



Workforce Trends of Pharmacists for Selected Provinces and Territories in Canada, 2006

H e a l t h H u m a n R e s o u r c e s D a t a b a s e



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

The Pharmacist Database (PDB) is one example of a health database developed and maintained by CIHI. Any questions or requests regarding this publication or the Pharmacist Database should be directed to:

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- Alberta College of Pharmacists
- Canadian Association of Chain Drug Stores
- Canadian Pharmacists Association
- Canadian Society of Hospital Pharmacists
- College of Pharmacists of British Columbia
- Government of 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

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

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

Introduction

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, 2006*. This is the first CIHI annual publication focused solely on the supply and distribution of the pharmacist workforce in Canada.

The information contained in the Pharmacist Database (PDB) is a key component to health human resource planning. An investigation into the number of health professionals required for a jurisdiction must begin with an understanding of the current supply and how that supply is changing.

The PDB is for the use of all levels of government, researchers, stakeholders and advocacy groups, private and public organizations, media and pharmacists as a source of data on the supply of the pharmacist workforce in Canada.

The presentation of clear, objective data and data analysis supports informed decision-making and policy formulation. This inaugural report represents the starting point for a data series to provide a useful historical perspective of the supply of pharmacists and their distribution, allowing for time-series analysis in the future.

CIHI has engaged in the development of five new databases, including the PDB, to further its contribution to the picture of health human resources in Canada. The Occupational Therapist, Physiotherapist, Medical Laboratory Technologist and Medical Radiation Technologist databases are set for phased release over the next few years, starting with this report on the pharmacist workforce. These reports will complement existing information gathered on physicians and nurses in Canada. The annual publications for each health profession have been standardized as much as possible to allow for cross-profession analyses.

In this annual report, CIHI presents information on the pharmacist workforce and the profession as a distinct health provider group.

We hope that this report will provide a starting point for the work of those who have an interest in human resources planning for pharmacists in Canada.

Data Analysis of Pharmacists

Methodological Overview

The data and information presented in this publication are from the Pharmacist Database (PDB) and Health Personnel Database (HPDB), which are both maintained by the Canadian Institute for Health Information (CIHI).

Pharmacists have been regulated since 1973 by provincial regulatory authorities. In the territories, the territorial governments register/license pharmacists.

Official registration requires the completion of a registration form by pharmacists either on paper or online, as available. In keeping with the mandate of the provincial regulatory authorities and territorial governments of pharmacists across Canada, registration forms typically contain personal information, educational credentials and employment history details. The collection of these specific pieces of information tends to be common across jurisdictions. Other information collected on the registration form may vary according to the bylaws and business needs of the individual provincial regulatory authority or territorial government.

The administrative data collected by the respective provincial regulatory authorities and territorial governments are well suited to informing health human resource planning and management in Canada. Collecting and collating these data from all provinces and territories provides a unique opportunity to examine aggregate information on registered pharmacists in Canada, which is essential in identifying the influence of supply-based issues for 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. These data elements cover the demographic, geographic, educational and employment characteristics of pharmacists across Canada. From this consultation, a data dictionary containing specific information on the development process, data elements and associated values, as well as definitions and 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. As such, the data collected on the annual registration form and submitted to CIHI for the PDB are the property of the respective provincial regulatory authorities or territorial governments.

Under an agreement with CIHI, a portion of this information is submitted to CIHI once each year. CIHI and the respective regulatory authorities/territorial governments jointly review the new data, applying rigorous principles of data quality assurance. Once data quality assurance has been completed, CIHI adds the new data to the Pharmacist Database for analysis and reporting. This information will be collected year-on-year to provide a historical record of the pharmacist workforce.

The Methodological Notes section provides more detail on CIHI's review process and data considerations. It is important for readers to understand how the data are collected, reviewed and reported by CIHI. This is true for two reasons: first, the statistics reported by CIHI will differ from the statistics reported by the regulatory authorities or territorial governments, even though the source of the data (the annual registration forms) is the same. Second, differences in the registration forms can affect the results and subsequent interpretation of the data. CIHI aims to highlight and explain these data considerations.

Any questions regarding the methodology may be sent to pdb@cihi.ca.

Note to Readers

1. Data for the 2006 pharmacist workforce in Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut were not available for this publication.
2. Due to small cell sizes in the territories, the results for the pharmacists in the Yukon and Northwest Territories may have been grouped together for some of the analyses found in this publication.
3. The term *pharmacist workforce* is used in this publication and accompanying documents to include registered pharmacists who were employed at the time of annual registration.
4. The provincial and territorial statistics from the PDB have been reviewed and authorized by the respective representatives at the provincial regulatory authorities and territorial governments responsible for the regulation and licensure of pharmacists in Canada.
5. 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 are year-end statistics that include all registrations received during the 12-month registration period. In contrast, CIHI collects data as of October 1 of the data collection year. In consultation with provincial regulatory authorities and territorial governments, this point-in-time data collection was established to ensure timely and comprehensive information based on their respective registration periods.
 - b. **Reference population**—For the PDB, provincial regulatory authorities and territorial governments (data providers) submit data for “active” registrations received during the registration year. The active total presented in this report represents the number of pharmacists deemed eligible to work by the regulatory authority or territorial government in that particular jurisdiction in that year. Specifically, active registration includes those registration categories that authorize a registrant, based on the assessment and issuance by a regulatory authority or territorial government, 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 for the PDB.
 - c. **Exclusions from CIHI data**—Active registrants fall into five categories: Employed in the profession of pharmacy; Employed in other than the profession of pharmacy, seeking employment in the profession of pharmacy; Employed in other than the profession of pharmacy, not seeking employment in the profession of pharmacy; Unemployed and seeking employment in the profession of pharmacy; and Unemployed and not seeking employment in the profession of pharmacy. For this publication, CIHI removes registrants who are not employed in the profession of pharmacy, as well as those pharmacists for whom employment status information is missing or unknown. These registrants are not included in most CIHI analyses.
 - d. **Other exclusions from CIHI data**—CIHI statistics do not necessarily include pharmacists who are on leave (for example, maternity/paternity leave) as of October 1 of the data collection year.

- e. **CIHI editing and processing**—The CIHI database is not an amalgamation of regulatory data. When data files are submitted, CIHI attempts to remove those pharmacists who may register with more than one provincial regulatory authority and/or territorial government. For example, if a pharmacist has employment in both Alberta and British Columbia, he or she is required to register with both colleges. These registrants are called secondary registrations (or interprovincial duplicates). Duplicate information is removed by CIHI according to the methodology described in the Methodological Notes section of this publication. The removal of duplicate information avoids double-counting pharmacists across jurisdictions, while more accurately reflecting 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.
6. CIHI, the provincial regulatory authorities and the territorial governments are continually working to improve data quality. This may affect the comparability of historical data in the future.
 7. The data presented in this publication are self-reported, which may lead to higher-than-expected “unknown” values if a substantial portion of pharmacists chose not to complete all fields on their annual registration forms. 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

Definition

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

Responsibilities/Activities

Duties of a pharmacist can include: reviewing medications and collaborating with patients/clients and other health care providers to ensure optimal therapy for 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 contra-indications; 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 developed by researchers; coordinating clinical investigations of new drugs; controlling the quality of drug products during production; developing informational materials concerning the uses and properties of particular drugs; providing information services about drug products and pharmacotherapy; and evaluating labelling, packaging and advertising of drug products.

They supervise and may also perform delegated technical tasks such as: compounding pharmaceutical products; dispensing pharmaceuticals to patients or to other health care professionals; maintaining medication profiles of patients; maintaining a registry of poisons, narcotics and controlled drugs; ensuring proper storage of vaccines, serums, biologicals and other pharmaceutical products to prevent deterioration; and ordering and maintaining a stock of pharmaceutical supplies.

Practice Setting

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

Supply of Pharmacists

The Evolution of CIHI Data on Pharmacists

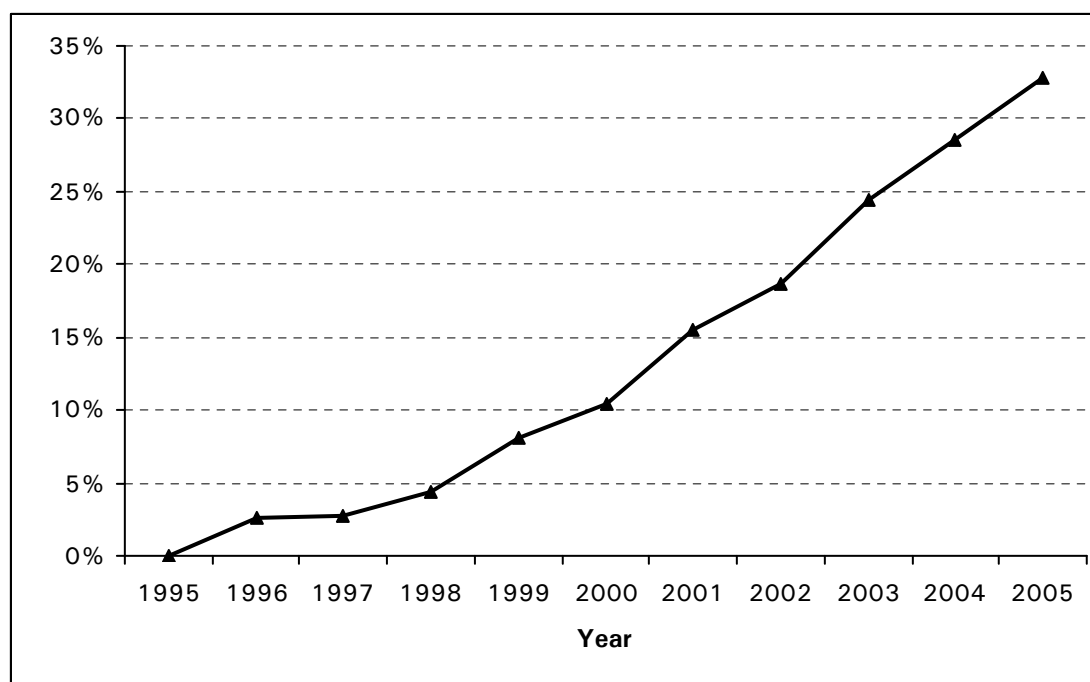
Prior to 2006, the information on pharmacists was collected at an aggregate level by the Health Personnel Database (HPDB) at CIHI. The HPDB provides basic information on entry to the profession and the workforce for pharmacists, among 22 other health occupations. Although the HPDB provides informative analysis that can be used to compare across health professions, it only provides a limited range of the desired information needs for health human resource planning. Because HPDB data are collected from a variety of sources, standardized, comparable data are not always available. Given these realities, HPDB reports present informative but simple outputs. These limitations reinforce the need for future work in health human resource information development in Canada for all health care providers.

The newly developed PDB provides a wide range of data elements available for analysis to address current and changing information needs. The PDB data dictionary clearly articulates the data standard for the collection of information on the pharmacist workforce across Canada, which allows for more rigorous data quality activities. With PDB data, advanced analytical activities such as trending and forecasting may be possible in the future, resulting in value-added research. With time, the PDB will be a source of advanced, policy-relevant reports available to inform the ongoing health human resource planning efforts for pharmacists.

Number of Pharmacists in Canada (HPDB 1995 to 2005)

According to the historical information found in the HPDB, the pharmacist profession experienced a strong growth rate over the decade. The number of active pharmacists registered in Canada increased steadily for an overall gain of over 32.8% since 1995 (Figure 1).

Figure 1. Percent Growth in the Number of Active Registered Pharmacists, Canada (HPDB 1995 to 2005)



Notes:

In Figure 1, 1995 is used as the base year. Yearly figures are calculated as a percentage change from the 1995 total.

The data source for this table is the Health Personnel Database (HPDB), which reports the number of active registered pharmacists. This data table includes regulated membership data (membership with a specific data provider is required as a condition of practice). Data in this table are useful for some purposes but should be used within the limitations noted in the Methodological Notes section of the *Health Personnel Trends in Canada, 1995 to 2004* publication.

Source: Health Personnel Database, Canadian Institute for Health Information.

Although the headcount of pharmacists has fluctuated over time, almost all of the provinces/territories experienced similar growth over the decade. Prince Edward Island showed the greatest percentage increase, at 42.9% (Table 1).

Table 1. Supply of Pharmacists, Canada (HPDB 1995 to 2005)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Percent Change From 1995
N.L.	484	483	489	491	534	514	526	540	572	585	585	20.9%
P.E.I.	112	111	113	109	112	119	131	138	149	152	160	42.9%
N.S.	788	828	818	907	932	940	931	988	1,011	1,014	1,065	35.2%
N.B.	478	511	533	539	564	570	554	551	602	613	625	30.8%
Que.	5,342	5,387	5,148	5,096	5,457	5,670	6,141	6,238	6,323	6,615	6,790	27.1%
Ont.	7,666	7,852	7,928	8,070	8,238	8,490	8,790	9,023	9,817	10,068	10,395	35.6%
Man.	858	914	906	875	940	899	990	1,086	1,092	1,154	1,155	34.6%
Sask.	1,043	1,049	1,080	1,081	1,100	1,108	1,129	1,080	1,142	1,170	1,177	12.8%
Alta.	2,545	2,609	2,686	2,784	2,816	2,904	2,990	3,086	3,185	3,333	3,504	37.7%
B.C.	2,812	2,946	3,032	3,147	3,223	3,248	3,406	3,544	3,672	3,766	3,941	40.1%
Y.T.	27	30	30	20	22	26	27	31	27	34	33	22.2%
N.W.T.	42	47	36	45	47	25	23	36	20	23	25	-40.5%
Nun.	..	..	..	..	..	5	5	5	..	10	16	..
Total	22,197	22,767	22,799	23,164	23,985	24,518	25,643	26,346	27,612	28,537	29,471	32.8%

Notes:

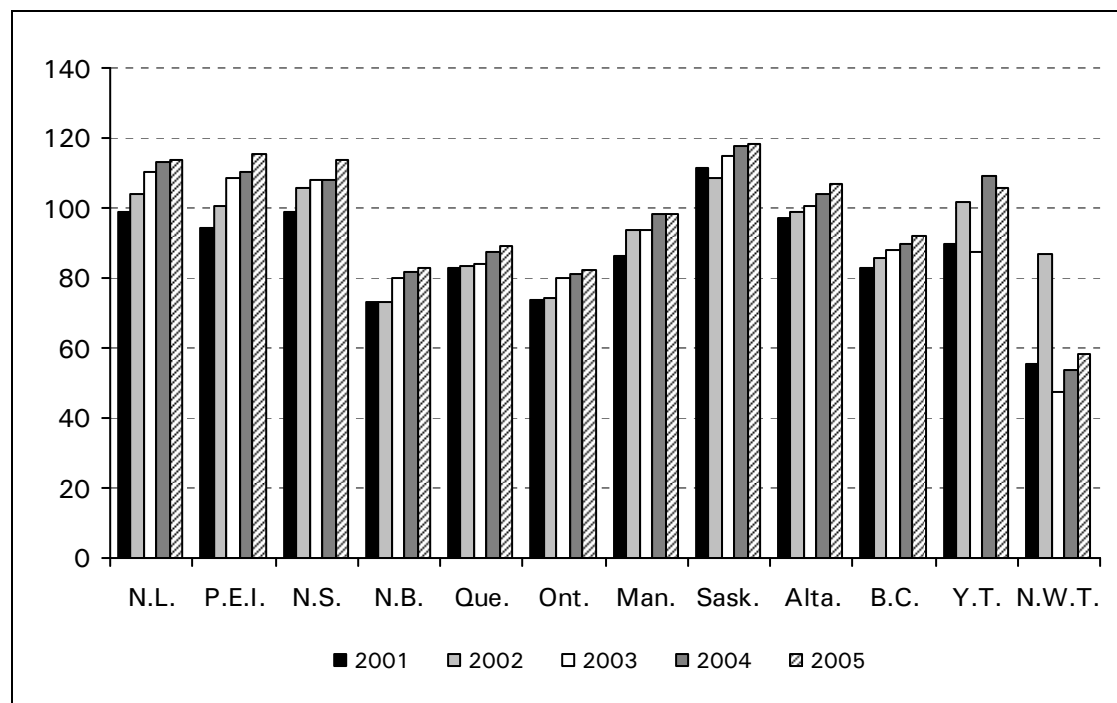
.. Data not available.

The data source for this table is the Health Personnel Database (HPDB), which reports the number of active registered pharmacists across Canada. This data table includes regulated membership data (membership with a specific data provider is required as a condition of practice). Data in this table are useful for some purposes but should be used within the limitations noted in the Methodological Notes section of the *Health Personnel Trends in Canada, 1995 to 2004* publication.

Source: Health Personnel Database, Canadian Institute for Health Information.

With the exception of the territories, the “per population” supply of pharmacists across Canada increased steadily from 2001 to 2005 (Figure 2).

Figure 2. Number of Pharmacists per 100,000 Population by Province/Territory of Registration, 2001 to 2005



Notes:

Data from Nunavut are not available.

The data source for this table is the Health Personnel Database (HPDB), which reports the number of active registered pharmacists across Canada. This data table includes regulated membership data (membership with a specific data provider is required as a condition of practice). Data in this table are useful for some purposes but should be used within the limitations noted in the Methodological Notes section of the *Health Personnel Trends in Canada, 1995 to 2004* publication.

Source: Health Personnel Database, Canadian Institute for Health Information.

2006 Pharmacist Database

This section describes the pharmacist workforce from the newly developed Pharmacist Database (PDB, 2006). This CIHI publication reports the number of pharmacists that are registered with a provincial regulatory authority or territorial government. The report's focus is on the pharmacist workforce in Canada; therefore, only those pharmacists who are employed in the profession of pharmacy are included in the analyses of 2006 Pharmacist Database (PDB) data found herein.

Employed Pharmacists

The provincial regulatory authorities and territorial governments participating in the 2006 PDB submitted a total of 20,713 records representing the pharmacist workforce in selected provinces/territories in Canada. Of these, 87.7% of the registrants were currently employed in the profession of pharmacy (Table 2). Other pharmacists were employed in a profession other than pharmacy (0.3%), unemployed (8.7%) or their employment status was unknown (3.3%).

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

	Count	Percent
Employed in the Profession of Pharmacy	18,175	87.7
Employed in Other than the Profession of Pharmacy, Seeking Employment in the Profession of Pharmacy	19	0.1
Employed in Other than the Profession of Pharmacy, Not Seeking Employment in the Profession of Pharmacy	36	0.2
Unemployed and Seeking Employment in the Profession of Pharmacy	1,778	8.6
Unemployed and Not Seeking Employment in the Profession of Pharmacy	28	0.1
Unknown	677	3.3
Total	20,713	100.0

Notes:

Data from Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut are not available. Total includes data from Prince Edward Island, Nova Scotia, Ontario, Saskatchewan, Alberta, British Columbia and the Yukon. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

Source: Pharmacist Database, Canadian Institute for Health Information.

Secondary Registrations

CIHI also identifies and removes secondary registrations (Table 3). Secondary registrations totalled 880 (4.2%) pharmacists; this group includes: i) pharmacists who maintain Canadian registration while living outside of Canada or ii) pharmacists whose province/territory of residence and/or province of primary employment is in a Canadian jurisdiction that is different from the province/territory of registration (see Appendix A). (A detailed explanation of the secondary registration methodology can be found in the Methodological Notes section of this publication.) The data for these secondary registrations (also termed *interprovincial duplicates*) are excluded from the analysis contained in this report. In this way, CIHI is better able to minimize double-counting pharmacists and report more accurate head counts for the pharmacist workforce.

Table 3. Number and Composition of Pharmacist Workforce by Selected Province/Territory, 2006

	Records Submitted by Jurisdiction	Identify and Remove Secondary Registrations	Remove Employed in Other Than Profession of Pharmacy and Unemployed, and Remove Employment Status Unknown	Total
P.E.I.	162	15	6	141
N.S.	1,113	51	274	788
Ont.	10,612	514	789	9,309
Sask.	1,189	51	111	1,027
Alta.	3,642	136	309	3,197
B.C.	3,937	106	680	3,151
Y.T.	35	6	0	29
N.W.T.	23	1	0	22
Total	20,713	880	2,169	17,664

Notes:

Data for Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut are not available. CIHI data will differ from provincial regulatory authority or territorial government data due to the CIHI collection, processing and reporting methodology. Please review the Methodological Notes for more comprehensive information regarding the collection and comparability of PDB data. Data in this table are useful for some purposes but should be used within the limitations noted in the Methodological Notes section of *Workforce Trends of Pharmacists for Selected Provinces and Territories in Canada, 2006*.

Source: Pharmacist Database, Canadian Institute for Health Information.

Of the 880 secondary registrations identified in the 2006 data, 58.4% were registered in Ontario, 15.4% in Alberta and 12.0% in British Columbia.ⁱ

Therefore, of the 20,713 records submitted by the provincial regulatory authorities or territorial governments, 3,049 were excluded (880 secondary registration + 2,169 not employed in pharmacy), yielding a total of 17,664 records that represent the analyses contained in this report.

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.

Number of Pharmacists in Selected Provinces and Territories (2006)

According to the PDB, for the eight jurisdictions that were able to participate and submit data to CIHI in 2006, there were a total of 17,664 employed pharmacists (Table 4).

Table 4. Number of Pharmacists, Province/Territory, 2006

P.E.I.	N.S.	Ont.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Total
141	788	9,309	1,027	3,197	3,151	29	22	17,664

Notes:

Data for Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut are not available. CIHI data will differ from provincial regulatory authority or 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.

Source: Pharmacist Database, Canadian Institute for Health Information.

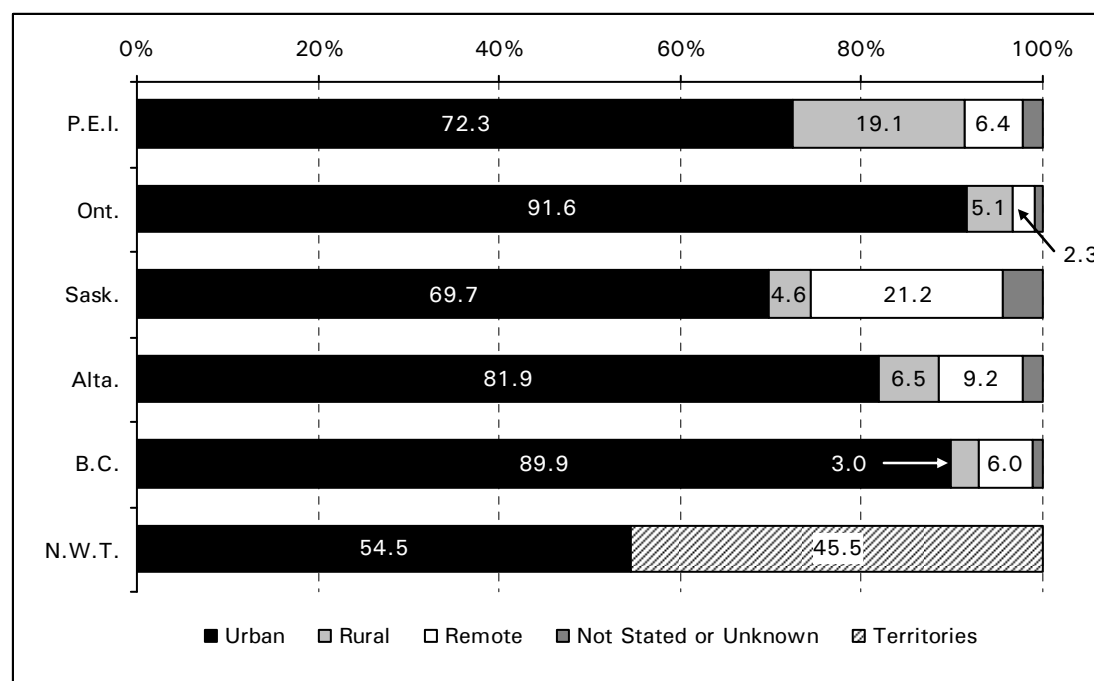
Geographic Distribution

Urban/Rural Distribution

There is variability in the distribution of the pharmacist workforce across the jurisdictions featured in this annual report. Within Ontario and British Columbia the proportion topped 89.9% in urban areas (Figure 3). Other provinces, including Saskatchewan and Prince Edward Island, have a higher proportion of pharmacists in rural or remote areas (21.2% and 19.1%, respectively).

For this analysis, urban areas are defined (in part) as communities with populations greater than 10,000 persons. Rural areas are in relatively close proximity to the urban areas. Remote areas are those communities with relatively little social and economic interaction with urban areas.

Figure 3. Geographic Distribution of Pharmacists in Urban, Rural and Remote Regions by Selected Provinces/Territories, 2006



Notes:

Data for Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut are not available. Findings do not include Nova Scotia and Yukon, as postal code of primary employment was not collected/submitted.

Postal code data were assigned to “urban,” “rural” and “remote” categories using the July 2006 release of Statistics Canada’s Postal Code Conversion File (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.

“Not stated” indicates that the postal code was not provided by the jurisdiction.

“Unknown” indicates that the postal code provided did not match with the PCCF.

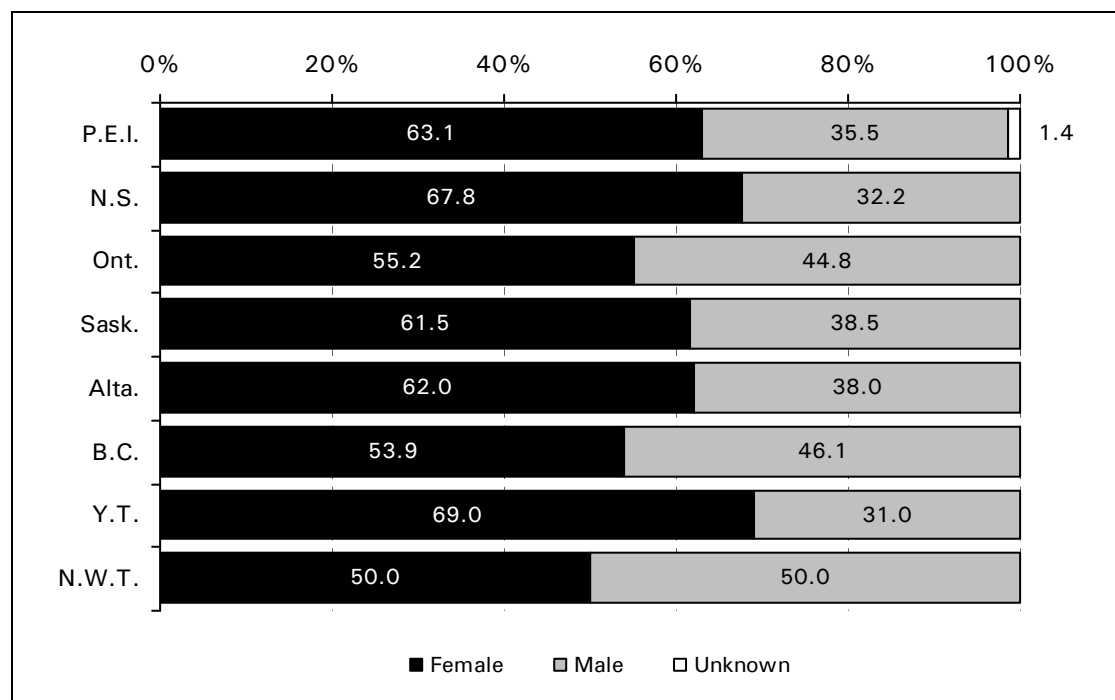
Sources: Pharmacist Database, Canadian Institute for Health Information; and Statistics Canada.

Demographic Trends of Pharmacists

Gender

Women make up a larger portion of the pharmacist workforce across the selected provinces/territories featured in this report, with the exception of the Northwest Territories, where there is a 50/50 split of males and females (Figure 4).

Figure 4. Percent Distribution of Gender by Selected Provinces/Territories, 2006



Notes:

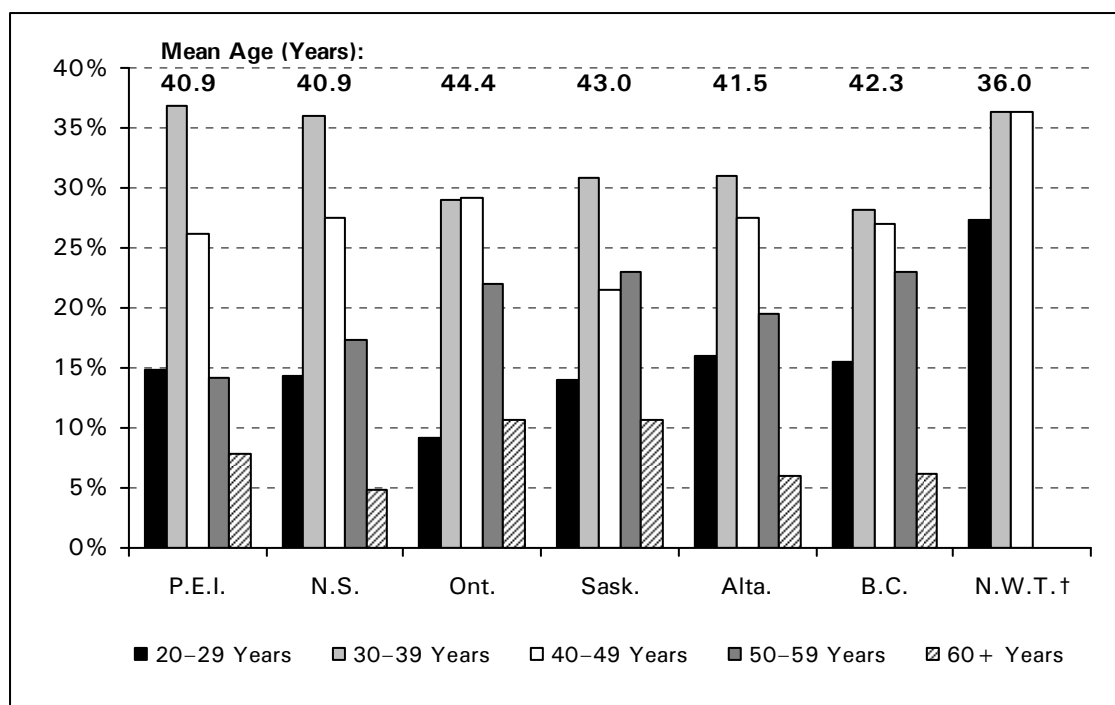
Data for Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut are not available. CIHI data will differ from provincial regulatory authority or territorial government statistics due to the CIHI collection, processing and reporting methodology. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

Source: Pharmacist Database, Canadian Institute for Health Information.

Age Distribution

The age distribution varies slightly across the selected provinces and territories (Figure 5).

Figure 5. Percent Distribution of Pharmacists by 10-Year Age Groups for Selected Provinces/Territories, 2006



Notes:

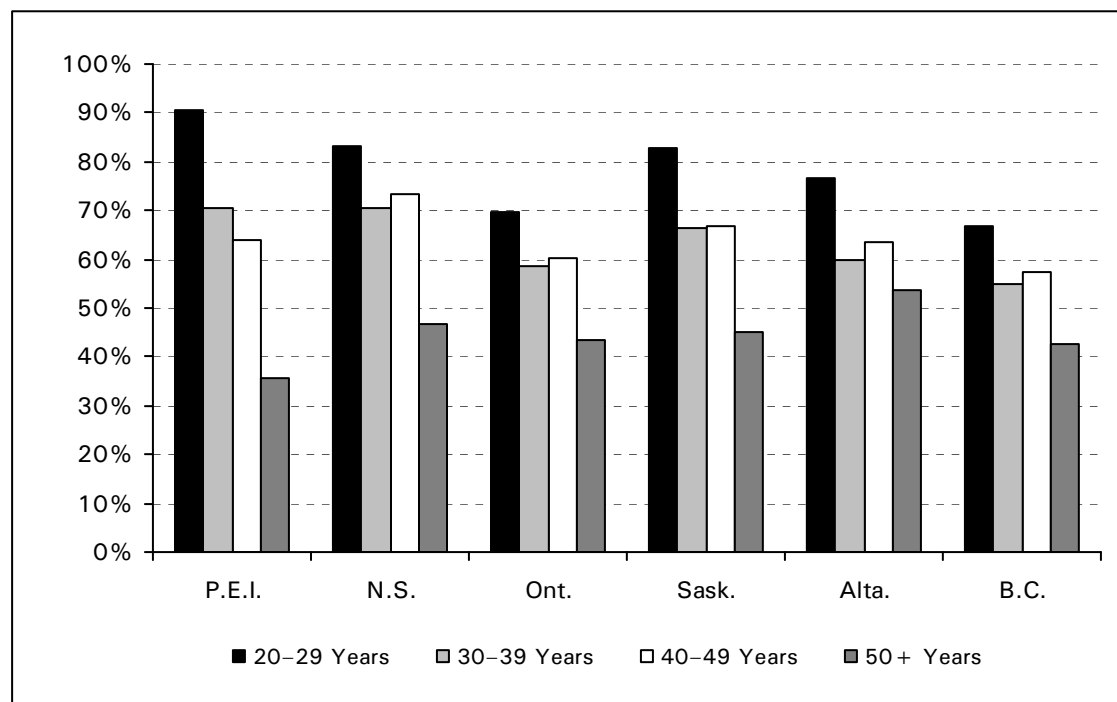
† Northwest Territories data for those 40 years and older were combined due to small cell sizes. Data for Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut are not available. Findings do not include Yukon Territory, as age was not collected/submitted. CIHI data will differ from provincial 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.

Age by Gender

The data provided by the provinces shown in Figure 6 illustrate that younger pharmacists are predominately female; whereas, a more even split occurs between male and female pharmacists over the age of 50 years.

Figure 6. Percent Distribution of Female Pharmacists by 10-Year Age Group for Selected Provinces, 2006



Notes:

Data for Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut are not available. Findings do not include Yukon Territory, as age was not collected/submitted. Northwest Territory data were suppressed due to small cell sizes. 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.

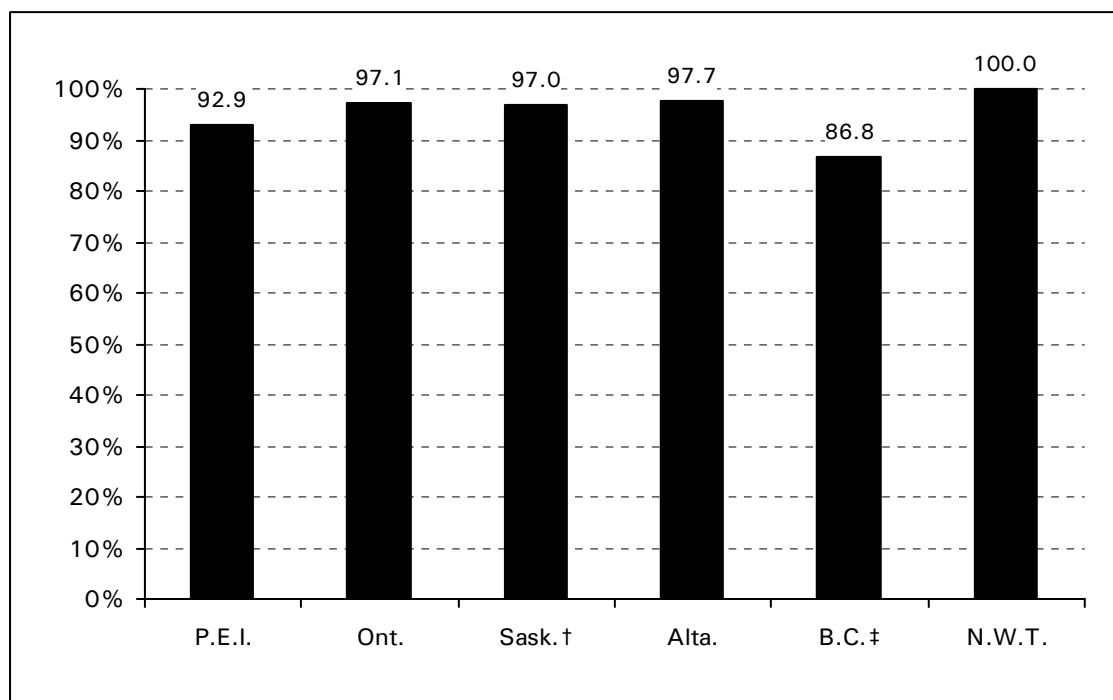
Source: Pharmacist Database, Canadian Institute for Health Information.

Education of Pharmacists

Current Level of Education in Pharmacy

Most of the pharmacist workforce in the selected provinces/territories have achieved the baccalaureate level of education in pharmacy (Figure 7).

Figure 7. Percent Distribution of Baccalaureate Level for Current Education in Pharmacy for Selected Provinces/Territories, 2006



Notes:

† Saskatchewan had 1.2% unknown responses for level of education.

‡ British Columbia had 11.8% unknown responses for level of education.

All other provinces and territories had 0.0% unknown.

Data for Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut are not available.

Findings do not include Nova Scotia and Yukon Territory, as level of education was not collected/submitted.

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.

New Grads (HPDB 1995 to 2005)

According to the historical trending done in the HPDB, Canadian universities produced over 600 graduates per year (Table 5). The number of graduates from accredited programs in pharmacy fluctuated over the decade.

Table 5. Number of Degree Graduates of Schools for Pharmacy by Gender and School of Graduation, Canada, 1995 to 2005

School	1995	1996	1997	1998	1999	2000 [§]	2001 [§]	2002 [§]	2003	2004	2005
N.L.											
Memorial University	33	29	34	31	36	38	40	35	32	37	35
Males	17	13	17	13	21	..	..	..	9	7	13
Females	16	16	17	18	15	..	..	..	23	30	22
N.S.											
Dalhousie University	67	63	69	62	62	66	64	62	50	59	88
Males	23	19	19	21	20	..	19	15	10	14	18
Females	44	44	50	41	42	..	45	47	40	45	70
Que.											
Université Laval	96	114	120	103	98	145	..	..	..	..	..
Males	33	37	37	28	24	..	..	..	..	..	..
Females	63	77	83	75	74	..	..	..	..	..	..
Université de Montréal	105	136	107	115	123	149	107	94	120	116	..
Males	31	53	37	39	45	..	..	..	27	23	..
Females	74	83	70	76	78	..	..	..	93	93	..
Ont.											
University of Toronto [†]	159	161	0 [‡]	129	109	122	111	117	119	131	165
Males	65	65	0	38	33	..	..	..	43	36	..
Females	94	96	0	91	76	..	..	..	76	95	..
Man.											
University of Manitoba	44	28	49	49	46	42	47	48	47	43	45
Males	24	8	27	20	16	..	..	15	10	18	14
Females	20	20	22	29	30	..	..	33	37	25	31
Sask.											
University of Saskatchewan	73	76	78	74	71	74	75	65	..	72	80
Males	37	31	23	21	27	..	..	..	..	8	25
Females	36	45	55	53	44	..	..	..	..	64	55
Alta.											
University of Alberta [†]	102	101	98	96	99	104	104	95	98	93	97
Males	47	42	31	35	28	..	..	..	34	20	28
Females	55	59	67	61	71	..	..	..	64	73	69
B.C.											
University of British Columbia [†]	108	119	119	122	130	136	123 ^{††}	129 ^{††}	127	121	145
Males	53	48	41	50	49	44	40	43	52	28	2
Females	55	71	78	72	81	91	83	86	75	93	143
Canada^{‡‡}	787	827	674	781	774	876	671	645	593	672	655

Notes:

Data provided by the Pharmacy Examining Board of Canada.

.. Information not available.

† Includes graduates from master's degree program.

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

§ Distribution by gender not available in 2000, 2001 and 2002.

†† University of British Columbia 2001–2002 data from the College of Pharmacists of British Columbia.

‡‡ Data from all schools are not available from 2001 to 2005.

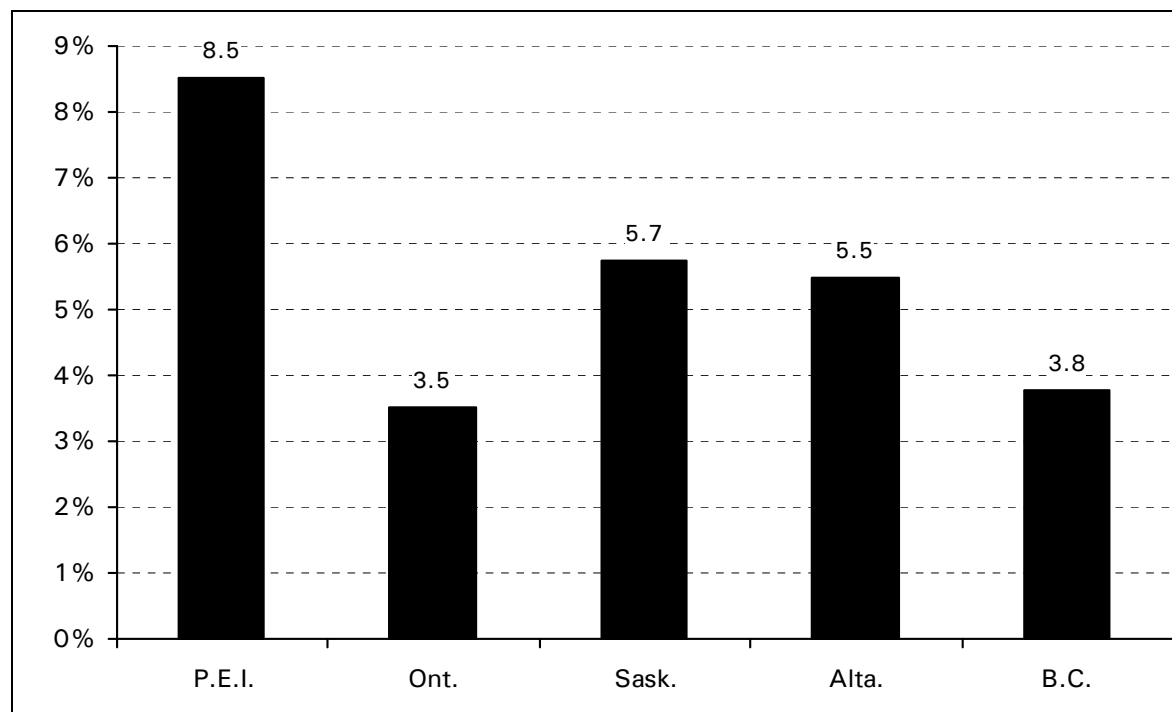
The data source for this table is the Health Personnel Database (HPDB), which reports the graduates from accredited pharmacy programs in Canada, including the province of Quebec. Data in this table are useful for some purposes but should be used within the limitations noted in the Methodological Notes section of the *Health Personnel Trends in Canada, 1995 to 2004* publication.

Source: Health Personnel Database, Canadian Institute for Health Information.

2006 Pharmacy Graduates (PDB)

Within the 2006 Pharmacist Database, the percentage of new pharmacy graduates in the workforce (that is, their year of graduation from basic education was in 2005 or 2006) varied by province/territory (Figure 8).

Figure 8. Percentage of New Graduates Within the Pharmacist Workforce, for Selected Provinces, 2006



Notes:

Data for Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut are not available. Findings from Nova Scotia and Northwest Territories are not included, as year of graduation was not collected/submitted.

Yukon data were suppressed due to small cell sizes.

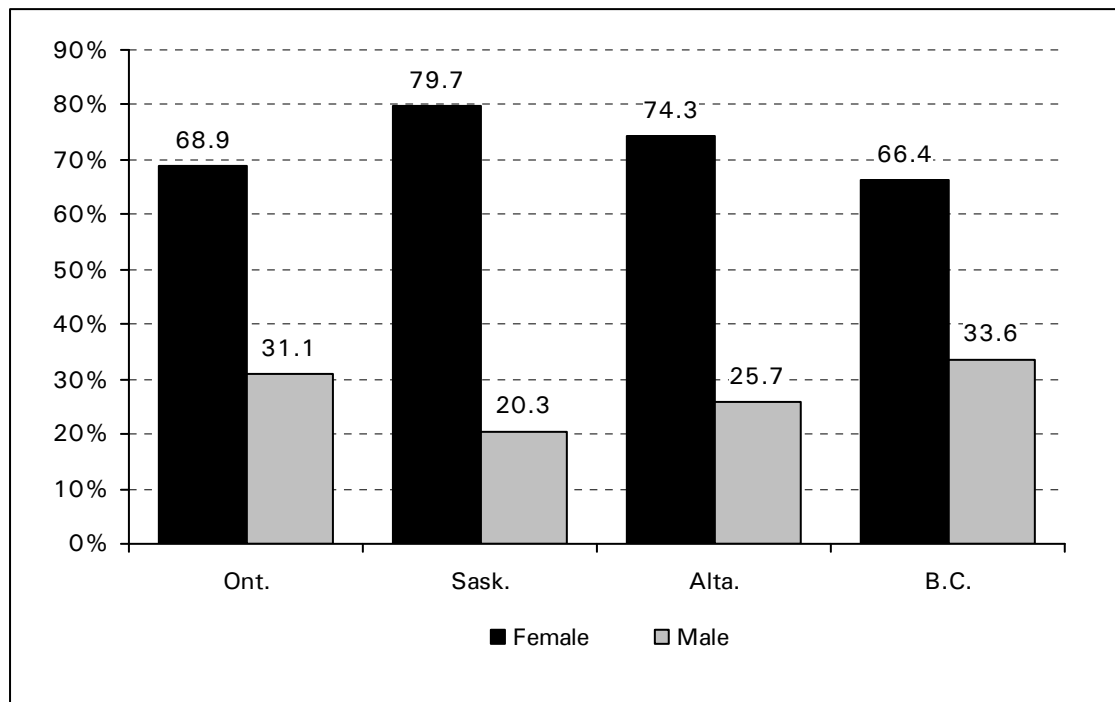
Percentage of unknown for the year of graduation from basic education varied by jurisdiction (P.E.I. [0.7%], Ont. [0.1%], Sask. [0.5%], Alta. [0.0%], B.C. [12.0%]).

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.

In keeping with the gender distribution discussed earlier, over two-thirds of new graduates across the selected provinces were female (Figure 9).

Figure 9. Percent Distribution of Gender of New Graduates, for Selected Provinces, 2006



Notes:

Data for Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut are not available. Findings from Nova Scotia and the Northwest Territories are not included, as year of graduation was not collected/submitted.

P.E.I. and Yukon data were suppressed due to small cell sizes.

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.

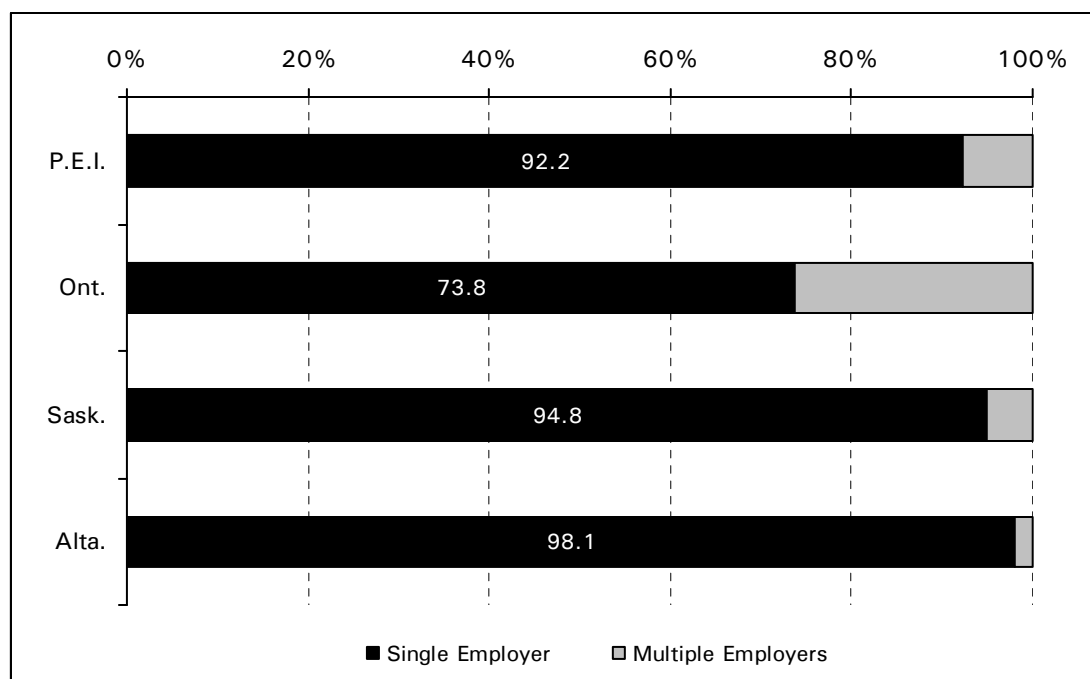
Source: Pharmacist Database, Canadian Institute for Health Information.

Employment Trends of Pharmacists

Single Versus Multiple Employers

Most pharmacists, within the selected provinces, worked for a single employer (Figure 10).

Figure 10. Percent Distribution of Pharmacists With Multiple Employers for Selected Provinces, 2006



Notes:

Data for Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut are not available. Findings from Nova Scotia are not provided, as employment information was not collected/submitted to CIHI for 2006.

Findings from B.C., the Northwest Territories and the Yukon are not provided, as secondary and third employment information was not collected/submitted to CIHI for 2006.

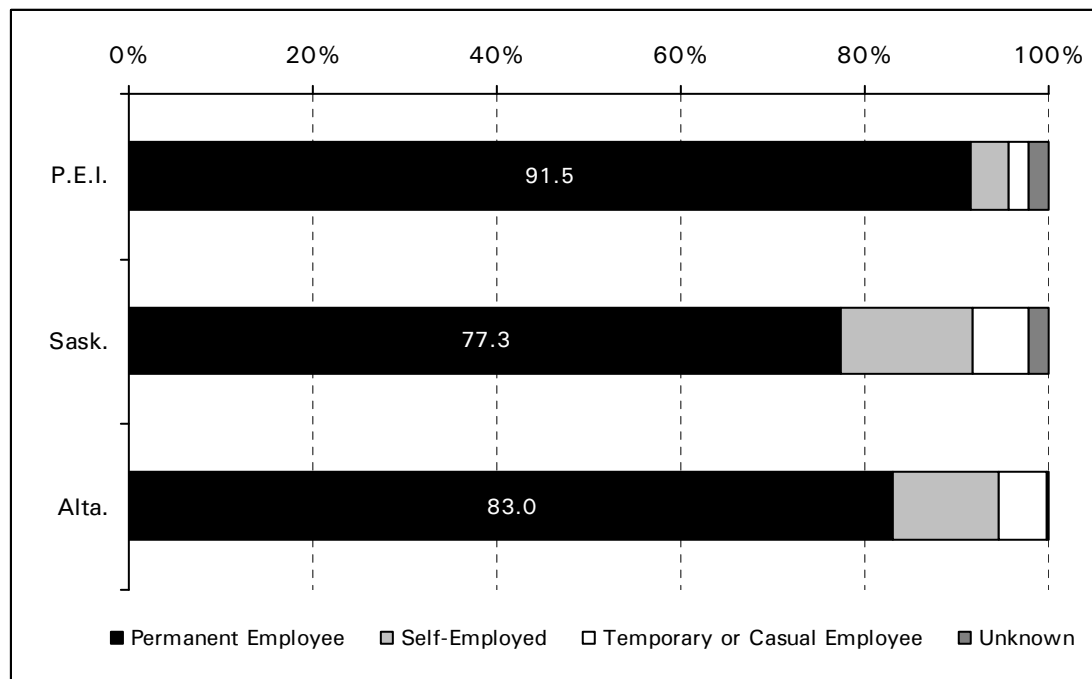
CIHI data will differ from provincial regulatory authority or territorial government data due to the CIHI collection, processing and reporting methodology. The Methodological Notes provide more comprehensive information regarding the collection and comparability of PDB data.

Source: Pharmacist Database, Canadian Institute for Health Information.

Employment Category

For their primary employment, most pharmacists in the featured provinces were permanent employees. (Primary employment is defined as employment with an employer or in a self-employed arrangement, that is, associated with the highest number of usual weekly hours worked.) (Figure 11)

Figure 11. Percent Distribution of Pharmacists by Primary Employment Category, for Selected Provinces, 2006



Notes:

Data for Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut are not available. Findings do not include Nova Scotia, British Columbia, Yukon and the Northwest Territories, as employment category was not collected/submitted to CIHI for 2006. For 2006 data, the Ontario College of Pharmacists (OCP) was unable to identify the employment categories and, therefore, assumed that 100% of their active registrants were permanent employees for their data submission to CIHI.

“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 who engages 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 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.

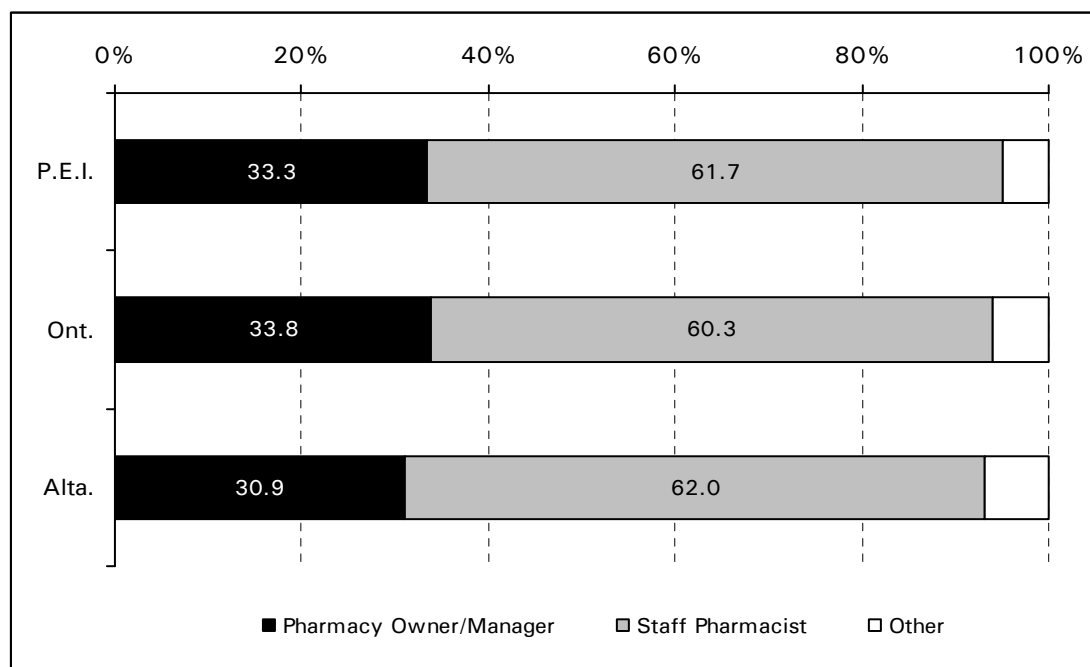
Source: Pharmacist Database, Canadian Institute for Health Information.

With the further development and growth of the PDB, the collection of employment category will help to differentiate between those in an employee–employer work relationship from those who are self-employed. For registrants in an employee–employer work relationship, the distinction between permanent and temporary employment, in combination with other data elements such as employment status and hours worked, provides an indication of changes in the conditions of employment for a profession (for example, a change to more temporary rather than permanent work arrangements with employers).

Employment Position

The employment position refers to a pharmacist's main role within her/his primary place of work. For registrants that have multiple roles within their primary place of work, employment position is reflective of the role associated with the most worked hours (Figure 12).

Figure 12. Percent Distribution of the Pharmacist Workforce by Primary Employment Position, for Selected Provinces, 2006



Notes:

Data for Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut are not available. Findings do not include Nova Scotia, Saskatchewan, British Columbia, Yukon and Northwest Territories, as employment category was not collected/submitted to CIHI for 2006.

"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 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.

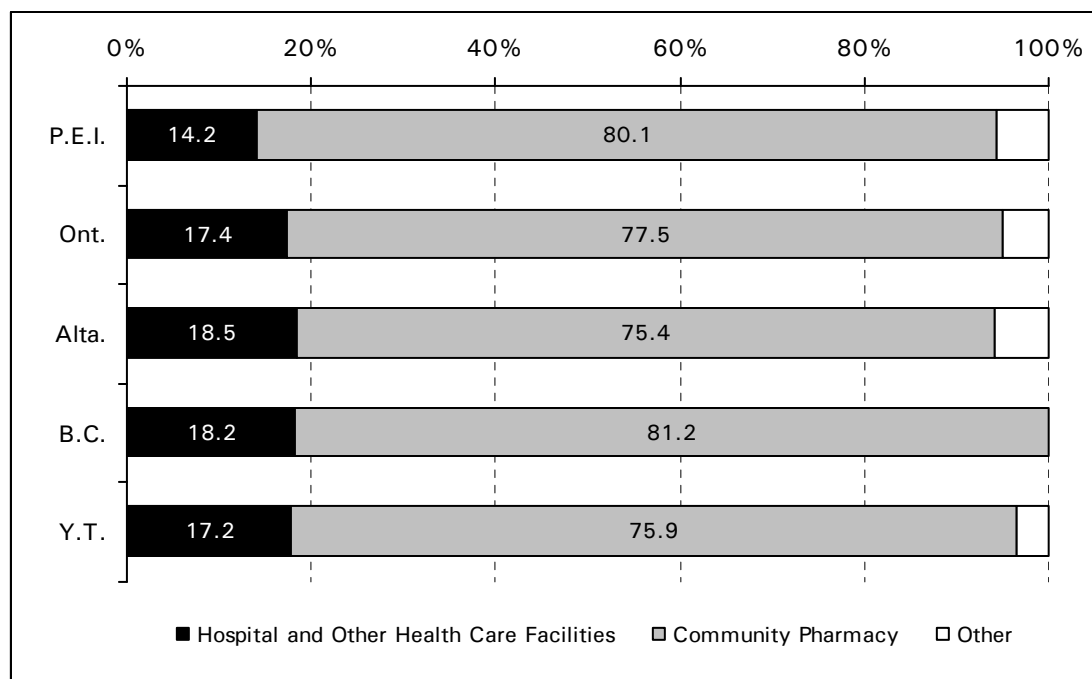
Source: Pharmacist Database, Canadian Institute for Health Information.

The primary employment position provides an indication of the role that the professional has within the organizational structure of an employment setting and allows for a more precise differentiation of professionals primarily involved in direct service provision, compared to those involved in other roles. In the future, with broader provincial participation in the PDB, the "other" category within employment position 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

Community pharmacy accounted for at least three-quarters of employment settings within the selected provinces (Figure 13).

Figure 13. Percent Distribution of Pharmacists by Primary Place of Employment, for Selected Provinces, 2006



Notes:

Data for Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut are not available. Findings from Nova Scotia and Saskatchewan are not included, as place of employment was not collected/submitted to CIHI for 2006.

Findings from the Northwest Territories were suppressed due to small cell sizes.

“Hospital and other health care facilities” – Hospital or other health care facilities, including 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.

“Other” – Includes other pharmacy, group professional practice/clinic, community health centre, other community-based pharmacist practice, post-secondary educational institution, association/government/para-governmental, health-related industry/manufacturing/commercial, community pharmacy corporate office and other place of employment not otherwise specified.

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.

The place of employment data element provides an indication of the setting in which the professional engages in employed activity and permits monitoring of changes in the setting of employed activity over time. Collection of this information facilitates the examination of, among other things, the number of professionals engaged in an employed activity within a community versus an institutional setting.

Methodological Notes

The following information should be used to ensure a clear understanding of the basic concepts that define the data provided in this publication, of the underlying methodology of the data collection and of key aspects of data quality.

This information will provide a better understanding of the strengths and limitations of the data and of how data can be effectively used and analyzed. This information is of particular importance when making comparisons with other data sources, and especially when drawing conclusions regarding changes over time.

CIHI is founded upon the principles of data quality, privacy and confidentiality. Data collection, processing, analysis and dissemination are each guided by CIHI's commitment to ensuring good-quality data in a privacy-sensitive manner. Further details regarding CIHI's privacy principles are available in the document *Privacy and Confidentiality of Health Information at CIHI: Principles and policies for the protection of health information*, which may be obtained from the CIHI website (www.cihi.ca).

Background

Purpose of This Report

CIHI is publishing this first annual report to provide readers with the most recent statistics on the pharmacist workforce. The supply and distribution information that have been included will be used by a wide variety of governmental and non-governmental organizations to better understand the changing supply and distribution of the pharmacist workforce. This information will contribute to policy formulation and decision-making on pharmacist human resource planning and management, particularly at the national and provincial/territorial levels.

This publication includes current information on the geography, demographics, education and employment of the pharmacist workforce. Analyses are supplemented with detailed information about the data collection process, pertinent limitations of the current data and an explanation of the analytical methods.

Value of the Information

The supply and distribution information presented herein is a key component to health human resource planning at the national 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 is very little standardized national data on health professionals in Canada, except for the physicians and regulated nursing professions. Based on consultation with federal, provincial and territorial ministries of health, the profession of pharmacy was identified as a priority focus for such data development.

Focus

Population of interest

The population of interest for the PDB is all pharmacists submitting active registrations with a regulatory authority within a Canadian province or territory.

Population of reference

For the purpose of the PDB, the population of reference includes all pharmacists submitting active registrationsⁱⁱ with a Canadian provincial licensing authority or territorial government who were employed in the profession of pharmacy. For any given year, the population includes those 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, New Brunswick, Newfoundland and Labrador, Nunavut and Quebec), the Ministry of Community Services for data pertaining to the Yukon Territory and the Department of Health and Social Services for data from the Northwest Territories.
- All active registrations received by the provincial regulatory authority or governmental authorities for Yukon and N.W.T., before October 1, 2006;ⁱⁱⁱ and
- 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.

ii. CIHI has 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.

iii. 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.

Data Exclusions

Data collected for the PDB exclude:

- For 2006, data from the provinces of Manitoba, New Brunswick, Newfoundland and Labrador and Quebec and from the territory of Nunavut were not available.
- Pharmacists that registered with a provincial regulatory authority or governmental authority for Yukon and N.W.T. after October 1, 2006; and
- Pharmacists with an inactive registration type.

Data Flow From Primary Data Collector to CIHI

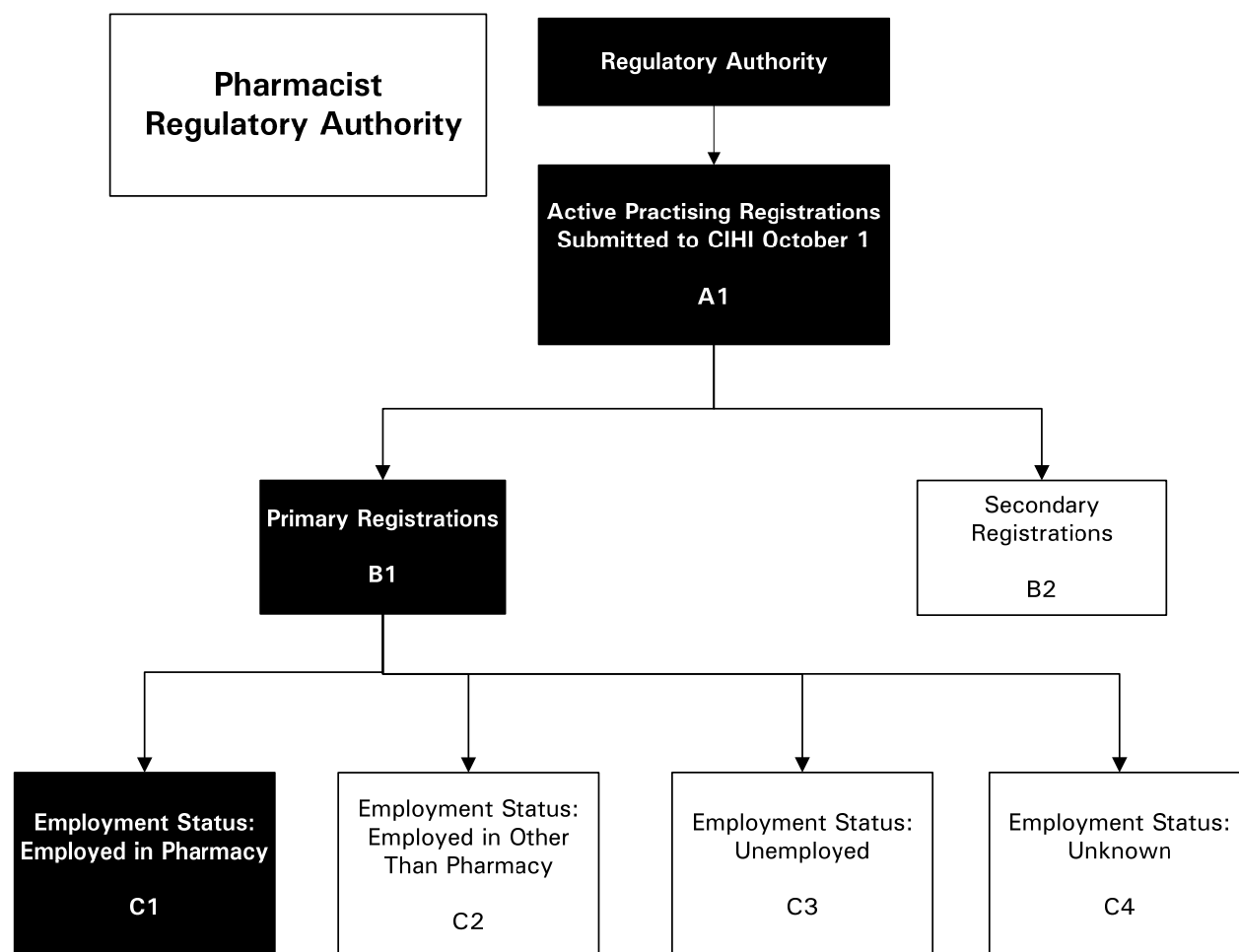
The regulatory and governmental authorities collect membership data annually as part of their registration/licensing process. To satisfy their internal business needs, data are collected on members applying for all categories of active and inactive registration.

The purpose of the database is to gain information on the pharmacist workforce in Canada; therefore, the population of reference for the PDB focuses on pharmacists who are currently authorized to engage in practice; in other words, pharmacists with “active” registration types as of October 1, 2006.

Since the data collected by the provincial and territorial regulatory authorities is wider in scope than the population of reference for the PDB, a filtering methodology is applied by CIHI from the point of data collection and through data processing.

Figure 14 illustrates the data flow when this methodology is applied. Explanations of each step within the data flow are provided in the following text. More detail about data collection is provided in the Data Collection Methods section.

Figure 14. Tracing Regulatory Data Flow to CIHI Data



The total number of registrations submitted to a pharmacist regulatory authority comprises “active” and “inactive” registration types.

ACTIVE REGISTRATIONS

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

Box B1: Represents the primary registrations, where the province/territory of registration reflects registrants’ primary jurisdiction of practice (see also explanation on Box B2 below).

Box B2: Pharmacists in Canada can work in more than one jurisdiction concurrently as long as they are registered with the proper authorities, which give them authorization to practice in their respective jurisdictions. Since one of the primary purposes of the PDB is to have an accurate representation of the size of the pharmacist workforce in Canada, it is important to prevent double-counting of pharmacists who work in more than one jurisdiction. This box represents the secondary registrations (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/territorial regulatory authorities include all active-practising registrations, regardless of employment status. In contrast, CIHI statistics typically include only those registrants explicitly stating their employment in pharmacy (Box C1). Those pharmacists employed in other than the profession of 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 of selecting registrants for inclusion in the publication are presented in Table 6 by province/territory (see also Appendix A).

Table 6. The Pharmacist Database Pharmacist Workforce Counts by Province/Territory, 2006

	P.E.I.	N.S.	Ont.	Sask.	Alta.	B.C.	Y.T.	N.W.T	Total
Total Active Registrants Submitted to CIHI	162	1,113	10,612	1,189	3,642	3,937	35	23	20,713
Primary Registrants	147	1,062	10,098	1,138	3,506	3,831	29	22	19,833
Employed in Pharmacy	141	788	9,309	1,027	3,197	3,151	29	22	17,664

Note: Data from Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut are not available.

Source: Pharmacist Database, Canadian Institute for Health Information.

“Point-in-Time” Data Collection

For the CIHI PDB, data collection begins at the onset of the data providers’ respective annual registration period and ends on October 1. Based on discussions with the data providers, this collection period was identified as the period that captures most of the registrants renewing or applying for membership.

The registration periods for provincial and territorial jurisdictions for the 2006 registration year are presented in Figure 15.

Figure 15. Twelve-Month Registration Periods by Province and Territory of Registration, 2006

Registration Year		2005												2006						
		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	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	xxx	xxx	xxx	xxx
Jan. 1–Dec. 31	N.S.	xxx	xxx	xxx	xxx	xxx	xxx	xxx	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	xxx	xxx	xxx	xxx	xxx	xxx	xxx
April 1–March 31	Que.				xxx	xxx	xxx	xxx	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	xxx	xxx	xxx	xxx
Jan. 1–Dec. 31	Man.	xxx	xxx	xxx	xxx	xxx	xxx	xxx	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	xxx	xxx	xxx	xxx	xxx
July 1–June 30	Alta.						xxx	xxx	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	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	xxx	xxx	xxx	xxx
April 1–March 31	N.W.T.				xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

The “point-in-time” approach to data collection provides a snapshot of the pharmacist workforce across jurisdictions. Using the same “point-in-time” consistently will enable comparability in time, which is useful for visualizing trends. However, this approach may not capture the entire year-end totals for all workforces equally in every province and territory. Depending on the jurisdiction, the October 1 cut-off date may not allow for inclusion of those pharmacists who register later in the registration period.

How CIHI Defines the Pharmacist Workforce for the 2006 PDB

As highlighted earlier, the population of reference for CIHI includes all pharmacists holding active registration authorizing them to engage in practice as of October 1, 2006. By carefully selecting the reporting population for the pharmacist workforce, CIHI is able to provide standardized comparable data that are suitable for analysis and identifying trends.

The population of reference for reporting by provincial regulatory/governmental authorities may differ from CIHI reports because of differences such as: i) the time frame used; ii) the inclusion of registration types (active, inactive and others); iii) the employment status (employed versus unemployed); and iv) secondary registrations (interprovincial duplicates). These differences are justified as the purpose of their data collection is to support the organization registration/licensure process as a whole. The purpose of CIHI data collection, on the other hand, is to provide accurate, timely and useful information that facilitates health human resources planning, policy development and research. By limiting the collection to only those pharmacists who have active registration at the “point-in-time” date of data collection, CIHI is able to satisfy the analytical needs of the organization and its clients.

Discrepancies between the data in CIHI publications and data presented by provincial regulatory/governmental authorities (PDB data providers) are often the result of the differences described. We therefore caution our readers to be mindful of these differences when comparing PDB data and related reporting 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 N.W.T. Annual registration with a regulatory body is mandatory for pharmacists wishing to work within the provinces and territories. These data are held by the respective provincial regulatory body and the governmental authorities of the Yukon and N.W.T., 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 N.W.T.

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 or sent on CD or DVD using a secure bonded courier.

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 the 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 each jurisdiction is provided in Appendix B.

Key Concepts and Definitions

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

Demographics

Gender

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

Year of Birth

Year of birth of the registrant.

Geography and Related

Province/Territory of Residence

The province/territory of residence at the time of registration or renewal.

Country of Residence

The country of residence at the time of registration or renewal.

Province/Territory of Registration

The province/territory of registration based on the jurisdiction or organization submitting pharmacist data.

Education

Level of Basic Education in Pharmacy

Initial 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 post-secondary education is captured under "Highest Level of Post-Basic Education in Pharmacy."

Year of Graduation for Basic Education in Pharmacy

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.

Employment

Employment Status

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

Employment Category

Employment category at the time of registration or renewal.

Province/Territory of Employment

The province/territory of employment at the time of registration or renewal.

Postal Code of Employment

The postal code assigned by Canada Post for the registrant's place of employment at the time of registration or renewal. The postal code reflects the service delivery level worksite, when available, with the employer or business office postal code provided as an alternate (for example, when the employer or business office location is different from the service delivery level worksite and only the employer or business office postal code is available). Service delivery level worksite refers to the location where the registrant is directly engaged in employment associated with the profession of pharmacy, as a pharmacist or in a pharmacy-related field.

Position

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.

Primary Place of 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.

Data Processing Methods

File Processing

Once provincial/territorial data files are received by CIHI, all records undergo two stages of processing before inclusion in the national database.

The first stage of processing 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 also undergo tests to check for a logical relationship between specific fields. For example, an error is identified in the exception report if the *Year of Graduation* is less than the *Year of Birth*.

Errors are reviewed jointly by CIHI and the respective data provider representative. The data provider then corrects the data and resubmits its data file to CIHI, where it is reviewed again. In cases where the data provider is not able to make the corrections, CIHI may make the corrections directly to the PDB data 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. As pharmacists are able to register simultaneously in more than one jurisdiction, a methodology was developed to identify (or “flag”) pharmacists living outside of Canada or pharmacists registered in more than one province or territory.

To accurately count the number of pharmacists registered and working in Canada, it is necessary to identify records that do not reflect the primary jurisdiction of employment.

For instance, there are administrative incentives for pharmacists to maintain their Canadian pharmacy licences while living and/or working outside of the country. Therefore, a pharmacist living abroad may continue to register with a Canadian pharmacy regulatory authority or territorial government each year, even though she/he may have no intention of returning to Canada in the next 12 months. CIHI must identify these pharmacists living abroad and remove their data from analysis, as CIHI only reports on the pharmacist workforce in Canada.

For those living and working in Canada, CIHI must also identify registrations that do not reflect the primary jurisdiction of practice. For example, similar to the international situation identified previously, there are administrative incentives for pharmacists to maintain their provincial/territorial pharmacy licence while living and/or working in another Canadian jurisdiction. Therefore, a pharmacist may continue to register in one province while living and/or working in another. To include both of these registrations in analyses would result in double-counting. Therefore, CIHI evaluates each registration to ensure that it reflects the primary jurisdiction of practice. These secondary registrations are also termed “interprovincial duplicates.”

All data received from the provinces/territories are kept in the PDB; however, secondary registrations are excluded from the annual publication, media release 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*; or,
- 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.

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

Such a method for eliminating pharmacists living abroad and secondary registrations does introduce certain errors. For example:

- (1) A pharmacist living in the United States but working in Canada will be erroneously removed as “Living Abroad”; and

- (2) A pharmacist registered and employed in a Canadian province (for example, Alberta) decides to provide short-term relief staffing in another province (for example, British Columbia). When registering with the B.C. provincial pharmacy regulatory authority, this pharmacist may provide his/her temporary residence information in B.C. As a result, he or she will be double-counted.

Analytical Methods

Urban–Rural Statistics

For analytical purposes, urban areas are defined (in part) as communities with populations 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) by larger urban centres (that is, the CMAs and CAs). Metropolitan Influenced Zone (MIZ) categories disaggregate the RST population into four subgroups: Strong MIZ, Moderate MIZ, Weak MIZ and No MIZ. These urban/rural/remote categories are applied to communities (cities, town, villages, etc.) that can be equated with the Statistics Canada designation Census Subdivision (CSD).

The CMA/CA and MIZ categories were collapsed for the purposes of this report. These categories 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); and 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. (2000),^{iv} du Plessis et al. (2001)^v and CIHI (2002).^{vi}

iv. C. McNiven, H. Puderer and D. Janes, *Census Metropolitan Area and Census Agglomeration Influenced Zones (MIZ): A Description of the Methodology*. Geography Working Paper Series No. 2000-2. (Ottawa: Statistics Canada, 2000), cat. no. 92F0138MIE.

v. V. Du Plessis, R. Beshiri and R. D. Bollman, "Definitions of Rural," *Rural and Small Town Canada Analysis Bulletin* 3, 3 (November 2001).

vi. Canadian Institute for Health Information, *Supply and Distribution of Registered Nurses in Rural and Small Town Canada, 2000* (Ottawa: CIHI, 2002).

Data Suppression

To safeguard the privacy and confidentiality of data received by CIHI, guidelines have been developed to govern the publication and release of health information.

To ensure the anonymity of individual pharmacists, cells with counts from one to four are suppressed in the data tables presented in this publication. CIHI is committed to protecting the confidential information of each pharmacist.

In the tables presented in this publication, cells with a value from one to four 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 suppressed as well. Generally, the next smallest value is chosen for additional suppression. However, if the second value suppressed is greater than four, 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 (not collected, not applicable and unknown) in the data tables.

These policies also govern CIHI's release of data through ad hoc queries and special analytical studies.

Symbols

Standard symbols and numerical presentations are used wherever possible in this report. The standard symbols include:

- * Value suppressed in accordance with CIHI privacy policy; cell value is from one to four.
- ** Value suppressed to ensure confidentiality; cell value is five or greater.
- Data are not applicable or do not exist.
- .. Data not currently collected.
- n/s Data not submitted to CIHI.

Other symbols, when necessary, are footnoted at the bottom of the respective tables or figures.

Data Quality Assessment

To ensure a high level of accuracy and usefulness in data dissemination, the Data Quality department at CIHI has developed a framework for assessing and reporting the quality of data contained in CIHI's databases and registries. The framework focuses upon the five dimensions of data quality: timeliness, accuracy, usability, comparability and relevance. Timeliness, usability and relevance are described briefly in the following paragraph. Accuracy and comparability are then described in further detail, as they relate more closely to the data processing routine.

Timeliness is achieved by collecting data at a point-in-time, which was agreed upon by the data providers. This reflects a majority of total records and allows CIHI to analyze and release the data in a timely manner. Usability comprises the availability and documentation of the data and the ease of interpretation. Methodological Notes contribute to the usability dimension, as the limitations of data interpretation are outlined in detail. The 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

Accuracy is an assessment of how well the data reflect reality. For the PDB, this is an assessment of how closely the data presented in this publication reflect the population of reference: all pharmacists holding active membership in Canada as of October 1, 2006, who are employed in pharmacy.

Provincial regulatory authorities and territorial governments collect these data for administrative purposes. It is through a mutual agreement that these data are submitted to CIHI for research and analysis. Consequently, it is important to note that the level of accuracy and completeness necessary to meet the financial and administrative requirements of a registry can differ from that 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 (when applicable) and described in the methodological notes or footnotes. Several data providers were also able to include CIHI definitions of some of the data elements and/or values in their registration guides, facilitating a higher level of data accuracy.

The following section outlines where caution must be applied when analyzing data presented in *Workforce Trends of Pharmacists for Selected Provinces and Territories in Canada, 2006*.

Under-Coverage

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

In the first 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 jurisdictions were not able to collect some data elements. Within the analysis of these data elements, those provinces/territories are not represented (Table 7).

Table 7. Pharmacist Records Where Data Are “Not Collected” by Data Element and Province/Territory of Registration, 2006

	P.E.I.	N.S.	Ont.	Sask.	Alta.	B.C.	Y.T.	N.W.T.
Gender								
Year of Birth							X	
Year of Graduation for Basic Education in Pharmacy		X						X
Current Level of Education in Pharmacy [†]		X					X	X
Primary Employment Category		X	X			X	X	X
Primary Position		X		X		X	X	X
Place of Primary Employment		X		X				
Urban vs Rural [‡]		X					X	X

Notes:

† 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 vs rural is derived from the postal code of primary employment.

“X” indicates that the percentage of “not collected” was 100.

Over-Coverage

Over-coverage is the inclusion of data beyond the target population.

Pharmacists on leave are defined as those who are temporarily on leave for reasons such as maternity/paternity leave, education leave or short-term illness or injury. Depending on the jurisdiction, pharmacists may have the option to register as active, as inactive or to not register at all. However, if pharmacists choose to register as active and submit employment information, they will be included in the workforce numbers when they are, in fact, not working.

Non-Response

In the PDB, the item “non-response” refers to the percentage of unknown responses for each data element (Table 8).

Table 8. Percentage of Pharmacist Records With “Unknown” Responses by Data Element and Province/Territory of Registration, 2006

	P.E.I.	N.S.	Ont.	Sask.	Alta.	B.C.	Y.T.	N.W.T.
Gender (%)	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Year of Birth (%)	0.0	0.0	0.0	0.0	0.0	0.0	..	0.0
Year of Graduation for Basic Education in Pharmacy (%)	0.7	..	0.1	0.5	0.0	12.0	27.6	..
Current Level of Education in Pharmacy [†] (%)	0.0	..	0.0	1.2	0.0	11.8	..	..
Primary Employment Category (%)	2.1	..	..	2.3	0.4	..	..	..
Primary Position (%)	0.0	..	0.0	..	0.3	..	..	..
Place of Primary Employment (%)	0.0	..	0.0	..	0.2	0.7	3.4	0.0
Urban vs Rural [‡] (%)	2.2	..	1.0	4.5	2.3	1.1	..	..

Notes:

.. Not collected/submitted.

† 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 vs rural is derived from the postal code of primary employment.

Definitions for Missing Values

Missing values are values attributed in instances where a data provider is unable to provide information for a registrant for a specific data element. Three situations correspond to the following CIHI missing values:

- “Not Collected” means that the information is not collected by the data provider on the registration form, or that a data provider cannot submit the information;
- “Unknown” indicates that the information was not provided by the registrant; and
- “Not Applicable” states that the data element is not relevant to the situation of the registrant. For example, if a pharmacist resides in the United States, the “Province of Residence” is not applicable.

Data Quality Methodology for “Unknown” and “Not Applicable”

The CIHI has implemented the following validation and correction methodology for the appropriate use of the missing values “Unknown” and “Not Applicable”:

- If a registrant has provided valid data to one or more data elements within the same education or employment grouping and some of the other related elements are missing values, then the value “Unknown” (rather than “Not Applicable”) is appropriate; and
- If 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-response 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 of their questionable accuracy, which limits their usability and opens the door to erroneous interpretations (www.cihi.ca/hhr). In other cases, the number of missing values is clearly identified in the analysis and footnoted for explanation when necessary.

Comparability

Comparability measures how well the current-year data compare to data from previous years and how data from the PDB compare to pharmacist data from other sources.

Historical Data

This publication presents pharmacist data for the registration year 2006. Previous data years are only available in aggregate counts from the Health Personnel Database at CIHI.

Data Limitations

The major data limitation with the 2006 PDB data is the lack of information regarding the pharmacist workforce in Newfoundland and Labrador, New Brunswick, Quebec, Manitoba and Nunavut. Ultimately, the aim of the PDB is to provide a pan-Canadian profile of the pharmacist workforce in Canada that can be used to observe trends over time. In the absence of the participation of all jurisdictions, the PDB is unable to provide a complete picture of the health human resource issues facing pharmacists today.

Also, being the first year of data collection, 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 registration year.

With time and more participation across Canada, the PDB can become an important part of health human resource planning for Canadian pharmacists.

Provincial/Territorial Profiles

Prince Edward Island—Pharmacist Workforce

		Prince Edward Island	2006 (Percent)
		2006	P.E.I.
Pharmacists Employed in Pharmacy		141	
Gender	Male	50	35.5
	Female	89	63.1
	Missing Values	2	1.4
Average Age	Years	40.9	
10-Year Age Groups	20–29	21	14.9
	30–39	52	36.9
	40–49	37	26.2
	50–59	20	14.2
	60–69	**	**
	70–79	*	*
	80+	0	0.0
	Missing Values	0	0.0
Urban vs. Rural	Urban	102	72.3
	Rural	27	19.1
	Remote Territories	9	6.4
		0	0.0
	Missing Values	3	2.1
Current Level of Education	Diploma	10	7.1
	Baccalaureate	131	92.9
	Masters	0	0.0
	PharmD	0	0.0
	Doctorate	0	0.0
	Missing Values	0	0.0
New Graduates	No	128	90.8
	Yes	12	8.5
	Missing Values	1	0.7
Employment Count	1	130	92.2
	2	**	**
	3	*	*
Employment Category	Permanent	129	91.5
	Temporary	*	*
	Casual	*	*
	Self-Employed	6	4.3
	Missing Values	3	2.1
Place of Employment	Hospital and Other Health Care Facilities	20	14.2
	Community Pharmacy	113	80.1
	Other Pharmacy	*	*
	Group Professional Practice/Clinic	0	0.0
	Community Health Centre	*	*
	Other Community-Based Pharmacist Practice	0	0.0
	Post-Secondary Educational Institution	0	0.0
	Association/Government/Para-Governmental	**	**
	Health-Related Industry/Manufacturing/Commercial	0	0.0
	Community Pharmacy Corporate Office	*	*
	Other	0	0.0
	Missing Values	0	0.0
	Position	Director of Pharmacy	0	0.0
Pharmacy Owner/Manager		20	14.2
Pharmacy Manager		27	19.1
Institutional Leader/Coordinator		*	*
Staff Pharmacist		87	61.7
Pharmacist Consultant		**	**
Educator		0	0.0
Researcher		0	0.0
Industrial Pharmacist		0	0.0
Other		2	1.4
Missing Values		0	0.0

(see notes on next page)

Notes:

* Value suppressed in accordance with CIHI privacy policy; cell value is from 1 to 4.

** Value suppressed to ensure confidentiality; cell value is 5 or greater.

Postal code data were assigned to "urban," "rural" and "remote" categories using the July 2006 release of Statistics Canada's Postal Code Conversion File (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.

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 to pdb@cihi.ca.

Source: Pharmacist Database, Canadian Institute for Health Information.

Nova Scotia – Pharmacist Workforce

		Nova Scotia	2006 (Percent)
		2006	N.S.
Pharmacists Employed in Pharmacy		788	
Gender	Male	254	32.2
	Female	534	67.8
	Missing Values	0	0.0
Average Age	Years	40.9	
10-Year Age Groups	20–29	113	14.3
	30–39	284	36.0
	40–49	217	27.5
	50–59	136	17.3
	60–69	30	3.8
	70–79	**	**
	80+	*	*
	Missing Values	0	0.0
Urban vs. Rural	Not Collected	–	–
Current Level of Education	Not Collected	–	–
New Graduates	Not Collected	–	–
Employment Count	Not Collected	–	–
Employment Category	Not Collected	–	–
Place of Employment	Not Collected	–	–
Position	Not Collected	–	–

Notes:

– Data not available.

* 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.

Postal code data were assigned to “urban,” “rural” and “remote” categories using the July 2006 release of Statistics Canada’s Postal Code Conversion File (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.

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 to pdb@cihi.ca.

Source: Pharmacist Database, Canadian Institute for Health Information.

Ontario – Pharmacist Workforce

		Ontario	2006 (Percent)
		2006	Ontario
Pharmacists Employed in Pharmacy		9,309	
Gender	Male	4,173	44.8
	Female	5,136	55.2
	Missing Values	0	0.0
Average Age	Years	44.4	
10-Year Age Groups	20–29	850	9.1
	30–39	2,693	28.9
	40–49	2,722	29.2
	50–59	2,044	22.0
	60–69	782	8.4
	70–79	187	2.0
	80+	31	0.3
	Missing Values	0	0.0
Urban vs. Rural	Urban	8,530	91.6
	Rural	477	5.1
	Remote	213	2.3
	Territories	0	0.0
	Missing Values	89	1.0
Current Level of Education	Diploma	80	0.9
	Baccalaureate	9,039	97.1
	Masters	53	0.6
	PharmD	137	1.5
	Doctorate	0	0.0
	Missing Values	0	0.0
New Graduates	No	8,975	96.4
	Yes	328	3.5
	Missing Values	6	0.1
Employment Count	1	6,869	73.8
	2	1,838	19.7
	3	602	6.5
Employment Category	Permanent	9,309	100.0
	Temporary	0	0.0
	Casual	0	0.0
	Self-Employed	0	0.0
	Missing Values	0	0.0
Place of Employment	Hospital and Other Health Care Facilities	1,616	17.4
	Community Pharmacy	7,219	77.5
	Other Pharmacy	0	0.0
	Group Professional Practice/Clinic	0	0.0
	Community Health Centre	0	0.0
	Other Community-Based Pharmacist Practice	*	*
	Post-Secondary Educational Institution	**	**
	Association/Government/Para-Governmental	177	1.9
	Health-Related Industry/Manufacturing/Commercial	263	2.8
	Community Pharmacy Corporate Office	0	0.0
	Other	26	0.3
	Missing Values	1	0.0
Position	Director of Pharmacy	0	0.0
	Pharmacy Owner/Manager	1,900	20.4
	Pharmacy Manager	1,245	13.4
	Institutional Leader/Coordinator	0	0.0
	Staff Pharmacist	5,612	60.3
	Pharmacist Consultant	301	3.2
	Educator	52	0.6
	Researcher	10	0.1
	Industrial Pharmacist	178	1.9
	Other	11	0.1
	Missing Values	0	0.0

(see notes on next page)

Notes:

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** Value suppressed to ensure confidentiality; cell value is 5 or greater.

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

Postal code data were assigned to "urban," "rural" and "remote" categories using the July 2006 release of Statistics Canada's Postal Code Conversion File (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.

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 to pdb@cihi.ca.

Source: Pharmacist Database, Canadian Institute for Health Information.

Saskatchewan – Pharmacist Workforce

		Saskatchewan	2006 (Percent)
		2006	Sask.
Pharmacists Employed in Pharmacy		1,027	
Gender	Male	395	38.5
	Female	632	61.5
	Missing Values	0	0.0
Average Age	Years	43	
10-Year Age Groups	20–29	144	14.0
	30–39	317	30.9
	40–49	220	21.4
	50–59	237	23.1
	60–69	99	9.6
	70–79	**	**
	80+	*	*
	Missing Values	0	0.0
Urban vs. Rural	Urban	716	69.7
	Rural	47	4.6
	Remote	218	21.2
	Territories	0	0.0
	Missing Values	46	4.5
Current Level of Education	Diploma	*	*
	Baccalaureate	996	97.0
	Masters	**	**
	PharmD	9	0.9
	Doctorate	*	*
	Missing Values	12	1.2
New Graduates	No	963	93.8
	Yes	59	5.7
	Missing Values	5	0.5
Employment Count	1	974	94.8
	2	48	4.7
	3	5	0.5
Employment Category	Permanent	794	77.3
	Temporary	17	1.7
	Casual	44	4.3
	Self-Employed	148	14.4
	Missing Values	24	2.3
Place of Employment	Not Collected	–	–
Position	Not Collected	–	–

Notes:

– Data not available.

* 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.

Postal code data were assigned to “urban,” “rural” and “remote” categories using the July 2006 release of Statistics Canada’s Postal Code Conversion File (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.

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 to pdb@cihi.ca.

Source: Pharmacist Database, Canadian Institute for Health Information.

Alberta—Pharmacist Workforce

		Alberta	2006 (Percent)
		2006	Alberta
Pharmacists Employed in Pharmacy		3,197	
Gender	Male	1,215	38.0
	Female	1,982	62.0
	Missing Values	0	0.0
Average Age	Years	41.5	
10-Year Age Groups	20–29	510	16.0
	30–39	990	31.0
	40–49	881	27.6
	50–59	623	19.5
	60–69	166	5.2
	70–79	**	**
	80+	*	*
	Missing Values	0	0.0
Urban vs. Rural	Urban	2,619	81.9
	Rural	209	6.5
	Remote Territories	295	9.2
	Territories	0	0.0
	Missing Values	74	2.3
Current Level of Education	Diploma	0	0.0
	Baccalaureate	3,125	97.7
	Masters	38	1.2
	PharmD	28	0.9
	Doctorate	6	0.2
	Missing Values	0	0.0
New Graduates	No	3,021	94.5
	Yes	175	5.5
	Missing Values	1	0.0
Employment Count	1	3,136	98.1
	2	51	1.6
	3	10	0.3
Employment Category	Permanent	2,654	83.0
	Temporary	37	1.2
	Casual	128	4.0
	Self-Employed	366	11.4
	Missing Values	12	0.4
Place of Employment	Hospital and Other Health Care Facilities	590	18.5
	Community Pharmacy	2,412	75.4
	Other Pharmacy	37	1.2
	Group Professional Practice/Clinic	8	0.3
	Community Health Centre	9	0.3
	Other Community-Based Pharmacist Practice	18	0.6
	Post-Secondary Educational Institution	26	0.8
	Association/Government/Para-Governmental	29	0.9
	Health-Related Industry/Manufacturing/Commercial	25	0.8
	Community Pharmacy Corporate Office	21	0.7
	Other	14	0.4
	Missing Values	8	0.2
	Position	Director of Pharmacy	30	0.9
Pharmacy Owner/Manager		375	11.7
Pharmacy Manager		613	19.2
Institutional Leader/Coordinator		21	0.7
Staff Pharmacist		1,983	62.0
Pharmacist Consultant		46	1.4
Educator		20	0.6
Researcher		14	0.4
Industrial Pharmacist		5	0.2
Other		82	2.6
Missing Values		8	0.3

(see notes on next page)

Notes:

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** Value suppressed to ensure confidentiality; cell value is 5 or greater.

Postal code data were assigned to "urban," "rural" and "remote" categories using the July 2006 release of Statistics Canada's Postal Code Conversion File (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.

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 to pdb@cihi.ca.

Source: Pharmacist Database, Canadian Institute for Health Information.

British Columbia—Pharmacist Workforce

		British Columbia	2006 (Percent)
		2006	B.C.
Pharmacists Employed in Pharmacy		3,151	
Gender	Male	1,454	46.1
	Female	1,697	53.9
	Missing Values	0	0.0
Average Age	Years	42.3	
10-Year Age Groups	20–29	491	15.6
	30–39	889	28.2
	40–49	850	27.0
	50–59	726	23.0
	60–69	167	5.3
	70–79	**	**
	80+	*	*
	Missing Values	0	0.0
Urban vs. Rural	Urban	2,834	89.9
	Rural	93	3.0
	Remote	188	6.0
	Territories	0	0.0
	Missing Values	36	1.1
Current Level of Education	Diploma	16	0.5
	Baccalaureate	2,734	86.8
	Masters	8	0.3
	PharmD	21	0.7
	Doctorate	0	0.0
	Missing Values	372	11.8
New Graduates	No	2,655	84.3
	Yes	119	3.8
	Missing Values	377	12.0
Employment Count	1	3,145	99.8
	2	–	–
	3	–	–
Employment Category	Not Collected	–	–
Place of Employment	Hospital and Other Health Care Facilities	572	18.2
	Community Pharmacy	2,558	81.2
	Other Pharmacy	0	0.0
	Group Professional Practice/Clinic	0	0.0
	Community Health Centre	0	0.0
	Other Community-Based Pharmacist Practice	0	0.0
	Post-Secondary Educational Institution	0	0.0
	Association/Government/Para-Governmental	0	0.0
	Health-Related Industry/Manufacturing/Commercial	0	0.0
	Community Pharmacy Corporate Office	0	0.0
	Other	0	0.0
	Missing Values	21	0.7
	Position	Not Collected	–

(see notes on next page)

Notes:

– Data not available.

* 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.

Secondary and third employment information was not collected/submitted to CIHI for 2006.

Postal code data were assigned to “urban,” “rural” and “remote” categories using the July 2006 release of Statistics Canada’s Postal Code Conversion File (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.

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 to pdb@cihi.ca.

Source: Pharmacist Database, Canadian Institute for Health Information.

Yukon – Pharmacist Workforce

		Yukon	2006 (Percent)
		2006	Yukon
Pharmacists Employed in Pharmacy		29	
Gender	Male	9	31.0
	Female	20	69.0
	Missing Values	0	0.0
Average Age	Not Collected	–	
10-Year Age Groups	Not Collected	–	–
Urban Vs. Rural	Not Collected	–	–
Current Level of Education	Not Collected	–	–
New Graduates	No	19	65.5
	Yes	*	*
	Missing Values	**	**
Employment Count	1	29	100.0
	2	–	–
	3	–	–
Employment Category	Not Collected	–	–
Place of Employment	Hospital and Other Health Care Facilities	5	17.2
	Community Pharmacy	22	75.9
	Other Pharmacy	0	0.0
	Group Professional Practice/Clinic	0	0.0
	Community Health Centre	0	0.0
	Other Community-Based Pharmacist Practice	0	0.0
	Post-Secondary Educational Institution	0	0.0
	Association/Government/Para-Governmental	0	0.0
	Health-Related Industry/Manufacturing/Commercial	0	0.0
	Community Pharmacy Corporate Office	0	0.0
	Other	1	3.4
Missing Values	1	3.4	
Position	Not Collected	–	–

Notes:

– Data not available.

* 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.

Postal code data were assigned to “urban,” “rural” and “remote” categories using the July 2006 release of Statistics Canada’s Postal Code Conversion File (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.

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.

Secondary and third employment information was not collected/submitted to CIHI for 2006.

Additional methodological information is available upon request to pdb@cihi.ca.

Source: Pharmacist Database, Canadian Institute for Health Information.

Northwest Territories—Pharmacist Workforce

		Northwest Territories	2006 (Percent)
		2006	Northwest Territories
Pharmacists Employed in Pharmacy		22	
Gender	Male	11	50.0
	Female	11	50.0
	Missing Values	0	0.0
Average Age	Years	36.0	
10-Year Age Groups	20–29	6	27.3
	30–39	8	36.4
	40–49	**	**
	50–59	*	*
	60–69	0	0.0
	70–79	0	0.0
	80+	0	0.0
	Missing Values	0	0.0
Urban vs. Rural	Urban	12	54.5
	Rural	10	0.0
	Remote	0	0.0
	Territories	0	45.5
	Missing Values	0	0.0
Current Level of Education	Diploma	0	0.0
	Baccalaureate	22	100.0
	Masters	0	0.0
	PharmD	0	0.0
	Doctorate	0	0.0
	Missing Values	0	0.0
New Graduates	Not Collected	–	–
Employment Count	1	22	100.0
	2	–	–
	3	–	–
Employment Category	Not Collected	–	–
Place of Employment	Hospital and Other Health Care Facilities	*	*
	Community Pharmacy	**	**
	Other Pharmacy	0	0.0
	Group Professional Practice/Clinic	0	0.0
	Community Health Centre	0	0.0
	Other Community-Based Pharmacist Practice	0	0.0
	Post-Secondary Educational Institution	0	0.0
	Association/Government/Para-Governmental	0	0.0
	Health-Related Industry/Manufacturing/Commercial	0	0.0
	Community Pharmacy Corporate Office	0	0.0
	Other	0	0.0
Missing Values	0	0.0	
Position	Not Collected	–	–

(see notes on next page)

Notes:

– Data not available.

* 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.

Postal code data were assigned to “urban,” “rural” and “remote” categories using the July 2006 release of Statistics Canada’s Postal Code Conversion File (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.

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.

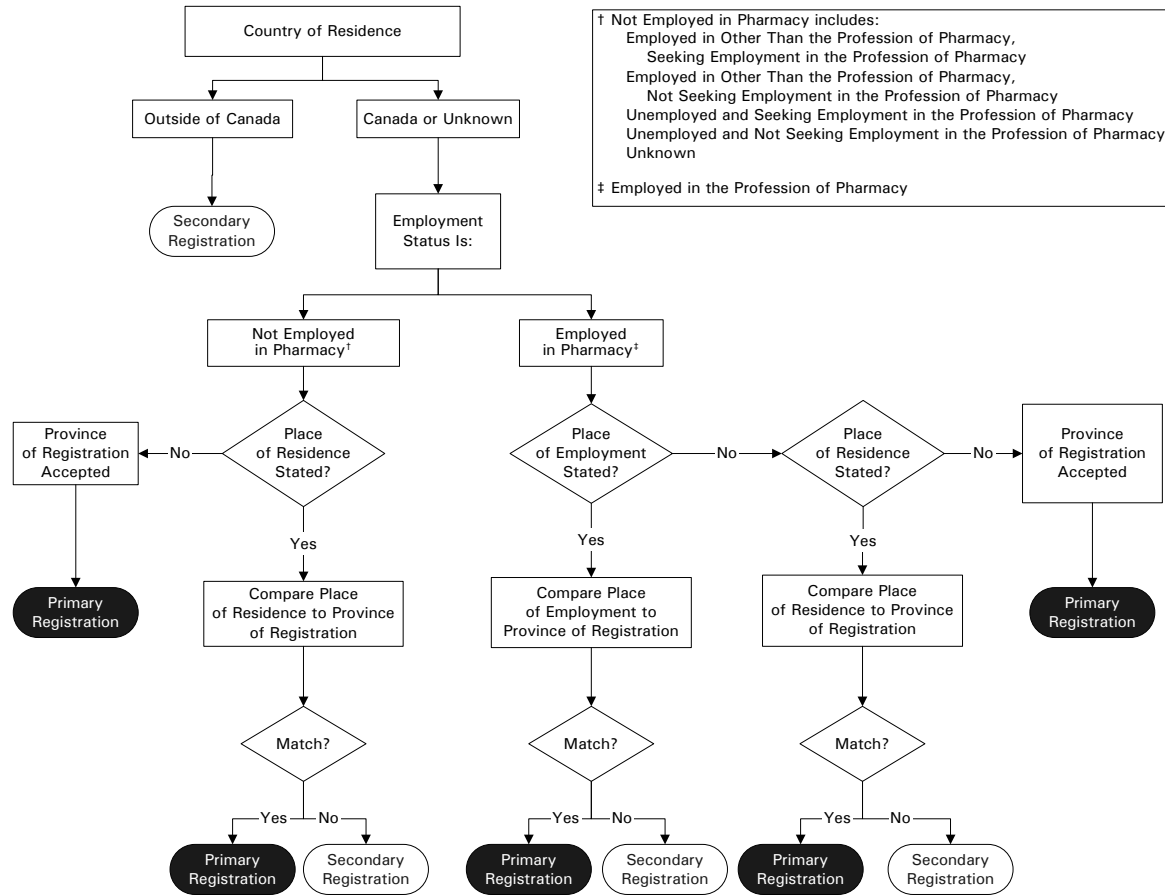
Secondary and third employment information was not collected/submitted to CIHI for 2006.

Additional methodological information is available upon request to pdb@cihi.ca.

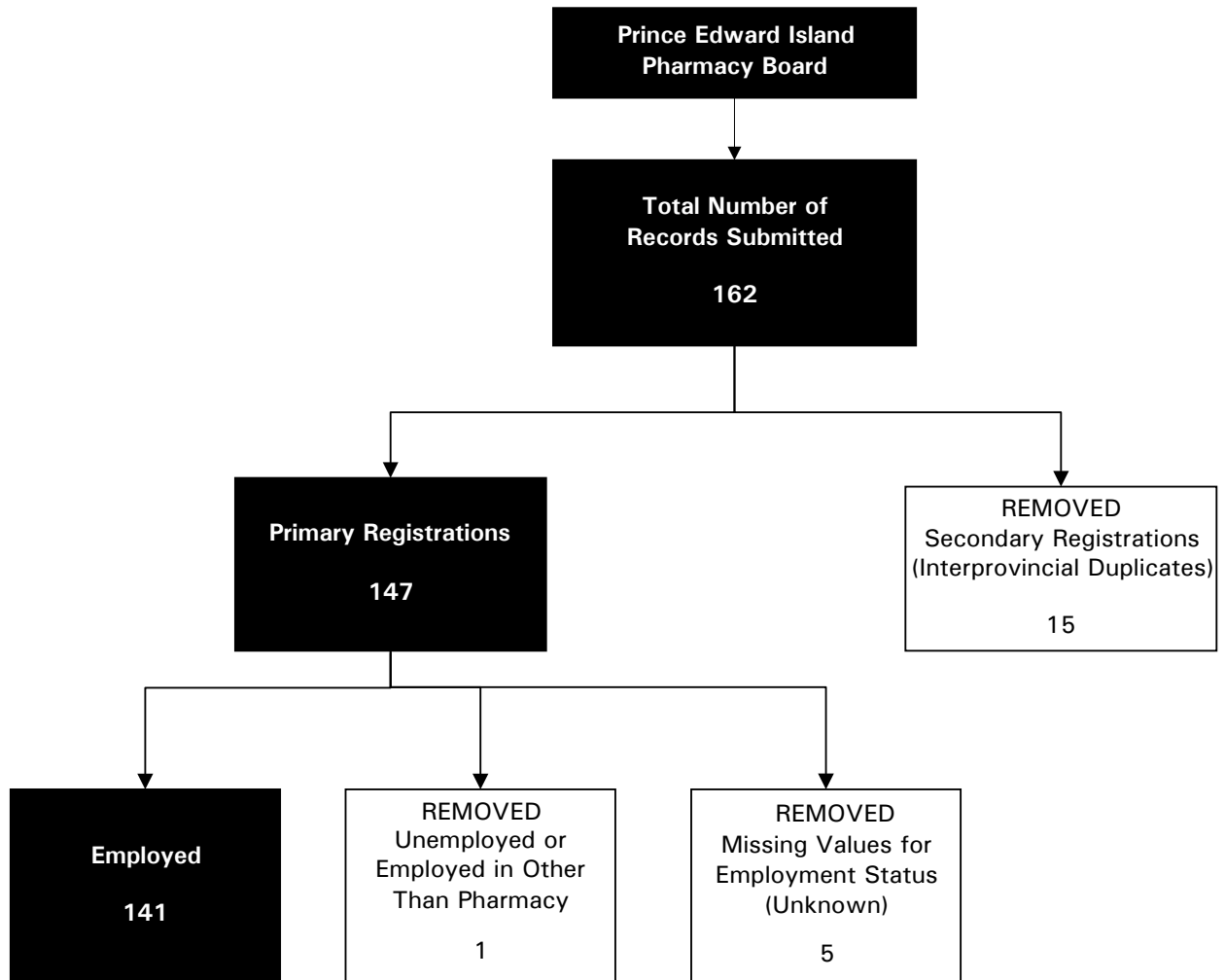
Source: Pharmacist Database, Canadian Institute for Health Information.

Appendix A
Identification of Secondary Registrations

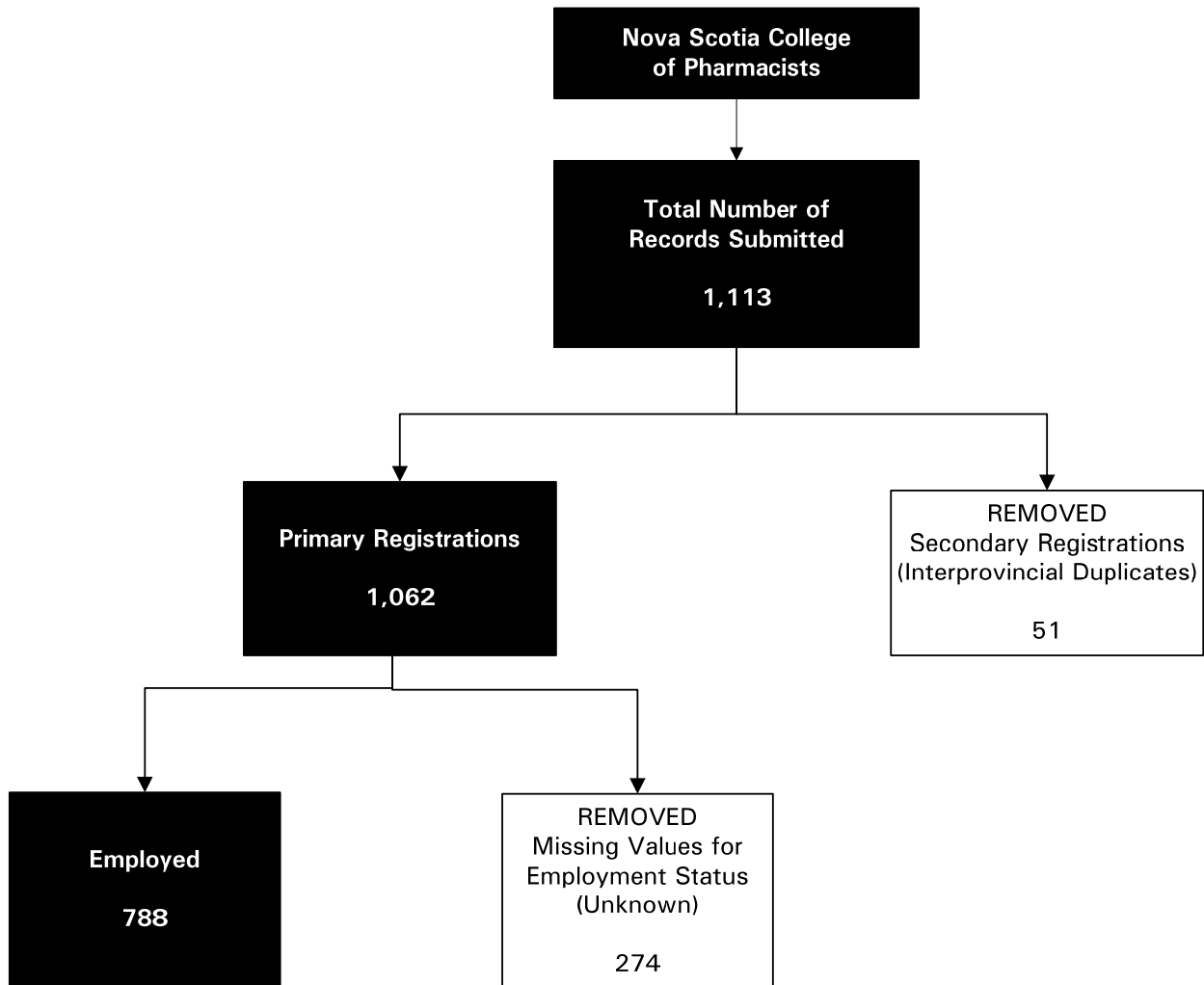
Pharmacist Database
Identification of Secondary Registrations for Provincial/Territorial Data



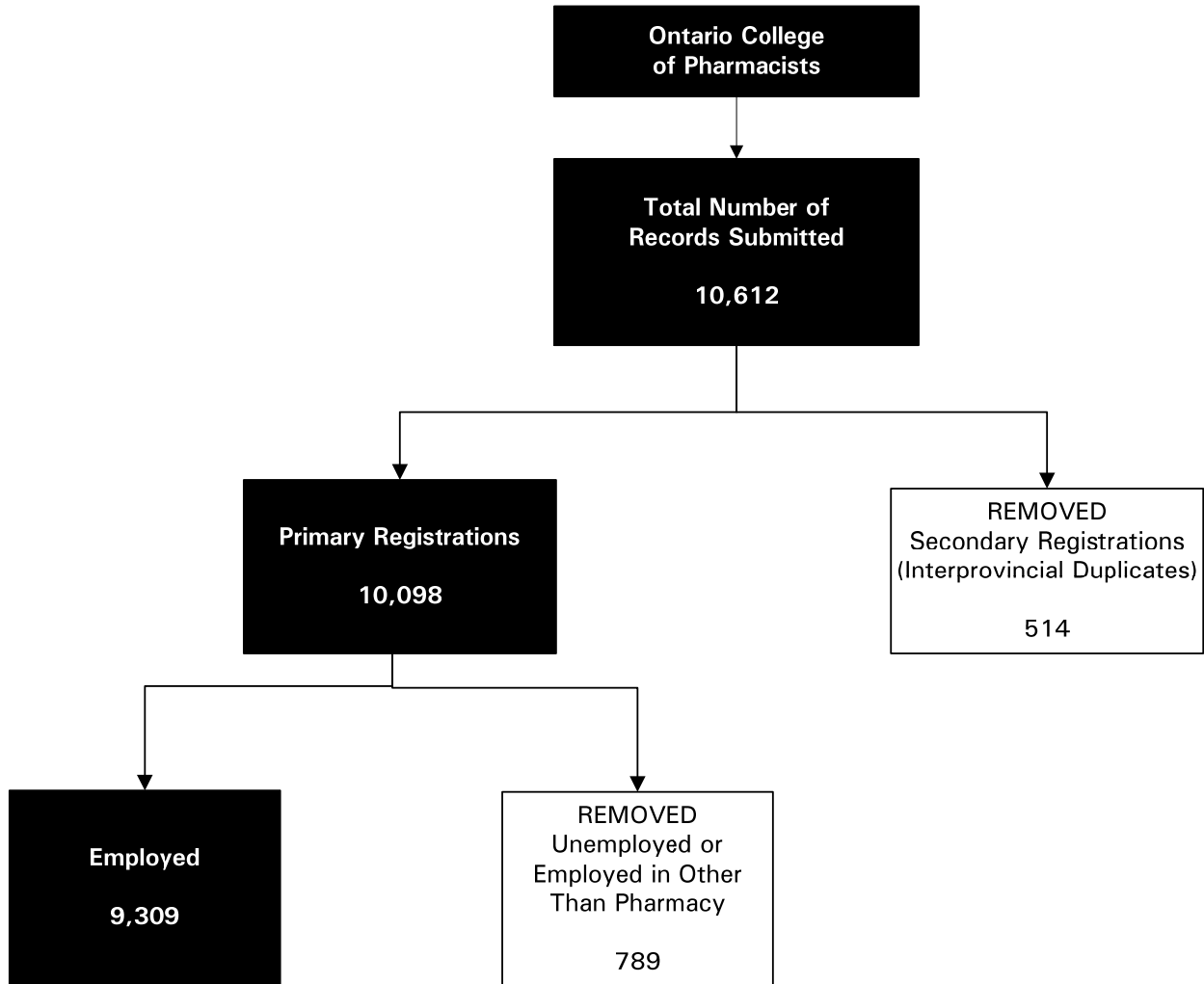
Data Flow From Prince Edward Island Pharmacy Board to CIHI



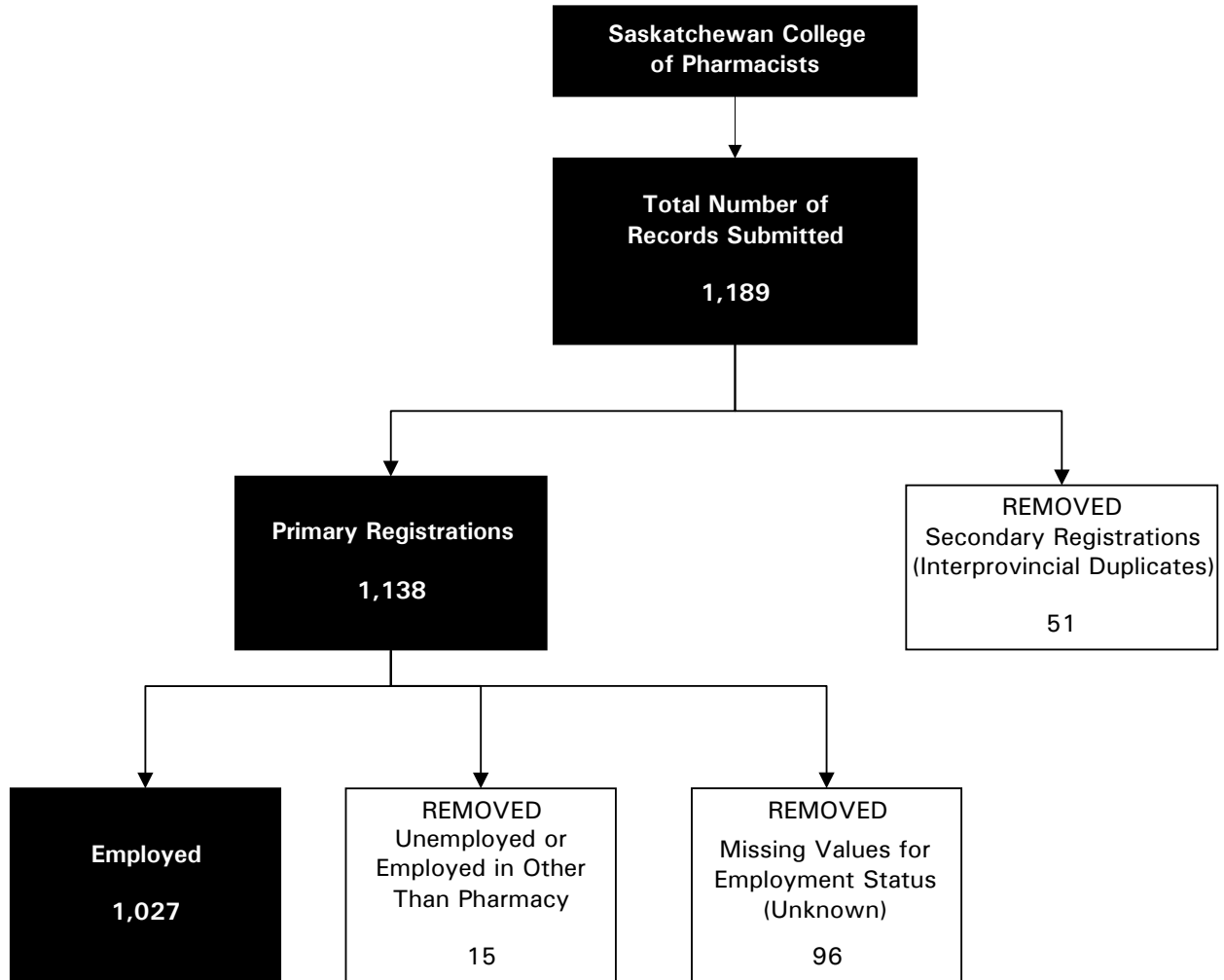
Data Flow From Nova Scotia College of Pharmacists to CIHI



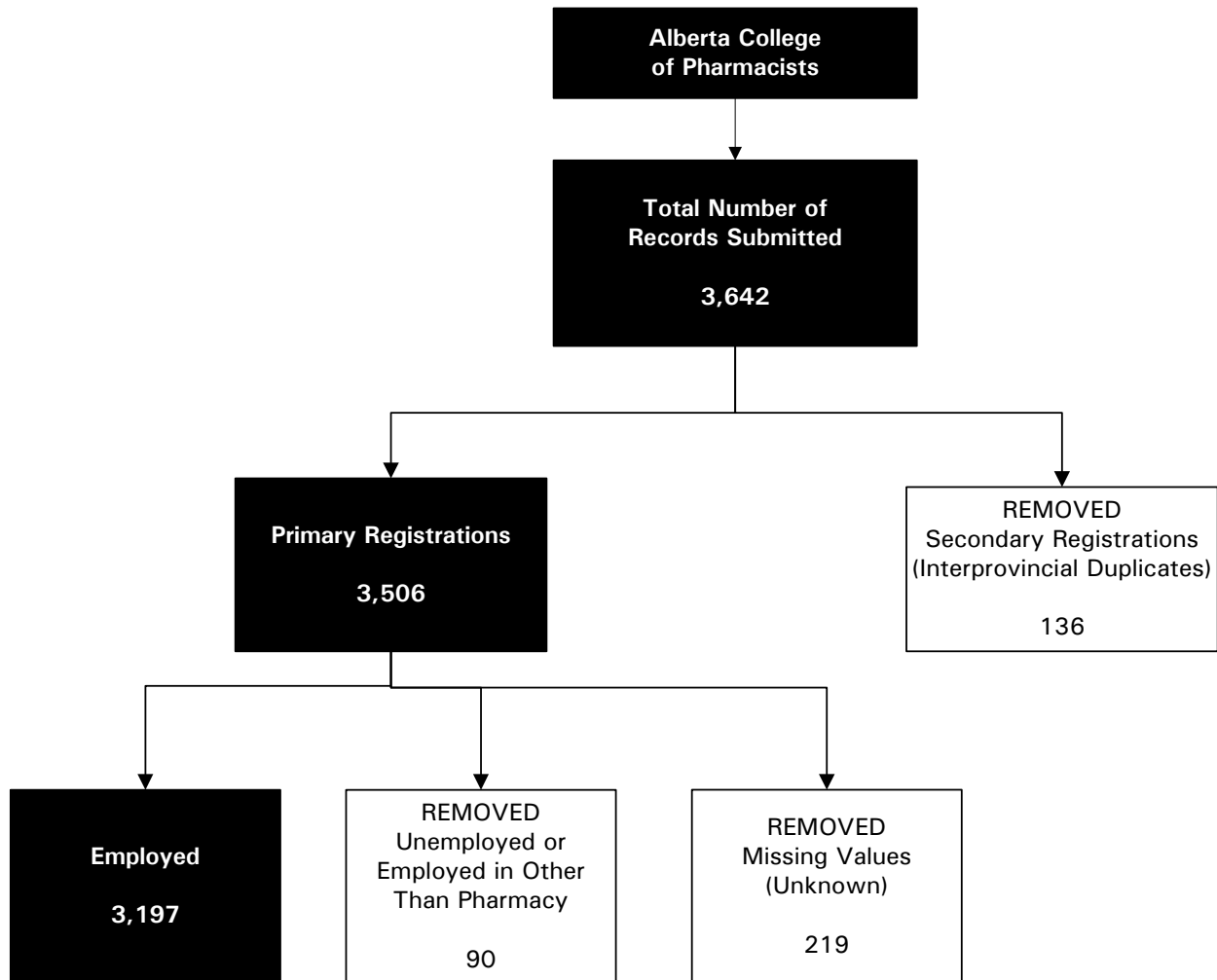
Data Flow From Ontario College of Pharmacists to CIHI



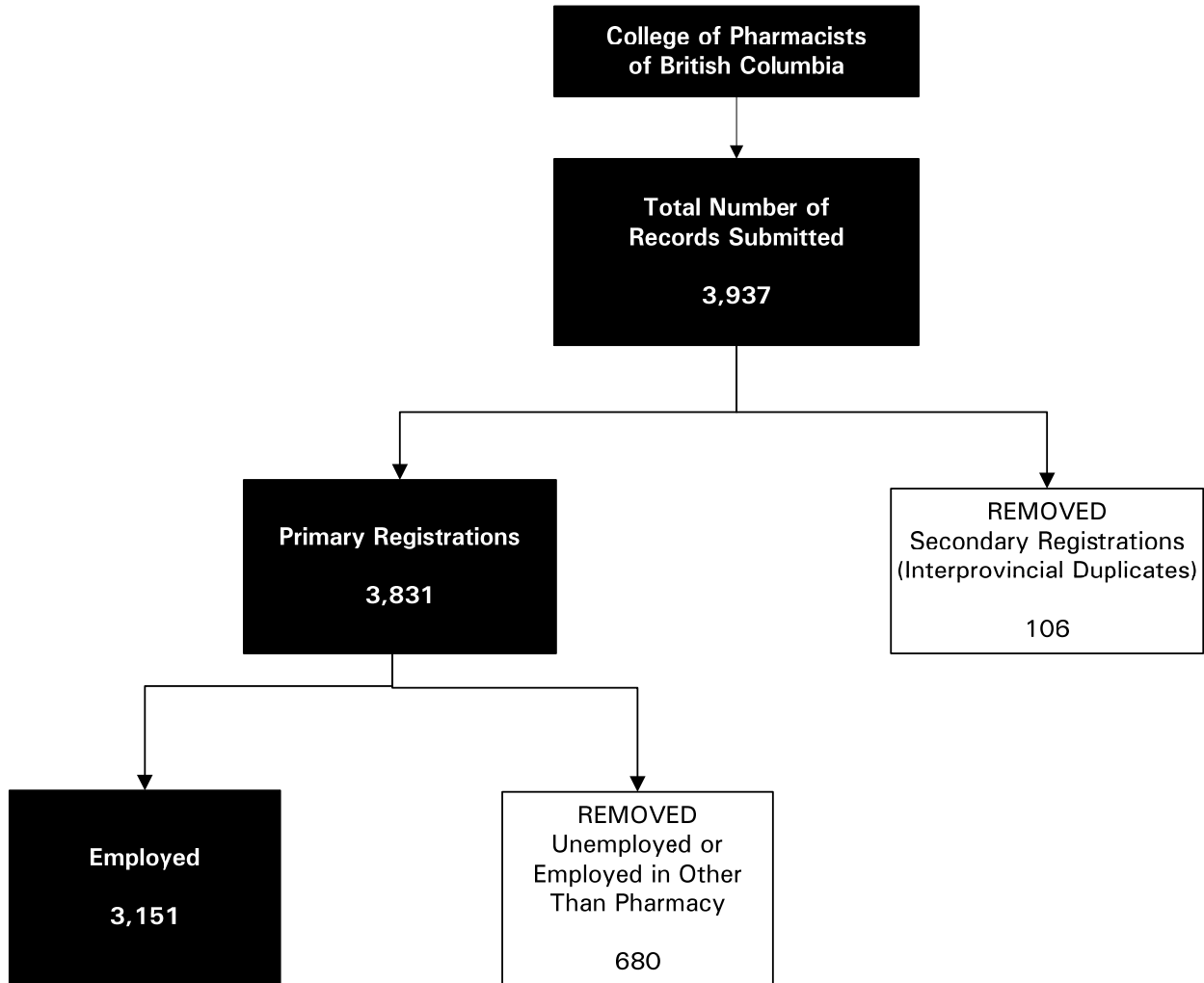
Data Flow From Saskatchewan College of Pharmacists to CIHI



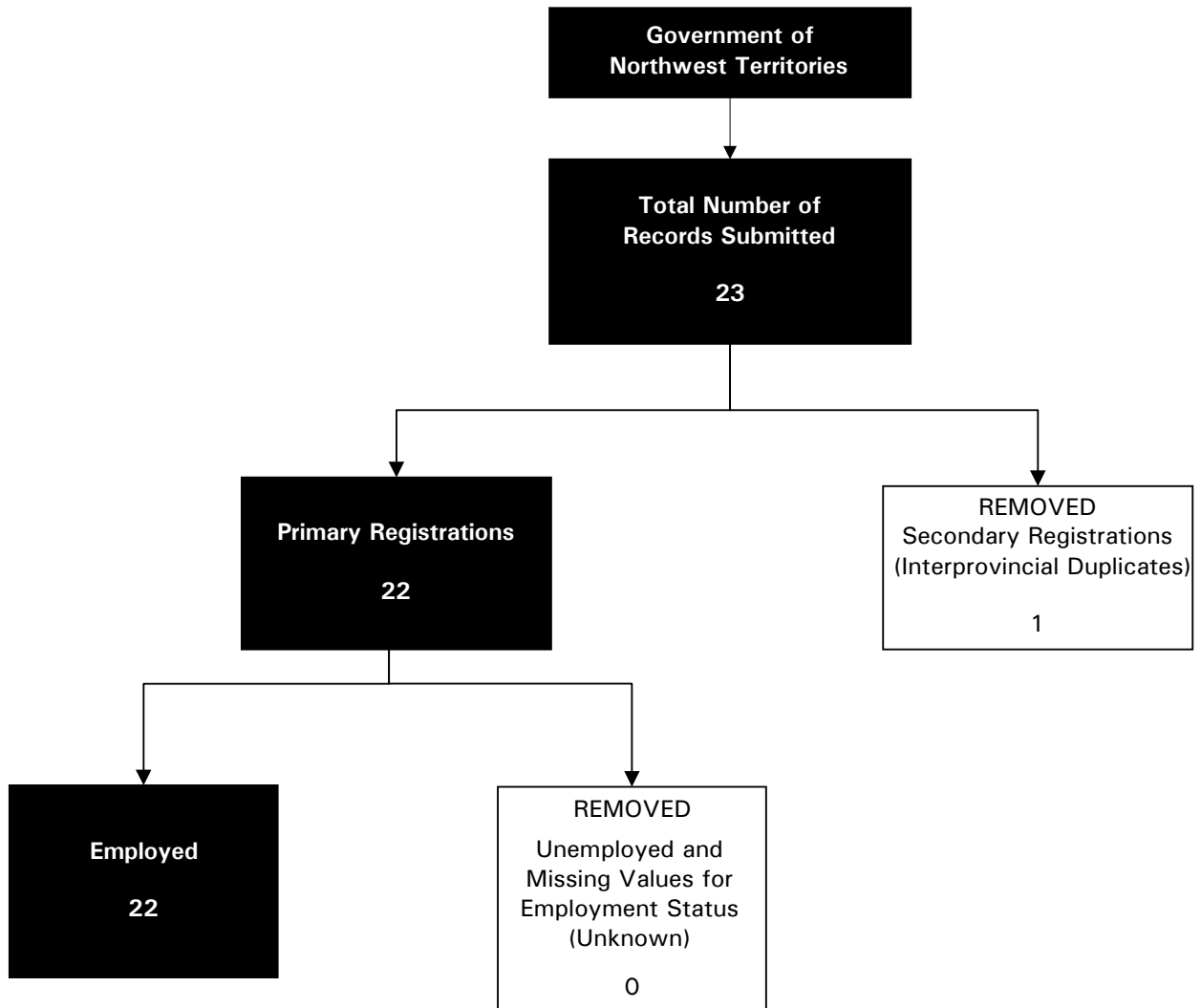
Data Flow From Alberta College of Pharmacists to CIHI



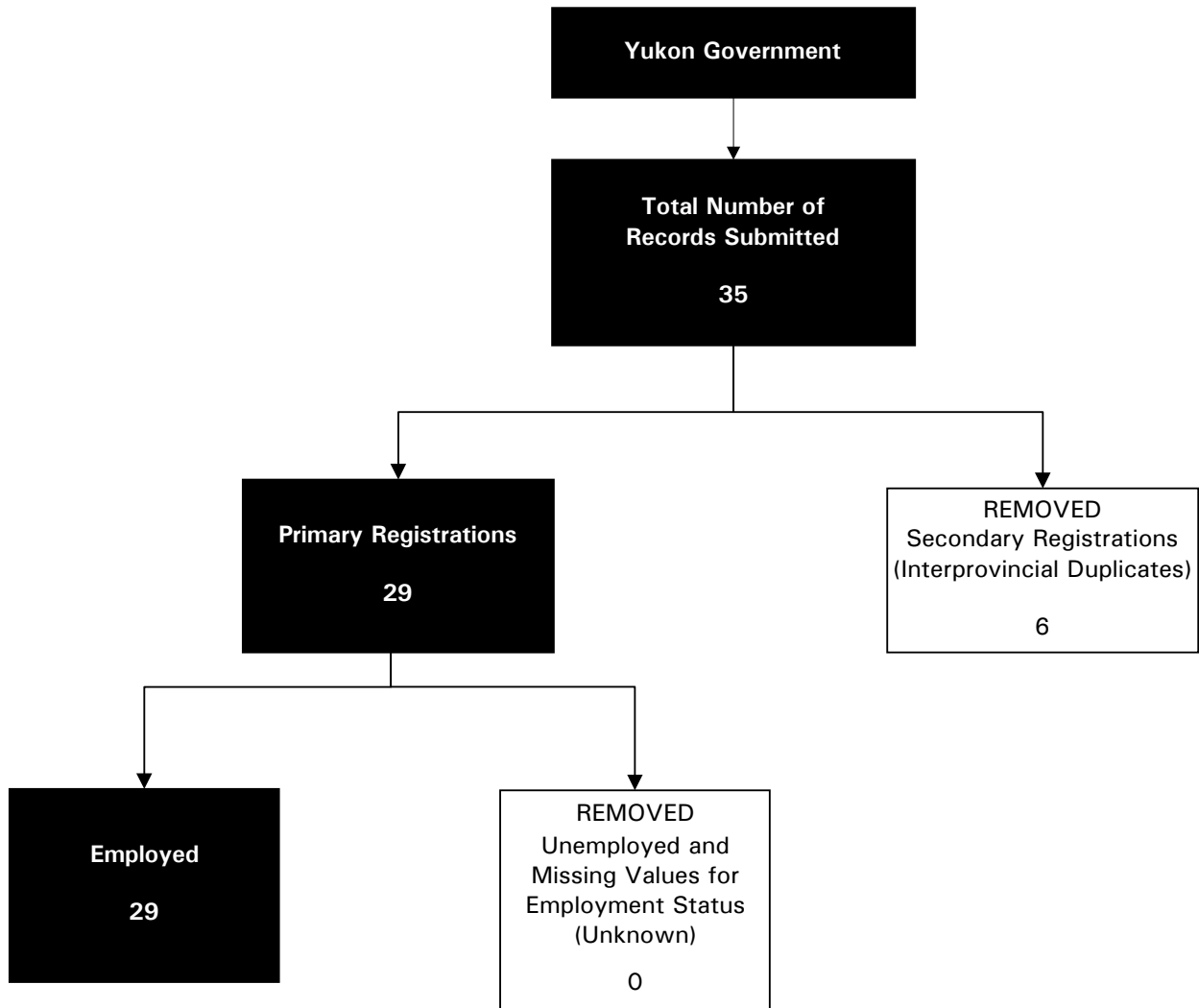
Data Flow From College of Pharmacists of British Columbia to CIHI



Data Flow From Government of Northwest Territories to CIHI



Data Flow From Yukon Government to CIHI



Appendix B
Pharmacist Contact Information

National Organizations (2006)

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
P.O. Box 89
Crapaud, Prince Edward Island COA 1J0

Prince Edward Island Pharmaceutical Association

P.O. Box 24042, 13 Stratford Rd.
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 rue Molson
Montréal, Quebec H1Y 3N1
Website: www.apesquebec.org

Association québécoise des pharmaciens propriétaires (AQPP)

4378, avenue Pierre-De Coubertin
Montréal, Quebec H1V 1A6
Website: www.aqpp.qc.ca/fr/index.php

Association professionnelle des pharmaciens salariés du Québec (APPSQ)

3560 rue la Verendrye
Sherbrooke, Quebec J1L 1Z6

Ordre des pharmaciens du Québec

301-266 rue Notre-Dame Ouest
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

Pharmacists Board of Saskatchewan

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

Alberta

Alberta College of Pharmacists

1200–10303 Jasper Ave. 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
Dept. of Health and Social Services
8th Floor, Centre Square Tower
P.O. Box 1320
Yellowknife, Northwest Territories X1A 2L9

Yukon

Government of Yukon

Yukon Consumer Services, Dept. of Community Services
P.O. Box 2703, C-5
Whitehorse, Yukon Y1A 2C6

Canadian University Programs in Pharmacy

Memorial University of Newfoundland

School of Pharmacy

St. John's Campus

P.O. 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

The 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