Health Workforce, 2018

Methodology Guide

1994 • 2019

Canadian Institute for Health Information

Institut canadien d'information sur la santé

Production of this document is made possible by financial contributions from Health Canada and provincial and territorial governments. The views expressed herein do not necessarily represent the views of Health Canada or any provincial or territorial government.

Unless otherwise indicated, this product uses data provided by Canada's provinces and territories.

Canadian Institute for Health Information
495 Richmond Road, Suite 600
Ottawa, Ontario K2A 4H6
Phone: 613-241-7860
Fax: 613-241-8120
cihi.ca
copyright@cihi.ca

ISBN 978-1-77109-823-6 (PDF)

How to cite this document:
Canadian Institute for Health Information. *Health Workforce, 2018 — Methodology Guide*. Ottawa, ON: CIHI; 2019.

Cette publication est aussi disponible en français sous le titre *La main-d'œuvre de la santé, 2018 — guide méthodologique*.
ISBN 978-1-77109-824-3 (PDF)

Table of contents

Health workforce information at CIHI

The Canadian Institute for Health Information (CIHI) collects and reports health human resources data to support federal, provincial and territorial workforce planning and policy development and to assist decision-makers in the planning and distribution of the health workforce. CIHI collects and reports data on 30 groups of health care providers. For 7 provider groups, data is available at the record level; for the other 23, data is available at the aggregate level.

Record-level data collection offers information on the supply, distribution, demographic, education, employment and practice characteristics of health care providers; aggregate-level collection offers information on their supply and demographics. CIHI also collects information on the number of graduates for each profession when available.

The following companion products are available on CIHI's website:

- *Nursing in Canada, 2018: A Lens on Supply and Workforce* (PDF)
- *A profile of nursing in Canada* (infographic)
- *Canada's supply of regulated nurses* (infographic)
- *Nursing in Canada, 2018 — Data Tables* (XLSX)
- *Health Workforce, 2018 — Data Tables* (XLSX)
- *Health Workforce, 2018: Indicators* (XLSX)

Feedback and questions are welcome at hhr@cihi.ca.

For more information, please contact

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

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

About this document

This document summarizes the basic concepts, underlying methodologies, strengths and limitations of the data. It provides a better understanding of the health workforce information presented in our analytical products and the ways in which it can be effectively used. This information is particularly important when making comparisons with other data sources and when looking at trends over time.

Health care providers

CIHI's Health Workforce Database includes record-level data for the 3 groups of regulated nursing professionals in Canada — registered nurses (including nurse practitioners, or NPs), licensed practical nurses and registered psychiatric nurses — as well as for occupational therapists, physiotherapists and pharmacists.

Included below are definitions for each:

Registered nurses (RNs, including NPs) are self-regulated health care providers who work both autonomously and in collaboration with others to enable individuals, families, groups, communities and populations to achieve their optimal levels of health. At all stages of life, in situations of health, illness, injury and disability, RNs deliver direct health care services, coordinate care and support clients in managing their own health. RNs contribute to the health care system through their leadership across a wide range of settings in practice, education, administration, research and policy. RNs are currently regulated in all 13 provinces and territories.

> **Nurse practitioners** (NPs) are RNs with additional educational preparation and experience who possess and demonstrate the competencies to autonomously diagnose, order and interpret diagnostic tests, prescribe pharmaceuticals and perform specific procedures within their legislated scope of practice. NPs are currently regulated in all 13 provinces and territories.

Licensed practical nurses (LPNs) work independently or in collaboration with other members of a health care team. LPNs assess clients and work in health promotion and illness prevention. They assess, plan, implement and evaluate care for clients. LPNs are currently regulated in all 13 provinces and territories. **Note:** In Ontario, these nurses are called registered practical nurses. For the purposes of this guide, and to maintain continuity between jurisdictions, they are referred to as LPNs.

Registered psychiatric nurses (RPNs) are regulated health professionals who work both autonomously and in collaboration with clients and other health care team members to coordinate health care and provide client-centred services to individuals, families, groups and communities. RPNs focus on mental and developmental health, mental illness and addictions, while integrating physical health and utilizing bio-psycho-social and spiritual models for a holistic approach to care. RPNs are currently regulated in the 4 Western provinces (Manitoba, Saskatchewan, Alberta and British Columbia) and Yukon. **Note:** RPNs are educated and trained independently of the registered nursing class.

Occupational therapists (OTs) are regulated health care providers who promote health, well-being and quality of life by enabling individuals, families, organizations and communities to participate in occupations that give meaning and purpose to their lives. “Occupational therapy is a type of health care that helps to solve the problems that interfere with a person’s ability to do the things that are important to them”[1] — everyday things such as self-care, being productive and leisure activities. OTs contribute to the productivity of Canadians through client-centred care.

Physiotherapists or physical therapists (PTs) are regulated, evidence-based, primary health care providers who aim to prevent, assess and treat the impact of injury, disease and/or disorders in movement and function. PTs work to promote optimal mobility; help improve physical activity and overall health and wellness; prevent disease, injury and disability; manage acute and chronic conditions; manage activity limitations and participation restrictions; improve and maintain optimal functional independence and physical performance; rehabilitate injury and the effects of disease or disability; and educate clients and plan maintenance and support programs to prevent reoccurrence, re-injury or functional decline.

Pharmacists are regarded as the medication management experts of the health care team and collaborate with patients, their families and other health care providers to benefit the health of Canadians. They are health care providers who work in a variety of different settings, such as hospitals, community pharmacies, family health teams, the pharmaceutical industry, governments, associations, colleges and universities.

Terminology

Throughout this guide,

- The term *regulated nurses* is used to describe the 3 groups of regulated nursing professionals as a whole: RNs (including NPs), LPNs and RPNs.
- The term *nursing* refers collectively to Canada’s 3 regulated nursing professions, unless otherwise specified.

- *Health Workforce Database* (HWDB) refers to the database that stores both record-level and aggregate-level data collected on 30 groups of health care providers in Canada, including all regulated nurses as well as occupational therapists, physiotherapists and pharmacists.
- The term *supply* refers to all registrants who were eligible to practise in the given year (including those employed and those not employed at the time of registration). Note that inactive registrants and secondary registrants or interprovincial duplicates are excluded from the supply.
- The term *workforce* refers to only those registrants who were employed in the profession at the time of annual registration, including those on leave. The term *primary employment* refers to employment with an employer or in a self-employed arrangement that is associated with the highest number of usual weekly hours of work. All workforce data and analyses in this product represent primary employment statistics for the respective health care providers.
- The term *inflow* refers to the number of registrants entering the profession. Inflow occurs when a health care provider registers to practise in a jurisdiction in which they did not register the previous year. Inflow is calculated by dividing the number of new registrants — health care providers who were not registered to practise in the same province or territory the year before — by the total number of registrants in the same year. Inflow can include new graduates, health care providers who migrate in from other Canadian jurisdictions or foreign countries, and those who return to the workforce after extended leave (such as family responsibilities or further education).
- The term *outflow* refers to the number of registrants leaving the profession. Outflow is calculated by dividing the number of registrants who did not renew their licence to practise in the same province or territory by the total number of registrants in the same year. Outflow is influenced by a number of factors[i] that will change over time. For those health care providers who are late in their career, failing to renew their registration may be a signal that they have retired. For health care providers who are early in their career, reasons for failing to renew registration could include an employment opportunity in another jurisdiction or country, leaving the profession, parental leave and family responsibilities, or a return to school for additional education.
- The term *renewal* refers to the number of registrants who renewed their registration in the same jurisdiction as the one they were registered in the year before.

---

i. Health workers, like others in the labour force, consider many factors when choosing where to live and work. Factors might include social, political, economic, environmental and familial issues.

Data sources and collection

Data quality

CIHI is founded on the principles of data quality, privacy and confidentiality. Data collection, processing, analysis and dissemination are guided by CIHI's commitment to publishing high-quality data in a privacy-sensitive manner. Data quality methodologies are used to maximize the accuracy, comparability, timeliness, usability and relevance of the health workforce data.

Privacy and confidentiality

To safeguard the privacy and confidentiality of data received by CIHI, guidelines have been developed to govern the publication and release of health information in accordance with provincial and territorial privacy legislation.

Regulation status

Whether a health profession is regulated in a jurisdiction has a significant impact on data collection and the quality of the data. Regulated health professions are governed by a legislative framework, which establishes health regulatory organizations that regulate the professions in the public's interest. Health regulatory organizations are responsible for ensuring that regulated health care providers provide health services in a safe, professional and ethical manner. Self-regulated health care providers are involved in determining the rules that govern the profession and are accountable for their own behaviour. The regulation status of health professions may impact data comparability and trends. Appendix A lists the first year of regulation and registration status, by jurisdiction, for the 7 groups of health care providers included in this data release.

Data collection

In provinces and territories where health professions are regulated or require a licence to practise, official registration with the provincial/territorial regulatory/licensing authority requires the mandatory completion of a registration form on an annual basis. In provinces and territories where health care professions are not regulated, health care providers often register with their respective national association to obtain an annual membership.

Through agreement with CIHI, regulatory/licensing authorities and national associations submit a set of standardized data to CIHI, which is collected using the annual registration forms. Data includes demographic, education, geographic and employment characteristics.

CIHI and the regulatory authorities jointly review and scrutinize the submitted data. Once the regulatory authority and CIHI approve the final data, it is added to CIHI's Health Workforce Database for analysis and reporting.

Statistics reported by CIHI may differ from those reported by others, even though the source of the data (i.e., annual registration forms) is the same. Differences may be attributed to differences in the population of reference, the collection period and/or CIHI's data exclusion criteria and editing and processing methodologies.

Population of reference and collection period

CIHI takes steps to adjust the population of reference of the health workforce data to more closely represent the population of interest. To better ensure timeliness, CIHI collects data prior to the end of the registration period, which varies among professions and jurisdictions. For nursing, the population of reference includes all regulated nurses who submit an active practising registration in a Canadian province or territory in the first 6 months of the registration year. The 12-month registration period varies among the provinces and territories, as each jurisdiction is responsible for setting the start and end dates of its own registration period. This manner of collection enables CIHI to produce more timely data. Analyses completed annually by CIHI indicate that less than 5% of regulated nurses register after the 6-month mark, thus ensuring that CIHI's trends are consistent with provincial/territorial trends that include those registering after the 6-month mark.

For OTs, PTs and pharmacists, a cut-off date for data collection was established through consultation with the data providers and reflects a point in time when the majority of the registrations have been received for the registration period.

Non-practising registrations

The regulated nurses target population includes those who submit an active practising registration; those who submit a non-practising registration are excluded.

Under- and over-coverage

Under- and over-coverage occur when there is a difference between the population of reference and the frame. The frame for a data holding is a list of units (i.e., jurisdictions) that will be part of the data collection. The frame is used to determine from whom the data should be collected and what proportion of the data was actually received.

Under-coverage occurs when part of the population of reference is not included in the database.

Over-coverage occurs when duplicates appear in the database or when out-of-scope records (i.e., inactive registrants) are included.

Registration period versus data collection period

While setting cut-off dates enables CIHI to release more timely data, health care providers who register between the cut-off date and the end of the registration period are not included in the HWDB. This is a source of under-coverage.

Non-response

Non-response rates reflect a case of under-coverage. Statistics on item non-response, or *not stated* values for each reporting data element, are available in *Nursing in Canada, 2018 — Data Tables*, *Health Workforce, 2018 — Data Tables* and *Health Workforce, 2018: Indicators.*

First-time registrants

First-time registrants include new graduates as well as health care providers who are registering in a jurisdiction for the first time. Information on first-time registrants has varied across jurisdictions and over time, which has resulted in cases of under-coverage.

Voluntary registration data

National associations submit membership registration data to CIHI for provinces and/or territories where the corresponding profession is unregulated or does not require mandatory registration with the provincial/territorial licensing authorities. Membership registration with a national association is often voluntary; data received from the national associations for these jurisdictions is therefore under-covered.

Health care providers on leave

Health care providers who are employed in their profession and on leave are included in the population of reference for OTs and PTs. At the time of registration and when options exist, these health care providers may state that they are employed in their profession but take leave during some of the rest of the registration period. Examples of leave are maternity/paternity leave, family leave, education leave and leave for short-term illness or injury. While potential over-coverage may exist, the assumption is that health care providers on temporary leave who register as employed in their profession and who provide full employment information (when possible) intend to return to that position when the temporary leave ends.

Data providers and CIHI have made efforts to address over-coverage issues and improve the accuracy of the data. Some of the issues are investigated during the data collection stage and others are investigated during the review process.

Refer to the section Methodological and historical changes for details associated with under- or over-coverage issues.

Secondary registrations

Health care providers can choose to register simultaneously in multiple jurisdictions. In order to avoid double-counting individuals, CIHI identifies registrations that do not reflect the primary jurisdiction of practice and excludes them when reporting supply or workforce information. Such interjurisdictional duplicates are also known as secondary registrations.

Secondary registrations for record-level data are identified in the HWDB and excluded from reported statistics using the following methodology:

- When the country of residence is a non-Canadian location, the record is deemed to be a secondary registration.
- A comparison is made between the jurisdictions of registration and employment for each record; when they do not match, the record is identified as a secondary registration.
- When the jurisdiction of employment is not stated, a comparison is made between the jurisdictions of registration and residence for each record; when they do not match, the record is identified as a secondary registration.
- When the jurisdiction of residence is not stated, the jurisdiction of employment is assumed to be the same as the jurisdiction of registration and the record is deemed to be a primary registration.

Sometimes, double-counting a health care provider cannot be avoided. For example, a health care provider who registers and works in more than one province/territory simultaneously would be double-counted in the health workforce data, as the jurisdiction of employment would match the jurisdiction of registration.

The supply and workforce of health care providers is defined when the secondary registrations are excluded from active registrations.

Registered nurses in the territories

It is common for registered nurses to work in the territories on a temporary basis and to return to their home province for part of the year. In these cases, where the jurisdiction of employment is a territory, the duplicates are not excluded so that the nursing workforce in the territories will not be underestimated.

For the Northwest Territories and Nunavut, the data for RNs is presented as a combined total throughout the summary report and data tables. RNs in these territories are governed by the same regulatory authority; because information about the specific territory in which the RNs usually worked is not available, combined data is submitted to CIHI. Therefore, any duplicates between the Northwest Territories and Nunavut cannot be resolved.

Recoding the data element Employment Status

Regulated nurses who do not indicate their employment status (i.e., full time, part time, casual) on their registration form risk being excluded from the workforce population. However, in cases where employment status is not stated but employment information is provided, CIHI, in consultation with the regulatory authority, will change the Employment Status element to *employed — status unknown* to ensure that the record is included in the workforce. This methodology has been applied to all nursing types.

General methodology

Population estimates and per 100,000 population counts

Using population estimates from Statistics Canada, rates per population can be calculated for health care providers. Appendix B includes Statistics Canada's population estimates by province and territory for 2009 to 2017.

Average age

The average age for a health care provider in a given province/territory and/or Canada is calculated based on the age of the individual health care provider, which is derived from the data elements Birth Year and the current Data Year for each record. Records with missing age are excluded from the calculation.

$$\text{Average age} = \frac{1}{n}\sum_{i=1}^{n} Age_i$$

Where

- i = Individual health care provider
- n = Total number of health care providers in a jurisdiction or Canada

Urban and rural/remote[ii]

A postal code analysis is performed to determine whether a health care provider is practising in an urban or a rural/remote setting. In the case of nursing, the postal code used is that of the workplace; however, when the data element Postal Code (Primary Worksite) is not submitted to CIHI, Postal Code of Residence is used. If the postal code is unknown or invalid, it is defaulted to *not stated*. For OTs/PTs/pharmacists, the postal code of the workplace is used to conduct this analysis. If the postal code is unknown or invalid, it is defaulted to *unknown* (missing values for OTs/PTs/pharmacists).

Using Statistics Canada's Postal Code Conversion File (PCCF), postal codes are assigned to statistical area classifications (SACs) — urban or rural/remote. Urban areas are defined (in part) by Statistics Canada as communities with populations greater than 10,000 people; rural/remote is equated with communities outside the urban boundaries and is referred to as *rural and small town* (RST) by Statistics Canada.

ii. Details of the urban and rural/remote classification schemes can be found in McNiven et al.,[2] du Plessis et al.[3] and CIHI.[4]

RST communities are further subdivided by identifying the degree to which they are influenced in terms of social and economic integration with larger urban centres. Metropolitan influenced zone (MIZ) categories disaggregate the RST population into 4 subgroups: strong MIZ, moderate MIZ, weak MIZ and no MIZ.

All categories may be interpreted in the following manner:

- Urban: Greater than 10,000 people (SACtype = 1, 2, 3)
- Rural/remote: Strong/moderate/weak/no MIZ located relatively close to larger urban centres and distant from large urban centres (SACtype = 4, 5, 6, 7, 8)

The urban and rural/remote analysis for regulated nurses in the Northwest Territories and Nunavut is completed differently from the analysis for those in the provinces and Yukon. Urban areas are identified as postal codes within Yellowknife and Iqaluit, and rural/remote areas are identified as postal codes outside of Yellowknife and Iqaluit.

Health care providers employed in direct care

The term *employed in direct care* refers to only those registrants who provided services directly to clients. The methodology for defining health care providers employed in direct care can vary by profession.

RNs (including NPs): Direct care includes those whose Area of Practice is *medicine/surgery*, *psychiatry/mental health*, *pediatrics*, *maternity/newborn*, *geriatric/long-term care*, *critical care*, *community health*, *ambulatory care*, *home care*, *occupational health*, *operating room/ recovery room*, *emergency care*, *several clinical areas*, *oncology*, *rehabilitation*, *public health*, *telehealth* and *other areas of direct service*.

LPNs: Direct care includes those whose Area of Practice is *medicine/surgery*, *psychiatry/ mental health*, *pediatrics*, *maternity/newborn*, *geriatric/long-term care*, *critical care*, *community health*, *ambulatory care*, *home care*, *occupational health*, *operating room/recovery room*, *emergency care*, *several clinical areas*, *oncology*, *rehabilitation*, *palliative care*, *public health* and *other areas of direct service*.

RPNs: Direct care includes those whose Area of Practice is *medicine/surgery*, *pediatrics*, *geriatric/long-term care*, *crisis/emergency services*, *occupational health*, *oncology*, *rehabilitation*, *palliative care*, *children and adolescent services*, *developmental habilitation/ disabilities*, *addiction services*, *acute services*, *forensic services* and *other areas of direct service*.

OTs: Direct care includes those whose Areas of Practice are in *mental health*, *neurological system*, *musculoskeletal system*, *cardiovascular and respiratory system*, *digestive/metabolic/ endocrine system*, *general physical health*, *vocational rehabilitation*, *palliative care*, *health promotion and wellness*, and *other areas of direct service*.

PTs: Direct care includes those whose Areas of Practice are in *general practice*, *sports medicine*, *burns and wound management*, *plastics*, *amputations*, *orthopedics*, *rheumatology*, *vestibular rehabilitation*, *perineal*, *oncology*, *critical care*, *cardiology*, *neurology*, *respirology*, *health promotion and wellness*, *palliative care*, *return to work rehabilitation*, *ergonomics* and *other areas of direct service*.

Pharmacists: Direct care includes those whose Primary Position is *staff pharmacist*, *pharmacy owner/manager*, *pharmacy manager* or *institutional leader/coordinator*. *Pharmacy owner/ managers* and *pharmacy managers* may spend less of their time providing direct care.

Health regions

Health regions are legislated administrative areas defined by provincial ministries of health. These administrative areas represent geographic areas of responsibility for hospital boards or regional health authorities. Health regions, being provincial administrative areas, are subject to change.

The health region data presented in this publication includes health care providers who work in direct patient care and whose postal code is within the province or territory of analysis; those employed in administration, education or research are excluded from the health region totals.

The postal code data and Statistics Canada's PCCF are used to assign health care providers to health regions. The postal code of the workplace is used to conduct this analysis. If the postal code is outside of the province/territory of analysis, the health region is defaulted to *outside of jurisdiction*.

Health region peer groups

In order to facilitate comparisons among health regions, Statistics Canada developed a methodology that groups health regions with similar socio-economic and socio-demographic characteristics; these are referred to as peer groups. The health region peer groups defined by Statistics Canada are based on the 2018 classification of peer groups and are presented in *Health Workforce, 2018: Indicators*.

International comparability

In an effort to improve the usability of Canada's health workforce statistics for international stakeholders, CIHI has developed a series of health workforce indicators grounded in the work of the World Health Organization's *National Health Workforce Accounts: A Handbook*.[5] CIHI's release is focused on indicators identified in Module 1: Active health workforce stock.

Please see CIHI's Indicator Library for the detailed methodology for each health workforce indicator.

Methodological and historical changes

Methodological and historical changes to the data have the potential to make it difficult to compare data across time. CIHI, in collaboration with the regulatory authorities, is continually striving to improve data quality; therefore, the following information should be considered when making historical comparisons and consulting previous CIHI publications. In all cases, comparisons should be made with caution and in consideration of the methodological and historical changes made. For a complete list of data elements, please review the Health Workforce Database metadata page on CIHI's website.

Detailed health care provider methodology

The section below provides information on the data elements with data quality improvements or changes in data years 2009 to 2018 that may affect comparability. The descriptions are organized by health care provider group and by demographic, education and employment data elements.

Nursing

Registered nurse (including nurse practitioner) data, 2009 to 2018

Nurses employed in mental health

The term *employed in mental health* refers to those nurses working in direct care who identified a primary place of work as mental health hospital, or an area of responsibility of psychiatry/mental health, and to all RPNs. Regulated nurses working in other settings may also be supporting the delivery of psychiatry/mental health services and may not be captured.

Nursing graduate outmigration

Graduate outmigration[6] is defined as the proportion of new graduates from Canadian nursing entry-to-practice programs who do not apply for registration with a Canadian nursing regulatory body.

General

Jurisdiction	Data limitation
British Columbia	In 2018, the College of Registered Nurses (CRNBC), the College of Licensed Practical Nurses (CLPNBC) and the College of Registered Psychiatric Nurses (CRPNBC) amalgamated to the British Columbia College of Nursing Professionals (BCCNP). Fluctuations in data can be attributed to this amalgamation.

Supply and workforce

Jurisdiction	Data limitation
New Brunswick	The **Supply** and **Workforce** of RNs in New Brunswick decreased between 2015 and 2016. According to the Nurses Association of New Brunswick (NANB), the fluctuation is due to an increase in outflow and a decrease in initial registrations.
Quebec	The RN **Workforce** in Quebec declined between 2015 and 2016, impacting trending in other employment-related data elements. The overall decline in the Quebec RN/NP **Workforce** can be attributed to a decline in employment among new graduates (those who graduated in 2015 or 2016) in addition to retirements of late-career nurses. The number of RNs in manager positions has been declining since 2007. While part of this shift can be attributed to retirement of late-career nurses, movement of RNs from manager to staff nurse and other positions is also a factor. Since 2007, the **Supply** of NPs in Quebec has increased. According to the Ordre des infirmières et infirmiers du Québec (OIIQ), the growth among NPs in Quebec is primarily a result of the implementation of NP legislation in 2006. Since that time, the ministère de la Santé et des Services sociaux du Québec (MSSS) has introduced a workforce strategy with a goal of 2,000 NPs in Quebec by the year 2025. As a result, universities in Quebec, in collaboration with other partners, are increasing enrolment in NP programs.
Ontario	A new registration regulation requirement, called the Declaration of Practice, was introduced by the College of Nurses of Ontario (CNO) for the 2014 registration year. With this new requirement, a member could renew in the General Class only if they had practised nursing in Ontario within the past 3 years, or had become registered or reinstated within the past 3 years. This change impacted the Ontario nursing supply in 2014 compared with the trends of previous years. Caution should be used when comparing data.

Jurisdiction	Data limitation
Manitoba	In Manitoba, questions pertaining to employment status are voluntarily reported by RNs and NPs. The data collection did not change this year. This voluntary reporting may impact the workforce information for RNs and NPs, and the overall workforce totals for regulated nurses in Manitoba and Canada. Please use with caution. The supply counts, which include nurses eligible to practise, are not based on voluntary reporting.
Alberta	The annual growth rates for RNs in Alberta fluctuated between 2013 and 2017. According to the College and Association of Registered Nurses of Alberta (CARNA), the fluctuation is the result of a system upgrade implemented in 2013.
Northwest Territories and Nunavut	The **Supply** and **Workforce** of RNs/NPs decreased between 2017 and 2018; comparisons should therefore be made with caution for employment-related data elements. The overall decline of the **Supply** and **Workforce** for RNs/NPs is attributed to the nature of the work in the Northwest Territories and Nunavut.

Demographic

Jurisdiction	Data limitation
Newfoundland and Labrador	In 2016, the Association of Registered Nurses of Newfoundland and Labrador (ARNNL) implemented a new identifier in its annual submission to CIHI, limiting the ability to analyze the flow of nurses in and out of Newfoundland and Labrador. For 2016, ARNNL submitted aggregate counts for inflow/outflow/renewal and inflow/outflow/renewal by **Age Group**, resulting in over-coverage.
Manitoba	The College of Registered Nurses of Manitoba (CRNM) does not provide record-level values for the data elements **Birth Year** and **Sex** in order to conform to provincial privacy legislation. Each year, it submitted age groups at the record level in place of **Birth Year** as well as aggregate tables on **Sex** and **Average Age**. For 2009 to 2015, CRNM provided aggregate-level data for **Sex** and **Average Age** based on **Workforce** counts; therefore, the Canada total for these variables does not match the Canada **Supply** count.

Education

Jurisdiction	Data limitation
Quebec	Starting in 2016, a nursing degree from an educational institution in France is recognized as an equivalent to the Bachelor of Science in Nursing from Quebec universities. As a result of this change, the **Initial Education** of nurses who graduated in France has been recoded by the OIIQ as *baccalaureate*. Prior to 2016, it was coded as *diploma*.
Ontario	In 2018, the College of Nurses of Ontario (CNO) implemented a new database. As a result, there was a decrease in *not stated* and an increase in *none* for **Education in Other Than Nursing**.
Manitoba	In 2017, the CRNM defaulted **Other Education in Nursing Discipline — Degree** to *not stated*. This was due to the implementation of a new database. As a result, there was a decrease in *baccalaureate* and *master's* for the derived data element **Highest Education in Nursing**. In 2018, the CRNM resolved the issue stated above and as a result, *baccalaureate* and *masters* values increased for the data element **Highest Education in Nursing**. In addition to this quality improvement, the **Other Education in Nursing** and **Education in Other Than Nursing** elements observed a decrease in the *not stated* values and an increase in *none* values. In 2018, as a result of the new database implementation, the CRNM began submitting **Education in Other Than Nursing** and **Other Education in Nursing Discipline — Degree** elements for NPs.
Northwest Territories and Nunavut	From 2012 to 2015, a change in reporting methodology by the Registered Nurses Association of the Northwest Territories and Nunavut (RNANT/NU) influenced *baccalaureate* and *diploma* responses for **Initial Education in Registered Nursing**.

Employment

Jurisdiction	Data limitation
Quebec	Starting in 2015, the OIIQ registration form required RNs to specify their **Place of Work**. As a result, the number of RNs recording *other* as their **Place of Work** has declined alongside an increase in *hospital*, *community health* and *nursing home/ long-term care*. Starting in 2013, the OIIQ submitted full **Postal Code of Worksite. Postal Code of Residence** was not submitted due to a privacy regulation in Quebec.
Ontario	Prior to 2012, members of the CNO provided detailed employment information (**Employment Status, Place of Work, Position** and **Area of Responsibility**) on only the single employer for whom they worked the most hours. As of 2012, members are required to provide this same detailed employment information about all of their current employers and to designate an employer to appear on the CNO's register. The CNO does not have a concept of primary employer; however, as CIHI requires a primary employer, the CNO provides CIHI with the employer the member designates as the register address as the primary employer. More information can be found on the CNO's website.
Manitoba	Over the past decade, the CRNM has made efforts to collect **Postal Code of Worksite** and/or **Postal Code of Residence** to support CIHI's health region and urban/rural/remote analysis. **Postal Code of Primary Worksite**, 2009 to 2011, full postal code collected; 2012, not collected; 2013 to 2016, partial (3 digit) postal code; 2017, full postal code. **Postal Code of Residence**, 2009 to 2012, partial (3 digit) postal code; 2013 to 2017, full postal code. In 2009, a total of 6,573 RNs and NPs failed to indicate their primary **Place of Work**, which resulted in an increase in non-responses and a low volume of RNs/ NPs in each workplace. While reporting since 2010 has improved, caution should be taken when comparing 2009 data with data from other years. In Manitoba, questions pertaining to employment status are voluntarily reported by RNs and NPs. The data collection did not change this year. This voluntary reporting may impact the workforce information for RNs and NPs, and the overall workforce totals for regulated nurses in Manitoba and Canada. Please use with caution. The supply counts, which include nurses eligible to practise, are not based on voluntary reporting. In 2018, **Place of Work** observed fluctuations in *community health centres*, *physician's office/family practice unit* and *other place of work*. According to the CRNM, reporting of **Area of Responsibility** was not mandatory on the CRNM registration renewal application. This led to fluctuations in this data element in 2017 and 2018. Starting in 2018, the CRNM began to report *employed in other than registered nursing — seeking and/or not seeking employment in registered nursing* for **Employment Status**. In 2018, a change in reporting methodology by the CRNM influenced the *full-time* and *part-time* responses for NPs for **Employed in nursing discipline**.

Jurisdiction	Data limitation
Alberta	From 2011 to 2013, reporting **Place of Work**, **Area of Responsibility** and **Position** was not mandatory on the CARNA registration renewal application. This change led to an increase in non-response for the data elements in these years. In 2014 and 2016, there was an increase in *unknown* values for **Employment Status**. In 2017, CARNA provided historical corrections for these records.
Yukon	Starting in 2009, the Yukon Registered Nurses Association (YRNA) implemented a coding change to the element **Postal Code of Worksite**. This change affects the number of nurses who were employed in small Yukon communities outside of Whitehorse, as reporting was based on the employer's Whitehorse office postal code. Caution should be used when reviewing the urban/rural/remote analysis. CIHI is working with the YRNA to improve the accuracy of this data element.
Northwest Territories and Nunavut	The RN **Workforce** in the Northwest Territories and Nunavut relies on a core of resident RNs with **Employment Status** of *full time*, plus a large number of short-term relief staff from across Canada each year. While some RNs return each year, some register in these territories only once. This results in greater variability in the data over time. Data for the Northwest Territories and Nunavut is provided by the RNANT/NU. It is not possible to accurately attribute the number of RNs to these 2 territories; as a result, data for the Northwest Territories and Nunavut is combined under a single set of statistics. CIHI is working with the RNANT/NU to improve reporting of nurses in both territories.

Licensed practical nurse data, 2009 to 2018

General

Jurisdiction	Data limitation
British Columbia	In 2018, the College of Registered Nurses (CRNBC), the College of Licensed Practical Nurses (CLPNBC) and the College of Registered Psychiatric Nurses (CRPNBC) amalgamated to the British Columbia College of Nursing Professionals (BCCNP). Fluctuations in data can be attributed to this amalgamation.
Yukon	In 2017 and 2018, the Yukon Department of Community Services submitted aggregate supply data for LPNs. Data for 2009 to 2016 was submitted at the record level.
Nunavut	CIHI does not collect record-level LPN data from Nunavut. Aggregate counts are included where possible.

Supply and workforce

Jurisdiction	Data limitation
Newfoundland and Labrador	In 2012, the College of Licensed Practical Nurses of Newfoundland and Labrador (CLPNNL) implemented new entry-to-practice requirements for licensure. Consequently, this caused a decrease in registrants in 2012.
Prince Edward Island	In 2012, the Prince Edward Island Licensed Practical Nurses Registration Board (PEILPNRB) implemented new entry-to-practice requirements for licensure. Consequently, this caused a decrease in registrants in 2013.
Quebec	In 2015, a new entry-to-practice exam was implemented for LPNs in Quebec. According to the Ordre des infirmières et infirmiers auxiliaires du Québec (OIIAQ), this may have contributed to a decline in new registrants since 2015.
Ontario	A new registration regulation requirement, called the Declaration of Practice, was introduced by the CNO for the 2014 registration year. With this new requirement, a member could renew in the General Class only if they had practised nursing, or had become registered or reinstated, in Ontario within the past 3 years. This change affected the Ontario practical nursing supply in 2014 and therefore affected comparisons with the trends of previous years. Caution should be used when comparing data.
Alberta	The LPN **Supply** in Alberta increased between 2017 and 2018. According to the College of Licensed Practical Nurses of Alberta (CLPNA), the fluctuation is due to the implementation of a new database and an increase in membership. The CLPNA is working to rectify these issues for 2019.

Demographic

Jurisdiction	Data limitation
Quebec	In 2010, the OIIAQ implemented a change to its member identifiers in the data file submitted to CIHI. Inflow, outflow and renewal trending is not available due to this change. From 2009 to 2010, **Location of Graduation** was not collected. As a result, all **Location of Graduation** values were defaulted to *Quebec*.
British Columbia	The College of Licensed Practical Nurses of British Columbia (CLPNBC) receives registration requests from students enrolled in Bachelor of Science in Nursing (BSN) programs. If the registrant fulfills the academic competencies, they are permitted to work as an LPN. As these registrants have not yet graduated from their BSN program, no data is provided for **Year of Graduation**.
Yukon	In 2018, the Yukon Department of Community Services submitted aggregate-level data for **Sex**, **5-Year Age Band** and **Average Age**.

Education

Jurisdiction	Data limitation
Ontario	In 2018, the CNO implemented a new customer relationship management software leading to data quality improvements for **Other Education in Nursing — Non-Practical Nursing** and **Education in Other Than Nursing**.

Employment

Jurisdiction	Data limitation
Nova Scotia	Starting in 2016, the College of Licensed Practical Nurses of Nova Scotia (CLPNNS) defaults the **Employment Status** of all new registrants who indicated *not employed* to *not employed and seeking employment in practical nursing*.
Quebec	Prior to 2012, the OIIAQ did not collect data for the value *mental health centre*, because this type of institution, as defined by CIHI, did not exist in the province of Quebec. In 2005, Quebec's MSSS merged most of the province's public-sector hospitals, long-term care facilities and community health centres into 95 CSSSs. Starting in 2013, the OIIAQ reclassified its definitions for **Place of Work**, which resulted in different distribution patterns among the sectors over the years.
Ontario	Prior to 2012, members of the CNO provided detailed employment information (**Employment Status, Place of Work, Position** and **Area of Responsibility**) on only the single employer for whom they worked the most hours. As of 2012, members are required to provide this detailed employment information for all current employers and to designate an employer to appear on the CNO's register. The CNO does not have a concept of primary employer; however, as CIHI requires this information, the CNO provides CIHI with the employer the member designates as the register address as the primary employer. More information can be found on the CNO's website. In 2018, the CNO implemented a new database. As a result, there was an increase in *not stated* values for the following data elements: **Place of Work**, **Position** and **Area of Responsibility**.
Manitoba	Between 2011 and 2012, the College of Licensed Practical Nurses of Manitoba (CLPNM) migrated to a new database. Following the migration, there was a decrease in the number of members in the category *employed — part time* and an increase in the number in *employed — casual*. While the issue has been resolved, the data for 2011 and 2012 is not an accurate reflection of **Employment Status**.
Alberta	According to the College of Licensed Practical Nurses of Alberta (CLPNA), the increase in responses for the value *community health centre* in 2010 is the result of a reorganization of the Alberta health system, which saw many rural hospitals change to community health centres. In 2018, there was an increase in nurses working as *staff nurse/community health nurse* and an increase in nurses working in *other position*. According to the CLPNA, the data element **Position (Primary Employer)** is self-reported and the fluctuations reflect employment practices in Alberta.

Jurisdiction	Data limitation
British Columbia	As of 2011, the CLPNBC continued to emphasize accuracy and modified its renewal form to include **Employment Status** values *employed — part time* and *employed — casual*. Previously, the 2 categories were combined.
Northwest Territories	In 2008, the Northwest Territories Department of Health and Social Services coded **Area of Responsibility** as *several clinical areas* for practical nurses who identified more than one area of responsibility. Starting in 2009, primary area of responsibility was submitted.

Registered psychiatric nurse data, 2009 to 2018

General

Jurisdiction	Data limitation
British Columbia	In 2018, the College of Registered Nurses (CRNBC), the College of Licensed Practical Nurses (CLPNBC) and the College of Registered Psychiatric Nurses (CRPNBC) amalgamated to the British Columbia College of Nursing Professionals (BCCNP). Fluctuations in data can be attributed to this amalgamation.
Yukon	CIHI does not collect record-level RPN data from Yukon. Aggregate counts are included where possible.

Education

Jurisdiction	Data limitation
Saskatchewan	In 2017, the Registered Psychiatric Nurses Association of Saskatchewan (RPNAS) reported a higher proportion of registrants as *not stated* for **Other Education in Psychiatric Nursing (Degree)**. As a result, there was a decrease in the number of RPNs reporting *Advanced Diploma in Psychiatric Nursing* and *none*. According to the RPNAS, the increase is the result of a system mapping issue that they are working to resolve.

Employment

Jurisdiction	Data limitation
Saskatchewan	Between 2015 and 2016, the RPNAS identified a fluctuation in the proportion of registrants reporting their **Place of Work** as *nursing home/long-term care facility* and *general hospital*. This is a result of a reclassification of several nursing homes/long-term care facilities to general hospitals by the province in 2016. In 2017 and 2018, **Employment Status** data was not available from the RPNAS; as such, all RPNs employed in Saskatchewan were coded as *employed — status unknown*. CIHI is working with the RPNAS to review and improve the reporting.

Therapists

Occupational therapist data, 2009 to 2018

General

Jurisdiction	Data limitation
Newfoundland and Labrador	In 2018, the Newfoundland and Labrador Occupational Therapy Board implemented a new database. As a result, the new identification numbers do not match to the old database. Inflow, outflow and renewal trending is not available due to this change.

Supply and workforce

Jurisdiction	Data limitation
Nova Scotia	In 2018, the College of Occupational Therapists of Nova Scotia implemented a new database, which made it easier for registrants to update their employment information. As a result, there was an increase in total **Workforce**.
Quebec	The Ordre des ergothérapeutes du Québec began submitting data in 2011. Quebec data for 2009 and 2010 represents aggregate counts.
Yukon, Northwest Territories and Nunavut	The Canadian Association of Occupational Therapists (CAOT) submits voluntary registrations for OTs residing and working in Yukon, the Northwest Territories and Nunavut. These counts may exclude temporary relief workers who may not have registered with CAOT.

Demographic

Jurisdiction	Data limitation
Manitoba	The College of Occupational Therapists of Manitoba (COTM) provides record-level information for **Sex** and **Year of Birth** for only those registrants who provided their consent to share this information with CIHI. For registrants who did not consent, the data is submitted as *not collected* by the COTM. To better reflect the workforce, CIHI has used the aggregate totals for **Age Group**, **Average Age** and **Sex** provided by Manitoba Health.

Education

Jurisdiction	Data limitation
All jurisdictions	Starting in 2008, the CAOT began to accredit only programs leading to a professional master's degree; by 2010, all new graduates from Canadian OT programs held an entry-level professional master's degree in occupational therapy.

Employment

Jurisdiction	Data limitation
Newfoundland and Labrador, Quebec	As of 2017, all jurisdictions collect the value *employed, on leave* with the exception of Newfoundland and Labrador and Quebec.
Nova Scotia	In 2018, the College of Occupational Therapists of Nova Scotia implemented a new database. As a result, there are fluctuations in the following values: *employed in occupational therapy* and *unemployed and seeking employment in occupational therapy*.
New Brunswick	New Brunswick data for the value *self-employed* for the data element **Employment Category** is unavailable for all data years.
Quebec	Quebec does not report on **Area of Practice**, **Employment Category** and **Postal Code of Employment** for all data years.

Physiotherapist data, 2009 to 2018

General

Jurisdiction	Data limitation
Prince Edward Island, Nova Scotia and Yukon	Data is unavailable for the following jurisdictions and data years: Prince Edward Island, 2014; Nova Scotia, 2009; and Yukon, 2017.
New Brunswick	CIHI and the College of Physiotherapists of New Brunswick continue to work toward improving data quality and data collection methodologies.
Yukon	In 2018, the Yukon Department of Community Services submitted aggregate-level supply data for physiotherapists. Data for 2009 to 2016 was submitted at the record level.

Supply and workforce

Jurisdiction	Data limitation
Quebec	L'Ordre professionnel de la physiothérapie du Québec (OPPQ) provided its data after the cut-off date. Thus, the **Supply** and **Workforce** of PTs in Quebec increased between 2017 and 2018. The fluctuation is also attributed to the implementation of a new database. Comparisons should be made with caution.

Demographic

Jurisdiction	Data limitation
Manitoba	The College of Physiotherapists of Manitoba does not provide record-level data for **Year of Birth** and **Sex**; however, aggregate data is provided by Manitoba Health.
Yukon	In 2018, the Yukon Department of Community Services submitted aggregate-level supply data (including **Sex**, **5-Year Age Band** and **Average Age**) for physiotherapists.

Education

Jurisdiction	Data limitation
All jurisdictions	By 2012, the entry-to-practice requirement was a master's degree in physiotherapy.
Quebec	In 2018, OPPQ implemented a new database. As a result, education data elements were unavailable for new registrants in 2018.
Ontario	In 2018, the College of Physiotherapists of Ontario (CPTO) implemented a new database. As a result, there was an increase in *not applicable* values for **Level of Post-Basic Education in Physiotherapy**.

Employment

Jurisdiction	Data limitation
Prince Edward Island	Data for **Area of Practice** and **Sector of Employment** is unavailable for Prince Edward Island for 2009 to 2012 and 2015. Data for 2016 to 2018 has a high proportion of missing values, so comparisons should be made with caution. Data for **Full-Time/Part-Time Status** is also unavailable for 2009 to 2012.
Nova Scotia	Data for **Employment Category** is unavailable for Nova Scotia for all data years.
Quebec	Data for **Employment Category** and **Employment Status** is unavailable for Quebec for 2009 to 2018. Data for **Area of Practice** and **Sector of Employment** is also unavailable from 2012 onward. In 2018, OPPQ implemented a new database. As a result, data for **Place of Employment** is unavailable. CIHI and OPPQ continue to work together to improve reporting.

Jurisdiction	Data limitation
Ontario	In 2011, the College of Physiotherapists of Ontario (CPTO) changed its data collection methodology for all employment data. Caution is advised when comparing historical data. CIHI and CPTO continue to work toward improving data quality for employment data elements. In 2018, the CPTO implemented a new database. As a result of this major transition, there are fluctuations in the **Employment Status** data element. In addition, there was an increase of *unknown* values for the following data elements: **Employment Category**, **Full-Time/Part-Time Status**, **Place of Employment**, **Sector of Employment** and **Area of Practice**. The methodology to determine physiotherapists *employed in direct care* for *Health Workforce, 2018: Indicators* are derived from **Area of Practice**. Due to the high proportion of *unknown* values for CPTO registrants, comparisons should be made with caution.
Saskatchewan	In 2018, the Saskatchewan College of Physical Therapists changed its data collection methodology, resulting in fluctuations in employment data elements; comparisons should be made with caution.
Alberta	In 2018, the Physiotherapy Alberta College Association changed its data collection methodology, resulting in fluctuations in the **Place of Employment** data element.
British Columbia	In 2017, the College of Physiotherapists of British Columbia (CPTBC) reported a higher proportion of missing values for employment data elements. In 2018, CPTBC resolved this issue, which resulted in a decrease of missing values in those data elements.

Pharmacists

Pharmacist data, 2009 to 2018

Supply and workforce

Jurisdiction	Data limitation
New Brunswick, Quebec, Manitoba, Yukon and Nunavut	Supply data was acquired from the National Association of Pharmacy Regulatory Authorities (NAPRA) for New Brunswick (2014), Quebec and Nunavut (2009 to 2018), Manitoba (2018) and Yukon (2014, 2016 and 2017).
Yukon	In 2018, the Yukon Department of Community Services submitted aggregate-level supply data for pharmacists. Data for 2009 to 2013 and 2015 to 2016 was submitted at the record level.

Demographic

Jurisdiction	Data limitation
Manitoba	The College of Pharmacists of Manitoba does not provide record-level data for **Year of Birth** and **Sex**; however, aggregate data is provided by Manitoba Health. For 2010, Manitoba data was excluded for selected provinces/territories' **Average Age** calculation due to data quality issues.
Yukon	Data for **Year of Birth** was not available for 2009 to 2011. As such, the derived variables **Flow by Age Group**, **Age Group** and **Average Age** cannot be calculated for those years. In 2018, the Yukon Department of Community Services submitted aggregate-level supply data (including **Sex**, **5-Year Age Band** and **Average Age**) for pharmacists.

Education

Jurisdiction	Data limitation
All jurisdictions	**Highest Level of Education in Pharmacy** is currently not reported due to changes in the entry to practice for pharmacists. We continue to explore methodology for improvement.
New Brunswick	Between 2009 and 2013, the New Brunswick Pharmaceutical Society was unable to differentiate **Location of Graduation** (Canada and international) for pharmacists in New Brunswick. Canadian and international graduate data is not available for those years.
Ontario	In 2011, the University of Waterloo had its first graduating cohort since its accreditation.

Employment

Jurisdiction	Data limitation
Ontario	For 2009 and 2011 to 2014, the Ontario College of Pharmacists was unable to accurately identify employment categories. As such, all pharmacists were coded as active permanent employees. In 2010 and 2015 to 2017, data for **Employment Category** (*temporary employee*, *casual employee* and *self-employed*) was accurately submitted. Prior to 2017, the Ontario College of Pharmacists was unable to accurately identify **Employment Status** categories. As such, all pharmacists were coded as *employed in the profession of pharmacy* or *unemployed and seeking employment in the profession of pharmacy*. In 2017, data for **Employment Status** was accurately submitted. In 2013, the Ontario College of Pharmacists identified a data collection issue affecting reporting of **Employment Status**. While the issue was corrected for the 2013 data year, historical revisions were not possible, resulting in an under-coverage of employed pharmacists in 2009 to 2012.

Appendix A: List of health care providers (data available at record level), first year of regulation and regulation status, by jurisdiction

Health care provider group	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nun.
Registered nurses	1954	1949	1910	1916	1946	1922	1913	1967	1916	1918	1994	1973	1999
Nurse practitioners	1997	2006	2002	2002	2003	1997	2005	2003	2002	2005	2013	2004	2004
Licensed practical nurses	1983	1959	1957	1960	1974	1947	1946	1956	1986	1988	1987	1988	2011
Registered psychiatric nurses	n/a	n/a	n/a	n/a	n/a	n/a	1960	1948	1955	1951	2009	n/a	n/a
Occupational therapists	1987	1976	1972	1997	1973	1993	1971	1971	1990	2000	NR	NR	NR
Physiotherapists	1970	1973	1959	1960	1973	1953	1956	1945	1985	1946	2007	NR	NR
Pharmacists	1910	1905	1876	1884	1875	1871	1878	1911	1911	1891	1986	1953	1999

Notes

n/a: Not applicable.

NR: Not regulated as of 2018.

Source

Health Workforce Database, Canadian Institute for Health Information.

Appendix B: Population estimates, by jurisdiction, 2009 to 2017

Year	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nun.	Canada
2009	516,729	139,909	938,194	749,954	7,843,475	12,997,687	1,208,589	1,034,782	3,679,092	4,410,679	33,732	43,149	32,600	**33,628,571**
2010	521,972	141,678	942,073	753,044	7,929,365	13,135,063	1,220,930	1,051,425	3,732,573	4,465,924	34,596	43,278	33,353	**34,005,274**
2011	525,037	144,038	944,469	755,530	8,007,656	13,263,544	1,233,728	1,066,349	3,790,191	4,499,139	35,402	43,501	34,196	**34,342,780**
2012	526,450	145,080	944,943	756,777	8,085,906	13,413,702	1,250,265	1,086,018	3,880,755	4,546,290	36,058	43,594	34,707	**34,750,545**
2013	527,399	145,198	943,049	755,710	8,151,331	13,555,754	1,265,588	1,104,825	3,997,950	4,590,081	36,298	43,773	35,414	**35,152,370**
2014	528,386	145,915	942,209	754,700	8,210,533	13,680,425	1,280,912	1,120,639	4,108,416	4,646,462	36,817	43,867	36,067	**35,535,348**
2015	528,815	146,791	941,545	753,944	8,254,912	13,789,597	1,295,422	1,131,150	4,177,527	4,694,699	37,289	44,214	36,608	**35,832,513**
2016	530,305	149,472	948,618	757,384	8,321,888	13,976,320	1,318,115	1,148,588	4,236,376	4,757,658	38,086	44,617	37,177	**36,264,604**
2017	528,817	152,021	953,869	759,655	8,394,034	14,193,384	1,338,109	1,163,925	4,286,134	4,817,160	38,459	44,520	37,996	**36,708,083**

Note

2017 population estimates, the most current available at the time of publication, were used for both 2017 and 2018.

Source

Statistics Canada, Demography Division. CANSIM table 17-10-0086-01.

Appendix C: List of HWDB data providers, 2018 record-level data

Registered nurses (including nurse practitioners)	
Newfoundland and Labrador	Association of Registered Nurses of Newfoundland and Labrador
Prince Edward Island	College of Registered Nurses of Prince Edward Island
Nova Scotia	College of Registered Nurses of Nova Scotia
New Brunswick	Nurses Association of New Brunswick
Quebec	Ordre des infirmières et des infirmiers du Québec
Ontario	College of Nurses of Ontario
Manitoba	College of Registered Nurses of Manitoba
Saskatchewan	Saskatchewan Registered Nurses' Association
Alberta	College and Association of Registered Nurses of Alberta
British Columbia	British Columbia College of Nursing Professionals
Yukon	Yukon Registered Nurses Association
Northwest Territories and Nunavut	Registered Nurses Association of the Northwest Territories and Nunavut
Licensed practical nurses	
Newfoundland and Labrador	College of Licensed Practical Nurses of Newfoundland and Labrador
Prince Edward Island	College of Licensed Practical Nurses of Prince Edward Island
Nova Scotia	College of Licensed Practical Nurses of Nova Scotia
New Brunswick	Association of New Brunswick Licensed Practical Nurses
Quebec	Ordre des infirmières et infirmiers auxiliaires du Québec
Ontario	College of Nurses of Ontario
Manitoba	College of Licensed Practical Nurses of Manitoba
Saskatchewan	Saskatchewan Association of Licensed Practical Nurses
Alberta	College of Licensed Practical Nurses of Alberta
British Columbia	British Columbia College of Nursing Professionals
Yukon	Department of Community Services, Government of Yukon
Northwest Territories	Department of Health and Social Services, Government of the Northwest Territories
Nunavut	n/a

Registered psychiatric nurses*	
Manitoba	College of Registered Psychiatric Nurses of Manitoba
Saskatchewan	Registered Psychiatric Nurses Association of Saskatchewan
Alberta	College of Registered Psychiatric Nurses of Alberta
British Columbia	British Columbia College of Nursing Professionals
Yukon	Department of Community Services, Government of Yukon
Occupational therapists	
Newfoundland and Labrador	Newfoundland and Labrador Occupational Therapy Board
Prince Edward Island	Prince Edward Island Occupational Therapists Registration Board Society
Nova Scotia	College of Occupational Therapists of Nova Scotia
New Brunswick	New Brunswick Association of Occupational Therapists
Quebec	Ordre des ergothérapeutes du Québec
Ontario	College of Occupational Therapists of Ontario
Manitoba	College of Occupational Therapists of Manitoba
Saskatchewan	Saskatchewan Society of Occupational Therapists
Alberta	Alberta College of Occupational Therapists
British Columbia	College of Occupational Therapists of British Columbia
All territories	Canadian Association of Occupational Therapists
Physiotherapists	
Newfoundland and Labrador	Newfoundland and Labrador College of Physiotherapists
Prince Edward Island	Prince Edward Island College of Physiotherapists
Nova Scotia	Nova Scotia College of Physiotherapists
New Brunswick	College of Physiotherapists of New Brunswick
Quebec	Ordre professionnel de la physiothérapie du Québec
Ontario	College of Physiotherapists of Ontario
Manitoba	College of Physiotherapists of Manitoba
Saskatchewan	Saskatchewan College of Physical Therapists
Alberta	Physiotherapy Alberta — College + Association
British Columbia	College of Physical Therapists of British Columbia
Yukon	Department of Community Services, Government of Yukon
Northwest Territories and Nunavut	n/a

Pharmacists	
Newfoundland and Labrador	Newfoundland & Labrador Pharmacy Board
Prince Edward Island	Prince Edward Island College of Pharmacists
Nova Scotia	Nova Scotia College of Pharmacists
New Brunswick	New Brunswick College of Pharmacists
Quebec	National Association of Pharmacy Regulatory Authorities
Ontario	Ontario College of Pharmacists
Manitoba	College of Pharmacists of Manitoba
Saskatchewan	Saskatchewan College of Pharmacy Professionals
Alberta	Alberta College of Pharmacy
British Columbia	College of Pharmacists of British Columbia
Yukon	Government of Yukon
Northwest Territories	Department of Health and Social Services, Government of the Northwest Territories
Nunavut	National Association of Pharmacy Regulatory Authorities

Notes

* Registered psychiatric nurses are currently regulated in the 4 Western provinces (Manitoba, Saskatchewan, Alberta and British Columbia) and Yukon.

n/a: Not applicable.

Source

Health Workforce Database, Canadian Institute for Health Information.

Appendix D: Text alternative for image

Text alternative for Average age image: Average age equals numerator 1 over denominator n (defined as the total number of health care providers in a jurisdiction or Canada) times the sum of the individual health care providers' ages for the total number of n health care providers; the count of individual health care providers i equals 1 to n.

References

1. Canadian Association of Occupational Therapists. What is occupational therapy?. Accessed February 11, 2019.

2. McNiven C, Puderer H, Janes D. *Census Metropolitan Area and Census Agglomeration Influenced Zones (MIZ): A Description of the Methodology*. Geography Working Paper Series. 2000.

3. du Plessis V, et al.; Statistics Canada; Clemenson H; Agriculture and Agri-Food Canada. Definitions of rural. *Rural and Small Town Canada Analysis Bulletin*. 2001.

4. Canadian Institute for Health Information. *Supply and Distribution of Registered Nurses in Rural and Small Town Canada, 2000*. 2002.

5. World Health Organization. *National Health Workforce Accounts: A Handbook*. 2016.

6. Tomblin Murphy G, Birch S, Alder R, et al. *Tested Solutions for Eliminating Canada's Registered Nurse Shortage*. 2009.

media@cihi.ca

CIHI Ottawa
495 Richmond Road
Suite 600
Ottawa, Ont.
K2A 4H6
613-241-7860

CIHI Toronto
4110 Yonge Street
Suite 300
Toronto, Ont.
M2P 2B7
416-481-2002

CIHI Victoria
880 Douglas Street
Suite 600
Victoria, B.C.
V8W 2B7
250-220-4100

CIHI Montréal
1010 Sherbrooke Street West
Suite 602
Montréal, Que.
H3A 2R7
514-842-2226

cihi.ca

20486-0719