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# Workforce renewal in health occupations

by *André Bernard and Yasmina Seddiki*

## Overview of the study

This study uses annual data from the Labour Force Survey (LFS) to examine employment trends in health occupations between 1998 and 2024. Data from the 2021 Census of Population are used to provide age profiles by detailed health occupations, to better understand the extent to which younger workers could replace those approaching retirement age. This article also explores the role of immigration in mitigating the impacts of an aging health workforce.

- The number of workers in health occupations more than doubled from 1998 to 2024 (+898,000; +114.8%). Over that period, the health workforce has grown on average by 3% per year, double the pace observed across all occupations (+1.5% on average per year).
- Employment in nursing occupations rose by 30,000 (+6.9%) from 2023 to 2024, accounting for two-thirds of the overall increase in health occupations over the period (+45,000; +2.7%).
- In 2024, 17.9% of health workers were aged 55 and older. This was down slightly from the peak of 19.6% recorded in 2018, but significantly higher than in 1998 (9.5%).
- The renewal ratio for workers in health occupations was 1.9 in 2024, which means that for each worker approaching retirement age (aged 55 to 64), there was close to two younger workers aged 25 to 34 in the health workforce. While the overall renewal ratio for health occupations has been rather stable in recent years, it does vary when considering specific health occupations (e.g., registered nurses, nurse aides, general practitioners).
- Immigration was a major source of workforce renewal in health occupations, particularly among nurse aides, orderlies and patient service associates. In 2021, recent immigrants (13.0%) and non-permanent residents enumerated in the Census (10.8%) together accounted for close to one-quarter (23.8%) of all nurse aides, orderlies and patient service associates aged 25 to 34.
- In 2021, nearly half of recent immigrants (47.1%) who were nurse aides, orderlies and patient service associates had a bachelor's degree or a higher level of education. In contrast, only 6.3% of workers in this occupation and who were born in Canada had a bachelor's degree or a higher level of education.

## Introduction

Canada's health care system has strived to maintain a sufficient workforce to meet the rising health care demands of an aging population. From 2016 to 2021, the number of people aged 65 and older rose by 18.3% to reach 7 million, and that number is projected to reach 11.8 million by 2051. Meanwhile, the number of persons aged 85 and older is projected to triple from 861,000 in 2021 to 2.8 million in 2051.<sup>1,2</sup>

Across all occupations, the aging of the workforce is putting downward pressure on labour supply. According to the 2021 Census of Population, a record high

proportion (21.8%) of the working-aged population was close to retirement age in 2021 (i.e., aged 55 to 64).<sup>3</sup> The impacts of an aging population on labour supply can be mitigated by immigration, which has played an increasingly large role in Canada's labour market, including in the health care sector, where the share of new and recent immigrant workers has grown since 2010.<sup>4</sup>

While the overall supply of health care professionals has grown or remained stable,<sup>5</sup> growth has not always kept pace with the needs of an aging population. For example,

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the number of nurses providing direct care per 1,000 seniors (age 65 and older) in Canada has declined from 59 in 2013 to 52 in 2022.<sup>6</sup>

In this context — and given projected shortages of health care workers worldwide<sup>7</sup> and in Canada<sup>8,9</sup> — much attention has been given to addressing challenges in retention and recruitment of talent in health care.<sup>10</sup>

This article examines the age profile of health occupations<sup>11</sup> in Canada, with a focus on renewal ratios, that is, the ratio of younger workers (workers aged 25 to 34) to those approaching retirement age (workers aged 55 to 64). These ratios can be used to measure occupational renewal, with lower ratios signaling potential difficulties meeting labour demand in the future (for more information, refer to the text box “Occupational renewal ratios”). For example, a ratio below 1.0 in a given health occupation would indicate that there are fewer young workers

entering that occupation relative to older workers approaching retirement age.

Annual data from 1998 to 2024 from the Labour Force Survey (LFS) are used to examine aggregate employment trends in health occupations, while data from the 2021 Census of Population are used to examine disaggregated age profiles, including renewal ratios, by detailed occupation (for more information, refer to the “[Data sources](#)”).

The extent to which immigration is mitigating the impacts of an aging health workforce on renewal ratios is also examined using Census data, by looking at the shares of young workers in select health occupations who are recent immigrants or non-permanent residents. The educational attainment profile of recent immigrants entering the health workforce is also explored and compared to that of workers born in Canada.

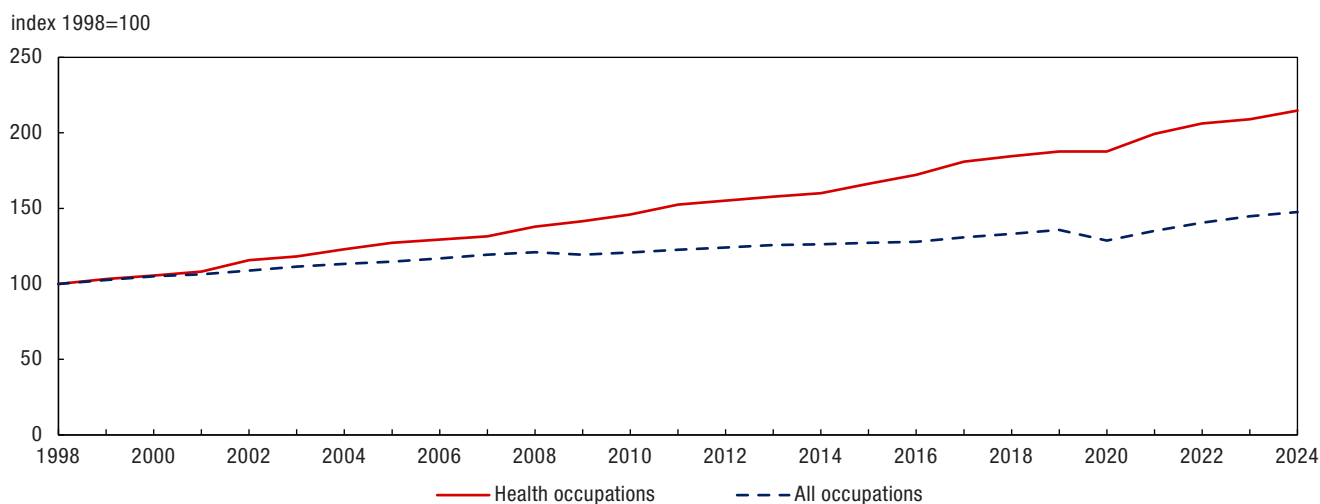
### Growth in the health workforce has outpaced total employment growth over the past 25 years

The number of workers in health occupations has grown steadily in recent decades. Based on data from the Labour Force Survey (LFS), there were just under 1.7 million workers in health occupations<sup>12</sup> in 2024, up 45,000 (+2.7%) from 2023, and up 212,000 (+14.4%) from 2019, before the COVID-19 pandemic.

The number of workers in health occupations more than doubled from 1998 to 2024 (+898,000; +114.8%). Over the same period, the health workforce has grown on average by 3% per year, double the pace observed across all occupations (+1.5% on average per year) (Chart 1). Consequently, the share of the health workforce in the total workforce in Canada has increased, from 5.6% in 1998 to 8.1% in 2024.

Growth in the health workforce, since 1998 as well as in more recent years, was reflected across

**Chart 1**  
Employment growth in health occupations, 1998 to 2024



Source: Statistics Canada, Labour Force Survey, 1998 to 2024.

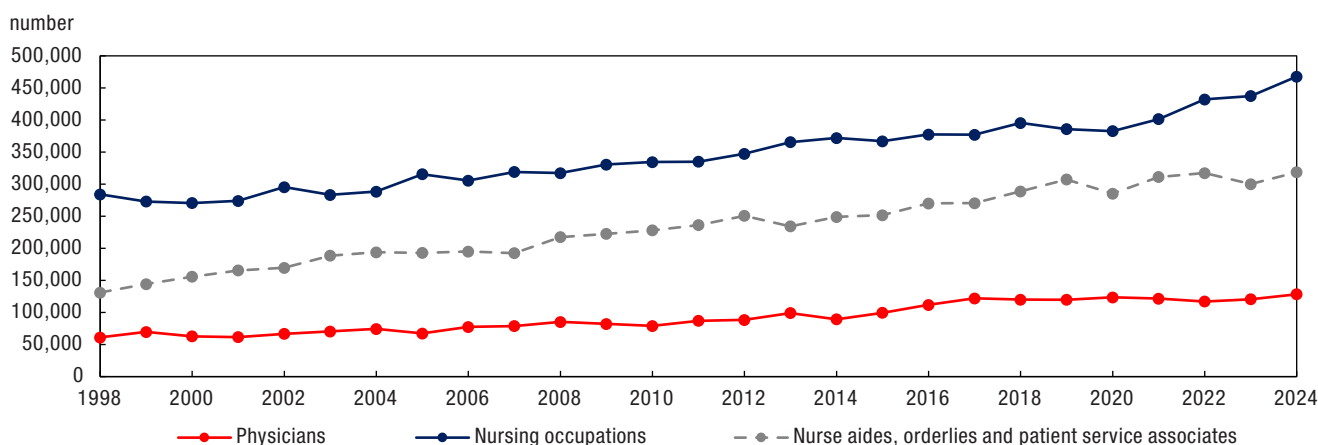
## Workforce renewal in health occupations

major health occupation groups and specific health occupations. For example, employment in nursing occupations<sup>13</sup> (as measured in the LFS) rose by 30,000 (+6.9%) from 2023 to 2024, accounting for two-thirds of the overall net increase in health occupations over the period (+45,000; +2.7%) (Chart 2).

Compared with before the COVID-19 pandemic, in 2019, employment in nursing occupations in 2024 was up by 21.2%. Over the same period, the number of physicians<sup>14</sup> (+7.2%) and the number of nurse aides, orderlies and patient service associates (+3.7%) also grew, albeit at a slower pace.

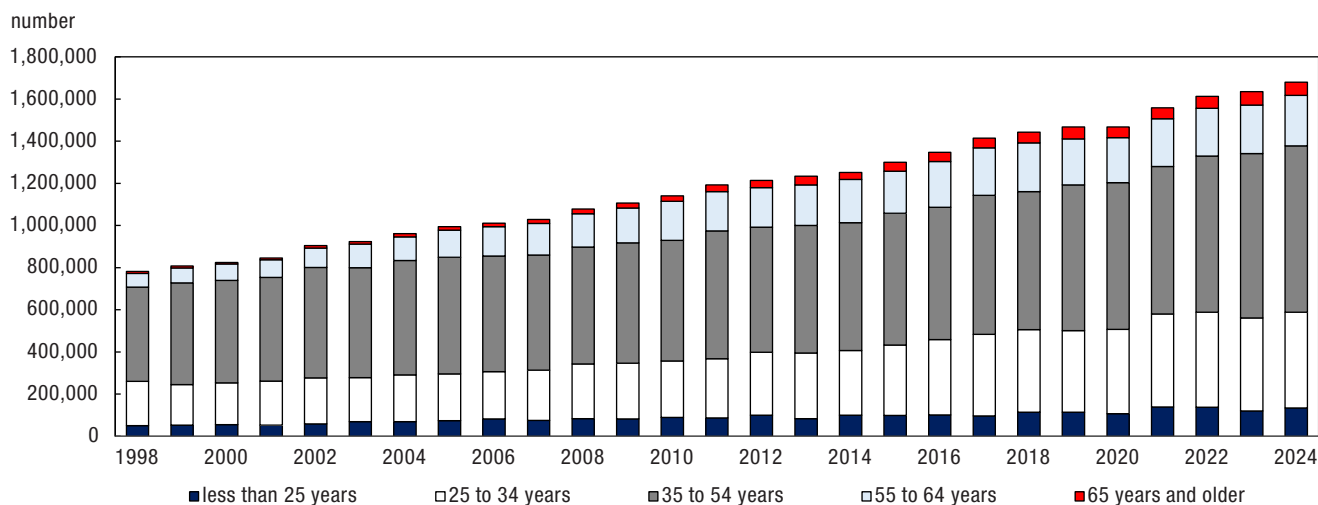
This growth in the size of the health workforce was accompanied by changes in its age structure. In 2024, 17.9% of health workers were aged 55 and older. This was down slightly from the peak of 19.6% recorded in 2018, but significantly higher than in 1998 (9.5%) (Chart 3).

**Chart 2**  
Employment in selected health occupations, 1998 to 2024



**Note:** Selected health occupations were coded using the National Occupational Classification (NOC) 2021 and include the following codes: physicians (NOC 31100, 31101, 31102); nursing occupations (NOC 31301, 31302, 32101); nurse aides, orderlies and patient service associates (NOC 33102).  
**Source:** Statistics Canada, Labour Force Survey, 1998 to 2024.

**Chart 3**  
Size and composition of the health workforce, by age group, 1998 to 2024



**Source:** Statistics Canada, Labour Force Survey, 1998 to 2024.

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### Occupational renewal ratios

In this study, the occupational renewal ratio for occupation *i* is defined as follows:

(Number of workers aged 25 to 34 in occupation *i*) / (Number of workers aged 55 to 64 in occupation *i*).

Renewal ratios can be used to assess occupational renewal, that is, the extent to which workers approaching retirement age can be replaced by younger workers entering the workforce.<sup>15</sup> Lower ratios indicate that there are fewer younger workers who have entered the occupational workforce, relative to workers approaching retirement age. For occupations in which the demand is expected to remain stable or increase, lower ratios typically suggest increased risks of unmet labour demand in the future.

Renewal ratios have some limitations. First, there is no pre-determined target value above which occupational renewal would be ensured. For example, occupations with a renewal ratio above 1.0 (which would mean that there are more young workers relative to workers approaching retirement age) may still experience labour shortages in the future, if the demand for the occupation grows.

Moreover, renewal ratios do not take into account other factors, such as employee retention<sup>16</sup> and age to retirement, which may have a significant impact on the current and future size and composition of an occupation's workforce.

In addition, young workers with education in a health-related field, but who work in an occupation not related to health, would not be represented in the renewal ratios, but could still represent a potential source of occupational renewal in the future.<sup>17,18</sup>

### The renewal ratio for workers in health occupations has remained steady in recent years

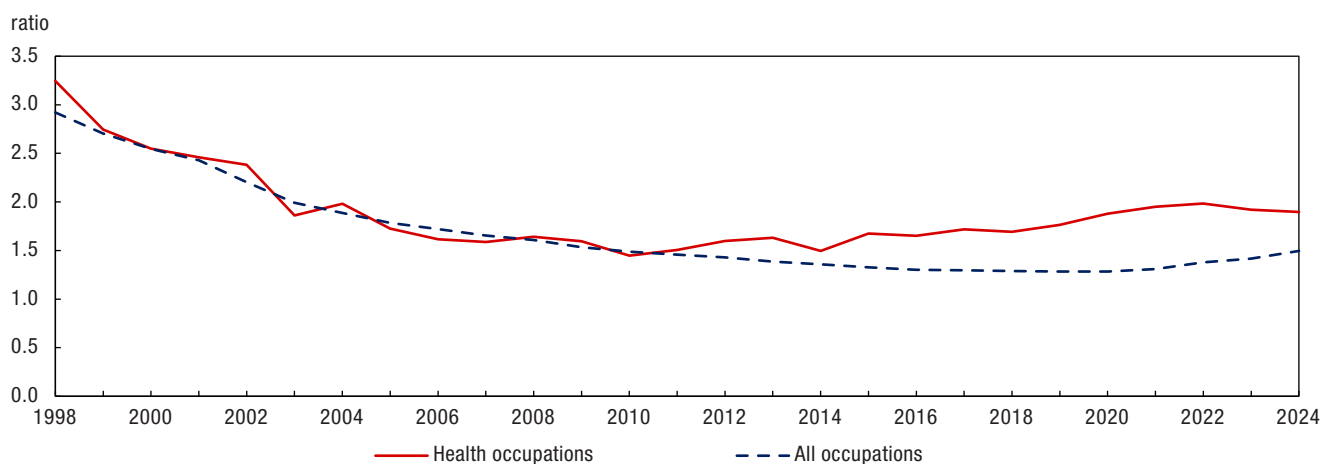
According to the Labour Force Survey (LFS), the renewal ratio for workers in health occupations was 1.9 in 2024, which means that for each worker approaching retirement age (aged 55 to 64), there was close to two younger workers aged 25 to 34 in the health workforce

(Chart 4). The ratio has been rather stable in recent years, and in 2024, it remained relatively unchanged from before the COVID-19 pandemic, in 2019. In comparison, the renewal ratio for the total workforce (which includes all occupational groups) in Canada was 1.5 in 2024.

It is important to note, however, that there hasn't always been this continuous stability in the renewal ratios of workers in health

occupations. Specifically, in the early 2000s, the renewal ratio for workers in health occupations fell sharply and reached a low of 1.4 in 2010, before partially recovering in the years that followed. A similar downward trend was observed for the total workforce, with the renewal ratio falling to a low of 1.3 in 2015. Unlike with health occupations, there was no notable increase in the overall

**Chart 4**  
Renewal ratios for health occupations and all occupations, 1998 to 2024



**Note:** Renewal ratios can help assess occupational renewal by examining the extent to which workers approaching retirement (referred to as potential leavers and are between the age of 55 to 64) can be replaced by younger workers entering the workforce (between the age of 25 to 34).

**Source:** Statistics Canada, Labour Force Survey, 1998 to 2024.

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renewal ratio in the past decade to partially offset the decline observed in the early 2000s (Chart 4).

Despite sustained employment growth and relatively high renewal ratios in health occupations compared with other occupational groups, Canada has faced persistent challenges filling available positions in the health care sector. The number of job vacancies in health occupations reached a record-high 97,415 in the third quarter of 2022, more than double the number of vacant positions before the pandemic (40,895 in the third quarter of 2019). Meeting the growing needs of an aging population may therefore require not only replacing retiring workers but also expanding the workforce.

The age profile and renewal ratios can also differ significantly across specific occupations. In the following sections, Census data and the National Occupational Classification (NOC) 2021 are used to examine five occupations in more detail: i) registered nurses, registered

psychiatric nurses (NOC 31301) and nurse practitioners (NOC 31302); ii) licensed practical nurses (NOC 32101); iii) nurse aides, orderlies and patient service associates (NOC 33102); iv) general practitioners and family physicians (NOC 31102) and; v) specialists in clinical and laboratory medicine (NOC 31100) and specialists in surgery (NOC 31101) — medical specialists.<sup>19</sup>

These occupations were chosen because they accounted for the majority (57.1%) of the overall health workforce<sup>20</sup> (excluding managers in health care) at the time of the 2021 Census. These occupations are also central to primary health care and require varying degrees of education and experience.<sup>21</sup>

### Renewal ratios higher among registered and licensed practical nurses; lower among nurse aides, orderlies and patient service associates

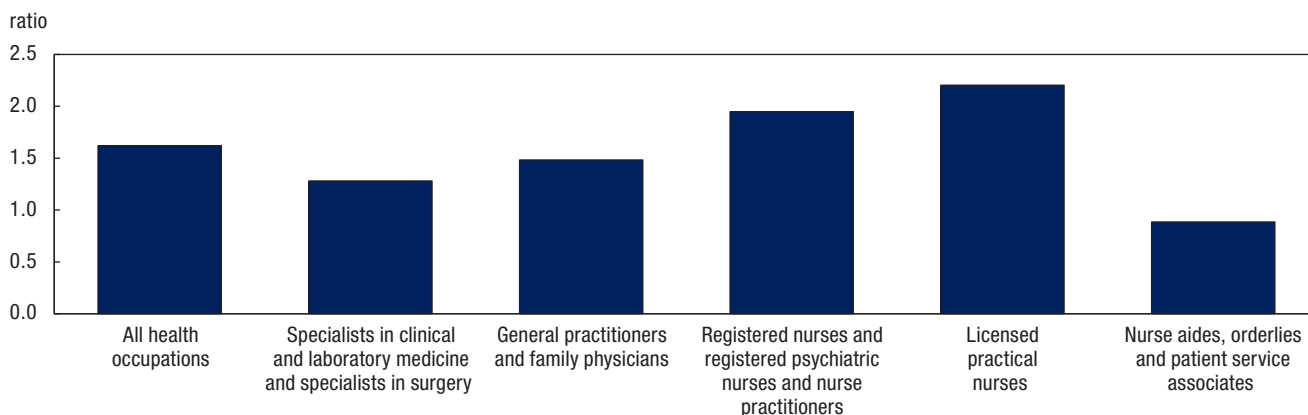
Results from the 2021 Census show that there were 326,265 registered nurses (including registered

psychiatric nurses and nurse practitioners) in Canada in 2021, and 72,735 licensed practical nurses. The renewal ratio was 1.9 for registered nurses and 2.2 for licensed practical nurses. These renewal ratios were higher than for health occupations overall (1.6) (Chart 5).

In contrast, the renewal ratio among the 331,790 nurse aides, orderlies and patient service associates was 0.9. This means that there were fewer nurse aides, orderlies and patient service associates entering the workforce (aged 25 to 34) relative to those approaching retirement age (aged 55 to 64).

The renewal ratio for this occupation was lower than for all assisting occupations in support of health services (1.1) and significantly below the average for all health occupations (1.6). This signals potential current and future difficulties meeting labour demand for nurse aides, orderlies and patient service associates,

**Chart 5**  
Renewal ratios among selected health occupations, 2021



**Notes:** Selected health occupations were coded using the National Occupational Classification (NOC) 2021 and include the following codes: specialists in clinical and laboratory medicine (NOC 31100) and specialists in surgery (NOC 31101); general practitioners and family physicians (NOC 31102); registered nurses and registered psychiatric nurses (NOC 31301) and nurse practitioners (NOC 31302); licensed practical nurses (NOC 32101); nurse aides, orderlies and patient service associates (NOC 33102). Renewal ratios can help assess occupational renewal by examining the extent to which workers approaching retirement (referred to as potential leavers and are between the age of 55 to 64) can be replaced by younger workers entering the workforce (between the age of 25 to 34).

**Source:** Statistics Canada, Census of Population, 2021.

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especially if needs for care increase in the context of an aging population.

Among the 60,410 general practitioners and family physicians enumerated in the 2021 Census, the renewal ratio was 1.5, while it was 1.3 for the 46,785 medical specialists (which included 36,115 specialists in clinical and laboratory medicine and 10,670 specialists in surgery). The lower renewal ratio for medical specialists is in part attributable to the longer years of schooling and training normally required to become a specialist (which translates into proportionally fewer specialists aged 25 to 34).

### Relatively high percentage of recent immigrants and non-permanent residents offset the impacts of an aging workforce for nurse aides, orderlies and patient service associates

Newcomers, particularly young recent immigrants and non-permanent residents, can help alleviate the impacts of an aging workforce on labour supply and can contribute to increasing renewal ratios in health occupations. This aspect is examined in the following sections based on detailed age profiles by immigrant status, which include the shares of younger workers who are recent immigrants and non-permanent residents (Table 1).

Close to half (44.8%) of all nurse aides, orderlies and patient service associates were immigrants — the largest share among the health occupations considered — including 7.2% who had immigrated in the previous five years and 5.2% who were non-permanent residents enumerated in the Census.<sup>22</sup>

Accordingly, immigration was a major source of workforce renewal for this occupation and contributed to increasing an otherwise much lower renewal ratio. In 2021, recent immigrants (i.e., those who had become permanent residents in the previous five years) (13.0%), and non-permanent residents enumerated in the Census (10.8%) together accounted for close to

**Table 1**  
Composition of employment of selected health occupations, by age group, and immigrant status and period of immigration, 2021

Selected health occupations by age group	Immigrants admitted before 2011	Immigrants admitted between 2011 to 2015	Immigrants admitted between 2016 to 2021	Non-permanent residents	Non-immigrants
<b>Specialists in clinical and laboratory medicine and specialists in surgery</b>					
<b>Total</b>	<b>26.8</b>	<b>3.7</b>	<b>3.1</b>	<b>3.8</b>	<b>62.7</b>
25 to 34 years	18.7	1.5	2.2	8.6	69.0
35 to 44 years	17.9	4.2	5.0	5.7	67.2
45 to 54 years	30.9	7.2	4.0	1.0	57.0
55 to 64 years	37.5	2.7	1.1	0.3	58.5
65 years and over	42.3	1.0	0.3	0.0	56.2
<b>General practitioners and family physicians</b>					
<b>Total</b>	<b>28.5</b>	<b>3.9</b>	<b>2.7</b>	<b>1.5</b>	<b>63.3</b>
25 to 34 years	21.1	1.9	2.0	2.6	72.5
35 to 44 years	19.9	7.0	5.5	2.3	65.2
45 to 54 years	36.1	6.9	3.6	1.2	52.2
55 to 64 years	35.0	2.1	0.5	0.2	62.2
65 years and over	41.3	0.1	0.7	0.0	57.8

## Workforce renewal in health occupations

**Table 1**  
**Composition of employment of selected health occupations, by age group, and immigrant status and period of immigration, 2021**

Selected health occupations by age group	Immigrants admitted before 2011	Immigrants admitted between 2011 to 2015	Immigrants admitted between 2016 to 2021 percent	Non-permanent residents	Non-immigrants
<b>Registered nurses and registered psychiatric nurses and nurse practitioners</b>					
<b>Total</b>	<b>19.3</b>	<b>4.4</b>	<b>2.0</b>	<b>0.9</b>	<b>73.3</b>
25 to 34 years	11.9	3.8	3.9	1.8	78.6
35 to 44 years	18.4	8.6	2.6	0.7	69.8
45 to 54 years	29.2	3.9	0.7	0.3	66.0
55 to 64 years	23.6	1.0	0.3	0.1	75.1
65 years and over	25.1	0.2	0.0	0.1	74.5
<b>Licensed practical nurses</b>					
<b>Total</b>	<b>20.9</b>	<b>7.2</b>	<b>3.6</b>	<b>1.0</b>	<b>67.4</b>
less than 25 years	8.5	5.6	2.6	3.4	80.0
25 to 34 years	11.2	7.0	6.6	1.7	73.3
35 to 44 years	19.2	11.4	4.4	0.7	64.3
45 to 54 years	32.7	6.4	1.2	0.3	59.3
55 to 64 years	29.8	1.7	0.2	0.1	68.2
65 years and over	28.9	0.0	0.0	0.0	70.2
<b>Nurse aides, orderlies and patient service associates</b>					
<b>Total</b>	<b>23.6</b>	<b>8.8</b>	<b>7.2</b>	<b>5.2</b>	<b>55.2</b>
less than 25 years	5.7	4.0	3.9	6.0	80.4
25 to 34 years	8.7	7.9	13.0	10.8	59.6
35 to 44 years	19.3	14.9	12.1	7.7	46.0
45 to 54 years	32.3	11.0	5.5	3.0	48.1
55 to 64 years	36.6	4.1	1.6	0.8	56.9
65 years and over	42.6	2.3	1.0	0.4	53.7

**Note:** Selected health occupations were coded using the National Occupational Classification (NOC) 2021 and include the following codes: specialists in clinical and laboratory medicine (NOC 31100) and specialists in surgery (NOC 31101); general practitioners and family physicians (NOC 31102); registered nurses and registered psychiatric nurses (NOC 31301) and nurse practitioners (NOC 31302); licensed practical nurses (NOC 32101); nurse aides, orderlies and patient service associates (NOC 33102).

**Source:** Statistics Canada, Census of population, 2021.

one-quarter (23.8%) of nurse aides, orderlies and patient service associates aged 25 to 34.

Recent immigrants who were nurse aides, orderlies and patient service associates often had qualifications acquired abroad which were much higher than those typically required for the occupation. For example, in 2021, nearly half of this group (47.1%) had a bachelor's degree or a higher level of education (Chart 6-A; Chart 6-B). This included just under one-quarter (24.6%) who had a degree acquired abroad in a health-

related field. In contrast, only 6.3% of workers in this occupation and who were born in Canada had a bachelor's degree or a higher level of education.<sup>23</sup>

This highlights the barriers immigrants can face, particularly those with foreign credentials, when looking to apply their skills in Canada. For many new immigrants, the occupation of nurse aide, orderlies or patient service associate is an entry point for work in the health care system, even for those with qualifications significantly above

those required for the job, with a small proportion of them intending to work in the occupation upon admission.<sup>24</sup>

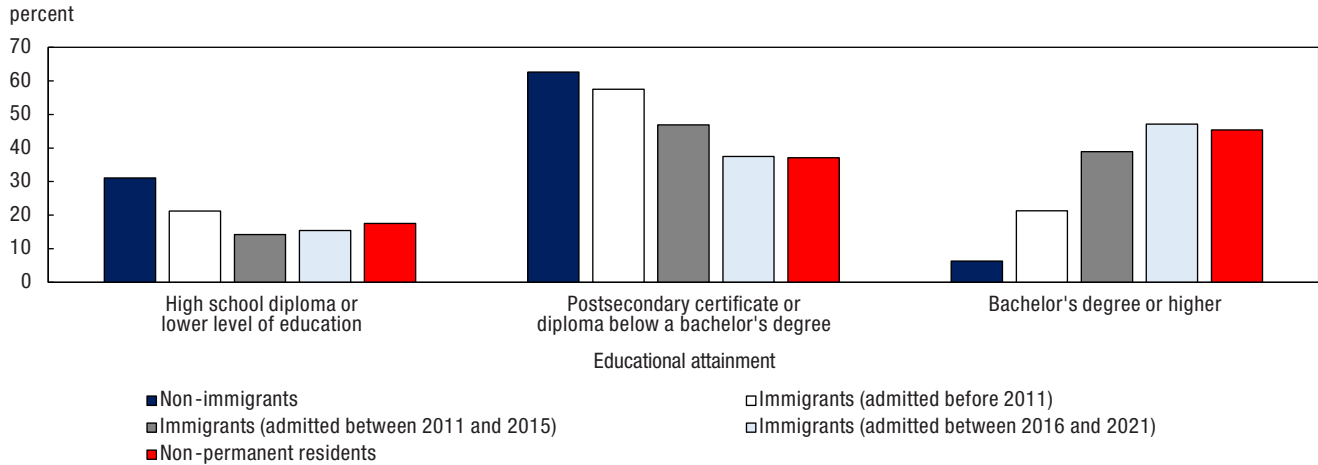
### **Recent immigrants in nursing more likely to work as licensed practical nurses, despite higher educational attainment**

Young recent immigrants were also more likely to work as licensed practical nurses than as registered nurses, despite the renewal ratio being lower for registered

## Workforce renewal in health occupations

**Chart 6-A**

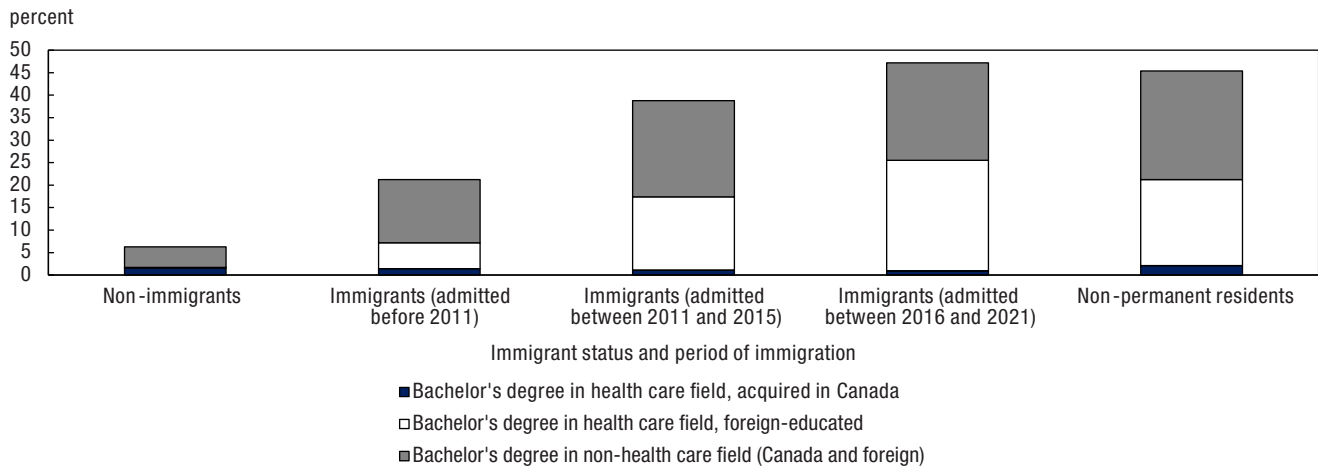
**Educational attainment of nurse aides, orderlies and patient service associates, by immigrant status and period of immigration, 2021**



**Note:** Based on the National Occupational Classification (NOC) 2021 and includes the following code: nurse aides, orderlies and patient service associates (NOC 33102).  
**Source:** Statistics Canada, Census of Population, 2021.

**Chart 6-B**

**Percentage of nurse aides, orderlies and patient service associates with a bachelor's degree or higher, by immigrant status, period of immigration, location of study and field of study, 2021**



**Note:** Based on the National Occupational Classification (NOC) 2021 and includes the following code: nurse aides, orderlies and patient service associates (NOC 33102).  
**Source:** Statistics Canada, Census of Population, 2021.

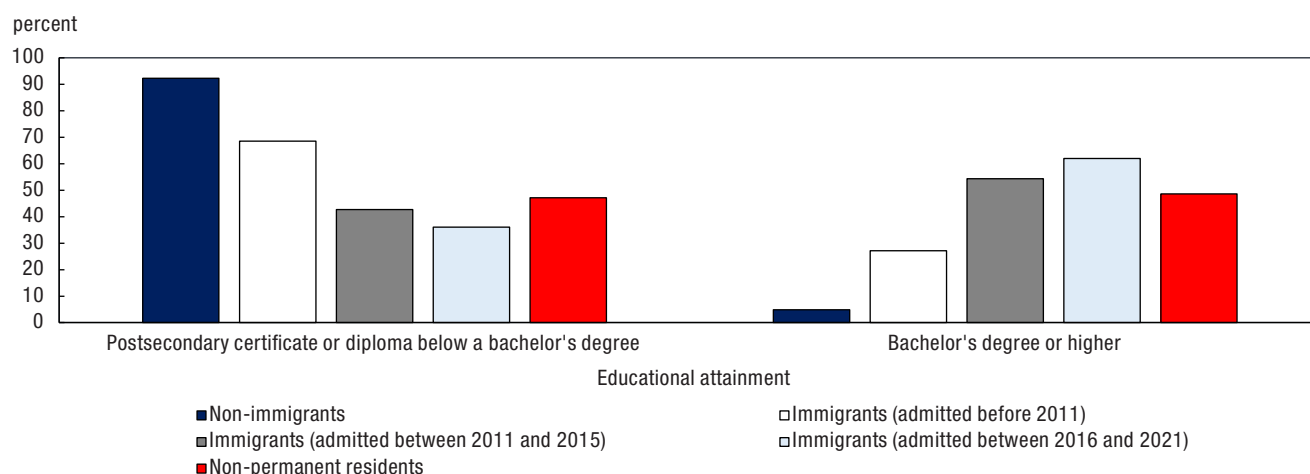
## Workforce renewal in health occupations

nurses (1.9) than for licensed practical nurses (2.2). In 2021, 6.6% of licensed practical nurses aged 25 to 34 were recent immigrants, while for registered nurses, the proportion was 3.9%.<sup>25</sup>

The majority (62.0%) of recent immigrants who worked as licensed practical nurses had a bachelor's degree or a higher level of education, including about half (49.0%) who had a degree acquired abroad in a health-related field (Chart 7-A; Chart 7-B).

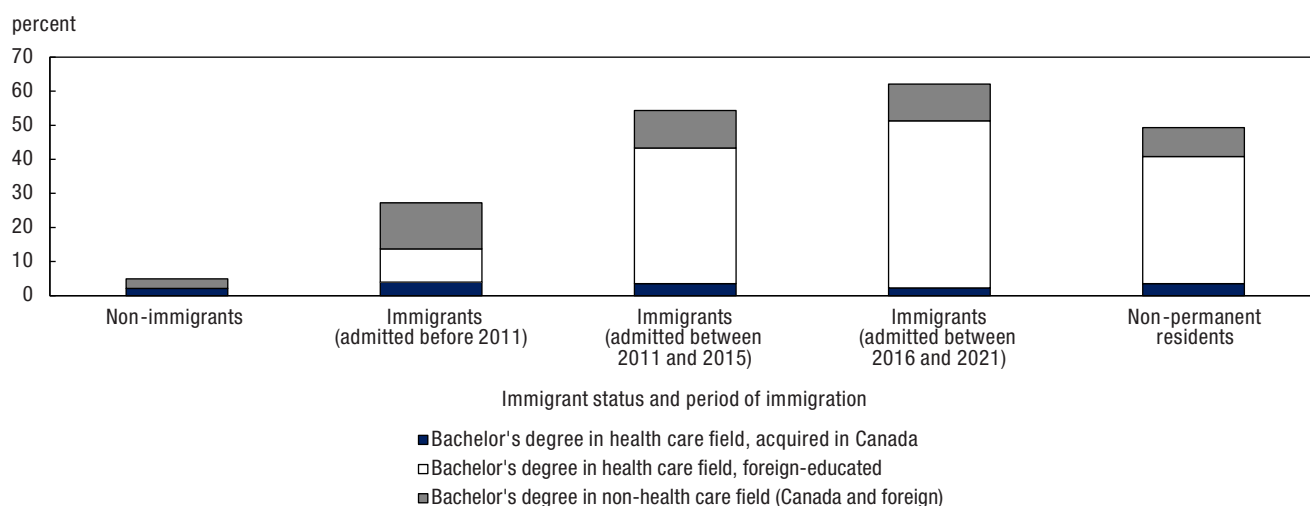
This level of education is usually not required of licensed practical nurses, who usually work under the direction of registered nurses and medical practitioners. In this context, the results again suggest a high prevalence of overqualification

**Chart 7-A**  
Educational attainment of licensed practical nurses, by immigrant status and period of immigration, 2021



**Note:** Based on the National Occupational Classification (NOC) 2021 and includes the following code: licensed practical nurses (NOC 32101).  
**Source:** Statistics Canada, Census of Population, 2021.

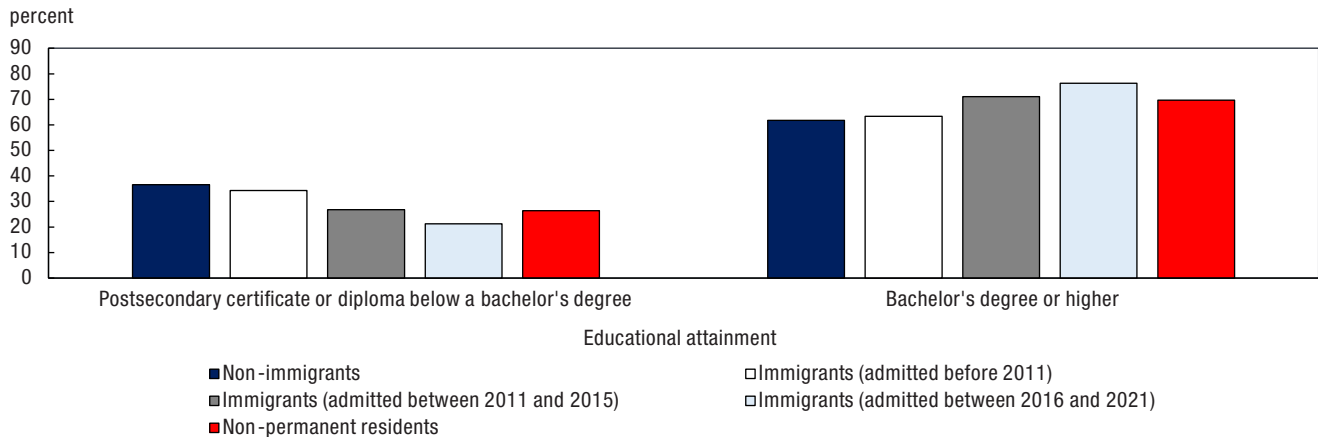
**Chart 7-B**  
Percentage of licensed practical nurses with a bachelor's degree or higher, by immigrant status, period of immigration, location of study and field of study, 2021



**Note:** Based on the National Occupational Classification (NOC) 2021 and includes the following code: licensed practical nurses (NOC 32101).  
**Source:** Statistics Canada, Census of Population, 2021.

**Chart 8**

### Educational attainment of registered nurses, registered psychiatric nurses and nurse practitioners, by immigrant status and period of immigration, 2021



**Note:** Based on the National Occupational Classification (NOC) 2021 and includes the following codes: registered nurses and registered psychiatric nurses (NOC 31301) and nurse practitioners (NOC 31302).

**Source:** Statistics Canada, Census of Population, 2021.

for this group and highlight potential barriers to attaining equivalent licensure.

Indeed, the educational attainment profile of recent immigrants who worked as licensed practical nurses was largely similar to that of registered nurses born in Canada, with similar shares of each group holding a bachelor's degree or a higher level of education (61.8% of registered nurses born in Canada versus 62.0% of licensed practical nurses who were recent immigrants) (Chart 8).

These results are consistent with previously reported findings from the 2021 Census, which highlighted the high rates of job mismatch among immigrants with foreign degrees in a health-related field, including in nursing. In 2021, over one-third (36.5%) of immigrants with a foreign bachelor's degree in nursing worked as registered nurses or in closely related occupations such as nurse practitioners. In comparison, close

to 9 in 10 (87.4%) workers with a Canadian nursing degree worked as registered nurses.<sup>26</sup>

### Non-permanent residents comprise a notable share of young medical specialists

Non-permanent residents enumerated in the 2021 Census comprised a notable share of young medical specialists and have thus contributed to increasing the renewal ratio for this occupation. In 2021, they accounted for 8.6% of medical specialists aged 25 to 34, and 5.7% of those aged 35 to 44. In comparison, the shares of recent immigrants among medical specialists aged 25 to 34 (2.2%) and 35 to 44 (5.0%) were smaller.

Young medical specialists who were immigrants tended to be more established. In 2021, 18.7% of medical specialists aged 25 to 34 and 17.9% of those aged 35 to 44 were immigrants who had been admitted more than 10 years earlier.

Compared with medical specialists, general practitioners and family physicians aged 25 to 34 were more likely to be born in Canada. In 2021, non-permanent residents (2.6%) and recent immigrants (2.0%) accounted for relatively small shares of general practitioners and family physicians aged 25 to 34.

### Conclusion

Employment growth in health occupations has remained relatively high in recent years and has outpaced growth across all occupations. Workforce renewal ratios in health occupations were generally higher than in other occupations. For most health occupations, the number of younger workers entering the workforce was larger than the number approaching retirement age.

There were, however, differences across detailed occupations within the health workforce. In particular, the renewal ratio among nurse aides, orderlies and patient service

## Workforce renewal in health occupations

associates was below 1.0, meaning that there were fewer younger workers in this occupation relative to older workers approaching retirement age.

Recent immigrants and non-permanent residents represented a relatively large share of young nurse aides, orderlies and patient service associates; however, they often had qualifications well above those typically required for the occupation. This reflects the significant barriers immigrants can face, particularly

those with foreign credentials, to using their skills in Canada, as highlighted in previous research.

Vacancies in health occupations have been elevated in recent years, and significant proportions of Canadians report having unmet health care needs.<sup>27</sup> With projected growing needs for care in the context of a growing and aging population, the health care system may need to expand beyond replacing retiring workers. The results presented in this study highlight the central role of

new immigrants and non-permanent residents aged 25 to 34 years old in the supply of young health workers, including in direct care roles, and in ensuring workforce renewal and growth. At the same time, the results also highlight persistent issues around over-qualification and labour under-utilization observed among immigrant workers.

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**André Bernard** is an Assistant Director and **Yasmina Seddiki** is an analyst with the Centre for Labour Market Information at Statistics Canada.

### Data sources

The analysis presented in the article are based on data from the [Labour Force Survey](#) (LFS) and the 2021 Census of Population.

The LFS is a monthly household survey conducted by Statistics Canada. Recently, the LFS monthly sample has included over 65,000 households, resulting in labour data for well over 100,000 individuals. The target population of the LFS includes all persons aged 15 years and older whose usual place of residence is in Canada, with some exclusions.<sup>28</sup>

In this study, indicators from the LFS are based on annual averages of the monthly LFS data.

The [Census of Population](#) is conducted every five years and provides a detailed and comprehensive statistical portrait

of Canada. The Census long-form questionnaire, which is administered to a sample of 25% of the Canadian population, includes questions on respondents' labour force status and occupation during the week preceding the census, or during the previous year.

Occupational data in this study are based on the [National Occupational Classification \(NOC\) 2021](#). The NOC has been developed and maintained as part of a collaborative partnership between Employment and Social Development Canada and Statistics Canada. The NOC 2021 is the result of an extensive revision from the NOC 2016.

## Workforce renewal in health occupations

### Appendix

**Table A.1**  
**Number of workers in professional occupations in health, by age group, and renewal ratios, 2021**

Professional occupations in health based on the National Occupational Classification (NOC) 2021	Age group						Renewal ratio
	Total	less than 25 years	25 to 34 years	35 to 54 years	55 to 64 years	65 years and over	
	number						
Specialists in clinical and laboratory medicine (NOC 31100)	36,115	65	7,700	18,660	5,880	3,810	1.3
Specialists in surgery (NOC 31101)	10,670	15	2,200	5,400	1,850	1,195	1.2
General practitioners and family physicians (NOC 31102)	60,410	360	16,195	26,255	10,920	6,675	1.5
Veterinarians (NOC 31103)	11,385	50	2,890	5,605	2,095	750	1.4
Dentists (NOC 31110)	23,135	50	4,735	11,455	4,790	2,105	1.0
Optometrists (NOC 31111)	6,705	20	1,735	3,510	1,030	415	1.7
Audiologists and speech-language pathologists (NOC 31112)	12,275	155	4,135	6,340	1,400	250	3.0
Pharmacists (NOC 31120)	42,085	690	13,305	21,405	5,215	1,470	2.6
Dietitians and nutritionists (NOC 31121)	11,190	340	3,975	5,255	1,330	290	3.0
Psychologists (NOC 31200)	19,535	120	3,495	9,930	3,395	2,600	1.0
Chiropractors (NOC 31201)	9,390	10	2,230	5,170	1,330	645	1.7
Physiotherapists (NOC 31202)	26,610	315	9,220	13,515	3,010	555	3.1
Occupational therapists (NOC 31203)	17,700	350	6,480	9,070	1,585	220	4.1
Kinesiologists and other professional occupations in therapy and assessment (NOC 31204)	10,350	1,210	4,510	3,795	760	85	5.9
Other professional occupations in health diagnosing and treating (NOC 31209)	7,190	25	1,820	3,945	1,010	390	1.8
Nursing coordinators and supervisors (NOC 31300)	13,960	165	2,655	7,935	2,735	485	1.0
Registered nurses and registered psychiatric nurses (NOC 31301)	319,765	17,310	95,270	147,505	48,660	11,005	2.0
Nurse practitioners (NOC 31302)	6,500	25	1,450	3,885	975	165	1.5
Physician assistants, midwives and allied health professionals (NOC 31303)	2,905	95	1,045	1,425	300	50	3.5

Source: Statistics Canada, Census of Population, 2021.

**Table A.2**  
**Number of workers in technical occupations in health, by age group, and renewal ratios, 2021**

Technical occupations in health based on the National Occupational Classification (NOC) 2021	Age group						Renewal ratio
	Total	less than 25 years	25 to 34 years	35 to 54 years	55 to 64 years	65 years and over	
	number						
Opticians (NOC 32100)	9,365	640	2,375	4,110	1,720	515	1.4
Licensed practical nurses (NOC 32101)	72,735	3,820	21,645	35,875	9,825	1,575	2.2
Paramedical occupations (NOC 32102)	29,985	2,800	10,510	13,635	2,665	375	3.9
Respiratory therapists, clinical perfusionists and cardiopulmonary technologists (NOC 32103)	13,065	610	4,180	6,630	1,435	215	2.9
Animal health technologists and veterinary technicians (NOC 32104)	20,355	5,115	8,110	6,125	890	115	9.1
Other technical occupations in therapy and assessment (NOC 32109)	17,225	2,305	5,490	7,265	1,865	305	2.9
Denturists (NOC 32110)	2,525	75	440	1,140	565	300	0.8
Dental hygienists and dental therapists (NOC 32111)	27,200	1,700	8,365	13,545	3,250	340	2.6
Dental technologists and technicians (NOC 32112)	4,955	160	755	2,460	1,240	340	0.6
Medical laboratory technologists (NOC 32120)	19,570	895	5,345	9,210	3,430	680	1.6
Medical radiation technologists (NOC 32121)	19,515	1,335	6,270	9,110	2,440	365	2.6
Medical sonographers (NOC 32122)	6,505	250	2,030	2,915	1,120	190	1.8
Cardiology technologists and electrophysiological diagnostic technologists (NOC 32123)	3,005	185	885	1,375	465	95	1.9
Pharmacy technicians (NOC 32124)	25,660	4,540	6,470	11,465	2,850	335	2.3
Other medical technologists and technicians (NOC 32129)	4,890	345	1,450	2,065	890	145	1.6
Traditional Chinese medicine practitioners and acupuncturists (NOC 32200)	4,795	10	545	2,600	1,155	485	0.5
Massage therapists (NOC 32201)	38,540	1,660	10,000	20,700	4,820	1,355	2.1
Other practitioners of natural healing (NOC 32209)	4,690	50	605	2,295	1,260	485	0.5

Source: Statistics Canada, Census of Population, 2021.



### Notes

1. See Statistics Canada, 2022a.
2. Based on the M3: medium-growth scenario. See Statistics Canada, 2025.
3. See Statistics Canada, 2022a.
4. See Statistics Canada, 2022b.
5. See Canadian Institute for Health Information, 2024a.
6. See Canadian Institute for Health Information, 2024b.
7. See Liu et al., 2017.
8. See Murphy et al., 2012.
9. See Health Canada, 2025.
10. See OECD, 2025.
11. Health occupations are based on the National Occupational Classification (NOC) 2021 and include occupations concerned with providing health care services directly to patients (professional and technical occupations in health) and with providing support to health services. The occupational category also includes specialized middle management occupations in health care (or managers in health care), who organize, direct, control and evaluate the delivery of health care services. For more information please consult: [NOC 2021 Version 1.0 - 3 - Health occupations - Broad Category](#).
12. These figures refer to all workers within the [health occupations](#) major group, from the National Occupational Classification 2021.
13. Included in this group are registered nurses and registered psychiatric nurses (NOC 31301), nurse practitioners (NOC 31302) and licensed practical nurses (NOC 32101).
14. Included in this group are specialists in clinical and laboratory medicine (NOC 31100), specialists in surgery (NOC 31101) and general practitioners and family physicians (NOC 31102).
15. See Ouellet-Léveillé and Milan, 2019.
16. See Canadian Institute for Health Information, 2024a.
17. See Hou and Schimmele, 2020.
18. Other measures can also be used to examine the age composition of an occupation, including the occupational replacement ratio. It is defined as the ratio, for a given occupation or for the entire workforce, of the number of workers aged 15 to 54 to the number of workers aged 55 and older. Replacement ratios highlight the dependency of a workforce on mature workers, without emphasizing the relative size of the workforce at younger ages and entering the workforce. For more information about this measure, see Adkins-Hackett and Fraikin (2024).
19. To facilitate the presentation of the results, some occupations were combined (i.e., specialists in clinical and laboratory medicine and specialists in surgery; registered nurses and registered psychiatric nurses, and nurse practitioners).
20. In this study, the health workforce is defined as workers within the “health occupations” major group, based on the National Occupational Classification 2021. It should be noted that there are other occupations, outside of the health occupations major group, which may be of relevance for further analysis. For example, the occupation of home support workers, caregivers and related occupations (NOC 44101), within the major group “occupations in education, law and social, community and government services”, may become increasingly important in the context of an aging population.
21. Statistics on the age profile and renewal ratios of all health occupations are presented in the appendix.
22. Despite best efforts to obtain comprehensive counts when conducting a census in a country as large and diverse as Canada, undercounting of some demographic groups may occur, especially for more mobile and precarious populations like non-permanent residents (NPRs). Coverage studies are conducted after each census to help estimate the undercoverage of NPRs. For more information on NPRs enumerated in the 2021 Census, see Tuey and Bastien (2023).
23. Elevated shares of immigrant nurse aides, orderlies and patient service associates had health-related degrees acquired abroad, even among more established immigrants. For example, about 4 in 10 (38.9%) immigrants who had become permanent residents between 5 and 10 years earlier in this occupation had a bachelor’s degree or a higher level of education, including 16.3% who had a degree acquired abroad in a health-related field.

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24. See Cornelissen, 2021.
25. Relatively small shares of non-permanent residents were working as licensed practical nurses and registered nurses at the time of the 2021 Census.
26. See Statistics Canada, 2022c.
27. For more information on unmet health care needs, see Statistics Canada, 2023.
28. Persons living on reserves, full-time members of the regular Armed Forces and persons living in institutions (for example, inmates of penal institutions and patients in hospitals or nursing homes) are excluded from the survey target population. These groups together represent an exclusion of approximately 2% of the population aged 15 and over.

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