PHARMACISTS

Workforce Trends of Pharmacists for Selected Provinces and Territories in Canada, 2007

Health Human Resources

Canadian Institute for Health Information
Institut canadien d'information sur la santé

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Preface

The Canadian Institute for Health Information (CIHI) collects and analyzes information on health and health care in Canada and makes it publicly available. Canada's federal, provincial and territorial governments created CIHI as a not-for-profit, independent organization dedicated to forging a common approach to Canadian health information. CIHI's goal: to provide timely, accurate and comparable information. CIHI's data and reports inform health policies, support the effective delivery of health services and raise awareness among Canadians of the factors that contribute to good health.

To fulfill this mandate, CIHI coordinates and promotes national health information standards and health indicators, develops and manages health databases and registries, funds and facilitates population health research and analysis, coordinates and develops education sessions and conferences, and produces and disseminates health information research and analysis. The Pharmacist Database (PDB) is one of the health databases developed and maintained by CIHI.

The Health Human Resources team at CIHI compiled this second edition of *Workforce Trends of Pharmacists for Selected Provinces and Territories in Canada*. This report contains information on the supply, demographics, geographic distribution, education and employment of pharmacists in Canada. This annual publication is an important source of information for effective human resource planning and management in the Canadian health care system. For 2007, a total of 10 provinces and territories participated in the PDB. Data were not available for Quebec, Manitoba and Nunavut.

Any questions or requests regarding this publication or the PDB should be directed to:

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- Canadian Association of Chain Drug Stores
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- Canadian Society of Hospital Pharmacists
- College of Pharmacists of British Columbia
- Government of the Northwest Territories
- Manitoba Pharmaceutical Association
- National Association of Pharmacy Regulatory Authorities
- New Brunswick Pharmaceutical Society
- Newfoundland and Labrador Pharmacy Board
- Nova Scotia College of Pharmacists
- Ontario College of Pharmacists
- Ordre des pharmaciens du Québec
- Prince Edward Island Pharmacy Board
- Saskatchewan College of Pharmacists
- Yukon Government

Please note that the analyses and conclusions in the present document do not necessarily reflect those of the individuals or organizations mentioned above.

Production of this material has been made possible through a financial contribution from Health Canada. The views expressed herein do not necessarily represent the views of Health Canada.We wish to extend our thanks and gratitude to all pharmacists caring for and improving the lives of Canadians.

Introduction

In order to determine the number of health professionals required in any jurisdiction, it is necessary to understand the current supply and how that supply is changing. The Pharmacist Database (PDB) is used by all levels of government, as well as researchers, stakeholders and advocacy groups, private and public organizations, media and pharmacists, as a source of data on the size of the pharmacist workforce in Canada. The information contained in the PDB is key to effective human resource planning in the health care sector.

The Health Human Resources team of the Canadian Institute for Health Information (CIHI) is pleased to present *Workforce Trends of Pharmacists for Selected Provinces and Territories in Canada, 2007.* This report is a continuation of a data series compiled from administrative sources beginning in 2006, and will eventually provide a useful historical perspective on the supply and distribution of pharmacists throughout Canada. This edition will include a data analysis section for 2006–2007 and a comprehensive section of methodological notes.

In addition, CIHI is engaged in the development of four other new databases to further illustrate human resources in the Canadian health care system: occupational therapists, physiotherapists, medical laboratory technologists and medical radiation technologists. These new databases will complement existing information gathered by CIHI on physicians and nurses in Canada.

We hope that this report will prove to be a useful foundation for those involved in human resources planning for pharmacists throughout Canada.

Highlights

Demographics

- Pharmacists in selected provinces/territories were mostly female. Nova Scotia had the highest proportion of female pharmacists (68.7%), while Newfoundland and Labrador had the lowest (48.1%).

Geographical Distribution

- Most pharmacists worked in urban areas in the selected provinces/territories; the highest proportion employed in urban areas was in the province of Ontario (93.0%).

Education

- More than 92.3% of the pharmacists within the participating jurisdictions had a baccalaureate degree as their current academic credential in pharmacy.

Employment

- The majority of pharmacists within the participating jurisdictions were permanent employees (more than 77.6%), most of whom were employed as staff pharmacists (more than 61.4%) and worked for one employer (more than 74.4%) within a community pharmacy setting (more than 75.2%).

Data Analysis

Methodological Overview

The data and information presented in this publication are from the Pharmacist Database (PDB) and the Health Personnel Database (HPDB). Both databases are maintained by the Canadian Institute for Health Information (CIHI). The PDB provides detailed supply-based information at both the provincial and national levels. In 2006 and 2007, some jurisdictions were unable to participate in the PDB; thus data from the HPDB have been inserted to provide an estimation of the supply in these provinces/territories only. For 1997 to 2005, the HPDB was also the source for the graduate data across Canadian universities.

Since 1973, pharmacists in Canada have been regulated and licensed across all provincial regulatory authorities and territorial governments. They are required to complete registration forms which typically contain details with respect to personal information, educational credentials and employment history. These administrative data are useful for informed human resource planning and management in Canada. They also provide a unique opportunity to examine aggregate information essential for identifying the impact of changes in the supply of pharmacists on future health human resources planning.

In consultation with provincial regulatory authorities, territorial governments and other stakeholders, CIHI developed a standardized set of data elements to capture supply-based information on the pharmacist workforce in Canada. They cover demographic, geographic and distribution characteristics, as well as educational and employment details. From this consultation, a data dictionary containing specific information on the development process, data elements and associated values, as well as definitions and the rationale for collection, was created. The *Pharmacist Database Data Dictionary* may be downloaded from the CIHI website at www.cihi.ca.

The provincial regulatory authorities and territorial governments participating in the PDB are the primary collectors of data compiled in the CIHI database. Therefore, the data collected on the annual registration form and submitted to CIHI for the PDB are the property of the respective regulatory authorities and territorial governments.

Under an agreement with CIHI, a portion of this information is submitted to CIHI once each year. CIHI and the respective regulatory authority jointly review the new data and apply rigorous principles of data quality assurance. Once this process is completed, CIHI adds the new data to the PDB for analysis and reporting. Over time, this information will provide a historical record of the changes in the number of pharmacists on a year-to-year basis.

The Methodological Notes provide additional details on the review process and data considerations. It is important for readers to understand how the data are collected, reviewed and reported by CIHI since the statistics reported by CIHI will differ from those reported by the regulatory authorities and territorial governments, and because differences in the registration forms can affect the results and subsequent interpretation of the data. CIHI has made every effort to highlight and explain these data considerations.

Please send any questions regarding the methodology to pdb@cihi.ca.

Notes to Readers

1. Data for the 2007 pharmacist workforce in Quebec, Manitoba and Nunavut were not available for this publication.

2. Aggregate data for selected data elements for the New Brunswick workforce were provided by the New Brunswick Pharmaceutical Society as of July 2, 2008.

3. Due to small cell sizes in the territories, the results for pharmacists in the Yukon and Northwest Territories may have been grouped together for some of the analyses found in this publication.

4. The term "pharmacist workforce" is used in this publication and accompanying documents to include active registered pharmacists who were employed at the time of annual registration.

5. The provincial and territorial statistics from the PDB have been reviewed and validated for use by representatives at the provincial regulatory authorities and territorial governments responsible for the regulation and licensure of pharmacists in Canada.

6. CIHI figures on pharmacists will not be exactly the same as figures published by provincial regulatory authorities and territorial governments for pharmacists for the following reasons:

   a. **Collection period**—the statistics typically released by provincial regulatory authorities and territorial governments include all registrations received during the 12-month registration period. In contrast, CIHI collects data as of October 1 of the data collection year. Because of different registration periods, and in consultation with provincial regulatory authorities and territorial governments, point-in-time data collection was established to ensure that information collected is timely and comprehensive.

   b. **Reference population**—these data reflect the number of active registrations received during the registration year and represent the number of pharmacists deemed eligible to work in the particular jurisdiction in the given year. Specifically, active registration includes those registration categories that authorize a registrant, based on the assessment and issuance by a regulatory authority, to engage in professional practice, as defined by the relevant laws, regulations and/or policies associated with a specific jurisdiction. Information on inactive registrants is not submitted to CIHI.

   c. **Exclusions from CIHI data**— for this publication, CIHI includes only those pharmacists who are **employed in the profession of pharmacy**. CIHI does not include registrants who are not employed in the profession of pharmacy, are unemployed or for whom employment status information is missing or unknown.

   d. **Other exclusions from CIHI data**—CIHI statistics do not necessarily include pharmacists who are on leave (such as maternity/paternity leave) as of October 1 of the data collection year.

   e. **CIHI editing and processing**—the CIHI database is not simply an amalgamation of provincial regulatory authority and territorial government data. When data files

are submitted, CIHI attempts to remove those records for pharmacists who may be registered with more than one jurisdiction. For example, where a pharmacist has employment in both Alberta and British Columbia, she or he is required to register with both colleges. These registrants are called secondary registrations or interprovincial duplicates. This duplicate information is removed by CIHI according to the methodology described in the Methodological Notes section of this publication in order to avoid double-counting and to more accurately reflect the primary jurisdiction of employment.

f. **Data quality processes**—some jurisdictions perform their data quality review at the end of their registration period. As CIHI receives the data in October of the data collection year, it is possible that some of the data-quality activities of some jurisdictions have not yet been completed. As a result, at the time of data submission, a jurisdiction may have records for which the information is unknown for some data elements. Although every reasonable effort is made to acquire the information at the time of data submission, the correction may not be reflected in the CIHI database.

7. CIHI and the provincial regulatory authorities and territorial governments are continually working to improve data quality; such changes may impact the comparability of historical data in the future.

8. The results in this report do not include data for which responses are unknown. Unless otherwise specified, the unknown responses were removed from the analysis and are not included in the total. Since the data presented in this publication are self-reported, higher-than-expected unknown values may occur where a substantial portion of pharmacists chose not to complete all fields on the annual registration form. More detailed information on the missing values reported to the PDB can be found in the Methodological Notes section of this report.

The Profession of Pharmacy

What Is a Pharmacist?

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

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 each patient's/client's disease state;
- Setting therapeutic goals with patients/clients;
- Reviewing prescriptions for appropriate therapy;
- Educating patients and other health care professionals on the administration, uses and effects of medication, drug incompatibilities and contraindications;
- Advising patients/clients on selection and use of non-prescription medication;
- 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;
- Coordinating clinical investigations of new drugs;
- Controlling the quality of drug products during production;
- Developing informational materials on the uses and properties of particular drugs;
- Providing information services about drug products and pharmacotherapy; and
- Evaluating the labelling, packaging and advertising of drug products.

Pharmacists supervise and may also perform technical tasks such as compounding and/or dispensing pharmaceutical products, maintaining medication profiles of patients and registries of poisons, narcotics and controlled drugs, ensuring proper storage of vaccines, serums, biologicals and other pharmaceutical products, and ordering/maintaining a stock of pharmaceutical supplies.

Practice Setting

In general, pharmacists specialize as community, institutional, government or industrial practitioners. 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 health care institutions. Government pharmacists work in areas such as drug plan management, regulatory and professional affairs and research, while industrial pharmacists participate in the research, development, manufacturing and sales of pharmaceutical products.

The Pharmacist Database

Defining the Pharmacist Workforce in Canada

In this CIHI publication, "pharmacist workforce" is defined as the total number of pharmacists holding active registrations in Canada who are employed in the profession of pharmacy and are not considered secondary registrations or interprovincial duplicates. For more detailed information on the inclusion and exclusion criteria, please see the Methodological Notes section.

Total Active Registrations in Selected Provinces and Territories in Canada

Provincial regulatory authorities and territorial governments provided data to CIHI for the PDB for those pharmacists who held an active membership for 2007. This includes those specific membership categories authorizing a member as eligible to work in the particular jurisdiction in the particular year. As this report focuses on the pharmacist workforce in Canada, only those pharmacists who are employed in pharmacy are included in the analyses of PDB data found in this report.

In 2007, a total of 22,373 records of active registrations were submitted by the participating provincial regulatory authorities and territorial governments to CIHI.

Secondary Registrations

As indicated in Table 1 below, CIHI identified and removed secondary registrations/ interprovincial duplicates, which total 631 pharmacists (2.8%), of which 27.9% were registered in Ontario, 26.0% in British Columbia and 19.2% in Alberta.[i] This group includes pharmacists who maintain provincial/territorial registration while living outside of Canada or whose province/territory of residence and/or province/territory of primary employment is in a Canadian jurisdiction that is different from the province/territory of registration (see Appendix A). These registrations are excluded from the analysis contained in this report in order to minimize double-counting and to report more accurate head counts. A detailed explanation of the secondary registration methodology can be found in the Methodological Notes section of this publication.

Table 1 Number and Composition of Pharmacist Workforce by Selected Province or Territory of Registration, 2007

	Records Submitted by Jurisdiction	Remove Employed in Other Than Profession of Pharmacy and Unemployed, and Remove Employment Status Unknown	Identify and Remove Secondary Registrations	Total
N.L.[‡]	613	0	21	592
P.E.I.	166	3	8	155
N.S.	1,139	92	45	1,002
N.B.[†, ‡]	684	0	16	668
Ont.	10,648	693	176	9,779
Sask.	1,303	90	71	1,142
Alta.	3,738	173	121	3,444
B.C.	4,021	422	164	3,435
Y.T.	39	0	9	30
N.W.T.	22	0	0	22
Total	**22,373**	**1,473**	**631**	**20,269**

Notes

† Aggregate data for the New Brunswick pharmacists presented in this table were provided by the New Brunswick Pharmaceutical Society, which reports the number of active registered pharmacists. Therefore, the data for New Brunswick may include different membership categories for registrants.

‡ Data for all pharmacists submitted by the Newfoundland and Labrador Pharmacy Board and the New Brunswick Pharmaceutical Society were included as *employed in the profession of pharmacy*, as *employment status* was not available.

Totals include data from Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Saskatchewan, Alberta, British Columbia, the Yukon and the Northwest Territories.

Data from Quebec, Manitoba and Nunavut were not available.

CIHI data will differ from data from provincial regulatory authorities and territorial governments due to the CIHI collection, processing and reporting methodology. Please review the Methodological Notes for more comprehensive information regarding the collection and comparability of PDB data.

Sources

Pharmacist Database, Canadian Institute for Health Information, and the New Brunswick Pharmaceutical Society.

i. These findings do not include all pharmacists currently outside the country. Only those pharmacists choosing to maintain their Canadian registration while abroad are included.

Employed Pharmacists

Of the primary registrations, 93.2% (20,269) were employed in the profession of pharmacy (Table 2) and the remainder was employed in a profession other than pharmacy (0.5%), unemployed (3.5%) or employment status was unknown (2.7%).

Table 2 Number of Pharmacists by Employment Status for Selected Provinces and Territories, 2006–2007

	2006		2007	
Employment Status	**Count**	**Percent**	**Count**	**Percent**
Employed in the Profession of Pharmacy	17,664	89.3	20,269	93.2
Employed in Other Than the Profession of Pharmacy, Seeking Employment in the Profession of Pharmacy	17	0.1	44	0.2
Employed in Other Than the Profession of Pharmacy, Not Seeking Employment in the Profession of Pharmacy	31	0.2	72	0.3
Unemployed and Seeking Employment in the Profession of Pharmacy	822	4.2	745	3.4
Unemployed and Not Seeking Employment in the Profession of Pharmacy	26	0.1	25	0.1
Unknown	1,226	6.2	587	2.7
Total	**19,786‡**	**100.0**	**21,742†**	**100.0**

Notes

† Total for 2007 includes data from Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Saskatchewan, Alberta, British Columbia, the Yukon and the Northwest Territories. Data from Quebec, Manitoba and Nunavut were not available.

‡ Total for 2006 includes data from Prince Edward Island, Nova Scotia, Ontario, Saskatchewan, Alberta, British Columbia, the Yukon and the Northwest Territories. Data from Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut were not available.

For 2007 only, aggregate data for the New Brunswick pharmacists presented in this table were provided by the New Brunswick Pharmaceutical Society, which reports the number of active registered pharmacists. Therefore, the data for New Brunswick may include different membership categories for registrants.

For 2007 only, data for all pharmacists submitted by the Newfoundland and Labrador Pharmacy Board and the New Brunswick Pharmaceutical Society were included as *employed in the profession of pharmacy*, as *employment status* was not available.

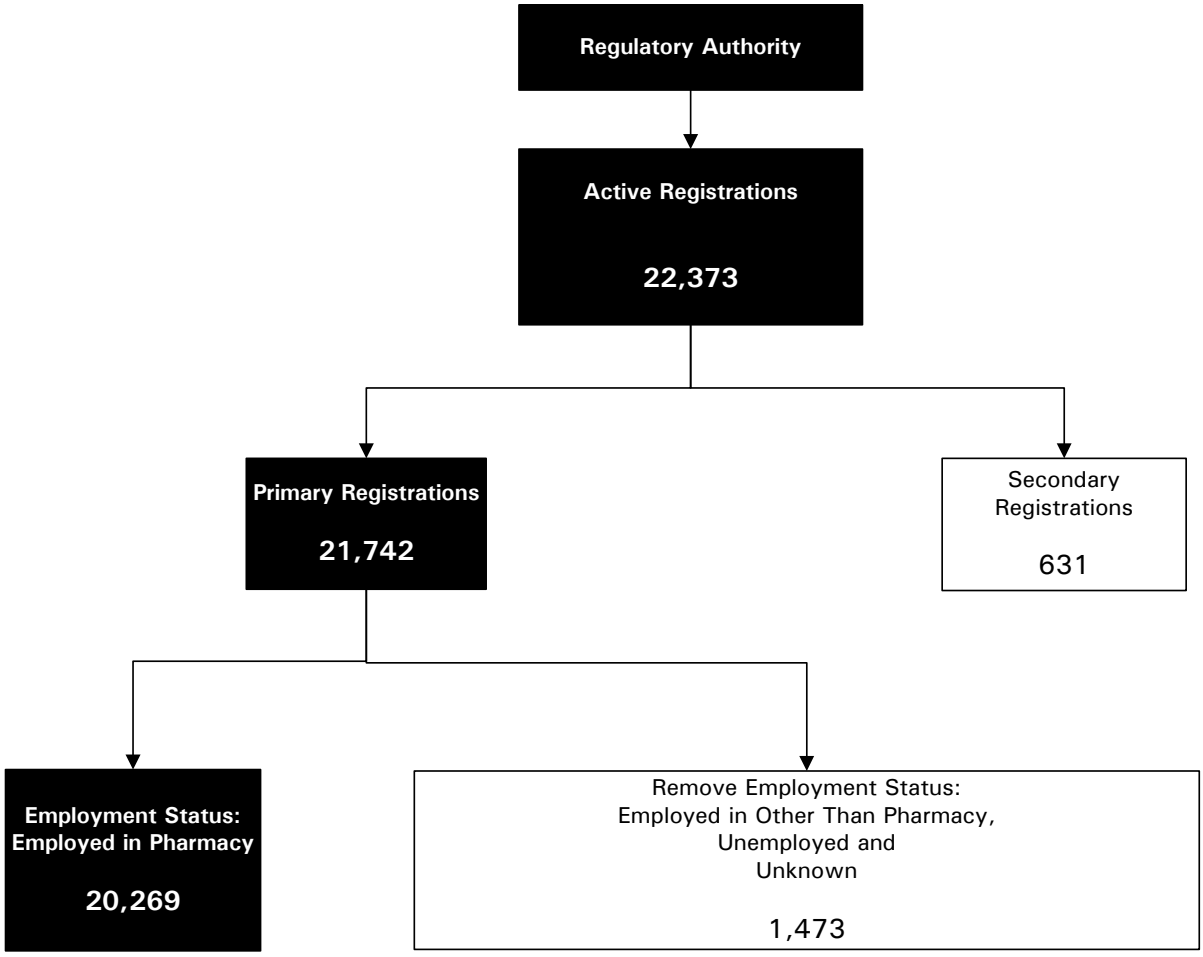
The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

Sources

Pharmacist Database, Canadian Institute for Health Information, and the New Brunswick Pharmaceutical Society.

To summarize, of the 22,373 records submitted by the provincial regulatory authorities and territorial governments, 2,104 were excluded (631 secondary registrations and 1,473 not employed in the profession of pharmacy or unknown employment status), yielding a total of 20,269 records that represent the pharmacist workforce in Canada for 2007 (see Figure 1).

Figure 1 Defining the CIHI PDB Pharmacist Workforce in Selected Provinces and Territories, 2007



Sources
Pharmacist Database, Canadian Institute for Health Information, and the New Brunswick Pharmaceutical Society.

Supply of the Pharmacist Workforce

In 2007, according to the CIHI Pharmacist and Health Personnel databases, there were a total of 28,495 pharmacists employed in the profession in Canada, which represented positive growth from 2006 to 2007 (see Table 3).

Table 3 Number of Pharmacists by Province or Territory of Registration, Canada, 2006–2007

	2006	2007
N.L.	585‡	592
P.E.I.	141	155
N.S.†	788	1,002
N.B.	625‡	668
Que.	6,790‡	7,057§
Ont.	9,309	9,779
Man.	1,155‡	1,152§
Sask.	1,027	1,142
Alta.	3,197	3,444
B.C.	3,151	3,435
Y.T.	29	30
N.W.T.	22	22
Nun.	16‡	17§
Total	**26,835**	**28,495**

Notes

† The increase in supply in Nova Scotia may be partially attributed to an improvement in data quality. In 2007, 90.3% of pharmacists reported their *employment status*, which represents an increase of 18.3% over 2006.

‡ Data from the CIHI Health Personnel Database. The Quebec, Manitoba and Nunavut data for 2006 were taken from the Health Personnel Database, which reports the number of active registered pharmacists (2006 data as of March 31). Therefore, the data for Quebec, Manitoba and Nunavut may include different membership categories for registrants. The HPDB data in this table are useful for some purposes, but should be used within the limitations noted in the Methodological Notes section of *Canada's Health Care Providers, 1997 to 2006, A Reference Guide*.

§ Data as of January 1, 2007, from the National Association of Pharmacy Regulatory Authorities.

For 2007 only, aggregate data for the New Brunswick pharmacists presented in this table were provided by the New Brunswick Pharmaceutical Society, which reports the number of active registered pharmacists. Therefore, the data for New Brunswick may include different membership categories for registrants.

For 2007 only, data for all pharmacists submitted by the Newfoundland and Labrador Pharmacy Board and the New Brunswick Pharmaceutical Society were included as *employed in the profession of pharmacy*, as *employment status* was not available.

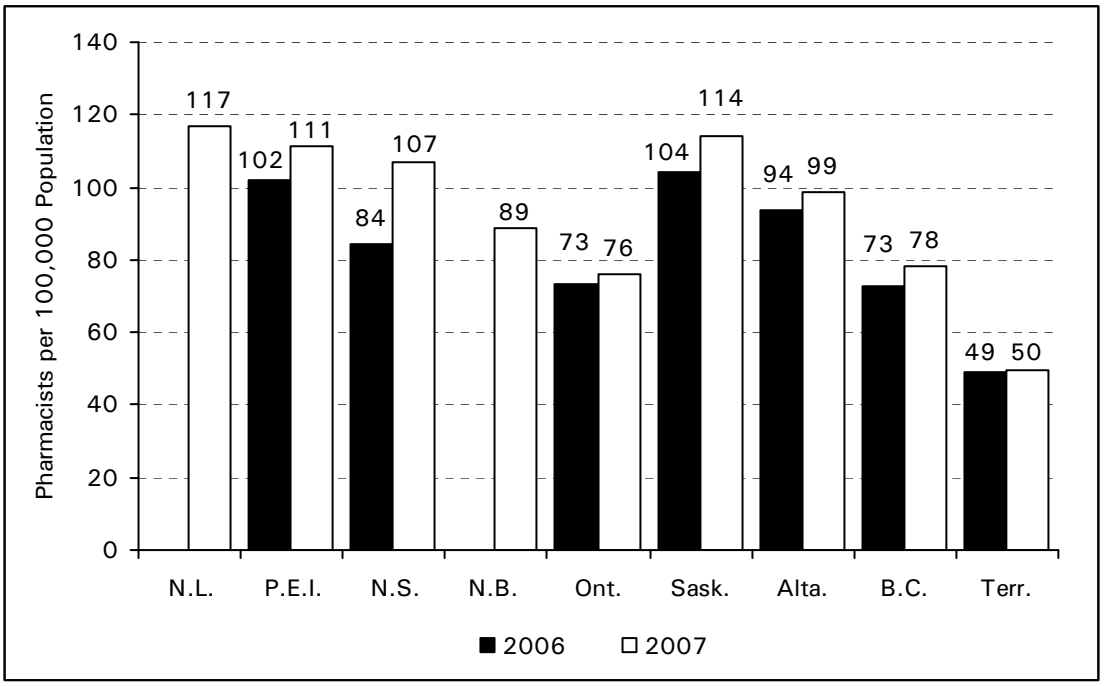
CIHI data will differ from provincial regulatory authority and territorial government statistics due to CIHI collection, processing and reporting methodology. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

Sources

Pharmacist Database and Health Personnel Database, Canadian Institute for Health Information, New Brunswick Pharmaceutical Society and the National Association of Pharmacy Regulatory Authorities.

Between 2006 and 2007, the rate of pharmacists per population across Canada increased in all participating jurisdictions with the exception of Newfoundland and Labrador and New Brunswick, where data were not available for 2006 (Figure 2). When provinces with larger populations were compared with those having smaller ones, Ontario (76 pharmacists per 100,000 population) and B.C. (78 pharmacists per 100,000 population) had lower ratios than smaller provinces such as Newfoundland and Labrador (117 pharmacists per 100,000 population) and P.E.I. (111 pharmacists per 100,000 population).

Figure 2 Number of Pharmacists per 100,000 Population by Selected Province or Territory of Registration, 2006–2007



Notes

"Terr." represents the Yukon and the Northwest Territories.
For 2006, data from Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut were not available.
For 2007, data from Quebec, Manitoba and Nunavut were not available.
For 2007 only, aggregate data for the New Brunswick pharmacists presented in this table were provided by the New Brunswick Pharmaceutical Society, which reports the number of active registered pharmacists. Therefore, the data for New Brunswick may include different membership categories for registrants.
For 2007 only, data for all pharmacists submitted by the Newfoundland and Labrador Pharmacy Board and the New Brunswick Pharmaceutical Society were included as *employed in the profession of pharmacy*, as *employment status* was not available.
CIHI data will differ from provincial regulatory authority and territorial government statistics due to the CIHI collection, processing and reporting methodology. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.
Population statistics are from Statistics Canada (Quarterly Demographic Estimates, Statistics Canada, catalogue no. 91-002-X).

Sources

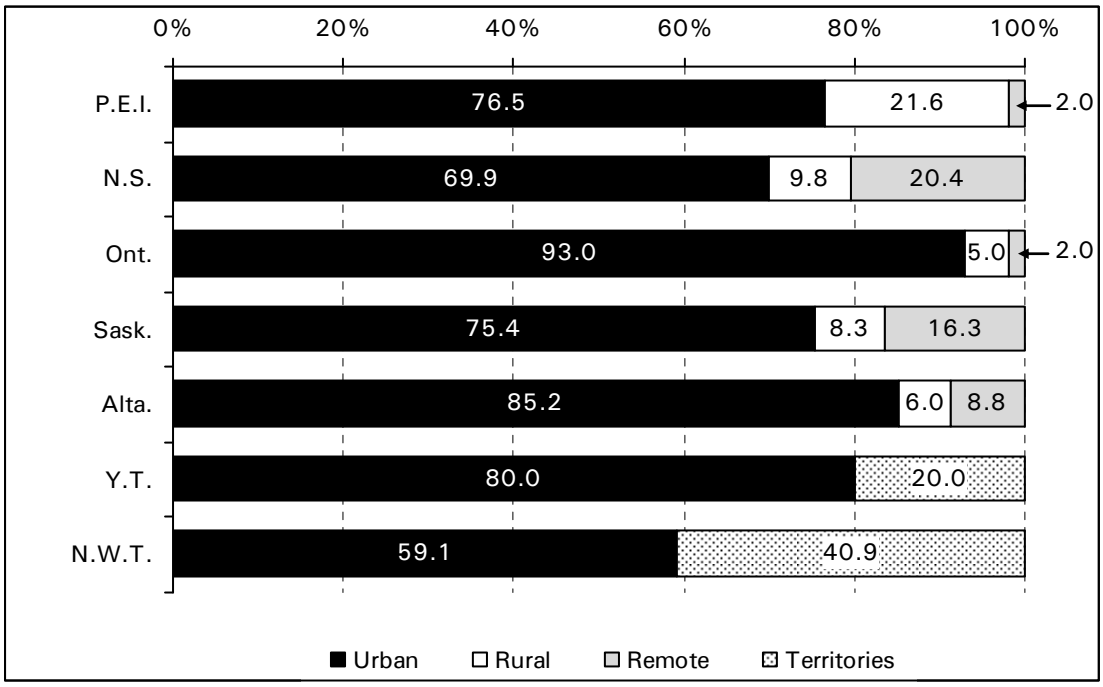
Pharmacist Database, Canadian Institute for Health Information; New Brunswick Pharmaceutical Society; and Demographic Estimates, Statistics Canada.

Geographic Distribution

Urban/Rural Distribution

Figure 3 below illustrates the variation in urban versus rural distribution of the pharmacist workforce in selected provinces and territories. Ontario had the highest proportion in urban areas (93.0%), while a greater percentage of the workforce in Nova Scotia and Saskatchewan was employed in rural or remote areas (30.2% and 24.6%, respectively). For this analysis, urban areas are defined as communities with populations greater than 10,000 persons, rural areas are relatively close to the urban areas and remote areas are those communities with relatively little social and economic interaction with urban areas. Territories denotes communities outside of Whitehorse or Yellowknife in the northern territories. For more information on this geographic classification scheme, please see the Methodological Notes section of this report.

Figure 3 Geographic Distribution of Pharmacist Workforce in Urban, Rural and Remote Regions by Selected Province or Territory of Registration, 2007



Notes

Data for Quebec, Manitoba and Nunavut were not available.
Findings do not include Newfoundland and Labrador and New Brunswick, as *postal code of primary employment* was not collected/submitted.
Data for British Columbia were removed due to high proportion of missing values.
Not stated and unknown responses were removed from the above analysis.
Not stated indicates that the *postal code for primary employment* was not provided.
Unknown indicates that the *postal code for primary employment* was provided but did not match with the Postal Code Conversion File (PCCF) from Statistics Canada.
Percentage unknown: P.E.I. (2, 1.3%), Nova Scotia (5, 0.6%), Ontario (94, 1.0%), Saskatchewan (2, 0.2%).
Percentage not stated: Nova Scotia (108, 10.8%), Ontario (206, 2.1%), Saskatchewan (51, 4.5%).
Postal code data were assigned to urban/rural/remote categories using the April 2007 release of Statistics Canada's PCCF. The urban, rural and remote categories are based on a classification scheme developed by Statistics Canada. Please review the Methodological Notes for more comprehensive information.
CIHI data will differ from provincial regulatory authority and territorial government statistics due to the CIHI collection, processing and reporting methodology. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

Sources

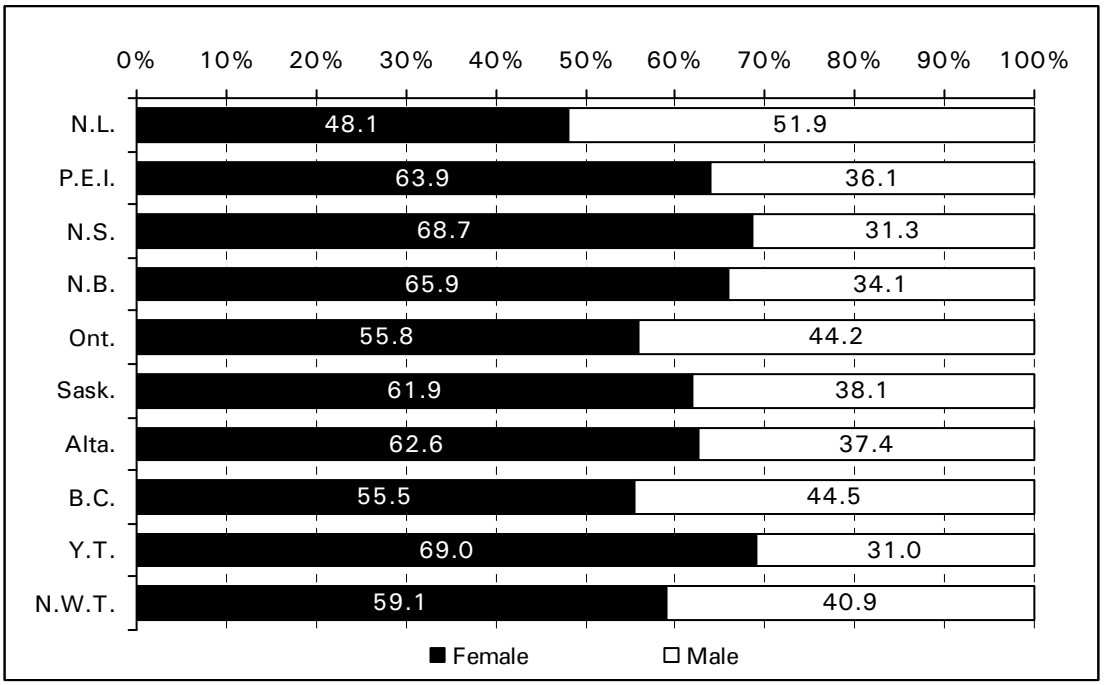
Pharmacist Database, Canadian Institute for Health Information, and Statistics Canada.

Demographic Trends for Pharmacists

Gender

Figure 4 indicates that, with the exception of Newfoundland and Labrador, the majority of pharmacists across selected provinces and territories featured in this report were female.

Figure 4 Percentage Distribution of Pharmacist Workforce by Gender and Selected Province or Territory of Registration, 2007



Notes

Data for Quebec, Manitoba and Nunavut were not available.

For 2007 only, aggregate data for the New Brunswick pharmacists presented in this table were provided by the New Brunswick Pharmaceutical Society, which reports the number of active registered pharmacists. Therefore, the data for New Brunswick may include different membership categories for registrants.

For 2007 only, data for all pharmacists submitted by the Newfoundland and Labrador Pharmacy Board and the New Brunswick Pharmaceutical Society were included as *employed in the profession of pharmacy*, as *employment status* was not available.

The results do not include data for which responses were unknown.

Percentage unknown: Newfoundland and Labrador (1, 0.2%), the Yukon (1, 3.3%).

CIHI data will differ from provincial regulatory authority and territorial government statistics due to the CIHI collection, processing and reporting methodology. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

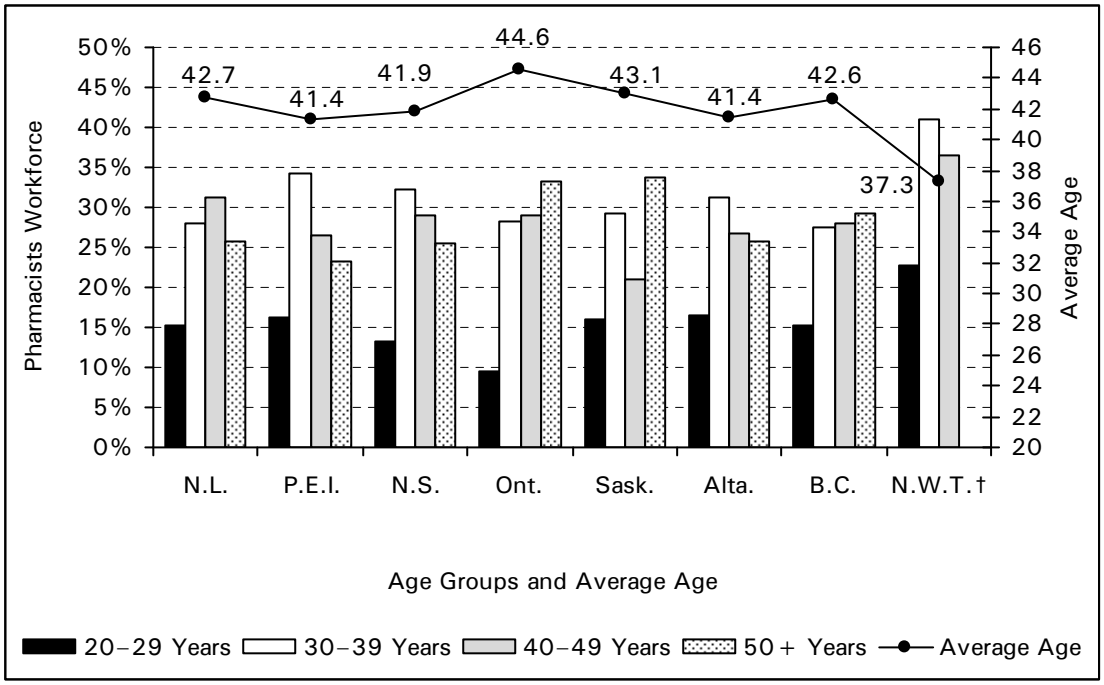
Sources

Pharmacist Database, Canadian Institute for Health Information, and the New Brunswick Pharmaceutical Society.

Age Distribution

Figure 5 reflects the age distribution, which varied slightly across selected provinces and territories. Ontario had the smallest proportion (9.6%) of younger pharmacists (20 to 29 years), as well as one of the largest proportions (33.3%) of older pharmacists (older than 50 years). In contrast, P.E.I. had the highest percentage (16.1%) of younger pharmacists, and one of the lowest percentages (23.2%) of older pharmacists. The average age of pharmacists across the selected provinces/territory ranged from 37.3 years (the Northwest Territories) to 44.6 years (Ontario).

Figure 5 Percentage Distribution of Pharmacists by 10-Year Age Groups and Average Age, Selected Province or Territory of Registration, 2007



Notes

† Northwest Territories data for pharmacists 40 years or older were combined due to small cell sizes.
Data for Quebec, Manitoba and Nunavut were not available.
Findings do not include New Brunswick or the Yukon, as *year of birth* was not collected/submitted.
For 2007 only, all pharmacists in Newfoundland and Labrador were included as *employed in the profession of pharmacy*.
The results do not include data for which responses were unknown.
Percentage unknown: Newfoundland and Labrador (11, 1.9%), Nova Scotia (1, 0.1%).
CIHI data will differ from provincial regulatory authority and territorial government data due to the CIHI collection, processing and reporting methodology. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

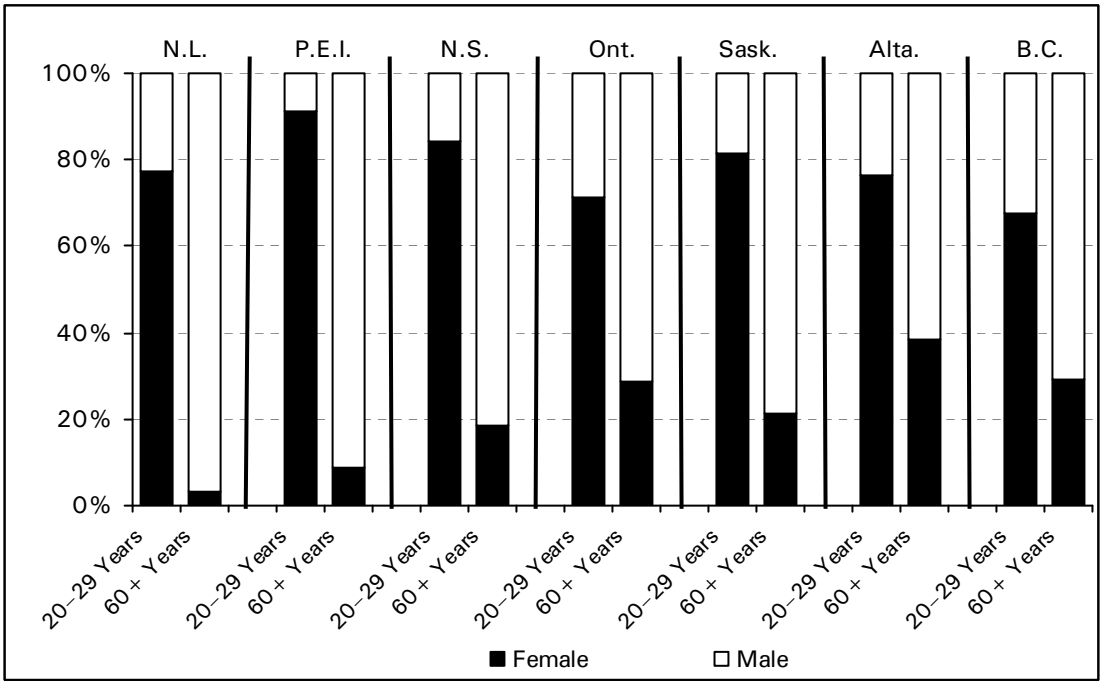
Source

Pharmacist Database, Canadian Institute for Health Information.

Age by Gender

As indicated in Figure 6 below, it is notable that female pharmacists under the age of 30 years outnumber male pharmacists in the same age group. In contrast, in the age group of 60 and older, female pharmacists were a minority in all provinces represented in this report.

Figure 6 Percentage Distribution of Pharmacist Workforce by Gender and Age Group, Selected Province of Registration, 2007



Notes
Data for Quebec, Manitoba and Nunavut were not available.
Northwest Territories and Yukon data were suppressed due to small cell sizes.
Findings do not include New Brunswick, as *year of birth* was not collected/submitted.
For 2007 only, data for all pharmacists submitted by the Newfoundland and Labrador Pharmacy Board were included as *employed in the profession of pharmacy*, as *employment status* was not available.
The results do not include data for which responses were unknown.
Percentage unknown for age groups: Newfoundland and Labrador (11, 1.9%), Nova Scotia (1, 0.1%).
Percentage unknown for gender: Newfoundland and Labrador (1, 0.2%).
CIHI data will differ from provincial regulatory authority or territorial government data due to the CIHI collection, processing and reporting methodology. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

Source
Pharmacist Database, Canadian Institute for Health Information.

Educational Trends for Pharmacists

The provincial regulatory authorities and territorial governments are directly responsible for granting licences to pharmacists, for assessing their competency and for ensuring public safety.[1] Each of these regulatory authorities has its own distinct licensing requirements.

In Canada, there are four requirements to become a licensed pharmacist:[1]

i) Bachelor of science degree in pharmacy from a Canadian university;

ii) Completion of the national board examination administered by the Pharmacy Examining Board of Canada (except in Quebec);[2]

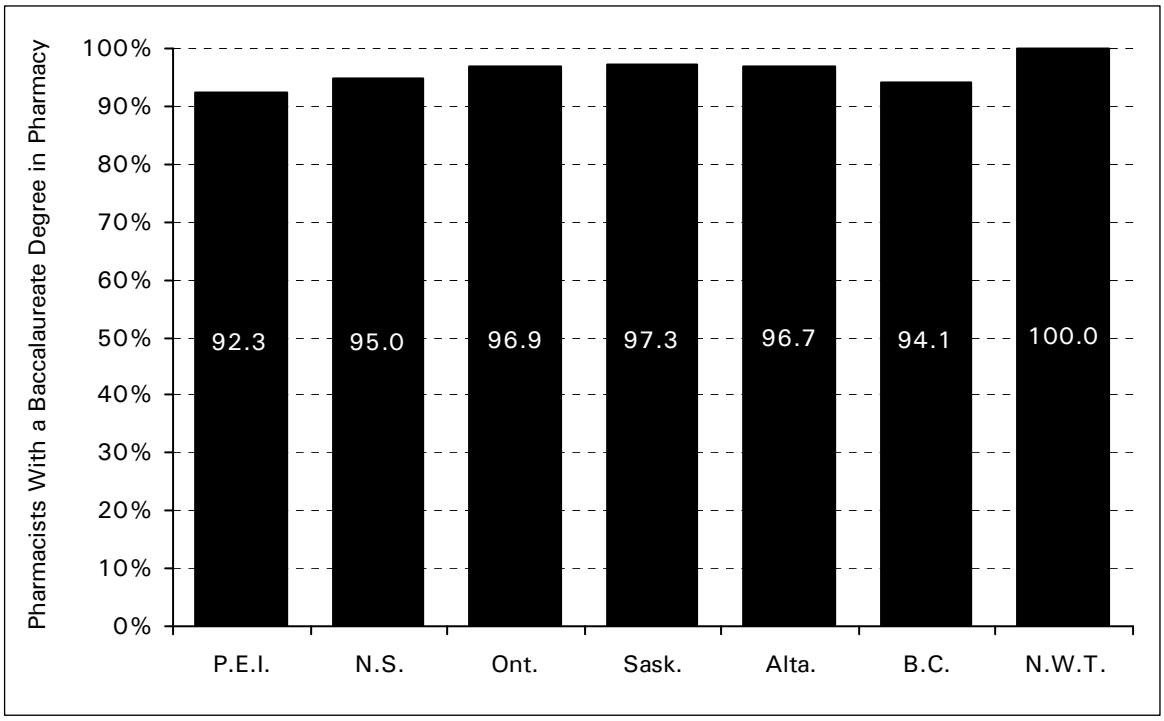
iii) Practical experience through an apprenticeship/internship program; and

iv) A particular level of fluency in English or French.

Current Level of Education in Pharmacy

The majority of employed pharmacists (more than 92%) within the participating jurisdictions have a baccalaureate degree as their current academic credential for pharmacy (see Figure 7).

Figure 7 Percentage Distribution of Pharmacist Workforce With Baccalaureate as the Level of Current Education in Pharmacy, Selected Province or Territory of Registration, 2007



Notes

Data for Quebec, Manitoba and Nunavut were not available.

Findings do not include Newfoundland and Labrador, New Brunswick and the Yukon, as the *level of education* was not collected/submitted.

The results do not include data for which responses were unknown.

Percentage unknown for *level of current education in pharmacy*: Nova Scotia (47, 4.7%), Saskatchewan (3, 0.3%), Alberta (1, <0.1%).

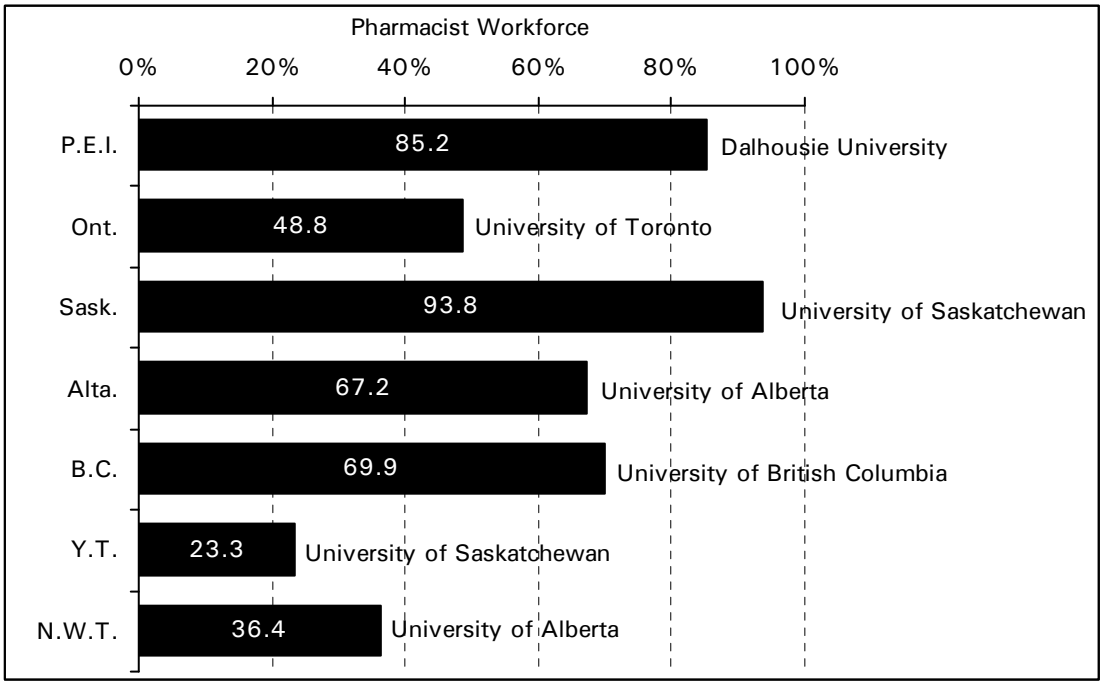
CIHI data will differ from provincial regulatory authority or territorial government data due to the CIHI collection, processing and reporting methodology. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

Source

Pharmacist Database, Canadian Institute for Health Information.

Similar to the migration patterns of other health care providers, pharmacists tended to be employed within or close to the province from which they graduated.[3] For example, 93.8% of pharmacists in Saskatchewan graduated from the University of Saskatchewan (see Figure 8).

Figure 8 Percentage Distribution of Pharmacist Workforce by University of Graduation for Current Education in Pharmacy and Selected Province or Territory of Registration, 2007



Notes
Data for Quebec, Manitoba and Nunavut were not available.
Findings do not include Newfoundland and Labrador, Nova Scotia and New Brunswick, as *university of graduation for basic/highest education in pharmacy* was not collected/submitted.
Percentage unknown for *university of graduation for current education in pharmacy*: British Columbia (437, 12.7%), Ontario (71, 0.7%), Saskatchewan (35, 3.1%), the Yukon (7, 23.3%).
CIHI data will differ from provincial regulatory authority and territorial government data due to the CIHI collection, processing and reporting methodology. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

Source
Pharmacist Database, Canadian Institute for Health Information.

New Graduates

Currently, there are 10 schools of pharmacy in Canada that offer a bachelor of science degree in pharmacy. The School of Pharmacy at the University of Waterloo is the first new school in Canada in 20 years, with the first undergraduate class beginning in 2008[1] (see Table 4).

Table 4 Status of Canadian University Pharmacy Programs

University	Baccalaureate in Pharmacy	Doctor of Pharmacy
Memorial University	✓	
Dalhousie University	✓	
Université Laval	✓	
Université de Montréal	✓	
University of Toronto	✓	✓
University of Waterloo	✓	
University of Manitoba	✓	
University of Saskatchewan	✓	
University of Alberta	✓	
University of British Columbia	✓	✓

Source
Canadian Council for Accreditation of Pharmacy Programs.

Did You Know?

The Leslie Dan Faculty of Pharmacy at the University of Toronto has developed the International Pharmacy Graduate Program to assist pharmacists educated in countries outside of North America to become licensed in Canada. A volunteer group of graduates from this program is available to guide colleagues on their journey to become licensed as Canadian pharmacists.[1]

The Canadian Pharmacy Practice Program is offered by the Faculty of Pharmaceutical Sciences at the University of British Columbia in Vancouver. This bridging program is designed both to assist internationally trained pharmacists to obtain the competencies for practice in Canada and to help Canadian-trained pharmacists to re-enter practice after a prolonged absence.[1]

Table 5 below shows that over the past decade, the number of graduates from accredited programs in pharmacy fluctuated and that many pharmacists attended universities in either Ontario or Quebec.

Table 5 Number of Graduates of Accredited Programs in Pharmacy by School of Graduation, Canada, 1997 to 2007

School	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
N.L.											
Memorial University	34	31	36	38	40	35	32	37	35	36	20
N.S.											
Dalhousie University	69	62	62	66	64	62	50	59	88	83	87
Que.	**203**	**229**	**243**	**252**	**206**	**191**	**232**	**251**	**323**		
Université Laval	96	114	120	103	99	97	112	135	138	188 §	179 §
Université de Montréal	107	115	123	149	107	94	120	129	185	..	..
Ont.											
University of Toronto	0 †	129	109	122	111	117	119	132	165	170	183
Man.											
University of Manitoba	49	49	46	42	47	48	47	43	45	49	43
Sask.											
University of Saskatchewan	78	74	71	74	75	65	..	72	80	73	85
Alta.											
University of Alberta	98	96	99	104	104	95	98	93	97	102	115
B.C.											
University of British Columbia ‡	119	122	130	135	123	129	127	121	145	132	125
Canada	**650**	**792**	**796**	**833**	**770**	**742**	**705**	**821**	**978**	**833**	**837**

Notes

.. Information not available.

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

‡ University of British Columbia 2001–2002 data are from the College of Pharmacists of British Columbia; in 2005, there was an increase in graduates due to an increase in enrolment numbers; data included graduates from the master's degree program.

§ Includes graduates from diploma, master's degree and PhD programs.

1997 to 2005 data provided by the HPDB, which reports the graduates from accredited pharmacy programs in Canada. Data in this table should be used within the limitations noted in the Methodological Notes section of *Canada's Health Care Providers, 1997 to 2006, A Reference Guide.*

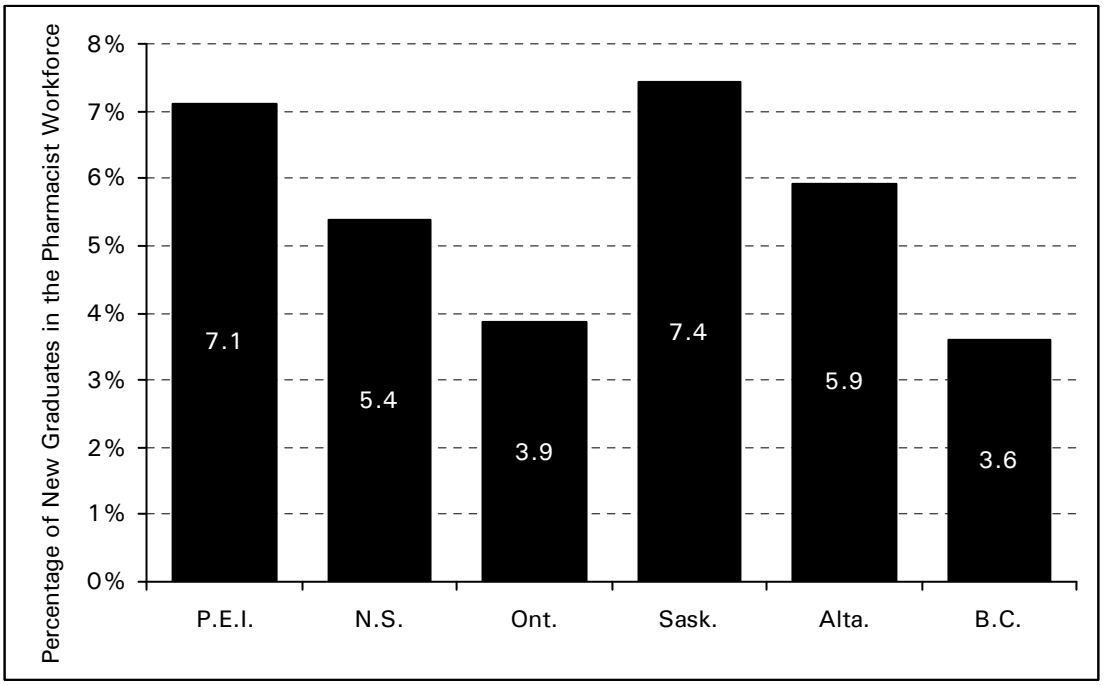
2006–2007 data provided by the Pharmacy Examining Board of Canada.

Sources

1997 to 2005: Health Personnel Database, Canadian Institute for Health Information; 2006 and 2007, Pharmacy Examining Board of Canada.

As indicated in Figure 9 below, where data were available, the number of new graduates[ii] in the workforce varied by province and territory, with Ontario (3.9%) and B.C. (3.6%) having the lowest proportion of new graduates.

Figure 9 Percentage Distribution of New Graduates in the Pharmacist Workforce by Selected Province of Registration, 2007



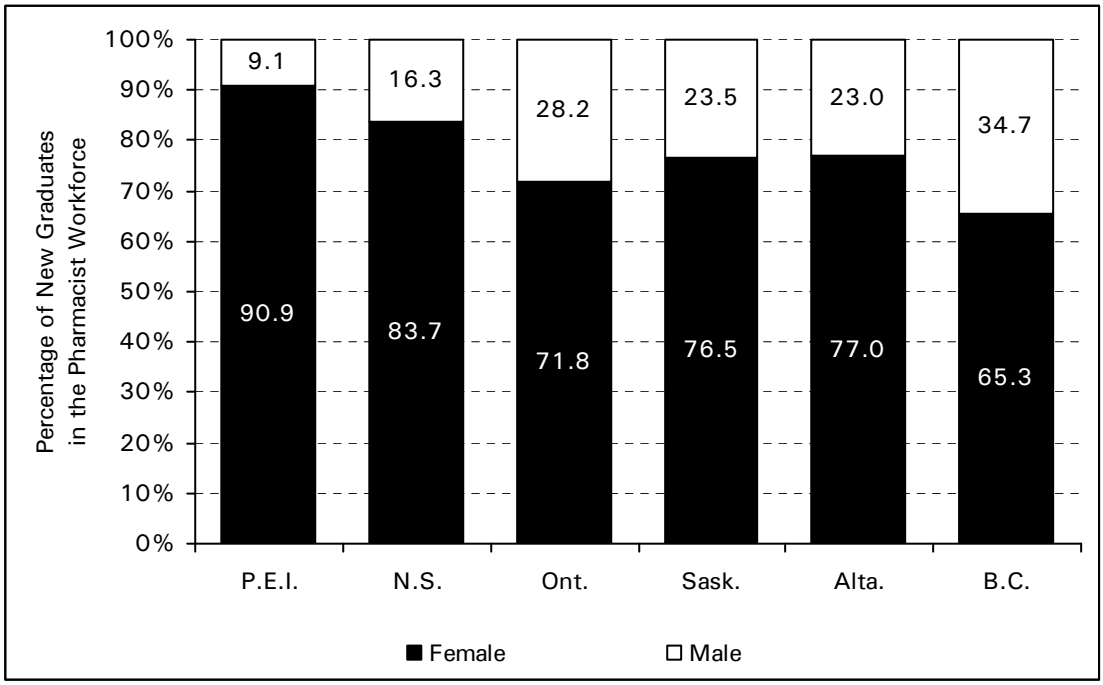
Notes
Data for Quebec, Manitoba and Nunavut were not available.
Findings do not include New Brunswick and Newfoundland and Labrador because the *year of graduation for basic education* was not collected/submitted.
Yukon data were suppressed due to small cell sizes.
Data for the Northwest Territories were excluded due to a high proportion of missing values for *year of graduation from basic education in pharmacy*.
The results do not include data for which responses were unknown.
Percentage unknown: Nova Scotia (94, 9.4%), Ontario (1, <0.1%).
New graduates: graduates have a year of graduation for basic education as 2006 or 2007.
CIHI data will differ from provincial regulatory authority or territorial government data due to the CIHI collection, processing and reporting methodology. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

Source
Pharmacist Database, Canadian Institute for Health Information.

ii. New graduates have a year of graduation in 2006 or 2007.

Similar to the gender distribution discussed earlier, which indicated that the majority of younger pharmacists across the selected provinces were female, most new graduates were female (see Figure 10).

Figure 10 Percentage Distribution of New Graduates by Gender, Selected Province of Registration, 2007



Notes
Data for Quebec, Manitoba and Nunavut were not available.
Findings do not include New Brunswick and Newfoundland and Labrador because *year of graduation for basic education* was not collected/submitted.
Yukon data were suppressed due to small cell sizes.
Data for the Northwest Territories were excluded due to a high proportion of missing values for *year of graduation for basic education*.
The results do not include data for which responses were unknown.
Percentage unknown for new graduates: Nova Scotia (94, 9.4%), Ontario (1, <0.1%).
New graduates: graduates have a year of graduation for basic education as 2006 or 2007.
CIHI data will differ from provincial regulatory authority and territorial government data due to the CIHI collection, processing and reporting methodology. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

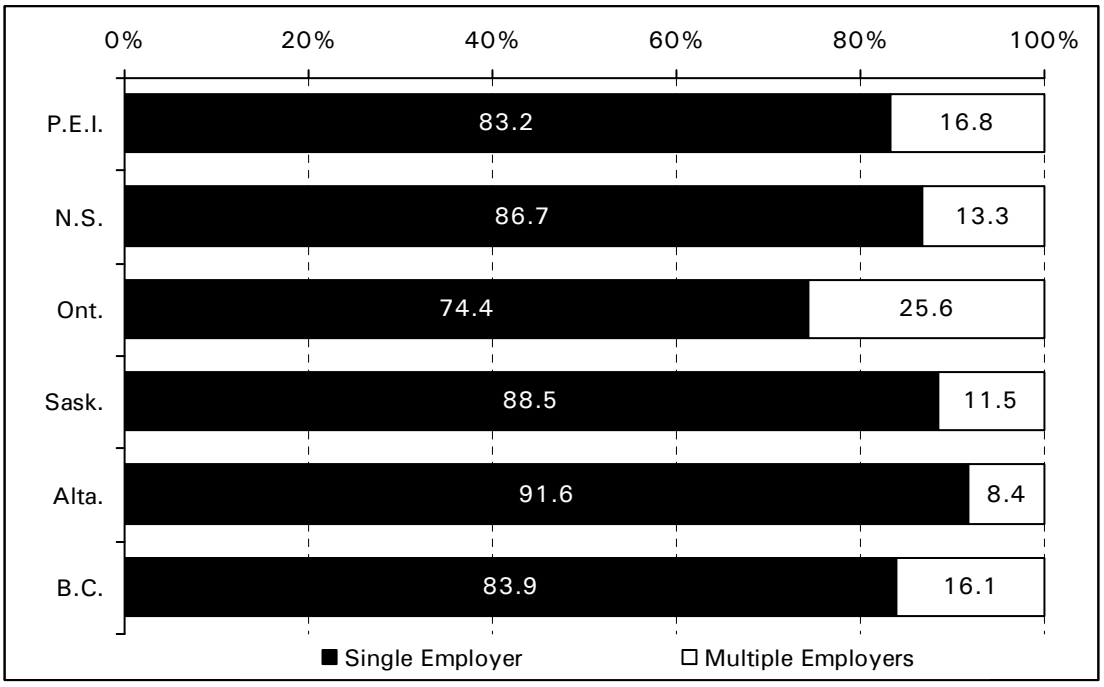
Source
Pharmacist Database, Canadian Institute for Health Information.

Employment Trends for Pharmacists

Single Versus Multiple Employers

In 2007, the majority of pharmacists—ranging from 74.4% to 91.6%—worked for a single employer. Ontario had the highest proportion of pharmacists with multiple employers (25.6%) and Alberta had the lowest (8.4%) (see Figure 11).

Figure 11 Percentage Distribution of Pharmacist Workforce by Number of Employers, Selected Province of Registration, 2007



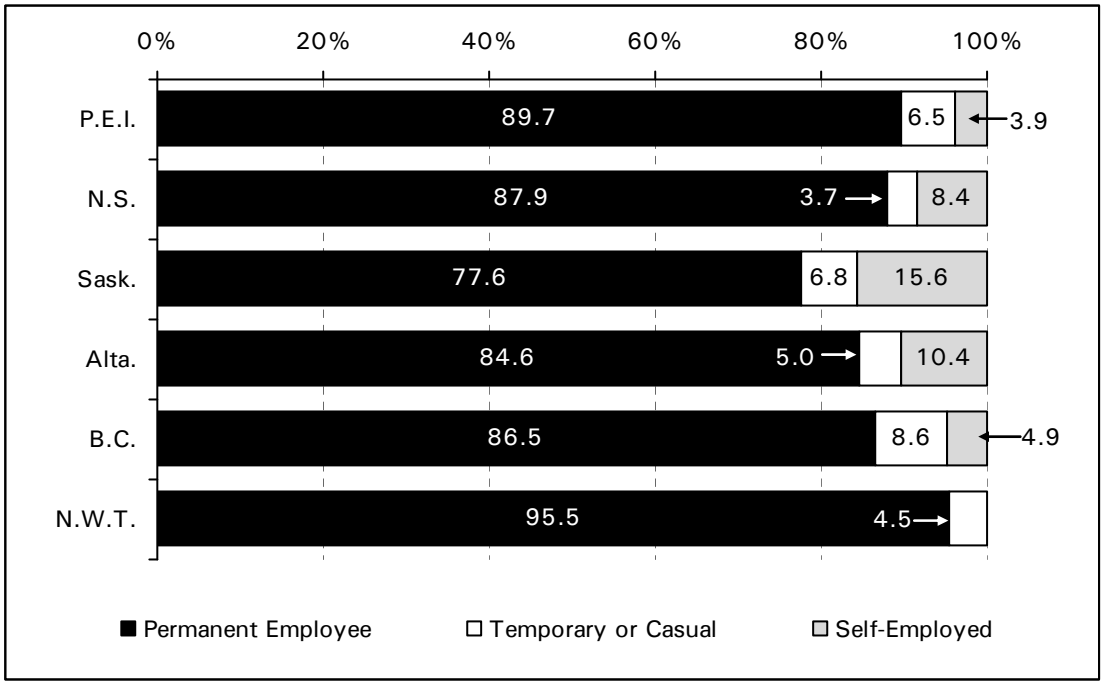
Notes
Data for Quebec, Manitoba and Nunavut were not available.
Findings do not include Newfoundland and Labrador, New Brunswick, the Yukon and the Northwest Territories, as secondary and third employment information was not collected/submitted.
The results do not include data for which responses were unknown.
Percentage unknown: Nova Scotia (48, 4.8%), Ontario (197, 2.0%).
CIHI data will differ from provincial regulatory authority and territorial government data due to the CIHI collection, processing and reporting methodology. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

Source
Pharmacist Database, Canadian Institute for Health Information.

Employment Category

Figure 12 indicates that the majority of pharmacists in the featured provinces were permanent employees.

Figure 12 Percentage Distribution of Pharmacist Workforce by Employment Category for Primary Employment, Selected Province or Territory of Registration, 2007



Notes

Data for Quebec, Manitoba and Nunavut were not available.
Findings do not include Newfoundland and Labrador, New Brunswick or the Yukon, as *employment category* was not collected/submitted to CIHI for 2007.
Findings do not include Ontario, as the Ontario College of Pharmacists was unable to identify the *employment category* and indicated that 100% of active registrants were *permanent employees* in its data submission to CIHI.
The results do not include data for which responses were unknown.
Percentage unknown: Nova Scotia (51, 5.1%), Saskatchewan (64, 5.6%), B.C. (578, 16.8%).
Permanent employee—status with employer is permanent with an indeterminate duration (no specified end date) of employment and guaranteed or fixed hours of work per week.
Self-employed—a person engaged independently in the profession, operating his or her own economic enterprise. The individual may be the working owner of an incorporated or unincorporated business or professional practice, or an individual in a business relationship characterized by a verbal or written agreement(s) in which the self-employed individual agrees to perform specific work for a payer in return for payment.
Temporary employee—status with employer is temporary with fixed duration of employment, based on a defined start and end date and guaranteed or fixed hours of work per week.
Casual employee—status with employer is on an as-needed basis, with employment that is not characterized by a guaranteed or fixed number of hours per week.
CIHI data will differ from provincial regulatory authority and territorial government data due to the CIHI collection, processing and reporting methodology. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

Source

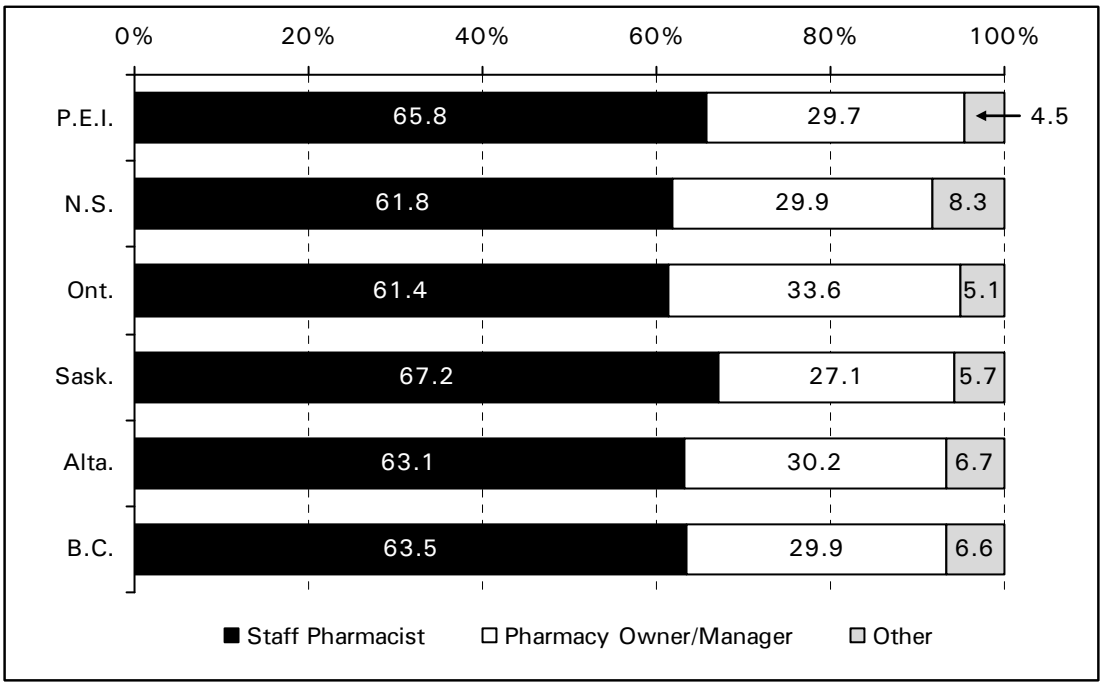
Pharmacist Database, Canadian Institute for Health Information.

With the development of the PDB, the collection of data on employment categories will help to differentiate between those in an employee–employer work relationship and those who are self-employed. In the case of registrants in an employee–employer work relationship, the distinction between permanent and temporary employment, in combination with other data (such as employment status and hours worked), provides an indication of changes in the conditions of employment (such as a change to a more temporary rather than permanent work arrangement).

Employment Position

Employment position refers to a pharmacist's main role within his or her primary place of work. For those with multiple roles, it reflects the role that is associated with the highest number of hours worked. Figure 13 below shows that in the selected provinces, the majority (more than 60%) worked as staff pharmacists. Between 27.1% (Saskatchewan) and 33.6% (Ontario) were employed as a pharmacy owner/manager.

Figure 13 Percentage Distribution of the Pharmacist Workforce by Employment Position for Primary Employment, Selected Province of Registration, 2007



Notes

Data for Quebec, Manitoba and Nunavut were not available.
Findings do not include Newfoundland and Labrador, New Brunswick or the Yukon, as *employment position* was not collected/submitted to CIHI for 2007.
Northwest Territories data were suppressed due to small cell sizes.
Results do not include data for which responses were unknown.
Percentage unknown: Nova Scotia (51, 5.1%), Ontario (6, 0.1%), Saskatchewan (185, 16.2%), B.C. (581, 16.9%).
Pharmacy owner/manager—pharmacy owner with a major role in the day-to-day operation of a pharmacy, although may include some direct client service provision.
Pharmacy manager—major role is in the day-to-day operation of a pharmacy combined with significant direct client service provision.
Staff pharmacist—major role is the direct delivery of pharmacist services to clients.
Other—includes director of pharmacy, institutional leader/coordinator, pharmacist consultant, educator, researcher, industrial pharmacist and other positions not otherwise specified.
The CIHI data will differ from provincial regulatory authority and territorial government data due to the CIHI collection, processing and reporting methodology. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

Source

Pharmacist Database, Canadian Institute for Health Information.

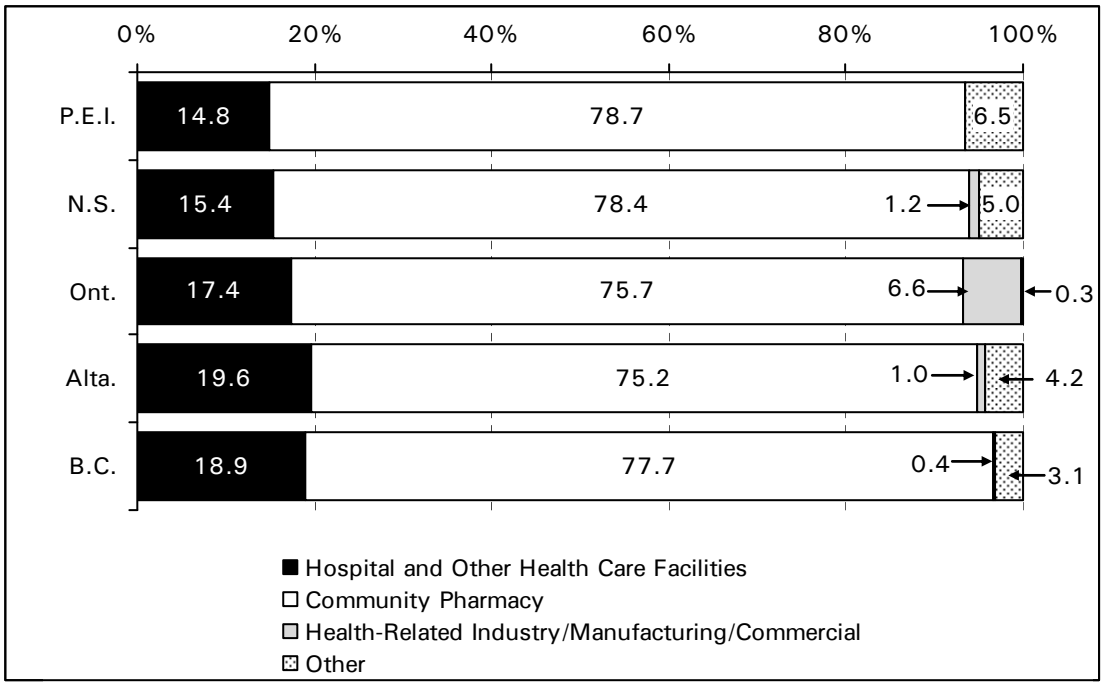
Primary employment position indicates the role that the professional has within the organizational structure of an employment setting and allows for a more precise differentiation for those who are primarily involved in providing direct services. In the future, with broader pan-Canadian participation in the PDB, the *other* category may be further explored to distinguish those pharmacists who are working in positions such as educator, researcher, industrial pharmacist and institutional leader/coordinator.

Place of Employment

These data provide an indication of the setting in which the professional is engaged and permits monitoring of changes over time. Collection of this information also facilitates the examination of the number of professionals within a community versus an institutional setting.

As indicated in Figure 14, at least three-quarters of pharmacists in selected provinces and territories were employed in a community pharmacy setting, with P.E.I. having the highest proportion (78.7%). The highest proportion of pharmacists working in hospitals and other health care facilities was in Alberta (19.6%), followed by B.C. (18.9%).

Figure 14 Percentage Distribution of Pharmacist Workforce by Place of Employment for Primary Employment, Selected Province of Registration, 2007



Notes
Data for Quebec, Manitoba and Nunavut were not available.
Findings from Newfoundland and Labrador, New Brunswick and Saskatchewan were not included, as *place of employment* for primary employment was not collected/submitted to CIHI for 2007.
Findings from the Northwest Territories and the Yukon were suppressed due to small cell sizes.
The results do not include data for which responses were unknown.
Percentage unknown: Nova Scotia (48, 4.8%), Ontario (4, <0.1%), B.C. (10, 0.3%), the Yukon (1, 3.3%).
Hospital and other health care facilities—this category also includes rehabilitation facilities, mental health facilities and residential care facilities.
Community pharmacy—retail setting where drugs and related products are distributed primarily through direct contact with clients.
Health-related industry/manufacturing/commercial—a health-related industry whose focus of activities is not the direct delivery of health care services, but rather health-related products, services and/or sales (medical device companies, pharmaceutical companies, insurers, etc.).

Notes from Figure 14 (cont'd)
Other—includes other pharmacy, group professional practice/clinic, community health centre, other community-based pharmacist practice, postsecondary educational institution, association/government/para-governmental, community pharmacy corporate office and other place of employment not otherwise specified.
CIHI data will differ from provincial regulatory authority and territorial government data due to the CIHI collection, processing and reporting methodology. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

Source
Pharmacist Database, Canadian Institute for Health Information.

Methodological Notes

These notes outline the basic concepts behind the data provided in this publication and the underlying methodology of the data collection, as well as key aspects of data quality. They will help to provide a better understanding of the strengths and limitations of the data and how the data can be used effectively. This information is of particular importance when comparisons are made with data from other sources and in regard to conclusions based on changes over time.

The Canadian Institute for Health Information relies on superior principles of data quality, privacy and confidentiality. CIHI's commitment to ensuring the collection of quality data in a privacy-sensitive manner is applied to data collection, processing, analysis and dissemination. For further details regarding CIHI's privacy principles outlined in *Privacy and Confidentiality of Health Information at CIHI: Principles and Policies for the Protection of Health Information*, go to www.cihi.ca.

Background

Purpose of This Report

This is the second edition of *Workforce Trends of Pharmacists for Selected Provinces and Territories in Canada*. It will provide the reader with the most recent statistics on the pharmacist workforce. It includes information on demographic, geographic, educational and employment dimensions. Analyses are supplemented with detailed information about the data collection process, pertinent limitations of the current data and an explanation of the analytical methods.

The information in this publication will be used by a wide variety of government and non-government organizations to better understand the changing supply and distribution of pharmacists throughout Canada. Accordingly, it will contribute to policy formulation and decision-making at both the pan-Canadian and provincial/territorial levels.

Value of the Information

The supply and distribution information presented here is a key component to health human resource planning at the pan-Canadian and provincial/territorial levels. Any planning or projection of the number of health professionals required for a particular jurisdiction must begin with an understanding of the current supply, and how that supply is changing.

The presentation of clear, objective data and data analysis enables informed decision-making and supports policy formulation.

History

Policy reports and research papers have consistently demonstrated that there are very little standardized data available on health professionals on a pan-Canadian basis, with the exception of physicians and regulated nursing professionals. Based on consultations with federal and provincial/territorial ministries of health, the pharmacy profession has been identified as a priority for the development of such data. The collection of data from across Canada for the Pharmacist Database (PDB) began in 2006.

Scope of the Data

Population of Interest

The population of interest for the PDB includes all pharmacists registering with a regulatory authority within a Canadian province or territory.

Population of Reference

The population of reference includes all pharmacists submitting active registrations[iii] with a Canadian provincial licensing authority or territorial government.

Period of Reference

For any given year, the population includes those pharmacists who register between the start of the individual regulatory authority or territorial government registration period and October 1.

Data Inclusions

Data collected for the PDB include:

- Registration information from the provincial registrars (except Manitoba and Quebec and the governments of the Yukon and the Northwest Territories);
- All active registrations received by the provincial regulatory authority or governmental authorities for the Yukon and the Northwest Territories, before October 1, 2007;[iv] and

iii. CIHI created definitions for active and inactive registrations to guide data providers in submission of data to the PDB.
An active registration is a professional practice licence that authorizes a registrant, based on the assessment and issuance by a regulatory authority or territorial government, to engage in a professional practice, as defined by the relevant laws, regulations and/or policies associated with a specific jurisdiction.
An inactive registration is a type of registration that does not permit a registrant to engage in professional practice without further consideration and/or licensure by the regulatory authority or territorial government, within a particular jurisdiction, as defined by the relevant laws, regulations and/or policies associated with a specific jurisdiction. This type of registration includes, for example, honorary, student, life non-practising and non-practising registrations.

iv. CIHI only reports data from registrations that are determined to be *primary registrations.* The definition and method used to identify primary registrations are included in the Data Processing Methods section of the Methodological Notes.

- Depending on the individual business process, some provinces/territories include pharmacists who are on temporary leave (such as maternity/paternity leave or short-term illness/injury leave) and have maintained their active registration with their provincial regulatory authority or territorial government.

Data Exclusions

Data collected for the PDB do not include:

- For 2007, data from the provinces of Manitoba, Quebec and from the territory of Nunavut;
- For 2006, data from the provinces of Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and from the territory of Nunavut.
- Pharmacists who register with a provincial regulatory authority or governmental authority for the Yukon and the Northwest Territories after October 1, 2007; and
- Pharmacists with an inactive registration type.

Data Flow From Primary Data Collector to CIHI

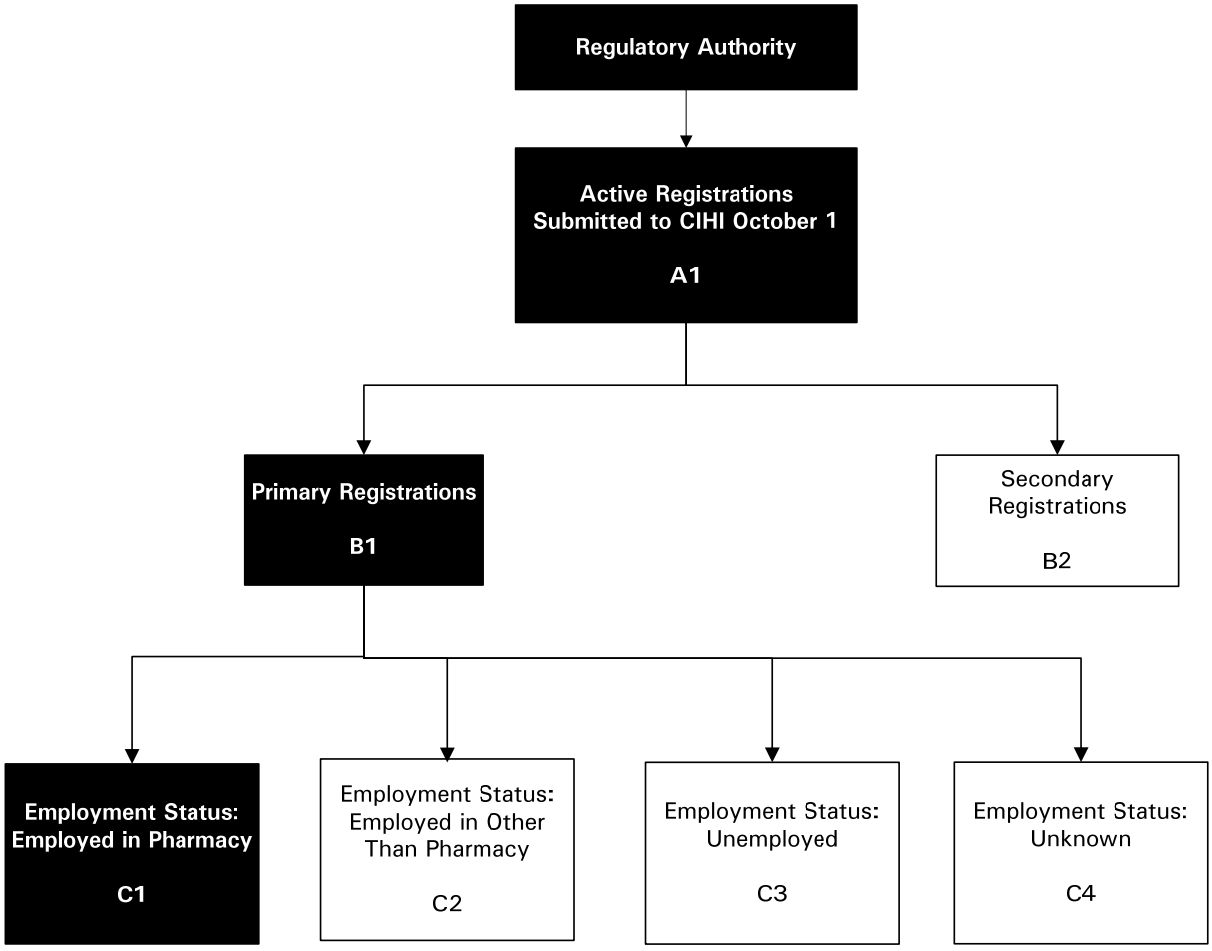
As part of their registration/licensing process, the regulatory authorities collect membership data on an annual basis. They collect data for all members applying for active and inactive registration.

The purpose of this database is to gain information on the pharmacist workforce in Canada; thus the population of reference for the PDB focuses on pharmacists who are currently authorized to engage in practice, meaning that they have active registration as of October 1, 2007.

Since the data collected by the provincial regulatory authorities and territorial governments are wider in scope than the population of reference for the PDB, a filtering methodology is applied by CIHI from the point of data collection through data processing. It targets the relevant records that meet the criteria for the population of reference for the PDB and also meets the information needs addressed in the annual report for the analysis.

Figure 15 illustrates the data flow when this methodology is applied. Explanations of each step within the data flow are provided in the text following the diagram.

Figure 15 Tracing Data Flow From Primary Data Collectors to CIHI



Source
Pharmacist Database, Canadian Institute for Health Information.

The total number of registrations submitted by a pharmacist regulatory authority is composed of both active and inactive registration types.

Box A1: Of all the registrations received by the provincial regulatory authorities and territorial governments, only the data of active registrants as of October 1 are submitted to CIHI.

Box B1: Represents the primary registrations, where the province or territory of registration is the registrant's primary jurisdiction of practice (see also Box B2).

Box B2: Pharmacists in Canada can work in more than one jurisdiction concurrently as long as they are registered/authorized by the proper authorities. In the interest of preventing double-counting of pharmacists who work in more than one jurisdiction, this box represents the secondary registrations or interprovincial duplicates. The methodology that identifies primary and secondary registrations is explained in detail in the Data Processing Methods section.

Boxes C1 to C4: In most cases, statistics produced by provincial regulatory authorities and territorial governments include all active-practising registrations, regardless of their employment status. In contrast, CIHI statistics typically include only those registrants who explicitly state their employment in pharmacy (Box C1). Those pharmacists employed in a profession other than pharmacy (Box C2), those not employed (Box C3) and those failing to state their employment status (Box C4) are excluded from the final statistics.

The results of this CIHI methodology are presented in Table 6 below (see also Appendix A).

Table 6 The PDB Pharmacist Workforce Counts by Province or Territory of Registration, 2007

	N.L.	P.E.I.	N.S.	N.B.	Ont.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Total
Total Active Registrants Submitted to CIHI	613	166	1,139	684	10,648	1,303	3,738	4,021	39	22	22,373
Primary Registrants	592	158	1,094	668	10,472	1,232	3,617	3,857	30	22	21,742
Employed in Pharmacy	592	155	1,002	668	9,779	1,142	3,444	3,435	30	22	20,269

Notes
Data from Quebec, Manitoba and Nunavut were not available.
For 2007 only, aggregate data for the New Brunswick pharmacists presented in this table were provided by the New Brunswick Pharmaceutical Society, which reports the number of active registered pharmacists. Therefore, the data for New Brunswick may include different membership categories for registrants.
For 2007 only, data for all pharmacists submitted by the Newfoundland and Labrador Pharmacy Board and the New Brunswick Pharmaceutical Society were included as *employed in the profession of pharmacy*, as *employment status* was not available.

Sources
Pharmacist Database, Canadian Institute for Health Information, and the New Brunswick Pharmaceutical Society.

Point-in-Time Data Collection

The point-in-time approach to data collection provides a snapshot of the pharmacist workforce across jurisdictions. Using the same one consistently will enable comparability in time, which is necessary for the accurate determination of a trend. However, depending on the jurisdiction, this approach may not capture the entire year-end totals equally in every province and territory.

The collection period identified as that which captures most of the registrants renewing or applying for membership was from the beginning of the respective annual registration period to October 1. The registration periods for provincial and territorial jurisdictions for the 2007 registration year are presented in Figure 16.

Figure 16 Twelve-Month Registration Periods by Province or Territory of Registration, 2007

Registration Year		2006												2007					
		Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June
Jan. 1–Dec. 31	N.L.	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx						
April 1–March 31	P.E.I.				xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx			
Jan. 1–Dec. 31	N.S.	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx						
Jan. 1–Dec. 31	N.B.	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx						
April 1–March 31	Que.				xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx			
April 1–March 31	Ont.				xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx			
Jan. 1–Dec. 31	Man.							xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
May 1–April 30	Sask.					xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx		
July 1–June 30	Alta.							xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Jan. 1–Dec. 31	B.C.	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx						
April 1–March 31	Y.T.				xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx			
April 1–March 31	N.W.T.				xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx			

Sources
Provincial regulatory authorities and the governments of the Yukon and the Northwest Territories.

How CIHI Defines Pharmacist Workforce

By carefully selecting the reporting population for the pharmacist workforce, CIHI is able to provide standardized comparable data suitable for analysis and trending purposes. As explained previously, population of reference includes all employed pharmacists who hold active registration authorizing them to practise as of October 1, 2007, and are not considered as secondary registrations. The population of reference may differ for reporting by provincial regulatory authority/territorial government for various reasons such as differences in the time frame used, inclusion of other registration types (such as inactive and others), differences in the employment status (employed versus unemployed) and the inclusion of secondary registrations. Discrepancies between the data in the CIHI publications and data presented by provincial regulatory authorities/territorial governments (PDB data providers) are often the result of these differences. We therefore caution our readers to be mindful of these differences when comparing PDB data with other data holdings and publications.

Data Collection Methods

Data Sources

The sources of data for the PDB are the provincial regulatory authorities and governments in the Yukon and the Northwest Territories. Annual registration with a regulatory body is mandatory for pharmacists seeking employment in the provinces and territories. These data are held by the respective provincial regulatory body and the governmental authorities of the Yukon and the Northwest Territories, who are considered primary data collectors.

Data Collection

Paper or online registration forms completed by the registrant for registration/licensing purposes are the usual methods of primary data collection for the provincial regulatory authorities and the governmental authorities of the Yukon and the Northwest Territories.

Once in electronic format, an extract of the data is prepared for submission to CIHI. Only those data elements defined in the *Pharmacist Database Data Dictionary* (available at www.cihi.ca) are submitted to CIHI. The data extract must conform to the specifications of the PDB, as outlined in the *Pharmacist Database Data Submissions Specifications Manual* (available at www.cihi.ca). These data are transmitted from the data provider to CIHI via a secure online system.

A letter of agreement governs CIHI's collection of pharmacist data. Each year, those provincial regulatory authorities and territorial governments participating in the PDB will review the core set of elements each data provider collects on its registration form. Under the current agreement, each data provider agrees to make every reasonable effort to collect and submit the 38 data elements for each registrant according to the definitions outlined in the *Pharmacist Database Data Dictionary*.

Contact information for the provincial regulatory authorities and the territorial governments is provided in Appendix B.

Key Concepts and Definitions

Only data elements used in the analysis of this publication are described below. For a complete list of data elements in the PDB, as well as definitions, please visit the CIHI website (www.cihi.ca) to download the *Pharmacist Database Data Dictionary*.

Demographics

Gender
The reported sexual category of a registrant at the time of registration or renewal and used for administrative purposes.

Year of Birth
Year of birth of the registrant.

Age
Derived from the year of birth of the registrant.

Geography

Province/Territory of Residence
At the time of registration or renewal.

Country of Residence
At the time of registration or renewal.

Province/Territory of Registration
Based on the jurisdiction of the organization responsible for submitting the data.

Education

Level of Basic Education in Pharmacy
Basic educational program used to prepare a pharmacist for practice. This refers to initial education in pharmacy used, in whole or in part, for consideration of licensure as a pharmacist in Canada. Master's and doctorate credentials would only be identified as initial education in pharmacy if the education permitted direct entry to practice (for example, entry-level PharmD). All other pharmacy-related postsecondary education is captured under highest level of post-basic education in pharmacy.

Year of Graduation for Basic Education in Pharmacy
The year of completion of an initial educational program that prepares a pharmacist for practice.

Canadian University of Graduation for Basic Education in Pharmacy
Name of the Canadian university where the initial educational program that prepares a pharmacist for practice was completed.

Highest Level of Post-Basic Education in Pharmacy
This includes other postsecondary education achieved in pharmacy which resulted in a degree (such as bridging or upgrade education).

Current Level of Education in Pharmacy
The current level of education in pharmacy represents the highest and the most recently acquired level of education in pharmacy reported by the registrant.

The current level of education in pharmacy is derived from the data elements level of basic education in pharmacy and highest level of post-basic education in pharmacy. If highest level of post-basic education in pharmacy exists, then the level of basic education in pharmacy is compared to the highest level of post-basic education in pharmacy. Whichever one is greater becomes the current level of education. If the level of basic education is the same as highest level of post-basic education, then whichever one is acquired later becomes the current level of education. However, if the highest level of post-basic education in pharmacy doesn't exist, then the level of basic education in pharmacy becomes the level of current education. The current level of education in pharmacy represents the highest and the most recently acquired level of education in pharmacy reported by the registrant.

Employment

Employment Status
A registrant's work status (employed or unemployed) at the time of registration or renewal.

Employment Category (for Primary Employment)
At the time of registration or renewal.

Province/Territory of Employment (for Primary Employment)
At the time of registration or renewal.

Postal Code of Employment (for Primary Employment)
The postal code assigned by Canada Post for a registrant's employment at the time of registration or renewal. It reflects the site where service is delivered, with the employer or business office postal code provided as an alternate (for example, if the employer or business office location is different from the site where service is delivered and only the employer or business office postal code is available). This refers to the location where the registrant is directly engaged in a pharmacy area of practice, direct service, client management, administration, education or research.

The postal code for primary employment is used to derive the geographic distribution of the workforce into urban, rural and remote areas using the PCCF file from Statistics Canada. For more information on the methodology used for this geographic classification scheme, please see the Analytical Methods section within the Methodological Notes.

Position (for Primary Employment)
The main role within the place of employment (for registrants with multiple roles within an employment, reflects the role associated with the most worked hours) at the time of registration or renewal.

Place of Employment (for Primary Employment)
The primary place of employment, whether an employee or self-employed, at the time of registration or renewal. This is at the service delivery level. Service delivery level refers to the worksite where the registrant is directly engaged in employment associated with the profession of pharmacy, as a pharmacist or in a pharmacy-related field.

Urban/Rural/Remote (for Primary Employment)
Please see the definition for Postal Code of Employment (for Primary Employment).

Data Processing Methods

File Processing

Once data files are received by CIHI, all records undergo two stages of processing before they are included in the pan-Canadian database. The first ensures that data are in the proper format and that all responses pass specific validity and logic tests. If the data submitted do not match the standardized CIHI codes, an exception report and data file summary (identifying and explaining the errors) are sent to the data provider. In addition, the data are tested for a logical relationship between specific fields. (For example, an error is identified in the exception report if the year of graduation is earlier than the year of birth.)

Errors are reviewed jointly by CIHI and the respective data provider representative. In cases where the data provider is not able to make the corrections, CIHI may make them directly with the explicit consent of the provider. If a correction cannot be made, the code is changed to the appropriate default/missing value.

Identification of Secondary Registrations

Once the file has passed all validity and logic tests, the second stage of processing begins. Since pharmacists are able to register simultaneously in more than one jurisdiction, a methodology has been developed to identify those pharmacists who are living outside of Canada or are registered in more than one province or territory in order to ensure an accurate count of the number of pharmacists registered and working in Canada only. For example, there are administrative incentives for pharmacists to maintain their Canadian pharmacy licence while living and/or working outside of the country. A pharmacist living abroad may continue to register with a Canadian pharmacy regulatory authority each year, even though she or he may have no intention of returning to Canada in the subsequent 12-month period. CIHI must identify these pharmacists living abroad and remove their data from analysis, since it only reports on the pharmacist workforce within Canada.

For those living and working in Canada, CIHI must also identify registrations that do not reflect the primary jurisdiction of practice. Similar to the international situation, there are administrative incentives for pharmacists to maintain their provincial/territorial pharmacy licence while living and/or working in another Canadian jurisdiction. To avoid double-counting, CIHI evaluates each registration to ensure that it reflects the primary jurisdiction of practice. These secondary registrations are also termed interprovincial duplicates and are not included in the annual publication, media releases and *ad hoc* queries.

Primary registrations are defined as records meeting the following conditions:

- Province/country of residence is either in Canada or unknown.
- For pharmacists employed in pharmacy, province of employment equals province of registration; if province of employment is unknown, then province of residence equals province of registration.
- For pharmacists not employed in pharmacy (or for pharmacists with employment status of unknown), province of residence equals province of registration; if province of residence is unknown, then province of registration is accepted.

The methodology for the removal of secondary registrations/interprovincial duplicates has remained relatively consistent over time. However, it is not without its limitations. For example, a pharmacist living in the United States but working in Canada will be erroneously removed as living abroad. Also, where a pharmacist is registered and employed in a Canadian province and decides to provide short-term relief staffing in another province, the temporary residence information may result in a double count.

See Appendix A for the flow diagram illustrating the process for identification of secondary registrations.

Analytical Methods

Urban–Rural Statistics

For analytical purposes, urban areas are defined (in part) as communities with populations that are greater than 10,000 people and are labelled by Statistics Canada as either a census metropolitan area (CMA) or a census agglomeration (CA). Rural/remote is equated with those communities outside the CMA/CA boundaries and is referred to as rural and small town (RST) by Statistics Canada.

RST communities are further subdivided by identifying the degree to which they are influenced in terms of social and economic integration with larger urban centres. Metropolitan influenced zone (MIZ) categories disaggregate the RST population into four subgroups: strong, moderate, weak and none. These urban/rural/remote categories are applied to those communities (cities, town, villages) that can be equated with the Statistics Canada designation census subdivision (CSD).

For the purpose of this report, the CMA/CA and MIZ categories were collapsed and may be interpreted in the following simple manner:

CMA/CA = large urban centre (urban)
Strong/moderate MIZ = small towns and rural areas located relatively close to larger urban centres (rural)
Weak/no MIZ = small towns, rural and remote communities distant from large urban centres (remote)

Details of the RST and MIZ classification schemes can be found in McNiven et al.,[4] du Plessis et al.[5] and CIHI.[6]

Missing Values in Urban/Rural Statistics

Missing values listed in the urban/rural statistics signify a sum of not stated and unknown responses. For example, where the data provider has not submitted a postal code for a registrant, it is coded as not stated. If the data provider has submitted a postal code for a registrant but it does not match with the postal code conversion file, then it is coded as unknown.

Data Suppression

CIHI is committed to protecting the confidential information of each pharmacist. Guidelines have been developed to govern the publication and release of health information in order to safeguard the privacy and confidentiality of the data received by CIHI. These policies also govern CIHI's release of data through *ad hoc* queries and special analytical studies.

To ensure the anonymity of individual pharmacists, cells with counts from 1 to 4 are suppressed in the data tables presented in this publication and have been replaced by a single asterisk (*). However, presenting accurate row and column totals also necessitates the suppression of a second value to prevent the reader from determining the suppressed value through subtraction. Therefore, in each row and column with a suppressed value, a second value is also suppressed, which generally is the next smallest value. However, if the second value suppressed is greater than 4, it must be replaced by a different symbol. In this case, the pharmacist publication uses a double asterisk (**).

Note: cell suppression does not apply to missing values (such as not collected, not applicable and unknown) in the data tables.

Symbols

Wherever possible, standard symbols and numerical presentations are used in this report:

* 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.

– Data are not applicable or do not exist.

.. Data not currently collected.

When necessary, other symbols are footnoted at the bottom of the respective tables or figures.

Data Quality Assessment

To ensure a high level of accuracy and usefulness, CIHI developed a framework for assessing and reporting the quality of data contained in its databases and registries. This framework focuses on the five dimensions of data quality: timeliness, usability, relevance, accuracy and comparability. The Methodological Notes section outlines the limitations of data interpretation in detail. Briefly, they are as follows:

Timeliness is achieved by collecting data at a point in time determined and agreed upon by the data providers and which reflects a majority of total records. This allows CIHI to analyze and release the data in a timely manner.

Usability includes the availability and documentation of the data and the ease of interpretation.

Relevance of the data set includes the adaptability and value of the data when used by decision-makers, policy developers, researchers and the media.

Accuracy is an assessment of how well the data reflect reality or how closely the data presented in this publication reflect the population of reference—specifically, those pharmacists holding active membership in Canada as of October 1, 2007 who are employed in the profession of pharmacy.

Comparability measures how well the data for the current year compare to the data from previous years and how data from the PDB compare to data from other sources. This publication presents pharmacist data for the registration years 2006 and 2007. Previous data years are only available in aggregate counts from the Health Personnel Database at CIHI.

It is important to note that the levels of accuracy and completeness necessary to meet the financial and administrative requirements of a registry can differ from those required for research. An extensive mapping exercise took place collaboratively with each data provider to ensure alignment between the data collected on the registration forms and the data elements of the CIHI *Pharmacist Database Data Dictionary*. When discrepancies were detected, these differences were documented and accounted for in the analysis and described in either the methodological notes or the footnotes. In some cases, data providers included CIHI definitions of some of the data elements and/or values in their registration guides, which facilitated a higher level of data accuracy.

Definitions for Missing Values

Missing values are those attributed in instances where a data provider is unable to provide information for a registrant for a specific data element. This involves three potential situations:

- Not collected—where the information is not collected by the data provider on the registration form, or a data provider cannot submit the information;
- Unknown—where the information was not provided by the registrant; and
- Not applicable—where the data element is not relevant to the situation of the registrant (for example, where a pharmacist resides in the United States, province of residence is not applicable).

For the missing values unknown and not applicable, CIHI implemented the following validation and correction methodology:

- Where a registrant has provided valid data to one or more data elements within the same education or employment grouping and other related elements are missing values, then the value unknown (rather than not applicable) is appropriate; and
- Where a registrant has not provided any data for all data elements within the same education or employment grouping, the value not applicable (rather than unknown) is appropriate.

For pharmacists not currently employed in pharmacy, all employment data in the PDB are coded as not applicable. The format of Table 8 removes all pharmacists not currently employed in pharmacy, so that unknown values accurately represent non-responses for the pharmacist workforce.

Some of the results with a large percentage of missing values were not included in the Data Analysis section of this publication or in the data tables available on the CIHI website because their questionable accuracy limits their usability and opens the door to erroneous interpretations. In other cases, the number of missing values is clearly identified in the analysis and footnoted for explanation when necessary.

Under Coverage

The following section outlines where caution must be applied when analyzing data presented in this report. In 2007, the second year of the PDB, not all data providers were able to align their registration forms to the data elements and values outlined in the *PDB Data Dictionary*. As a result, some provinces and territories were not able to collect some data elements; therefore, those provinces and territories are not represented (see Table 7).

Under coverage results when data that should be collected for the database are not included.

Quebec data—given that historically, Quebec accounts for the second largest number of pharmacists in Canada, the absence of data from Quebec is the largest source of under coverage for the 2006 and 2007 PDB; the Quebec data used in this report are based on information obtained from the HPDB.

Table 7 Pharmacist Records Where Data Are Not Collected by Data Element and Province or Territory of Registration, 2007

	Province/Territory of Registration																			
	N.L.		P.E.I.		N.S.		N.B.		Ont.		Sask.		Alta.		B.C.		Y.T.		N.W.T.	
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
Gender	..						..													
Year of Birth	..						..	x									x	x		
Year of Graduation for Basic Education in Pharmacy	..	x			x		..	x											x	
Current Level of Education in Pharmacy†	..	x			x		..	x									x	x	x	x
University of Graduation for Current Education	..	x			x	x	..	x									x		x	
Employment Category for Primary Employment	..	x			x		..	x	x						x		x	x	x	
Position for Primary Employment	..	x			x		..	x			x				x		x	x	x	
Place of Employment for Pirmary Employment	..	x			x		..	x			x	x								
Urban Versus Rural‡	..	x			x		..	x									x			

Notes

x Indicates that the percentage of not collected was 100.

† Current level of education is derived from the highest value submitted for *level of basic education in pharmacy* and the *highest level of education in pharmacy*.

‡ Urban versus rural flag is derived from the *postal code of primary employment*.

.. Data not available.

Source

Pharmacist Database, Canadian Institute for Health Information.

Over Coverage

Over coverage is the inclusion of data beyond the target population. Over coverage may occur where a pharmacist is on leave for a certain reason (such as maternity/paternity leave, education leave or short-term illness or injury); she or he may have the option to register as active or inactive, or to not register at all. However, those who choose to register as active and submit employment information will be included in the workforce numbers when, in fact, they are not working.

For 2007, the New Brunswick Pharmaceutical Society submitted aggregate data for active pharmacists who registered between the start of their registration period and up to July 2, 2008. The data for New Brunswick may include different membership categories for registrants.

For 2007 only, data for all pharmacists submitted by the Newfoundland and Labrador Pharmacy Board and the New Brunswick Pharmaceutical Society were included as employed in the profession of pharmacy, as employment status was not available.

Non-Response

In the PDB, the item non-response refers to the percentage of unknown responses for each data element, as presented in Table 8.

Table 8 Percentage of Pharmacist Records With Unknown Responses by Data Element and Province or Territory of Registration, 2007

	N.L.		P.E.I.		N.S.		N.B.		Ont.		Sask.		Alta.		B.C.		Y.T.		N.W.T.	
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
Gender (%)	–	0.2	1.4	0.0	0.0	0.0	–	§	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0
Year of Birth (%)	–	1.9	0.0	0.0	0.0	0.1	–	–	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	..	..	0.0	0.0
Year of Graduation for Basic Education in Pharmacy (%)	–	..	0.7	0.0	..	9.4	–	–	0.1	0.0	0.5	0.0	0.0	0.0	12.0	0.0	27.6	30.0	..	0.0
Current Level of Post-Basic Education in Pharmacy (%)†	–	..	0.0	0.0	..	4.7	–	–	0.0	0.0	1.2	0.3	0.0	0.0	11.8	0.0	..	..	..	..
University of Graduation for Current Education (%)	–	..	0.7	0.0	..	..	–	–	1.2	0.7	3.0	3.1	1.1	0.0	20.8	12.7	..	23.3	..	0.0
Employment Category for Primary Employment (%)	–	..	2.1	0.0	..	5.1	–	–	..	0.0	2.3	5.6	0.3	0.0	..	16.8	..	..	..	0.0
Position for Primary Employment (%)	–	..	0.0	0.0	..	5.1	–	–	0.0	0.1	..	16.2	0.3	0.0	..	16.9	..	..	..	0.0
Place of Employment for Primary Employment (%)	–	..	0.0	0.0	..	4.8	–	–	0.0	0.0	..	..	0.2	0.0	0.7	0.3	3.4	3.3	0.0	0.0
Urban Versus Rural Flag (%)‡	–	..	2.1	0.0	..	10.8	–	–	1.0	2.1	4.5	4.5	2.3	0.4	0.6	99.5	..	0.0	0.0	0.0

Notes

– Data not available.
† Current level of education is derived from the *highest value submitted for level of basic education in pharmacy* and the *highest level of education in pharmacy*.
‡ Urban versus rural flag is derived from the *postal code of primary employment*.
§ Aggregate data were provided.
.. Not collected.

Source

Pharmacist Database, Canadian Institute for Health Information.

Data Limitations

The major limitation of the data presented in this report is the lack of information regarding the pharmacist workforce in Quebec, Manitoba and Nunavut. The ultimate aim of the PDB is to provide a pan-Canadian profile of the pharmacist workforce that can be used to observe trends over time. Without full participation of all jurisdictions, the picture of the health human resource issues facing pharmacists today is incomplete.

In addition, not all participating jurisdictions were able to completely align with the data standard specified in the *Pharmacist Database Data Dictionary*. Therefore, for some jurisdictions, some data elements were not collected for the 2006 and 2007 registration years. For 2007 only, aggregate data for the New Brunswick pharmacists presented in this report were provided by the New Brunswick Pharmaceutical Society, which reports the number of active registered pharmacists. As well, for 2007 only, data for all pharmacists submitted by the Newfoundland and Labrador Pharmacy Board and the New Brunswick Pharmaceutical Society were included as employed in the profession of pharmacy, as employment status was not available.

Provincial/Territorial Participation

The PDB includes data from Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Saskatchewan, Alberta, British Columbia, the Yukon and the Northwest Territories for 2007. Data on active registered pharmacists in Newfoundland and Labrador and New Brunswick were not available for 2006. Data from Quebec, Manitoba and Nunavut were not available for 2006 or for 2007.

Year of Graduation for Basic Education in Pharmacy

Due to high proportion of missing values for 2007, the new graduate analysis for the Northwest Territories was not included.

Urban/Rural Distribution

Due to the high proportion of missing values for 2007, the urban/rural analysis for British Columbia was not included.

Employment Status

For 2007 only, data for all pharmacists submitted by the Newfoundland and Labrador Pharmacy Board were included as employed in the profession of pharmacy, as *employment status* was not available.

In addition, for 2007 only, aggregate data for the pharmacist workforce in New Brunswick were submitted by the New Brunswick Pharmaceutical Society; as employment status was not available, all pharmacists were included as employed in the profession of pharmacy.

The 2006 and 2007 PDB does not specifically identify registrants who are on leave.

Employment Category

For 2006 and 2007, the Ontario College of Pharmacists was unable to identify the employment categories and therefore assumed that 100% of its active registrants were permanent employees.

Privacy and Confidentiality

The Privacy Secretariat at CIHI developed a set of guidelines to safeguard the privacy and confidentiality of data received by CIHI. These policies govern the release of data in publications, media releases, the CIHI website and through ad hoc requests and special studies. The documents titled *Privacy and Confidentiality of Health Information at CIHI: Principles and Policies for the Protection of Personal Information* and the *Pharmacist Database Privacy Impact Assessment* can be found on the CIHI website (www.cihi.ca).

PDB Workforce Products and Services

The following publications relevant to this report may be downloaded in electronic (PDF) format, free of charge, at www.cihi.ca:

- *Workforce Trends of Pharmacists for Selected Provinces and Territories in Canada, 2007*
- *Workforce Trends of Pharmacists for Selected Provinces and Territories in Canada, 2006*
- *Pharmacist Database Data Dictionary*, version 1.0 (for data elements and definitions)
- *Pharmacist Database Data Submission Specifications Manual,* version 1.0 (for file specifications for the data elements sent by the provincial regulatory authorities and territorial governments)

Request for Our Services

CIHI completes *ad hoc* requests and special analytical projects on a cost-recovery basis using data from the PDB. Such requests are short queries that generally can be handled through standard reports and do not require major programming resources, while 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:

PDB Program Lead, Health Human Resources
Canadian Institute for Health Information
495 Richmond Road, Suite 600
Ottawa, Ontario K2A 4H6

Phone: 613-241-7860
Fax: 613-241-8120
Email: pdb@cihi.ca
Website: www.cihi.ca

Provincial and Territorial Profiles

Newfoundland and Labrador—Pharmacist Workforce

		Newfoundland and Labrador	
		2007	
Pharmacists Employed in Pharmacy		592	
Gender	Male	307	51.9%
	Female	284	48.0%
	Missing Values	1	0.2%
Average Age	Years	42.7	
10-Year Age Groups	20–29	88	14.9%
	30–39	162	27.4%
	40–49	182	30.7%
	50–59	84	14.2%
	60–69	51	8.6%
	70–79	**	**
	80+	*	*
	Missing Values	11	1.9%
Urban Versus Rural	Missing Values	–	–
Current Level of Education in Pharmacy	Not Collected	–	–
New Graduates	Not Collected	–	–
Multiple Employment Status	Single Employer	592	100.0%
	Multiple Employers	0	0.0%
	Missing Values	0	0.0%
Employment Category	Not Collected	–	–
Place of Employment	Not Collected	–	–
Position	Not Collected	–	–

Notes

– Data not available.
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Additional methodological information is available upon request by sending an email message to pdb@cihi.ca.

Source

Pharmacist Database, Canadian Institute for Health Information.

Prince Edward Island—Pharmacist Workforce

		Prince Edward Island			
		2006		2007	
Pharmacists Employed in Pharmacy		141		155	
Gender	Male	50	35.5%	56	36.1%
	Female	89	63.1%	99	63.9%
	Missing Values	2	1.4%	0	0.0%
Average Age	Years	40.9		41.4	
10-Year Age Groups	20–29	21	14.9%	25	16.1%
	30–39	52	36.9%	53	34.2%
	40–49	37	26.2%	41	26.5%
	50–59	20	14.2%	23	14.8%
	60–69	**	**	10	6.5%
	70–79	*	*	*	*
	80+	0	0.0%	*	*
	Missing Values	0	0.0%	0	0.0%
Urban Versus Rural	Urban	102	72.3%	117	75.5%
	Rural	27	19.1%	**	**
	Remote	9	6.4%	*	*
	Territories	0	0.0%	0	0.0%
	Missing Values	3	2.1%	2	1.3%
Current Level of Education in Pharmacy	Diploma	10	7.1%	**	**
	Baccalaureate	131	92.9%	143	92.3%
	Master's	0	0.0%	*	*
	PharmD	0	0.0%	0	0.0%
	Doctorate	0	0.0%	0	0.0%
	Missing Values	0	0.0%	0	0.0%
New Graduates	No	128	90.8%	144	92.9%
	Yes	12	8.5%	11	7.1%
	Missing Values	1	0.7%	0	0.0%
Multiple Employment Status	Single Employer	130	92.2%	129	83.2%
	Multiple Employers	11	7.8%	26	16.8%
	Missing Values	0	0.0%	0	0.0%
Employment Category	Permanent	129	91.5%	139	89.7%
	Temporary	*	*	7	4.5%
	Casual	*	*	*	*
	Self-Employed	6	4.3%	**	**
	Missing Values	3	2.1%	0	0.0%
Place of Employment	Hospital and Other Health Care Facilities	20	14.2%	23	14.8%
	Community Pharmacy	113	80.1%	122	78.7%
	Other Pharmacy	*	*	*	*
	Group Professional Practice/Clinic	0	0.0%	0	0.0%
	Community Health Centre	*	*	0	0.0%
	Other Community-Based Pharmacist Practice	0	0.0%	*	*
	Postsecondary Educational Institution	0	0.0%	0	0.0%
	Association/Government/Para-Governmental	**	**	**	**
	Health-Related Industry/Manufacturing/Commercial	0	0.0%	0	0.0%
	Community Pharmacy Corporate Office	*	*	*	*
	Other	0	0.0%	0	0.0%
	Missing Values	0	0.0%	0	0.0%

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Prince Edward Island—Pharmacist Workforce (cont'd)

		Prince Edward Island			
		2006		2007	
Position	Director of Pharmacy	0	0.0%	0	0.0%
	Pharmacy Owner/Manager	20	14.2%	21	13.5%
	Pharmacy Manager	27	19.1%	25	16.1%
	Institutional Leader/Coordinator	*	*	*	*
	Staff Pharmacist	87	61.7%	102	65.8%
	Pharmacist Consultant	*	*	*	*
	Educator	0	0.0%	*	*
	Researcher	0	0.0%	0	0.0%
	Industrial Pharmacist	0	0.0%	0	0.0%
	Other	*	*	*	*
	Missing Values	0	0.0%	0	0.0%

Notes

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Source

Pharmacist Database, Canadian Institute for Health Information.

Nova Scotia—Pharmacist Workforce

		Nova Scotia			
		2006		2007	
Pharmacists Employed in Pharmacy		788		1,002	
Gender	Male	254	32.2%	314	31.3%
	Female	534	67.8%	688	68.7%
	Missing Values	0	0.0%	0	0.0%
Average Age	Years	40.9		41.9	
10-Year Age Groups	20–29	113	14.3%	132	13.2%
	30–39	284	36.0%	322	32.1%
	40–49	217	27.5%	291	29.0%
	50–59	136	17.3%	198	19.8%
	60–69	30	3.8%	50	5.0%
	70–79	**	**	**	**
	80+	*	*	*	*
	Missing Values	0	0.0%	1	0.1%
Urban Versus Rural	Urban	–	–	621	62.0%
	Rural	–	–	87	8.7%
	Remote	–	–	181	18.1%
	Territories	–	–	0	0.0%
	Missing Values	788	100.0%	113	11.3%
Current Level of Education in Pharmacy	Diploma	–	–	**	**
	Baccalaureate	–	–	907	90.5%
	Master's	–	–	0	0.0%
	PharmD	–	–	*	*
	Doctorate	–	–	0	0.0%
	Missing Values	788	100.0%	47	4.7%
New Graduates	No	–	–	859	85.7%
	Yes	–	–	49	4.9%
	Not Collected	788	100.0%	0	0.0%
	Missing Values	–	–	94	9.4%
Multiple Employment Status	Single Employer	–	–	827	82.5%
	Multiple Employers	–	–	127	12.7%
	Not Collected	788	100.0%	0	0.0%
	Missing Values	–	–	48	4.8%
Employment Category	Permanent	–	–	836	83.4%
	Temporary	–	–	11	1.1%
	Casual	–	–	24	2.4%
	Self-Employed	–	–	80	8.0%
	Not Collected	788	100.0%	0	0.0%
	Missing Values	–	–	51	5.1%
Place of Employment	Hospital and Other Health Care Facilities	–	–	147	14.7%
	Community Pharmacy	–	–	748	74.7%
	Other Pharmacy	–	–	*	*
	Group Professional Practice/Clinic	–	–	*	*
	Community Health Centre	–	–	*	*
	Other Community-Based Pharmacist Practice	–	–	*	*
	Postsecondary Educational Institution	–	–	16	1.6%
	Association/Government/Para-Governmental	–	–	10	1.0%
	Health-Related Industry/Manufacturing/Commercial	–	–	11	1.1%
	Community Pharmacy Corporate Office	–	–	12	1.2%
	Other	–	–	*	*
	Not Collected	788	100.0%	0	0.0%
	Missing Values	–	–	48	4.8%

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Nova Scotia—Pharmacist Workforce (cont'd)

		Nova Scotia			
		2006		2007	
Position	Director of Pharmacy	–	–	18	1.8%
	Pharmacy Owner/Manager	–	–	284	28.3%
	Pharmacy Manager	–	–	0	0.0%
	Institutional Leader/Coordinator	–	–	10	1.0%
	Staff Pharmacist	–	–	588	58.7%
	Pharmacist Consultant	–	–	14	1.4%
	Educator and Researcher	–	–	15	1.5%
	Industrial Pharmacist	–	–	0	0.0%
	Other	–	–	22	2.2%
	Not Collected	788	100.0%	0	0.0%
	Missing Values	–	–	51	5.1%

Notes

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Source

Pharmacist Database, Canadian Institute for Health Information.

New Brunswick—Pharmacist Workforce

		New Brunswick	
		2007	
Pharmacists Employed in Pharmacy		668	
Gender	Male	228	34.1%
	Female	440	65.9%
	Missing Values	0	0.0%
Average Age	Not Collected	–	–
10-Year Age Groups	Not Collected	–	–
Urban Versus Rural	Not Collected	–	–
Current Level of Education in Pharmacy	Not Collected	–	–
New Graduates	Not Collected	–	–
Multiple Employment Status	Not Collected	–	–
Employment Category	Not Collected	–	–
Place of Employment	Not Collected	–	–
Position	Not Collected	–	–

Note

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Source

Pharmacist Database, Canadian Institute for Health Information.

Ontario—Pharmacist Workforce

		Ontario			
		2006		2007	
Pharmacists Employed in Pharmacy		9,309		9,779	
Gender	Male	4,173	44.8%	4,318	44.2%
	Female	5,136	55.2%	5,461	55.8%
	Missing Values	0	0.0%	0	0.0%
Average Age	Years	44.4		44.6	
10-Year Age Groups	20–29	850	9.1%	938	9.6%
	30–39	2,693	28.9%	2,761	28.2%
	40–49	2,722	29.2%	2,825	28.9%
	50–59	2,044	22.0%	2,146	21.9%
	60–69	782	8.4%	860	8.8%
	70–79	187	2.0%	212	2.2%
	80+	31	0.3%	37	0.4%
	Missing Values	0	0.0%	0	0.0%
Urban Versus Rural	Urban	8,530	91.6%	8,819	90.2%
	Rural	477	5.1%	475	4.9%
	Remote	213	2.3%	185	1.9%
	Territories	0	0.0%	0	0.0%
	Missing Values	89	1.0%	300	3.1%
Current Level of Education in Pharmacy	Diploma	80	0.9%	87	0.9%
	Baccalaureate	9,039	97.1%	9,480	96.9%
	Master's	53	0.6%	54	0.6%
	PharmD	137	1.5%	158	1.6%
	Doctorate	0	0.0%	0	0.0%
	Missing Values	0	0.0%	0	0.0%
New Graduates	No	8,975	96.4%	9,399	96.1%
	Yes	328	3.5%	379	3.9%
	Missing Values	6	0.1%	1	<0.1%
Multiple Employment Status	Single Employer	6,869	73.8%	7,130	72.9%
	Multiple Employers	2,440	26.2%	2,452	25.1%
	Missing Values	0	0.0%	197	2.0%
Employment Category	Permanent	9,309	100.0%	9,582	98.0%
	Temporary	0	0.0%	0	0.0%
	Casual	0	0.0%	0	0.0%
	Self-Employed	0	0.0%	0	0.0%
	Missing Values	0	0.0%	197	2.0%
Place of Employment	Hospital and Other Health Care Facilities	1,616	17.4%	1,668	17.1%
	Community Pharmacy	7,219	77.5%	7,254	74.2%
	Other Pharmacy	0	0.0%	0	0.0%
	Group Professional Practice/Clinic	0	0.0%	0	0.0%
	Community Health Centre	0	0.0%	0	0.0%
	Other Community-Based Pharmacist Practice	*	*	0	0.0%
	Postsecondary Educational Institution	**	**	0	0.0%
	Association/Government/Para-Governmental	177	1.9%	15	0.2%
	Health-Related Industry/Manufacturing/Commercial	263	2.8%	628	6.4%
	Community Pharmacy Corporate Office	0	0.0%	0	0.0%
	Other	26	0.3%	13	0.1%
	Missing Values	1	<0.1%	201	2.1%

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Ontario—Pharmacist Workforce (cont'd)

		Ontario			
		2006		2007	
Position	Director of Pharmacy	0	0.0%	0	0.0%
	Pharmacy Owner/Manager	1,900	20.4%	1,905	19.5%
	Pharmacy Manager	1,245	13.4%	1,308	13.4%
	Institutional Leader/Coordinator	0	0.0%	0	0.0%
	Staff Pharmacist	5,612	60.3%	5,876	60.1%
	Pharmacist Consultant	301	3.2%	108	1.1%
	Educator	52	0.6%	54	0.6%
	Researcher	10	0.1%	9	0.1%
	Industrial Pharmacist	178	1.9%	316	3.2%
	Other	11	0.1%	0	0.0%
	Missing Values	0	0.0%	203	2.1%

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For 2006 data, the Ontario College of Pharmacists was unable to identify the employment categories and, therefore, assumed that 100% of its active registrants were *permanent employees* for its data submission to CIHI.

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Source

Pharmacist Database, Canadian Institute for Health Information.

Saskatchewan—Pharmacist Workforce

		Saskatchewan			
		2006		2007	
Pharmacists Employed in Pharmacy		1,027		1,142	
Gender	Male	395	38.5%	435	38.1%
	Female	632	61.5%	707	61.9%
	Missing Values	0	0.0%	0	0.0%
Average Age	Years	43.0		43.1	
10-Year Age Groups	20–29	144	14.0%	183	16.0%
	30–39	317	30.9%	333	29.2%
	40–49	220	21.4%	241	21.1%
	50–59	237	23.1%	253	22.2%
	60–69	99	9.6%	115	10.1%
	70–79	**	**	**	**
	80+	*	*	*	*
	Missing Values	0	0.0%	0	0.0%
Urban Versus Rural	Urban	716	69.7%	821	71.9%
	Rural	47	4.6%	90	7.9%
	Remote	218	21.2%	178	15.6%
	Territories	0	0.0%	0	0.0%
	Missing Values	46	4.5%	53	4.6%
Current Level of Education in Pharmacy	Diploma	*	*	*	*
	Baccalaureate	994	96.8%	1,108	97.0%
	Master's	8	0.8%	12	1.1%
	PharmD	9	0.9%	14	1.2%
	Doctorate	*	*	*	*
	Missing Values	12	1.2%	3	0.3%
New Graduates	No	963	93.8%	1,057	92.6%
	Yes	59	5.7%	85	7.4%
	Missing Values	5	0.5%	0	0.0%
Multiple Employment Status	Single Employer	974	94.8%	1,006	88.1%
	Multiple Employers	53	5.2%	136	11.9%
	Missing Values	0	0.0%	0	0.0%
Employment Category	Permanent	794	77.3%	837	73.3%
	Temporary	17	1.7%	19	1.7%
	Casual	44	4.3%	54	4.7%
	Self-Employed	148	14.4%	168	14.7%
	Missing Values	24	2.3%	64	5.6%
Place of Employment	Not Collected	–	–	–	–
Position	Director of Pharmacy	–	–	11	1.0%
	Pharmacy Owner/Manager	–	–	0	0.0%
	Pharmacy Manager	–	–	259	22.7%
	Institutional Leader/Coordinator	–	–	*	*
	Staff Pharmacist	–	–	643	56.3%
	Pharmacist Consultant	–	–	*	*
	Educator and Researcher	–	–	6	0.5%
	Industrial Pharmacist	–	–	0	0.0%
	Other	–	–	35	3.1%
	Not Collected	1,027	100.0%	0	0.0%
	Missing Values	–	–	185	16.2%

(see notes on next page)

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Source

Pharmacist Database, Canadian Institute for Health Information.

Alberta—Pharmacist Workforce

		Alberta			
		2006		2007	
Pharmacists Employed in Pharmacy		3,197		3,444	
Gender	Male	1,215	38.0%	1,288	37.4%
	Female	1,982	62.0%	2,156	62.6%
	Missing Values	0	0.0%	0	0.0%
Average Age	Years	41.5		41.4	
10-Year Age Groups	20–29	510	16.0%	567	16.5%
	30–39	990	31.0%	1,072	31.1%
	40–49	881	27.6%	919	26.7%
	50–59	623	19.5%	665	19.3%
	60–69	166	5.2%	192	5.6%
	70–79	**	**	**	**
	80+	*	*	*	*
	Missing Values	0	0.0%	0	0.0%
Urban Versus Rural	Urban	2,619	81.9%	2,894	84.0%
	Rural	209	6.5%	203	5.9%
	Remote	295	9.2%	298	8.7%
	Territories	0	0.0%	0	0.0%
	Missing Values	74	2.3%	49	1.4%
Current Level of Education in Pharmacy	Diploma	0	0.0%	*	*
	Baccalaureate	3,125	97.7%	3,331	96.7%
	Master's	38	1.2%	60	1.7%
	PharmD	28	0.9%	40	1.2%
	Doctorate	6	0.2%	**	**
	Missing Values	0	0.0%	1	<0.1%
New Graduates	No	3,021	94.5%	3,240	94.1%
	Yes	175	5.5%	204	5.9%
	Missing Values	1	<0.1%	0	0.0%
Multiple Employment Status	Single Employer	3,136	98.1%	3,156	91.6%
	Multiple Employers	61	1.9%	288	8.4%
	Missing Values	0	0.0%	0	0.0%
Employment Category	Permanent	2,654	83.0%	2,903	84.3%
	Temporary	37	1.2%	52	1.5%
	Casual	128	4.0%	120	3.5%
	Self-Employed	366	11.4%	357	10.4%
	Missing Values	12	0.4%	12	0.3%
Place of Employment	Hospital and Other Health Care Facilities	590	18.5%	674	19.6%
	Community Pharmacy	2,412	75.4%	2,583	75.0%
	Other Pharmacy	37	1.2%	**	**
	Group Professional Practice/Clinic	8	0.3%	12	0.3%
	Community Health Centre	9	0.3%	*	*
	Other Community-Based Pharmacist Practice	18	0.6%	19	0.6%
	Postsecondary Educational Institution	26	0.8%	31	0.9%
	Association/Government/Para-Governmental	29	0.9%	31	0.9%
	Health-Related Industry/Manufacturing/Commercial	25	0.8%	33	1.0%
	Community Pharmacy Corporate Office	21	0.7%	21	0.6%
	Other	14	0.4%	18	0.5%
	Missing Values	8	0.3%	9	0.3%

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Alberta—Pharmacist Workforce (cont'd)

		Alberta			
		2006		2007	
Position	Director of Pharmacy	30	0.9%	37	1.1%
	Pharmacy Owner/Manager	375	11.7%	391	11.4%
	Pharmacy Manager	613	19.2%	645	18.7%
	Institutional Leader/Coordinator	21	0.7%	19	0.6%
	Staff Pharmacist	1,983	62.0%	2,167	62.9%
	Pharmacist Consultant	46	1.4%	49	1.4%
	Educator	20	0.6%	24	0.7%
	Researcher	14	0.4%	**	**
	Industrial Pharmacist	5	0.2%	*	*
	Other	82	2.6%	84	2.4%
	Missing Values	8	0.3%	10	0.3%

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Employment category, place of employment and *position* refer to primary employment.

Totals may not sum to 100 percent due to rounding.

Statistics released by CIHI will differ from statistics released by provincial regulatory authorities and territorial governments due to CIHI's collection, processing and reporting methodologies.

Additional methodological information is available upon request by sending an email message to pdb@cihi.ca.

Source

Pharmacist Database, Canadian Institute for Health Information.

British Columbia—Pharmacist Workforce

		British Columbia			
		2006		2007	
Pharmacists Employed in Pharmacy		3,151		3,435	
Gender	Male	1,454	46.1%	1,530	44.5%
	Female	1,697	53.9%	1,905	55.5%
	Missing Values	0	0.0%	0	0.0%
Average Age	Years	42.4		42.6	
10-Year Age Groups	20–29	491	15.6%	523	15.2%
	30–39	889	28.2%	942	27.4%
	40–49	850	27.0%	963	28.0%
	50–59	726	23.0%	764	22.2%
	60–69	167	5.3%	214	6.2%
	70–79	**	**	**	**
	80+	*	*	*	*
	Missing Values	0	0.0%	0	0.0%
Urban Versus Rural	Urban	2,834	89.9%	**	**
	Rural	93	3.0%	*	*
	Remote	188	6.0%	0	0.0%
	Territories	0	0.0%	0	0.0%
	Missing Values	36	1.1%	3,419	99.5%
Current Level of Education in Pharmacy	Diploma	16	0.5%	19	0.6%
	Baccalaureate	2,734	86.8%	3,232	94.1%
	Master's	8	0.3%	62	1.8%
	PharmD	21	0.7%	113	3.3%
	Doctorate	0	0.0%	9	0.3%
	Missing Values	372	11.8%	0	0.0%
New Graduates	No	2,655	84.3%	3,311	96.4%
	Yes	119	3.8%	124	3.6%
	Missing Values	377	12.0%	0	0.0%
Multiple Employment Status	Single Employer	3,145	99.8%	2,883	83.9%
	Multiple Employers	6	0.2%	552	16.1%
	Missing Values	0	0.0%	0	0.0%
Employment Category	Permanent	–	–	2,471	71.9%
	Temporary	–	–	34	1.0%
	Casual	–	–	211	6.1%
	Self-Employed	–	–	141	4.1%
	Missing Values	3,151	100.0%	578	16.8%
Place of Employment	Hospital and Other Health Care Facilities	572	18.2%	646	18.8%
	Community Pharmacy	2,558	81.2%	2,661	77.5%
	Other Pharmacy	0	0.0%	10	0.3%
	Group Professional Practice/Clinic	0	0.0%	*	*
	Community Health Centre	0	0.0%	11	0.3%
	Other Community-Based Pharmacist Practice	0	0.0%	**	**
	Postsecondary Educational Institution	0	0.0%	18	0.5%
	Association/Government/Para-Governmental	0	0.0%	27	0.8%
	Health-Related Industry/Manufacturing/Commercial	0	0.0%	12	0.3%
	Community Pharmacy Corporate Office	0	0.0%	18	0.5%
	Other	0	0.0%	15	0.4%
	Missing Values	21	0.7%	10	0.3%

(cont'd on next page)

British Columbia—Pharmacist Workforce (cont'd)

		British Columbia			
		2006		2007	
Position	Director of Pharmacy	–	–	35	1.0%
	Pharmacy Owner/Manager	–	–	279	8.1%
	Pharmacy Manager	–	–	575	16.7%
	Institutional Leader/Coordinator	–	–	17	0.5%
	Staff Pharmacist	–	–	1,813	52.8%
	Pharmacist Consultant	–	–	29	0.8%
	Educator	–	–	17	0.5%
	Researcher	–	–	7	0.2%
	Industrial Pharmacist	–	–	6	0.2%
	Other	–	–	76	2.2%
	Not Collected	3,151	100.0%	0	0.0%
	Missing Values	–	–	581	16.9%

Notes

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Employment category, place of employment and *position* refer to primary employment

Totals may not sum to 100 percent due to rounding.

Statistics released by CIHI will differ from statistics released by provincial regulatory authorities and territorial governments due to CIHI's collection, processing and reporting methodologies.

Additional methodological information is available upon request by sending an email message to pdb@cihi.ca.

Source

Pharmacist Database, Canadian Institute for Health Information.

The Yukon—Pharmacist Workforce

		Yukon			
		2006		2007	
Pharmacists Employed in Pharmacy		29		30	
Gender	Male	9	31.0%	9	30.0%
	Female	20	69.0%	20	66.7%
	Missing Values	0	0.0%	1	3.3%
Average Age	Not Collected	–	–	–	–
10-Year Age Groups	Not Collected	–	–	–	–
Urban Versus Rural	Urban	–	–	24	80.0%
	Rural	–	–	0	0.0%
	Remote	–	–	0	0.0%
	Territories	–	–	6	20.0%
	Missing Values	29	100.0%	0	0.0%
Current Level of Education in Pharmacy	Missing Values	–	–	–	–
New Graduates	No	**	**	**	**
	Yes	*	*	*	*
	Missing Values	8	27.6%	9	30.0%
Multiple Employment Status	Single Employer	29	100.0%	30	100.0%
	Multiple Employers	0	0.0%	0	0.0%
	Missing Values	0	0.0%	0	0.0%
Employment Category	Not Collected	–	–	–	–
Place of Employment	Hospital and Other Health Care Facilities	**	**	**	**
	Community Pharmacy	22	75.9%	23	76.7%
	Other Pharmacy	0	0.0%	0	0.0%
	Group Professional Practice/Clinic	0	0.0%	0	0.0%
	Community Health Centre	0	0.0%	0	0.0%
	Other Community-Based Pharmacist Practice	0	0.0%	0	0.0%
	Postsecondary Educational Institution	0	0.0%	0	0.0%
	Association/Government/Para-Governmental	0	0.0%	*	*
	Health-Related Industry/Manufacturing/Commercial	0	0.0%	0	0.0%
	Community Pharmacy Corporate Office	0	0.0%	0	0.0%
	Other	*	*	0	0.0%
	Missing Values	1	3.4%	1	3.3%
Position	Not Collected	–	–	–	–

Notes

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Employment category, place of employment and *position* refer to primary employment.

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Source

Pharmacist Database, Canadian Institute for Health Information.

The Northwest Territories—Pharmacist Workforce

		The Northwest Territories			
		2006		2007	
Pharmacists Employed in Pharmacy		22		22	
Gender	Male	11	50.0%	9	40.9%
	Female	11	50.0%	13	59.1%
	Missing Values	0	0.0%	0	0.0%
Average Age	Years	36.0		37.3	
10-Year Age Groups	20–29	6	27.3%	5	22.7%
	30–39	8	36.4%	9	40.9%
	40–49	**	**	**	**
	50–59	*	*	*	*
	60–69	0	0.0%	0	0.0%
	70–79	0	0.0%	0	0.0%
	80+	0	0.0%	0	0.0%
	Missing Values	0	0.0%	0	0.0%
Urban Versus Rural	Urban	12	54.5%	13	59.1%
	Rural	0	0.0%	0	0.0%
	Remote	0	0.0%	0	0.0%
	Territories	10	45.5%	9	40.9%
	Missing Values	0	0.0%	0	0.0%
Current Level of Education in Pharmacy	Diploma	0	0.0%	0	0.0%
	Baccalaureate	22	100.0%	22	100.0%
	Master's	0	0.0%	0	0.0%
	PharmD	0	0.0%	0	0.0%
	Doctorate	0	0.0%	0	0.0%
	Missing Values	0	0.0%	0	0.0%
New Graduates	No	–	–	**	**
	Yes	–	–	*	*
	Not Collected	22	100.0%	0	0.0%
	Missing Values	–	–	0	0.0%
Multiple Employment Status	Not Collected	–	–	–	–
Employment Category	Permanent	–	–	**	**
	Temporary	–	–	*	*
	Casual	–	–	0	0.0%
	Self-Employed	–	–	0	0.0%
	Not Collected	22	100.0%	0	0.0%
	Missing Values	–	–	0	0.0%
Place of Employment	Hospital and Other Health Care Facilities	*	*	*	*
	Community Pharmacy	**	**	**	**
	Other Pharmacy	0	0.0%	0	0.0%
	Group Professional Practice/Clinic	0	0.0%	0	0.0%
	Community Health Centre	0	0.0%	0	0.0%
	Other Community-Based Pharmacist Practice	0	0.0%	0	0.0%
	Postsecondary Educational Institution	0	0.0%	0	0.0%
	Association/Government/Para-Governmental	0	0.0%	0	0.0%
	Health-Related Industry/Manufacturing/Commercial	0	0.0%	0	0.0%
	Community Pharmacy Corporate Office	0	0.0%	0	0.0%
	Other	0	0.0%	0	0.0%
	Missing Values	0	0.0%	0	0.0%

(cont'd on next page)

The Northwest Territories—Pharmacist Workforce (cont'd)

		The Northwest Territories			
		2006		2007	
Position	Director of Pharmacy	–	–	0	0.0%
	Pharmacy Owner/Manager	–	–	*	*
	Pharmacy Manager	–	–	*	*
	Institutional Leader/Coordinator	–	–	0	0.0%
	Staff Pharmacist	–	–	**	**
	Pharmacist Consultant	–	–	0	0.0%
	Educator	–	–	0	0.0%
	Researcher	–	–	0	0.0%
	Industrial Pharmacist	–	–	0	0.0%
	Other	–	–	0	0.0%
	Not Collected	29	100.0%	0	0.0%
	Missing Values	–	–	0	0.0%

Notes

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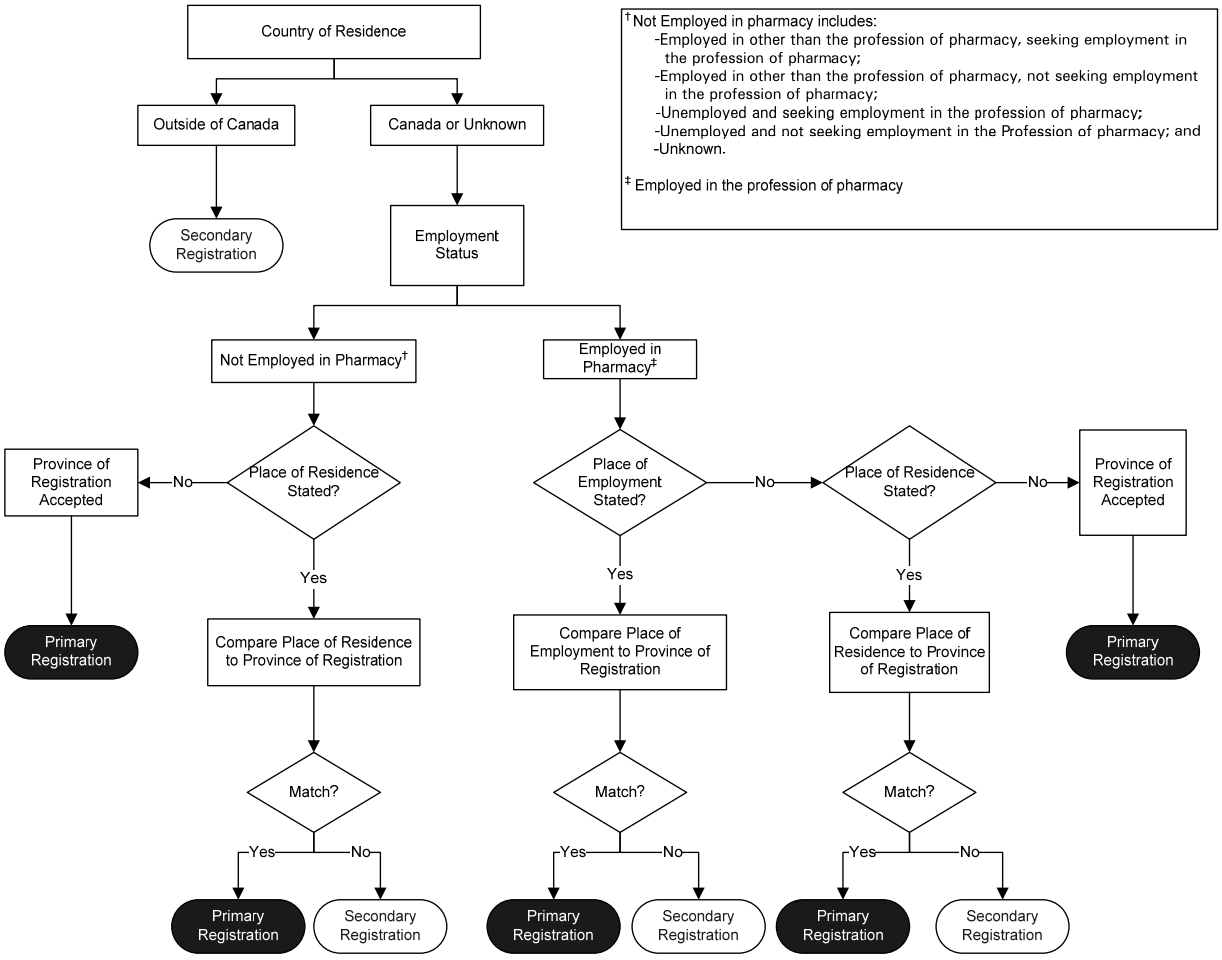
Source

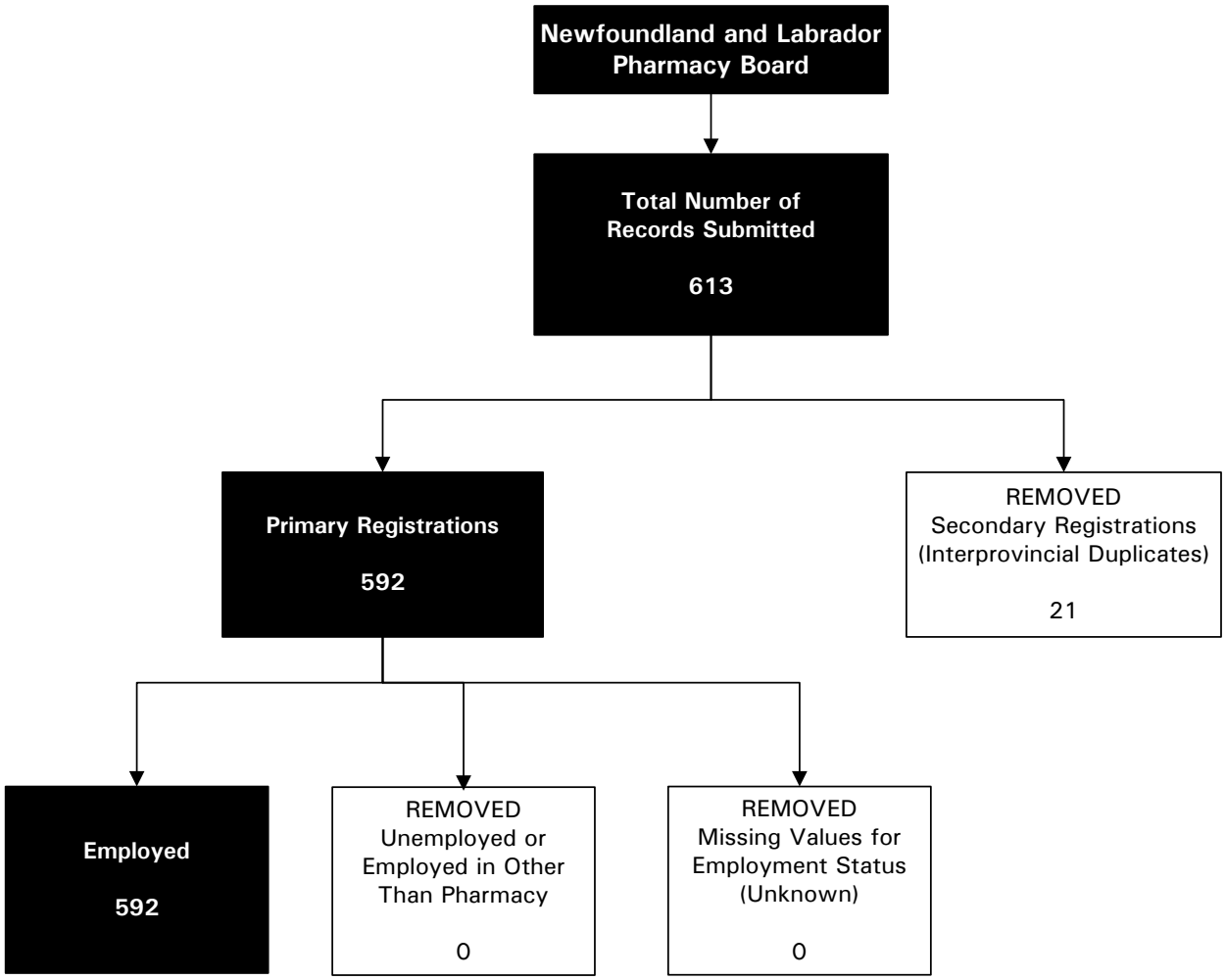
Pharmacist Database, Canadian Institute for Health Information.

Appendix A
Identification of Secondary Registrations

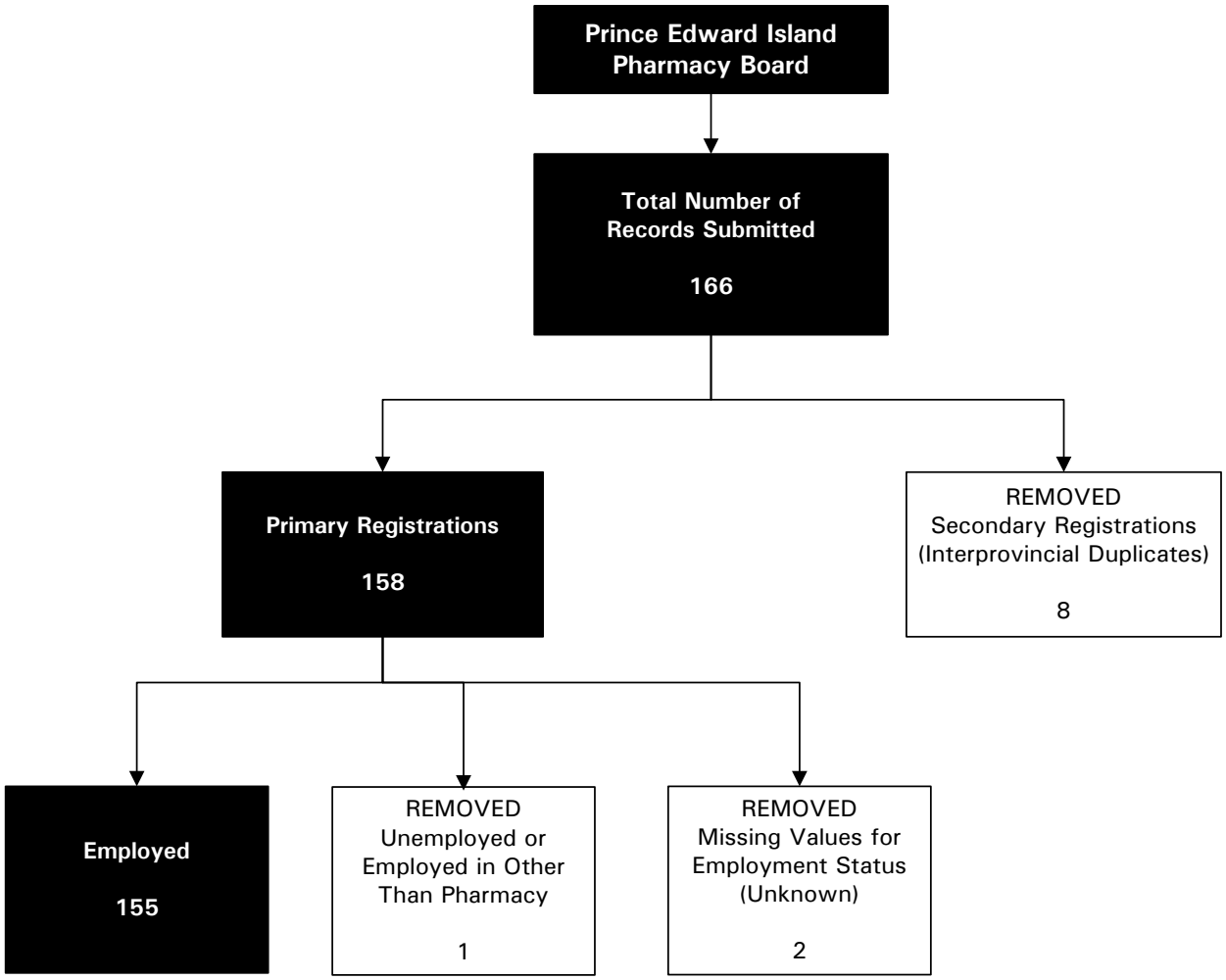
Pharmacist Database Identification of Secondary Registrations for Provincial/Territorial Data



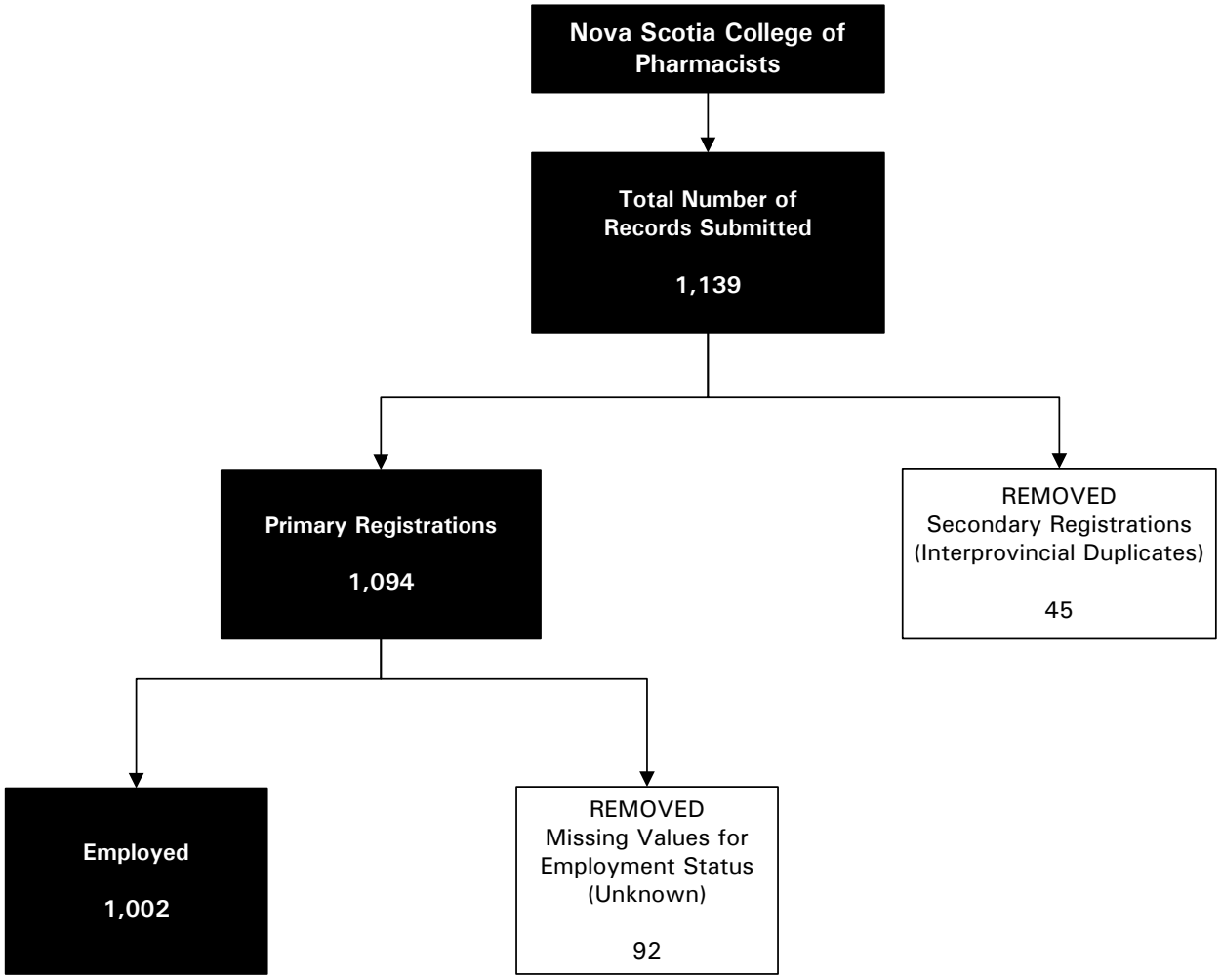
Data Flow From Newfoundland and Labrador Pharmacy Board to CIHI



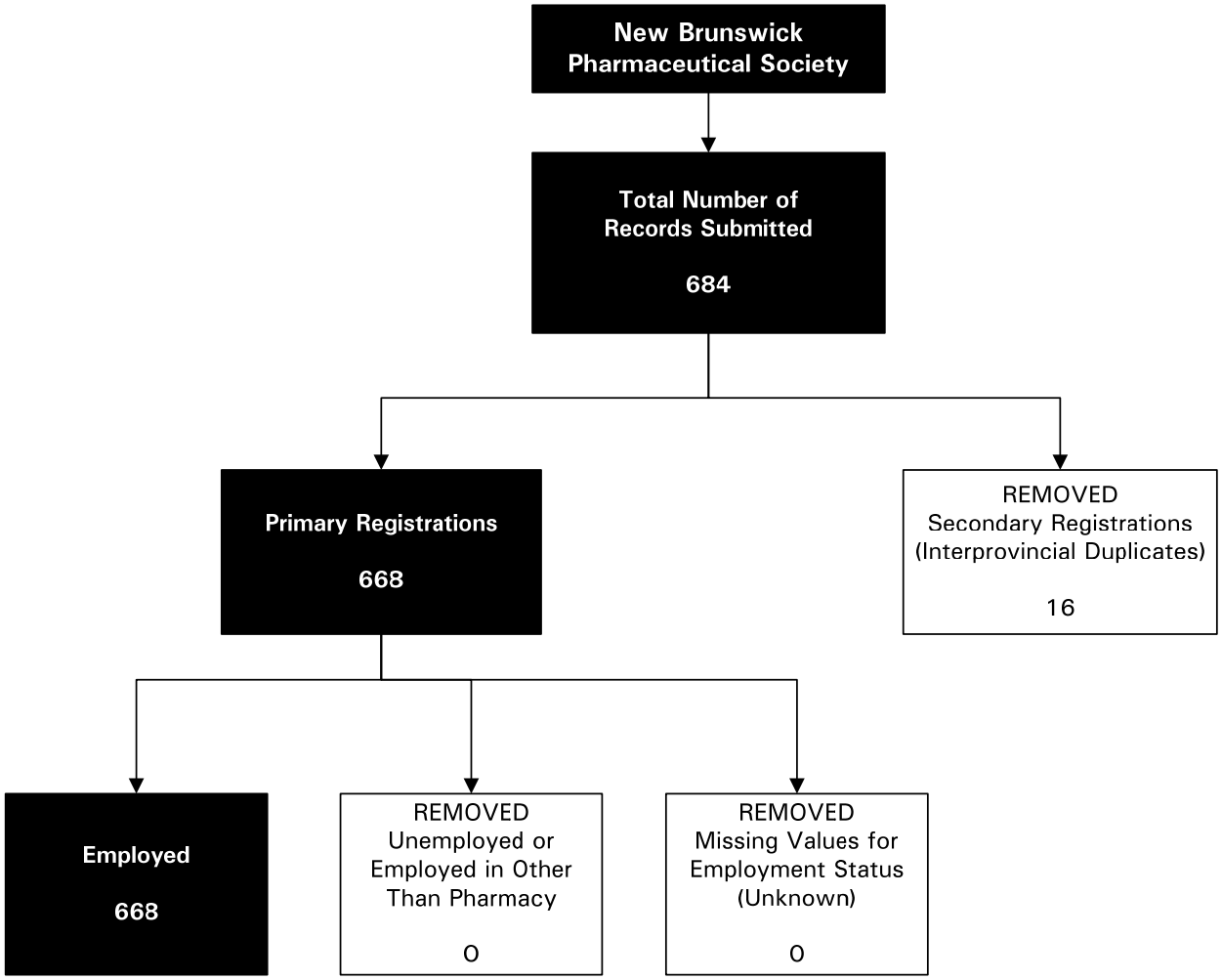
Data Flow From Prince Edward Island Pharmacy Board to CIHI



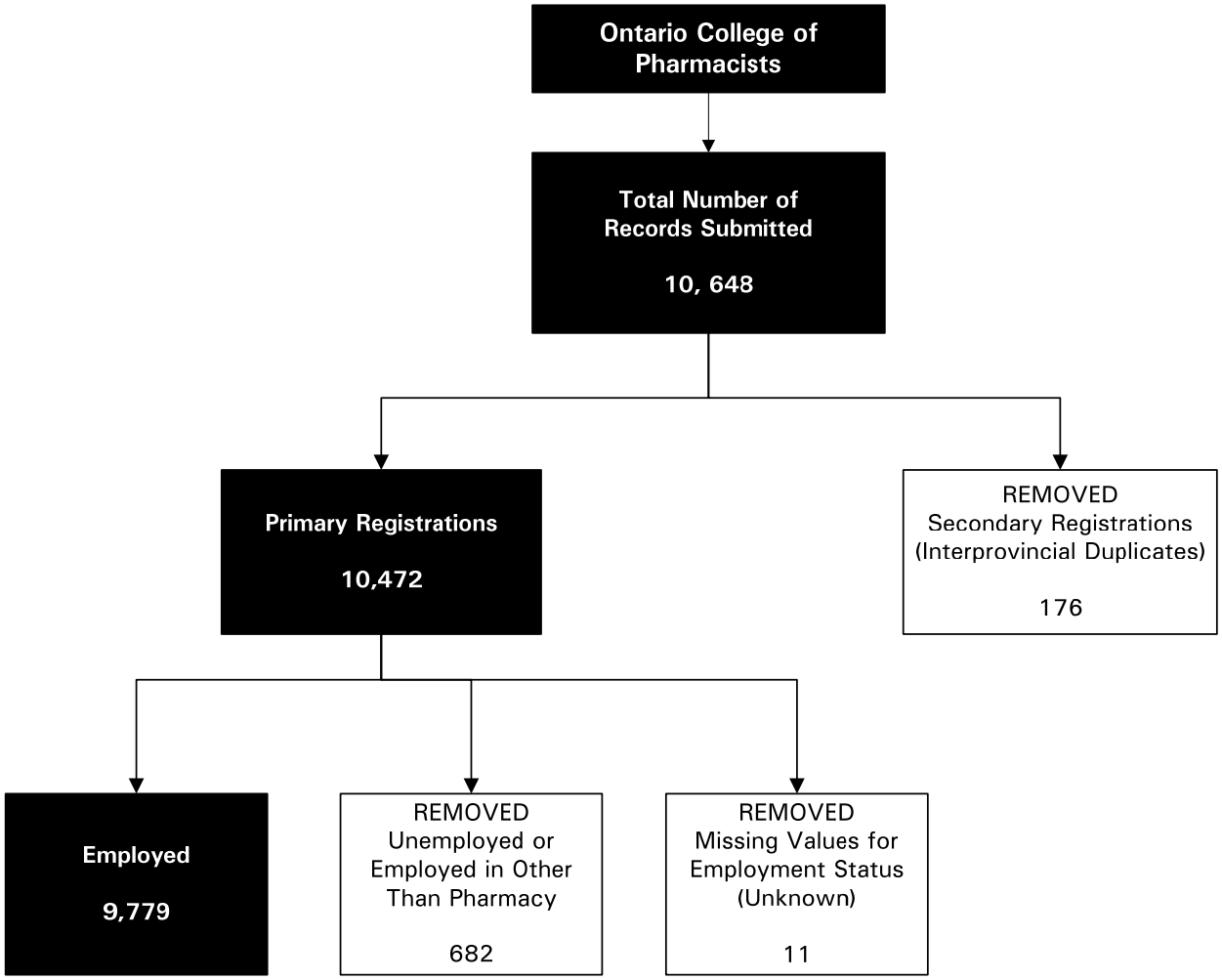
Data Flow From Nova Scotia College of Pharmacists to CIHI



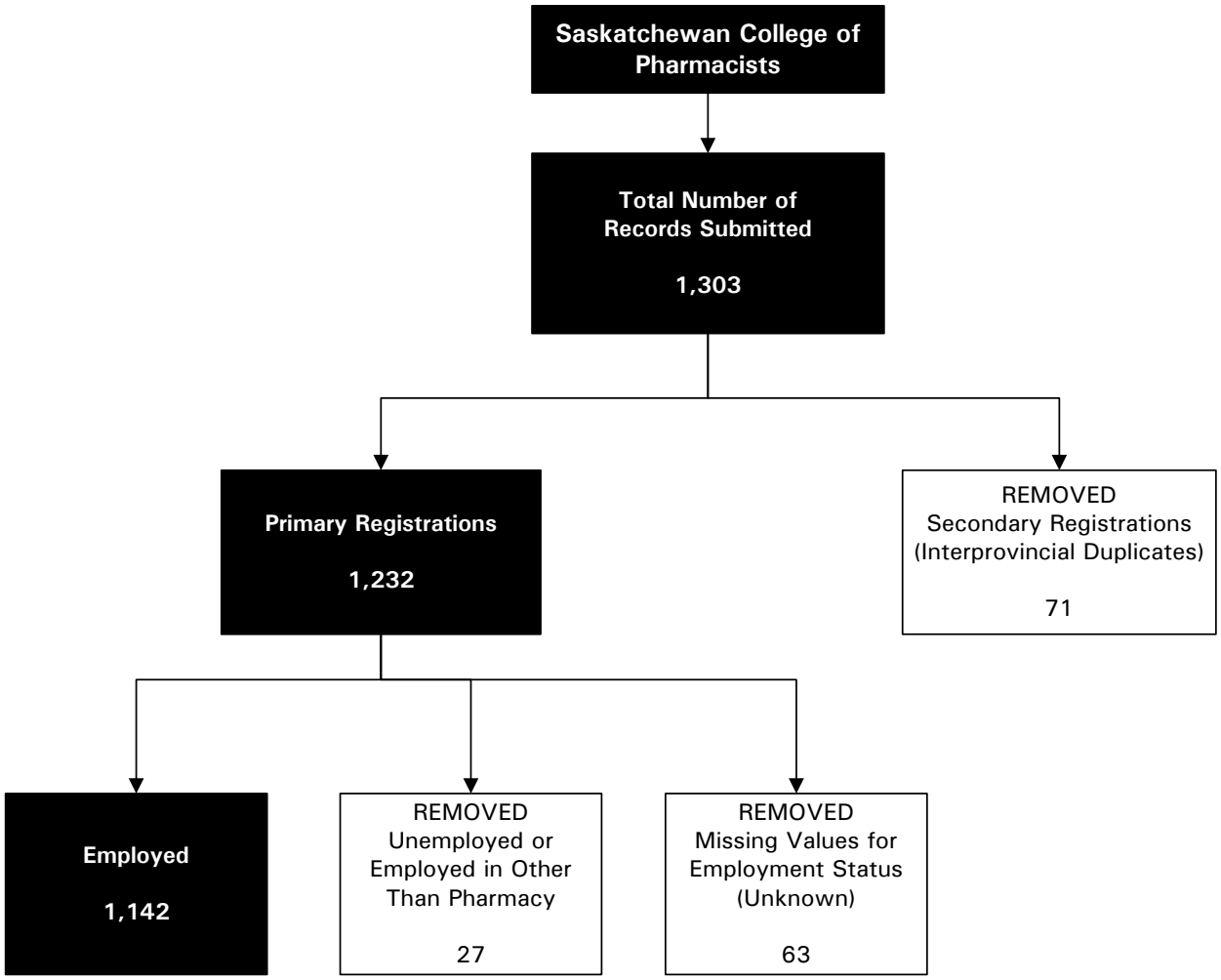
Data Flow From New Brunswick Pharmaceutical Society to CIHI



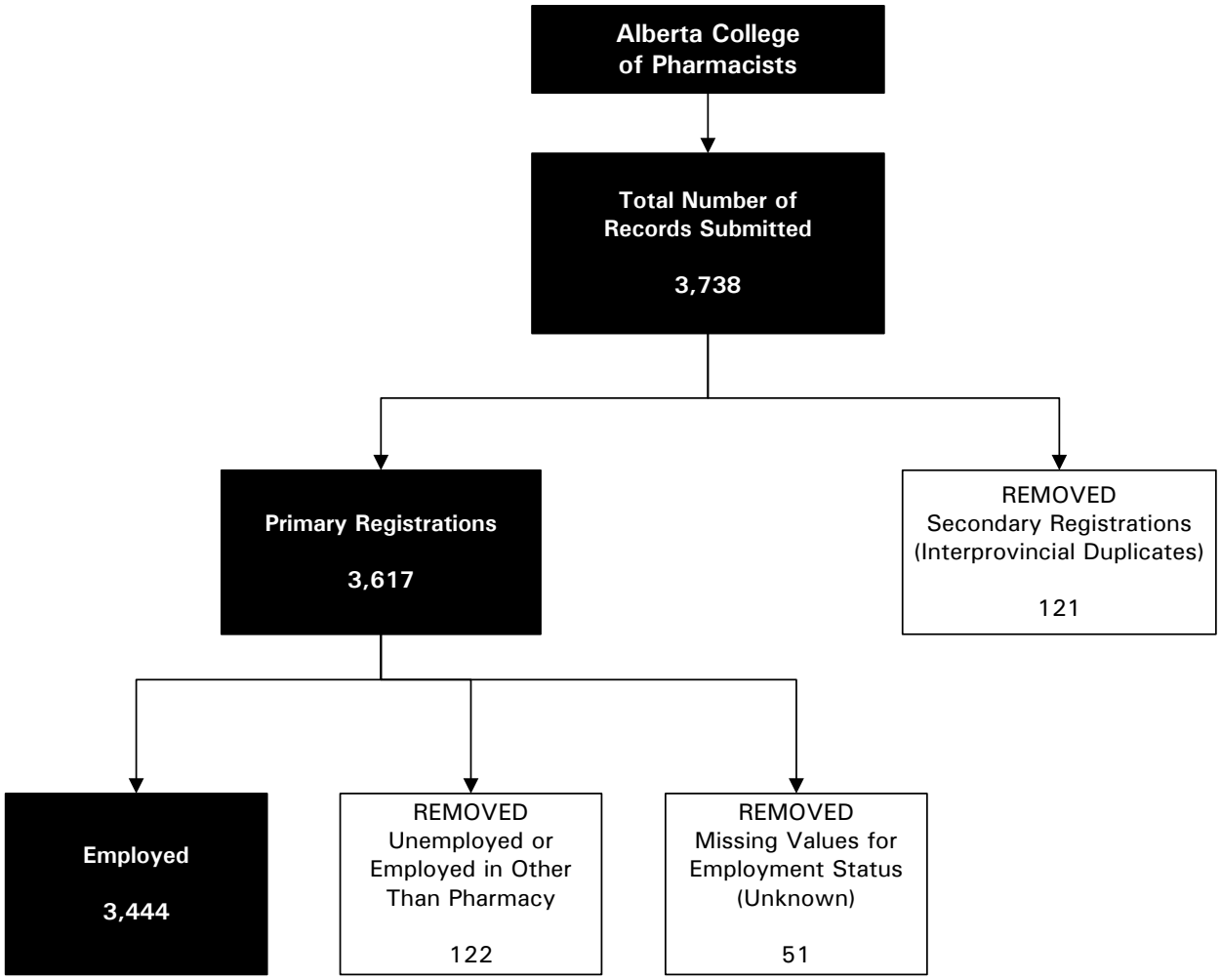
Data Flow From Ontario College of Pharmacists to CIHI



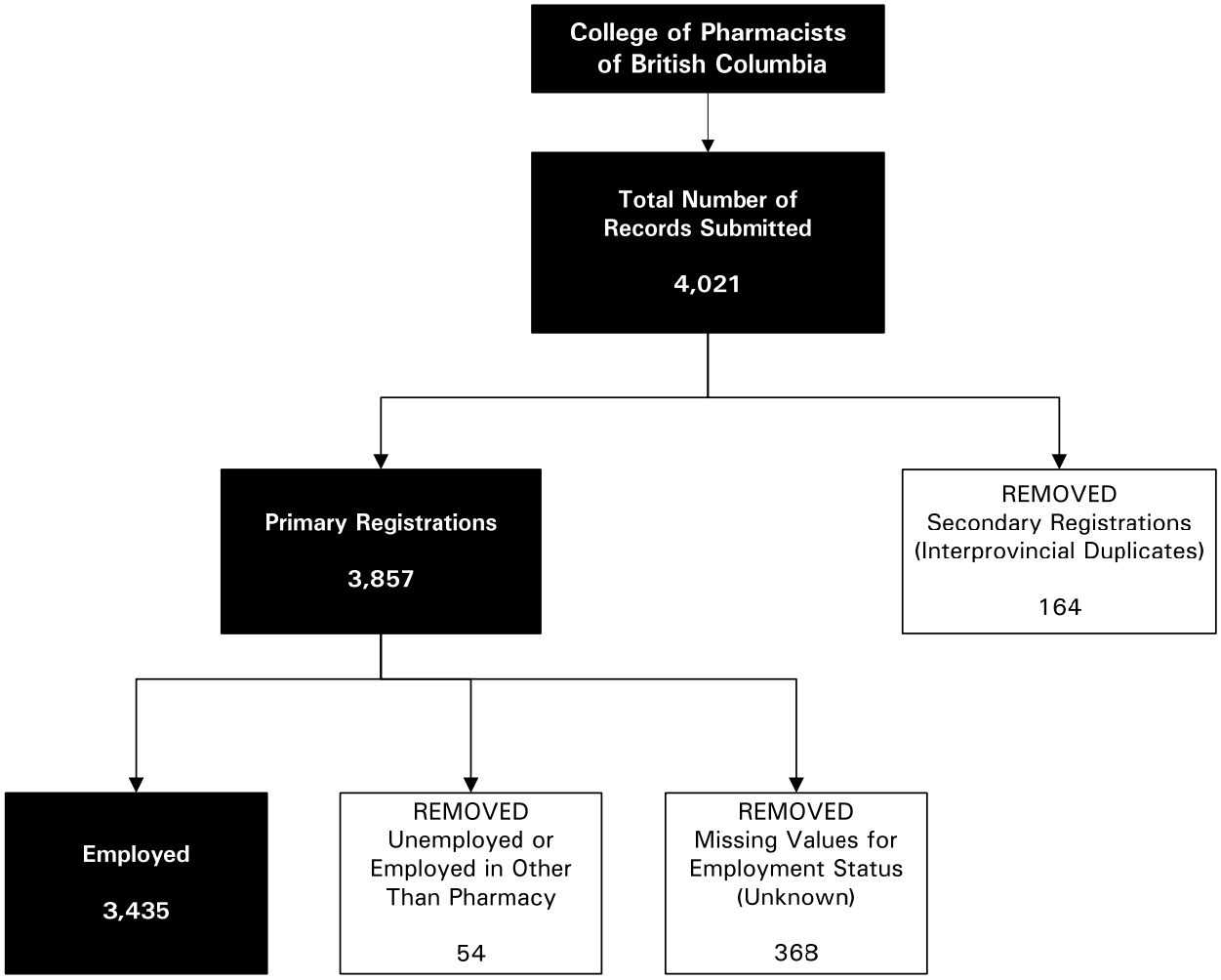
Data Flow From Saskatchewan College of Pharmacists to CIHI



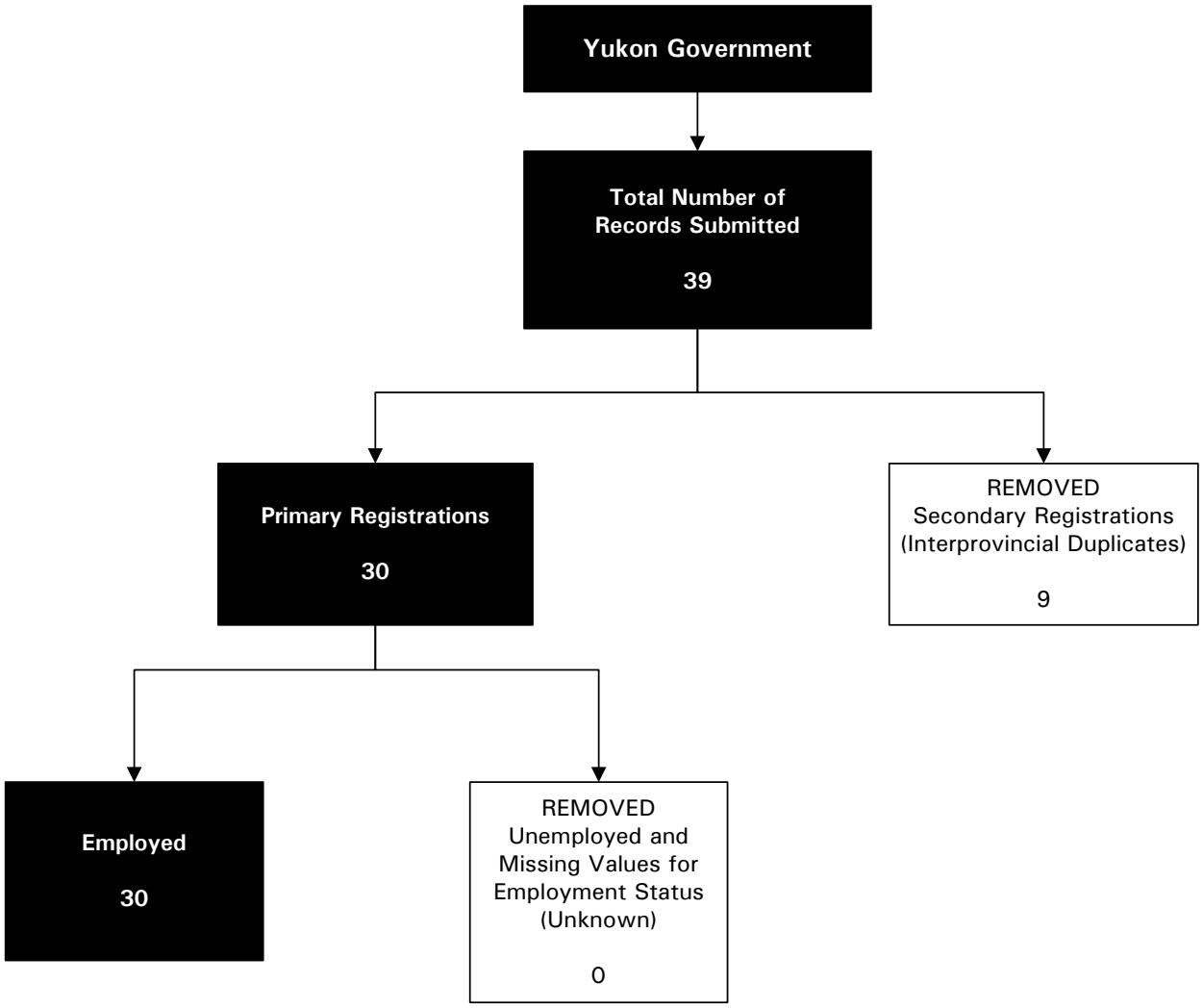
Data Flow From Alberta College of Pharmacists to CIHI



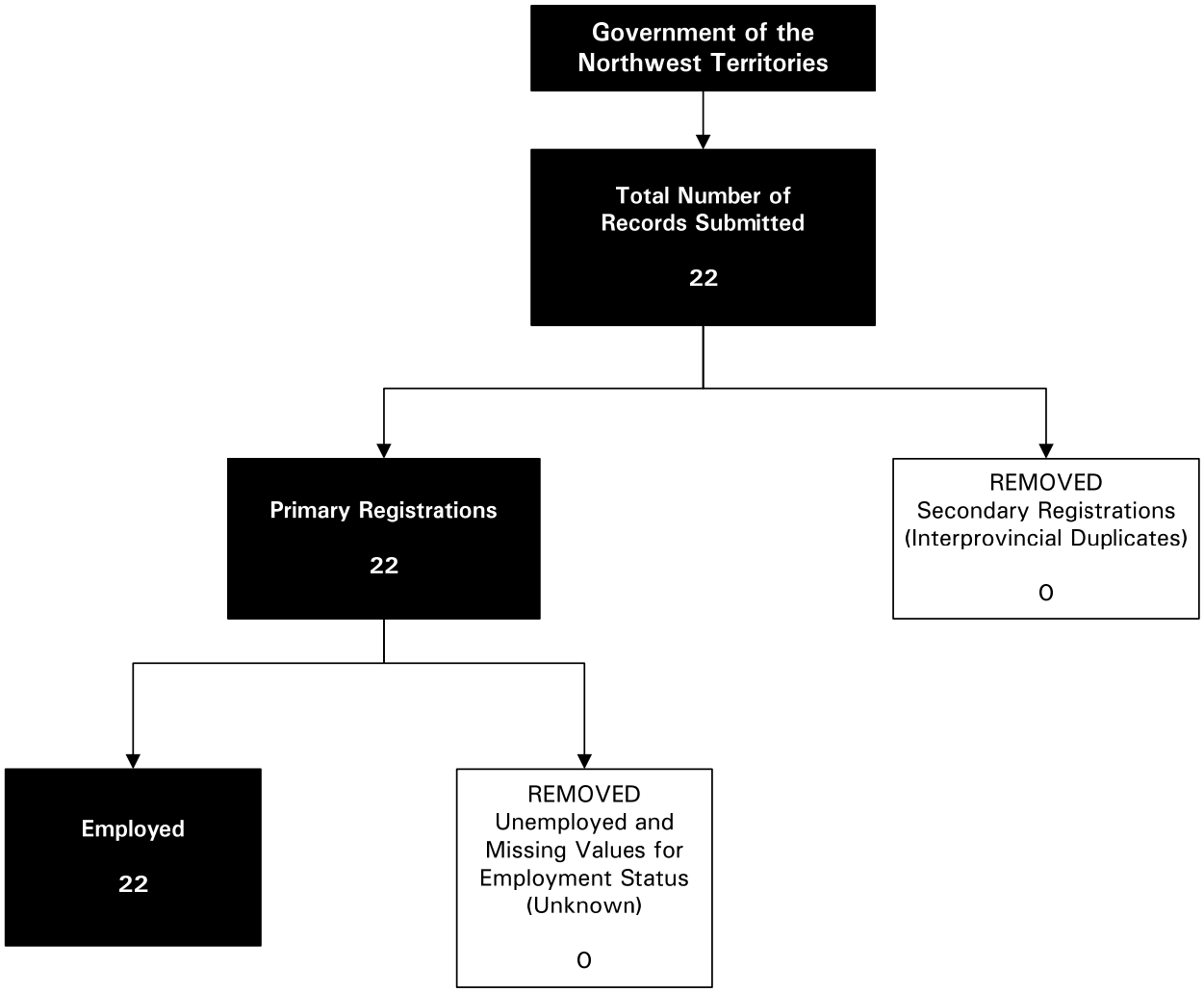
Data Flow From College of Pharmacists of British Columbia to CIHI



Data Flow From the Government of the Yukon to CIHI



Data Flow From Government of the Northwest Territories to CIHI



Appendix B
Pharmacist Contact Information

National Organizations

Canadian Forces Pharmacy Services
1745 Alta Vista Drive
Ottawa, Ontario K1A 0K6
Website: www.forces.gc.ca/Health/About_Us/CFHSCO/engraph/pharmacy-services_e.asp

Canadian Council for Accreditation of Pharmacy Programs
200–1765 West 8th Avenue
Vancouver, British Columbia V6J 5C6
Website: www.ccapp-accredit.ca/index.php

Canadian Society of Hospital Pharmacists
30 Concourse Gate, Unit 3
Ottawa, Ontario K2E 7V7
Website: www.cshp.ca

National Association of Pharmacy Regulatory Authorities
750–220 Laurier Avenue West
Ottawa, Ontario K1P 5Z9
Website: www.napra.org

The Canadian Association of Chain Drug Stores
301–45 Sheppard Avenue East
Toronto, Ontario M2N 5W9
Website: www.cacds.com

The Pharmacy Examining Board of Canada
717 Church Street
Toronto, Ontario M4W 2M4
Website: www.pebc.ca

Provincial/Territorial Professional Pharmacy Organizations

Atlantic

Atlantic Provinces Pharmacy Council (APPC)
410–212 Queen Street
Fredericton, New Brunswick E3B 1A8

Newfoundland and Labrador

Newfoundland and Labrador Pharmacy Board
Apothecary Hall
488 Water Street
St. John's, Newfoundland A1E 1B3
Website: www.nlpb.ca

Prince Edward Island

Prince Edward Island Pharmacy Board
South Shore Professional Building
Trans Canada Highway
PO Box 89
Crapaud, Prince Edward Island C0A 1J0

Prince Edward Island Pharmaceutical Association
PO Box 24042, 13 Stratford Road
Stratford, Prince Edward Island C1B 2V5

Nova Scotia

Nova Scotia College of Pharmacists
1464 Dresden Row
Halifax, Nova Scotia B3J 3T5
Website: www.nspharmacists.ca

Pharmacy Association of Nova Scotia
1470 Dresden Row
Halifax, Nova Scotia B3J 3K3
Website: www.pans.ns.ca

New Brunswick

New Brunswick Pharmaceutical Society
373–B Urquhart Avenue
Moncton, New Brunswick E1H 2R4
Website: www.nbpharmacists.ca

New Brunswick Pharmacists' Association
410–212 Queen Street
Fredericton, New Brunswick E3B 1A8
Website: www.nbpharma.ca

Quebec

Association des pharmaciens des établissements de santé du Québec
320–4050 Molson Street
Montréal, Quebec H1Y 3N1
Website: www.apesquebec.org

Association québécoise des pharmaciens propriétaires (AQPP)
4378 Pierre-De Coubertin Avenue
Montréal, Quebec H1V 1A6
Website: www.aqpp.qc.ca/fr/index.php

Association professionnelle des pharmaciens salariés du Québec (APPSQ)
3560 la Verendry Street
Sherbrooke, Quebec J1L 1Z6

Ordre des pharmaciens du Québec
301–266 Notre-Dame Ouest Street
Montréal, Quebec H2Y 1T6
Website: www.opq.org

Ontario

Ontario College of Pharmacists
483 Huron Street
Toronto, Ontario M5R 2R4
Website: www.ocpinfo.com

Ontario Pharmacists' Association
800–375 University Avenue
Toronto, Ontario M5G 2J5
Website: www.opatoday.com

Manitoba

Manitoba Pharmaceutical Association
187 St. Mary's Road
Winnipeg, Manitoba R2R 1J2
Website: www.mpha.mb.ca

The Manitoba Society of Pharmacists
202–90 Garry Street
Winnipeg, Manitoba R3C 4H1
Website: www.msp.mb.ca

Saskatchewan

Saskatchewan College of Pharmacists
700–4010 Pasqua Street
Regina, Saskatchewan S4S 7B9
Website: www.saskcollegepharm.ca

Pharmacists Board of Saskatchewan
202–2629 29th Avenue
Regina, Saskatchewan S4S 2N9
Website: www.rbsp.ca

Alberta

Alberta College of Pharmacists
1200–10303 Jasper Avenue NW
Edmonton, Alberta T5J 3N6
Website: www.pharmacists.ab.ca

Alberta Pharmacists' Association (RxA)
1800 Canadian Western Bank Building
10303 Jasper Avenue
Edmonton, Alberta T5J 3N6
Website: www.albertapharmacy.ca

British Columbia

College of Pharmacists of British Columbia
200–1765 West 8th Avenue
Vancouver, British Columbia V6J 5C6
Website: www.bcpharmacists.org

British Columbia Pharmacy Association
1530–1200 West 73rd Avenue
Vancouver, British Columbia V6P 6G5
Website: www.bcpharmacy.ca

Northwest Territories

Government of the Northwest Territories
Health Professional Licensing
Department of Health and Social Services
5022 49 Street
8th Floor, Centre Square Tower
PO Box 1320
Yellowknife, Northwest Territories X1A 2L9

Yukon

Government of the Yukon
Yukon Consumer Services, Department of Community Services
PO Box 2703, C-5
Whitehorse, Yukon Y1A 2C6

Canadian University Programs in Pharmacy

Memorial University of Newfoundland
School of Pharmacy
St. John's Campus
PO Box 4200
St. John's, Newfoundland A1C 5S7
Website: www.mun.ca/pharmacy

Dalhousie University
College of Pharmacy
5968 College Street
Halifax, Nova Scotia B3H 3J5
Website: www.pharmacy.dal.ca

Université Laval
Faculté de pharmacie
Pavillon Ferdinand-Vandry
Université Laval
Québec, Quebec G1K 7P4
Website: www.pha.ulaval.ca

Université de Montréal
Faculté de pharmacie
C.P. Box 6128, succursale Centre-ville
Montréal, Quebec H3C 3J7
Website: www.pharm.umontreal.ca

University of Toronto
Leslie L. Dan Faculty of Pharmacy
University of Toronto
144 College Street
Toronto, Ontario M5S 3M2
Website: www.pharmacy.utoronto.ca

University of Waterloo
School of Pharmacy
200 University Avenue West
Waterloo, Ontario N2L 3G1
Website: www.pharmacy.uwaterloo.ca

University of Manitoba
Faculty of Pharmacy
Pharmacy Building
University of Manitoba
Winnipeg, Manitoba R3T 2N2
Website: www.umanitoba.ca/faculties/pharmacy

University of Saskatchewan
College of Pharmacy and Nutrition
110 Science Place
Saskatoon, Saskatchewan S7N 5C9
Website: www.usask.ca/pharmacy-nutrition

University of Alberta
Faculty of Pharmacy and Pharmaceutical Sciences
Dentistry/Pharmacy Centre
University of Alberta
Edmonton, Alberta T6G 2N8
Website: www.pharmacy.ualberta.ca

University of British Columbia
Faculty of Pharmaceutical Sciences
University of British Columbia
2146 East Mall
Vancouver, British Columbia V6T 1Z3
Website: www.pharmacy.ubc.ca

References

1. Canadian Pharmacist Association, *Licensing of Pharmacists*, [online], cited October 30, 2008, from <http://www.pharmacists.ca/content/about_cpha/about_pharmacy_in_can/licensing/index.cfm>.

2. Pharmacy Examining Board of Canada, *Pharmacy Examining Board of Canada Questions & Answers*, [online], cited October 30, 2008, from <http://www.pebc.ca/EnglishGraphics/Questions%20and%20Answers%202008.pdf>.

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