



# Supply, Distribution and Migration of Physicians in Canada, 2022

## Methodology Notes



Canadian Institute  
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# Introduction

The Canadian Institute for Health Information (CIHI) collects, maintains and reports on the supply, distribution, demographics and migration of physicians in Canada, using data from Scott's Medical Database (SMDB). Collecting and reporting physician information assists decision-makers in the planning, distribution and funding of physicians.

Health Canada managed the SMDB until 1994. That year, Health Canada transferred the SMDB to CIHI. The SMDB includes historical data files from 1968 onward and is maintained on a network database (in Oracle) at CIHI. CIHI has collected, maintained and reported on this information since its inception in 1994.

## More information

The following physician products are available on [CIHI's website](#):

- *A profile of physicians in Canada, 2022* (infographic)
- *Supply, Distribution and Migration of Physicians in Canada, 2022* (data tables, historical data tables, methodology notes)
- *National Physician Database, 2021–2022* (payments and utilization data tables, historical payments and utilization data tables, methodology notes)
- Physician billing codes in response to COVID-19 (web page)

Physician and other health workforce products are available on [CIHI's website](#):

- *Health Workforce in Canada: In Focus* (digital report)
- *Health Workforce in Canada, 2021 — Quick Stats* (interactive web tool)
- *Nursing in Canada, 2022* (data tables, methodology notes)
- *Occupational Therapists in Canada, 2022* (data tables, methodology notes)
- *Pharmacists in Canada, 2022* (data tables, methodology notes)
- *Physiotherapists in Canada, 2022* (data tables, methodology notes)
- *Health Workforce in Canada: Overview, 2017 to 2021* (data tables, methodology notes)

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# 1 Data sources and collection

## 1.1 Scott's Directories

Scott's Directories, owned by IMD Health Global Corp., maintains a database on physicians in Canada to produce the *Canadian Medical Directory* and mailing lists for commercial purposes. CIHI acquires a copy of this database annually from Scott's Directories in a raw data format to update Scott's Medical Database (SMDB). Scott's Directories collects data from organizations and institutions such as jurisdictional registrars, the Royal College of Physicians and Surgeons of Canada (Royal College) and the College of Family Physicians of Canada (CFPC), and from physicians who contact them directly.

Information on individual physicians is primarily derived from publicly available reports and/or registration directories issued by jurisdictional licensing authorities.

## 1.2 Non-certified specialist data

CIHI works with jurisdictional authorities to include family medicine physicians who practise as non-certified specialists in the SMDB in the specialist category. To accomplish this, CIHI contacts the jurisdictional colleges of physicians and surgeons and requests lists that identify non-certified specialist physicians as close as possible to December 31 of the reference year. CIHI collects lists of non-certified specialists from Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Saskatchewan, Alberta and the Yukon. Additional information on the SMDB non-certified specialist methodology is available in [Section 3.6](#).

## 1.3 Population data

All population data used in this publication is for July 1 of the reference year and reflects the most recent population estimates available from Statistics Canada.

**Note to readers:** Statistics Canada information is used with the permission of the Minister of Industry (the minister responsible for Statistics Canada). Information on the availability of the wide range of data from Statistics Canada can be obtained from Statistics Canada's regional offices, its website ([statcan.gc.ca](http://statcan.gc.ca)) or its toll-free access number (1-800-263-1136).

## 1.4 Other data sources

Physician counts and demographic information about physicians are also available from a variety of Canadian sources, including CIHI's National Physician Database, jurisdictional ministries of health, professional licensing or certifying organizations, the Canadian Medical Association (CMA) and other organizations that include governmental and non-governmental collaborative groups and commercial enterprises. CIHI uses this data to conduct comparisons and to perform data quality exercises.

## 2 Data quality

Data received by Scott's Directories is first confirmed for authenticity and then keyed into its system. Upon entry into the database, each physician is assigned a unique ID number that is never recycled, even after the physician retires or dies.

At CIHI, once the file has been received from Scott's Directories, it is processed through a series of edit checks, and an edit/verification report is produced. Edit checks are done on all records in the database — active and inactive. Questionable entries are forwarded to Scott's Directories and used by their database manager to update any identified coding errors.

All SMDB data elements are described in detail in [Appendix A](#).

### 2.1 Data supply interruptions

#### Jurisdictional licensing authorities

Jurisdictional licensing authorities are key data sources for Scott's Directories and, in turn, CIHI's SMDB. Data from licensing authorities is used to identify new physicians and to update historical physician information (change of address, medical specialty, etc.). Interruptions in the data supply chain between licensing authorities and Scott's Directories contribute to potential over-coverage, under-coverage and/or error within the SMDB.

Table 1 outlines data supply interruptions experienced by Scott's Directories from jurisdictional licensing authorities. Caution should be used when comparing physician counts for the following provinces with counts from other years.

**Table 1** Scott’s Directories jurisdictional data supply interruptions

| Jurisdiction     | Year | Supply interruptions   |
|------------------|------|--|
| Quebec           | 2003 | Data for the year 2003 does not reflect annual physician information provided by the Collège des médecins du Québec.   |
| Ontario          | 2002 | Data for the year 2002 reflects a partial data supply interruption from the College of Physicians and Surgeons of Ontario. Scott’s Directories did not receive physician information updates from the college from September to December 2002. |
| Alberta          | 2000 | Data for the year 2000 does not reflect annual physician information provided by the College of Physicians and Surgeons of Alberta.  |
| British Columbia | 2004 | Data for the year 2004 does not reflect annual physician information provided by the College of Physicians and Surgeons of British Columbia.   |
| Yukon            | 2000 | Data for the year 2000 does not reflect annual physician information provided by the Government of Yukon.  |

## Other data sources

While jurisdictional licensing authorities are key data suppliers, they are not the only data source for Scott’s Directories. As noted in [Section 1](#), data reflects physician information gathered through a variety of data sources, including national medical associations. These data sources remained active during the data supply interruptions noted in Table 1.

Prior to the 2016 data year, Scott’s Directories received lists of graduates from Canadian medical schools. Medical schools discontinued sending lists of graduates during data collection for the 2016 data year.

Prior to the 2017 data year, Scott’s Directories sent a biannual questionnaire to all active physicians (individuals with a Doctor of Medicine [MD] degree who have a valid mailing address) in its database to confirm, update and add to existing physician information. Scott’s Directories discontinued the questionnaire during data collection for the 2017 data year, and information that was previously acquired through the physician questionnaire is no longer available.

In 2017, estimates of the international migration of physicians in and out of Canada were not published due to concerns about the completeness of the underlying data. The 2018 data submission contained complete migration data, and therefore international migration counts were reintroduced. “Physicians who moved abroad” includes physicians who were active in the SMDB in the previous year and left Canada in the given year. “Physicians who returned from abroad” includes physicians who were abroad in the previous year and who were active in Canada in the given year. Due to incomplete 2017 international migration data, 2018 data should be interpreted with caution, as 2018 data may include physicians who moved abroad or returned from abroad in 2017.



## 2.2 Physician counts in the territories

Scott's Directories assigns physicians to the province or territory where they report their primary postal code. The primary postal code typically reflects the jurisdiction where physicians practise and provides a reasonable indication of the access to medical care available to the population in that jurisdiction. In smaller jurisdictions — particularly in the territories where fewer physicians permanently reside — it is common to rely on arrangements where physicians temporarily relocate during the year from another jurisdiction. In these situations, counting only physicians who permanently reside in the jurisdiction may understate the actual access to care if significant numbers of physicians are arriving from elsewhere in the country on these arrangements and augmenting the level of access.

Physician counts in Nunavut are a prime example of the influence of temporary physician supply counts on the health care portrait of the territory. CIHI has received similar data from the other 2 territories.

### Nunavut

In 2022, Scott's Directories reported that there were 29 physicians with a postal code in Nunavut — 25 family medicine physicians and 4 specialists. However, according to information obtained from the Nunavut Department of Health shown in tables 2A and 2B, there were 175 individual family medicine physicians providing 8,020 days of service in the territory that year, or an average of 46 service days each. There were also 29 individual specialist physicians providing 2,347 days of service in the territory that year, or an average of 81 service days each.

The following tables show the number of physicians and the service days they provided in Nunavut, by region, as reported by the Nunavut Department of Health.

**Table 2** Number of physicians and service days rendered in Nunavut, by region, 2003–2004 to 2022–2023**A.** Family medicine physicians

| Fiscal year | Total number of family medicine physicians, Nunavut | Total service days rendered, Nunavut | Average service days, Nunavut | Number of family medicine physicians, Qikiqtaaluk | Service days rendered, Qikiqtaaluk | Number of family medicine physicians, Kivalliq | Service days rendered, Kivalliq | Number of family medicine physicians, Kitikmeot | Service days rendered, Kitikmeot |
|-------------|---|--------------------------------------|-------------------------------|---|------------------------------------|--|---------------------------------|---|----------------------------------|
| 2003–2004   | 77  | 2,268                                | 29                            | 44  | 1,302                              | 22   | 818                             | 11  | 148                              |
| 2004–2005   | 95  | 3,345                                | 35                            | 58  | 2,379                              | 22   | 705                             | 15  | 261                              |
| 2005–2006   | 88  | 4,602                                | 52                            | 50  | 3,187                              | 23   | 1,138                           | 15  | 276                              |
| 2006–2007   | 103   | 4,118                                | 40                            | 58  | 2,979                              | 32   | 934                             | 13  | 206                              |
| 2007–2008   | 103   | 4,509                                | 44                            | 60  | 3,158                              | 28   | 884                             | 15  | 467                              |
| 2008–2009   | 104   | 5,443                                | 52                            | 61  | 3,602                              | 30   | 1,463                           | 13  | 378                              |
| 2009–2010   | 100   | 6,516                                | 65                            | 55  | 4,306                              | 33   | 1,700                           | 12  | 510                              |
| 2010–2011   | 120   | 7,421                                | 62                            | 68  | 5,001                              | 39   | 1,760                           | 13  | 660                              |
| 2011–2012   | n/a   | n/a                                  | n/a                           | n/a   | n/a                                | n/a  | n/a                             | n/a   | n/a                              |
| 2012–2013   | 148   | 7,364                                | 50                            | 97  | 5,024                              | 32   | 1,715                           | 19  | 625                              |
| 2013–2014   | 153   | 7,465                                | 49                            | 95  | 5,076                              | 38   | 1,736                           | 20  | 653                              |
| 2014–2015   | 157   | 7,470                                | 48                            | 91  | 5,079                              | 49   | 1,726                           | 17  | 665                              |
| 2015–2016   | 149   | 7,501                                | 50                            | 83  | 5,082                              | 43   | 1,759                           | 23  | 660                              |
| 2016–2017   | 155   | 7,503                                | 48                            | 98  | 5,220                              | 43   | 1,669                           | 14  | 614                              |
| 2017–2018   | 128   | 8,403                                | 66                            | 85  | 5,919                              | 30   | 1,795                           | 18  | 689                              |
| 2018–2019   | 153   | 7,559                                | 49                            | 120   | 4,840                              | 39   | 1,745                           | 18  | 974                              |
| 2019–2020   | 136   | 8,439                                | 62                            | 91  | 5,281                              | 41   | 2,147                           | 19  | 1,011                            |
| 2020–2021   | 109   | 8,718                                | 80                            | 63  | 5,301                              | 26   | 2,325                           | 14  | 1,092                            |
| 2021–2022   | 123   | 8,464                                | 69                            | 87  | 5,338                              | 27   | 2,073                           | 9   | 1,053                            |
| 2022–2023   | 175   | 8,020                                | 46                            | 125   | 5,059                              | 40   | 2,130                           | 10  | 831                              |

**B. Specialists**

| Fiscal year | Total number of specialist physicians, Nunavut | Total service days rendered, Nunavut | Average service days, Nunavut | Number of specialist physicians, Qikiqtaaluk | Service days rendered, Qikiqtaaluk | Number of specialist physicians, Kivalliq | Service days rendered, Kivalliq | Number of specialist physicians, Kitikmeot | Service days rendered, Kitikmeot |
|-------------|--|--------------------------------------|-------------------------------|--|------------------------------------|---|---------------------------------|--|----------------------------------|
| 2017–2018   | 31   | 1,197                                | 39                            | 31   | 1,197                              | 0   | 0                               | 0  | 0                                |
| 2018–2019   | 27   | 1,610                                | 60                            | 27   | 1,610                              | 0   | 0                               | 0  | 0                                |
| 2019–2020   | 41   | 1,720                                | 42                            | 37   | 1,676                              | 2   | 8                               | 2  | 36                               |
| 2020–2021   | 29   | 1,936                                | 67                            | 26   | 1,911                              | 2   | 18                              | 1  | 7                                |
| 2021–2022   | 35   | 1,987                                | 57                            | 32   | 1,968                              | 2   | 12                              | 1  | 7                                |
| 2022–2023   | 29   | 2,347                                | 81                            | 29   | 2,347                              | n/a                                       | n/a                             | n/a  | n/a                              |

**Notes**

n/a: Not available. Data for fiscal year 2011–2012 was not provided by the Nunavut Department of Health.

Starting in the 2017–2018 data year, the Nunavut Department of Health counted individual service days as Family Medicine days or Specialist days, depending on the type of service provided. Therefore, total counts may not add up to the sum of individual regions.

**Source**

Nunavut Department of Health.

Due to the high volume of itinerant or visiting physicians in Nunavut, CIHI and the Government of Nunavut have discussed an alternate method for counting physicians in the territory using annual service day data from Table 2. This is referred to as the number of effective physicians. The number of effective physicians is calculated by dividing the total number of service days by the average number of days worked in a year. The Government of Nunavut estimates the number of days worked per year by an average full-time family medicine physician in Nunavut to be 220.

As seen in Table 2A, there were 8,020 family medicine physician service days in 2022–2023; when divided by 220 days of service, this equals 36 effective family medicine physicians providing services throughout the year. These effective physicians include both those residing in the territory and those who came from other parts of the country for short periods throughout the year to fill locum positions or to fill other gaps in access. Using the same approach, it was estimated that 11 effective specialists provided services in Nunavut. By using the number of effective physicians to calculate physicians per 100,000 population, the number of family medicine physicians and specialists per 100,000 population becomes 90 and 26, respectively. The number of effective family medicine physicians and specialists per 100,000 population provides a more meaningful value when compared with the national averages of 124 family medicine physicians and 122 specialists per 100,000.

## Separation of Nunavut from the Northwest Territories

On April 1, 1999, the central and eastern portions of the Northwest Territories became the new territory of Nunavut. Nunavut-specific data was collected by Scott's Directories beginning in 2000. For the purposes of the current publication, 1999 Nunavut data has been generated using postal codes, and all analyses reflect distinct physician data for Nunavut and the Northwest Territories from 1999 onward. A total of 11 family medicine and specialist physicians, previously identified as having a jurisdiction of residence in the Northwest Territories, were reassigned to Nunavut. Readers are cautioned when comparing changes over time in the Northwest Territories, as some of the change is attributable to the creation of Nunavut.

Scott's Directories has been unable to obtain updates from physician licensing authorities in Nunavut. To update information on physicians practicing in Nunavut, Scott's Directories has relied on other sources, such as licensing information from other jurisdictional colleges for which the physicians are members, and physician self-updates.

## Northwest Territories

CIHI receives data on itinerant physicians from the Government of the Northwest Territories. According to the SMDB, in 2022 there were 57 physicians with a postal code in the Northwest Territories, representing 45 family medicine physicians and 12 specialists.

As shown in Table 3, in 2022–2023, 1,131 itinerant physicians were identified by the Government of the Northwest Territories, representing 663 family medicine physicians and 468 specialists. Like Nunavut, the Northwest Territories has a high volume of itinerant physicians.

**Table 3** Number of itinerant physicians and service days rendered in the Northwest Territories, 2019–2020 and 2022–2023

| Fiscal year | Total number of itinerant family medicine physicians | Total itinerant family medicine physician service days rendered | Total number of itinerant specialist physicians | Total itinerant specialist physician service days rendered | Total number of itinerant physicians | Total number of itinerant physician service days rendered |
|-------------|--|---|---|--|--------------------------------------|---|
| 2019–2020   | 313  | 2,495   | 106   | 3,042  | 419                                  | 5,537   |
| 2020–2021   | 797  | 7,166   | 98  | 2,578  | 895                                  | 9,744   |
| 2021–2022   | 659  | 8,570   | 128   | 3,225  | 787                                  | 11,795  |
| 2022–2023   | 663  | 9356  | 468   | 3,553  | 1,131                                | 12,909  |

**Source**

Government of the Northwest Territories, Health and Social Services Authority.

## Yukon

According to the SMDB, in 2022 there were 89 physicians with a postal code in the Yukon, representing 74 family medicine physicians and 15 specialists. However, this number represents less than half of all physicians who provided care in the territory.

CIHI has been working with the Government of Yukon to identify itinerant physicians and convert them to effective physicians to provide a more comprehensive estimate of the total physician supply. As shown in Table 4, in 2022-2023, 146 itinerant physicians were identified by the Government of Yukon, representing 69 family medicine physicians and 77 specialists.

**Table 4** Number of itinerant physicians and service days rendered in the Yukon, 2017–2018 to 2022–2023

| Fiscal year | Total number of itinerant family medicine physicians | Total itinerant family medicine physician service days rendered | Total number of itinerant specialist physicians | Total itinerant specialist physician service days rendered | Total number of itinerant physicians | Total number of itinerant physician service days rendered |
|-------------|--|---|---|--|--------------------------------------|---|
| 2017–2018   | 58   | 2,417   | 54  | 1,092  | 112                                  | 3,509   |
| 2018–2019   | 57   | 2,213   | 49  | 1,071  | 106                                  | 3,284   |
| 2019–2020   | 52   | 2,509   | 47  | 1,137  | 99                                   | 3,646   |
| 2020–2021   | 44   | 3,248   | 53  | 2,333  | 97                                   | 5,581   |
| 2021–2022   | 69   | 3,623   | 69  | 1,845  | 138                                  | 5,468   |
| 2022–2023   | 69   | 3,082   | 77  | 2,775  | 146                                  | 5,857   |

**Source**

Government of Yukon, Department of Health and Social Services.

## Role of nurses

The territories employ a primary care delivery model in which full-scope advanced practice nurses are more likely to meet needs that are met by family medicine physicians in much of the rest of Canada. The nursing model of primary care alters the nurse-to-physician ratio relative to the rest of Canada. Furthermore, in the territories, more registered nurses are found in community settings such as nursing stations or community health centres.

To learn more about CIHI's data and information on regulated nurses, please refer to the [health workforce](#) and [nurse practitioner scopes of practice](#) products.

## 3 Computations

### 3.1 Head count inclusions and exclusions

Physician supply counts are based on the number of active physicians in Canada in the given data year. Active physicians are defined as individuals with an MD degree who have a valid mailing address. Out of 102,746 physicians in the SMDB in 2022, 96,020 were counted as active, while 6,726 were excluded for the reasons listed below.

- Residents are excluded from counts because this report focuses on physicians in the labour force who have completed their training and because of limitations with resident data in the SMDB (see [Section 4](#)).
- Physicians in the military are excluded because their services are not generally available to the public and because it can be difficult to establish their work location (which may be overseas).
- Non-registered physicians who have not given consent for the publication of their data are excluded because a physician's information is considered public only if the physician is registered (see [Section 5](#) for more details).
- Semi-retired physicians are excluded because the label "semi-retired" is self-reported to Scott's Directories and because there is no clear difference between semi-retired and retired.

Table 5 presents an overall breakdown of physicians included in and excluded from this report.

**Table 5** Total physicians included and excluded, by physician type and jurisdiction, Canada, 2022

| Physician type               | N.L.         | P.E.I.     | N.S.         | N.B.         | Que.          | Ont.          | Man.         | Sask.        | Alta.         | B.C.          | Y.T.      | N.W.T.    | Nun.      | Canada         |
|------------------------------|--------------|------------|--------------|--------------|---------------|---------------|--------------|--------------|---------------|---------------|-----------|-----------|-----------|----------------|
| Included                     |              |            |              |              |               |               |              |              |               |               |           |           |           |                |
| Family medicine              | 702          | 195        | 1,346        | 1,031        | 11,449        | 17,416        | 1,570        | 1,406        | 5,417         | 7,523         | 74        | 45        | 25        | 48,199         |
| Specialist                   | 713          | 161        | 1,412        | 1,132        | 11,316        | 17,904        | 1,461        | 1,200        | 5,661         | 6,830         | 15        | 12        | 4         | 47,821         |
| <b>Total included</b>        | <b>1,415</b> | <b>356</b> | <b>2,758</b> | <b>2,163</b> | <b>22,765</b> | <b>35,320</b> | <b>3,031</b> | <b>2,606</b> | <b>11,078</b> | <b>14,353</b> | <b>89</b> | <b>57</b> | <b>29</b> | <b>96,020</b>  |
| Excluded                     |              |            |              |              |               |               |              |              |               |               |           |           |           |                |
| <b>Family medicine</b>       |              |            |              |              |               |               |              |              |               |               |           |           |           |                |
| Military                     | 0            | 0          | 0            | 0            | 0             | 0             | 0            | 0            | 0             | 0             | 0         | 0         | 0         | 0              |
| “No publication” methodology | 2            | 2          | 9            | 8            | 17            | 26            | 4            | 1            | 16            | 40            | 0         | 3         | 1         | 129            |
| Semi-retired                 | 0            | 0          | 1            | 0            | 0             | 0             | 0            | 0            | 0             | 0             | 0         | 0         | 0         | 1              |
| <b>Total</b>                 | <b>2</b>     | <b>2</b>   | <b>10</b>    | <b>8</b>     | <b>17</b>     | <b>26</b>     | <b>4</b>     | <b>1</b>     | <b>16</b>     | <b>40</b>     | <b>0</b>  | <b>3</b>  | <b>1</b>  | <b>130</b>     |
| <b>Specialist</b>            |              |            |              |              |               |               |              |              |               |               |           |           |           |                |
| Military                     | 0            | 0          | 0            | 0            | 1             | 0             | 0            | 0            | 0             | 0             | 0         | 0         | 0         | 1              |
| “No publication” methodology | 5            | 1          | 1            | 14           | 15            | 15            | 3            | 1            | 13            | 33            | 0         | 0         | 0         | 101            |
| Semi-retired                 | 0            | 0          | 0            | 0            | 0             | 0             | 0            | 0            | 0             | 2             | 0         | 0         | 0         | 2              |
| <b>Total</b>                 | <b>5</b>     | <b>1</b>   | <b>1</b>     | <b>14</b>    | <b>16</b>     | <b>15</b>     | <b>3</b>     | <b>1</b>     | <b>13</b>     | <b>35</b>     | <b>0</b>  | <b>0</b>  | <b>0</b>  | <b>104</b>     |
| Resident                     | 21           | 8          | 143          | 14           | 50            | 5,436         | 628          | 45           | 24            | 123           | 0         | 0         | 0         | 6,492          |
| Resident military            | 0            | 0          | 0            | 0            | 0             | 0             | 0            | 0            | 0             | 0             | 0         | 0         | 0         | 0              |
| <b>Total</b>                 | <b>21</b>    | <b>8</b>   | <b>143</b>   | <b>14</b>    | <b>50</b>     | <b>5,436</b>  | <b>628</b>   | <b>45</b>    | <b>24</b>     | <b>123</b>    | <b>0</b>  | <b>0</b>  | <b>0</b>  | <b>6,492</b>   |
| <b>Total excluded</b>        | <b>28</b>    | <b>11</b>  | <b>154</b>   | <b>36</b>    | <b>83</b>     | <b>5,477</b>  | <b>635</b>   | <b>47</b>    | <b>53</b>     | <b>198</b>    | <b>0</b>  | <b>3</b>  | <b>1</b>  | <b>6,726</b>   |
| <b>Overall total</b>         | <b>1,443</b> | <b>367</b> | <b>2,912</b> | <b>2,199</b> | <b>22,848</b> | <b>40,797</b> | <b>3,666</b> | <b>2,653</b> | <b>11,131</b> | <b>14,551</b> | <b>89</b> | <b>60</b> | <b>30</b> | <b>102,746</b> |

**Notes**

Includes physicians in clinical practice and those not working in a clinical practice.

Data represents the number of physicians included in the publication (family medicine and specialists) and the number of physicians excluded (military, semi-retired, residents and non-registered physicians who requested that their information not be published as of December 31, 2022).

**Source**

Scott's Medical Database, Canadian Institute for Health Information, with raw data provided by iMD (© 2023 iMD Health Global Corp.).

It is possible, using the Medical Registration Indicator field, to compare the percentage of physicians who are registered in Canada with those who are not registered. Some physicians who work in non-clinical situations (such as administration or research) may not be registered with their provincial or territorial registrar. Also, some physicians may maintain their registration status but not engage in clinical activity. The percentage of non-registered physicians, by physician type and jurisdiction, is shown in Table 6.

**Table 6** Percentage of non-registered family medicine, specialists and total physicians, by physician type and jurisdiction, Canada, 2022

| Year | Physician type  | N.L.        | P.E.I.       | N.S.         | N.B.         | Que.        | Ont.        | Man.         | Sask.        | Alta.        | B.C.         | Y.T.         | N.W.T.       | Nun.         | Canada      |
|------|-----------------|-------------|--------------|--------------|--------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| 2022 | Family medicine | 4.0%        | 21.0%        | 9.4%         | 17.2%        | 1.4%        | 4.1%        | 5.9%         | 3.9%         | 8.2%         | 10.7%        | 20.3%        | 22.2%        | 16.0%        | 5.6%        |
|      | Specialists     | 12.5%       | 40.4%        | 18.9%        | 30.6%        | 6.9%        | 4.8%        | 16.4%        | 17.3%        | 18.4%        | 21.0%        | 0.0%         | 41.7%        | 50.0%        | 11.1%       |
|      | <b>Total</b>    | <b>8.3%</b> | <b>29.8%</b> | <b>14.3%</b> | <b>22.8%</b> | <b>4.1%</b> | <b>4.5%</b> | <b>11.0%</b> | <b>10.1%</b> | <b>13.4%</b> | <b>15.6%</b> | <b>16.9%</b> | <b>26.3%</b> | <b>20.7%</b> | <b>8.3%</b> |

**Notes**

Excludes residents and physicians with “no publication” status (see [Section 5](#) for details).

Data represents the percentage of active non-registered physicians of all active physicians (family medicine physicians, specialists and total physicians) in Canada.

**Source**

Scott’s Medical Database, Canadian Institute for Health Information, with raw data provided by iMD (© 2023 iMD Health Global Corp.).



## 3.2 Data comparison

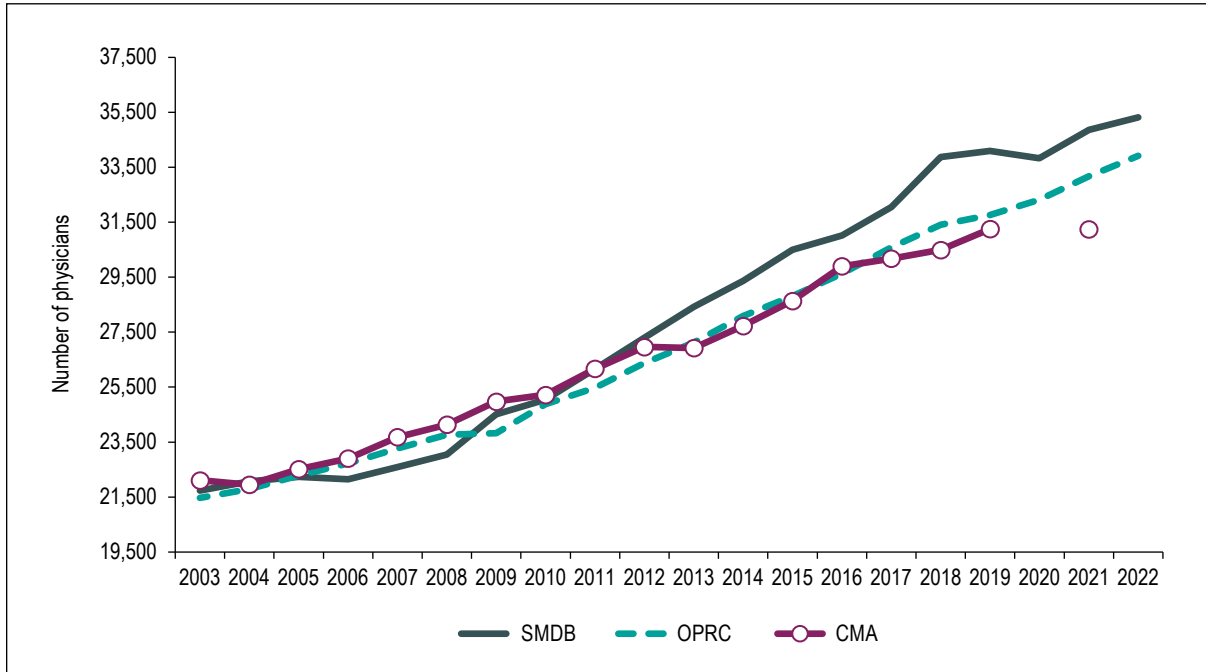
The counts of physicians from other data sources may not agree with CIHI's counts due to the inclusion and exclusion criteria applied by each source, and the timing of their data collection. A comparison of inclusion criteria by data source is available in table format in [Appendix B](#).

### Ontario Physician Reporting Centre

CIHI conducted a comparison of physician supply counts from the SMDB versus the Ontario Physician Reporting Centre (OPRC)<sup>i</sup> and the CMA. OPRC counts of Ontario physicians include those who are semi-retired, military physicians and physicians who have completed their postgraduate medical training and were active<sup>ii</sup> in that reporting year. The CMA's counts in Ontario exclude residents and include non-clinicians, semi-retired physicians and non-registered physicians. By comparison, CIHI's SMDB includes non-registered physicians and excludes residents, as well as physicians who are semi-retired, who are in the military, who request to be excluded from the publication (non-registered physicians only) and who are practising abroad. The impact of these different criteria on the relative numbers of physicians reported by each of these 3 data sources is illustrated in Figure 1 below.

- 
- i. The OPRC is governed collaboratively by the College of Physicians and Surgeons of Ontario, the Ontario Ministry of Health, the Ontario Medical Association and the Council of Ontario Faculties of Medicine. The OPRC provides physician supply data to CIHI on behalf of the Ontario Ministry of Health.
  - ii. The OPRC defines active Ontario physicians as those with a valid licence from the College of Physicians and Surgeons of Ontario who have completed their postgraduate medical training and who provided patient care for at least 52 days during the reporting year. As such, OPRC counts may include semi-retired physicians, military physicians and physicians who have recently completed their postgraduate medical training.

**Figure 1** Number of physicians in Ontario, comparison of 3 data sources, 2003 to 2022



**Notes**

SMDB: Scott's Medical Database.  
 OPRC: Ontario Physician Reporting Centre.  
 CMA: Canadian Medical Association.  
 OPRC data for 2022 is preliminary.  
 CMA data for 2020 and 2022 was unavailable at the time of publication.

**Sources**

Scott's Medical Database, Canadian Institute for Health Information, with raw data provided by iMD (© 2023 iMD Health Global Corp.); Ontario Physician Reporting Centre; Canadian Medical Association.

With the differences in inclusion and exclusion criteria described above, the observed gap between SMDB data and OPRC data varies over time.

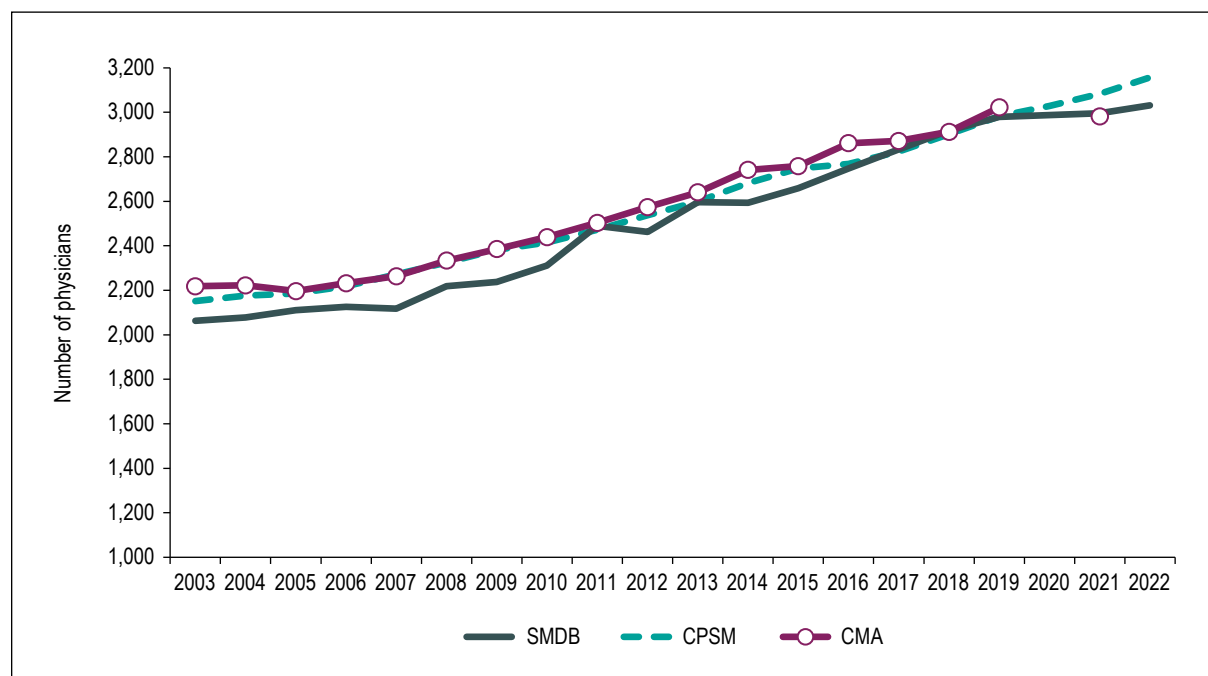
A more comprehensive comparison exercise is done periodically to explore the reasons for the gap.<sup>iii</sup> The latest findings indicated that close to 3,200 physicians were identified in the SMDB but not in the OPRC, and more than 800 physicians were identified in the OPRC but not in the SMDB, in part due to licence status exclusions. Furthermore, shifts in the composition of different subgroups included or excluded also partly explained the varying gap.

iii. More information can be found in *Comparison of CIHI's PIC [Physicians in Canada] & OPRC's PIO [Physicians in Ontario] for 2019*, available from the [OPRC](#).

## College of Physicians and Surgeons of Manitoba

CIHI also performs an annual comparison of counts published by the College of Physicians and Surgeons of Manitoba (CPSM) and the CMA. The count of Manitoba physicians by the CPSM includes all physicians who are registered and licensed to practise in Manitoba, including semi-retired physicians and fully licensed residents. The CMA's count of its members in Manitoba, like in Ontario, excludes residents and includes non-clinicians and semi-retired physicians. By comparison, CIHI's SMDB includes non-registered physicians and excludes residents, physicians who are semi-retired, who are in the military, who request to be excluded from the publication (non-registered physicians only) and who are practising abroad. The impact of these different criteria on the relative numbers of physicians reported by each of these 3 Manitoba-specific data sources is illustrated in the figure below.

**Figure 2** Number of physicians in Manitoba, comparison of 3 data sources, 2003 to 2022



### Notes

CPSM: College of Physicians and Surgeons of Manitoba.

CMA: Canadian Medical Association.

SMDB: Scott's Medical Database.

CMA data for 2020 and 2022 was unavailable at the time of publication.

### Sources

Scott's Medical Database, Canadian Institute for Health Information, with raw data provided by iMD (©2023 iMD Health Global Corp.); College of Physicians and Surgeons of Manitoba; Canadian Medical Association.

## Collaboration with other organizations

In an effort to continuously improve its data quality, CIHI has been working with different provincial ministries of health to compare counts at the aggregate level. We don't expect these counts to be similar to those of any ministry, as CIHI's inclusion and exclusion criteria are not necessarily the same as those used by the ministries; however, we don't expect very significant head count or trend differences either. Collaboration with the Saskatchewan Ministry of Health and others has been intensified in 2023, with a detailed-level comparison. The initiative confirms that a time delay in reporting changes in the SMDB is a non-trivial source of differences.

### 3.3 Physician-to-population ratios

Physician-to-population ratios are computed for each jurisdiction and also by jurisdiction and specialty. The numerator is the number of physicians in a jurisdiction and the denominator is the number of people in the jurisdiction. General population estimates are used. All ratios are per 100,000 population. As historical population estimates are revised by Statistics Canada, historical physician-to-population ratios are revised as well. Therefore, the historical figures presented in this publication will differ from ratios presented in previous publications.

### 3.4 Age and average age

Average age is calculated by dividing the sum of ages by the number of physicians. For those physicians for whom the year of birth was not available, age is calculated using year of MD graduation, with age at MD graduation assumed to be equal to 25 years. In 2022, year of birth was unknown for 42.2% of active physicians (40,494 physicians in total: 14,289 family medicine physicians and 26,205 specialists).

### 3.5 Assigning subspecialties to physicians

As of 2009, all certified specialties that a physician has received and that have been recorded in our database are considered to determine the parent specialty of subspecialties with more than one possible parent as defined by the Royal College. For example, nephrology is a subspecialty of either internal medicine or pediatrics. Depending on the other specialty certifications the physician has received, starting in 2009, nephrologists are assigned to the most appropriate parent specialty (either internal medicine or pediatrics). However, prior to 2009, all nephrologists were assigned to internal medicine; thus, caution should be used when comparing specialist data prior to and after 2009. All current specialties and subspecialties reported in the SMDB are listed in [Appendix C](#).

## 3.6 Certified and non-certified specialists

A growing demand for physician services, coupled with ongoing efforts to prepare international medical graduates for practice in Canada, has heightened the need to gather and report data on non-certified specialists. In response, CIHI worked with jurisdictional authorities to include non-certified specialists in the SMDB within the specialist category.

To accomplish this, CIHI contacts the jurisdictional colleges of physicians and surgeons and requests lists that identify non-certified specialist physicians as close as possible to December 31 of the reference year. In 2005, CIHI began collecting lists of non-certified specialists from the provinces of Newfoundland and Labrador and Saskatchewan. The lists provided in 2005 were also applied to 2004 data for Newfoundland and Labrador and Saskatchewan. In 2007, CIHI collected lists of non-certified specialists from Newfoundland and Labrador, Nova Scotia, New Brunswick, Saskatchewan and the Yukon. In 2009, CIHI added lists of non-certified specialists in P.E.I. and Quebec. In 2010, CIHI added non-certified specialist data for Alberta. As of 2019, Quebec non-certified specialist data is unavailable. New Brunswick non-certified specialist data for 2022 was not available at the time of publication. The impact is deemed to be minimal; however, caution should be used when comparing years.

Attempts are made to match physicians on these lists with physician records in the SMDB based on the physicians' first and last names, year of MD graduation and sex to ensure accuracy. Records in the SMDB are updated only for family medicine physicians whose province in the SMDB (based on the physicians' mailing address) matches that of the jurisdiction in which they are practising as a non-certified specialist. Non-certified specialists in the SMDB, therefore, do not include physicians who are recorded as residents in the SMDB, located in another jurisdiction or inactive.

While reports based on other data sources may present similar total physician counts, the proportional mix of family medicine and specialist physicians can differ due to varying methodological approaches and/or the level of detailed information available within various data sources. It is also recognized that the physician classification methods employed by the SMDB do not necessarily reflect the services provided by individual physicians. The range of services provided by a physician is subject to jurisdictional licensure rules, medical service plan payment arrangements and individual practice choices, which may lead to differences in counts presented in other publications.

To monitor potential differences in specialty classification methodologies of physicians between the SMDB and other data sources, jurisdictional government representatives of CIHI's Advisory Group on Physician Databases were asked to provide physician count information by certified and non-certified specialty for comparison with SMDB data (see Table 7). The information is based on data sources maintained within their respective health ministries. Jurisdictional college of physicians and surgeons information was gathered for purposes of cross-validation and for reporting results for jurisdictions where health ministry data was not available.

**Table 7** Family medicine and specialist physicians as a percentage of total physicians, by jurisdiction, Scott's Medical Database and jurisdictional data sources, 2022**A. Scott's Medical Database\***

| Physician type                         | N.L.  | P.E.I. | N.S.  | N.B.  | Que.  | Ont.  | Man.  | Sask. | Alta. | B.C.  | Y.T.  | N.W.T. | Nun.  |
|--|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|
| Family medicine <sup>†</sup>           | 49.6% | 54.8%  | 48.8% | 47.7% | 50.3% | 49.3% | 51.8% | 54.0% | 48.9% | 52.4% | 83.1% | 78.9%  | 86.2% |
| Specialists                            | 50.4% | 45.2%  | 51.2% | 52.3% | 49.7% | 50.7% | 48.2% | 46.0% | 51.1% | 47.6% | 16.9% | 21.1%  | 13.8% |
| Certified specialists <sup>‡</sup>     | 44.5% | 43.8%  | 50.3% | 41.7% | 49.7% | 50.7% | 48.2% | 44.2% | 47.6% | 47.6% | 16.9% | 21.1%  | 13.8% |
| Non-certified specialists <sup>§</sup> | 5.9%  | 1.4%   | 0.9%  | 10.7% | 0.0%  | 0.0%  | 0.0%  | 1.8%  | 3.5%  | 0.0%  | 0.0%  | 0.0%   | 0.0%  |

**B. Jurisdictional data sources**

| Physician type                         | N.L.** | P.E.I.** | N.S.** | N.B.** | Que.** | Ont. <sup>††</sup> | Man.** | Sask.** | Alta. <sup>‡‡</sup> | B.C. <sup>§§</sup> | Y.T.  | N.W.T.** | Nun. <sup>***</sup> |
|--|--------|----------|--------|--------|--------|--------------------|--------|---------|---------------------|--------------------|-------|----------|---------------------|
| Family medicine <sup>†</sup>           | 48.3%  | 54.3%    | 46.5%  | n/a    | 49.2%  | 46.3%              | 46.0%  | 50.8%   | 48.1%               | 54.2%              | 82.8% | n/a      | n/a                 |
| Specialists                            | 51.7%  | 45.7%    | 53.5%  | n/a    | 50.8%  | 53.7%              | 54.0%  | 49.2%   | 51.9%               | 45.8%              | 17.2% | n/a      | n/a                 |
| Certified specialists <sup>‡</sup>     | 51.7%  | 40.3%    | 53.5%  | n/a    | 50.8%  | 47.2%              | 50.4%  | 49.2%   | 46.7%               | 44.4%              | 17.2% | n/a      | n/a                 |
| Non-certified specialists <sup>§</sup> | 0.0%   | 5.4%     | 0.0%   | n/a    | 0.0%   | 6.5%               | 3.6%   | 0.0%    | 5.2%                | 1.4%               | 0.0%  | n/a      | n/a                 |

**Notes**

\* Scott's Medical Database, Canadian Institute for Health Information. Results are based on physician counts in December 2022, unless noted otherwise.

† Includes family medicine physicians and non-certified specialists, unless noted otherwise.

‡ Includes certificants of the Royal College and/or the CMQ.

§ Non-certified physicians include physicians who are licensed but are not certified as specialists in their specialty of practice by the Royal College and/or the CMQ.

See [Section 3.6](#) for details on the collection of non-certified specialists for the SMDB.

\*\* Based on data provided by provincial and territorial ministry of health representatives of CIHI's Advisory Group on Physician Databases. Results are based on physician counts as close as possible to December 2022, unless noted otherwise.

†† Ontario counts for family medicine physicians and specialists are based on preliminary data from the Ontario Physician Reporting Centre in June 2023.

‡‡ Based on data from the College of Physicians and Surgeons of Alberta. Results are based on physician counts in May 2023.

§§ B.C. certified counts are based on physicians with fee-for-service billings in 2022. Non-certified may be fee-for-service or alternative payment plan physicians, with or without fee-for-service billings.

\*\*\* Nunavut counts are based on data from the Nunavut Department of Health.

Jurisdiction-specific specialty exclusion and grouping criteria may affect comparability of family medicine physician-to-specialist ratios between data obtained from jurisdictional sources and the SMDB.

Percentages may not add up to 100% due to rounding.

n/a: Not available. Data not provided.

**Source**

Scott's Medical Database, Canadian Institute for Health Information, with raw data provided by iMD (© 2023 iMD Health Global Corp.).

## 3.7 Physicians by health region

Information on physicians by health region was integrated into this publication as a result of increasing demand for health information at a regional level. Statistics Canada<sup>2</sup> provides the following definition of a health region:

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.

Health region boundaries presented in this publication correspond to the health regions presented in the latest file available from Statistics Canada used by CIHI to map health care providers to health regions (i.e., health regions as of 2022). Note that the number of health regions in Saskatchewan changed from 13 to 7 in 2022. However, SMDB regional reporting based on the new structure has not been implemented yet.

### Assigning physicians to health regions

Postal code data and Statistics Canada’s Postal Code Conversion File (PCCF) were used to assign physicians to health regions. The 6-digit postal code of the physicians’ mailing address was used. The PCCF, with postal codes through November 2021, was used. This method accurately assigned 99.8% of physicians to a particular health region; the remaining 0.2% were categorized as *unknown*.

One should exert caution when performing comparisons of physician supply between health regions, as the population of one health region may receive health care in another health region. This is a common occurrence in health regions bordering larger urban areas.

To facilitate comparison between health regions, Statistics Canada developed a methodology that groups health regions with similar socio-economic and socio-demographic characteristics into peer groups. Information about health region peer groups, including the grouping methodology used, can be obtained from the [Statistics Canada website](#).

## 3.8 Assigning urban and rural status

Using Statistics Canada’s PCCF, postal codes were assigned to statistical area classifications (SACs). This made it possible to determine whether a physician practised in a census metropolitan area (CMA), a census agglomeration (CA), a metropolitan-influenced zone or the territories outside CMAs or CAs (municipalities in the territories outside the Yellowknife and Whitehorse CAs).

According to Statistics Canada’s definitions, “CMAs have a built-up core population of 50,000 or more with a total population of 100,000 or more” and “CAs have a built-up core population of 10,000 or more with a total population of less than 100,000.” Rural areas are defined as communities outside CMAs or CAs.<sup>1</sup> Records where the postal code could not be matched to an SAC were excluded from urban and rural counts.

## 4 Data limitations

The *Canadian Medical Directory* (CMD) database, maintained by Scott's Directories and owned by iMD Health Global Corp., is designed for the production of mailing lists and for marketing purposes, whereas data from CIHI's SMDB is used to determine supply, distribution and migration patterns at a national and/or jurisdictional level. Because of these nuances, there are limitations that should be kept in mind when using the data. This section will provide an overview of the primary data limitations associated with CIHI's SMDB.

### 4.1 Valid mailing address

Physicians working in locum positions present a unique challenge in that they may change locations frequently. In most cases, the required information is available from the monthly or quarterly reports and/or yearly registration directories produced by jurisdictional licensing authorities. In some circumstances, the physician changes locations frequently and Scott's Directories is unable to maintain a preferred mailing address. To be classified as an active physician by Scott's Directories, the physician must have a valid mailing address.

For reporting purposes, the SMDB at CIHI currently counts physicians in the jurisdiction of their mailing address. Physicians registered in more than one jurisdiction accounted for 25.8% of active physicians in 2022.

### 4.2 Time delay in reporting changes

The time delay in reporting changes to the system will influence the accuracy of the data at any given point in time. For example, a physician may move to another province in November of a given year, but the notification of the change may not reach Scott's Directories for 6 months. Technological advances and an increased effort to update physician information on a regular basis should contribute to a decrease in the time delay between notification and update of the physician's record.

### 4.3 Physicians moving abroad

The number of physicians abroad could be under-reported in the SMDB because any physician record that does not have a valid mailing address is coded as *inactive* until a valid address for the physician can be located. Some of the physicians who have records flagged as *inactive* may therefore actually have moved abroad.



For physicians who moved abroad after 1992, it is possible to determine the number who reported that they were moving to the United States. However, this would be an under-representation of those who actually went to the U.S., because some physicians may not have indicated specifically that they were going to the U.S. Those physicians who left prior to 1992 may also be in the U.S., but Scott's Directories would have them listed as *abroad*. For all years after 2017, due to the discontinuation of the biannual questionnaire, Scott's Directories relies solely on data from jurisdictional licensing authorities and physician self-reporting to assign physicians a status of having moved abroad or specifically to the U.S.

## 4.4 Resident data

Because residents are mobile after graduation (e.g., some go abroad or move to a different city or province for post-MD training), it is difficult for Scott's Directories to maintain a current and valid mailing address for residents. To this end, we have not included resident data in this report.

## 4.5 Comparisons between jurisdictions

Differences in physician supply and type of physicians in northern, rural and remote communities must be considered when comparing the number of active physicians per 100,000 population. For example, under a nursing model of primary care, advanced practice nurses meet the primary care needs of the community through nurse-led clinics and nursing stations (see the role of nurses in [Section 2.2](#)). In addition, patients from these regions travel to larger urban centres for specialized physician care, as not all medical procedures are available in rural/remote/northern regions.

## 4.6 Specialty designations

It is important to recognize that most of the specialists in the SMDB are certified and that, although information on certified specialties is useful, the functional specialty of the physician is considered to be a more appropriate measure to be used for physician resource planning. Some physicians may practise exclusively in areas of medicine not reflected by their most recent certified specialty. For example, some family medicine physicians may practise exclusively in areas such as geriatrics, physical medicine and rehabilitation.

## 5 Privacy and confidentiality

The protection of individual privacy, the confidentiality of records and the security of information are essential to CIHI operations. In support of this position, CIHI established a comprehensive privacy, confidentiality and security program. A key element of the program is the statement of principles and policies set out in the document *Privacy Policy on the Collection, Use, Disclosure and Retention of Health Workforce Personal Information and De-Identified Data*.

### 5.1 CIHI “no publication” methodology

To ensure compliance with CIHI’s privacy and confidentiality policy, a segment of physicians previously included in SMDB publications is excluded from analysis, beginning with the 2004 publication in the series. An exclusion methodology was chosen that meets all of the requirements of CIHI’s privacy and confidentiality policy while attempting to maximize the analysis potential for users of the SMDB. Distinct pieces of information were utilized in determining physicians to be excluded: registration status with a jurisdictional licensing authority and publication status with Scott’s Directories.

#### Registration status with a jurisdictional licensing authority

To practise medicine in Canada, physicians must register with the licensing authority in the jurisdiction in which they wish to practise. A list of Canadian licensing authorities can be accessed via the [Canadian Information Centre for International Credentials website](#). Once physicians are registered, much of the information they provide to the licensing authority enters the public domain via public-access websites and medical directories and can be accessed by interested parties through the licensing authority. The SMDB has a Medical Registration Indicator that denotes whether an individual physician is registered or not registered with a jurisdictional licensing authority. The Medical Registration Indicator by itself conveys no specific information about the choice of individual physicians to have their information utilized or not utilized for research purposes.

#### Publication status with Scott’s Directories

Scott’s Directories has established a Publication Status indicator to designate whether or not physician information should be published in the CMD. The Publication Status indicator is set to “do not publish” for physicians who have contacted Scott’s Directories to request that their information not be published in the CMD.

As of 2000, CIHI receives the Publication Status indicator with the annual file purchased from Scott’s Directories. The indicator reflects a decision to publish or not publish physician information within 1 specific publication — the CMD. CIHI, however, is interpreting the Publication Status indicator in a broader sense, as an indication that a physician may not wish to have information released at an individual-record or aggregate level through any medium.

Since some physicians who have “do not publish” status are jurisdictionally registered and thus their information is already in the public domain, the Publication Status indicator is not an appropriate stand-alone indicator on whose basis physician records can be excluded from the SMDB.

## 5.2 CIHI “no publication” status

The table below illustrates the method by which the 2 indicators, Medical Registration Indicator and Publication Status, are utilized to identify and remove records with “no publication” status from all analyses derived from the SMDB. If physicians are not registered with a jurisdictional licensing authority (Medical Registration Indicator = no) and have indicated to Scott’s Directories that they do not wish to have their information included in the CMD (Publication Status indicator = do not publish), then CIHI assigns the physician a “no publication” status. Physicians assigned a “no publication” status are excluded for the purposes of analysis and publication.

**Table 8** Count and percentage distribution of active family medicine and specialist physicians, by Medical Registration Indicator and Scott’s Directories Publication Status indicator, Canada, 2022

| Scott’s Directories Publication Status indicator | Medical Registration Indicator = Yes | Medical Registration Indicator = No                                  |
|--|--------------------------------------|--|
| Publish  | 85,627 (89.18%)                      | 7,963 (8.29%)  |
| Do not publish                                   | 2,426 (2.53%)                        | 0 (0.00%)<br>Removed from analysis<br>(CIHI “no publication” status) |

### Notes

Includes physicians in clinical practice and those not working in a clinical practice.

Includes active physicians, who are defined as physicians who have an MD degree and a valid mailing address.

Includes family medicine and specialist physicians as of December 31 of the reference year.

Percentage distribution represents the percentage of active physicians in the SMDB in 2022.

Excludes residents.

### Source

Scott’s Medical Database, Canadian Institute for Health Information, with raw data provided by iMD (© 2023 iMD Health Global Corp.).

At the national level, the percentage of files removed did not exceed 1% of the total number of active family medicine or specialist physicians. It was the same at more discrete levels of analysis, except in the Northwest Territories, Nunavut and New Brunswick, where it was 5%, 3.3% and 1%, respectively. Users of SMDB data should be aware of these differences, particularly when comparing the SMDB with other sources of physician data. Table 9 illustrates the percentage of records removed from analysis based on CIHI’s “no publication” status by physician type and jurisdiction. All SMDB data files at CIHI have been historically revised to reflect this methodology.

**Table 9** Percentage of family medicine, specialist and total physicians removed from analysis using CIHI’s “no publication” methodology, by physician type and jurisdiction, Canada, 2022

| Year | Physician type  | N.L.        | P.E.I.      | N.S.        | N.B.        | Que.        | Ont.        | Man.        | Sask.       | Alta.       | B.C.        | Y.T.        | N.W.T.      | Nun.        | Canada      |
|------|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 2022 | Family medicine | 0.3%        | 1.0%        | 0.7%        | 0.8%        | 0.1%        | 0.1%        | 0.3%        | 0.1%        | 0.3%        | 0.5%        | 0.0%        | 6.2%        | 3.8%        | 0.3%        |
|      | Specialist      | 0.7%        | 0.6%        | 0.1%        | 1.2%        | 0.1%        | 0.1%        | 0.2%        | 0.1%        | 0.2%        | 0.5%        | 0.0%        | 0.0%        | 0.0%        | 0.2%        |
|      | <b>Total</b>    | <b>0.5%</b> | <b>0.8%</b> | <b>0.4%</b> | <b>1.0%</b> | <b>0.1%</b> | <b>0.1%</b> | <b>0.2%</b> | <b>0.1%</b> | <b>0.2%</b> | <b>0.5%</b> | <b>0.0%</b> | <b>5.0%</b> | <b>3.3%</b> | <b>0.2%</b> |

**Notes**

Includes physicians in clinical practice and those not working in a clinical practice. Only physicians who are not provincially or territorially registered (not registered based on SMDB’s Medical Registration Indicator) are impacted by CIHI’s “no publication” methodology.

Excludes residents, semi-retired and military physicians. Data represents the percentage of active physicians (family medicine physicians, specialists and total physicians) removed as a result of implementing CIHI’s “no publication” methodology.

The percentage of family medicine physicians added to the percentage of specialists will not sum to the percentage of total physicians.

**Source**

Scott’s Medical Database, Canadian Institute for Health Information, with raw data provided by iMD (© 2023 iMD Health Global Corp.).

# Appendices

## Appendix A: Data definitions

### SMDB data definitions

Each of the data elements listed corresponds to a field on the physician's record. A list of the appropriate values and a brief definition for each data element present in the SMDB are provided below. More information can be found in the *SMDB Data Dictionary* (available upon request).

#### Subscriber Number

Unique SMDB serial number maintained throughout lifetime

#### Name

Includes first name, middle name(s) and last name

#### Jurisdiction

Information systems maintained by Scott's Directories can record multiple addresses for individual physicians. The address information submitted to CIHI by Scott's Directories corresponds to the physicians' preferred mailing address. For the purposes of SMDB reporting, individual physicians are assigned to the single province or territory that corresponds to their preferred mailing address.

#### Postal Code

Information systems maintained by Scott's Directories can record multiple addresses for individual physicians. The address information submitted to CIHI by Scott's Directories corresponds to the physicians' preferred mailing address. For the purposes of SMDB reporting, individual physicians are assigned to the single postal code that corresponds to their preferred mailing address.

#### Physician Type

Resident

Family medicine

Specialist

Within this report, residents include interns and are reported in the same category (residents<sup>iv</sup>) from 1993 onward.

Unless otherwise noted, CIHI publications use the term “family medicine physician” to include general practitioners (physicians, excluding residents, without a current medical specialty certified in Canada) and family medicine and emergency family medicine specialists.

The term “specialists” includes certificants of the Royal College or the CMQ, with the exception of Newfoundland and Labrador and Saskatchewan, starting in 2004; Nova Scotia and the Yukon, starting in 2007; New Brunswick, from 2007 to 2021; P.E.I., starting in 2009; Quebec, from 2009 to 2018; and Alberta, starting in 2010, where non-certified specialists are also included. Please refer to [Section 3.6](#) for a definition of non-certified specialists.

## Medical Activity Code

Active

Active — not in private practice

Retired

Semi-retired

Temporarily retired

Military

Abroad

U.S.A.

Not in practice

Temporarily not in practice

On leave of absence

On sabbatical

Maternity leave

Deceased

Removed

Post office return

Refusal

*Active:* Scott’s Directories defines physicians as active if they have an MD degree and have a valid mailing address.

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iv. The reporting of physician type intern is valid for the historical records — that is, records up to and including 1992. Even though 2-year pre-licensure replaced 1-year pre-licensure, Scott’s Directories still lists physicians who are in their first year of residency (either family medicine or one of the other certified specialties) as interns.

*Active — not in private practice*: This category includes active physicians who are working in administration, academia, etc., but do not engage in any private clinical practice.

*Active — not in private practice* was previously reported by the physician to Scott's Directories on the annual questionnaire but as of 2017, it is no longer captured in Scott's Directories. This status is included in the SMDB on historical records and will be counted if it is the most recent status available for the physician. These 2 categories, *active* and *active — not in private practice*, are combined by CIHI and are used to calculate the number of physicians.

*Inactive — Semi-retired/temporarily retired/retired/on leave of absence/on sabbatical/maternity leave/temporarily not in practice/not in practice*: These categories are self-reported to Scott's Directories by the physician.

*Inactive — Military*: The *military* activity code refers to any physician working in the Canadian Armed Forces. This information is received annually from the Department of National Defence.

*Inactive — Abroad*: The *abroad* code is used for a physician who has moved to an address outside the country.

*Inactive — U.S.A.*: In 1992, Scott's Directories added an additional code that indicates whether the physician moved to the U.S. The *abroad* category is combined with the *U.S.A.* category to produce statistics on physicians moving abroad.

*Inactive — Deceased*: A physician is coded as *deceased* when Scott's Directories receives notification from the jurisdictional registrar, the CMA or the next of kin.

*Inactive — Removed/post office return/refusal*: The activity status of the physician's record is changed to *removed/post office return/refusal* if mail is returned from the physician's currently listed address. Scott's Directories flags the physician as *removed* and pursues alternative means to attempt to locate the physician.

## Medical Specialties

Individual physician records provided by Scott's Directories allow for a maximum of 4 specialties to be coded. If more than one specialty is listed, the specialist is tabulated under the most recently acquired certified specialty on the assumption that it most accurately reflects the current field of practice. The exceptions to the usual assignment of specialty are for non-certified specialists. Non-certified specialists are tabulated under the specialty designation provided by their associated jurisdiction. Please refer to [Section 3.6](#) for a definition of non-certified specialists.

Specialty certifications are assigned according to designations defined by the Royal College, the CFPC and the CMQ. Specialty codes are grouped into various categories for use in this publication (e.g., internal medicine subspecialties have been aggregated into the category of internal medicine). Specialties have been aggregated according to the groupings of the Royal

College and cross-checked with groupings used by the CMA. For example, in Data Table 1.0, the subspecialties of internal medicine are listed. For a listing of the grouping categories and the specialties included in each grouping, please see [Appendix C](#).

## Medical Registration Indicator

Registered

Non-registered

This indicates whether a physician is registered or not registered in the current jurisdiction. Some physicians who work in non-clinical situations (such as administration or research) may not be registered with their jurisdictional registrar. Also, some physicians may maintain their registration status but not engage in clinical activity.

## Country of MD Graduation

Country in which the MD degree was completed

If the Graduation Country Indicator is *foreign* (see below), country of MD graduation is coded according to a country code list.

## Graduation Country Indicator

Canada

U.S.A.

Foreign

## University of MD Graduation

Separate codes for each of the Canadian medical schools. Other codes include *foreign*, *U.S.A.* and *British Commonwealth university*.

## Year of MD Graduation

The year in which the MD degree was completed

## Years Since MD Graduation (CIHI-derived)

Number of years between the year of graduation and the current year

This element indicates the **maximum** number of years a physician could have been in the workforce, not the actual number of years, because it does not account for time spent out of the workforce (e.g., on continuing education or maternity/parental leave).

For the purposes of this report, physicians with a number of years since graduation greater than 65 are assigned to category *unknown*.



## Language

English

French

This element refers to the physician's preferred language of correspondence. It does not capture other languages that they may speak.

## Gender

Male

Female

Another gender

Unknown

## Date of Birth

Physician date of birth (year, month, day)

Starting in 2014, Scott's Directories began modifying the Date of Birth field to include only the year of birth. The month and day for this data element have been set to January 1.

## Age (CIHI-derived)

Number of years between the data year of a given report and the year of birth

For those physicians for whom year of birth was not available, ages were calculated using year of MD graduation with age at MD graduation assumed to be equal to 25 years.

For the purposes of this report, physicians younger than the age of 20 and older than the age of 90 are assigned to age category *unknown*.

## CIHI Publication Indicator (CIHI-derived)

Yes

No

Based on CIHI's "no publication" methodology (see [Section 5](#) for more information), this indicates whether a physician record is to be excluded (indicator = N) or included (indicator = Y) for the purposes of analysis and publication.

## Appendix B: Comparing inclusion criteria

| Included in physician counts                  | OPRC | CPSM                 | CMA  | SMDB     |
|---|------|----------------------|------|----------|
| Active clinicians (licensed)                  | Yes  | Yes                  | Yes  | Yes      |
| Active non-clinicians                         | No   | Yes                  | Yes  | Yes      |
| Not registered with the province or territory | No   | No                   | Yes  | Yes      |
| Semi-retired                                  | Yes  | Yes                  | Yes  | No       |
| Military                                      | Yes  | Yes                  | No   | No       |
| Residents                                     | No   | Yes (fully licensed) | No   | No       |
| Age-based                                     | < 85 | All ages             | < 80 | All ages |

### Notes

OPRC:

Ontario Physician Reporting Centre.

CPSM: College of Physicians and Surgeons of Manitoba.

CMA: Canadian Medical Association.

SMDB: Scott's Medical Database.

CMA data for 2022 was unavailable at the time of publication.

Active non-clinicians may include physicians who are working in administration, academia, etc.

OPRC includes physicians who provide patient care in Ontario for at least 52 days per calendar year.

OPRC includes physicians who complete postgraduate training prior to July 31.

SMDB physicians younger than age 20 or older than age 90 are assigned *unknown age*.

## Appendix C: Specialty groupings: SMDB reports/tables

This list indicates the specialty codes as listed in the SMDB. The specialties are grouped into appropriate categories for use in reports and tables. The listed groupings have changed since originally constructed in the early 1970s. Some additional specialty codes were added. All specialties and subspecialties present in the SMDB are listed, whether or not they are still recognized by the Royal College or the CMQ.

Family medicine includes certificants of the CFPC or the CMQ (family medicine) and, unless otherwise stated, general practitioners not certified in Canada, foreign-certified specialists and other non-certified specialists. In Newfoundland and Labrador and Saskatchewan, starting in 2004; Nova Scotia and the Yukon, starting in 2007; New Brunswick, from 2007 to 2021; P.E.I., starting in 2009; Quebec, from 2009 to 2018; and Alberta, starting in 2010, non-certified specialists are designated as specialists in their specialty of practice. As of 2019, Quebec non-certified specialist data is unavailable. The impact is deemed to be minimal; however, caution should be used when comparing years. For all other jurisdictions, specialists include certificants of the Royal College or the CMQ (see [Section 3.6](#) for details).

### 1 Family medicine

General practice

Emergency family medicine

Family medicine

### 2 Specialists

#### 2.1 Medical specialists

##### 2.1.1 Clinical specialists

Anesthesiology

Dermatology

Diagnostic radiology

*Neuroradiology*

*Pediatric radiology*

Emergency medicine

Internal medicine

*Cardiology*

*Clinical immunology and allergy*

*Clinical pharmacology and toxicology*

*Critical care medicine*  
*Endocrinology and metabolism*  
*Gastroenterology*  
*General internal medicine*  
*Geriatric medicine*  
*Hematology*  
*Infectious diseases*  
*Medical oncology*  
*Nephrology*  
*Occupational medicine*  
*Palliative medicine*  
*Respirology*  
*Rheumatology*

Medical genetics and genomics

Neurology  
*Electroencephalography*

Nuclear medicine

Pediatrics  
*Adolescent medicine — Pediatrics*  
*Cardiology — Pediatrics*  
*Child and adolescent psychiatry — Pediatrics*  
*Clinical immunology and allergy — Pediatrics*  
*Clinical pharmacology and toxicology — Pediatrics*  
*Critical care medicine — Pediatrics*  
*Developmental — Pediatrics*  
*Emergency medicine — Pediatrics*  
*Endocrinology and metabolism — Pediatrics*  
*Gastroenterology — Pediatrics*  
*Hematology/oncology — Pediatrics*  
*Infectious diseases — Pediatrics*  
*Neonatal–perinatal medicine*  
*Nephrology — Pediatrics*  
*Respirology — Pediatrics*  
*Rheumatology — Pediatrics*

Physical medicine and rehabilitation

Psychiatry

*Forensic psychiatry*

*Geriatric psychiatry*

Public health and preventive medicine

Radiation oncology

### **2.1.2 Laboratory specialists**

Anatomical pathology

General pathology

*Forensic pathology*

Hematological pathology

Medical biochemistry

Medical microbiology

Neuropathology

### **2.2 Surgical specialists**

Cardiac surgery

General surgery

*Colorectal surgery*

*General surgical oncology*

*Pediatric surgery*

Neurosurgery

Obstetrics and gynecology

*Gynecologic oncology*

*Maternal–fetal medicine*

Ophthalmology

Orthopedic surgery

Otolaryngology — Head and neck surgery

Plastic surgery

Urology

Vascular surgery

### **2.3 Medical scientists**

## Appendix D: Text alternative for figures

### Text alternative for Figure 1

The 3 data sources corresponded closely until 2010, when a gap began to appear, showing SMDB counts to be higher than OPRC and CMA counts. With differences in inclusion and exclusion criteria, the observed gap varies over time. The overall trend from 2003 to 2019 was the same for all 3 sources: the number of physicians increased annually. In 2020, the SMDB reported a decrease and the OPRC reported an increase; both were less than 2%. CMA data for 2020 and 2022 was unavailable at the time of publication.

In 2022, the SMDB and OPRC reported small increases in their counts over the previous year (1.3% and 2.3%, respectively).

**Table: Number of physicians in Ontario, comparison of 3 data sources, 2003 to 2022**

| Year | SMDB   | OPRC   | CMA    |
|------|--------|--------|--------|
| 2003 | 21,738 | 21,472 | 22,110 |
| 2004 | 22,067 | 21,793 | 21,947 |
| 2005 | 22,237 | 22,277 | 22,515 |
| 2006 | 22,141 | 22,725 | 22,905 |
| 2007 | 22,592 | 23,266 | 23,683 |
| 2008 | 23,043 | 23,767 | 24,135 |
| 2009 | 24,515 | 23,819 | 24,975 |
| 2010 | 25,044 | 24,875 | 25,218 |
| 2011 | 26,163 | 25,480 | 26,171 |
| 2012 | 27,300 | 26,382 | 26,962 |
| 2013 | 28,422 | 27,125 | 26,922 |
| 2014 | 29,368 | 28,087 | 27,730 |
| 2015 | 30,494 | 28,805 | 28,642 |
| 2016 | 31,017 | 29,633 | 29,898 |
| 2017 | 32,055 | 30,584 | 30,175 |
| 2018 | 33,872 | 31,404 | 30,492 |
| 2019 | 34,094 | 31,764 | 31,252 |
| 2020 | 33,830 | 32,319 | n/a    |
| 2021 | 34,860 | 33,170 | 31,245 |
| 2022 | 35,320 | 33,921 | n/a    |

#### Notes

SMDB: Scott's Medical Database.

OPRC: Ontario Physician Reporting Centre.

CMA: Canadian Medical Association.

n/a: Not available.

OPRC data for 2022 is preliminary.

CMA data for 2020 and 2022 was unavailable at the time of publication.

#### Sources

Scott's Medical Database, Canadian Institute for Health Information, with raw data provided by iMD (© 2023 iMD Health Global Corp.); Ontario Physician Reporting Centre; Canadian Medical Association.

**Text alternative for Figure 2**

The 3 data sources corresponded closely from 2003 to 2020, with the number of physicians increasing over time. In 2022, the SMDB and CPSM reported small increases over 2021.

CMA data for 2020 and 2022 was unavailable at the time of publication. CMA data for 2021 reflected a very slight decrease over 2019.

**Table: Number of physicians in Manitoba, comparison of 3 data sources, 2003 to 2022**

| Year | SMDB  | CPSM  | CMA   |
|------|-------|-------|-------|
| 2003 | 2,063 | 2,152 | 2,218 |
| 2004 | 2,078 | 2,176 | 2,222 |
| 2005 | 2,111 | 2,186 | 2,196 |
| 2006 | 2,125 | 2,218 | 2,232 |
| 2007 | 2,117 | 2,272 | 2,263 |
| 2008 | 2,219 | 2,325 | 2,333 |
| 2009 | 2,238 | 2,382 | 2,385 |
| 2010 | 2,311 | 2,415 | 2,439 |
| 2011 | 2,490 | 2,472 | 2,503 |
| 2012 | 2,462 | 2,538 | 2,574 |
| 2013 | 2,596 | 2,599 | 2,640 |
| 2014 | 2,593 | 2,682 | 2,741 |
| 2015 | 2,659 | 2,748 | 2,758 |
| 2016 | 2,748 | 2,768 | 2,861 |
| 2017 | 2,833 | 2,824 | 2,871 |
| 2018 | 2,918 | 2,902 | 2,912 |
| 2019 | 2,979 | 2,982 | 3,022 |
| 2020 | 2,987 | 3,029 | n/a   |
| 2021 | 2,996 | 3,083 | 2,982 |
| 2022 | 3,031 | 3,157 | n/a   |

**Notes**

CPSM: College of Physicians and Surgeons of Manitoba.

CMA: Canadian Medical Association.

SMDB: Scott's Medical Database.

n/a: Not available.

CMA data for 2020 and 2022 was unavailable at the time of publication.

**Sources**

Scott's Medical Database, Canadian Institute for Health Information, with raw data provided by iMD (© 2023 iMD Health Global Corp.); College of Physicians and Surgeons of Manitoba; Canadian Medical Association.

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