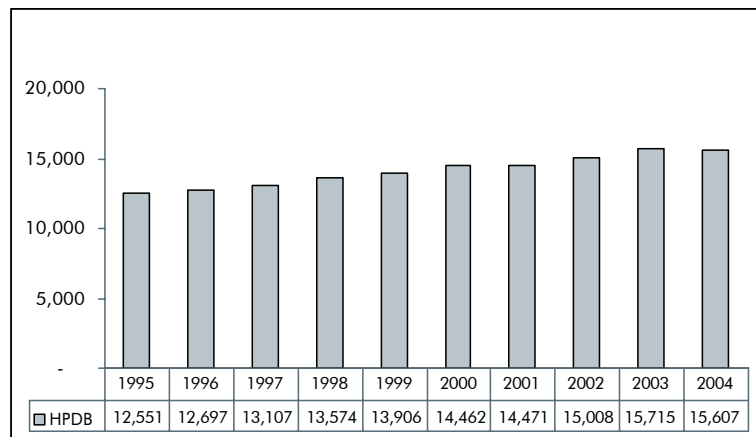
| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|------|------|------|------|-------|-------|------|------|--------|------|
| First Year of Regulation | 1970 | 1973 | 1959 | 1960 | 1973 | 1953 | 1956 | 1945 | 1985 | 1946 | NR | .. | .. |

.. Information not available.
NR = Not regulated as of 2004.

Supply Trends

- As shown in Figure Physio-1, the number of active registered physiotherapists in Canada grew at an average rate of 2.5% per year from 1995 to 2004. This represents a 24.3% increase in the number of active registered physiotherapists in Canada over this 10-year period (an increase of 3,056 physiotherapists).
- The distribution of active registered physiotherapists by province from 1995 to 2004 is outlined in Table Physio-2. The table indicates that in 2004, 35.2% of all physiotherapists in Canada were registered in Ontario, and 23.1% were registered in Quebec.

Figure Physio-1. Number of Physiotherapists, Canada, 1995 to 2004



Source: HPDB/CIHI.



- All provinces experienced an increase in registered physiotherapists from 1995 to 2004; however, the largest percentage increases over this 10-year period occurred in Alberta (43.0%), New Brunswick (40.7%) and Nova Scotia (40.6%).

Table Physio-2. Number of Active Registered Physiotherapists* by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|-------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| N.L. | 167 | 164 | 151 | 180 | 187 | 199 | 198 | 192 | 200 | 200 |
| P.E.I. | 44 | 48 | 39 | 47 | 45 | 47 | 50 | 53 | 52 | 51 |
| N.S. | 352 | 373 | 409 | 422 | 409 | 436 | 449 | 485 | 508 | 495 |
| N.B. | 312 | 290 | 315 | 367 | 361 | 377 | 363 | 397 | 436 | 439 |
| Que. | 2,771 ² | 2,865 ² | 2,920 | 2,964 | 2,995 | 3,200 | 3,210 | 3,304 | 3,435 | 3,606 |
| Ont. | 4,685 | 4,727 | 4,743 ³ | 4,953 | 5,087 | 5,210 | 5,223 | 5,520 | 5,921 | 5,494 |
| Man. ¹ | 452 | 448 | 458 | 462 | 479 | 519 | 505 | 552 | 578 | 602 |
| Sask. | 407 | 408 | 457 | 491 | 504 | 521 | 524 | 516 | 530 | 526 |
| Alta. | 1,268 | 1,281 | 1,377 | 1,430 | 1,510 | 1,632 | 1,643 | 1,634 | 1,712 | 1,813 |
| B.C. | 2,093 | 2,093 | 2,238 | 2,258 | 2,329 | 2,321 | 2,306 | 2,355 | 2,343 | 2,381 |
| Y.T. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| N.W.T. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Canada | 12,551 | 12,697 | 13,107 | 13,574 | 13,906 | 14,462 | 14,471 | 15,008 | 15,715 | 15,607 |

Source: HPDB/CIHI.

Notes

* This data table includes regulated membership data (membership with a specific data provider is required as a condition of practice). Data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).

See additional notes below.

.. Information not available.

1. Some physiotherapists may be practising in two or more provinces. All physiotherapists working in Manitoba are residents of the province.

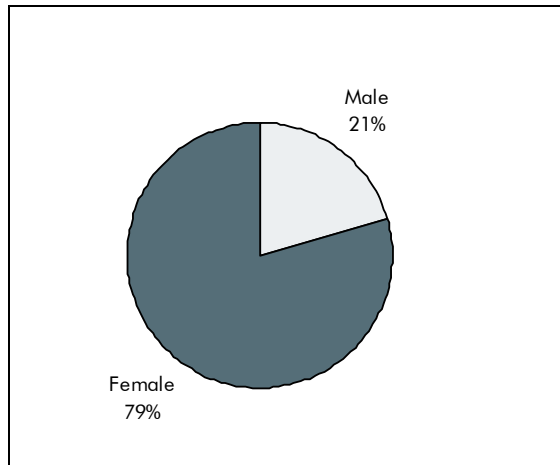
2. CIHI estimate.

3. Estimate.

What Else Do We Know?

- The percentage of women in the physiotherapy profession has decreased from 85% in 1991, to 79% in 2001 (Source: Census Data, Statistics Canada).
- The average age of physiotherapists in Canada is 39 years. Female physiotherapists tend to be of similar average age as their male colleagues, (39 and 38 years, respectively) (Source: 2001 Census Data, Statistics Canada). For more details on average age and gender refer to Appendix F.

Figure Physio-2. Physiotherapists by Gender, Canada, 2001



Source: Census, Statistics Canada.

What's Happening?

Listed below are references to key research documents relating to physiotherapy that are recommended** reading for health human resource planners.

Research Reports

1. *Background Paper: Physiotherapy Health Human Resources and Planning*. Burnett, D., 2004, available from www.physiotherapy.ca
2. *Competency Profile: Essential Competencies of Physiotherapist Support Workers in Canada*. Canadian Alliance of Physiotherapy Regulators and the Canadian Physiotherapy Association, July 2002
3. *Environmental Scan Health Human Resources*. British Columbia Ministry of Health Planning, 2002, available from www.healthplanning.gov.bc.ca
4. *Essential Competency Profile for Physiotherapists in Canada*. Accreditation Council for Canadian Physiotherapy Academic Programs, Canadian Alliance of Physiotherapy Regulators, Canadian Physiotherapy Association and the Canadian Universities Physical Therapy Academic Council, July 2004
5. *Health Human Resources Supply and Demand Analysis*. Fujitsu Consulting (Canada) Inc., 2002, New Brunswick Department of Health and Wellness, available from www.gnb.ca
6. "National Guidelines for Rehabilitation Staffing Levels." Erlendson, P. and Modrow, R., 2003, *Healthcare Management Forum*, Vol. 16, No. 2, pp. 19–24
7. *National Rehabilitation Health Human Resource Invitational Workshop*. Toronto, Ont., May 3, 2003. Contact: Dr. Lyn Jongbloed, lynjon@interchange.ubc.ca
8. *Physiotherapy Health Human Resources: Background Paper*. Canadian Alliance of Physiotherapy Regulators and the Canadian Physiotherapy Association for Health Canada, available from www.physiotherapy.ca
9. *Planification de la main-d'oeuvre dans le secteur de la réadaptation physique*, Government of Quebec, Ministry of Health and Social Services, July 2002
10. *Physiotherapy in Manitoba*, Manitoba Branch, Canadian Physiotherapy, August 2000, available from www.physiotherapy.ca
11. *The Rehabilitation Workforce Study: Supply Side Analysis*. Kazanjian, A., Rahim-Jamal, S., MacDonald, A. and Chen, A., Health Human Resources Unit, Centre for Health Services and Policy Research, University of British Columbia, 2001
12. "Physical Therapy Human Resources in Canada, 1991 to 2000." Landry, M., 2004, *Physiotherapy Canada*, Vol. 56, No. 1, pp. 39–42

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Alliance of Physiotherapy Regulators (see Appendix B for the survey tool).



13. *Essential Competency Profile for Physiotherapists*. Accreditation Council for Canadian Physiotherapy Academic Program, Canadian Alliance of Physiotherapy Regulators, Canadian Physiotherapy Association and the Canadian Universities Physical Therapy Academic Council, available from www.physiotherapy.ca

List of research reports was updated in October 2005.

Research in Progress

1. Integrating Internationally Educated Physiotherapists, The Canadian Alliance of Physiotherapy Regulators and the Canadian Physiotherapy Association.

List of research in progress was updated in October 2005.

Data Tables

Table Physio-3. Number of Registered Physiotherapists* by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| N.L. | 170 | 177 | 154 | 180 | 187 | 199 | 198 | 192 | 200 | 200 |
| P.E.I. | 44 | 49 | 42 | 50 | 45 | 47 | 50 | 53 | 52 | 51 |
| N.S. | 382 | 401 | 411 | 424 | 453 | 458 | 471 | 497 | 515 | 525 |
| N.B. | 321 | 344 | 368 | 386 | 392 | 411 | 393 | 437 | 461 | 472 |
| Que. | 2,797 | 2,943 | 3,003 | 3,077 | 3,212 | 3,370 | 3,439 | 3,554 | 3,702 | 3,853 |
| Ont. | 4,977 | 5,051 | 5,100 | 5,264 | 5,371 | 5,486 | 5,649 | 5,921 | 6,131 | 6,287 |
| Man. | 457 | 483 | 498 | 495 | 519 | 545 | 558 | 599 | 624 | 648 |
| Sask. ¹ | 407 | 414 | 457 | 491 | 504 | 521 | 524 | 540 | 556 | 563 |
| Alta. | 1,595 | 1,610 | 1,691 | 1,718 | 1,778 | 1,829 | 1,883 | 1,867 | 1,930 | 2,024 |
| B.C. | 2,451 | 2,368 | 2,558 | 2,607 | 2,658 | 2,649 | 2,678 | 2,599 | 2,683 | 2,701 |
| Y.T. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| N.W.T. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Canada | 13,601 | 13,840 | 14,282 | 14,692 | 15,119 | 15,515 | 15,843 | 16,259 | 16,854 | 17,324 |

Source: HPDB/CIHI.

Notes

- * This data table includes regulated membership data (membership with a specific data provider is required as a condition of practice). Data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables). See additional notes below.
- .. Information not available.
- 1. Prior to 2001, Saskatchewan did not differentiate between active and inactive (may or may not be working) registered physiotherapists.



Endnotes

Sources

Figure Physio–1. Calculated from data in Table Physio–2.

Figure Physio–2. Calculated using Census Data, Statistics Canada, 2001.

Table Physio–1. Individual universities (McGill University, Université de Montréal, Université Laval, University of Ottawa, Queen’s University, McMaster University, University of Western Ontario, University of Toronto, University of Manitoba, Dalhousie University, University of British Columbia, University of Alberta, University of Saskatchewan) and Statistics Canada.

Table Physio–2. 1995 to 1999: College of Physiotherapists of Manitoba, Newfoundland and Labrador College of Physiotherapists, Prince Edward Island College of Physiotherapists, Nova Scotia College of Physiotherapists, College of Physiotherapists New Brunswick, Ordre professionnel de la physiothérapie du Québec, College of Physiotherapists of Ontario, Saskatchewan College of Physical Therapists, College of Physical Therapists of Alberta, College of Physical Therapists of British Columbia.

2000 to 2004: Canadian Alliance of Physiotherapy Regulators.

Table Physio–3. 1995 to 1999: College of Physiotherapists of Manitoba, Newfoundland and Labrador College of Physiotherapists, Prince Edward Island College of Physiotherapists, Nova Scotia College of Physiotherapists, College of Physiotherapists New Brunswick, Ordre professionnel de la physiothérapie du Québec, College of Physiotherapists of Ontario, Saskatchewan College of Physical Therapists, College of Physical Therapists of Alberta, College of Physical Therapists of British Columbia.

2000 to 2004: Canadian Alliance of Physiotherapy Regulators.



Psychologists

Definition

Psychology is the study of the biological, cognitive, emotional, social, cultural and environmental determinants of behaviour—in other words, how people think, feel and behave in their social and physical environments. Psychologists are licensed provincially/territorially to assess, diagnose and treat psychological problems and mental illnesses.

Responsibilities/Activities

Psychologists' professional activities include conducting research to learn more about basic human functioning and to determine best practices; gathering information from interviews and psychological tests for assessment or diagnosis; treating patients and clients with psychological problems and mental illnesses; consulting with other professionals concerning clients' needs and treatments; planning, developing, directing, administrating and evaluating programs or services; supervising psychological and non-psychological staff in the delivery of services; and participating in the education and training of psychologists and other professionals and paraprofessionals.

Practice Setting

Psychologists provide services, teach and/or conduct research in settings such as hospitals, community clinics, private practices, universities, schools, criminal-justice settings, social-welfare agencies, workplace employee-assistance programs, rehabilitation programs and workers' compensation boards. Psychological services are provided across the continuum of care, which includes wellness, injury and illness prevention, diagnosis and treatment, rehabilitation and relapse prevention, chronic disease and disability management and palliative care.

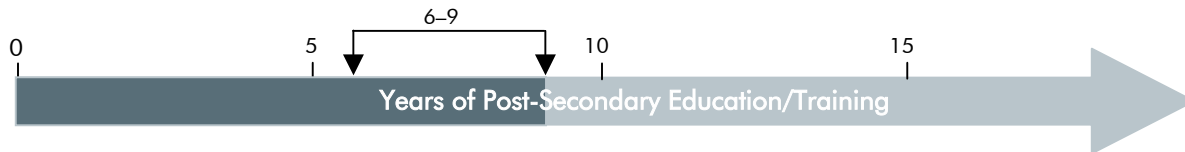
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training Requirements

The figure and table below outline the education and/or training requirements necessary to enter practice as a psychologist in Canada. Psychologists graduate with masters and doctoral degrees from psychology departments of universities.

- Six to nine years of post-secondary education are required.



| Typical Length of Program | Province of Education | Education and/or Training |
|---------------------------|---|--|
| 4 plus 2 | All provinces except Prince Edward Island | Honours undergraduate degree in psychology plus a masters degree* in psychology. |
| 4 plus 5 (minimum) | All provinces except Prince Edward Island | Honours undergraduate degree in psychology plus a doctoral degree** in psychology. |

* Masters degree includes both classes and supervised practice.

** Doctorate includes classes, supervised practice and a one-year internship for those programs accredited by the Canadian Psychological Association.

Changes to Education and/or Training Requirements**

- In order to comply with the demands of the Agreement on Internal Trade, some changes to the provincial registration requirements are anticipated. These will include, for example, the registration/licensure of masters-degree psychological associates in provinces that previously only registered or licensed doctoral psychologists.
- The province of Quebec has applied to the Quebec government to move from masters level to doctoral level as the minimum requirement for entry to practise. The Quebec government is considering the proposal at this time.

** Please note that this information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Psychological Association (see Appendix B for the survey tool).



Possible Areas of Practice (Specialization)**

The following are areas of specialization for psychologists:

- Clinical
- Counselling
- School
- Industrial/organizational
- Neuropsychology
- Developmental
- Criminal Justice

Exam Requirements**

- In all provinces except Quebec and Prince Edward Island, candidates must pass the Exam for the Professional Practice in Psychology.

Graduate Trends

Psychology education/training does not take place in a finite number of professional schools, as is the case with many of the other health professions. Psychologists graduate with Masters and doctoral degrees from psychology departments in universities. There is not at present a systematic method of tracking graduates from masters and doctoral programs in psychology across Canada. Therefore, no information on graduate trends is being reported within this publication.

Workforce

Primary Data Source: The primary source of psychologist data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) is regulatory/licensing authorities (in which membership is a condition of practice).

Regulatory Environment

The table below indicates the first year in which it became mandatory for psychologists to register with a provincial/territorial regulatory authority as a condition of practice.

- As of 2004, all provinces had legislation that made registration with a provincial licensing authority a condition of practice as a psychologist.

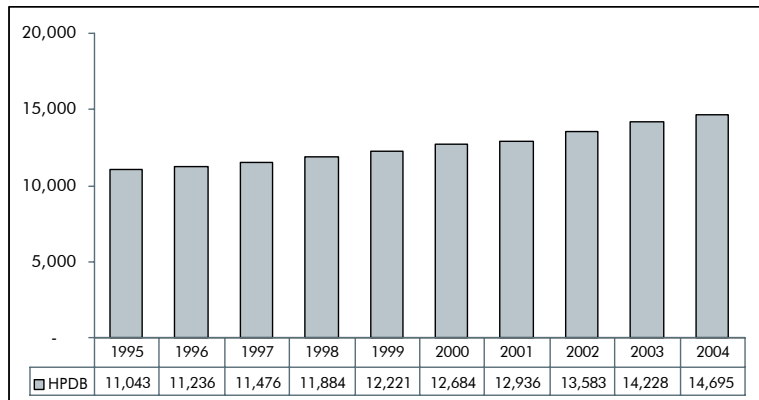
| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|------|------|------|------|-------|-------|------|------|--------|------|
| First Year of Regulation | 1988 | 1991 | 1981 | 1967 | 1962 | 1960 | 1966 | 1997 | 1960 | 1977 | NR | 1988 | REG |

NR = Not regulated.
REG = Regulated in 2004 but initial year of regulation is unknown.

Supply Trends

- As a result of the regulatory changes in Saskatchewan (before 2002, Saskatchewan data include only doctoral-level psychologists; after 2002, they include both masters- and doctoral-level psychologists) and more importantly, the considerable number of estimates found in the early years of HPDB psychologist data, observed trends should be interpreted cautiously.
- As shown in Figure Psych-1, the number of active registered psychologists in Canada grew at an average rate of 3.2% per year from 1995 to 2004. This represents a 33.1% increase in the number of registered psychologists in Canada over this 10-year period (an increase of 3,652 psychologists).
- The distribution of active registered psychologists by province from 1995 to 2004 is outlined in Table Psych-2. The table indicates that in 2004, 52.3% of all psychologists in Canada were registered in Quebec.

Figure Psych-1. Number of Psychologists in Canada, 1995 to 2004



Source: HPDB/CIHI.

Table Psych-1. Number of Active¹ Registered Psychologists* by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| N.L. | 29 ^{†,3} | 30 ^{†,3} | 31 ^{†,3} | 185 | 186 | 195 | 210 | 221 | 203 | 207 |
| P.E.I. | 14 | 15 | 15 | 19 | 22 | 21 | 22 ¹¹ | 28 ¹¹ | 27 | 29 |
| N.S. ⁷ | 290 | 297 | 310 | 331 | 350 | 369 | 383 | 414 | 387 ⁵ | 405 |
| N.B. | 209 ^{†,3} | 215 ^{†,3} | 219 ^{†,3} | 241 | 186 | 256 | 213 | 265 ^{†,2} | 304 ¹³ | 276 ¹³ |
| Que. | 5,486 | 5,602 | 5,671 | 5,728 | 5,898 | 6,076 | 6,271 | 6,455 | 7,554 ¹² | 7,690 |
| Ont. ⁹ | 2,176 | 2,190 | 2,281 | 2,369 | 2,501 | 2,575 | 2,665 | 2,740 | 2,569 | 2,748 |
| Man. | 146 ^{†,3} | 150 ^{†,3} | 153 ^{†,3} | 140 | 149 | 156 | 156 | 160 | 163 ¹⁴ | 181 ¹⁴ |
| Sask. ⁴ | 71 ^{†,3} | 76 ^{†,3} | 70 ^{†,3} | 70 | 73 ^{†,3} | 74 | 73 ^{†,3} | 387 | 374 | 404 |
| Alta. ⁶ | 1,647 | 1,642 | 1,671 | 1,712 | 1,768 | 1,833 | 1,930 | 1,892 | 1,650 | 1,722 |
| B.C. | 937 | 977 | 1,010 | 1,043 | 1,035 | 1,068 | 934 | 939 | 904 | 944 |
| Y.T. ⁸ | 8 ^{†,3} | 8 ^{†,3} | 8 ^{†,3} | 8 ^{†,3} | 8 ^{†,3} | 8 ^{†,3} | 8 ^{†,3} | 8 ^{†,3} | 8 ^{†,3} | 8 ^{†,3} |
| N.W.T. ¹⁰ | 30 | 34 | 37 | 38 | 45 | 53 | 71 | 74 | 85 | 81 |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Canada | 11,043[†] | 11,236[†] | 11,476[†] | 11,884[†] | 12,221[†] | 12,684[†] | 12,936[†] | 13,583[†] | 14,228[†] | 14,695[†] |

Source: HPDB/CIHI.

Notes

* This data table includes both regulated (membership with a specific data provider is required as a condition of practice) and voluntary membership data (registration with the data provider is not a condition of practice); data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).

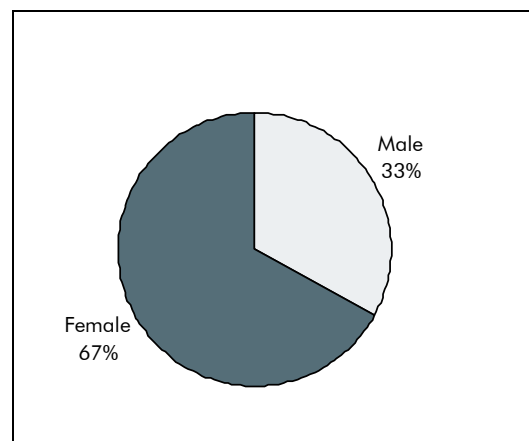
† Indicates the presence of voluntary membership data or estimated data (all estimated data are accompanied by superscript notes identifying the source of the estimate; that is, CIHI or data provider). See additional notes below.

1. "Active" refers to those self-employed or employed by agencies such as hospitals and clinics. Excluded are students, foreign affiliates, retired psychologists, those abroad and honorary members (exceptions are footnoted). Some psychologists are employed outside the health field.
2. Estimate.
3. CIHI estimate.
4. Saskatchewan: data from 1995 to 2001 include only doctoral-level psychologists and may undercount the number of practising psychologists in Saskatchewan. Saskatchewan: data for 2002 to 2004 include both masters- and doctoral-level psychologists.
5. Nova Scotia: 2003 data as of May 11, 2004.
6. Alberta: data for 1995 to 2002 include active and inactive (may or may not be employed) psychologists; 2003 data as of August 17, 2004; 2004 data as of February 10, 2005.
7. Nova Scotia: data for 1995 to 2002 include active and inactive (may or may not be employed) psychologists.
8. The Yukon is not a regulated territory.
9. Ontario: 1995 data as of July 1, 1995; 1996 to 1999 data as of September, 1999; 2000 to 2001 data as of October, 2001; 2002 data as of May 31, 2002.
10. Northwest Territories: 1995 to 2002 data as of March 31, 2002; 2003 to 2004 data as of April 8, 2005 and represent registered psychologists.
11. Prince Edward Island: 2001 to 2002 data as of November 1, 2002 and include five people who are employed outside the province.
12. Quebec: 2003 data as of May 31, 2004.
13. New Brunswick: 2003 data as of October 29, 2004; 2004 data as of April 5, 2005.
14. Manitoba: 2003 data as of August 16, 2004; 2004 data as of April 30, 2005.

What Else Do We Know?

- The percentage of women in the psychology profession increased from 59% in 1991, to 67% in 2001 (Source: Census Data, Statistics Canada).
- The average age of psychologists in Canada is 45 years. Female psychologists tend to be slightly younger on average than their male colleagues (44 and 48 years, respectively) (Source: 2001 Census Data, Statistics Canada). For more details on average age and gender refer to Appendix F.

Figure Psych-2. Psychologists by Gender, 2001, Canada



Source: Census, Statistics Canada.

What's Happening?

Listed below are references to key research documents relating to psychologists that are recommended** reading for health human resource planners.

Research Reports

1. *The Cost-Effectiveness of Psychological Interventions*. Canadian Psychological Association, 2002, available from www.cpa.ca
2. *Costs and Cost-Offsets of Psychological Interventions*. British Columbia Psychological Association, 2002, available from www.cpa.ca
3. *Putting Human Behaviour at the Heart of Health Care in Canada*. Canadian Psychological Association, 2002, available from www.cpa.ca
4. *Geographic Locations Survey of Registered Psychologists in Canada*. Canadian Psychological Association, 1999, available from www.cpa.ca
5. *A Profile of Canadian Consumers of Psychological Services*. Hunsley, J., Aubrey, T. and Lee, C., 1997, available from www.cpa.ca
6. *Strengthening Medicare*. Canadian Psychological Association, 1999, available from www.cpa.ca
7. *Strengthening Primary Care*. Canadian Psychological Association, 2002, available from www.cpa.ca
8. *Strengthening Pharmacare*. Canadian Psychological Association, 2001, available from www.cpa.ca
9. *Strengthening Home and Community Care*. Canadian Psychological Association, 2001, available from www.cpa.ca
10. *Strengthening Rural Health*. Canadian Psychological Association, 2002, available from www.cpa.ca
11. *Graduate Guide 2004–2005, Description of Graduate Psychology Programmes in Canadian Universities*. Canadian Psychological Association, available from www.cpa.ca
12. *Provincial/Territorial Licensing Requirements for Psychologists*. Canadian Psychological Association, available from www.cpa.ca

The list of research reports was updated in June 2005.

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Psychological Association (see Appendix B for the survey tool).



Research in Progress

- Information on planned health human resources–related research activities is available from the Canadian Psychological Association at www.cpa.ca.
- Psychology in Canada; a 2005 Snapshot. Scheduled for released in spring/summer 2006. The Canadian Psychological Association is conducting this study; contact is Dr. Ian Nicholson, Psychology Professional Practice Leader, London Health Sciences Centre. ian.nicholson@lhsc.on.ca.
- Psychology in Canadian School Boards; a 2006 snapshot. Scheduled for release in 2007. Contact: Dr. Ian Nicholson, Psychology Professional Practice Leader, London Health Sciences Centre, ian.nicholson@lhsc.on.ca.

Endnotes

Sources

- Figure Psych-1. Calculated from data in Table Psych-1.
- Figure Psych-2. Calculated using Census Data, Statistics Canada, 2001.
- Table Psych-1. Newfoundland Board of Examiners in Psychology, Prince Edward Island Psychologists Registration Board, Nova Scotia Board of Examiners in Psychology, College of Psychologists of New Brunswick, College of Psychologists of Ontario, Ordre des psychologues du Québec, Psychological Association of Manitoba, College of Alberta Psychologists, College of Psychologists of British Columbia, Department of Health and Social Services, Government of the Northwest Territories and Saskatchewan College of Psychologists.



Registered Nurses

Definition

Registered Nurses (RNs) are regulated health care professionals. They work in different domains of nursing practice including direct care (clinical), education, administration and research.

Responsibilities/Activities

RNs' duties include planning, implementing and evaluating care and programs on the basis of the nursing assessment. They play a key role in illness prevention and health promotion, as well as treating health conditions and assisting clients, families and communities throughout the life cycle. Within the collaborative health care team environment, registered nurses work autonomously. Some of the areas of responsibility include medicine, surgery, obstetrics care, psychiatric care, critical care, pediatrics, geriatrics, community health, occupational health, emergency care, health promotion, rehabilitation and oncology.

Practice Setting

RNs are employed in a variety of practice settings including institution and community-based environments such as hospitals, nursing homes, extended-care facilities, rehabilitation centres, clinics, community health centres, home-care agencies, education and research facilities, private companies, government and doctors' offices. They may also be self-employed.

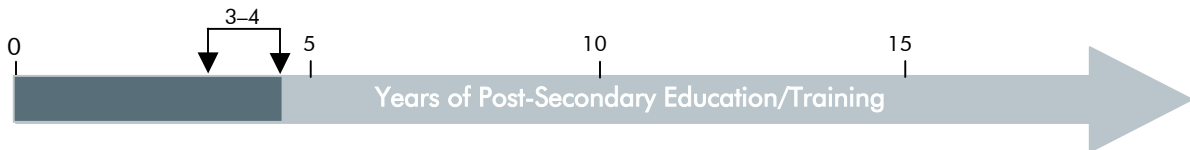
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training Requirements

The table and figure below outline the education and/or training requirements necessary to enter practice in Canada as a registered nurse.

- Three to four years of post-secondary education are required.



| Typical Length of Program | Province/Territory of Education | Education and/ Training |
|---------------------------|---|---|
| 3 | Quebec Ontario Manitoba | Diploma in registered nursing. |
| 4 | All provinces/ territories except Yukon | Bachelors degree in registered nursing. |

Changes to Education and/or Training Requirements**

- In Ontario, the College of Nurses of Ontario has required a degree in nursing for entry to practice since 2005. As the requirement changes, diploma graduates who are already practising will be able to continue without mandatory upgrading. Diploma graduates who wish to study for a degree can apply to university or institute schools of nursing that offer special and shortened programs for registered nurses. For further information, please consult the Canadian Nurses Association (CNA) at www.cna-aiic.ca.
- In British Columbia a bachelor’s degree entry to practise will be required by 2008.
- In Alberta a bachelor’s degree entry to practise will be required by 2010.

Possible Areas of Certified Specialization**

The CNA offers a voluntary certification program, under which registered nurses can write a national exam in one of fourteen areas of specialization: cardiovascular, critical care, critical-care pediatrics, emergency, gastroenterology, gerontology, hospice palliative care, nephrology, neuroscience, occupational health, oncology, perinatal, perioperative and psychiatric/mental health. Please contact the CNA for further details at www.cna-aiic.ca.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Nurses Association (see Appendix B for the survey tool).



Examination Requirements**

Individuals with a diploma or degree in registered nursing must pass the Canadian Registered Nurse Examination (CRNE) or the examen professionnel (de l'admission à la profession) of the Ordre des infirmières et infirmiers du Québec to earn the title "registered nurse" and to work as an RN in a Canadian province or territory.

Graduate Trends

Information on numbers of graduates from individual education providers is not currently captured within HPDB or within the Registered Nurses Database (RNDB) at CIHI. However, the RNDB does collect and report on educational attainment of registrants and offers a historical profile by province/territory. A summary of this information can be found in the What Else Do We Know? section within this chapter, but more detailed information can be found in *Workforce Trends of Registered Nurses in Canada, 2004*, available from www.cihi.ca.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Nurses Association (see Appendix B for the survey tool).

Workforce

Primary Data Source: The primary source of registered nurses data for the Health Personnel Database (HPDB) is data from the RNDB at CIHI. Data for the RNDB are collected from provincial and territorial regulatory bodies for registered nursing.

Regulatory Environment

The table below indicates the first year in which it became mandatory for registered nurses to register with a provincial/territorial regulatory authority as a condition of practice.

- As of 1994, all provinces/territories had legislation making registration with a provincial/territorial regulatory body a condition to practise in that province/territory and to use the title "registered nurse."

| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|---------------------------------|------|--------|------|------|------|------|------|-------|-------|-------|------|--------|--------|
| First Year of Regulation | 1954 | 1949 | 1985 | 1984 | 1946 | 1922 | 1913 | 1967 | 1983 | 1918* | 1994 | 1973 | 1999** |

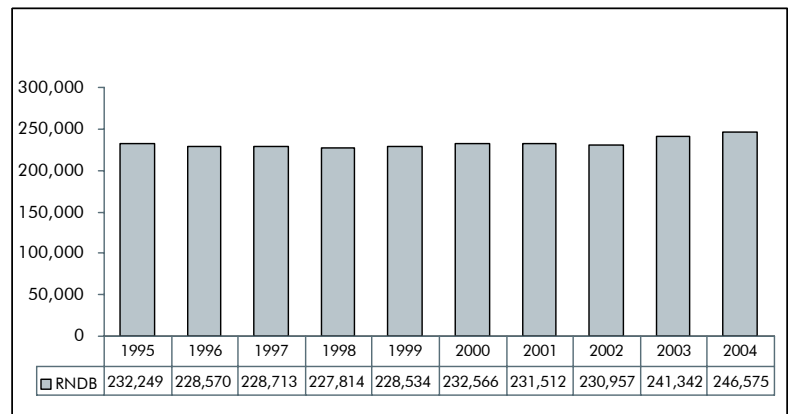
* In 1918, the *Registered Nurses Act* was enabled. In 1988, it became mandatory to register with the Registered Nurses Association of British Columbia in order to practise as a registered nurse.

** In 1973 registration became mandatory in the Northwest Territories, which included the land area now known as Nunavut. Nunavut was formed in 1999 and adopted the Northwest Territory legislation.

Supply Trends

- As shown in Figure RN-1, in 2004, the number of registered nurses in Canada had increased 6.2 % from 1995 (an increase of 14, 326 registered nurses).
- The distribution of registered nurses by province from 1995 to 2004 is outlined in Table RN-1. The table indicates that in 2004, 37.5% of all nurses in Canada were registered in Ontario.
- The table also shows that in 2004, of all registered nurses, 93.6% were employed in nursing.

Figure RN-1. Number of Registered Nurses Employed in Nursing in Canada, 1995 to 2004



Source: RNDB/CIHI.



Table RN-1. Number of Registered Nurses by Province/Territory of Registration and Employment Status, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|--------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| N.L. | | | | | | | | | | |
| Employed in nursing | 5,203 | 5,261 | 5,210 | 5,340 | 5,264 | 5,394 | 5,439 | 5,442 | 5,430 | 5,452 |
| Employed other than in nursing | 60 | 45 | 25 | 13 | 11 | 8 | 10 | 8 | * | * |
| Not employed | 382 | 443 | 178 | 103 | 74 | 55 | 42 | 39 | ** | ** |
| Not stated | 2 | 13 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 0 |
| Total | 5,647 | 5,762 | 5,413 | 5,456 | 5,349 | 5,464 | 5,491 | 5,490 | 5,472 | 5,493 |
| P.E.I. | | | | | | | | | | |
| Employed in nursing | 1,195 | 1,340 | 1,281 | 1,277 | 1,232 | 1,255 | 1,270 | 1,293 | 1,373 | 1,377 |
| Employed other than in nursing | 7 | 8 | 14 | 16 | 13 | ** | 13 | 0 | 0 | 0 |
| Not employed | 28 | 44 | 46 | 42 | 10 | ** | 18 | 0 | * | 13 |
| Not stated | 3 | 6 | 17 | 17 | 6 | 9 | 13 | 34 | ** | 0 |
| Total | 1,233 | 1,398 | 1,358 | 1,352 | 1,261 | 1,294 | 1,314 | 1,327 | 1,393 | 1,390 |
| N.S. | | | | | | | | | | |
| Employed in nursing | 8,863 | 8,738 | 8,587 | 8,525 | 8,615 | 8,699 | 8,554 | 8,419 | 8,498 | 8,602 |
| Employed other than in nursing | 64 | 99 | 54 | 28 | 22 | 18 | 13 | 22 | 49 | 42 |
| Not employed | 372 | 390 | 315 | 312 | 249 | 219 | 224 | 182 | 188 | 190 |
| Not stated | 25 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 9,324 | 9,256 | 8,956 | 8,865 | 8,886 | 8,936 | 8,791 | 8,623 | 8,735 | 8,834 |
| N.B. | | | | | | | | | | |
| Employed in nursing | 7,473 | 7,361 | 7,342 | 7,404 | 7,580 | 7,256 | 7,385 | 7,364 | 7,186 | 7,361 |
| Employed other than in nursing | 17 | 65 | 97 | 75 | 51 | 8 | 5 | 10 | ** | 21 |
| Not employed | 140 | 344 | 370 | 376 | 186 | 132 | 128 | 228 | ** | 284 |
| Not stated | 647 | 59 | 62 | 18 | 9 | 370 | 237 | 73 | 282 | 158 |
| Total | 8,277 | 7,829 | 7,871 | 7,873 | 7,826 | 7,766 | 7,755 | 7,675 | 7,842 | 7,821 |
| Que. | | | | | | | | | | |
| Employed in nursing | 62,058 | 57,291 | 59,160 | 56,825 | 57,980 | 58,750 | 58,482 | 59,193 | 62,494 | 63,455 |
| Employed other than in nursing | 513 | n/s | n/s | n/s | n/s | 505 | 400 | 249 | 25 | 21 |
| Not employed | 705 | n/s | 15 | n/s | n/s | 618 | 663 | 615 | 76 | 281 |
| Not stated | 1,579 | 7,635 | 7,244 | 6,819 | 7,122 | 3,691 | 3,558 | 3,145 | 1,385 | 158 |
| Total | 64,855 | 64,926 | 66,419 | 63,644 | 65,102 | 63,564 | 63,103 | 63,202 | 63,980 | 64,932 |
| Ont. | | | | | | | | | | |
| Employed in nursing | 79,410 | 80,198 | 78,067 | 78,825 | 78,197 | 81,679 | 80,590 | 78,737 | 85,187 | 86,099 |
| Employed other than in nursing | 5,111 | 5,517 | 5,201 | 5,325 | 4,993 | 3,833 | 5,379 | 4,953 | 4,520 | 4,573 |
| Not employed | 7,555 | 8,250 | 5,362 | 7,921 | 7,382 | 3,019 | 5,732 | 6,069 | 6,807 | 7,236 |
| Not stated | 6,219 | 5,362 | 8,655 | 3,359 | 5,339 | 7,253 | 2,786 | 5,523 | 22 | 910 |
| Total | 98,295 | 99,327 | 97,285 | 95,430 | 95,911 | 95,784 | 94,487 | 95,282 | 96,536 | 98,818 |
| Man. | | | | | | | | | | |
| Employed in nursing | 10,210 | 10,452 | 10,473 | 10,162 | 10,193 | 10,051 | 10,263 | 9,942 | 10,034 | 10,628 |
| Employed other than in nursing | 110 | 78 | 104 | 67 | 49 | n/s | n/s | n/s | 0 | 0 |
| Not employed | 38 | 77 | 87 | 71 | 39 | n/s | n/s | n/s | 0 | 0 |
| Not stated | 22 | 69 | 70 | 98 | 45 | 236 | 28 | 319 | 593 | 392 |
| Total | 10,380 | 10,676 | 10,734 | 10,398 | 10,326 | 10,287 | 10,291 | 10,261 | 10,627 | 11,020 |

(table continued on next page)

Table RN-1. Number of Registered Nurses by Province/Territory of Registration and Employment Status, Canada, 1995 to 2004 (cont'd)

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Sask. | | | | | | | | | | |
| Employed in nursing | 8,447 | 8,508 | 8,456 | 8,455 | 8,553 | 8,543 | 8,198 | 8,257 | 8,503 | 8,499 |
| Employed other than in nursing | 109 | 107 | 97 | 65 | 52 | 41 | 29 | 26 | 39 | 29 |
| Not employed | 195 | 163 | 153 | 149 | 171 | 101 | 84 | 84 | 121 | 95 |
| Not stated | 93 | 177 | 104 | 4 | 2 | 4 | 238 | 38 | 0 | 2 |
| Total | 8,844 | 8,955 | 8,810 | 8,673 | 8,778 | 8,689 | 8,549 | 8,405 | 8,663 | 8,625 |
| Alta. | | | | | | | | | | |
| Employed in nursing | 21,132 | 20,549 | 21,238 | 21,976 | 22,044 | 22,172 | 22,924 | 23,377 | 23,964 | 25,600 |
| Employed other than in nursing | 339 | 342 | 290 | 173 | 104 | 25 | 58 | 37 | 34 | 35 |
| Not employed | 708 | 820 | 755 | 659 | 494 | 201 | 325 | 379 | 448 | 447 |
| Not stated | 499 | 603 | 434 | 369 | 422 | 1,008 | 514 | 857 | 871 | 46 |
| Total | 22,678 | 22,314 | 22,717 | 23,177 | 23,064 | 23,406 | 23,821 | 24,650 | 25,317 | 26,128 |
| B.C. | | | | | | | | | | |
| Employed in nursing | 27,329 | 27,878 | 27,964 | 28,001 | 27,911 | 27,730 | 27,375 | 27,901 | 27,711 | 28,289 |
| Employed other than in nursing | 23 | 10 | 19 | 24 | 78 | 54 | 10 | 82 | 199 | 195 |
| Not employed | 37 | 25 | 42 | 36 | 176 | 104 | 11 | 194 | 450 | 429 |
| Not stated | 1,078 | 1,160 | 1,106 | 834 | 874 | 611 | 841 | 585 | 494 | 134 |
| Total | 28,467 | 29,073 | 29,131 | 28,895 | 29,039 | 28,499 | 28,237 | 28,762 | 28,854 | 29,047 |
| Y.T. | | | | | | | | | | |
| Employed in nursing | 237 | 271 | 302 | 286 | 283 | 275 | 273 | 272 | 290 | 283 |
| Employed other than in nursing | * | * | 5 | 6 | * | * | * | * | 0 | * |
| Not employed | * | ** | 12 | 5 | * | * | * | * | 0 | * |
| Not stated | 0 | 31 | 5 | 0 | 0 | 0 | * | 0 | 3 | 2 |
| Total | 242 | 311 | 324 | 297 | 291 | 282 | 281 | 276 | 293 | 289 |
| N.W.T. | | | | | | | | | | |
| Employed in nursing | 692 | 723 | 633 | 738 | 682 | 762 | 471 | 487 | 414 | 930 |
| Employed other than in nursing | ** | ** | 14 | 12 | * | 0 | 0 | * | 0 | 0 |
| Not employed | ** | ** | 18 | 20 | ** | 14 | ** | ** | 4 | 0 |
| Not stated | 2 | 14 | 18 | 20 | 40 | 4 | ** | 21 | 5 | 29 |
| Total | 723 | 771 | 683 | 790 | 737 | 780 | 485 | 519 | 423 | 959 |
| Nun. | | | | | | | | | | |
| Employed in nursing | - | - | - | - | - | - | 288 | 273 | 258 | ^ |
| Employed other than in nursing | - | - | - | - | - | - | * | * | 0 | ^ |
| Not employed | - | - | - | - | - | - | * | * | 0 | ^ |
| Not stated | - | - | - | - | - | - | 0 | 4 | 0 | ^ |
| Total | - | - | - | - | - | - | 292 | 280 | 258 | ^ |
| Canada | | | | | | | | | | |
| Employed in nursing | 232,249 | 228,570 | 228,713 | 227,814 | 228,534 | 232,566 | 231,512 | 230,957 | 241,342 | 246,575 |
| Employed other than in nursing | 6,367 | 6,281 | 5,920 | 5,804 | 5,381 | 4,506 | 5,921 | 5,392 | 4,880 | 5,039 |
| Not employed | 10,180 | 10,589 | 7,353 | 9,694 | 8,796 | 4,486 | 7,237 | 7,803 | 8,497 | 9,181 |
| Not stated | 10,169 | 15,158 | 17,715 | 11,538 | 13,859 | 13,193 | 8,227 | 10,600 | 3,674 | 2,561 |
| Total | 258,965 | 260,598 | 259,701 | 254,850 | 256,570 | 254,751 | 252,897 | 254,752 | 258,393 | 263,356 |

Source: RNDB/CIHI.

Notes

* Value suppressed in accordance with CIHI privacy policy; cell value is from 1 to 4.

** Value suppressed to ensure confidentiality; cell value is 5 or greater.

n/s = Data not submitted to CIHI.

^ Northwest Territories and Nunavut data combined for 2004.

- Data does not exist.

CIHI reports the "Employed in nursing" figure in its RN publications, media releases, ad-hoc requests and on the CIHI Web site.

The "Employed in nursing" figure includes employment in direct care, administration, education and research.

Some data between 1995 and 2000 have been revised from figures previously published by Statistics Canada and/or CIHI.

Prior to 2001, Northwest Territories and Nunavut data are combined.

Provincial data exclude secondary registrations that do not reflect the primary jurisdiction of employment. These secondary registrations are retained in the territorial data for RNs employed in nursing in the territories.

CIHI statistics will differ from provincial/territorial statistics for four primary reasons: (1) CIHI data are collected at the 6-month mark of the registration year, in contrast to provincial/territorial figures that include the full 12-month period; (2) CIHI removes "secondary" registrations that do not reflect primary employment; (3) CIHI uses a narrower definition of "registered nurse workforce," which includes only those employed in nursing at the time of registration; and (4) provincial/territorial regulatory authorities may review and improve the completeness of data at year-end, after CIHI has received its data.

Data subject to change as data-quality reviews continue.

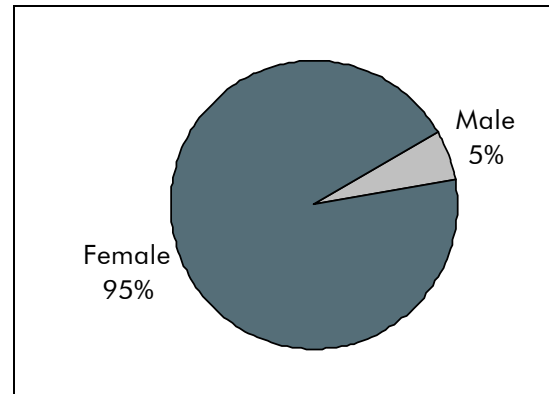


What Else Do We Know?

The following information is from the CIHI publication, *Workforce Trends of Registered Nurses in Canada, 2004*. For further details please visit www.cihi.ca. Within the publication, detailed information is available for annual historical data (prior to 2004); however, the trending frame in the publication is five years, and comparisons below are made between 2004 and 2000 data.

- More than forty percent (41.4%) of new graduates (those graduating in the past five years) entered registered nursing practice with a baccalaureate in nursing. Overall, 15.2% of the 2004 RN workforce began their career with a baccalaureate, an increase from 11.8% compared to the 2000 workforce.
- The proportion of RNs with a degree (i.e. baccalaureate, master's or doctorate) as their highest education in registered nursing also increased from 24.4% to 32.1% between 2000 and 2004.
- For the provinces, Prince Edward Island and British Columbia attracted the greatest proportion of out-of-province graduates, 30.2% and 28.1% respectively. In contrast, 95.7% of Quebec's RN workforce graduated from Quebec nursing programs, the highest rate in the country.
- Rates of casual employment for new graduates (those graduating in the past five years) have declined. In 2004 the casual employment rate for new graduates was 18.4%, compared with 39.3% in 2000.
- A comparison of employment patterns between the territories and provinces illustrates that 37.0% of all RNs in the Yukon, Northwest Territories and Nunavut worked in the Community Health sector, compared to 13.3% for the provinces. Average age of RNs is similar between the territories and the provinces (44.1 and 44.6 years respectively). In the North, males comprise a larger percentage of the workforce than in the provinces (10.0% and 5.4% respectively).
- The average age of an RN in 2004 was 45 years, this represents an increase of 1 year from 2000. The average age increased in every jurisdiction between 2000 and 2004.
- Males represented 5.4% (13,379) of the RN workforce in 2004, an increase of 0.6% from 2000. Almost half (43.2%) of all male RNs in Canada are employed in Quebec.
- Registered nurses employed in the Hospital sector are, on average, younger than RNs working in the Community Health or Nursing Home/Long-term Care sectors. In 2004, the average age of RNs in the Hospital sector was 43.0 years, compared to 45.8 years for those in the Community Health sector and 48.2 years in the Nursing Home/Long-term Care sector.

Figure RN-2. Registered Nurses by Gender, Canada, 2004



Source: RNDB, CIHI.

What's Happening?

Listed below are references to key research documents relating to RNs that are recommended reading for health human resource planners.

Research Reports

1. *A Report on The Nursing Strategy for Canada*. Advisory Committee Health Delivery and Human Resources, 2003, available from www.hc-sc.gc.ca
2. *A Statistical Picture of the Past, Present and Future of Registered Nurses in Canada*. Canadian Nurses Association, September 1997, available from www.cna-aiic.ca
3. *Bringing the Future into Focus: Projecting RN Retirement in Canada*. Canadian Institute for Health Information/University of Toronto, 2003, available from www.cihi.ca
4. *Building on Values: The Future of Health Care in Canada—Chapter 4: Investing in Health Care Providers*. Commission on the Future of Health Care in Canada, Roy J. Romanow, Commissioner, 2002, available from www.hc-sc.gc.ca
5. *Building the Future: An Integrated Strategy for Nursing Human Resources in Canada: Phase I Final Report*. Nursing Sector Study Corporation, 2005, available from www.buildingthefuture.ca
6. *Canada's Health Care Providers*. Canadian Institute for Health Information, 2001, available from www.cihi.ca
7. *Commitment and Care: The Benefits of a Healthy Workplace for Nurses, Their Patients and the System*. 2001, available from www.chsrf.ca
8. *Earning Their Return: When and Why Ontario RNs Left Canada, and What Will Bring Them Back*. Registered Nurses Association of Ontario, February 2001, available from www.rnao.org
9. *Future Development of Information to Support the Management of Nursing Resources: Recommendations*. Canadian Institute for Health Information, 2001, available from www.cihi.ca
10. "Nurses' Reports of Hospital Quality of Care and Working Conditions in Five Countries." Aiken, L.H. et. al., *Health Affairs*, May–June 2001
11. *Nursing Workforce Study, Volumes I–V*. Health Human Resources Unit, Centre for Health Services and Policy Research, University of British Columbia, April 2000, available from www.chspr.ubc.ca
12. *Our Health, Our Future: Creating Quality Workplaces for Canadian Nurses—Final Report of the Canadian Nursing Advisory Committee*. Advisory Committee on Health Human Resources, 2002, available from www.hc-sc.gc.ca
13. *Planning For the Future: Nursing Human Resource Projections*. Canadian Nurses Association, 2002, available from www.cna-aiic.ca

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.



14. *Supply and Distribution of Registered Nurses in Rural and Small Town Canada*. Canadian Institute for Health Information/Nursing Practice in Rural and Remote Canada Study Group, 2002, available from www.cihi.ca
15. *Survey of Casual and Part-Time Registered Nurses in Ontario*. Registered Nurses Association of Ontario, May 2003, available from www.rnao.org
16. *The Nursing Strategy for Canada*. Advisory Committee on Health Human Resources, October 2000, available from www.hc-sc.gc.ca
17. "Workforce Planning and Workforce Management." O'Brien-Pallas, L., Birch, S. and Tomblin Murphy, G., *International Nursing Perspectives* 1(2-3), pp. 55-65, 2001
18. *Workforce Trends of Registered Nurses in Canada, 2004*. Canadian Institute for Health Information, 2005, available from www.cihi.ca

List of research reports was updated in October 2005.

Research in Progress

1. Building the Future: An Integrated Strategy for Nursing Human Resources in Canada. Contact: info@buildingthefuture.ca or www.buildingthefuture.ca
2. National Survey of the Work and Health of Nurses. Contact: nursing@cihi.ca or www.cihi.ca
3. The Nature of Nursing Practice in Rural and Remote Canada. Contact: rrn@unbc.ca or www.ruralnursing.unbc.ca

List of research in progress was updated in October 2005.

Data Tables

Table RN-2. Number of Registered Nurses Employed in Nursing by Province/Territory of Registration and Derived Employment Status, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| N.L. | | | | | | | | | | |
| Full-time | 3,306 | 3,290 | 3,071 | 3,149 | 3,227 | 3,918 | 4,046 | 4,050 | 3,966 | 3,909 |
| Part-time | 929 | 934 | 881 | 852 | 844 | 871 | 851 | 875 | 922 | 963 |
| Casual | 968 | 1,037 | 1,258 | 1,339 | 1,193 | 605 | 542 | 517 | 542 | 580 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 5,203 | 5,261 | 5,210 | 5,340 | 5,264 | 5,394 | 5,439 | 5,442 | 5,430 | 5,452 |
| P.E.I. | | | | | | | | | | |
| Full-time | 506 | 578 | 570 | 543 | 539 | 505 | 616 | 650 | 713 | 691 |
| Part-time | 454 | 479 | 477 | 497 | 487 | 562 | 539 | 528 | 597 | 640 |
| Casual | 235 | 283 | 234 | 237 | 206 | 188 | 115 | 115 | 63 | 29 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Total | 1,195 | 1,340 | 1,281 | 1,277 | 1,232 | 1,255 | 1,270 | 1,293 | 1,373 | 1,377 |
| N.S. | | | | | | | | | | |
| Full-time | 5,044 | 4,915 | 4,704 | 4,616 | 4,701 | 4,910 | 4,884 | 5,008 | 5,203 | 5,321 |
| Part-time | 1,932 | 1,916 | 2,020 | 2,060 | 2,081 | 2,156 | 2,216 | 2,255 | 2,353 | 2,371 |
| Casual | 1,887 | 1,907 | 1,863 | 1,849 | 1,833 | 1,633 | 1,454 | 1,156 | 942 | 910 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 8,863 | 8,738 | 8,587 | 8,525 | 8,615 | 8,699 | 8,554 | 8,419 | 8,498 | 8,602 |
| N.B. | | | | | | | | | | |
| Full-time | 4,220 | 4,057 | 3,903 | 3,914 | 3,975 | 3,889 | 4,281 | 4,354 | 4,377 | 4,669 |
| Part-time | 1,862 | 1,827 | 1,881 | 1,881 | 1,964 | 2,305 | 2,162 | 2,050 | 2,120 | 2,214 |
| Casual | 1,391 | 1,477 | 1,558 | 1,609 | 1,641 | 1,062 | 942 | 782 | 689 | 478 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 178 | 0 | 0 |
| Total | 7,473 | 7,361 | 7,342 | 7,404 | 7,580 | 7,256 | 7,385 | 7,364 | 7,186 | 7,361 |
| Que. | | | | | | | | | | |
| Full-time | 26,024 | 22,485 | 28,986 | 27,322 | 28,115 | 29,895 | 30,863 | 31,963 | 32,370 | 32,842 |
| Part-time | 19,335 | 16,128 | 20,319 | 19,095 | 19,308 | 19,670 | 19,975 | 20,309 | 20,308 | 20,312 |
| Casual | 6,639 | 8,818 | 9,855 | 10,408 | 10,557 | 9,185 | 7,644 | 6,921 | ** | 6,752 |
| Unknown | 10,060 | 9,860 | 0 | 0 | 0 | 0 | 0 | 0 | ** | 3,549 |
| Total | 62,058 | 57,291 | 59,160 | 56,825 | 57,980 | 58,750 | 58,482 | 59,193 | 62,494 | 63,455 |
| Ont. | | | | | | | | | | |
| Full-time | 43,369 | 42,493 | 40,005 | 39,478 | 39,383 | 43,899 | 44,496 | 44,803 | 43,351 | 44,566 |
| Part-time | 25,673 | 26,721 | 26,738 | 27,999 | 28,101 | 28,949 | 28,115 | 26,185 | 24,383 | 24,123 |
| Casual | 10,368 | 10,984 | 11,324 | 11,348 | 10,713 | 8,831 | 7,979 | 7,749 | 6,154 | 6,480 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11,299 | 10,930 |
| Total | 79,410 | 80,198 | 78,067 | 78,825 | 78,197 | 81,679 | 80,590 | 78,737 | 85,187 | 86,099 |
| Man. | | | | | | | | | | |
| Full-time | 4,633 | 4,558 | 4,439 | 4,359 | 4,440 | 4,524 | 4,721 | 4,563 | 4,637 | 4,963 |
| Part-time | 4,344 | 4,512 | 4,697 | 4,745 | 4,949 | 4,886 | 4,883 | 4,734 | 4,782 | 4,876 |
| Casual | 1,233 | 1,382 | 1,337 | 1,058 | 804 | 641 | 659 | 645 | 615 | 694 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 95 |
| Total | 10,210 | 10,452 | 10,473 | 10,162 | 10,193 | 10,051 | 10,263 | 9,942 | 10,034 | 10,628 |

(table continued on next page)



Table RN-2. Number of Registered Nurses Employed in Nursing by Province/Territory of Registration and Derived Employment Status, Canada, 1995 to 2004 (cont'd)

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Sask. | | | | | | | | | | |
| Full-time | 3,965 | 4,014 | 3,902 | 3,913 | 4,119 | 4,340 | 4,229 | 4,177 | 4,613 | 4,632 |
| Part-time | 2,264 | 3,002 | 2,987 | 2,997 | 3,129 | 3,173 | 3,052 | 2,832 | 2,940 | 2,962 |
| Casual | 1,761 | 1,492 | 1,567 | 1,545 | 1,305 | 1,030 | 917 | 860 | 950 | 905 |
| Unknown | 457 | 0 | 0 | 0 | 0 | 0 | 0 | 388 | 0 | 0 |
| Total | 8,447 | 8,508 | 8,456 | 8,455 | 8,553 | 8,543 | 8,198 | 8,257 | 8,503 | 8,499 |
| Alta. | | | | | | | | | | |
| Full-time | 10,752 | 10,070 | 10,345 | 10,887 | 10,388 | 11,392 | 10,699 | 10,333 | 10,149 | 9,950 |
| Part-time | 5,839 | 5,452 | 5,498 | 5,960 | 4,737 | 6,469 | 7,962 | 9,267 | 10,103 | 12,176 |
| Casual | 4,541 | 5,027 | 5,395 | 5,129 | 6,919 | 4,311 | 4,263 | 3,777 | 3,712 | 2,786 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 688 |
| Total | 21,132 | 20,549 | 21,238 | 21,976 | 22,044 | 22,172 | 22,924 | 23,377 | 23,964 | 25,600 |
| B.C. | | | | | | | | | | |
| Full-time | 13,587 | 13,628 | 13,508 | 13,246 | 13,227 | 12,880 | 13,881 | 14,453 | 14,175 | 14,122 |
| Part-time | 5,773 | 6,944 | 7,196 | 7,038 | 8,398 | 7,985 | 8,542 | 8,943 | 8,702 | 8,525 |
| Casual | 7,451 | 7,000 | 7,160 | 7,613 | 6,148 | 6,865 | 4,952 | 4,505 | 4,834 | 5,143 |
| Total | 27,329 | 27,878 | 27,964 | 28,001 | 27,911 | 27,730 | 27,375 | 27,901 | 27,711 | 28,289 |
| Y.T. | | | | | | | | | | |
| Full-time | 129 | 159 | 150 | 148 | 139 | 132 | 128 | 123 | 143 | 123 |
| Part-time | 64 | 73 | 92 | 88 | 96 | 88 | 95 | 95 | 92 | 94 |
| Casual | 44 | 39 | 60 | 50 | 48 | 55 | 50 | 54 | 55 | 64 |
| Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 237 | 271 | 302 | 286 | 283 | 275 | 273 | 272 | 290 | 283 |
| N.W.T. | | | | | | | | | | |
| Full-time | 487 | 194 | 239 | 281 | 259 | n/a | n/a | 299 | 291 | n/s |
| Part-time | 66 | 45 | 52 | 59 | 73 | n/a | n/a | 65 | 55 | n/s |
| Casual | 139 | 162 | 143 | 174 | 141 | n/a | n/a | 100 | ** | n/s |
| Unknown | | 322 | 199 | 224 | 209 | 762 | 471 | 23 | * | 930 |
| Total | 692 | 723 | 633 | 738 | 682 | 762 | 471 | 487 | 414 | 930 |
| Nun. | | | | | | | | | | |
| Full-time | - | - | - | - | - | - | n/a | 170 | 159 | ^ |
| Part-time | - | - | - | - | - | - | n/a | 25 | 23 | ^ |
| Casual | - | - | - | - | - | - | n/a | 68 | 76 | ^ |
| Unknown | - | - | - | - | - | - | 288 | 10 | 0 | ^ |
| Total | - | - | - | - | - | - | 288 | 273 | 258 | ^ |
| Canada | | | | | | | | | | |
| Full-time | 116,022 | 110,441 | 113,822 | 111,856 | 112,512 | 120,284 | 122,844 | 124,946 | 124,147 | 125,788 |
| Part-time | 68,535 | 68,033 | 72,838 | 73,271 | 74,167 | 77,114 | 78,392 | 78,163 | 77,380 | 79,256 |
| Casual | 36,657 | 39,608 | 41,754 | 42,359 | 41,508 | 34,406 | 29,517 | 27,249 | 25,468 | 24,821 |
| Unknown | 11,035 | 10,488 | 299 | 328 | 347 | 762 | 759 | 599 | 14,347 | 16,710 |
| Total | 232,249 | 228,570 | 228,713 | 227,814 | 228,534 | 232,566 | 231,512 | 230,957 | 241,342 | 246,575 |

Source: RNDB/CIHI.

Notes

* Value suppressed in accordance with CIHI privacy policy; cell value is from 1 to 4.

** Value suppressed to ensure confidentiality; cell value is 5 or greater.

n/a = Data not available.

n/s Data not submitted to CIHI.

^ Northwest Territories and Nunavut data combined for 2004.

- Data does not exist.

Data represent all active-practising RNs employed in nursing at the time of annual registration. This includes employment in direct care, administration, education and research.

Some data between 1995 and 2000 have been revised from figures previously published by Statistics Canada and/or CIHI.

Some full-time/part-time data are not available for RNs registered in Quebec in 1995 and 1996.

Prior to 2001, Northwest Territories and Nunavut data are combined.

Provincial data exclude secondary registrations that do not reflect the primary jurisdiction of employment. These secondary registrations are retained in the territorial data for RNs employed in nursing in the territories.

CIHI statistics will differ from provincial/territorial statistics for four primary reasons: (1) CIHI data are collected at the 6-month mark of the registration year, in contrast to provincial/territorial figures that include the full 12-month period; (2) CIHI removes "secondary" registrations that do not reflect primary employment; (3) CIHI uses a narrower definition of "registered nurse workforce," which includes only those employed in nursing at the time of registration; and (4) provincial/territorial regulatory authorities may review and improve the completeness of data at year-end, after CIHI has received its data.

Data subject to change as data-quality reviews continue.



Endnotes

Sources

- Figure RN-1. Registered Nurses Database, Canadian Institute for Health Information.
- Figure RN-2. Calculated from data in Registered Nurses Database, Canadian Institute for Health Information.
- Table RN-1. Registered Nurses Database, Canadian Institute for Health Information.
- Table RN-2. Registered Nurses Database, Canadian Institute for Health Information.



Registered Psychiatric Nurses

Definition

Registered psychiatric nurses (RPNs) are members of a distinct profession that provides services to individuals whose primary care needs relate to mental and developmental health. RPNs are regulated as a distinct profession in only four provinces in Canada: British Columbia, Alberta, Saskatchewan and Manitoba.

Responsibilities/Activities

Registered psychiatric nurses' duties include planning, implementing and evaluating therapies and programs on the basis of psychiatric nursing assessments.

Practice Setting

Some of the areas of practice and employment settings where RPNs work are acute psychiatry, long-term geriatric care and home care, residential and community programs for the developmentally handicapped, forensic psychiatry, institutional and community-based corrections, community mental-health programs, K–12 special education programs, employee-assistance programs, child-guidance and family-therapy clinics, chemical-dependency programs, hospitals and special-care homes, women's shelters and clinics, residential and community adolescent programs, consultation and private practice, psychiatric nursing education programs, sheltered workshops, rehabilitation programs, vocational programs, administration, personnel and staff development programs and self-help groups.

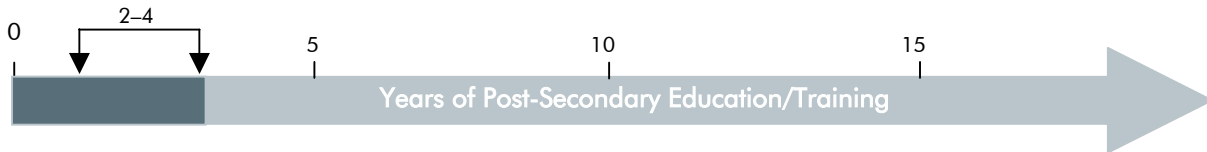
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training Requirements

The table and figure below outline the education and/or training requirements necessary to enter practice in Canada as a registered psychiatric nurse.

- Two to four years of post-secondary education are required.



| Typical Length of Program | Province of Education | Education and/or Training |
|-------------------------------------|--------------------------|---|
| 2 | Saskatchewan and Alberta | Two-year diploma program. |
| 3 | British Columbia | Three-year diploma program. |
| 3 plus a 6-credit course OR 4 | Manitoba | Diploma-exit option. Bachelor of science in psychiatric nursing. |

Changes to Education and/or Training Requirements**

- In British Columbia, two proposals are being developed for an undergraduate degree in psychiatric nursing as entry to the profession.
- In Alberta, there is a goal to work toward an undergraduate degree.

Possible Areas of Certified Specialization**

- Although there are no certification programs for specialization at this time, there is recognition of specialized areas of practice for RPNs. These include child and adolescent psychiatry; psycho-geriatrics; forensic psychiatric nursing; and emergency/crisis psychiatric nursing.
- Additional information on competency profiles can be obtained from *Registered Psychiatric Nurses: A Competency Profile for the Profession*, which can be found on the Web site for each of the four regulatory bodies (www.crpnbcc.ca, www.rpnaa.ab.ca, www.rpnas.com and www.crpnm.mb.ca).

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Registered Psychiatric Nurses Association (see Appendix B for the survey tool).



Graduate Trends

- Information on numbers of graduates from individual education providers is not currently captured within HPDB or within the Registered Psychiatric Nurses Database (RPNDB) at the Canadian Institute for Health Information (CIHI). However, the RPNDB does collect and report on educational attainment of registrants and offers an historical profile by province. A summary of this information can be found in the What Else Do We Know section within this chapter, but more detailed information can be found in *Workforce Trends of Registered Psychiatric Nurses in Canada, 2004* at www.cihi.ca.

Workforce

Primary Data Source: The Health Personnel Database (HPDB) at CIHI utilizes data from the provincial regulatory authorities for the years 1995 to 2001; 2002 to 2004 data are provided by the RPNDB at CIHI. Since 2002, registered psychiatric nursing regulatory authorities have submitted a core set of agreed-upon data elements to CIHI on an annual basis; reported indicators from the RPNDB system are based on standardized data that are comparable across Canada. The introduction of RPNDB data reflects a break in the registered psychiatric nurses data series reported in HPDB, and readers are cautioned that 2002 to 2004 data are not directly comparable to those from previous years (1995 to 2001).



Visit www.cihi.ca for more information.

Regulatory Environment

The table below indicates the first year in which it became mandatory for registered psychiatric nurses to register with a provincial regulatory authority as a condition of practice.

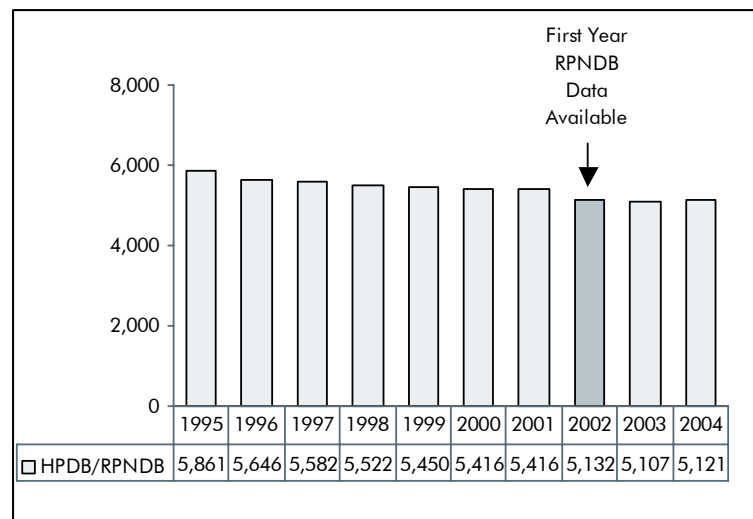
- RPNs are regulated as a distinct profession in only four provinces in Canada: British Columbia, Alberta, Saskatchewan and Manitoba.

| | Man. | Sask. | Alta. | B.C. |
|--------------------------|------|-------|-------|------|
| First Year of Regulation | 1960 | 1948 | 1955 | 1951 |

Supply Trends

- In Figure RPN-1, the 2002 to 2004 data are not directly comparable to the data presented for 1995 to 2001 due to different collection methodologies.
- Between 2002 and 2004, the number of RPNs remained fairly consistent (5,132 and 5,121, respectively).
- Table RPN-1 indicates that in 2004, 41% of the RPNs were located in British Columbia. The remaining RPNs were located in Alberta (22%), Manitoba (19%) and Saskatchewan (18%).

Figure RPN-1. Number of Registered Psychiatric Nurses, Western Canada, 1995 to 2004



Sources: HPDB/CIHI, RPNDB/CIHI.

Note
Numbers from 1995 to 2001 represent total active registered RPNs, regardless of activity/employment status. Numbers from 2002 to 2004 represent those registered, active practicing and employed in registered psychiatric nursing. CIHI data will differ from provincial data due to the CIHI collection, processing and reporting methodology. Please review the Methodological Notes for more comprehensive information regarding the collection and comparability of RPNDB data.



Table RPN-1. Number of Registered Psychiatric Nurses by Province, Western Canada, 1995 to 2004¹

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | Series Break | 2002 | 2003 | 2004 |
|-----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Man. | 1,133 | 1,102 | 1,077 | 1,055 | 1,034 | 1,028 | 1,011 | | 966 | 954 | 963 |
| Sask. | 1,182 | 1,155 | 1,137 | 1,112 | 1,089 | 1,051 | 1,038 | | 930 | 939 | 935 |
| Alta. | 1,230 | 1,177 | 1,158 | 1,155 | 1,148 | 1,136 | 1,186 | | 1,081 | 1,128 | 1,123 |
| B.C. ² | 2,316 | 2,212 | 2,210 | 2,200 | 2,179 | 2,201 | 2,181 | | 2,155 | 2,086 | 2,100 |
| Western Canada | 5,861 | 5,646 | 5,582 | 5,522 | 5,450 | 5,416 | 5,416 | | 5,132 | 5,107 | 5,121 |

Sources: HPDB/CIHI, RPNDB/CIHI.

Notes

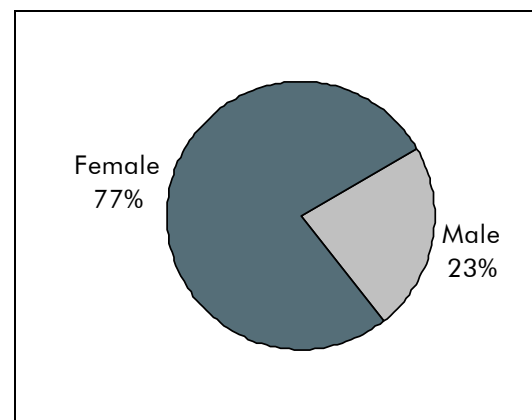
- Figures from 1995 to 2001 represent total active registered RPNs, regardless of activity/employment status. Data from 2002 to 2004 represent those registered, active practicing and employed in registered psychiatric nursing. The 2002 to 2004 data are not directly comparable to the data presented for 1995 to 2001 due to different collection methodologies. CIHI data will differ from provincial data due to the CIHI collection, processing and reporting methodology. Please review the Methodological Notes for more comprehensive information regarding the collection and comparability of RPNDB data.
- In 2002, British Columbia did not submit information regarding employment status, so all registered psychiatric nurses in British Columbia are considered to have been employed in psychiatric nursing.

What Else Do We Know?

The following information is from the CIHI publication, *Workforce Trends of Registered Psychiatric Nurses in Canada, 2004*. For further details please visit www.cihi.ca.

- Between 2003 and 2004, the number of RPNs employed in psychiatric nursing increased by 0.2%, from 5,107 to 5,121. This rate of increase was less than for the RN (registered nurse) workforce (2.2%) and for the LPN (licensed practical nurse) workforce (0.3%).
- In 2004, 22.7% of the RPN workforce was male. This compares to rates of 5.4% for the RN workforce and 6.9% for the LPN workforce.
- The average age of RPNs employed in psychiatric nursing in 2004 was 46.6 years, the highest average of the three regulated nursing professions. This was also an increase of 0.4 years from the 2003 average of 46.2 years. In 2004, 24.5% of the RPN workforce was aged 55 years or older.
- The majority of the RPN workforce graduated from a diploma program in psychiatric nursing. Of the 5,121 RPNs employed in 2004, 7.2% graduated from a psychiatric nursing program outside of Canada. Of these foreign-trained graduates, 81.1% received their psychiatric nursing education in the United Kingdom.
- The percentage of RPNs aged 30 years or older at the time of graduation has increased. Among the 2004 workforce, those graduating in the 1980s, 18.1% were aged 30 or older at graduation; this compares to a rate of 35.6% for those graduating in the 1990s and 35.1% for those graduating since 2000.
- Where RPNs work varies by province: in 2004, 40.3% of Manitoba's RPNs were employed in the Community Health sector, whereas 57.8% of Alberta's RPNs were employed in the Hospital sector.

Figure RPN-2. Registered Psychiatric Nurses by Gender, Canada, 2004



Source: RPNDB, CIHI.

What's Happening?

Listed below are references to key research documents relating to registered psychiatric nurses that are recommended reading for health human resource planners.

Research Reports

1. *Building the Future: A National Strategy for Nursing Human Resources in Canada*. Available from www.buildingthefuture.ca
2. *Collaborative Nursing Practice in Alberta, 2003*. Available from www.rpnaa.ab.ca
3. *Evaluation Framework to Determine the Impact of Nursing Staff Mix Decisions*. Canadian Nurses Association, 2005, available from www.cna-nurses.ca
4. *The Registered Psychiatric Nurses of Canada—Speak Up and Speak Out*. Report to the Senate Standing Committee on Technology, Science and Social Affairs in response to *Mental Health, Mental Illness and Addiction: Issues and Options for Canada*, June 2005
5. *Workforce Trends of Registered Psychiatric Nurses in Canada, 2004*. Canadian Institute for Health Information, 2005

List of research reports was updated in October 2005.

Research in Progress

1. Canadian Collaborative Mental Health Initiative. Contact: Kim Ryan-Nicholls, www.ccmhi.ca
2. Saskatchewan Mental Health Sector Study, Saskatchewan Health, 2003, available from www.health.gov.sk.ca

List of research in progress was updated in October 2005.

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for interest for the user and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.



Endnotes

Sources

Figure RPN-1. Calculated from data in Table RPN-1.

Figure RPN-2. Calculated from data in RPNDB/CIHI.

Table RPN-1. HPDB/CIHI and RPNDB/CIHI.



Respiratory Therapists

Definition

Respiratory therapists are health care professionals who assist physicians with the diagnosis and treatment of lung disorders.

Responsibilities/Activities

The duties of a respiratory therapist include: maintaining an open airway for trauma, intensive-care and surgery patients; assisting in cardiopulmonary resuscitation and support; providing life support for patients who cannot breathe on their own; assisting in high-risk births; stabilizing high-risk patients being moved by air or ground ambulance; assisting anesthesiologists in the operating room; administering inhaled drugs and medical gases such as asthma medication and oxygen; conducting tests to measure lung function; teaching people to manage their asthma or to quit smoking; and providing in-home respiratory care to adults and children with chronic lung disease.

Practice Setting

Most respiratory therapists work in hospitals. They may be found in neonatal nurseries, operating rooms, intensive-care units, general wards and emergency departments. Respiratory therapists also work in the community, bringing their expertise to the following areas: home care; asthma, emphysema, cystic fibrosis and other clinics; teaching; research; rehabilitation; diagnostic clinics and sleep-disorder laboratories; hyper-baric oxygen treatment; and medical equipment sales and services.

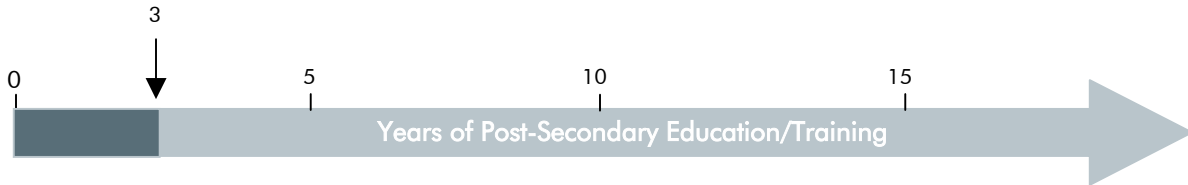
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training

The figure and table below outline the education and/or training requirements necessary to enter practice as a respiratory therapist in Canada.

- A total of three years of post-secondary education is required.



| Typical Length of Program | Province of Education | Education and/or Training |
|---------------------------|--|--------------------------------------|
| 3 | All provinces except Prince Edward Island and Saskatchewan | Diploma in respiratory therapy (RT). |

Changes to Education and/or Training Requirements **

- There is no anticipated change to education and/or training requirements within the next five years.
- Some universities provide the option to receive a bachelor of health sciences (BHS) in conjunction with an RT diploma.

Possible Areas of Certified Specialization **

- Respiratory therapists specialize in the areas of asthma and chronic obstructive pulmonary disease (COPD) education and undergo recognized certification processes. Most other specialties are based on institutional-specific training and certification processes for various clinical services such as neonatal, high-risk transport, intubation, arterial-line insertion and tracheotomy tube changes.

Exam Requirements **

- In order to practise as a respiratory therapist in Canada, graduates may be required pass a certification exam. Most provinces that do use a certification exam use the one produced by the Canadian Board for Respiratory Care, available from www.cbrc.ca.

For further details on exam requirements for the four regulated provinces (Quebec, Ontario, Manitoba and Alberta), please consult the respective provincial regulatory body. Outside of these provinces, please contact the Canadian Society of Respiratory Therapists for more information.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Society of Respiratory Therapists (see Appendix B for the survey tool).

Workforce

Primary Data Source: The primary sources of respiratory therapist data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) are regulatory/licensing authorities (in which membership is a condition of practice) and professional associations (in which membership is voluntary).

Regulatory Environment

The table below indicates the first year in which it became mandatory for respiratory therapists to register with a provincial/territorial regulatory authority as a condition of practice.

- Registration with a provincial licensing authority is a mandatory condition of practice for respiratory therapists in four provinces: Quebec, Ontario, Manitoba and Alberta.

| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|------|------|------|------|-------|-------|------|------|--------|------|
| First Year of Regulation | NR | NR | NR | NR | 1985 | 1991 | 1981 | NR | 1988 | NR | .. | .. | .. |

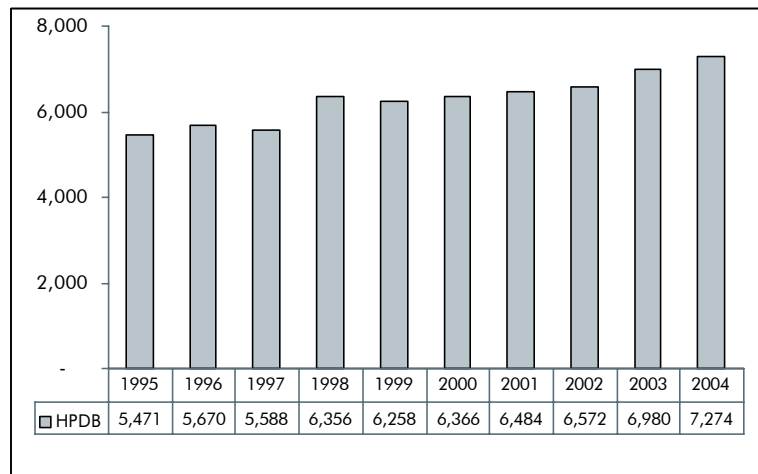
.. Information not available.

NR = Not regulated as of 2004.

Supply Trends

- Please view the data with some caution. Only four provinces are regulated (mandatory registration is required in order to practise). This may influence the data in that the number of respiratory therapists may be undercounted, as there is no mandatory requirement to register (outside of the four regulated provinces).
- As shown in Figure RT-1, the number of registered respiratory therapists grew at an average rate of 3.3% per year from 1995 to 2004. This represents a 32.9% increase in the number of respiratory therapists over this 10-year period (an increase of 1803 respiratory therapists).
- The distribution of registered respiratory therapists by province from 1995 to 2004 is outlined in Table RT-2. The table indicates that in 2004, 40.2% of all respiratory therapists in Canada were registered in Quebec.

Figure RT-1. Number of Respiratory Therapists in Canada, 1995 to 2004



Source: HPDB/CIHI.

Table RT-1. Number of Registered Respiratory Therapists* by Province/Territory, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|----------------------------|--------------|--------------|----------------------|--------------|--------------|--------------|------------------|------------------|------------------|------------------|
| N.L. [†] | 63 | 71 | 65 | 78 | 50 | 60 | 70 | 64 | 67 ⁸ | 68 ⁸ |
| P.E.I. [†] | 6 | 11 | 14 | 17 | 14 | 13 | 14 ¹ | 14 ¹ | 14 ¹ | 14 ¹ |
| N.S. [†] | 166 | 172 | 186 | 223 | 176 | 179 | 152 ¹ | 154 ¹ | 150 ⁹ | 184 |
| N.B. [†] | 159 | 169 | 170 | 193 | 177 | 192 | 213 | 168 | 167 ⁷ | 220 ⁷ |
| Que. ² | 2,338 | 2,354 | 2,221 ^{†,1} | 2,457 | 2,534 | 2,602 | 2,651 | 2,651 | 2,807 | 2,925 |
| Ont. ³ | 1,572 | 1,628 | 1,658 | 1,727 | 1,812 | 1,816 | 1,846 | 1,923 | 2,083 | 2,198 |
| Man. ⁴ | 183 | 186 | 195 | 189 | 200 | 201 | 197 | 200 | 233 | 234 |
| Sask. [†] | 92 | 94 | 94 | 116 | 95 | 93 | 98 ¹ | 99 ¹ | 97 ¹⁰ | 103 |
| Alta. ⁵ | 620 | 681 | 680 | 812 | 812 | 832 | 867 | 895 | 870 | 922 |
| B.C. [†] | 271 | 303 | 304 | 540 | 384 | 374 | 373 | 401 | 488 | 402 ⁶ |
| Y.T. & N.W.T. [†] | 1 | 1 | 1 | 4 | 4 | 4 | 3 ¹ | 3 ¹ | 4 | 4 ¹ |
| Nun. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Canada [†] | 5,471 | 5,670 | 5,588 | 6,356 | 6,258 | 6,366 | 6,484 | 6,572 | 6,980 | 7,274 |

Source: HPDB/CIHI.

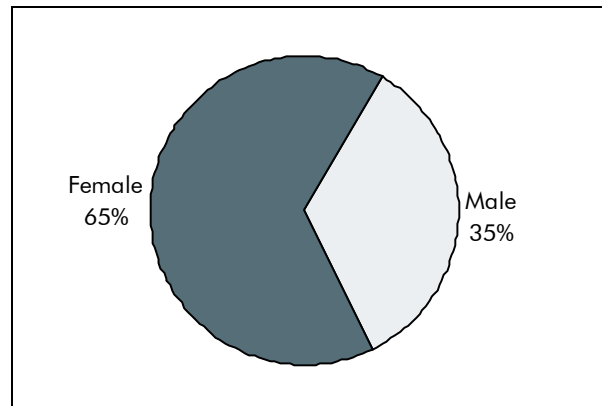
Notes

- * This data table includes regulated membership data (registration with the data provider is a condition of practice) and voluntary membership data (registration with the data provider is not a condition of practice); data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).
- † Indicates the presence of voluntary membership data or estimated data (all estimated data are accompanied by superscript notes identifying the source of the estimate; that is, CIHI or data provider). See additional notes below.
- As of 2004, respiratory therapists are regulated in four provinces: Quebec, Ontario, Manitoba and Alberta.
- .. Information not available
- 1. CIHI estimate.
- 2. Non-practising respiratory therapists are not included in the figures for Quebec. Data are provided by the Ordre professionnel des inhalothérapeutes du Québec. Data as of March of the following year, except for 2003, when data are as of May 5, 2004.
- 3. Ontario data for the years 1995 to 2004 are provided by the College of Respiratory Therapists of Ontario; 2003 data as of February 29, 2004; 2004 data as of February 28, 2005.
- 4. Manitoba data are provided by the Manitoba Association of Registered Respiratory Therapists and only include active registered respiratory therapists; 2003 data as of April 29, 2004.
- 5. Alberta data for the years 1998 to 2004 are provided by the College and Association of Respiratory Therapists of Alberta.
- 6. According to the British Columbia Society of Respiratory Therapists, it is estimated that there are 715 respiratory therapists in British Columbia; however, only 402 were actually registered with the British Columbia Society of Respiratory Therapists. Membership is not required to practise in British Columbia.
- 7. New Brunswick: 2003 data as of April 30, 2004; 2004 data as of December 15, 2004.
- 8. Newfoundland and Labrador: 2003 data as of November 2, 2003; 2004 data as of November 9, 2004.
- 9. Nova Scotia: 2003 data as of January 15, 2004.
- 10. Saskatchewan: 2003 data as of March 31, 2004.

What Else Do We Know?

- The percentage of women in the respiratory therapy profession was 65% in 2001 (Source: Census Data, Statistics Canada). Please note that this data includes information for both respiratory therapists and clinical perfusionists.
- The average age of respiratory therapists in Canada is 37 years. Female respiratory therapists tend to be slightly younger on average than their males colleagues (35 and 39 years, respectively) (Source: 2001 Census Data, Statistics Canada). For more details on average age and gender refer to Appendix F.

Figure RT-2. Respiratory Therapists by Gender, Canada, 2001



Source: Census, Statistics Canada.



What's Happening?

Listed below are references to key research documents relating to respiratory therapists that are recommended** reading for health human resource planners.

Research Reports

1. "The Coming RT Shortage." Sobel, Litwin, Seville and Homuth, *Canadian Journal of Respiratory Therapy*, Winter 2000, available from www.csrt.com

List of research reports was updated in November 2005.

Research in Progress

- There is no information to report at this time.

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Society of Respiratory Therapists (see Appendix B for the survey tool).

Endnotes

Sources

- Figure RT-1. Calculated from data in Table RT-2.
- Figure RT-2. Calculated using Census Data, Statistics Canada, 2001.
- Table RT-1. 1995 to 1997: Canadian Society of Respiratory Therapists, Manitoba Association of Registered Respiratory Therapists Inc., College of Respiratory Therapists of Ontario, New Brunswick Association of Respiratory Therapists Inc. and Newfoundland and Labrador Association of Respiratory Therapists.
- 1998 to 2000: Canadian Society of Respiratory Therapists, Ordre professionnel des inhalothérapeutes du Québec, Manitoba Association of Registered Respiratory Therapists Inc., College and Association of Respiratory Therapists of Alberta, College of Respiratory Therapists of Ontario, New Brunswick Association of Respiratory Therapists Inc. and Newfoundland and Labrador Association of Respiratory Therapists.
- 2001 to 2004: Ordre professionnel des inhalothérapeutes du Québec, Manitoba Association of Registered Respiratory Therapists Inc., British Columbia Society of Respiratory Therapists, College and Association of Respiratory Therapists of Alberta, College of Respiratory Therapists of Ontario, New Brunswick Association of Respiratory Therapists Inc., Newfoundland and Labrador Association of Respiratory Therapists, Saskatchewan Association of Respiratory Therapists (2003–2004) and Respiratory Therapists Society of Nova Scotia (2003–2004).



Social Workers

Definition

Social workers promote social change aimed at improving conditions that affect the health and well-being of individuals, families, groups and communities; they provide counselling, therapy and problem-solving interventions to create a functional relationship between the system and those that interact with it.

Responsibilities/Activities

The areas of practice for social workers within institutional and community health settings include: policy development, program planning, program management, research, consultation, case management, discharge planning, counselling, therapy and advocacy. Social workers use a variety of specific approaches and interventions that are largely based on principles of social justice and theories of human behaviour and social systems. Modalities of service include discharge planning, networking with community agencies, counselling ranging from financial counselling to adjustment-to-illness counselling and psychotherapy, patient and family education and team consultation.

Practice Setting

Social workers are usually employed in hospitals, community health centers, mental-health clinics, schools, advocacy organizations, government departments, social-service agencies, child-welfare settings, family-service agencies, correctional facilities, social housing organizations, family courts, employee-assistance and private counselling programs, school boards and consultation agencies.

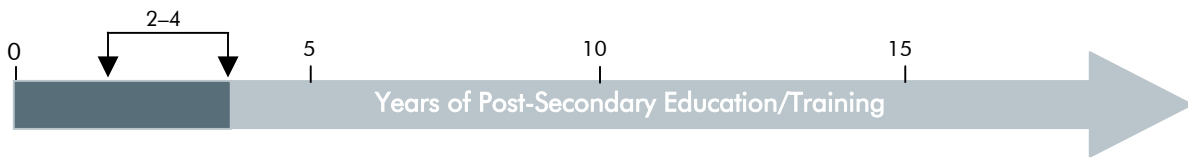
Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

Entering the Profession

Education and/or Training Requirements

The figure and table below outline the education and/or training requirements necessary to enter practice as a social worker in Canada.

- Two to four years of post-secondary education are basic requirements to practise in the provinces and territories. In addition, there is the option for a master’s level entry to practice.



| Typical Length of Program | Province of Education | Education and/Training |
|---------------------------|--|--|
| 2 | Quebec Saskatchewan British Columbia | Social work diploma (presently, graduates of the social work diploma program are eligible for registration only with the Alberta College of Social Workers). <i>In Alberta, this is the basic requirement for practice.</i> |
| 4 | All provinces except Prince Edward Island | Bachelor’s degree in social work (BSW). <i>In all provinces except Alberta, this is the basic requirement for practice.</i> |
| 5–6 | All provinces except Prince Edward Island | Graduate degree in social work—master’s in social work (MSW). <i>This consists of a two-year program if you possess a bachelor’s degree in another discipline, or a one-year program if you possess a BSW.</i> |

Changes to Education and/or Training Requirements **

- There are no anticipated changes to education and/or training requirements for social workers in the next year.

Possible Areas of Certified Specialization**

- There are no areas of certified specialization for social workers at this time.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at The Canadian Association of Social Workers (CASW) (see Appendix B for the survey tool).



Examination Requirements **

- A national competency exam is not required in order to practise as a social worker in Canada.

Graduate Trends

Please note that this is the first year that Health Personnel Trends in Canada is reporting on social work graduates. The number of graduates from schools of social work for 2003 and 2004 is outlined in Table SW-1. The table includes information for graduate and undergraduate programs.

Table SW-1. Total Number of Graduates From Undergraduate and Graduate Social Work Programs by School,* Province, Canada, 2003–2004

| School | 2003 | 2004 |
|---|------|-----------------|
| N.L. | | |
| Memorial University of Newfoundland | 61 | 54 |
| N.S. | | |
| Dalhousie University | 90 | 115 |
| N.B. | | |
| St-Thomas University | 47 | 46 |
| Université de Moncton ³ | 38 | 38 |
| Que. | | |
| McGill University | 210 | 200 |
| Université de Laval | 152 | 166 |
| Université de Montréal | 92 | 131 |
| Université du Québec en Abitibi-Témiscamingue | .. | .. |
| Université du Québec à Chicoutimi | 42 | 64 |
| Université du Québec en Outaouais | 49 | 46 |
| Université du Québec à Montréal | 118 | 121 |
| Université de Sherbrooke | .. | .. |
| Ont. | | |
| Carleton University | 110 | 115 |
| Lakehead University | 54 | 76 |
| Laurentian University | 22 | 21 |
| McMaster University | 79 | 89 |
| Renison College (University of Waterloo) | 27 | 28 |
| Ryerson University | 133 | 127 |
| University of Ottawa | 29 | 24 |
| University of Toronto | 161 | 145 |
| University of Western Ontario ⁴ | 43 | 43 |
| University of Windsor | 56 | 70 |
| Wilfrid Laurier University | 121 | 104 |
| York University | 132 | 129 |
| Man. | | |
| University of Manitoba | 159 | 35 ¹ |

(table continued on next page)

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at The Canadian Association of Social Workers (CASW) (see Appendix B for the survey tool).

Table SW-1. Total Number of Graduates from Undergraduate and Graduate Social Work Programs by School,* Province, Canada, 2003–2004 (cont'd)

| School | 2003 | 2004 |
|--|--------------|--------------|
| Sask. | | |
| First Nations University of Canada ⁶ | 51 | 46 |
| University of Regina ² | 185 | 139 |
| Alta. | | |
| King's University College | 43 | 43 |
| University of Alberta | .. | .. |
| University of Calgary | 261 | 267 |
| B.C. | | |
| Nicola Valley Institute of Technology | .. | .. |
| Okanagan University College | 32 | 41 |
| University of British Columbia | 102 | 87 |
| University College of the Cariboo | 46 | 43 |
| University College of the Fraser Valley ⁵ | 21 | 29 |
| University of Northern British Columbia | 58 | 34 |
| University of Victoria | 156 | 140 |
| Canada | 2,980 | 2,856 |

Source: HPDB/CIHI.

Notes

- * This is a comprehensive list of schools offering social-work programs.
- .. Information not available.
- 1. Does not include bachelor-of-social-work graduates.
- 2. University of Regina also has a master of Aboriginal social work: (2003: 4 graduates; 2004: 4 graduates) and a bachelor of Indian social work (2003: 47 graduates; 2004: 42 graduates).
- 3. Université de Moncton does not offer a diploma or doctorate in social work.
- 4. King's University College at the University of Western Ontario also offers a part-time master of social work program. The first group of students will graduate in fall 2006.
- 5. University College of the Fraser Valley also offers a social services diploma (2003: 39 graduates; 2004: 32 graduates), a substance abuse counselling diploma (2003: 3 graduates; 2004: 2 graduates) and a certificate (2003: 4 graduates; 2004: 8 graduates).
- 6. First Nations University of Canada does not have a PhD program.



Workforce

Primary Data Source: The primary sources of social work data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) are associations (in which membership is voluntary) and regulatory/licensing authorities (in which membership is a condition of practice).

Regulatory Environment

The regulatory environment for social workers is complex in Canada, and even in provinces with regulation, not all social workers may be required to register with a provincial regulatory authority as a condition of practice. (Note: the titles “social worker” and “registered social worker” are controlled in all provinces/territories.) Provinces/territories may control specific social-worker titles, practice, education or some combination thereof. For complete information, please contact the Canadian Association of Social Workers (CASW).

The table below indicates the year in which regulation came into effect for each province/territory.

| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|------|------|------|------|-------|-------|------|------|--------|------|
| First Year of Regulation | 1994 | 1988 | 1994 | 1989 | 1958 | 2000 | NR | NR | 2003 | REG | NR | NR | NR |

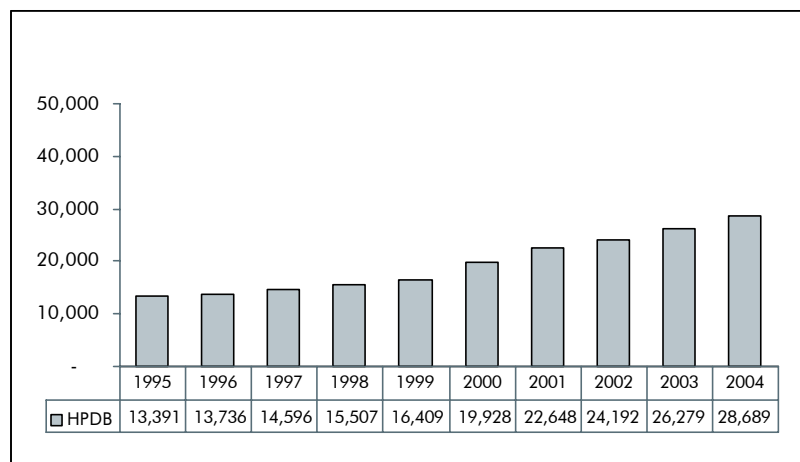
NR = Not regulated as of 2004.

REG = Regulated in 2004, year of regulation unknown.

Supply Trends

- Please view the data presented with caution. Given the complexity of the regulatory environment for social workers, and the changes in legislation in the last 10 years, a portion of the increase in the number of social workers may reflect changes in legislation rather than an actual increase in the number of social workers in the workforce.

Figure SW-1. Number of Social Workers in Canada, 1995 to 2004



Source: HPDB/CIHI.

- As shown in Figure SW-1, the number of registered social workers in Canada grew steadily at an average rate of 9% per year from 1995 to 2004. This represents a 114.2% increase in the number of registered social workers in Canada over this 10-year period (an increase of 15,298 social workers). A portion of the increase in the number of social workers may reflect changes in legislation rather than an actual increase in the number of social workers in the workforce.
- The distribution of registered social workers by province from 1995 to 2004 is outlined in Table SW-2. The table indicates that in 2004, 36% of all social workers in Canada were registered in Ontario, and 19.5% were registered in Quebec.

Table SW-2. Number of Registered Social Workers* by Province/Territory of Registration, Canada, 1995 to 2004

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|-------------------------|---------------|---------------|---------------|---------------|-----------------|--------------------|---------------|--------------------|---------------|---------------|
| N.L. ¹¹ | 673 | 676 | 753 | 838 | 870 | 946 | 973 | 976 | 1,036 | 1,032 |
| P.E.I. ⁶ | 175 † | 180 † | 185 † | 190 † | 195 | 195 | 198 | 198 | 204 | 215 |
| N.S. | 943 | 1,074 | 1,167 | 1,295 | 1,392 | 1,441 | 1,471 | 1,496 | 1,524 | 1,566 |
| N.B. ¹⁰ | 1,168 | 1,082 | 1,208 | 1,205 | 1,238 | 1,243 | 1,224 | 1,348 | 1,367 | 1,321 |
| Que. ^{†, 12} | 3,725 | 4,088 | 4,275 | 4,323 | 4,564 | 4,721 | 4,765 | 4,748 | 5,189 | 5,608 |
| Ont. | 3,048 † | 2,977 † | 3,042 † | 3,038 † | 3,250 † | 5,449 ² | 6,896 | 7,980 | 9,092 | 10,348 |
| Man. [†] | 412 | 398 | 504 | 524 | 487 | 487 | 511 | 530 ⁹ | 525 | 561 |
| Sask. ^{†, 4} | 449 | 452 | 453 | 856 | 923 | 930 | 976 | 1,050 | 1,004 | 1,019 |
| Alta. ³ | 1,477 † | 1,485 † | 1,631 † | 1,829 † | 2,090 | 3,108 ⁸ | 4,171 | 4,367 | 4,817 | 5,436 |
| B.C. ⁵ | 1,202 † | 1,203 † | 1,257 † | 1,270 | 1,277 | 1,304 | 1,361 | 1,383 | 1,521 | 1,583 |
| Y.T. ^{†, 13} | 54 | 55 | 55 | 54 | 54 ¹ | 26 | 16 | 25 ⁷ | .. | .. |
| N.W.T. ^{†, 13} | 65 | 66 | 66 | 85 | 69 ¹ | 65 | 76 | 77 ⁷ | .. | .. |
| Nun. ¹³ | .. | .. | .. | .. | .. | 13 † | 10 † | 14 ^{†, 7} | .. | .. |
| Canada [†] | 13,391 | 13,736 | 14,596 | 15,507 | 16,409 | 19,928 | 22,648 | 24,192 | 26,279 | 28,689 |

Source: HPDB/CIHI.

Notes

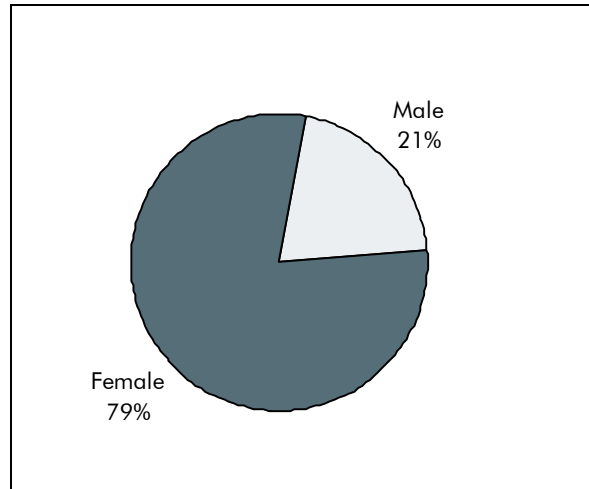
- * This data table includes both regulated membership data (membership with a specific data provider is required as a condition of practice) and voluntary membership data (registration with the data provider is not a condition of practice); data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).
- † Indicates the presence of voluntary membership data or estimated data.
- .. Information not available.
1. CIHI estimate.
 2. Ontario became regulated in 2000; prior to this year membership was voluntary. 2000 to 2004 data are from the Ontario College of Social Workers (figure does not include the number of social service workers).
 3. Alberta: 2003 data as of September 14, 2004; 2004 data as of June 6, 2005.
 4. Data include full-time, part-time, not-employed and retired members.
 5. Data from 1995 to 1997 are from the British Columbia Association of Social Workers, in which membership is voluntary. Data from 1998 to 2004 are from the Board of Registration for Social Workers of British Columbia, which is the regulatory authority.
 6. Prince Edward Island: 1999 to 2002 and 2004 data as of March 31 of the following year; 2003 data as of July 2004; 2003 to 2004 data from the Social Work Registration Board.
 7. Data as of February 23 of the following year.
 8. Increases in Alberta due to mandatory registration and requirement of being a member of the provincial association.
 9. Data as of November 13 of the given year.
 10. New Brunswick: 1998 to 2002 data as of March 31 of the following year.
 11. Newfoundland and Labrador: 1995 to 2001 data as of February 28 of the following year; 2002 data as of November 14 of the given year; 2003 data as of October 12, 2004; 2004 data as of April 6, 2005.
 12. 1995 to 2001 data as of March 31 of the given year; 2002 data as of November 15 of the given year. 2003 to 2004 data represent active registered social workers.
 13. Northwest Territories: 1998 data as of April 1999; Northwest Territories, Nunavut and Yukon: 2000 to 2001 data as of March 31 of the following year; 2002 data as of February 23, 2003.



What Else Do We Know?

- The percentage of women in the social work profession increased from 74% in 1991 to 79% in 2001 (Source: Census Data, Statistics Canada).
- The average age of social workers in Canada is 41 years. Female social workers tend to be slightly younger on average than their male colleagues (40 and 43 years, respectively) (Source: 2001 Census Data, Statistics Canada). For more details on average age and gender refer to Appendix F.

Figure SW-2. Social Workers by Gender, Canada, 2001



Source: Census, Statistics Canada.

What's Happening?

Listed below are references to key research documents relating to social workers that are recommended** reading for health human resource planners.

Research Reports

1. *Canadian Association of Social Workers Child Welfare Project: Creating Conditions for Good Practice*. Ottawa: CASW, 2003, available from www.casw-acts.ca
2. *Canadian Social Work: HIV/AIDS (Special Issue)*. Vol. 3, No. 1, William Rowe, Ed., Ottawa: Myropen, 2001
3. *CASW National Scope of Practice Statement*. Ottawa: CASW, 2000, available from www.casw-acts.ca
4. *CASW Statement on Preventive Practices and Health Promotion*. Ottawa: CASW, 1998, available from www.casw-acts.ca
5. *Comprehensive Guide for the Care of People with HIV Disease: Module 6: Psychosocial Care: HIV Psychosocial Care and Social Work Practice: Ethical, Professional and Practical Issues [manual]*. Ottawa: CASW, 1997
6. *In Critical Demand: Social Work in Canada*. Ottawa: CASW/CASSW, 2000, available to purchase from www.casw-acts.ca
7. *Position Paper on Social Work and Long-Term Care*. Ottawa: CASW, 2002, available from www.casw-acts.ca
8. *Preparing for Change Social Work in Primary Health Care*. Ottawa: CASW, 2003, available from www.casw-acts.ca
9. *Social Work Practice and Practice Wisdom in the Field of HIV/AIDS: A Research Report*. Ottawa: CASW, 1995
10. *The Role of Social Work in Mental Health*. Ottawa: CASW, 2001, available from www.casw-acts.ca

The list of research reports was updated in November 2005.

Research in Progress

- There is no information available at this time.

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at The Canadian Association of Social Workers (CASW) (see Appendix B for the survey tool).



Endnotes

Sources

- Figure SW-1. Calculated from data in Table SW-2.
- Figure SW-2. Calculated using Census Data, Statistics Canada, 2001.
- Table SW-1. Individual schools and universities.
- Table SW-2. Newfoundland and Labrador Association of Social Workers, Nova Scotia Association of Social Workers, New Brunswick Association of Social Workers, Prince Edward Island Social Work Registration Board, Ordre professionnel des travailleurs sociaux du Québec, Manitoba Association of Social Workers/Manitoba Institute of Registered Social Workers, Saskatchewan Association of Social Workers, Alberta College of Social Workers, Board of Registration for Social Workers of British Columbia, Association of Social Workers in Northern Canada, Ontario College of Social Workers and Social Service and Canadian Association of Social Workers (CASW).



Speech-Language Pathologists

Please note that this is the first year that Health Personnel Trends in Canada is reporting information on speech-language pathologists.

Definition

Speech-language pathologists are autonomous professionals who have acquired an expertise in the area of human communication and its disorders. They are engaged in the prevention, identification, evaluation, assessment, treatment and management of and counselling, research and education about communication and swallowing disorders. Communication disorders include disorders of speech, language, voice and fluency in individuals from all age groups. Services can be provided directly to the client or to those who interact with individuals with communication or swallowing disorders. Speech-language pathology services are integral to a number of comprehensive interdisciplinary assessment and treatment programs.

Responsibilities/Activities

The following is an overview of the broad range of services provided by speech-language pathologists:

- Screening, identification, assessment, interpretation, diagnosis (restricted in some provinces), management, rehabilitation and prevention of speech and language disorders, including delayed and disordered language and/or speech to improve the client's ability to understand spoken and written language, convey ideas verbally and in writing, communicate in social situations and improve articulation, intelligibility and fluency.
- Screening, identification, assessment, interpretation, diagnosis (restricted in some provinces), management and rehabilitation of disorders of:
 - The upper aerodigestive tract, including swallowing, to ensure that clients are on safe diets and not at increased risk for choking; and voice dysfunction to improve vocal pitch, quality and loudness as well as to address those whose ability to vocalize has been affected by cancer of the head, neck or throat;

Note: Readers are cautioned to carefully review the Methodological Notes section of this publication as well as all notes accompanying the figures and tables.

- Cognitive communicative disorders such as those resulting from dementia, neurological impairment (for example, Parkinson’s disease, multiple sclerosis or injuries) to improve the reasoning, problem-solving, memory and organizational skills required to communicate effectively.
- Assessment, selection and development of augmentative and alternative communication systems for those unable to communicate verbally and provision of training in their use.
- Provision of counselling and education services to clients, families, caregivers and others regarding all aspects of communication and swallowing disorders.
- Provision of aural rehabilitation and related counselling services to hearing-impaired individuals and their families.
- Enhancement of speech-language proficiency and communication effectiveness (for example, accent reduction).
- Screening of hearing and other factors for the purpose of speech-language evaluation and/or initial identification of individuals with other communication and swallowing disorders.
- Education and supervision of students and professionals.
- Consultation with and referral to other professionals.
- Research and university instruction in communication sciences and disorders.

Practice Setting

Speech-language pathologists work in various settings such as hospitals, community health centres, nursing homes, childcare facilities, schools, universities and in private practice.

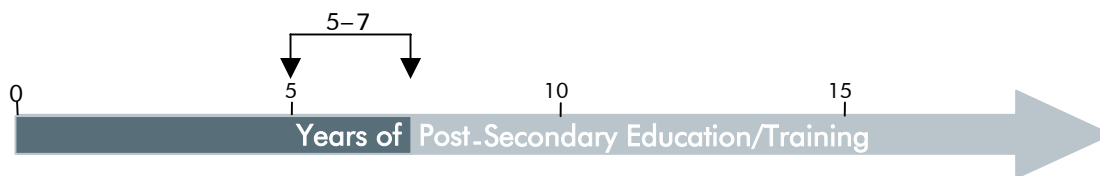


Entering the Profession

Education and/or Training

The table and figure below outline the education and/or training requirements necessary to enter practice as a speech-language pathologist in Canada.

- Five to seven years of post-secondary education are required. The entry-to-practise requirement in Canada is a masters degree or equivalent.



| Typical Length of Program | Province of Education | Education and/or Training |
|---------------------------|---|---|
| 5-7* | Nova Scotia Quebec Ontario Alberta British Columbia | Masters degree** or equivalent (including a supervised clinical practicum). |

* Three-to-four year undergraduate degree is a prerequisite.

** Two to three years, the number of years is dependent on the program; there are nine speech-language pathology university programs in Canada.

Changes to Education and/or Training Requirements**

- There are no anticipated changes to education and/or training requirements.

Possible Areas of Certified Specialization**

- There are no areas of specialization at the moment. Some professionals may choose to work with one specific clientele (specific age group, specific service, etc.), but there is no formal program that provides specialization.

Examination Requirements**

- In the six provinces that have regulatory bodies, there are no mandatory exam requirements; speech-language pathologists must have a licence or be registered to practise.
- In the other provinces/territories, most employers require membership in the provincial/territorial association and/or the Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA). In addition to membership, CASLPA offers a

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Association of Speech-Language Pathologists and Audiologists (see Appendix B for the survey tool).

certification designation. As part of the certification, members must successfully complete a national exam. Please note that the designation through CASLPA is not a mandatory requirement for membership/licensing/registration by any of the provincial regulatory bodies or provincial/territorial professional associations; it is a voluntary certification designation.

Graduate Trends

As indicated earlier, this is the first year Health Personnel Trends is reporting graduate information for speech-language pathologists. Currently there are nine speech-language pathology programs in Canada. The information reported includes data for 2003 and 2004; the data for 2003 will form the foundation (start-date) for future historical trending analysis on graduates.

The number of graduates from speech-language pathology programs for 2003 and 2004 is outlined in Table SLP-1. The table indicates the following:

- The number of graduates from speech-language pathology programs increased by 19% from 2003 to 2004.
- The inaugural class from the Université Laval graduated in 2004 with 18 graduates.

Table SLP-1. Total Number of Graduates From Speech-Language Pathology Programs by School,* Province, Canada, 2003–2004

| School | 2003 | 2004 |
|--------------------------------|------------|------------|
| N.S. | | |
| Dalhousie University | 28 | 32 |
| Que. | | |
| McGill University | 24 | 23 |
| Université de Montréal | 50 | 46 |
| Université Laval ¹ | n/a | 18 |
| Ont. | | |
| University of Ottawa | 15 | 18 |
| University of Toronto | 25 | 35 |
| University of Western Ontario | 47 | 52 |
| Alta. | | |
| University of Alberta | 36 | 41 |
| B.C. | | |
| University of British Columbia | 22 | 30 |
| Canada | 247 | 295 |

Source: HPDB/CIHI.

Notes

* This is a comprehensive list of schools offering masters and/or doctorate degrees in speech-language pathology.

n/a not applicable

1. Université Laval: first graduating class was in 2004.

Workforce

Primary Data Source: The primary sources of speech-language pathology data for the Health Personnel Database (HPDB) at the Canadian Institute for Health Information (CIHI) are associations (in which membership is voluntary) and regulatory/licensing bodies (in which membership is a condition of practice).

Regulatory Environment

The table below indicates the first year in which it became mandatory for speech-language pathologists to register with a provincial regulatory body as a condition of practice.

- Six provinces currently require registration with a regulatory body as a condition of practice: New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta.

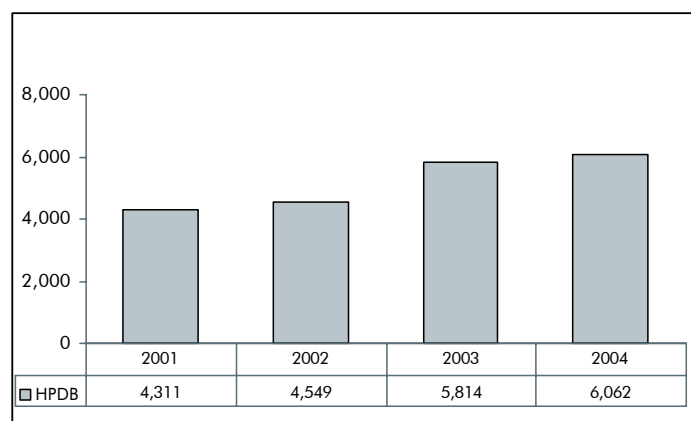
| | N.L. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Nun. |
|--------------------------|------|--------|------|------|------|------|------|-------|-------|------|------|--------|------|
| First Year of Regulation | NR | NR | NR | 1987 | 1973 | 1994 | 1961 | 1992 | 2002 | NR | NR | NR | NR |

NR = Not regulated.

Supply Trends

- Please note that the information below should be viewed with some caution as the regulatory environment has experienced some changes in recent years (regulation in Alberta).
- In addition, not all provinces were able to provide information for all respective years (for example, 2001 and 2002 information from Saskatchewan, B.C. and Nova Scotia). The variation in the numbers between 2001 and 2004 could be attributed to this fact.
- The above two factors could partially account for the increase (and variation) in numbers of speech-language pathologists over the time period, as opposed to the profession experiencing a significant increase in the actual number of professionals.
- As shown in Figure SLP-1 the number of registered speech-language pathologists in Canada grew steadily from 2001 to 2004. This represents a 41% increase in the number of registered speech-language pathologists in Canada over this four-year period (an increase of 1,751 speech-language pathologists).

Figure SLP-1. Number of Speech-Language Pathologists in Canada, 2001 to 2004



Source: HPDB/CIHI.

- The distribution of registered speech-language pathologists by province/territory from 2001 to 2004 is outlined in Table SLP-2. The table indicates that 37.9% of all speech-language pathologists in Canada were registered in Ontario.

Table SLP-2. Number of Registered Speech-Language Pathologists by Province/Territory, Canada, 2001 to 2004

| | 2001 | 2002 | 2003 | 2004 |
|---------------------------|------------------|--------------|------------------|--------------------|
| N.L. ^{2,†} | 84 | 86 | 90 | 89 |
| P.E.I. ^{4,†} | 17 | 16 | 17 | 22 |
| N.S. ³ | 156 [†] | .. | 160 [†] | 164 [†] |
| N.B. | 147 | 152 | 157 | 171 |
| Que. ^{5,†} | 969 | 1,015 | 1,112 | 1,218 |
| Ont. | 1,954 | 2,051 | 2,215 | 2,296 |
| Man. [†] | 257 | 268 | 362 | 295 |
| Sask. | .. | .. | 213 [†] | 218 [†] |
| Alta. | 711 | 946 | 846 | 888 ¹ |
| B.C. | .. | .. | 625 [†] | 685 ^{†,8} |
| Y.T. [†] | 10 | 9 | 11 ⁶ | 10 |
| N.W.T. ^{7,†} | 6 | 6 | 6 | 6 |
| Nun. | .. | .. | .. | .. |
| Canada[†] | 4,311 | 4,549 | 5,814 | 6,062 |

Source: HPDB/CIHI.

Notes

* This data table includes both regulated (membership with a specific data provider is required as a condition of practice) and voluntary membership data (registration with the data provider is not a condition of practice); data in this table are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying data tables).

† Indicates the presence of voluntary membership data. See additional notes below.

As of 2005, speech-language pathologists were regulated in six provinces: New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta.

.. Information not available.

1. Alberta: 2004 data as of October 31, 2004.

2. Newfoundland and Labrador: 2003 data as of November 15, 2003; 2004 data as of May 17, 2005.

3. Nova Scotia: 2003 data as of May 21, 2004; 2004 data as of May 17, 2005.

4. Prince Edward Island: 2003 data as of May 7, 2004; 2004 data as of May 17, 2005.

5. Quebec: 2003 to 2004 data as of March 31 of the given year. 2003 data represents "active registered".

6. Yukon: 2003 data as of May 14, 2004.

7. Northwest Territories: data as of October 31 of the given year.

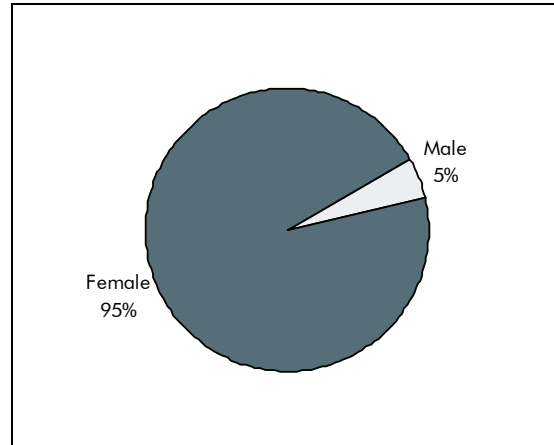
8. British Columbia 2004 data: 153 speech-language pathologists did not indicate employment status (not included in numbers).



What Else Do We Know?

- In 2003, the HPDB initiated collection of gender data. Analysis of the data for 2004 identified that the percentage of female speech-language pathologists was 95% (Source: HPDB, CIHI).
- The average age of audiologists and speech-language pathologists in Canada is 39 years. Female speech-language pathologists and audiologists tend to be slightly younger than their male colleagues (38 and 42 years, respectively) (Source: 2001 Census Data, Statistics Canada). Please note this information includes data for both speech-language pathologists and audiologists. For more details on average age and gender refer to Appendix F.

Figure SLP-2. Speech-Language Pathologists by Gender, Canada, 2004



Source: HPDB, CIHI.

Note

This figure excludes Alberta and Manitoba data, as gender breakdown is unavailable.

What's Happening?

Listed below are references to key research documents relating to speech-language pathologists that are recommended** reading for health human resource planners.

Research Reports

1. *Assessing and Certifying Clinical Competency: Foundations of Clinical Practice for Audiology and Speech-Language Pathology*. CASLPA, 2004, available from CASLPA, Suite 401, 200 Elgin Street, Ottawa, Ont., K2P 1L5
2. *CASLPA 2003 Survey of University Speech-Language Pathology and Audiology Programs*. CASLPA, 2003, available from www.caslpa.ca
3. *Commentaires relatifs à l'étude du MÉQ visant à établir les besoins additionnels de diplômés universitaires en orthophonie et en audiologie*. OOAQ, 1996, available from the OOAQ, 235 René Levesque Boulevard East, Montréal, Que., H2X 1N8
4. *Document synthèse sur la considérable pénurie d'effectif en orthophonie et sur la nécessité de recruter immédiatement à l'étranger*. OOAQ, 2000, available from the OOAQ, 235 René Levesque Boulevard East, Montréal, Que., H2X 1N8
5. *Gap Analysis*. CASLPA Joint Alliance Project, 2004, available from www.caslpa.ca
6. *Guidelines for Use of Supportive Personnel*. CASLPO, available from www.caslpo.com
7. "Knowledge of the Roles of Speech-Language Pathologists by Students in Other Health Care Programs." CASLPA, *Journal of Speech-Language Pathology and Audiology*, Vol. 27, No. 2, Summer 2003
8. *Recruitment and Retention Package for Speech-Language Pathologists*. SASLPA, 2004, available from www.saslpa.ca
9. *Recruitment and Retention Plan to Improve Access to OT, PT and SLP Services for Preschool Children*. 2001, BC Centre for Ability, Vancouver
10. *Report of Findings: 2005 Membership Survey*. CASLPA, Suite 401, 200 Elgin Street, Ottawa, Ont., K2P 1L5
11. *Results of the School Speech-Language Pathologists Survey, 2003*, OSLA, 2003, available from www.osla.on.ca
12. *Retention and Recruitment Issues in Speech-Language Pathology on PEI, 2002*, PEI Speech-Language Pathologists Classification, Professional Level 18 & 19
13. *Scopes of Practice in Speech-Language Pathology and Audiology in Canada*. CASLPA, 1998, available from www.caslpa.ca

Note: Reports and research identified are products of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not necessarily reflect those of CIHI. They are put here for the user's interest and for reference only. Authors retain all copyright privileges. Information provided is not comprehensive.

** Please note that the information in this section is adapted from a survey completed in 2005 by the staff at the Canadian Association of Speech-Language Pathologists and Audiologists (see Appendix B for the survey tool).



14. *Speech-Language Pathology Review: Report for Deputy Minister of Education and Health and Community Services, Government of Newfoundland and Labrador, 2004*
15. *Supportive Personnel Guidelines: Working with Speech-Language Pathologists*. CASLPA, 2004, available from www.caslpa.ca
16. *Workforce Projection Report*. OSLA, 2002, available from www.osla.on.ca

Research in Progress

1. CASLPA 2005 Survey of University Speech-Language Pathology and Audiology Programs, CASLPA.
2. HEAL's (Health Action Lobby) Potential in Pan-Canadian Health Human Resource Policy and Planning. Contact: HEAL, pfralick@physiotherapy.ca

Endnotes

Sources

- Figure SLP-1. Calculated from data in Table SLP-2.
- Figure SLP-2. Calculated from data in the Health Personnel Database, CIHI.
- Table SLP-1. Individual schools and universities.
- Table SLP-2. Newfoundland and Labrador Association of Speech-Language Pathologists and Audiologists, Prince Edward Island Speech and Hearing Association, The Speech and Hearing Association of Nova Scotia (SHANS), New Brunswick Association of Speech-Language Pathologists and Audiologists, Ordre des orthophonistes et audiologistes du Québec, College of Audiologists and Speech-Language Pathologists of Ontario (CASLPO), Manitoba Speech and Hearing Association, Saskatchewan Association of Speech-Language Pathologists and Audiologists, Alberta College of Speech-Language Pathologists and Audiologists, British Columbia Association of Speech-Language Pathologists and Audiologists, Association of Northwest Territorial Speech-Language Pathologists and Audiologists and Yukon Speech-Language Pathology and Audiology Association.



Methodological Notes

The methodological notes provide an explanation of the strengths and limitations of the data in the Health Personnel Database (HPDB), and outline how the information within the publication can be most effectively interpreted, analyzed and used.

This information is of particular importance when making comparisons with other data sources, and especially when drawing conclusions regarding changes over time.

Readers are strongly urged to read all methodological notes to fully understand the data outlined in the HPDB. The methodological notes are referenced in the following sections:

Background to the HPDB

Data Sources

Data Reporting and Analysis

Data Quality

Comparison with Statistics Canada Data Sources

Background to the Health Personnel Database

Background

The Health Personnel Database (HPDB) contains data and information on a number of health care professionals in Canada. The type of information maintained on each profession varies depending on the availability of data from over 300 different providers. The HPDB enables time-series comparisons of health personnel at national and provincial and territorial levels, and is the only national database of its kind with information on such a broad scope of different health personnel in Canada. The HPDB does not collect, use or disclose personal information. Individual record-level data are not collected or maintained in the HPDB. The data in the HPDB represent aggregate counts by province or territory and by year for selected health professions. At a minimum, data include the number of voluntary members of health professional associations and regulatory authorities by province or territory and year. Where possible, data on registered, active-registered or active-registered employed health personnel are provided from the appropriate regulatory authority. Education data for some health personnel groups are maintained as well.

The CIHI publication series *Health Personnel Trends in Canada* is a reference document published every two years that reports the most recent 10-year trends from the HPDB. By providing time-specific information for health personnel groups, this document enables governments, academics, professional health organizations, researchers and managers of health delivery organizations to better understand Canadian health personnel trends.

Data Collection Processes

The data collection processes for the publication *Health Personnel Trends in Canada, 1995 to 2004* include standardized data collection instruments and thorough processes for verification of data by data providers. In recent years, greater effort was placed on presenting contextual information for the profession, and on better understanding the regulatory environment of health personnel in Canada.

A number of standardized data collection instruments are used:

Phase I Questionnaire: A survey to obtain information on the numbers of health personnel (copy is presented in Appendix A).

Phase II Questionnaire: A survey to obtain contextual information about the profession (copy is presented in Appendix B).

Education Data Request Forms: Requests are made directly to education providers (with the exception of physician and nursing data). Please note that this level of information is not reported for all professions within the HPDB (a copy is presented in Appendix C).

The Phase I data requests were sent out in early 2005, and the majority of data were received by June 2005. Phase II surveys were sent to selected stakeholders in the summer of 2005. As identified within the publication, Phase II responses represent the responses of independent individuals and/or organizations. Their opinions and/or views, as well as content, do not



necessarily reflect those of CIHI. The Phase II survey was not intended to be comprehensive and other sources and perspectives on health human resources issues, as they relate to specific health professions, should also be considered.

Individuals and organizations that provided data for the Phase I and Phase II questionnaires were provided an opportunity to review the chapters before publication to ensure that the information they provided was interpreted correctly, and to verify the data presented in the report.

For education data (graduate counts), requests were submitted to individual education providers in mid-2005. Due to the volume of the data, the submitting organizations were not afforded an opportunity for final review of the chapters prior to publication. The data were verified with the data provider at the time of submission and reported within the publication on that basis. For other education data (that is, number of certificants), the respective data provider, usually the national professional association, was asked to verify the data prior to publication.

HPDB Publications and Products

HPDB results are published in a report every two years; however, data are collected from data providers on an annual basis. As of 2004, CIHI has initiated publication of select data from the HPDB. The data are not released in a formal publication, but select data are made available in bulletin or Web-based form.

In an effort to reduce the cost to users, the publication *Health Personnel Trends in Canada, 1995 to 2004* is produced as an electronic document only (paper copies are not available). Additional PDF copies of this publication are available free of charge from the CIHI Web site at www.cihi.ca.

Data Requests

CIHI completes ad hoc requests and special analytical projects on a cost-recovery basis using data from the HPDB. Ad hoc requests are short queries that do not require major resources. Special analytical projects require project planning and the commitment of extra resources.

For an estimate of the costs associated with these products and services, please contact:

Program Lead, Health Personnel Database
Canadian Institute for Health Information
495 Richmond Road, Suite 600
Ottawa, Ontario K2A 4H6
Tel.: (613) 241-7860
Fax: (613) 241-8120
Email: hpdb@cihi.ca
Web site: www.cihi.ca

Data Sources Used in This Publication

Professional Associations and Regulatory Bodies

The primary data sources for this publication are national professional associations, national associations representing provincial and territorial regulatory bodies, provincial and territorial regulatory bodies, provincial and territorial professional associations and education providers. These organizations provide much of the contextual information and data on the number of personnel and number of graduates.

Information is obtained on an annual basis from these organizations, using standardized data collection mechanisms, as described in the previous section.

Data Sources Internal to CIHI

For the reporting of physician and nursing data, the publication utilizes existing data sources at CIHI, which include the Scott Medical Database (formerly known as the Southam Medical Database) and the regulated nursing databases.

Scott's Medical Database at CIHI

Scott's Directories (www.MDSelect.com) maintains a database on physicians to produce the Canadian Medical Directory and mailing lists for commercial purposes. CIHI acquires a copy of this database annually to update CIHI's Scott's Medical Database (SMDB) (formerly Southam Medical Database). The SMDB is used to produce publications, handle ad hoc requests for information, and fulfill special client-requested projects. The SMDB contains individual record-level data; longitudinal data about each physician's age, gender, school and year of graduation; and specialty data.

The SMDB incorporates information from a variety of data sources, including licensing authorities and postgraduate training programs. Once a physician is in the database, he or she receives a notice in the mail each year requesting that information stored in the directory be updated.

For the purposes of this publication, an "active" physician is defined as one who meets the following criteria:

- has a medical degree;
- is not in post-graduate training; and
- is defined as "active" in the SMDB (defined below).

The status of "active" for the purposes of this publication, explicitly excludes physicians who are confirmed to have retired or semi-retired, are deceased, have moved abroad, do not have a licence to practise in their current province of residence, or who report a temporary leave of absence (for example, a temporary retirement or sabbatical) and those in the military.

Physicians in postgraduate training (residents) are identifiable in the database and are treated as a separate category, and are excluded for the purposes of most published data. However, a physician who has obtained specialty certification, is billing a provincial medical plan for health services, but is doing a clinical fellowship in some discipline, would be considered to be an active physician. All resident data in this publication are derived from the Canadian Post-M.D. Education Registry (CAPER). For analytical purposes, data from CAPER was added to data from



the SMDB in order to reflect counts of physicians including residents. This is clearly identified in the graphs affected.

For the purpose of this publication, two physician types are identified: family medicine physicians (which includes uncertified specialists and general practitioners, as well as family medicine and emergency family medicine specialist physicians) and specialist physicians. Specialty is based on most recent specialty certification achieved within Canada. SMDB specialist counts do not include uncertified/foreign-certified specialist physicians and may, therefore, differ from other sources of provincial/territorial physician data that categorize physicians on some other basis (for example, functional specialty, payment specialty, provisional licence or other).

For more information on the SMDB, please visit www.cihi.ca or contact the Program Lead, Physician Databases at smdb@cihi.ca.

Regulated Nursing Databases at CIHI

CIHI maintains national databases on three regulated nursing professions in Canada: registered nurses (RNs), licensed practical nurses (LPNs) and registered psychiatric nurses (RPNs).

These databases collect information on the supply and distribution of regulated nursing professionals in Canada. Data collected for each of these distinct professions are based on nationally comparable data standards and specifications; data dictionary and data submission specifications for all three systems are available at www.cihi.ca. Each provincial (and in some cases, territorial) regulatory authority submits to CIHI a sub-set of data collected from each member during the annual registration period.

The Registered Nurses Database (RNDB) has longitudinal data from 1980 to the present,, Licensed Practical Nurses Database (LPNDB) and Registered Psychiatric Nurses Database (RPNDB) data first became available in 2002. Prior to 2002, LPN and RPN data were collected through HPDB processes and the development of both the LPNDB and RPNDB systems represent fundamental series breaks. As such, LPN and RPN data presented in this publication for years prior to 2002 are not directly comparable to post-2001 data.

For all regulated nursing groups, CIHI data will differ from provincial/territorial data reported elsewhere due to CIHI collection, processing and reporting methodologies.

The collection of information for nurse practitioners was initiated by CIHI in 2003. Currently only data for 2003 and 2004 can be reported. This is a new data source and information is not readily available for all provinces and territories to allow comparison. Data for nurse practitioners are primarily obtained from the existing RNDB; however, in some cases, supplementary information requests were made to provincial or territorial bodies to enhance the information.

For more information on any of the regulated nursing data sources identified above, please visit www.cihi.ca or contact the Program Lead, Regulated Nursing Databases at nursing@cihi.ca.

Data Sources External to CIHI

Data sources external to CIHI include The Canadian Post-M.D. Education Registry (CAPER), the Canadian Information Centre for International Credentials (CICIC) and Statistics Canada.

The Canadian Post-M.D. Education Registry

The Canadian Post-M.D. Education Registry (CAPER) was established in 1986 through the cooperation of national medical organizations with an interest in the post-MD clinical education of physicians in Canada. CAPER has a mandate to provide accurate information, which may be used for physician-resources planning on a national, provincial and regional basis. CAPER maintains individual, record-level, longitudinal socio-demographic data of all trainees under supervision in each Canadian faculty of medicine and all post-MD trainees (residents and fellows) in training positions on November 1 of the given academic year. For more information on CAPER, please visit www.caper.ca.

For the purposes of specific analysis within this publication, CAPER resident data were added to the counts for physicians (from the SMDB) to determine the total number of physicians including residents. These counts will be an overestimate of the number of physicians because the CAPER data for residents include physicians that could be recorded in the SMDB as physicians. For example, a physician that was working as a family medicine physician for a period of time and then returned for further training in a residency program would appear on the SMDB as a physician and in the CAPER database as a resident. According to CAPER publications, in 2002–2003 and 2003–2004, there were 101 and 97 re-entries of Canadian MD graduates to postgraduate training positions, respectively. Although this gives an indication of the potential level of double counting, it is not exact. Without doing a linkage between the two databases, it is impossible to know if the physicians who were counted as re-entries to postgraduate training in the CAPER data were actually “active” in the SMDB.

Canadian Information Centre for International Credentials

The Canadian Information Centre for International Credentials (CICIC) collects, organizes and distributes information, and acts as a national clearing house and referral service to support the recognition and portability of Canadian and international educational and occupational qualifications. CICIC collects data about procedures for recognizing academic and occupational credentials in different Canadian jurisdictions. This information is stored in a regularly updated database covering more than 800 professional organizations. The CICIC Web site provides up-to-date summary and detailed information on entry to practise and regulatory requirements for specific health occupations. The Web site served as a source of reference for this publication, and some information was adopted for use in this publication. For further information on the CICIC, please visit www.cicic.ca.

Statistics Canada

Two sources of data from Statistics Canada are used within this publication to provide a comparison with HPDB administrative data. Detailed information on these two sources and the methodology for comparison are presented at the end of the methodological notes, in the Comparison of Labour Force Survey, Census and HPDB Administrative Data section.



Data Reporting and Analysis

Data Year

Refers to data year. HPDB data reflect data as of December 31st of the given year, unless otherwise noted by data providers.

Regulated and Voluntary Membership

In many cases, data tables throughout this publication include both regulated (membership with a specific data provider is required as a condition of practice) and voluntary membership data (registration with the data provider is not a condition of practice). These data are appropriate for some purposes but users should have a clear understanding of the data-quality limitations associated with particular sources of data such as over-coverage and/or under-coverage. For further information, see the Data Quality section. For ease of identification, the symbol (†) in a table indicates the presence of voluntary membership data or estimated data. All estimates in the data tables are accompanied by superscript notes, which identify the source of the estimate (that is, CIHI or the data provider).

Although great effort has been made to accurately reflect the regulatory environment for each health personnel group included in this publication, gaps in understanding still exist. CIHI, with the continued support of the HPDB data providers across Canada, will continue to refine the information available to users on which to base informed decisions.

Number of Personnel

With the exception of physician, nursing and Statistics Canada survey data, all data providers were asked to provide data that reflected the following definitions:

| | Regulated Health Professions | Unregulated Health Professions |
|---|---|---|
| Definition | <p>A regulated health profession is one that is covered by provincial/territorial and/or federal legislation and governed by a professional organization or regulatory authority.</p> <p>The regulatory authority governing the profession has the authority to set entry requirements, license qualified applicants and ensure practice requirements are met and/or maintained.</p> <p>Licensure/registration with the regulatory authority is a condition of practice.</p> | <p>An unregulated health profession is one for which there is no legal requirement or restriction on practice with regard to licensure/registration.</p> <p>Registration with a provincial/territorial or national professional organization is voluntary and not a condition of practice.</p> |
| Type of data requested from data providers (and subsequently presented in this report, as applicable) | <p>If the health profession is subject to regulation in a specific jurisdiction, the following information was requested from the data provider</p> <p>TOTAL number of REGISTERED: All individuals who are registered/licensed with your organization. The count may include individuals in all registration categories (active, inactive, honorary, etc.).</p> <p>TOTAL number of REGISTERED, ACTIVE: All registered/licensed individuals who are legally able to work under the title of the specified health profession. Individuals may or may not be currently employed in the profession.</p> <p>TOTAL number of REGISTERED, ACTIVE-EMPLOYED: Personnel that are registered/licensed with your organization, and currently working in the specified health profession.</p> | <p>If the health profession is not subject to regulation within a specific jurisdiction, the following information was requested from the data provider:</p> <p>TOTAL number of REGISTERED: All individuals who are registered with the organization. The count may include individuals in all registration categories (active, inactive, honorary, etc.).</p> |



Administrative nursing data (registered nurses, nurse practitioners, licensed practical nurses and registered psychiatric nurses) for HPDB are derived from the regulated nursing databases (RNDB, LPNDB and RPNDB, respectively) at CIHI. Unless otherwise noted, data reflect nurses (registered nurses, nurse practitioners, licensed practical nurses or registered psychiatric nurses) holding an active-practising licence that are employed in nursing. For the purposes of this publication, these data equate to the number of “active registered employed” nurses.

Administrative physician data for HPDB are derived from the SMDB at CIHI. Unless otherwise noted, data reflect physicians, registered and unregistered, who may be involved in clinical and non-clinical practice. Administrative counts of resident physicians used in the HPDB were derived from data provided by the Canadian Post-M.D. Education Registry (CAPER). CAPER data include physicians involved in residency training within the given year, excluding foreign physicians training in Canada by visa and physician fellows receiving medical training or education beyond initial MD education. For more information please visit www.caper.ca.

Please note that SMDB data are not directly comparable to HPDB definitions because the SMDB includes non-registered personnel. However, the number of non-registered physicians in the SMDB is known to represent less than 2% of active family medicine and specialist physicians in the system in any given year.¹ With this limitation in mind, for the purposes of this publication, SMDB data would equate to the number of “registered” physicians.

Northern Territories Data

CIHI attempts to collect data from each province and territory in Canada. On April 1, 1999, the central and eastern portions of the Northwest Territories became the new territory of Nunavut. For some professions (for example, physicians and registered nurses), Nunavut-specific data are provided in this publication. In many cases, however, data providers have combined Nunavut and Northwest Territories data or data for all three northern territories including the Yukon.

Descriptions of Health Occupations

Occupational descriptions have been provided for each type of health personnel. National associations provided the majority of the professional descriptions based on criteria outlined in the Phase II data collection. Each chapter identifies the sources of the definition, if not provided by a national professional association. The descriptions for each of the four nursing groups (RN, NP, LPN and RPN) were provided by the Health Human Resources (nursing) team at CIHI, and the descriptions for chiropractors, medical laboratory technologists and psychologists were adopted from Human Resources Development Canada’s National Occupational Classification with the permission of the Minister of Public Works and Government Services Canada, 2001.

Entry to Practise Requirements

Entry to practise requirements refer to the range of academic and/or experiential criteria that are necessary for an individual to be eligible to practise a profession in Canada. Entry to practise information available in this publication was gathered as part of the Phase II collection activities, and will appear in the Entering the Profession and the Changes to Education and/or Training Requirements sections for each health personnel group. Readers are cautioned that the information collected may not be comprehensive.

1. Unpublished data provided by Program Lead, Physician Databases, Canadian Institute for Health Information (November 14, 2003).

Education Data

Counts of graduates of health professional educational and training programs are provided for health personnel groups where the universe of possible Canadian educational and training programs is known, and sufficient data are available. Education data may reflect graduates of Canadian educational institutions, candidates of a specific competency exam and/or candidates who passed specific competency exams. Additional training (e.g. post-MD training required to enter medical practice) may be required before entering the workforce. Some education data previously published in the *Health Personnel Trends in Canada* series has been removed for data-quality reasons.

Estimation

Where feasible, estimates were obtained from individual data providers. In circumstances where such estimates could not be obtained, and where appropriate, CIHI produced estimates. In all cases, CIHI estimates were prepared by applying the average Canadian growth rate over the previous five years. In the tables, all estimates are presented with a symbol (†) and footnoted. Summarized data (for example, column totals) that contain estimates (or voluntary membership data) are also presented with a (†) symbol.

Privacy and Confidentiality of Data

CIHI's data collection, use and disclosure activities are guided by its corporate privacy principles, policies and procedures, which are based on the 10 privacy principles set out in Schedule 1 of the federal *Personal Information Protection and Electronic Documents Act* (PIPEDA). These principles safeguard the privacy and confidentiality of data received by CIHI.

The release of data in CIHI publications, media releases, on the CIHI Web site and through ad hoc requests and special studies is governed by CIHI's Privacy Principles. These principles are set out in the document *Privacy and Confidentiality of Health Information at CIHI: Principles and Policies for the Protection of Health Information and Policies for Institution-Identifiable Information 3rd edition*. The document is available from CIHI's Web site at www.cihi.ca. The results of a Privacy Impact Assessment undertaken for CIHI's HPDB can be found in the document *Privacy Impact Assessment of the Health Personnel Database*, which is available at www.cihi.ca.

One of the objectives of CIHI's Privacy Principles is to avoid disclosure of an individual's identity. This means that, generally, table cells containing fewer than five observations are not reported. However, exceptions are made where it is determined that an individual's identity cannot be ascertained from the information provided. This may occur where the geographic area or population being reported is very large, and there are few other data elements that could lead to identification of individuals.

The publication series *Health Personnel Trends in Canada* includes tables with cells reporting fewer than five observations. The Health Human Resources program area, in conjunction with the CIHI Privacy Secretariat, reviewed the tables and determined that due to the high level of aggregation, the professional nature of the information and non-reporting of person identifiable information, the tables do not compromise the confidentiality of information being reported and will add to the analytical value of the data being reported.



Common Comparable Years (1996 and 2001)

The years 1996 and 2001 were selected as the basis of comparison between HPDB data and the Census and Labour Force Survey data. These were the only common data points within the reference period (1995 to 2004).

Common Comparable (CC) Groups

In order to examine total health personnel in Canada from the various data sources (HPDB, Census and the Labour Force Survey) health personnel groups common to all three sources were identified. Appendix D identifies the 18 out of 23 personnel groups included.

An estimate for the health personnel group registered psychiatric nurses (RPNs) was not available from either the Labour Force Survey or the Census. However, the Standard Occupational Classification (SOC 1991) classification D112—Registered Nurses does include RPNs. Therefore, for the purposes of examining the total number of health personnel in Canada, the RPN health personnel group was identified as a CC group and included in CC totals. HPDB common comparable data for LPNs and RPNs reflect those active employed in 2001, and for physicians reflect those active, including residents (see Data Sources for definition of “active” for the SMDB).

For Census, all CC groups reflect those employed in the labour force in Canada in each year. Labour Force Survey estimates reflect those both employed and unemployed in the labour force for each year.

Data Quality

To ensure a high level of accuracy and usefulness in data dissemination, CIHI has developed a framework for assessing and reporting the quality of data contained in its databases and registries. The framework focuses on five dimensions of data quality: timeliness, accuracy, usability, comparability and relevance.

Timeliness, Usability and Relevance

Timeliness is achieved by meeting CIHI production schedule deadlines (data are collected, analyzed and released in a timely manner). Although the publication is released every two years, data are collected annually by CIHI and are available upon request.

Usability comprises the availability and documentation of the data and the ease of interpretation. The methodological notes section and detailed notes accompanying all data tables in this publication contribute to usability, as the limitations of data interpretation are clearly outlined. The addition of information on the historical and current regulatory environment for each health personnel group and the use of the symbol (†) within table cells identifies data based on estimates or voluntary membership sources and enhances the ability of readers to assess the suitability of data for specific usage.

The relevance of the data set includes the adaptability and value of the data: while there continues to be strong interest from decision-makers, researchers and the media about the value of collecting health personnel data, outside of physician and nursing data, significant limitations exist depending on the intended use. Data in HPDB are useful for identifying trends in health personnel in Canada. However, it is inappropriate to infer from total numbers or population ratios the adequacy of health personnel resources. Various factors influence whether the supply of health personnel is appropriate:

- Distribution and location within a province or territory (having the highest rate of personnel per 100,000 population may mean little to rural patients if all personnel are concentrated in a distant urban centre);
- Type and mix of personnel and level of specialization (for example, specialist physicians provide a different range of services than family medicine physicians);
- Access to hospitals, health care facilities, technology and other types of health personnel (having the lowest rate of personnel per 100,000 population may mean less to rural patients, if technology [telehealth, rapid transport, etc.] allow appropriate access to personnel and services concentrated in a distant urban centre);
- Needs of the population (for example, demographic characteristics and health problems of the underlying population);
- Level of service being provided by health personnel (for example, full-time versus part-time);
- Age and gender of the health personnel population; and
- Society's perceptions of required levels of service.

For planning purposes at the provincial/territorial, regional and health-district level, more appropriate data sources may be available.



The assessment below relates to HPDB data² collected via the Phase I survey. This section outlines where caution must be applied when analyzing HPDB data presented in *Health Personnel Trends in Canada, 1995 to 2004*.

Accuracy

Accuracy is an assessment of how well the data reflect the reality they are supposed to represent.

Under-Coverage

Under-coverage results when data that should be collected for the database are not included.

Since the purpose of HPDB is to collect and maintain data on “selected” health personnel groups, data for many professions important to the health system and the health of Canadians are not reflected in HPDB or this publication. At a national level, some sense of the gap between what is collected in HPDB and the actual number of health personnel can be seen in the comparison of the HPDB with the national survey estimates from Census and the Labour Force Survey (see Figure 4 in the Number of Health Personnel in Canada section of this report and appendices D to G for additional information).

When membership in a professional organization is voluntary, the number of health professionals may be under-represented. If there is no obligation for a member of the health profession to register with the professional organization, a certain percentage will not join. As a result, the memberships vary among years, among groups and among jurisdictions. The use of voluntary membership data as a proxy for the population of various professional groups is still necessary in some instances because an accurate source of the required information does not exist or was not available at the time of publication. All voluntary membership data, including summarized data (for example, column totals) that are found in tables are identified by the symbol (†).

In Canada, legislation affecting health personnel is the responsibility of provincial and territorial governments. For many of the health personnel groups included in this publication, 2005 marks the second time a national review of the historical regulatory environment has been completed. In general, regulated health professional organizations are able to provide more complete and accurate data. In addition, health professional groups that have been regulated for a longer period of time tend to have more established data-collection processes than groups that have recently become regulated. For these reasons, the majority of groups included in the HPDB reflect the larger and more-established occupations. When available, regulatory information (such as the initial year of regulation) is presented with notes identifying the nuances of individual provincial and territorial legislation. However, users are cautioned that documentation and understanding of the data implications of differences in legislation are not complete. It may not be known, for example, whether the legislation provides for the exclusive provision of services falling within a particular scope of practice, or simply reserves the use of certain titles. If legislation only protects the use of specific titles (for example, registered social worker) then individuals practicing under a slightly different title (for example, social worker) may not be covered by legislation, and as a result not be required to register as a condition of practice.

2. Data quality documentation for the SMDB and the regulated nursing databases (LPNDB, RPNDB and RNDB) are available from the respective CIHI program areas and/or publications (both can be accessed at www.cihi.ca).

Data collected within this regulatory environment would potentially undercount the number of personnel (for the purposes of this example, the number of social workers).

Counts of graduates of health professional educational/training programs are provided for health personnel groups where the universe of possible Canadian educational/training programs is known, and sufficient data are available. Some education data previously published have been removed because of data-quality concerns identified during the 2004 data-collection cycle. Where education data are presented, the number of graduates from various health-training programs may be underestimated in the tables. For some professions, not all post-secondary institutions provided information regarding programs and graduates. These instances are clearly identified in the footnotes of the corresponding tables.

CIHI collects data on a schedule designed to accommodate the production related activities necessary to deliver updated HPDB data every two years. CIHI collection timelines in many cases do not necessarily align with data provider's year-end data-processing and the resultant under-coverage probably has the greatest impact on the most recent year of data collected. For example, CIHI may request 2001 and 2002 data in order to update HPDB data. At the time of collection, sometime in 2002 or 2003, the 2001 data will most likely reflect all registrations during that year. The 2002 data requested, depending on the registration period, may not reflect the total number of registrations for that reference period because more registration may occur after data have already been submitted to CIHI. Data collected by CIHI for a particular profession may reflect data after the first few months of the 12-month registration period; this is an unavoidable necessity if timely data are to be made available. The level of under-coverage is unknown for HPDB data.

While not directly comparable with the year end provincial/territorial figures, the registered nurses databases (RNDB, LPNDB and RPNDB) at CIHI collect data after the first 6 months of the 12-month registration period from all registered nursing regulatory authorities across Canada. The resulting under-coverage for RNDB has been documented as typically 1–5%³ less than provincial and territorial figures.

Over-Coverage

Over-coverage is the inclusion of data beyond the target population.

Given the variety of data sources, the differences in the level of detail available from these sources and the fact that much of this information was collected initially for specific administrative rather than statistical purposes, caution must be used in applying the data to particular analyses. For example, in an analysis of employment levels, use of data based on registration levels may overstate current active employment numbers when membership with a regulatory authority is required for practice. Those professionals temporarily out of the work force, or out of the province or country, may maintain their registration to maintain continuity. Some of the regulatory authorities collect active employment information, but not all do.

3. *Workforce Trends of Registered Nurses in Canada, 2004*. Canadian Institute for Health Information, 2005, available from www.cihi.ca



At the national level, only nursing and physician information systems in Canada have methodologies in place to control double counting of the same individual within the same profession. The Scott's Medical Database (SMDB) maintains a unique subscriber number for each physician. While the regulated nursing databases at CIHI have methodologies in place to control for duplication at the national level.

The inability to identify providers consistently and uniquely, at a national level, is a barrier to integration of information across jurisdictions. National yearly totals for the same health personnel group may double-count individuals registered in more than one province or territory or more than one profession. This effect is compounded when health personnel from separate professions are added together. The impact of this double-counting on over-coverage is unknown.

Collection and Capture

Lack of data-collection standards for health personnel groups, outside of physicians and nurses, is confounded further by the fact that provincial/territorial regulatory authorities and voluntary professional organizations collect data for administrative purposes, and not for purposes of health human resource management. The level of accuracy and completeness necessary to meet the financial and administrative needs of a registry or membership list may be less stringent than the requirements of health human resources management (that is, monitoring, evaluation, planning and research).

As a secondary data collector, CIHI is dependent to a large degree on the data quality at source. Since data providers do not submit individual record-level data, rigorous edit checks and advanced verification and validation routines cannot be applied by CIHI. The extent to which these processes are in place for each data provider, in each profession, is unknown at this time.

When information is self-reported, as is the case with all HPDB data, reliability can be an issue. The intended purpose and use of data collected in the HPDB are communicated to all data providers and data received are considered reliable.

Data-entry also affects the accuracy of the data, as information may not be classified or coded properly. It is possible that data providers were not able to appropriately categorize data (for example, voluntary membership, registered, active registered or active registered employed) and this may lead to inaccurate reporting of the information. Although quality checks are utilized, the manual entering of data by CIHI staff could also introduce errors. Data providers were asked to verify data provided in previous years and CIHI staff reviewed all data carefully; however, a more rigorous audit of data-entry accuracy was not completed. Consequently, data-entry accuracy is unknown.

Comparability

Comparability measures how well the current-year data compare to data from previous years, and how data from the HPDB compare to health personnel data found in other sources.

Data Collection Standards

For most health personnel groups, outside of physicians and nursing, national standards for data collection do not exist. For the 2004 collection cycle, CIHI requested that data providers submit data based on standardized definitions of levels of registration status. The specific classifications are outlined in the Data Reporting and Analysis section of this publication as well as Appendix A. While this collection strategy improves comparability by allowing CIHI to better inform users as to the content of data provided, it is important to note that this approach is **not equivalent** to the submission of data based on standardized specifications, as is the case for the regulated nursing professions.

Before making comparisons between health personnel groups, it is important to review the title of the table or figure, and to read the footnotes carefully. These provide information regarding the group or sub-group of health personnel that is captured in the table. For instance, a table including data for all registered members of a health personnel group (for example, active, inactive, retired and honorary) will not be directly comparable to a table that includes only data on active registered members. Within the personnel-specific sections of this publication, CIHI has endeavoured to clearly indicate when registration with a regulatory authority may not be a mandatory condition of employment or where data estimation may limit comparability. Cells (and summarized data based on these cells) that include voluntary membership data or estimates are presented with the (†) symbol in all data tables. Caution must be exercised when comparing inter-temporal change at both the provincial/territorial and national levels when tables contain data collected under different regulatory environments.

Data Reference Period

Registration periods vary among various health personnel regulatory authorities, across various jurisdictions and within the same health profession. Based on previous collection activities, it was apparent that the majority of data providers could not provide data as of December 31 of each year. As a result, the Phase I Questionnaire focuses on having data providers identify the actual point in time reflected by the data, rather than assuming what was submitted reflected the requested time frame. As a result, reference periods of the available data are not always uniform and this may influence the comparability of data. The impact of this limitation on the interpretation of the data is unknown.

Historical Data

For the 2004 collection cycle, CIHI requested that data providers verify data from 2003 based on the definitions provided in the Phase I Questionnaire (see Appendix A).



Comparability with Other Sources

The HPDB data used in CIHI publications, media releases, ad hoc requests and special studies will vary from data released by other provincial and territorial sources of health personnel data, as a result of differences in the following:

- The collection period used. The data released by provincial and territorial regulatory authorities may reflect year-end statistics, compared to data reported by CIHI that reflect some portion of registrations received during a 12-month registration period.
- Editing and processing activities. CIHI does not receive individual record-level data and opportunities for editing and “cleaning” of data are limited.
- Differences in definitions. CIHI reports data at the lowest common (across all provinces and territories) available classification. For example, while CIHI is only able to report “total registered” numbers for a particular health profession, individual data providers may release more discrete levels of data, such as “active registered employed” personnel. In addition, CIHI’s classification of personnel based on a registration status may not be relevant to some data providers.

Additional data-quality questions related to the HPDB can be directed to the Program Lead, Health Personnel Database at hpdb@cihi.ca.

Comparison of Labour Force Survey, Census⁴ and HPDB Administrative Data

The Labour Force Survey

Since July 1995, the monthly LFS has involved approximately 54,000 households, representing approximately 100,000 respondents.

The LFS provides current monthly estimates of total employment (including self-employment) and unemployment by industry including health, and by occupations based on the Standard Occupational Classification (SOC). The 1991 SOC is the current standard used for the LFS (please see Appendix G). Demographic information (such as age, sex and education) as well as detailed employment information is collected (such as employment/unemployment, full-time/part-time employment status; actual hours of work; and employee hourly and weekly wages).

The LFS data used in this publication include members of the civilian non-institutional population 15 years of age and over who, during the reference week, were employed or unemployed in Canada. Yearly estimates (1991 and 1995 to 2004) used in this publication are the average of the 12 months of the given year.

The primary objective of the LFS is to provide reliable monthly estimates of employment and unemployment for Canada and the provinces, and to provide descriptive and explanatory data (by demographic characteristics, industry, occupation, etc.) for each health personnel group. While the LFS provides detailed and current data on the health personnel labour market across the country, it provides only a sample of the total supply and the sample is relatively small for many health occupations. In addition, the LFS produces estimates only for the 10 provinces.

The survey sample size was never intended to generate estimates at the unit-group level (for example, the four-digit code that identifies D011—Specialist Physicians within the increasingly larger minor group D01—Physicians, Dentists and Veterinarians, major group D0—Professional Occupations in Health and broad occupational category D—Health Occupations). In fact, Statistics Canada discourages use of estimates at this level because of concerns about sampling and non-sampling error, especially when data are cross-tabulated by other variables (for example, gender, age-group, full-time/part-time status). With this caution in mind, in 2003, CIHI purchased data (the coefficient of variation) with which to explore in more detail the quality of the data reported at the health occupation-specific level. The data for each health profession are provided in a consolidated data table in Appendix D. In addition, LFS data on average age and gender are available in Appendix F.

A coefficient of variation (CV) provides an indication of the precision of an estimate. CVs were generated for LFS estimates of health occupations based on: estimated total counts, by occupation for Canada; estimated total counts, by occupation and gender for Canada;

4. The concepts, definitions and questions asked in the Census and the Labour Force Survey are similar. However, users should be aware that some differences do exist. In addition, there are differences in target populations, enumeration methods, sample size, weighting systems and reference period.



and estimated total counts, by occupation and average age for Canada. LFS data in this publication should be used, subject to the following conditions:⁵

- Estimates with CVs less than or equal to 16.5 require no release restrictions: data are of sufficient precision that no special warnings to users or other restrictions are required.
- Estimates with CVs greater than 16.5 but less than or equal to 33.3 can be released with caution: data are potentially useful for some purposes but should be accompanied by a warning to users regarding their precision.
- Estimates with CVs greater than 33.3 should not be released: data contain a level of sampling error that makes them so potentially misleading that they should not be released in most circumstances.

LFS estimates with CVs greater than 33.3 do not appear in this publication. LFS estimates with CVs between 16.5 and 33.3 will appear in this publication with a notation cautioning readers that the estimate may be unreliable.

For further information about the impact of sampling error and non-sampling errors on LFS estimates or other questions about the quality of LFS data, please visit www.statcan.ca, call Client Services at 1 (866) 873-8788 or write to labour@statcan.ca.

Census

The Census enumerates the entire Canadian population, which consists of Canadian citizens (by birth and by naturalization), landed immigrants, non-permanent residents together with family members who live with them and landed immigrants who are temporarily outside the country on Census Day. By law, Statistics Canada must take a census every five years, and every household in Canada must complete a Census questionnaire. Four out of five households receive the short form while the remaining one in five receive a long-form questionnaire. The short-form includes seven questions: the respondent's name, sex, date of birth, marital or common-law status, family and household relationships and mother tongue. The long form includes the 7 questions plus an additional 52 questions on topics such as education, ethnicity, mobility, income and employment. The estimates in this publication will differ from Census estimates reported elsewhere using different inclusion/exclusion criteria. The last Census was conducted on May 15, 2001.

Each Census, conducted in 1991, 1996 and 2001, reflects a sample of one fifth of the Canadian population, and provides point-in-time estimates of the supply of health personnel by occupational class based on the 1991 Standard Occupational Classification (SOC).

Census data reported for health occupations included in this publication reflect estimates of those members of the non-institutional population who were 15 years of age and over with labour market activity in the week (Sunday to Saturday) prior to the Census day, classified as employed and indicated a place of work inside Canada.

Census estimates of health occupations by sex and average age are based on responses from the entire Canadian population. Census estimates of health occupations by average age are based on age (that is, age at last birthday, as of the Census day), which is derived from date of birth.

5. Statistics Canada methodologists specifically generated coefficients of variation and designed these guidelines for use with the data presented in this publication. The conditions of use should not be assumed to be applicable to any other estimates derived from the Labour Force Survey.

Date of birth is collected for the entire Canadian population and persons who were unable to give the exact date of birth were asked to give the best possible estimate. For each Census all respondents are required to specify whether they are male or female. Consolidated Census average age and gender data are available in Appendix F.

Due to the large sample size involved in the Census, and through discussions with Statistics Canada, it was felt that for the purposes of reporting counts of health occupations at a national level, including analysis by sex and average age, no extraordinary data-quality measures were required. This was not the case for the Labour Force Estimates (see discussion on LFS data). This decision may not hold true for other Census data. The Census is limited to looking at changes in data between Census years. This is not a concern for the purposes of the cross-validation exercise in the appendices, but may be a potentially significant issue for those seeking to monitor and evaluate health occupations more frequently than every five years.

The Census is a large, complex survey, and for Census data in general, the principal types of error involved relate to coverage, non-response errors, response errors, processing errors and sampling errors (which apply only to the supplementary questions on the long form). Statistics Canada has extensive on-line documentation exploring these and other data-quality issues, including sampling and weighting, confidentiality and random rounding procedures. Please visit www.statcan.ca or contact the Social Survey Methods Division via Statistics Canada's toll-free general enquiries line at 1 (800) 263-1136 for further information.

To monitor and ensure the continued quality of its data, the LFS and the Census have extensive data quality programs. A whole range of quality indicators is produced on a regular basis and carefully analyzed by Statistics Canada staff. For further information about the quality of Census and Labour Force Survey data or any other Statistics Canada product, please visit www.statcan.ca or contact Statistics Canada's Client Services at 1 (866) 873-8788.

Comparison of the Labour Force Survey, Census and HPDB Administrative Data

This publication includes a consolidated comparison data table in Appendix D that examines counts of health occupations from two sources of supply-based data on health personnel in Canada: administrative data collected from associations, regulatory authorities and existing national administrative databases; and two national surveys that provide estimated counts based on the classification of respondents into occupational groups. The purpose of this examination is two-fold: first, for selected common years of interest, to cross-validate the face validity of administrative data, counts maintained in the HPDB at CIHI with the estimated health occupation counts available from Statistics Canada's Census and LFS; second, to provide readers with demographic data from survey sources, where administrative information systems cannot currently provide such information (the current publication provides gender and average-age data from the 1991 and 2001 Census for selected health personnel groups).

This examination should not be interpreted as providing a determination of which data source is more appropriate for use—such a determination must be made by individual data users on a case-by-case basis, with full knowledge and appreciation for the benefits and limitations inherent in each data source.



When registration with a regulatory authority is a condition of practice for a particular health occupation, data collected from administrative sources can provide sufficient coverage and allow reliable enumeration of the entire population of interest. In fact, administrative counts often serve as the basis for the development of sampling frames for surveys. However, not all of the 23 health personnel groups included in the HPDB are regulated, or are subject to regulation throughout all years of interest. In addition, although attempts are made to apply standardization to the collection of data in the HPDB, standardized, nationally comparable data are not available for the majority of health personnel groups in Canada.

Currently, only registered nurses, licensed practical nurses, registered psychiatric nurses, nurse practitioners and physicians have administrative data collected nationally that are based on standardized collection specifications. CIHI is undertaking an initiative to develop standards for five other health professions: occupational therapists, pharmacists, physiotherapists, medical laboratory technologists and medical radiation technologists. For more information please write to hhrddp@cihi.ca.

Without standards, data may be difficult to define and may not provide a sufficiently accurate enumeration of health personnel in Canada. A survey is used for the annual collection of HPDB data, however, as data from the HPDB are not extrapolated from a sample of the population, the results are not prone to particular types of sampling error. Additional limitations of the administrative data available from the HPDB are outlined in the Data Quality section of the Methodological Notes.

The primary limitations that influence the comparability of survey data (for example, Census and the LFS) with the HPDB data are the self-reported nature of survey data, the classification of health occupations and inclusion/exclusion criteria.

Both the LFS and Census represent estimates based on the self-reported responses of a sample of the Canadian population. All identified discrepancies, logical inconsistencies and missing information are resolved either automatically by the Statistics Canada processing system or through manual intervention. This is accomplished through the imputation of logically consistent values. Where possible, deterministic imputation is used to resolve any inconsistent or missing information using other information provided by the respondent. When this is not possible, information for an individual may be carried forward from the previous month (if it exists) under certain circumstances. In other instances hot-deck imputation is used, which involves copying information from another individual (that is, a “donor”) with similar characteristics.

Arguably, administrative data collected for registration purposes are also self-reported. However, when registration is a condition of practice in a particular health occupation, there should be greater confidence that the administrative data, at the very least, are able to capture those personnel that register and meet the qualifications of registration set by a regulatory authority for practice in a particular health occupation. The ability of individuals to identify their own occupation on a survey, without further scrutiny, may lead to inappropriate occupational classification of personnel (for example, does the response “nurse” identify an individual as a registered nurse, licensed practical nurse, registered psychiatric nurse or some other type of nurse’s aid?). In addition, while administrative systems categorize regulated health occupations based on assessments of completion of specified education and training, successful examination or on certified specialization, individuals may self-report their occupation on a survey on some other basis.

Both the LFS and the Census use standardized classification systems to classify survey respondents into occupations. The LFS and the Census estimates used in this publication are based on the 1991 Standard Occupational Classification (1991 SOC). The LFS presently uses the 1991 SOC. The 2001 Census used the 2001 National Occupational Classification for Statistics (2001 NOC-S), which is a revision of the 1991 Standard Occupational Classification (1991 SOC). The 1991 SOC was used to code occupation data from the 1991 and 1996 Censuses. Data prior to 2001 cannot be converted to 2001 NOC-S standards; however, Statistics Canada can reorganize the 2001 data to the 1991 SOC structure for those wishing to compare pre-2001 Census years to post-1996 Census years. All LFS and Census data used in this publication are based on the 1991 SOC. The entire 1991 SOC and 2001 NOC-S classification structures are available in an online, search-capable format at the Statistics Canada Web site (www.statcan.ca). For example purposes, Appendix G illustrates the 1991 Standard Occupational Classification codes for many of the occupations profiled in this publication.

The 1991 SOC provides a systematic structure to classify not simply health, but the entire range of occupational activity in Canada based on the kind of work performed. The classification seeks to define an occupation as a collection of jobs that are similar in the work performed and skill-level involved. Individual health occupations are defined at the unit-group level (for example, D011—Specialist Physicians) and data below this level of occupational classification are not available. For some health personnel groups (such as specialist and family medicine physicians) the 1991 SOC unit group, exclusion criteria and the listed example titles appear to isolate an individual health personnel group very well. However, for many health personnel groups in this publication this is not the case, particularly for some numerically smaller professions (for example, midwives). Some health personnel groups, such as registered psychiatric nurses, are subsumed under occupational categories with other occupations so numerically large (in this example, registered nurses) that their distinct characteristics are unrecognizable. For standardization purposes and to increase the sample sizes of smaller areas of aggregation (for example, by province, gender or age group), the 1991 SOC serves the needs of survey methodologies by grouping numerically smaller (but functionally similar) health personnel groups together. However, this approach may make this same survey instrument an ineffective means of monitoring and evaluating very specific health personnel groups, and most certainly presents an obstacle for comparison with health personnel group-specific administrative data sets.

Data standards used to define variables in both the Census and the LFS ensure comparability across years. For example, for all years of data, Census counts used in this publication reflect estimates of the number of health personnel employed in the labour force in Canada. The same foundation of standardized definitions and comparable data does not exist for health personnel groups outside of physicians and the regulated nursing groups. Data from the HPDB, depending on the particular personnel group, may reflect total registered, active registered, active registered employed, voluntary members or some combination thereof. For certain health personnel groups, the definition in use will change during the years under investigation because of regulatory changes or some other reason. Lack of national data standards around the collection of administrative data for most health personnel groups in Canada makes comparisons with other existing data sources difficult.



Appendices

Appendix A

CIHI 2004 Data Request

Please complete the tables in Part A and respond to the questions in Part B

If you feel that the definitions or terms used in this questionnaire limit you from supplying data, or if you have any questions, please contact Jessica Livermore at 1-888-244-4613 ext. 4157 or at hpdb@cihi.ca.

PART A

Please complete the data table according to the following:

- If your profession is currently **not regulated**¹ in your province/territory, please provide counts of **REGISTERED**³ members;
- If your profession is currently **regulated**¹, please provide counts of **REGISTERED**³, **ACTIVE REGISTERED**⁴ and **EMPLOYED ACTIVE REGISTERED**⁵;
- Please be sure to indicate a **DATE OF COUNT**²;
- Use "NA" to indicate information that is not available;
- The 2003 data provided were derived from CIHI's Health Personnel Database (HPDB).

Health Personnel Group: _____
Name of Organization: _____ <Indicate name of organization>

| CIHI REPORTING YEAR—2003 (please verify data) | | | | | |
|--|--|------------------------|---------------|-------------|----------------|
| DATE OF COUNT ² (dd/mm/yyyy): | | <insert date of count> | | | |
| | | Total | Female | Male | Unknown |
| REGISTERED members ³ | | | | | |
| ACTIVE REGISTERED members ⁴ | | | | | |
| EMPLOYED ACTIVE REGISTERED members ⁵ | | | | | |

| CIHI REPORTING YEAR—2004 (please provide data) | | | | | |
|--|--|--------------|---------------|-------------|----------------|
| Please Indicate the DATE OF COUNT ² | | | | | |
| (dd/mm/yyyy): | | | | | |
| | | Total | Female | Male | Unknown |
| REGISTERED members ³ | | | | | |
| ACTIVE REGISTERED members ⁴ | | | | | |
| EMPLOYED ACTIVE REGISTERED members ⁵ | | | | | |

PART B

| Questions | Answers |
|--|---------|
| 1a. According to our records, the year in which it became mandatory in your profession in your province/territory to register with the regulatory authority or association as a condition of employment was: | <year> |
| 1b. If the year in question # 1 a is incorrect, please provide the correct year: | |

Comments:

THANK YOU!

Notes:

1. **Regulated** : A regulated health profession is one that is covered by provincial/territorial and/or federal legislation and governed by a professional organization or regulatory body. The regulatory body governing the profession has the authority to set entry requirements and license qualified applicants. Employment in a regulated health profession uses a regulated title and requires licensure/registration with the regulatory body. A non-regulated health profession is one for which there is no legal requirement or restriction on practice with regard to licensure/registration (i.e. registration with a provincial/territorial professional organization is voluntary and not a condition of employment).

2. **DATE OF COUNT:** Please indicate as of what month, day (if possible), and year the counts were current for the indicated year. For example:

| | | |
|-------------------------------------|---------------------|---------------|
| Number of ACTIVE REGISTERED members | CIHI Reporting Year | Date of Count |
| 2,555 | 2004 | Nov 30, 2004 |

In this example, as of November 30, 2004 there were 2,555 ACTIVE REGISTERED members.

3. **TOTAL number of REGISTERED members:** All individuals who are registered with your organization. The count may include individuals in all registration categories (i.e. active, inactive, honorary, etc.).

4. **TOTAL number of ACTIVE REGISTERED members:** All individuals that are registered/licensed with your organization, and are assessed by the regulatory/licensing authority as qualified to seek employment within the designated profession and the specified jurisdiction. Individuals may or may not be currently employed.

5. **Number of EMPLOYED ACTIVE REGISTERED members:** All individuals that are registered/licensed with your organization, and currently working in the specified health profession.



Appendix B

CIHI 2004 Data Request

Please complete the table below for all available information.
Please use "NA" where information is **not available**.

HEALTH PERSONNEL GROUP

<Profession>

EDUCATIONAL INSTITUTION

| CIHI REPORTING YEAR | 2003 | 2004 |
|--|------|------|
| Data as of December 31 st of each year ¹ | | |
| TOTAL number of DIPLOMA GRADUATES ² of the program | | |
| Number of MALES | | |
| Number of FEMALES | | |

| CIHI REPORTING YEAR | 2003 | 2004 |
|--|------|------|
| Data as of December 31 st of each year ¹ | | |
| TOTAL number of B.Sc. GRADUATES ² of the program | | |
| Number of MALES | | |
| Number of FEMALES | | |

| CIHI REPORTING YEAR | 2003 | 2004 |
|--|------|------|
| Data as of December 31 st of each year ¹ | | |
| TOTAL number of M.Sc. GRADUATES ² of the program | | |
| Number of MALES | | |
| Number of FEMALES | | |

| CIHI REPORTING YEAR | 2003 | 2004 |
|--|------|------|
| Data as of December 31 st of each year ¹ | | |
| TOTAL number of Ph.D. GRADUATES ² of the program | | |
| Number of MALES | | |
| Number of FEMALES | | |



Comments:

Thank You!

Footnotes:

1. If the data is not as of December 31 of the given year, please indicate.
2. If graduate designation (i.e. Diploma, B.Sc., M.Sc., Ph.D., etc.) is different from that specified in tables, please indicate by providing the correct designation.

Please complete and return to:

Health Personnel Database
Canadian Institute for Health Information
495 Richmond Road, Suite 600
Ottawa, ON K2A 4H6
Tel: (613) 241-7860
Fax: (613) 241-8120
Email: hpdb@cihi.ca



If you indicated “No”, in the space below please provide the professional description for using the guidelines. Note that some print space restrictions exist and occupational descriptions should not exceed half a page (8^{1/2} x 11; 11 font).

Guidelines:

1. Each description should begin with a single sentence answering the question:
What is a _____? (With respect to the Canadian health care system)
2. The next paragraph should be designed to give readers a sense of the range of activities or responsibilities a _____ may have in their occupation.
3. The final paragraph should describe the setting in which a _____ may practice.

Professional Description



In addition to the description, we ask that you review the following information for your profession that was presented in CIHI's *Health Personnel Trends in Canada, 1993–2002* publication.

| Number of Years | Education and/or Training Required* to Enter Practice in Canada |
|-----------------|---|
| | |
| | |

1. The duration of education and training required after high school for entry into the _____ profession is shown above. If there have been any changes in education and/or training requirements please indicate these changes in the space below.

2. Is there a change in entry to practice requirements anticipated within the next 5 years?

3. Listed below are possible areas of certified specialization for _____. If there have been any changes please indicate in the space below.



The following question is designed to further understand what is required to practice as a _____ in Canada.

- 4. Is there a provincial and/or national competency exam that candidates must pass to be certified/licensed in order to practice as a _____? Please indicate any difference between provinces.

Part B—Research Activities

Listed are references to key research documents relating to _____ that were previously recommended as reading for Health Human Resource planners. In the space provided beside each reference, please indicate with a “yes” if you would like the reference to be considered again in the next publication.

| Research Reports | Yes, please include in next publication |
|------------------|---|
| | |
| | |
| | |
| | |
| | |
| | |

Are there any other Health Human Resources research documents related to _____ that you would recommend Health Human Resource planners to review? In the space provided please list references that will be considered for inclusion in the publication. Preference will be given to reports that are cross-jurisdictional in nature. Depending on the number of references provided not all may be included in the publication. There will be no priority given to the order in which listed.



Include: Full Title/ Author/Publish Year/Location (URL or email address is available)

- 1.
- 2.
- 3.
- 4.
- 5.

Research in Progress

1. Listed below are key research activities that were underway two years ago that relate to Health Human Resources. Please provide an update to any activity that has occurred since this time.

| Research in Progress | Update |
|----------------------|--------|
| | |
| | |

Appendix D

Comparison of Health Professionals From Selected Data Sources, Canada, Selected Years

| | 1991 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Chiropractors | | | | | | | | | | | | | |
| (CC) HPDB—Registered ⁸ | 3,788 | 3,917 | 4,155 | 4,350 | 4,485 | 4,737 | 5,050 | 5,342 | 5,633 | 6,077 | 6,418 | 6,632 | 6,892 |
| (CC) Labour Force Survey (LFS) | 3,100 | 5,100 | 4,600 | 4,200 | 4,700 | 3,800 | 5,300 | 2,300 | 3,900 | 4,200 | 5,300 | 4,700 | 5,800 |
| CV for LFS Estimate | ng | ng | ng | ng | 18.8 | 22.1 | 17.7 | 20.8 | 19.9 | 18.4 | 18.4 | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 3,440 | | | | 3,630 | | | | | 5,230 | | | |
| (CC) In the Labour Force, Employed | 3,405 | | | | 3,525 | | | | | 5,035 | | | |
| Dental Hygienists | | | | | | | | | | | | | |
| (CC) HPDB—Registered ⁸ | 9,587 | 10,990 | 11,555 | 12,133 | 12,662 | 13,293 | 14,213 | 14,525 | 14,895 | 15,553 | 16,128 | 16,920 | 17,553 |
| (CC) Labour Force Survey (LFS) | 8,300 | 11,800 | 11,800 | 12,200 | 12,500 | 12,600 | 11,800 | 12,400 | 12,100 | 13,500 | 16,600 | 14,500 | 16,700 |
| CV for LFS Estimate | ng | ng | ng | ng | 11.5 | 11.1 | 12.1 | 10.5 | 11.4 | 11.2 | 10.6 | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 9,560 | | | | 11,315 | | | | | 14,250 | | | |
| (CC) In the Labour Force, Employed | 9,170 | | | | 10,945 | | | | | 13,815 | | | |
| Dentists | | | | | | | | | | | | | |
| (CC) HPDB—Active Registered ⁸ | 14,512 | 14,331 | 14,449 | 15,589 | 15,807 | 16,231 | 16,490 | 16,908 | 17,314 | 17,691 | 17,961 | 18,265 | 18,313 |
| (CC) Labour Force Survey (LFS) | 14,500 | 15,800 | 18,100 | 18,400 | 16,500 | 18,300 | 17,600 | 16,500 | 16,600 | 14,500 | 14,300 | 16,300 | 16,700 |
| CV for LFS Estimate | ng | ng | ng | ng | 10.9 | 10.4 | 10.2 | 10.3 | 11.0 | 11.6 | 10.5 | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 13,245 | | | | 15,770 | | | | | 18,105 | | | |
| (CC) In the Labour Force, Employed | 13,035 | | | | 15,615 | | | | | 17,830 | | | |
| Dietitians and Nutritionists | | | | | | | | | | | | | |
| (CC) HPDB—Complex ^{8,3} | 6,276 | 5,675 | 6,129 | 6,261 | 6,397 | 6,517 | 6,739 | 6,771 | 6,858 | 6,975 | 7,292 | 7,499 | 7,783 |
| (CC) Labour Force Survey (LFS) | 7,600 | 7,000 | 7,300 | 9,400 | 5,600 | 7,000 | 5,400 | 4,800 | 6,600 | 6,300 | 7,900 | 6,600 | 7,000 |
| CV for LFS Estimate | ng | ng | ng | ng | 15.3 | 12.7 | 12.5 | 15.3 | 16.1 | 13.6 | 15.7 | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 4,705 | | | | 6,765 | | | | | 8,705 | | | |
| (CC) In the Labour Force, Employed | 4,415 | | | | 6,445 | | | | | 8,380 | | | |
| Health Information Management Professionals | | | | | | | | | | | | | |
| HPDB—Voluntary Membership ⁸ | 3,326 | 3,483 | 3,475 | 3,303 | 3,143 | 2,965 | 2,835 | 2,591 | 2,522 | 2,412 | 2,406 | 2,412 | 2,461 |
| Labour Force Survey (LFS) ³ | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| CV for LFS Estimate | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Census ³ | | | | | | | | | | | | | |
| In the Labour Force | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| In the Labour Force, Employed | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Licensed Practical Nurses | | | | | | | | | | | | | |
| HPDB ⁷ | | | | | | | | | | | | | |
| (CC) Registered LPN | 83,855 | 82,598 | 82,453 | 81,017 | 78,639 | 76,830 | 73,751 | 72,983 | 72,905 | 73,306 | | | |
| Active Registered Employed LPN | | | | | | | | | | | 60,123 | 63,138 | 63,443 |
| (CC) Labour Force Survey (LFS) | 78,300 | 70,400 | 67,900 | 59,000 | 81,200 | 63,300 | 60,200 | 53,100 | 55,900 | 54,400 | 49,700 | 48,700 | 51,600 |
| CV for LFS Estimate | ng | ng | ng | ng | 3.8 | 4.3 | 4.6 | 4.7 | 4.5 | 4.7 | 5.0 | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 53,380 | | | | 39,895 | | | | | 47,165 | | | |
| (CC) In the Labour Force, Employed | 50,190 | | | | 38,375 | | | | | 45,555 | | | |
| Medical Laboratory Technologists | | | | | | | | | | | | | |
| (CC) HPDB—Complex ⁸ | 19,509 | 19,659 | 19,877 | 19,190 | 18,847 | 17,945 | 17,534 | 17,468 | 17,789 | 17,935 | 18,259 | 19,051 | 19,401 |
| (CC) Labour Force Survey (LFS) | 13,500 | 13,400 | 13,500 | 12,500 | 12,100 | 17,700 | 13,000 | 14,700 | 16,300 | 17,200 | 15,400 | 18,700 | 19,600 |
| CV for LFS Estimate | ng | ng | ng | ng | 10.1 | 9.0 | 9.8 | 9.9 | 10.4 | 9.7 | 9.8 | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 19,925 | | | | 18,225 | | | | | 18,475 | | | |
| (CC) In the Labour Force, Employed | 19,050 | | | | 17,490 | | | | | 18,005 | | | |

(table continued on next page)

Comparison of Health Professionals From Selected Data Sources, Canada, Selected Years (cont'd)

| | 1991 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Medical Physicians | | | | | | | | | | | | | |
| HPDB—Voluntary Membership | .. | 156 | 185 | 201 | 214 | 229 | 253 | 253 | 254 | 277 | 267 | 285 | 314 |
| Labour Force Survey (LFS) ⁵ | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| CV for LFS Estimate | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Census ⁵ | | | | | | | | | | | | | |
| In the Labour Force | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| In the Labour Force, Employed | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Medical Radiation Technologists | | | | | | | | | | | | | |
| (CC) HPDB—Complex ⁸ | 13,743 | 14,231 | 14,329 | 14,414 | 14,208 | 14,076 | 14,164 | 14,189 | 14,417 | 14,593 | 14,780 | 15,289 | 15,693 |
| (CC) Labour Force Survey (LFS) | 11,100 | 13,200 | 13,100 | 9,900 | 11,400 | 12,900 | 13,400 | 14,300 | 13,900 | 15,700 | 14,300 | 14,200 | 16,900 |
| CV for LFS Estimate | ng | ng | ng | ng | 11.4 | 11.8 | 10.2 | 9.8 | 9.8 | 9.7 | 10.8 | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 14,550 | | | | 13,400 | | | | | 14,275 | | | |
| (CC) In the Labour Force, Employed | 13,960 | | | | 13,035 | | | | | 13,955 | | | |
| Midwives | | | | | | | | | | | | | |
| (CC) HPDB—Complex ⁸ | 37 | 96 | 130 | 146 | 165 | 207 | 265 | 310 | 356 | 370 | 413 | 440 | 509 |
| (CC) Labour Force Survey (LFS) | .. | .. | .. | 2,200 | 3,100 | 2,000 | 2,200 | 3,600 | 4,600 | 3,900 | 6,500 | 5,300 | 6,200 |
| CV for LFS Estimate | .. | .. | ng | ng | 25.3 | 28.7 | 23.2 | 18.5 | 18.2 | 16.8 | 17.0 | ng | ng |
| Census ⁴ | | | | | | | | | | | | | |
| In the Labour Force | 3,445 | | | | 3,155 | | | | | 5,175 | | | |
| (CC) In the Labour Force, Employed | 3,165 | | | | 2,920 | | | | | 4,735 | | | |
| Occupational Therapists | | | | | | | | | | | | | |
| (CC) HPDB—Complex ⁸ | 5,369 | 6,702 | 6,522 | 7,023 | 7,235 | 7,545 | 7,882 | 8,353 | 8,948 | 9,434 | 9,783 | 10,462 | 10,984 |
| (CC) Labour Force Survey (LFS) | 5,700 | 4,300 | 5,800 | 4,600 | 5,900 | 7,600 | 10,500 | 6,700 | 7,400 | 9,900 | 8,900 | 9,400 | 12,000 |
| CV for LFS Estimate | ng | ng | ng | ng | 16.6 | 13.7 | 12.1 | 15.5 | 13.9 | 13.2 | 13.3 | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 5,825 | | | | 6,535 | | | | | 9,585 | | | |
| (CC) In the Labour Force, Employed | 5,470 | | | | 6,270 | | | | | 9,240 | | | |
| Optometrists | | | | | | | | | | | | | |
| (CC) HPDB—Active Registered ⁸ | 2,744 | 2,779 | 2,835 | 2,901 | 3,044 | 3,079 | 3,267 | 3,388 | 3,433 | 3,493 | 3,587 | 3,821 | 3,941 |
| (CC) Labour Force Survey (LFS) | 4,900 | 3,100 | 2,600 | 3,400 | 3,000 | 4,600 | 5,000 | 3,200 | 4,400 | 4,200 | 2,800 | 3,800 | 4,000 |
| CV for LFS Estimate | ng | ng | ng | ng | 22.9 | 20.1 | 20.0 | 20.3 | 22.3 | 24.5 | 19.3 | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 3,075 | | | | 3,395 | | | | | 3,725 | | | |
| (CC) In the Labour Force, Employed | 3,010 | | | | 3,360 | | | | | 3,660 | | | |
| Pharmacists | | | | | | | | | | | | | |
| (CC) HPDB—Active Registered ⁸ | 19,810 | 20,901 | 21,380 | 22,197 | 22,767 | 22,799 | 23,164 | 23,985 | 24,518 | 25,643 | 26,346 | 27,612 | 28,537 |
| (CC) Labour Force Survey (LFS) | 16,200 | 18,200 | 19,300 | 22,600 | 22,900 | 20,300 | 19,100 | 18,400 | 19,300 | 22,400 | 25,400 | 19,300 | 23,600 |
| CV for LFS Estimate | ng | ng | ng | ng | 8.7 | 8.9 | 10.0 | 8.8 | 9.4 | 9.4 | 8.1 | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 17,625 | | | | 20,625 | | | | | 23,895 | | | |
| (CC) In the Labour Force, Employed | 17,040 | | | | 20,165 | | | | | 23,380 | | | |
| Physicians | | | | | | | | | | | | | |
| Specialist Physicians | | | | | | | | | | | | | |
| HPDB ^{1,8} | | | | | | | | | | | | | |
| Including Residents | 29,451 | 30,745 | 31,547 | 31,699 | 32,033 | 32,248 | 32,824 | 33,310 | 33,818 | 34,111 | 34,477 | 34,320 | 35,156 |
| Excluding Residents | 24,858 | 25,733 | 26,276 | 26,352 | 26,719 | 27,115 | 27,644 | 28,130 | 28,690 | 28,919 | 29,154 | 28,792 | 29,326 |
| Labour Force Survey (LFS) | 22,900 | 24,300 | 28,500 | 26,500 | 25,100 | 24,800 | 26,600 | 27,400 | 23,700 | 25,100 | 27,500 | 31,100 | 32,200 |
| CV for LFS Estimate | ng | ng | ng | ng | 8.8 | 8.7 | 7.5 | 7.9 | 8.0 | 8.4 | 8.4 | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 18,315 | | | | 21,625 | | | | | 24,090 | | | |
| In the Labour Force, Employed | 18,005 | | | | 21,310 | | | | | 23,725 | | | |
| Family Medicine Physicians | | | | | | | | | | | | | |
| HPDB ^{1,8} | | | | | | | | | | | | | |
| Including Residents | 29,938 | 31,012 | 30,228 | 30,181 | 29,805 | 29,700 | 30,113 | 30,341 | 30,636 | 31,115 | 31,812 | 32,263 | 33,015 |
| Excluding Residents | 27,868 | 29,302 | 28,668 | 28,588 | 28,199 | 28,092 | 28,519 | 28,784 | 29,113 | 29,627 | 30,258 | 30,662 | 31,286 |
| Labour Force Survey (LFS) | 32,600 | 40,800 | 38,000 | 32,000 | 35,300 | 35,500 | 35,700 | 41,400 | 38,400 | 36,100 | 39,700 | 39,700 | 42,600 |
| CV for LFS Estimate | ng | ng | ng | ng | 7.1 | 7.0 | 7.6 | 7.0 | 6.7 | 7.2 | 7.6 | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 37,280 | | | | 37,720 | | | | | 41,435 | | | |
| In the Labour Force, Employed | 36,590 | | | | 37,285 | | | | | 40,860 | | | |
| Total—All Physicians | | | | | | | | | | | | | |
| HPDB ^{1,8} | | | | | | | | | | | | | |
| (CC) Including Residents | 59,389 | 61,757 | 61,775 | 61,880 | 61,838 | 61,948 | 62,937 | 63,651 | 64,454 | 65,226 | 66,289 | 66,583 | 68,171 |
| Excluding Residents | 52,726 | 55,035 | 54,944 | 54,940 | 54,918 | 55,207 | 56,163 | 56,914 | 57,803 | 58,546 | 59,412 | 59,454 | 60,612 |
| (CC) Labour Force Survey (LFS) | 55,500 | 65,100 | 66,500 | 58,500 | 60,400 | 60,300 | 62,300 | 68,800 | 62,100 | 61,200 | 67,200 | 70,800 | 74,800 |
| CV for LFS Estimate | ng | ng | ng | ng | ng | ng | ng | ng | ng | ng | ng | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 55,595 | | | | 59,345 | | | | | 65,525 | | | |
| (CC) In the Labour Force, Employed | 54,595 | | | | 58,595 | | | | | 64,585 | | | |

(table continued on next page)

Comparison of Health Professionals From Selected Data Sources, Canada, Selected Years (cont'd)

| | 1991 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|------------------|---------|---------|---------|----------|----------|----------|----------|----------|---------|---------|---------|---------|
| Physiotherapists | | | | | | | | | | | | | |
| (CC) HPDB—Active-Registered ⁸ | 10,827 | 12,018 | 12,402 | 12,551 | 12,697 | 13,107 | 13,574 | 13,906 | 14,462 | 14,471 | 15,008 | 15,715 | 15,607 |
| (CC) Labour Force Survey (LFS) | 11,300 | 13,700 | 15,700 | 17,100 | 14,900 | 19,100 | 15,000 | 14,600 | 16,000 | 16,700 | 17,600 | 18,100 | 19,100 |
| CV for LFS Estimate | ng | ng | ng | ng | 9.5 | 9.3 | 9.3 | 11.3 | 9.8 | 10.0 | 9.5 | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 11,025 | | | | 12,925 | | | | | 15,760 | | | |
| (CC) In the Labour Force, Employed | 10,555 | | | | 12,615 | | | | | 15,435 | | | |
| Psychologists | | | | | | | | | | | | | |
| (CC) HPDB—Active-Registered ⁸ | 9,276 | 9,917 | 10,699 | 11,043 | 11,236 | 11,476 | 11,884 | 12,221 | 12,684 | 12,936 | 13,583 | 14,228 | 14,695 |
| (CC) Labour Force Survey (LFS) | 11,100 | 11,400 | 12,900 | 11,800 | 10,600 | 13,500 | 12,500 | 14,800 | 13,000 | 15,900 | 14,300 | 15,100 | 15,700 |
| CV for LFS Estimate | ng | ng | ng | ng | 12.7 | 12.8 | 11.9 | 12.0 | 12.9 | 9.9 | 10.2 | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 10,155 | | | | 14,000 | | | | | 16,050 | | | |
| (CC) In the Labour Force, Employed | 9,815 | | | | 13,645 | | | | | 15,670 | | | |
| Registered Nurses | | | | | | | | | | | | | |
| HPDB ⁸ | | | | | | | | | | | | | |
| (CC) Active-Registered, Employed in RN | ng ¹⁰ | 235,738 | 234,502 | 232,249 | 228,570 | 228,713 | 227,814 | 228,534 | 232,566 | 231,512 | 230,957 | 241,342 | 246,575 |
| (CC) Labour Force Survey (LFS) ⁵ | 224,500 | 218,300 | 220,600 | 224,300 | 184,400 | 207,500 | 213,400 | 217,700 | 227,100 | 235,600 | 266,000 | 256,900 | 258,700 |
| CV for LFS Estimate | ng | ng | ng | ng | 10.9/2.9 | 10.0/2.6 | 11.3/2.6 | 11.3/2.6 | 10.6/2.6 | 9.8/2.7 | 9.6/2.5 | ng | ng |
| Census ⁶ | | | | | | | | | | | | | |
| In the Labour Force | 249,365 | | | | 246,805 | | | | | 241,920 | | | |
| (CC) In the Labour Force, Employed | 238,615 | | | | 238,395 | | | | | 235,705 | | | |
| Registered Psychiatric Nurses | | | | | | | | | | | | | |
| HPDB | | | | | | | | | | | | | |
| (CC) Registered | 5,826 | 5,903 | 5,853 | 5,861 | 5,646 | 5,582 | 5,522 | 5,450 | 5,416 | 5,416 | | | |
| Active-Registered, Employed in RPN | | | | | | | | | | | 5,132 | 5,107 | 5,121 |
| (CC) Labour Force Survey (LFS) ⁵ | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| CV for LFS Estimate | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Census ⁶ | | | | | | | | | | | | | |
| In the Labour Force | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| (CC) In the Labour Force, Employed | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Respiratory Therapists | | | | | | | | | | | | | |
| (CC) HPDB—Complex ^{8,9} | 4,430 | 4,877 | 5,428 | 5,471 | 5,670 | 5,588 | 6,356 | 6,258 | 6,366 | 6,484 | 6,572 | 6,980 | 7,274 |
| (CC) Labour Force Survey (LFS) | 5,700 | 5,800 | 3,800 | 5,300 | 4,600 | 5,800 | 6,000 | 5,100 | 5,700 | 4,800 | 6,300 | 7,400 | 8,100 |
| CV for LFS Estimate | ng | ng | ng | ng | 17.6 | 14.9 | 15.0 | 15.1 | 16.9 | 17.6 | 15.3 | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 4,530 | | | | 5,335 | | | | | 6,500 | | | |
| (CC) In the Labour Force, Employed | 4,335 | | | | 5,215 | | | | | 6,290 | | | |
| Social Workers | | | | | | | | | | | | | |
| (CC) HPDB—Complex ⁸ | 12,284 | 11,928 | 12,706 | 13,391 | 13,736 | 14,596 | 15,507 | 16,409 | 19,928 | 22,648 | 24,192 | 26,279 | 28,689 |
| (CC) Labour Force Survey (LFS) | 28,800 | 26,500 | 32,300 | 31,000 | 28,400 | 33,100 | 33,900 | 42,800 | 42,200 | 43,500 | 49,000 | 46,900 | 47,700 |
| CV for LFS Estimate | ng | ng | ng | ng | 6.8 | 6.3 | 6.3 | 6.4 | 6.0 | 5.7 | 5.7 | ng | ng |
| Census | | | | | | | | | | | | | |
| In the Labour Force | 32,045 | | | | 38,875 | | | | | 46,975 | | | |
| (CC) In the Labour Force, Employed | 29,910 | | | | 36,860 | | | | | 44,935 | | | |
| Total | | | | | | | | | | | | | |
| (CC) HPDB ^{6,8} | ng ¹⁰ | 524,017 | 527,179 | 527,667 | 523,649 | 524,269 | 526,113 | 530,651 | 542,942 | 549,763 | 542,823 | 565,363 | 579,181 |
| (CC) Labour Force Survey (LFS) | 500,100 | 503,100 | 515,800 | 504,200 | 479,100 | 507,400 | 504,400 | 510,200 | 522,500 | 540,000 | 581,000 | 571,400 | 598,000 |
| (CC) Census - In the Labour Force, Employed | 489,735 | .. | .. | .. | 503,470 | .. | .. | .. | .. | 546,210 | .. | .. | .. |

Sources: Health Personnel Database, CIHI; Census, Statistics Canada; Labour Force Survey, Statistics Canada.

(table continued on next page)

Notes:

- .. Information not available.
- ng Estimate not generated.
- CV Coefficient of variation; relate to year-specific Labour Force Survey estimates. $CV < 16.5$ indicates reliable estimate. $CV 16.5—33.3$ indicates estimate may be reliable but should be used with caution. Estimates associated with $CVs > 33.3$ are unreliable and are not reported. Please see Methodological Notes for details.
- CC Refers to “Common Comparable” health personnel group. CC groups reflect health personnel groups for which administrative (HPDB) and survey (both Labour Force Survey and Census) data are available for most years under comparison.
 1. Based on SMDB counts of “active” physicians and CAPER resident data. Please see Methodological Notes for details.
 2. Coefficients of variation (CV) are provided for the two component groups added together to provide the Labour Force Survey estimate for registered nurses used in this publication. The two groups are SOC category D111—Head Nurses and D112—Registered Nurses. The format in the table is: c.v.D111—Head Nurses /c.v.D112—Registered Nurses.
 3. HPDB data excludes nutritionists.
 4. Caution must be exercised when comparing Census data with HPDB data as Census midwife data are collected within a group of health professionals and therefore do not accurately reflect midwife data.
 5. Labour Force Survey and Census estimates for the health personnel group Medical Physicists were not generated. The Standard Occupational Classification (SOC 1991) classification C011—Physicists and Astronomers, was determined to be too broadly based to provide a reasonable comparison to HPDB data.
 6. Labour Force Survey (LFS) and Census counts for registered nurses include the 1991 SOC codes D111—Head Nurses and Supervisors + D112—Registered Nurses. The 1991 SOC D112 includes registered psychiatric nurses; as a result, LFS and Census estimates for the health personnel group registered psychiatric nurses are not available.
 7. Total includes: active registered, employed (2002) and registered (1991;1993–2001) licensed practical nurses; active registered employed (2002) and active registered (1991;1993–2001) registered psychiatric nurses; total physicians, including residents. Total was not generated for 1991 because of missing registered nurses data.
 8. Categorization of data (e.g. registered) identifies general description and users are cautioned that data content varies by year, and may include both registered (membership with a specific data provider is required as a condition of practise), voluntary membership data (mandatory registration with the data provider is not a condition of practise) and estimates; data are useful for some purposes but should be used within the limitations noted (see Methodological Notes as well as notes accompanying personnel-specific sections of the publication). Designation as “complex” indicates personnel groups where particular attention is required.
 9. Data for Prince Edward Island and Nova Scotia are not available in 1991.
 10. RNDB publications report 170, 273 registered nurses (RNs) employed in nursing in Canada in 1991 (Quebec did not report employment status and imputations were not completed); these data undercount the number of RNs employed in nursing at the national level in 1991 and are not reported.

Appendix E

Total Number and Percent Increase/Decrease Between 1996 and 2001, Selected Supply Data for Health Personnel in Canada, 1996 and 2001

| HPDB Health Personnel Group Format: General Title (Category) | Reference 1991 SOC Format: 1991 SOC Unit Group Code (2001 NOC-S Unit Code) Unit Group Title | Specificity Rating* | Percent Difference between HPDB and.. | | | | | | | | | | | | | | | |
|---|---|------------------------|---------------------------------------|---------|---------|---------|---------|---------|---------------------|---------|---------|------------------|----------|----------|---------------------|------|------------------|--|
| | | | HPDB ³ | | | | | | Census ⁴ | | | LFS ⁵ | | | Census ⁴ | | LFS ⁵ | |
| | | | 1996 | 2001 | % (-/+) | 1996 | 2001 | % (-/+) | 1996 | 2001 | % (-/+) | 1996 | 2001 | 1996 | 2001 | 1996 | 2001 | |
| Chiropractors | D022 (3122) Chiropractors | Good | 4,485 | 6,077 | 35.5 | 3,525 | 5,035 | 42.8 | 4,700 | 4,200 | -10.6 | 21.4 | 17.1 | -4.8 | 30.9 | | | |
| Dental Hygienists | D222 (3222) Dental Hygienists and Dental Therapists | Poor | 12,662 | 15,553 | 22.8 | 10,945 | 13,815 | 26.2 | 12,500 | 13,500 | 8.0 | 13.6 | 11.2 | 1.3 | 13.2 | | | |
| Dentists | D013 (3113) Dentists | Good | 15,807 | 17,691 | 11.9 | 15,615 | 17,830 | 14.2 | 16,500 | 14,500 | -12.1 | 1.2 | -0.8 | -4.4 | 18.0 | | | |
| Dietitians | D032 (3132) Dietitians and Nutritionists | Poor | 6,397 | 6,975 | 9.0 | 6,445 | 8,380 | 30.0 | 5,600 | 6,300 | 12.5 | -0.8 | -20.1 | 12.5 | 9.7 | | | |
| Licensed Practical Nurses | D233 (3233) Registered Nursing Assistants | Fair | 78,639 | 73,306 | -6.8 | 38,375 | 45,555 | 18.7 | 81,200 | 54,400 | -33.0 | 51.2 | 37.9 | -3.3 | 25.8 | | | |
| Medical Laboratory Technologists | D211 (3211) Medical Laboratory Technologists and Pathologists' Assistants | Poor | 18,847 | 17,935 | -4.8 | 17,490 | 18,005 | 2.9 | 12,100 | 17,200 | 42.1 | 7.2 | -0.4 | 35.8 | 4.1 | | | |
| Medical Radiation Technologists | D215 (3215) Medical Radiation Technologists | Poor | 14,208 | 14,593 | 2.7 | 13,035 | 13,955 | 7.1 | 11,400 | 15,700 | 37.7 | 8.3 | 4.4 | 19.8 | -7.6 | | | |
| Midwives | D232 (3232) Midwives and Practitioners of Natural Healing | Poor | 165 | 370 | 124.2 | 2,920 | 4,735 | 62.2 | 3,100 | 3,900 | 25.8 | -1,669.7 | -1,179.7 | -1,778.8 | -954.1 | | | |
| Occupational Therapists | D043 (3143) Occupational Therapists | Good | 7,235 | 9,434 | 30.4 | 6,270 | 9,240 | 47.4 | 5,900 | 9,900 | 67.8 | 13.3 | 2.1 | 18.5 | -4.9 | | | |
| Optometrists | D021 (3121) Optometrists | Good | 3,044 | 3,493 | 14.8 | 3,360 | 3,660 | 8.9 | 3,000 | 4,200 | 40.0 | -10.4 | -4.8 | 1.4 | -20.2 | | | |
| Pharmacists | D031 (3131) Pharmacists | Good | 22,767 | 25,643 | 12.6 | 20,165 | 23,380 | 15.9 | 22,900 | 22,400 | -2.2 | 11.4 | 8.8 | -0.6 | 12.6 | | | |
| Physicians ² | D012 (3112) General Practitioners and Family Physicians + D011 (3111) Specialist Physicians | Good | 61,838 | 65,226 | 5.5 | 58,595 | 64,585 | 10.2 | 60,400 | 61,200 | 1.3 | 5.2 | 1.0 | 2.3 | 6.2 | | | |
| Physiotherapists | D042 (3142) Physiotherapists | Good | 12,697 | 14,471 | 14.0 | 12,615 | 15,435 | 22.4 | 14,900 | 16,700 | 12.1 | 0.6 | -6.7 | -17.4 | -15.4 | | | |
| Psychologists | E021 (4151) Psychologists | Good | 11,236 | 12,936 | 15.1 | 13,645 | 15,670 | 14.8 | 10,600 | 15,900 | 50.0 | -21.4 | -21.1 | 5.7 | -22.9 | | | |
| Registered Nurses + | D111 (3151) Head Nurses and Supervisors + D112 (3152) Registered Nurses | Poor | 234,216 | 236,928 | 1.2 | 238,395 | 235,705 | -1.1 | 184,400 | 235,600 | 27.8 | -1.8 | 0.5 | 21.3 | 0.6 | | | |
| Registered Psychiatric Nurses ¹ | D214 (3214) Respiratory Therapists and Clinical Perfusionists | Poor | 5,670 | 6,484 | 14.4 | 5,215 | 6,290 | 20.6 | 4,600 | 4,800 | 4.3 | 8.0 | 3.0 | 18.9 | 26.0 | | | |
| Respiratory Therapists | E022 (4152) Social Workers | Good | 13,736 | 22,648 | 64.9 | 36,860 | 44,935 | 21.9 | 28,400 | 43,500 | 53.2 | -168.3 | -98.4 | -106.8 | -92.1 | | | |

Source: Health Personnel Database, CIHI; Census, Statistics Canada; Labour Force Survey, Statistics Canada.

Notes:

1. The occupation "registered psychiatric nurse" is categorized in the unit group D112—Registered Nurses.
2. Based on SMDB counts of active physicians and CAPER resident data. Please see Methodological Notes for details.
3. HPDB data may include voluntary membership data and/or estimates; users are cautioned to review personnel-specific sections of this publication (data tables and all related notes) as well as Methodological Notes before undertaking any analyses.
4. Census estimates reflect those employed in the labour force in Canada for each year.
5. Labour Force Survey estimates reflect those employed and unemployed in the labour force for each year.

* Specificity Rating—This indicator suggests how well the 1991 SOC Unit Group compares to HPDB Personnel Groups. This is a crude rating system designed by CIHI staff to judge the relative comparability of the 1991 SOC health occupations unit groups to health personnel groups included in HPDB; the rating should not be interpreted beyond this scope.

Good—Indicates 1991 SOC Unit Group describes only the individual HPDB personnel group and all example titles are related.

Fair—Indicates 1991 SOC Unit Group describes only the individual HPDB personnel group and < 5 example titles seem unrelated.

Poor—Indicates 1991 SOC Unit Group describes more than the HPDB personnel group and >5 example titles are unrelated.

Appendix F

Health Professions by Average Age and Gender, Selected Data Sources, 1991, 1996 and 2001

| Format: 1991 SOC Unit Group Code (2001 NOC-S Unit Code) Unit Group Title | Average Age | | | | | | % Women by Health Profession | | | | | |
|---|---------------------|------|------|----------------------------------|------|------|------------------------------|------|------|----------------------------------|---------------------|---------------------|
| | Census ¹ | | | Labour Force Survey ² | | | Census ¹ | | | Labour Force Survey ² | | |
| | 1991 | 1996 | 2001 | 1991 | 1996 | 2001 | 1991 | 1996 | 2001 | 1991 | 1996 | 2001 |
| D022(3122) Chiropractors | 40.6 | 41.2 | 40.6 | 40.9 | 42.6 | 38.5 | 16 % | 22 % | 28 % | - | - | - |
| D222(3222) Dental Hygienists and Dental Therapists | 32.2 | 34.1 | 36.2 | 31.1 | 33.0 | 37.2 | 96 % | 98 % | 98 % | - | - | - |
| D013(3113) Dentists | 42.0 | 42.8 | 44.3 | 43.1 | 43.1 | 42.9 | 15 % | 21 % | 27 % | 12 % ^{cv?} | 21 % ^{cv?} | 41 % ^{cv?} |
| D032(3132) Dietitians and Nutritionists | 35.2 | 38.4 | 40.5 | 38.8 | 37.4 | 41.1 | 95 % | 94 % | 93 % | - | - | - |
| D233(3233) Registered Nursing Assistants | 38.8 | 41.3 | 43.2 | 39.4 | 40.7 | 42.3 | 92 % | 93 % | 92 % | 92 % ^{cv?} | 95 % ^{cv?} | 93 % ^{cv?} |
| D211(3211) Medical Laboratory Technologists and Pathologists' Assistants | 36.6 | 39.0 | 41.4 | 36.8 | 39.1 | 42.8 | 80 % | 80 % | 81 % | 77 % ^{cv?} | 79 % ^{cv?} | 78 % ^{cv?} |
| D215(3215) Medical Radiation Technologists | 36.5 | 38.6 | 40.5 | 33.9 | 40.2 | 40.2 | 80 % | 79 % | 80 % | 83 % ^{cv?} | 84 % ^{cv?} | 75 % ^{cv?} |
| D232(3232) Midwives and Practitioners of Natural Healing | 41.8 | 43.4 | 44.4 | - | 41.3 | 45.9 | 59 % | 66 % | 75 % | - | - | - |
| D043(3143) Occupational Therapists | 34.5 | 35.6 | 36.3 | 35.0 | 34.7 | 37.4 | 89 % | 91 % | 90 % | - | - | - |
| D021(3121) Optometrists | 40.1 | 41.4 | 40.6 | 39.9 | 42.6 | 38.4 | 38 % | 42 % | 44 % | 43 % ^{cv?} | 50 % ^{cv?} | 64 % ^{cv?} |
| D031(3131) Pharmacists | 38.7 | 39.4 | 40.6 | 38.3 | 39.2 | 40.2 | 52 % | 56 % | 57 % | 58 % ^{cv?} | 55 % ^{cv?} | 67 % ^{cv?} |
| (D012 + D011) Physicians | ng | ng | ng | ng | ng | ng | ng | ng | ng | ng | ng | ng |
| D012(3112) General Practitioners and Family Physicians | 42.3 | 44.2 | 45.3 | 43.1 | 41.7 | 42.3 | 27 % | 30 % | 34 % | 31 % | 29 % | 35 % |
| D011(3111) Specialist Physicians | 44.3 | 45.0 | 45.7 | 44.3 | 43.8 | 44.2 | 23 % | 28 % | 31 % | 22 % | 32 % | 34 % |
| D042(3142) Physiotherapists | 36.3 | 38.0 | 39.0 | 38.3 | 37.2 | 37.9 | 85 % | 82 % | 79 % | 81 % ^{cv?} | 82 % ^{cv?} | 81 % ^{cv?} |
| E021(4151) Psychologists | 40.5 | 42.8 | 45.3 | 39.8 | 41.0 | 44.4 | 59 % | 62 % | 67 % | 47 % ^{cv?} | 69 % ^{cv?} | 72 % ^{cv?} |
| (D111 + D112) Registered Nurses | ng | ng | ng | ng | ng | ng | ng | ng | ng | ng | ng | ng |
| D111(3151) Head Nurses and Supervisors | 42.6 | 44.7 | 45.2 | 44.0 | 43.5 | 44.8 | 93 % | 93 % | 93 % | - | - | - |
| D112(3152) Registered Nurses | 38.8 | 41.2 | 42.9 | 38.1 | 40.0 | 42.6 | 95 % | 95 % | 94 % | 95 % | 95 % | 94 % |
| D214(3214) Respiratory Therapists and Clinical Perfusionists | 33.0 | 35.2 | 36.6 | 32.8 | 33.1 | 33.8 | 64 % | 66 % | 65 % | 68 % ^{cv?} | 74 % ^{cv?} | 75 % ^{cv?} |
| E022(4152) Social Workers | 37.8 | 39.7 | 40.9 | 37.6 | 39.5 | 41.5 | 74 % | 76 % | 79 % | 77 % ^{cv?} | 76 % ^{cv?} | 80 % ^{cv?} |

Source: Labour Force Survey, Statistics Canada; Census, Statistics Canada.

Notes

ng Estimate not generated.

^{cv?} The coefficient of variation indicates that this Labour Force Survey estimate is potentially useful for some purposes but may be unreliable (coefficients of variation relate to year-specific Labour Force Survey estimates; please see Methodological Notes for details).

- The coefficient of variation indicates that this Labour Force Survey estimate is unreliable (Coefficients of variation relate to year-specific Labour Force Survey estimates; please see Methodological Notes for details).

1. Census estimates reflect those employed in the labour force in Canada for each year.
2. Labour Force Survey estimates reflect those employed and unemployed in the labour force for each year.



Appendix G

1991 Standard Occupational Classification Codes

A3—OTHER MANAGERS

A32—Managers in health, education, social and community services

A321—Managers in health care

C0—PROFESSIONAL OCCUPATIONS IN NATURAL AND APPLIED SCIENCES

C01—Physical Science Professionals

C011—Physicists and Astronomers

D0—PROFESSIONAL OCCUPATIONS IN HEALTH

D01—PHYSICIANS, DENTISTS AND VETERINARIANS

D011—Specialist Physicians

D012—General Practitioners and Family Physicians

D013—Dentists

D014—Veterinarians

D02—OPTOMETRISTS, CHIROPRACTORS AND OTHER HEALTH DIAGNOSING AND TREATING PROFESSIONALS

D021—Optometrists

D022—Chiropractors

D023—Other Professional Occupations in Health Diagnosing and Treating

D03—PHARMACISTS, DIETITIANS AND NUTRITIONISTS

D031—Pharmacists

D032—Dietitians and Nutritionists

D04—THERAPY AND ASSESSMENT PROFESSIONALS

D041—Audiologists and Speech-Language Pathologists

D042—Physiotherapists

D043—Occupational Therapists

D044—Other Professional Occupations in Therapy and Assessment

D1—NURSE SUPERVISORS AND REGISTERED NURSES

D11—NURSE SUPERVISORS AND REGISTERED NURSES

D111—Head Nurses and Supervisors

D112—Registered Nurses

D2—TECHNICAL AND RELATED OCCUPATIONS IN HEALTH

D21—MEDICAL TECHNOLOGISTS AND TECHNICIANS (EXCEPT DENTAL HEALTH)

- D211—Medical Laboratory Technologists and Pathologists' Assistants
- D212—Medical Laboratory Technicians
- D213—Animal Health Technologists
- D214—Respiratory Therapists and Clinical Perfusionists
- D215—Medical Radiation Technologists
- D216—Medical Sonographers
- D217—Cardiology Technologists
- D218—Electroencephalographic and Other Diagnostic Technologists, n.e.c.
- D219—Other Medical Technologists and Technicians (except Dental Health)

D22—TECHNICAL OCCUPATIONS IN DENTAL HEALTH CARE

- D221—Denturists
- D222—Dental Hygienists and Dental Therapists
- D223—Dental Technicians and Laboratory Bench Workers

D23—OTHER TECHNICAL OCCUPATIONS IN HEALTH CARE (EXCEPT DENTAL)

- D231—Opticians
- D232—Midwives and Practitioners of Natural Healing
- D233—Registered Nursing Assistants
- D234—Ambulance Attendants and Other Paramedical Occupations
- D235—Other Technical Occupations in Therapy and Assessment

D3—ASSISTING OCCUPATIONS IN SUPPORT OF HEALTH SERVICES

D31—ASSISTING OCCUPATIONS IN SUPPORT OF HEALTH SERVICES

- D311—Dental Assistants
- D312—Nurse Aides and Orderlies
- D313—Other Aides and Assistants in Support of Health Services

E0—Judges, lawyers, psychologists, social workers, ministers of religion, and policy and program officers

E02—Psychologists, social workers, counsellors, clergy and probation officers

- E021—Psychologists
- E022—Social workers

