



Characteristics and Labour Market Outcomes of Internationally Educated Health Care Professionals in Canada

Kristyn Frank, Jungwee Park,
Patrick Cyr, Susan Weston
and Feng Hou



Health
Canada

Santé
Canada

Canada 

Health Canada is the federal department responsible for helping the people of Canada maintain and improve their health. Health Canada is committed to improving the lives of all of Canada's people and to making this country's population among the healthiest in the world as measured by longevity, lifestyle and effective use of the public health care system.

Également disponible en français sous le titre :
Caractéristiques et perspectives du marché du travail pour les professionnels de la santé formés à l'étranger au Canada

To obtain additional information, please contact:

Health Canada

Address Locator 0900C2

Ottawa, ON K1A 0K9

Tel.: 613-957-2991

Toll free: 1-866-225-0709

Fax: 613-941-5366

TTY: 1-800-465-7735

E-mail: publications-publications@hc-sc.gc.ca

© His Majesty the King in Right of Canada, as represented by the Minister of Health, 2023

Publication date: September 2023

This publication may be reproduced for personal or internal use only without permission provided the source is fully acknowledged.

Cat.: H22-4/35-2023E-PDF

ISBN: 978-0-660-67821-4

Pub.: 230381

ACKNOWLEDGEMENTS

Kristyn Frank and Jungwee Park are with the Health Analysis Division at Statistics Canada
Patrick Cyr and Susan Weston are with Health Care Programs and Policy Directorate at Health Canada

Feng Hou is with the Social Analysis and Modelling Division at Statistics Canada

The authors would like to thank the following reviewers for their helpful comments on this paper: Caroline Ewen and Joan Atlin from World Education Services, Thy Dinh, Kisalaya Basu, Olesya Levina, and Olena Schell from Health Canada, and Dafna Kohen and Li Xue from Statistics Canada.



TABLE OF CONTENTS

EXECUTIVE SUMMARY	2
INTRODUCTION	4
BACKGROUND	6
RESEARCH QUESTIONS	9
DATA AND METHODS	10
Data source and sample	10
Measures	11
Analytical approach	14
RESULTS	16
Estimated population counts of IEHPs in Canada.....	16
Distribution of IEHPs across educational and sociodemographic characteristics	16
Labour market outcomes of IEHPs in Canada	24
Employment of IEHPs in health occupations	31
Multivariate analyses.....	36
DISCUSSION	48
CONCLUSION	54
REFERENCES	55



EXECUTIVE SUMMARY

Using the 2021 Canadian Census of Population, this study provides new information on the demographic profile and labour market outcomes of immigrants who are internationally educated health care professionals (IEHPs) in Canada. Labour market outcomes are presented by detailed sociodemographic characteristics.

There were an estimated 259,695 IEHPs aged 18 to 64 residing in Canada in 2021. They accounted for 13% of all Canadians in the same age group with postsecondary education in a health field (excluding non-permanent residents). Most IEHPs were found in Ontario (116,310), followed by British Columbia (45,235), Alberta (42,035), and Quebec (30,595).

One-third (33%) of IEHPs had studied nursing and 15.2% reported studying medicine. Pharmacy (8%) and dentistry (8%) were also among the top fields of study. Lower proportions of IEHPs reported fields of study related to laboratory and diagnostics (3%), personal support work (2%), and therapeutic services (1%). Over one-third of IEHPs had a bachelor's degree, and about 2 in 10 had a degree in medicine, dentistry, or optometry. The majority of IEHPs received their education in Asia, while just over 1 in 10 studied in an English-speaking Western country.

About 7 in 10 of IEHPs were women and most were under the age of 50. Nearly one-third of IEHPs had recently arrived in Canada (between 2016 and 2021) and the majority entered Canada under either the Federal Skilled Worker (FSW) or provincial programs. Most IEHPs were able to speak at least one of Canada's official languages, with the majority reporting another mother tongue, but proficiency in English.

Overall, 76% of IEHPs in Canada were employed in 2021. Among the employed, nearly 6 in 10 worked in health occupations. Newfoundland and Labrador had the highest proportion of IEHPs working in health occupations (74%), while more than 6 in 10 IEHPs in Prince Edward Island, Nova Scotia, and Saskatchewan were also employed in health occupations.

The labour market outcomes of IEHPs varied by field of study. The employment rate ranged from 79% to 81% among IEHPs who studied pharmacy, laboratory and diagnostics, nursing, or therapeutic services, compared with 73% among those who studied medicine and 72% among those who studied dentistry. Among IEHPs who were employed, those who had studied nursing had the highest proportion (69%) working in health occupations, followed by those studied medicine (67%). Across the other major fields of study, 63% of IEHPs who studied pharmacy and 60% who studied dentistry were employed in health occupations. Employed IEHPs who studied medicine had the highest average annual earnings (\$89,800), followed by those who studied pharmacy (\$64,300), therapeutic services (\$58,350), and nursing (\$56,500).

The educational level and region of education mattered to the employment outcomes of IEHPs. IEHPs whose highest educational credential was a bachelor's degree had the highest employment rate (81%) followed by 79% of those with a graduate degree (not in medicine, dentistry, or optometry) and 73% of those with a degree in medicine, dentistry, or optometry. Employed IEHPs with a degree in medicine, dentistry, or optometry were more likely to be employed in professional health occupations. IEHPs who were educated in Asia were less likely to obtain employment in a health occupation than those who were educated in most other regions. Also, IEHPs who had studied in English-speaking Western countries or French-speaking European countries had higher earnings than those educated in Asia.

Sociodemographic characteristics were associated with different labour market outcomes of IEHPs. While men were less likely than women to be employed in a health occupation, they were more likely to be employed in managerial or professional health occupations. Women were more likely than men to work in technical or lower-skilled health occupations. Among employed IEHPs, men earned more than women, even when accounting for the differences in the type of health occupation they held. IEHPs in most racialized groups were less likely to work in professional health occupations compared with non-racialized, non-Indigenous IEHPs. Language also mattered to employment outcomes of IEHPs—those whose mother tongue was a non-official language and who did not speak English or French were least likely to obtain employment in a health occupation.

Recency of immigration and immigration class were also important factors differentiating the labour market outcomes of IEHPs. Recent IEHPs who arrived in Canada between 2016 and 2021 had lower employment rates and higher unemployment rates and were also less likely to obtain employment in a health occupation, especially in professional health occupations. As a result, recently arrived IEHPs had the largest earnings gap with immigrants who arrived earlier. IEHPs who immigrated under the family class, or refugee or humanitarian classes were less likely to obtain employment in a health occupation, more likely to obtain employment in lower-skilled health occupations, and earned less than their counterparts who immigrated under the Federal Skilled Worker or provincial programs.

In conclusion, IEHPs are a diverse population with variations in their characteristics, such as fields of study, educational attainment, time of arrival in Canada, and official language proficiency, which were associated with different labour market outcomes. Findings from this study can help inform policymakers about the degree to which IEHPs are not using their skills and educational training in the health sector and which groups of IEHPs may be experiencing greater barriers to entering health occupations in Canada. The results will also be of importance to IEHPs themselves, as well as to employers of health care professionals.



INTRODUCTION

Immigrants who received their educational training outside of Canada have had a long history of contributing to the country's labour force. However, many internationally educated immigrants encounter barriers to entering their chosen professions or fields in Canada, such as difficulties having their international credentials and work experience recognized by employers. This is particularly true for those seeking employment in regulated professions in the health care sector such as physicians, nurses, and dentists. The underutilization of internationally trained health workers is associated with the deskilling of these workers which can lead to a loss of their skills and previously held occupational status as well as underemployment in more precarious jobs (Bauder, 2003; Grez, Gamboa, and Purewal, 2023).

Labour shortages in health care professions have been a concern across many Canadian jurisdictions and have intensified during the COVID-19 pandemic. To respond to these shortages, the Government of Canada announced investments towards initiatives that aim to remove barriers for internationally educated health care professionals (IEHPs), support IEHPs with obtaining Canadian work experience, and enable labour mobility of IEHPs and other health care professionals across jurisdictions (ESDC, 2022). Citing “acute shortages” of health care professionals such as physicians, nurses, paramedics, and medical laboratory technicians (ESDC, 2022), these investments are intended to facilitate immigrants with skills and qualifications in health care to enter the professions in which they were trained when they are in Canada.

The provinces and territories also play an important role in the integration of IEHPs into health care occupations. First, the provinces and territories have the authority¹ to set requirements for certification or licensure of a regulated health occupation, or minimum educational and training standards in the case of non-regulated health professions (i.e., personal support workers), including credential recognition for IEHPs (ESDC, 2023). Second, Canada's provinces and territories have implemented various training and licensing initiatives to ease the barriers experienced by IEHPs and health professionals from other jurisdictions in Canada trying to enter health care occupations (Government of Saskatchewan, 2022; World Employment Services, 2023). Recruitment programs streamlining the process for entering certain health care professions, such as nursing, have been implemented by several provinces, and many also offer programs that facilitate IEHPs in navigating the assessment and licensing processes. For example, New Brunswick has the “Internationally Educated Nurses (IEN) navigation service” for nurses and has extended this program to support IEHPs in other health care professions

¹ The authority is often delegated to a regulatory authority of the respective health profession in that jurisdiction.

(Government of New Brunswick, n.d.). Provincial governments also provide financial supports for IEHPs such as bursaries and tuition support and many have provided funding to expand the number of seats in training and bridging programs for IEHPs. Regulatory reforms, such as the creation of new classes of licensing that are inclusive of IEHPs, have also been implemented in provinces such as British Columbia, Newfoundland and Labrador, and Ontario (World Education Services, 2023).

While previous research has examined the employment of IEHPs in Canada using 2016 census data (Hou and Schimmele, 2020)², information based on more recent data is needed. There is also a need for more detailed information about their characteristics and how different groups of IEHPs may experience greater difficulties entering health occupations than others. Reaching a better understanding of the employment of IEHPs in health fields is valuable for addressing labour shortages in health care and enabling IEHPs to use the skills they bring with them to Canada.

This study first provides recent estimates of the number of IEHPs in Canada by province and territory. Following this, the data are disaggregated to provide more insight into the sociodemographic, educational, and immigration-related characteristics of IEHPs. Results on the labour market outcomes of IEHPs are then presented, which are also disaggregated by various characteristics. Lastly, regression models are estimated to provide greater clarity on the labour market outcomes of IEHPs when accounting for differences in their characteristics. Specifically, these models examine the likelihood of IEHPs being employed in a health occupation, the type of health occupation in which they are employed, and their earnings. Combined, these results will better inform policymakers about the characteristics and labour market outcomes of this group of immigrants, providing more information on the sociodemographic, educational, or immigration-related characteristics that are associated with their employment outcomes in Canada.

² This research examined only those aged 20 to 44 and its findings are not comparable to the current analysis.



BACKGROUND

Internationally educated health care providers (IEHPs) play an important role in Canada's health workforce (Dumont et al., 2008; World Education Services, 2022). Historically, the role of immigrants in Canada's health care system has fluctuated, as immigration policies have responded to perceived shortages or surpluses of health care professionals at different points in time (Dumont et al., 2008). However, IEHPs are now in demand globally and considered critical for addressing Canada's increasing health care needs (Campbell-Page et al., 2013; Covell, Neiterman, and Bourgeault, 2016; Darzi and Evans, 2016; World Education Services, 2022).

Currently, the aging workforce and labour shortages in key health professions are chief concerns in Canada. In particular, the pressures of the COVID-19 pandemic have substantially impacted the health care workforce (Murphy et al., 2022; Tardif et al., 2022; World Education Services, 2022). To better support the Canadian health workforce, questions have been raised regarding the number of IEHPs in Canada and the additional supply of IEHPs that may be needed (Harun and Walton-Roberts, 2022). This increased interest has pointed to an increasing importance of IEHPs in supporting Canada's health care system.

Previous research has found that immigrants educated outside of Canada are largely overqualified for the occupations they hold in Canada, particularly in the initial years after immigration. For example, in 2016 nearly half (47%) of IEHPs between the ages of 20 and 44 in Canada were either not employed or employed in non-health occupations that required no more than a high school diploma (Hou and Schimmele, 2020).³ Additionally, immigrants tend to be over-represented in certain types of health occupations such as nursing and health support occupations (Cornelissen, 2021).

The over-education of qualified health workers not only leads to a loss of their skills but can also result in IEHPs working in more precarious jobs with lower occupational status than their previous positions in health care professions (Bauder, 2003; Grez, Gamboa, and Purewal, 2023). In Ontario, IEHPs were found to be more likely to enter lower-wage occupations and to work outside of the health care sector than their Canadian-born and educated counterparts (Augustine and Commissioner, 2015); often, internationally educated medical graduates report difficulties finding alternative employment in health care (Wang et al., 2023). Among recent

³ Note that the study by Hou and Schimmele (2020) used occupational skill levels based on the 2016 National Occupational Classification (NOC) and their results are not directly comparable to the results of the current study. This is because the current study is based on the new definition of occupational skill levels in the 2021 NOC.

immigrants employed as nurse aides, orderlies, and patient service associates, about 45 percent had at least a bachelor's degree, and over 40 percent had a bachelor's degree in a health-related field of study (Turcotte and Savage, 2020).

Many studies have found that IEHPs in Canada face barriers to obtaining employment in their fields. Numerous policy and programmatic initiatives, particularly at the provincial level, are aiming to address barriers to registration and employment, which underscores the need to have accurate and current data to inform decision-making. One of the key challenges experienced by IEHPs is the registration requirements of provincial regulatory bodies, such as educational or recent practice requirements, some of which can only be obtained in Canada. Additionally, immigrants have reported difficulties having their international credentials or work experience recognized by employers in Canada (e.g., Guo, 2009; Houle and Yssaad, 2010; Walton-Roberts, 2023); this is particularly true for those seeking employment in regulated occupations in the health care sector. Bauder (2003) identified these types of barriers as a means of excluding immigrant workers from higher-status occupations, also referred to as labour segmentation.

Other researchers have noted that certain groups of IEHPs, such as women and racialized groups, are particularly impacted by labour segmentation (Bourgeault, 2013; Walters-Roberts, 2022). Moreover, while the majority of health care workers in Canada were women in 2016, they also accounted for over 8 in 10 adults with a health education whose education was underutilized (Hou and Schimmele, 2020). Among racialized workers with an education in health fields, there was a higher proportion who were either unemployed or not working in a health occupation in 2016 than working in a health occupation (Hou and Schimmele, 2020). Geographic differences in the underutilization of individuals trained in health fields have also been observed, with the highest share residing in Ontario (Hou and Schimmele, 2020). Therefore, a more detailed analysis of differences in the labour market outcomes of IEHPs across different sociodemographic characteristics and in different regions of Canada is needed.

The location of education outside of Canada as well as the shifting source countries of immigrants may also be connected to the difficulties IEHPs experience when trying to obtain employment in their fields in Canada (Girard and Smith, 2013; Hou and Schimmele, 2020). For example, previous research indicates that the process of licensure for physicians may favour graduates from certain Western countries as regulations that are required for some IEHPs, such as exams and service obligations, are waived for physicians from many Western countries (Grez, Gamboa, and Purewal, 2023). While the representation of IEHPs from Western nations such as the United Kingdom has decreased over time, immigrants from other regions of the world, such as India and the Philippines, have increased their importance as sources of health care professionals in Canada (Cornelissen, 2021; Covell et al., 2017; Dumont et al., 2008; Harun and Walton-Roberts, 2022). Other educational factors such as field of study may also play a role in employment outcomes.

For example, about one-third of IEHPs aged 20 to 44 who studied nursing were underutilized (did not work in the field) in 2016, compared to only 12% of IEHPs who studied medicine and 8% who studied pharmacy (Hou and Schimmele, 2020). Therefore, field of study is important to consider when examining the labour market outcomes of IEHPs.

Previous research on IEHPs has examined the employment challenges that certain groups of IEHPs experience either within particular jurisdictions in Canada or specific occupations (Cornelissen, 2021; Harun and Walton-Roberts, 2022; Walton-Roberts, 2023; Wang et al., 2023). While several studies focus on the over-qualification and deskilling experienced by IEHPs in Canada, a key gap is disaggregated data on IEHPs (World Education Services, 2022) which can provide a better understanding of which groups may be at a particular disadvantage in obtaining employment in the health care sector. There is also a need for more up-to-date information on the number of IEHPs in Canada to better inform policymakers on the potential supply of qualified health care workers. Further, more detailed information on the underutilization of skills among IEHPs would contribute to “planning and policy measures necessary to equitably rebuild Canada’s health workforce” (World Education Services, 2022).

This study addresses several of these information gaps. First, it presents estimates of the number of IEHPs in Canada based on the 2021 Census, the most recent census data available. Second, information on the sociodemographic characteristics of IEHPs is provided. Results for several labour market outcomes are also presented across these different characteristics, allowing for more information on which groups of IEHPs may be experiencing greater difficulty obtaining employment in health occupations. Furthermore, the study delves into the types of health occupations held by IEHPs, providing insight into their integration within the health care sector.



RESEARCH QUESTIONS

This study addresses the following research questions:

1. How many IEHPs were estimated to be residing in Canada and the provinces/territories in 2021?
 - What was the representation of IEHPs across key sociodemographic characteristics?
2. What were the general labour market outcomes (employment rates, unemployment rates, annual mean earnings) of IEHPs in Canada and how do they vary across sociodemographic characteristics?
3. What proportion of IEHPs in Canada were employed in health occupations in 2021 and in what types of occupations were they employed (managerial, professional, technical, or lower-skilled)?
4. Were certain sociodemographic characteristics significantly associated with the likelihood of IEHPs being employed in health occupations?
5. Were certain sociodemographic characteristics significantly associated with the type of health occupation in which IEHPs were employed (i.e., managerial, professional, technical, or lower-skilled health occupations)?
6. Were certain sociodemographic and employment characteristics (e.g., employed in health/non-health occupation) associated with higher or lower annual earnings among IEHPs?



DATA AND METHODS

Data source and sample

This study uses the 2021 Canadian Census of Population to examine internationally educated health care professionals (IEHPs) in Canada. The Census of Population is based on a sample of 25% of Canadian households and provides information on a range of sociodemographic, geographic, economic, and labour market characteristics. Of particular interest for the study of IEHPs in Canada are immigration class, age and year of immigration, educational attainment (highest certificate, diploma or degree completed), field of study, and the location of study associated with the highest certificate, diploma, or degree.

Since this study largely focuses on the labour market outcomes of IEHPs, the sample was restricted to individuals who were between the ages of 18 to 64. The decision to set the age limit to 64 was made because age 65 is typically considered retirement age in Canada. Overall, the size of the analytical sample was 63,098, representing 259,695 IEHPs.

For the analysis of employment rates, the sample included all IEHPs aged 18 to 64, and for the analysis of unemployment rates, the sample included all IEHPs aged 18 to 64 who were in the labour force. For the other labour market outcomes examined⁴, the sample was restricted to only those IEHPs aged 18 to 64 who worked during the census reference week (May 2 to May 8, 2021). This is a standard approach to examining labour outcomes as it ensures valid information for outcomes such as earnings at a common reference point and provides comparable results across different groups. Additionally, including only individuals who were employed during the census reference week is preferable when examining recent immigrants as they may report previous jobs held in 2020 or 2021⁵ that were held outside of Canada (Cornelissen, 2023).

⁴ These outcomes include annual earnings, percent working in health/non-health occupations, distribution of IEHPs across different types of health occupations, and regression analyses related to these outcomes.

⁵ Typically, the occupation variable in the census reports the job the respondent held during the census reference week. However, if the person did not work during that week but had worked at some point since January 1, 2020, the information reported relates to the job held the longest during that period. Persons with two or more jobs are asked to report the information for the job at which they worked the most hours.

Measures

In this study, IEHPs were defined as individuals who are, or ever have been, landed immigrants or permanent residents, who held a postsecondary certificate, diploma, or degree in a health field of study, and who received their highest certificate, diploma, or degree outside of Canada. The Canadian-born population who received their highest certificate, diploma, or degree in health in a foreign country were excluded. Non-permanent residents (NPRs) were also excluded from this study as they have different labour market circumstances than permanent residents and might be undercounted in the census data due to their high mobility (Tuey and Bastien, 2023). Therefore, the exclusion of this population may affect the estimation of IEHPs who arrive in Canada through NPR programs.⁶

The census data used the 2021 Classification of Instructional Programs (CIP) to classify fields of study; 66 fields were identified as health fields for this study. Detailed information on the health fields of study can be found in Appendix Table 1.

Select sociodemographic and labour variables were used to further understand the characteristics of IEHPs in Canada. The distributions of IEHPs by sociodemographic characteristics are presented by gender (men+, women+)⁷, age group in 2021 (18–29 years, 30–39 years, 40–49 years, 50–59 years, 60–64 years), age at immigration (24 years or younger, 25–34 years, 35–44 years, 45 years or older), year of immigration (before 2000, 2000–2009, 2010–2015, 2016–2021), immigration admission class (Federal Skilled Worker program, provincial programs such as the Provincial Nominee program, other economic immigrants, family immigrants, refugees or humanitarian class, immigrants who arrived before 1980), language (English mother tongue, French mother tongue, other mother tongue and speaks English, other mother tongue and speaks French, other mother tongue and speaks English and

⁶ There were estimated 35,580 NPRs who were internationally educated health care professionals in the 2021 census, compared with 259,695 immigrant IEHPs. About 73.7% of NPR IEHPs were employed, and their top five occupations were nurse aides, orderlies and patient service associates (18.1%); registered nurses and registered psychiatric nurses (5.8%); specialists in clinical and laboratory medicine (4.2%); home child care providers (4.1%); and general practitioners and family physicians (3.2%). Overall, 44.6% of employed NPR IEHPs worked in health occupations.

⁷ Given that the population that identifies as non-binary is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses provided. In these cases, individuals in the category “non-binary persons” were distributed into the other two gender categories and are denoted by the “+” symbol.

French, other mother tongue and does not speak English or French), and population group⁸ (non-racialized and non-Indigenous, South Asian, Chinese, Black, Filipino, Arab or West Asian, Southeast Asian, Korean or Japanese, other racialized population groups).

Results are also presented by educational characteristics of interest. Education level reflects the highest postsecondary certificate, diploma, or degree received and was divided into the following groups: less than a bachelor's degree; bachelor's degree, graduate degree excluding a degree in medicine, dentistry, or optometry; degree in medicine, dentistry, or optometry. Results for broad fields of study are also presented including the following: medicine and medical fields, nursing, therapeutic services, laboratory/diagnostics, pharmacy, personal support work⁹, and dentistry. Detailed information about the fields of study included for each of these categories can be found in Appendix Table 2. Region of education was also examined and broken into the following categories: English-speaking Western countries (United States, United Kingdom, Australia, New Zealand); French-speaking European countries (France, Belgium, Luxembourg, Switzerland); other European countries; Caribbean, Central, and South America; Africa; and Asia.

Several labour market outcomes of interest are also examined. First, employment and unemployment rates are reported. Employment is presented as the percentage of IEHPs who were in employment during the census reference week (May 2 to May 8, 2021); unemployment is presented as the percentage of IEHPs who were available for work but without employment during the census reference week. Mean annual employment income for IEHPs employed in the census reference week is also reported across sociodemographic characteristics. Annual earnings are based on the calendar year preceding the census year (i.e., 2020).

This study also examines employment in health occupations to get a sense of the extent to which IEHPs are working in jobs related to their educational background. The first measure examines the percentage of IEHPs employed in a health occupation during the census reference week. The health occupations were classified according to the 2021 National Occupational Classification (NOC), including specialized middle management occupations in health care (NOC group 30), professional occupations in health (NOC group 31), technical occupations in health (NOC

⁸ The concept of "population group" is derived directly from the detailed "visible minority" variable in the census. The term "visible minority" comes from the *Employment Equity Act*, which defines visible minorities as "persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour." The terminology used to refer to visible minority groups collectively is "racialized population groups." Note that population group is a unique concept used to identify visible minority groups and is distinct from other measures that may have similar categorizations such as region of education or ethnic origin. Indigenous individuals were excluded from the study as very few immigrants identify as Indigenous.

⁹ Note that the "personal support work" group is associated with the 'health aides/attendants/orderlies' field of study reported on the census.

group 32), and assisting occupations in supporting health services (NOC group 33). A list of all occupations classified as health occupations is presented in Appendix Table 3 at the 5-digit (unit group) level of the NOC. For this measure, all occupations were grouped together and identified as health occupations.

The second measure examines the types of health occupations in which IEHPs were employed during the census reference week. The types of occupations are based on the skill levels required to work in an occupation and were identified using the Training, Education, Experience, and Responsibility (TEER) categories, a new categorization introduced in the 2021 NOC Version 1.0. Health occupations were grouped into the following TEER groups:

- Management occupations: occupations with management responsibilities, including legislators, senior managers, and middle managers.
- Professional occupations: TEER 1
 - Occupations that require completion of a university degree (bachelor’s, master’s, or doctorate) or previous experience and expertise in subject matter knowledge from a related occupation found in TEER 2 (when applicable).
- Technical occupations: TEER 2 and TEER 3 occupations
 - TEER 2: occupations that usually require completion of a postsecondary education program of two to three years at a community college, institute of technology, or CEGEP; or completion of an apprenticeship training program of two to five years; or occupations with supervisory or significant safety responsibilities; or several years of experience in a related occupation from TEER 3 (when applicable).
 - TEER 3: occupations that usually require completion of a postsecondary education program of less than two years at a community college, institute of technology, or CEGEP; or completion of an apprenticeship training program of less than two years; or more than six months of on-the-job training, training courses, or specific work experience, with some secondary school education; or several years of experience in related occupations from TEER 4 (when applicable).
- Lower-skilled occupations: TEER 4 and TEER 5 occupations
 - TEER 4: occupations that usually require completion of secondary school; or several weeks of on-the-job training with some secondary school education; or experience in a related occupation from TEER 5 (when applicable).
 - TEER 5: occupations that usually require a short work demonstration and no formal educational requirements.

These skill level measures can provide a better understanding of the extent of underemployment among IEHPs with a university degree. For example, if a large proportion of IEHPs who have a university-level education or whose field of study is associated with higher levels of education (e.g., medicine) were employed in technical or lower-skilled health occupations, this would be an indication of their underemployment in Canada. In addition to these four types of health occupations, results for non-health occupations are also presented which will provide more information about the occupational attainment of IEHPs in Canada.

Analytical approach

This study addresses the research questions of interest using both descriptive and multivariate analyses. Research questions 1, 2, and 3 employ descriptive statistics to obtain an understanding of the characteristics and key labour market outcomes of IEHPs. Results for the descriptive statistics were estimated using the Generalized Specification system (G-Spec), a program that is designed to produce census tabular outputs. G-Spec has automated confidentiality methods which apply rounding and confidentiality rules to the census data.

Research questions 4, 5, and 6 were addressed through multivariate regression models. The first regression (research question 4) uses logistic regression to examine whether certain sociodemographic, education, and immigration characteristics were associated with the likelihood of IEHPs being employed in a health occupation in Canada in 2021. The independent variables of interest included major field of study, gender, age group, period of immigration, immigration class, highest level of education, language, region of education, population group, and province of residence. The dependent variable for this model is binary, indicating whether an individual was employed in a health occupation (coded as 1) or a non-health occupation (coded as 0) in 2021.

The second regression model (research question 5) examines whether certain sociodemographic, education, and immigration characteristics were significantly associated with the *type* of health occupation in which IEHPs were employed. This model employs the same set of independent variables as the first regression model. However, the analytical approach is a multinomial logit model, which is used to examine employment outcomes across several categories. These categories included health management occupations, professional health occupations, technical health occupations, and lower-skilled health occupations (refer to the *Measures* section for definitions of each occupational group).

For each of these models, the results are presented as marginal effects as they are more easily interpreted than regression coefficients or odds ratios. Marginal effects represent the change in probability when the predictor increases by one (continuous variable) or changes from 0 to 1 (binary variable).

Lastly, the third regression model (research question 6) examines whether certain sociodemographic, education, immigration, and employment characteristics are associated with higher or lower earnings among IEHPs in Canada. Log earnings in 2020 were used as the dependent variable to reduce the impact of cases with very high earnings on the model estimate. Two models were employed to examine this research question. The first (Model 1) included the same set of independent variables included in the previous regression models.¹⁰ The second model (Model 2) determines whether the type of occupations that IEHPs hold is associated with earnings. For this model, the different types of health occupations specified above (management, professional, technical, lower-skilled) were included using non-health occupations as the reference category. The inclusion of the type of occupations in the second model allows for an examination of whether IEHPs in certain types of health occupations earned more or less than those employed in non-health occupations. These models employ ordinary least squares (OLS) regression models, and the coefficients can be interpreted proximately as a percent (when multiplied by 100) change in earnings associated with a unit change in the independent variable (while controlling for the other variables).

In estimating all descriptive statistics and regression models, census sample weights were used.

¹⁰ Note that hours worked was not included in the model because the census data measure for hours worked is based on the census reference week, while earnings are based on the year preceding the census. Since it cannot be assumed that individuals worked the same hours in 2020 and 2021, this variable was not included in the model. Additionally, hours (or weeks) worked may be a voluntary or involuntary choice. If it is an involuntary choice, this would be part of the disadvantage in the economic outcomes of IEHPs.



RESULTS

Estimated population counts of IEHPs in Canada

Overall, there were an estimated 259,695 IEHPs between the ages of 18 and 64 residing in Canada in 2021 (Table 1). They accounted for 13% of all Canadians in the same age group with a postsecondary education in a health field (excluding temporary residents). Ontario had an estimated 116,310 IEHPs, the largest number across all jurisdictions. Following Ontario, British Columbia (45,235), Alberta (42,035), and Quebec (30,595) had the next highest number of IEHPs. Of the remaining provinces, Manitoba had 11,680 IEHPs while Saskatchewan had 7,280. The Atlantic Provinces had lower numbers of IEHPs, from 475 in Prince Edward Island to 3,195 in Nova Scotia. The three territories combined were estimated to have 605 IEHPs in 2021.

Estimated counts of IEHPs by major fields of study are also presented in Table 1. Generally, Ontario had the highest number of IEHPs who studied medicine (19,980) and nursing (32,655), followed by Alberta (5,605 and 16,410, respectively) and British Columbia (5,915 and 15,245, respectively). These provinces also had the highest numbers of IEHPs who studied pharmacy and dentistry fields. Population counts for the number of IEHPs by other sociodemographic characteristics can be found in Appendix Table 4.

Distribution of IEHPs across educational and sociodemographic characteristics

The percentage distribution of IEHPs across four major fields of study (medicine, nursing, pharmacy, and dentistry) is presented in Table 2 and Figure 1. About one-third of IEHPs in Canada had studied nursing (33.0%) and 15.2% reported studying medicine. Just under 1 in 10 IEHPs had studied either pharmacy or dentistry fields (8.3% and 7.8%, respectively). As shown in Table 2, low proportions of IEHPs reported studying fields related to laboratory/diagnostics (3.1%), personal support work (2.3%), and therapeutic services (0.8%), while about 3 in 10 had studied in other health fields.

The distribution of IEHPs across other educational characteristics is presented in Table 2. In Canada, over one-third of IEHPs aged 18 to 64 in Canada had a bachelor's degree (37.6%), while just over 2 in 10 had a degree in medicine, dentistry, or optometry (20.5%). About one-quarter reported having a postsecondary credential below a bachelor's degree (24.7%) and 17.2% had a graduate degree (not in medicine, dentistry, or optometry). Education levels varied across jurisdictions. Notably, over one-third of IEHPs in Newfoundland and Labrador (34.8%) had a degree in medicine, dentistry, or optometry, while New Brunswick (24.0%) and Ontario (23.8%) also had higher proportions of IEHPs with this type of degree compared to Canada overall.

TABLE 1
Estimated population count of IEHPs, total and by major field of study, Canada and provinces and territories, 2021, aged 18 to 64

	Canada	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Territories
Total —All IEHPs	259,695	770	475	3,195	1,520	30,595	116,310	11,680	7,280	42,035	45,235	605
Major field of study												
Medicine/medical field	39,410	235	35	590	305	4,370	19,980	1,180	1,150	5,605	5,915	40
Nursing	85,615	255	240	1,350	480	9,880	32,655	5,505	3,310	16,410	15,245	285
Therapeutic services	1,990	10	0	30	0	190	740	100	45	395	465	10
Laboratory/diagnostic	7,995	30	0	50	30	730	3,750	485	195	1,340	1,355	20
Pharmacy	21,540	30	40	165	95	1,985	11,570	990	505	3,485	2,625	40
Personal support work	5,890	10	10	70	50	1,175	2,300	310	110	895	940	25
Dentistry	20,365	40	20	165	105	2,290	10,535	630	330	2,550	3,670	30
Other health fields	76,890	165	110	780	450	9,975	34,780	2,480	1,630	11,355	15,015	160

Note: Sample size is 63,098. The estimated total population counts for some jurisdictions may differ slightly from the sum of IEHPs by fields of study due to suppression and rounding procedures
Source: Statistics Canada, 2021 Census of Population.

TABLE 2
Distribution of IEHPs by region and educational characteristics, by percentage, Canada and the provinces and territories, 2021, aged 18 to 64

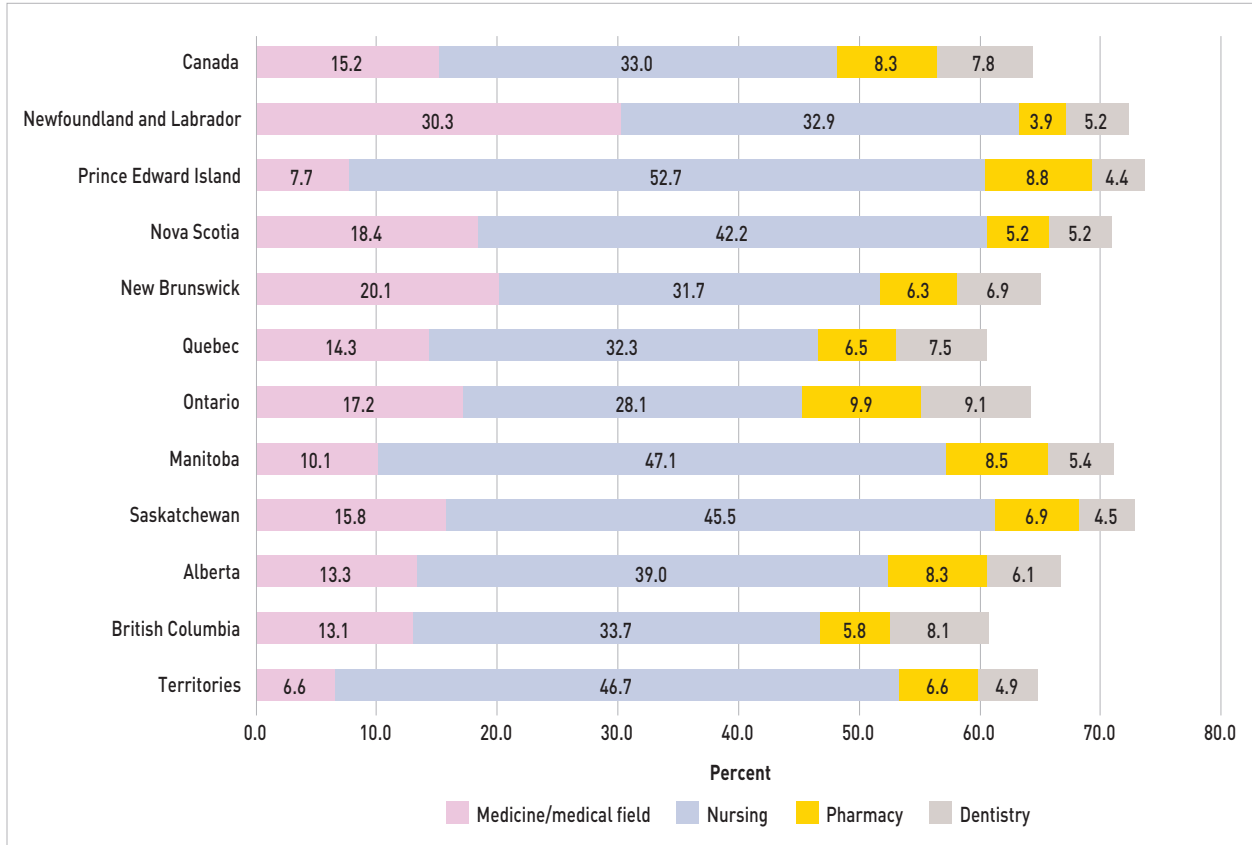
Region of education	Canada	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Territories
English speaking Western countries	11.3	16.7	11.7	15.9	21.3	4.1	12.4	5.7	7.3	10.0	15.9	6.6
French speaking European countries	1.9	1.3	0.0	0.6	4.3	12.7	0.4	0.2	0.0	0.3	0.8	5.8
Other European countries	8.7	5.1	7.4	10.3	10.8	10.9	9.6	6.5	5.4	6.3	8.3	11.6
Caribbean, Central and South America	5.7	7.1	2.1	4.2	5.6	14.2	5.6	2.8	2.4	3.9	3.1	3.3
Africa	9.7	17.3	7.4	10.6	15.1	22.8	7.4	9.6	12.1	11.1	4.7	4.1
Asia	62.7	52.6	71.3	58.4	43.0	35.4	64.6	75.3	72.8	68.3	67.2	68.6
Education level												
Postsecondary below bachelor's degree	24.7	20.0	24.0	21.4	30.6	31.2	22.9	22.6	22.0	23.7	26.8	35.8
Bachelor's degree	37.6	29.7	43.8	39.6	27.6	31.4	34.8	52.2	45.1	44.6	37.7	42.5
Graduate degree (not in medicine)	17.2	15.5	21.9	17.2	17.8	18.5	18.6	11.7	14.2	14.3	17.3	11.7
Degree in medicine, dentistry, or optometry	20.5	34.8	10.4	21.8	24.0	18.9	23.8	13.5	18.7	17.4	18.2	10.0
Fields of study												
Medicine/medical field	15.2	30.3	7.7	18.4	20.1	14.3	17.2	10.1	15.8	13.3	13.1	6.6
Nursing	33.0	32.9	52.7	42.2	31.7	32.3	28.1	47.1	45.5	39.0	33.7	46.7
Therapeutic services	0.8	1.3	0.0	0.9	0.0	0.6	0.6	0.9	0.6	0.9	1.0	1.6
Laboratory/diagnostic	3.1	3.9	0.0	1.6	2.0	2.4	3.2	4.2	2.7	3.2	3.0	3.3
Pharmacy	8.3	3.9	8.8	5.2	6.3	6.5	9.9	8.5	6.9	8.3	5.8	6.6
Personal support work	2.3	1.3	2.2	2.2	3.3	3.8	2.0	2.7	1.5	2.1	2.1	4.1
Dentistry	7.8	5.2	4.4	5.2	6.9	7.5	9.1	5.4	4.5	6.1	8.1	4.9
Other health fields	29.6	21.3	24.2	24.4	29.7	32.6	29.9	21.2	22.4	27.0	33.2	26.2

Note: Sample size is 63,098.

Source: Statistics Canada, 2021 Census of Population.

FIGURE 1

Distribution of IEHPs aged 18 to 64, by four major fields of study (medicine, nursing, pharmacy, and dentistry), Canada and the provinces and territories, 2021



Note: Sample size is 63,098.

Source: Statistics Canada, 2021 Canadian Census of Population.

In contrast, about 1 in 10 IEHPs in Prince Edward Island and the territories had a degree in medicine, dentistry, or optometry. More than half of IEHPs in Manitoba reported a bachelor's degree as their highest degree or diploma, while notable proportions of IEHPs in Saskatchewan and Alberta also had this level of education (45.1% and 44.6%, respectively). The highest proportions of IEHPs who reported a postsecondary credential below the bachelor's level resided in the territories (35.8%), Quebec (31.2%), and New Brunswick (30.6%).

The majority of IEHPs received their highest degree or diploma in Asia (62.7%), while just over 1 in 10 had studied in English-speaking Western countries. Just under 1 in 10 IEHPs received their education in other European countries (8.7%) or Africa (9.7%). Compared to Canada overall, smaller proportions of IEHPs in New Brunswick (43%) and Quebec (35.4%) studied in Asia, while higher proportions of IEHPs in Quebec (22.8%) and Newfoundland and Labrador (17.3%) obtained their highest degree or diploma in Africa. The proportion of IEHPs who studied in an English-speaking Western country was highest in New Brunswick (21.3%) and lowest in Quebec (4.1%). However, Quebec had the highest proportion of IEHPs from French-speaking European countries (12.7%), followed by the territories (5.8%) and New Brunswick (4.3%).

The distribution of IEHPs in Canada across sociodemographic characteristics reveals some interesting results (Table 3). Of note, the majority of IEHPs in Canada aged 18 to 64 were women (71.2%) and just over 3 in 10 were recent immigrants to Canada (32.1%), arriving between 2016 and 2021. Additionally, about two-thirds of IEHPs were under the age of 50 in 2021.

In terms of immigration characteristics, about half of IEHPs immigrated to Canada between the ages of 25 to 34 (49.9%). Over half of IEHPs immigrated under either the Federal Skilled Worker (FSW) program (32.3%) or the Provincial Nominee or Quebec selection programs (20.1%). Just over 2 in 10 arrived as family class immigrants (22.7%). About one-quarter of IEHPs reported either English (22.4%) or French (3.3%) as their mother tongue. The majority, over 7 in 10, reported another mother tongue, but spoke English (65.1%), French (2.3%), or both official languages (5.3%). A small proportion of IEHPs—1.6%—indicated that they had a different mother tongue and did not speak English or French. The largest population groups for IEHPs in Canada were Filipino (25.5%), South Asian (21.8%), non-racialized and non-Indigenous (19.4%), and Arab and West Asian (10.8%). Among population groups, the lowest proportions of IEHPs were Southeast Asian (1.5%) and Korean or Japanese (2.1%).

There were also interesting differences in the profile of IEHPs across provinces and territories. First, while women accounted for the majority of IEHPs across all jurisdictions, there were smaller proportions of IEHP women in Newfoundland and Labrador (61.0%) and New Brunswick (63.3%) compared to other provinces and territories. Additionally, nearly half (47.9%) of IEHPs in Prince Edward Island were between the ages of 30 to 39 in 2021, while more than 4 in 10 IEHPs

TABLE 3
Distribution of IEHPs by selected sociodemographic characteristics, by percentage, Canada and the provinces and territories,
2021, aged 18 to 64

	Canada	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Territories
Gender												
Men+	28.8	39.0	34.0	33.3	36.7	30.6	28.6	29.8	32.3	27.7	27.5	27.9
Women+	71.2	61.0	66.0	66.7	63.3	69.4	71.4	70.2	67.7	72.3	72.5	72.1
Current age												
18-29	6.1	5.9	2.1	7.1	4.9	4.0	6.9	5.2	6.5	6.1	5.8	5.0
30-39	31.1	34.0	47.9	40.1	26.0	32.8	28.8	44.5	42.5	35.0	25.9	38.8
40-49	29.3	28.1	19.8	22.9	30.3	32.9	28.1	27.6	26.6	32.8	28.0	25.6
50-59	24.3	20.3	19.8	21.2	26.6	22.6	25.9	17.5	18.7	19.6	28.7	22.3
60+	9.2	11.8	10.4	8.8	12.2	7.7	10.3	5.2	5.8	6.5	11.6	8.3
Age at immigration												
<=24	15.4	15.5	5.3	10.5	11.5	9.4	17.7	13.1	12.2	13.5	16.7	12.5
25 to 34	49.9	44.5	52.1	52.8	37.2	51.5	49.0	54.8	52.1	52.6	47.3	55.0
35 to 44	26.8	29.0	26.6	26.7	33.9	30.7	25.6	25.3	27.2	26.9	27.2	24.2
45 +	8.0	11.0	16.0	10.0	17.4	8.3	7.7	6.8	8.6	7.0	8.8	8.3
Period of immigration												
2016-2021	32.1	41.9	64.6	51.6	43.0	38.2	29.2	38.3	37.4	36.0	27.0	39.7
2010-2015	24.2	24.5	14.6	18.3	23.0	23.6	21.6	33.0	39.2	29.7	21.9	21.5
2000-2009	26.2	19.4	12.5	17.8	21.0	26.0	28.4	20.8	16.8	22.8	28.0	24.8
Before 2000	17.5	14.2	8.3	12.3	13.1	12.3	20.8	7.9	6.6	11.5	23.2	14.0
Immigration class												
Federal skilled worker program	32.3	32.9	12.8	21.9	17.7	8.3	40.9	14.5	17.9	32.9	34.1	19.3
Provincial programs	20.1	34.2	67.0	43.1	45.9	53.4	7.2	59.1	52.8	17.3	14.6	29.4
Other economic immigrants	17.1	8.4	3.2	8.8	8.9	7.2	18.2	4.6	8.7	22.0	22.2	20.2
Family immigrants	22.7	18.1	13.8	18.3	20.7	21.1	24.1	18.4	17.0	21.8	23.2	26.9
Refugees, humanitarian category	6.4	4.5	0.0	5.9	4.6	9.1	8.1	2.4	3.0	4.8	3.9	4.2
Immigrants arrived before 1980	1.4	1.9	3.2	2.0	2.3	0.9	1.5	1.0	0.5	1.2	2.0	0.0

continued

TABLE 3
Continued

Language	Canada	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Territories
English mother tongue	22.4	34.9	28.4	30.3	32.8	10.9	22.7	20.1	26.0	26.6	24.1	27.5
French mother tongue	3.3	1.3	0.0	1.4	6.6	21.9	0.9	0.5	0.3	0.6	0.6	2.5
Other mother tongue, speaks English	65.1	61.2	65.3	65.4	50.2	17.3	72.3	77.3	71.9	70.2	70.8	65.8
Other mother tongue, speaks French	2.3	0.0	0.0	0.0	2.0	18.8	0.1	0.0	0.1	0.1	0.0	0.0
Other mother tongue, speaks English and French	5.3	2.6	2.1	2.0	7.2	29.9	2.5	1.2	0.8	1.6	1.3	2.5
Other mother tongue, does not speak English or French	1.6	0.0	4.2	0.9	1.3	1.2	1.4	0.9	0.9	0.9	3.1	1.7
Population groups												
Non-racialized, non-Indigenous	19.4	25.3	25.5	26.8	34.0	32.3	17.4	13.3	12.7	14.8	21.4	22.3
South Asian	21.8	20.8	33.0	22.5	11.1	5.3	27.9	21.1	27.4	22.8	15.9	17.4
Chinese	7.2	3.9	9.6	4.1	3.3	4.3	7.5	1.6	2.7	3.7	14.3	0.0
Black	6.3	13.0	2.1	6.1	10.5	13.7	5.1	6.7	7.9	8.4	2.0	8.3
Filipino	25.5	22.1	19.1	21.1	18.3	13.3	20.8	47.7	39.8	36.3	28.2	43.8
Arab and West Asian	10.8	12.3	5.3	11.5	12.1	19.4	13.0	3.8	4.0	5.8	7.2	0.0
Latin American	3.1	0.0	2.1	1.7	2.6	7.7	2.8	1.5	1.5	2.6	2.1	1.7
Southeast Asian	1.5	1.3	0.0	1.6	1.6	1.5	1.3	1.6	1.7	1.6	1.6	1.7
Korean and Japanese	2.1	0.0	0.0	2.0	3.3	0.7	1.7	1.0	0.3	1.8	4.7	1.7
Other racialized population groups	2.3	1.3	3.2	2.7	3.3	1.7	2.4	1.8	1.9	2.1	2.5	3.3

Note: Sample size is 63,098. Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses provided. In these cases, individuals in the category "non-binary persons" are distributed into the other two gender categories and are denoted by the "+" symbol.

Source: Statistics Canada, 2021 Census of Population.

in Manitoba and Saskatchewan were also in this age group. However, British Columbia and New Brunswick had higher shares of IEHPs aged 50 or older than other jurisdictions (40.3% and 38.8%, respectively).¹¹

The results also indicated that Newfoundland and Labrador, Prince Edward Island, and Nova Scotia had higher proportions of recently arrived IEHPs (who immigrated between 2016 and 2021) than other provinces and territories. Prince Edward Island was particularly notable in this respect, with over 6 in 10 of their IEHPs (64.6%) arriving during this period. Lower proportions of IEHPs in Ontario (29.2%) and British Columbia (27.0%) were recent immigrants.

Differences in the immigration class of IEHPs across jurisdictions also indicated that some provinces rely more on the provincial programs (the Provincial Nominee program or Quebec selection) than other immigration programs when admitting IEHPs. The majority of IEHPs residing in Prince Edward Island (67.0%), Quebec (53.4%), Manitoba (59.1%), and Saskatchewan (52.8%) arrived in Canada under provincial programs. In contrast, fewer than 1 in 10 of Ontario's IEHPs arrived through provincial programs, with 40.9% arriving under the FSW program.

Differences in language profiles of IEHPs were also observed across provinces and territories. As expected, the language profile of IEHPs in Quebec differed substantially from other jurisdictions, with a higher proportion reporting French as their mother tongue (21.9%) than IEHPs in other provinces and territories. Nearly 3 in 10 IEHPs residing in Quebec reported that their mother tongue is a non-official language, but that they can speak both English and French (29.9%). Manitoba (77.3%), Ontario (72.3%), and Saskatchewan (71.9%) had the highest proportions of IEHPs whose mother tongue was a non-official language but could speak English.

There were also variations in the distribution of population groups across provinces and territories. While about one-quarter of IEHPs in Canada were Filipino, higher proportions of this population group were represented in Manitoba (47.7%) and the territories (43.8%); only 13.3% of IEHPs in Quebec were Filipino. Across other jurisdictions, South Asian was the most predominant population group in Prince Edward Island (33.0%) and Ontario (27.9%). Non-racialized, non-Indigenous IEHPs were the most often reported population group for New Brunswick (34.0%), Quebec (32.3%), Nova Scotia (26.8%), and Prince Edward Island (25.5%).

¹¹ These percentages were determined by adding the 50–59 and 60+ age groups together.

Labour market outcomes of IEHPs in Canada

Examining the labour market outcomes of IEHPs in Canada is important to better understand their ability to find employment after migration, particularly in health-related occupations. This section provides detailed information on several labour market outcomes by sociodemographic characteristics. General employment information on the employment and unemployment rates of IEHPs is presented in Table 4.

The employment results indicated that, overall, 76.4% of IEHPs in Canada were employed in 2021, while their unemployment rate was 7.8%. In comparison, about 80% of Canadian-educated healthcare professionals¹² (CEHPs) were employed, as observed in the 2021 Census (data not presented in table). Employment outcomes of IEHPs varied by field of study. Although they represented a small proportion of IEHPs overall, individuals who studied therapeutic services fields, such as occupational therapist, physiotherapist, or respiratory therapist programs, had the highest employment rate (80.7%), followed by those who had studied nursing (79.6%), laboratory/diagnostics fields (79.2%) or pharmacy (79.2%). The lowest employment rates were observed for IEHPs whose fields of study were dentistry (72.0%), personal support work (72.1%), and medicine (73.2%). Across fields, the highest unemployment rates were reported for IEHPs who had studied dentistry (9.6%) or medicine (9.3%).

Differences in employment rates were also observed across other educational characteristics. IEHPs whose highest educational credential was a bachelor's degree had the highest employment rate (80.7%) and the lowest unemployment rate (6.3%) compared to other education levels. IEHPs who had a graduate degree, but not in medicine, dentistry, or optometry, also had a higher employment rate (78.8%) than those with a degree in medicine, dentistry, or optometry (73.2%) or a postsecondary education below the bachelor's level (70.9%). The highest unemployment rate was among IEHPs with a degree in medicine, dentistry, or optometry (9.4%).

IEHPs who obtained their education in French-speaking European countries had the highest employment rate (85.4%), followed by IEHPs who had studied in English-speaking Western countries (79.8%). The lowest employment rates were observed for IEHPs who had studied in other European countries (74.7%), Caribbean, Central, or South America (74.9%), or African countries (74.9%).

¹² Includes Canadian-born and immigrant individuals whose highest degree or diploma was received in Canada. NPRs were excluded.

TABLE 4

Employment and unemployment rates of IEHPs aged 18–64 by selected characteristics, Canada, 2021

	Employment rate (%)	Unemployment rate (%)
Overall	76.4	7.8
Gender		
Men+	84.4	6.3
Women+	73.2	8.5
Current age		
18–29	65.8	13.0
30–39	76.2	8.4
40–49	81.9	6.5
50–59	78.1	7.4
60+	62.5	8.2
Age at immigration		
<= 24	74.2	8.2
25 to 34	78.3	7.1
35 to 44	77.0	8.0
45 +	67.1	10.8
Period of immigration		
2016–2021	72.9	10.1
2010–2015	79.4	7.2
2000–2009	79.3	6.5
Before 2000	74.5	6.4
Immigration class		
Federal skilled worker program	77.5	7.4
Provincial programs	80.0	6.5
Other economic immigrants	82.4	6.4
Family immigrants	70.6	9.6
Refugees, humanitarian category	64.9	13.1
Immigrants arrived before 1980	73.2	5.6
Language		
English mother tongue	78.6	7.0
French mother tongue	81.5	6.9
Other mother tongue, speaks English	76.5	7.9
Other mother tongue, speaks French	72.1	7.9
Other mother tongue, speaks English and French	76.1	7.6
Other mother tongue, does not speak English or French	38.0	21.0

continued

TABLE 4
Continued

	Employment rate (%)	Unemployment rate (%)
Population groups		
Non-racialized, non-Indigenous	76.8	6.6
South Asian	75.6	9.1
Chinese	63.4	10.5
Black	78.2	8.2
Filipino	85.6	5.0
Arab and West Asian	65.6	11.9
Latin American	73.5	10.2
Southeast Asian	78.9	7.7
Korean and Japanese	68.6	9.3
Other racialized population groups	75.7	8.7
Education level		
Postsecondary below bachelor's degree	70.9	9.1
Bachelor's degree	80.7	6.3
Graduate degree (not in medicine)	78.8	7.7
Degree in medicine, dentistry, or optometry	73.2	9.4
Region of education		
English speaking Western countries	79.8	5.2
French speaking European countries	85.4	4.5
Other European countries	74.7	8.2
Caribbean, Central and South America	74.9	9.6
Africa	74.9	8.3
Asia	76.2	8.1
Fields of study		
Medicine/medical field	73.2	9.3
Nursing	79.6	6.0
Therapeutic services	80.7	5.8
Laboratory/diagnostic	79.2	6.8
Pharmacy	79.2	6.7
Personal support work	72.1	9.0
Dentistry	72.0	9.6
Other health fields	74.9	9.0

Note: the sample size for employment rates is 63,098, including IEHPs aged 18 to 64 who resided in Canada in 2021. The sample size for unemployment rates is 52,377, including IEHPs aged 18 to 64 who resided in Canada in 2021 and were in the labour force. Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses provided. In these cases, individuals in the category "non-binary persons" are distributed into the other two gender categories and are denoted by the "+" symbol.

Source: Statistics Canada, 2021 Census of Population.

A higher proportion of IEHP men were employed compared to IEHP women (84.4% and 73.2%, respectively); conversely, a higher proportion of women than men was unemployed (8.5% and 6.3%, respectively). Across age groups, the highest employment rates were among the middle age groups. The youngest and oldest age groups had the lowest employment rates—65.8% of those aged 18 to 29 and 62.5% of those aged 60 or older were employed. The youngest age group (18 to 29) also had the highest unemployment rate across age groups (13.0%). Interestingly, the unemployment rates of those aged 30 to 39 and those aged 60 or older were similar (8.4% and 8.2%, respectively).

Differences were also observed across immigration characteristics. Immigrants who arrived in Canada between the ages of 25 and 34 had the highest employment rate (78.3%) compared to other ages at immigration, followed closely by those who immigrated between the ages of 35 to 44 (77.0%). The lowest employment rates were among immigrants who had arrived in Canada at older ages—those who arrived at age 45 or older had an employment rate of 67.1% and an unemployment rate of 10.8%.

Recently arrived IEHPs had lower employment rates than IEHPs who arrived in Canada before 2016. Nearly 8 in 10 IEHPs who immigrated between 2010 to 2015 or 2000 to 2009 were employed (79.4% and 79.3%, respectively), compared to 72.9% of IEHPs who arrived between 2016 and 2021. Across immigration classes, IEHPs who immigrated under refugee or humanitarian classes, or the family class had the lowest employment rates (64.9% and 70.6%, respectively). In contrast, about 8 in 10 IEHPs who immigrated under provincial programs (80.0%) or other economic immigrant classes (82.4%) had the highest employment rates. The employment rate of immigrants who arrived under the FSW program was 77.5% in 2021. The lowest unemployment rate was for IEHPs who had arrived before 1980 (5.6%).

The language results indicated higher employment rates for IEHPs whose mother tongue was either French or English. Over 8 in 10 IEHPs who reported their mother tongue as French were employed (81.5%) compared to 78.6% of those who reported their mother tongue as English. Those who had another mother tongue but spoke English had a slightly higher employment rate (76.5%) than other language groups. Notably, IEHPs whose mother tongue was a non-official language and who did not speak English or French had a much lower employment rate (38.0%) and a much higher unemployment rate (21.0%) than other groups.

Comparing results across population groups indicated that Filipino IEHPs had the highest employment rate in 2021 (85.6%), as well as the lowest unemployment rate (5.0%). Southeast Asian (78.9%) and Black (78.2%) IEHPs also had higher employment rates than other population groups. Chinese IEHPs had the lowest employment rate (63.4%) and among the highest unemployment rates (10.5%) compared to the other population groups.

Another important labour market outcome for employed IEHPs is annual earnings. Table 5 presents mean annual earnings in 2020 for IEHPs aged 18 to 64 who were employed during the census reference week across sociodemographic and educational characteristics. Earnings differences will also be discussed in the multivariate analysis section.

Overall, the mean annual earnings of IEHPs who worked during the census reference week was \$60,000. Generally, IEHP men earned more than IEHP women on average, with a difference of about \$20,000. Additionally, earnings increased as the age group increased, except for those aged 60 or older. Mean annual earnings among IEHPs were highest for those aged 50 to 59 (\$69,300) and lowest for those aged 18 to 29 (\$33,920).

Substantial earnings differences were observed across educational characteristics. Generally, higher levels of education corresponded with higher earnings, with IEHPs who had a degree in medicine, dentistry, or optometry earning the most on average (\$79,000). IEHPs with a postsecondary education below the bachelor's level earned the least (\$45,640). The region of education also mattered. IEHPs who received their education in English-speaking Western countries earned the most on average (\$82,800), while IEHPs who were educated in Asia had the lowest earnings on average (\$52,400).

Annual earnings differed across major fields of study. IEHPs who had studied medicine had substantially higher earnings—\$89,800 on average—compared with IEHPs who had studied other fields. The next highest earning field of study was pharmacy at \$64,300. IEHPs from three fields of study—nursing, laboratory/diagnostics, and therapeutic services—earned between \$55,000 to \$60,000 on average. IEHPs who had studied personal support work earned the least on average (\$38,960).

Results for the period of immigration revealed that immigrants who arrived before 2000 had the highest earnings (\$73,200), while recently arrived IEHPs had the lowest (\$45,520). Across immigration classes, IEHPs who arrived before 1980 had the highest annual earnings (\$85,600), likely reflecting an association between the length of time in Canada and earnings. Following this group, IEHPs who immigrated under the FSW program and the provincial programs had the next highest annual earnings, while IEHPs who immigrated under the refugee or humanitarian class had the lowest earnings, on average.

IEHPs whose mother tongue was French had the highest annual earnings across language groups (\$69,700). Those whose mother tongue was English or whose mother tongue was a non-official language but could speak both English and French also had higher earnings than other language groups. IEHPs whose mother tongue was a non-official language and who could not speak English or French earned the least. Across population groups, non-racialized, non-Indigenous IEHPs earned the most on average (\$78,800), nearly \$17,000 more than the next highest earning population group—Black IEHPs. Korean and Japanese IEHPs earned the least across population groups (\$46,440).

TABLE 5

Mean annual earnings of IEHPs aged 18 to 64 who were employed during the census reference week, by selected characteristics, Canada, 2020

	Mean annual earnings 2020 dollars
Overall	60,000
Gender	
Men+	74,000
Women+	53,550
Current age	
18-29	33,920
30-39	49,760
40-49	64,800
50-59	69,300
60+	68,000
Age at immigration	
<= 24	58,900
25 to 34	58,850
35 to 44	63,150
45 +	58,500
Period of immigration	
2016-2021	45,520
2010-2015	59,450
2000-2009	68,400
Before 2000	73,200
Immigration class	
Federal skilled worker program	67,100
Provincial programs	62,350
Other economic immigrants	52,350
Family immigrants	54,150
Refugees, humanitarian category	50,960
Immigrants arrived before 1980	85,600
Language	
English mother tongue	67,800
French mother tongue	69,700
Other mother tongue, speaks English	56,850
Other mother tongue, speaks French	47,840
Other mother tongue, speaks English and French	67,900
Other mother tongue, does not speak English or French	26,480

continued

TABLE 5
Continued

	Mean annual earnings 2020 dollars
Population groups	
Non-racialized, non-Indigenous	78,800
South Asian	57,100
Chinese	54,000
Black	61,850
Filipino	52,200
Arab and West Asian	60,900
Latin American	54,200
Southeast Asian	53,000
Korean and Japanese	46,440
Other racialized population groups	57,600
Education level	
Postsecondary below bachelor's degree	45,640
Bachelor's degree	55,500
Graduate degree (not in medicine)	69,300
Degree in medicine, dentistry, or optometry	79,000
Region of education	
English speaking Western countries	82,800
French speaking European countries	80,600
Other European countries	67,100
Caribbean, Central and South America	58,050
Africa	73,900
Asia	52,400
Fields of study	
Medicine/medical field	89,800
Nursing	56,500
Therapeutic services	58,350
Laboratory/diagnostic	55,800
Pharmacy	64,300
Personal support work	38,960
Dentistry	46,000
Other health fields	54,400

Note: Sample size is 45,066. Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses provided. In these cases, individuals in the category "non-binary persons" are distributed into the other two gender categories and are denoted by the "+" symbol.

Source: Statistics Canada, 2021 Census of Population.

Employment of IEHPs in health occupations

While the previous section provided a broad picture of the labour outcomes of IEHPs in Canada, these measures do not indicate whether they were employed in occupations relevant to their educational training. Overall, 57.7% of IEHPs aged 18 to 64 who were employed during the census reference week worked in a health occupation in 2021 (Figure 2 and Table 6). Nearly one-third of IEHPs were employed in professional health occupations (32.0%), which have high skill level requirements, while an additional 24.1% worked in technical health occupations (Table 6). Very small proportions of IEHPs were employed in health occupations in management (0.9%) or lower-skilled health occupations (0.8%).

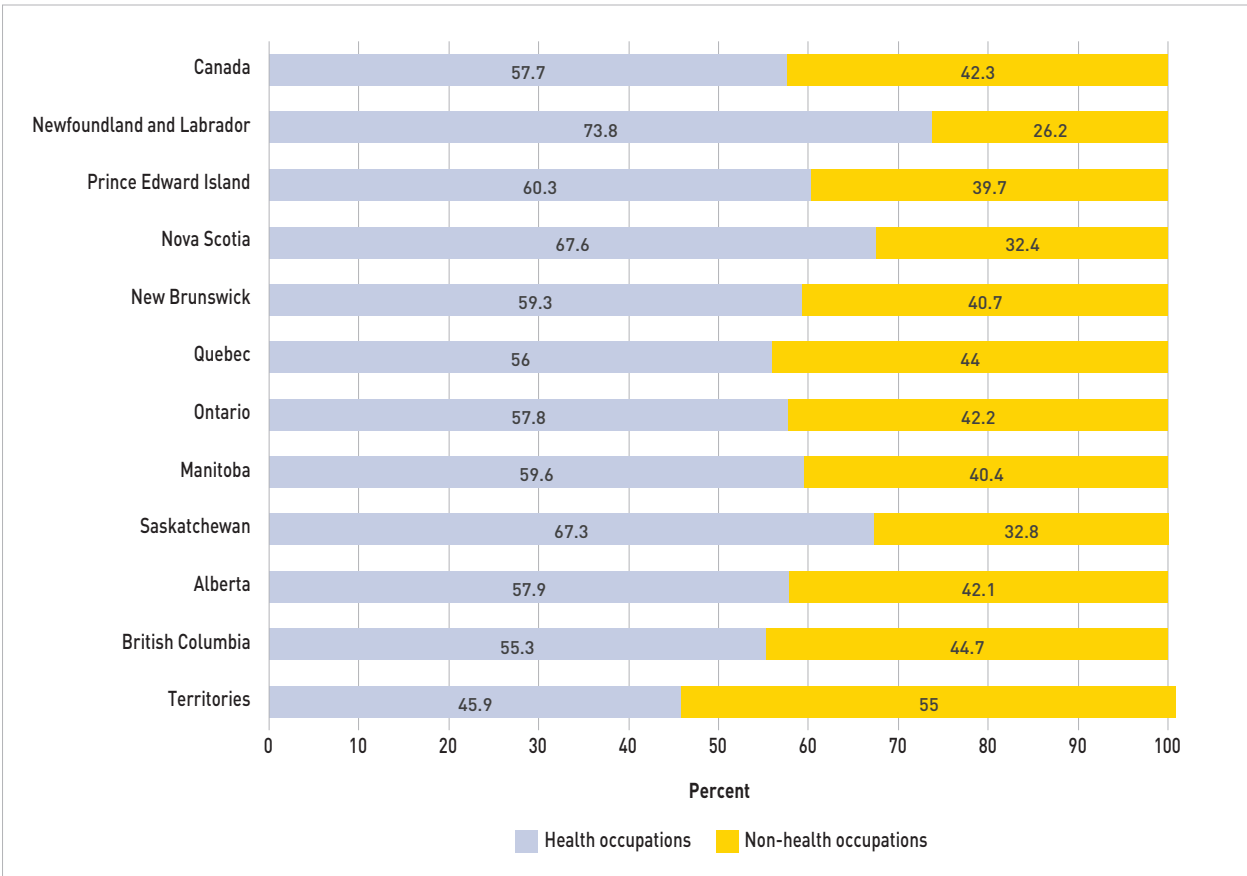
Across provinces and territories, Newfoundland and Labrador had the highest proportion of IEHPs employed in health occupations (73.8%, Figure 2). Additionally, more than 6 in 10 IEHPs in Nova Scotia (67.6%) and Saskatchewan (67.3%), and about 6 in 10 in Prince Edward Island (60.3%), were employed in health occupations. Across the remaining provinces, over half of IEHPs worked in health occupations in 2021; just under half of IEHPs residing in the territories were employed in health occupations (45.9%).

Sociodemographic differences in IEHPs' employment in health occupations are shown in Table 6. The highest proportion of IEHPs who were working in health occupations studied nursing (68.7%), followed by those who studied medicine (66.9%). Across the other major fields of study, 63.0% of IEHPs who studied pharmacy and 59.7% who studied dentistry were employed in health occupations. Relative to CEHPs, the gap in the proportion working in health occupations was largest among those trained in medicine (67% of IEHPs vs. 95% of CEHPs), followed by those who studied pharmacy (63% of IEHPs vs. 86% of CEHPs). Among individuals trained in nursing, 69% of IEHPs were employed in health occupations compared with 87% of CEHPs (CEHP data not shown in Table 6).

Examining the types of health occupations in which IEHPs were employed, over half of the IEHPs who studied medicine (51.6%) and 46.4% who studied pharmacy worked in professional health occupations, which require a high skill level. IEHPs who studied laboratory/diagnostic or personal support work were concentrated in technical health occupations (43.1% and 39.5%, respectively).

Among the employed IEHPs who studied nursing, the top five occupations were registered nurses and registered psychiatric nurses (34%), nurse aides, orderlies, and patient service associates (21%), licensed practical nurses (8%), light duty cleaners (2%), and social and community service workers (2%). The top five occupations for IEHPs who studied medicine were general practitioners and family physicians (28%); specialists in clinical and laboratory medicine (13%); nurse aides, orderlies, and patient service associates (4%); registered nurses and registered psychiatric nurses (4%); and medical sonographers (3%). Across other major

FIGURE 2
 Percent of IEHPs employed in health and non-health occupations, IEHPs aged 18 to 64 who were employed during the census reference week, Canada and the provinces and territories, 2021



Note: sample size is 48,303.
 Source: Statistics Canada, 2021 Canadian Census of Population.

TABLE 6

Percent of IEHPs employed in health occupations, by type of occupation and selected characteristics, IEHPs aged 18 to 64 who were employed during the census reference week, Canada, 2021

			Type of health occupation			
	Employed in non-health occupation	Employed in health occupation	Health —Managerial	Health —Professional	Health —Technical	Health —Lower-skilled
Overall	42.3	57.7	0.9	32.0	24.1	0.8
Gender						
Men+	47.3	52.8	1.0	35.4	16.0	0.3
Women+	40.1	60.0	0.8	30.3	27.9	0.9
Current age						
18–29	50.4	49.6	0.4	21.5	26.8	0.9
30–39	41.1	58.9	0.8	32.2	25.3	0.6
40–49	40.6	59.4	1.0	33.4	24.2	0.8
50–59	43.7	56.3	1.0	31.5	23.0	0.8
60+	44.0	55.8	0.8	33.6	20.6	1.0
Age at immigration						
<= 24	40.9	59.1	1.2	38.3	19.2	0.4
25 to 34	40.6	59.4	0.8	33.3	24.6	0.7
35 to 44	44.6	55.3	0.9	28.1	25.4	1.0
45 +	48.2	51.8	0.7	23.8	26.3	1.0
Period of immigration						
2016–2021	48.0	51.9	0.7	22.0	28.3	1.0
2010–2015	38.7	61.2	0.8	33.7	26.1	0.7
2000–2009	39.9	60.0	1.0	36.5	22.0	0.6
Before 2000	40.9	59.2	1.2	40.1	17.1	0.7
Immigration class						
Federal skilled worker program	37.8	62.2	1.2	40.8	19.9	0.3
Provincial programs	39.1	60.8	0.8	34.4	24.9	0.8
Other economic immigrants	44.7	55.4	0.5	19.1	34.1	1.6
Family immigrants	48.4	51.6	0.8	28.0	22.1	0.7
Refugees, humanitarian category	49.9	50.1	1.0	24.9	23.5	0.7
Immigrants arrived before 1980	42.7	57.3	1.5	43.4	12.0	0.4
Language						
English mother tongue	39.7	60.4	1.2	36.9	21.4	0.8
French mother tongue	37.8	62.4	1.4	39.5	20.8	0.5
Other mother tongue, speaks English	42.9	57.0	0.8	29.9	25.6	0.8
Other mother tongue, speaks French	40.7	59.2	0.4	25.1	33.1	0.7
Other mother tongue, speaks English and French	42.7	57.2	0.8	38.0	18.0	0.5
Other mother tongue, does not speak English or French	85.6	14.4	0.6	2.9	10.9	0.0

continued

TABLE 6
Continued

	Employed in non-health occupation	Employed in health occupation	Type of health occupation			
			Health —Managerial	Health —Professional	Health —Technical	Health —Lower-skilled
Population groups						
Non-racialized, non-Indigenous	43.9	56.1	1.6	41.4	12.7	0.4
South Asian	39.4	60.5	1.0	37.4	21.8	0.4
Chinese	56.8	43.1	0.9	25.9	16.1	0.3
Black	35.7	64.3	0.9	35.2	26.8	1.4
Filipino	40.4	59.6	0.4	19.1	38.6	1.5
Arab and West Asian	39.6	60.5	0.8	45.8	13.6	0.2
Latin American	53.8	46.1	0.4	23.1	22.1	0.6
Southeast Asian	46.4	53.9	0.5	28.5	22.8	1.8
Korean and Japanese	56.4	43.5	0.4	22.6	20.3	0.3
Other racialized population groups	42.5	57.5	0.7	31.6	24.6	0.6
Education level						
Postsecondary below bachelor's degree	54.2	45.8	0.4	14.9	29.2	1.3
Bachelor's degree	37.9	62.1	0.7	31.6	28.9	0.9
Graduate degree (not in medicine)	45.6	54.4	1.8	38.2	14.1	0.4
Degree in medicine, dentistry, or optometry	33.8	66.2	1.1	48.2	16.7	0.2
Region of education						
English speaking Western countries	39.2	60.8	2.2	50.9	7.4	0.3
French speaking European countries	40.2	59.6	1.6	48.4	9.3	0.5
Other European countries	48.9	51.1	1.2	31.7	17.7	0.5
Caribbean, Central and South America	46.1	54.0	0.5	28.9	23.8	0.7
Africa	32.6	67.4	0.6	47.4	18.7	0.7
Asia	43.2	56.8	0.6	25.8	29.5	0.9
Fields of study						
Medicine/medical field	33.1	66.9	1.2	51.6	13.9	0.2
Nursing	31.3	68.7	0.8	35.3	31.3	1.3
Therapeutic services	38.7	61.4	0.6	38.0	21.5	1.2
Laboratory/diagnostic	51.4	48.7	0.5	4.6	43.1	0.4
Pharmacy	37.0	63.0	0.6	46.4	15.9	0.1
Personal support work	55.0	45.1	0.0	2.2	39.5	3.3
Dentistry	40.4	59.7	0.7	26.9	31.7	0.3
Other health fields	60.2	39.8	1.0	20.1	18.1	0.6

Note: Sample size is 48,303. Managerial, professional, technical, and lower-skilled health occupations are determined by the skill levels (TEER categories) associated with each occupation in the 2021 National Occupational Classification. Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses provided. In these cases, individuals in the category "non-binary persons" are distributed into the other two gender categories and are denoted by the "+" symbol. Source: Statistics Canada, 2021 Census of Population.

fields of study, IEHPs who studied pharmacy primarily worked as pharmacists (46%), pharmacy technical assistants and pharmacy assistants (9%), pharmacy technicians (5%), retail and wholesale trade managers (4%), and retail salespersons and visual merchandisers (2%). The most frequent occupations for the IEHPs who studied dentistry were dentists (25%), dental assistants and dental laboratory assistants (13%), dental hygienists and dental therapists (7%), dental technologists and technicians (7%), and receptionists (2%).

Across other educational characteristics, the highest proportion of IEHPs employed in a health occupation were those with a degree in medicine, dentistry, or optometry (66.2%), followed by IEHPs with a bachelor's degree (62.1%). In comparison, less than half of IEHPs with a postsecondary credential below the bachelor's level worked in a health occupation in 2021 (45.8%). Just under half of IEHPs with a degree in medicine, dentistry, or optometry (48.2%) and nearly 4 in 10 with a bachelor's degree (38.2%) were employed in professional health occupations. Nearly 3 in 10 IEHPs with a bachelor's degree worked in technical health occupations (28.9%). The results also showed that a considerable number of IEHPs with a bachelor's degree or higher held technical occupations in health, indicating over-education for some workers. However, only small proportions of IEHPs with a bachelor's degree or higher held lower-skilled health occupations.

The highest share of IEHPs employed in health occupations received their education in African countries (67.4%) or English-speaking Western countries (60.8%). IEHPs who studied in other European countries had the lowest percentage employed in health occupations (51.1%) across regions of education. There were also interesting differences by type of health occupation. Just over half of IEHPs who studied in English-speaking Western countries (50.9%) and nearly half of IEHPs who were educated in French-speaking European countries (48.4%) and African countries (47.4%) were employed in professional health occupations, while 29.5% IEHPs who studied in Asian countries held technical health positions in 2021.

Generally, IEHP women (60.0%) were more likely to be employed in a health occupation than men (52.8%). However, a higher proportion of men than women were employed in professional health occupations (35.4% and 30.3%, respectively), while a higher proportion of women than men were employed in technical health professions (27.9% and 16.0%, respectively). Across age groups, higher proportions of IEHPs in the middle age groups were employed in health occupations—just under 6 in 10 of those aged 30 to 39 and 40 to 49.

Some differences were also observed by age at immigration. Higher proportions of IEHPs who arrived in Canada at younger ages were employed in health occupations compared to those who arrived at older ages. Just under 6 in 10 of IEHPs who arrived between the ages of 25 and 34 or under age 25 were employed in health occupations in 2021. Further, a higher proportion of IEHPs who immigrated to Canada before age 25 were employed in professional health occupations (38.3%) compared to other age groups. Period of immigration also mattered. A

higher proportion of established immigrants were employed in health occupations than recent immigrants. Additionally, while a higher proportion of IEHPs who arrived in recent years (2016 to 2021) were employed in technical health occupations than professional health occupations (28.3% and 22.0%, respectively), the reverse was true for IEHPs who arrived in earlier years.

By immigration program, those who immigrated to Canada under the FSW program had the highest proportion of IEHPs employed in a health occupation (62.2%), followed by those who immigrated under the provincial programs (60.8%). About 4 in 10 IEHPs who arrived under the FSW program and one-third of those in the provincial programs worked in professional health occupations, which have a high skill level compared to the other occupation types. In contrast, the lowest proportions of IEHPs employed in a health occupation arrived under refugee or humanitarian classes (50.1%) or the family class (51.6%).

Generally, results across language groups were similar to the language results for employment rates. IEHPs whose mother tongue was French or English had the highest proportions who were employed in a health occupation (62.4% and 60.4%, respectively); more than one-third of each of these language groups were employed in professional health occupations. In contrast, a much lower proportion of IEHPs who reported a mother tongue in a non-official language and were not proficient in English or French worked in health occupations (14.4%).

Among population groups, the highest proportion of IEHPs employed in health occupations was for Black IEHPs (64.3%), followed by South Asian, and Arab and West Asian IEHPs (60.5% for each group). Chinese, and Korean and Japanese groups had the lowest proportions employed in health occupations in 2021 (43.1% and 43.5%, respectively). Differences across different types of occupations were also apparent. Higher proportions of Arab and West Asian IEHPs (45.8%) and non-racialized, non-Indigenous IEHPs (41.4%) were employed in professional health occupations compared to other population groups. Additionally, nearly 4 in 10 Filipino IEHPs were employed in technical health occupations (38.6%), a higher proportion than other population groups.

Multivariate analyses

The descriptive analyses provided a general picture of differences in labour market outcomes across various groups of IEHPs. However, they did not account for variations in other characteristics. The following multivariate regression models examine how various factors are associated with three labour outcomes of interest—the likelihood of working in a health occupation, the type of health occupation (based on the skill level required), and the earnings of IEHPs—while controlling for other characteristics. Only IEHPs aged 18 to 64 who were employed during the census reference week were included in these regression analyses.

The first model estimates the likelihood of IEHPs working in a health occupation in Canada in 2021 (Table 7). Across sociodemographic characteristics, women were more likely to be employed in health occupations than men, and the youngest IEHPs (aged 18 to 29) were about 3.5 percentage points less likely than their older counterparts aged 50 or older to be working in a health occupation. However, IEHPs in the middle age groups—20 to 29 and 40 to 49—were more likely to be employed in health occupations than those aged 50 or older.

Compared to IEHPs residing in Ontario, IEHPs in Newfoundland and Labrador, Nova Scotia, and Saskatchewan were significantly more likely to be employed in a health occupation. IEHPs residing in Newfoundland and Labrador were about 12 percentage points more likely to be working in a health occupation than their counterparts in Ontario. Conversely, IEHPs in Quebec and the territories were less likely than their counterparts in Ontario to be employed in a health occupation in 2021.

Relative to IEHPs who immigrated to Canada prior to 2000, IEHPs from all other periods of immigration were less likely to be employed in a health occupation. Of note, recent immigrants were nearly 15 percentage points less likely to be employed in a health occupation in 2021 than their counterparts who immigrated prior to 2000. Moreover, compared to IEHPs who immigrated under the FSW program, IEHPs from most immigration classes were less likely to be employed in health occupations. However, there was not a statistically significant difference between IEHPs who immigrated under the FSW program and those who arrived under the provincial programs after controlling for other sociodemographic and educational differences.

Language differences also accounted for some variations as IEHPs whose mother tongue was French or who had a mother tongue in a non-official language but could speak French were more likely than IEHPs whose mother tongue was English to be employed in a health occupation. However, there was a significant disadvantage for IEHPs who had a mother tongue in a non-official language and did not speak English or French—this group was about 25 percentage points less likely to obtain employment in a health occupation than their counterparts whose mother tongue was English.

Across population groups, some were more likely than non-racialized, non-Indigenous IEHPs to be employed in a health occupation, while others were less likely. Notably, South Asian, Black, and Filipino IEHPs were between 2 and 5 percentage points more likely than their non-racialized, non-Indigenous counterparts to have worked in a health occupation in 2021. However, Chinese, Latin American, and Korean and Japanese IEHPs were less likely than non-racialized, non-Indigenous IEHPs to be employed in a health occupation. The disadvantage was greatest for Latin American IEHPs who were 9.5 percentage points less likely to have worked in a health occupation than their non-racialized, non-Indigenous counterparts.

TABLE 7

Logistic regression predicting the likelihood of working in a health occupation, IEHPs aged 18 to 64 who were employed during the census reference week, Canada, 2021

	Marginal effect	Standard Error
Men+ (ref: Women+)	-0.076***	0.005
Age groups (ref: >= 50)		
18 to 29	-0.035**	0.012
30 to 39	0.023***	0.007
40 to 49	0.037***	0.006
Province/territory of residence (ref: Ontario)		
Newfoundland and Labrador	0.121***	0.036
Prince Edward Island	0.027	0.046
Nova Scotia	0.078***	0.018
New Brunswick	0.016	0.029
Quebec	-0.057***	0.011
Manitoba	-0.011	0.011
Saskatchewan	0.063***	0.013
Alberta	-0.010	0.006
British Columbia	-0.006	0.006
Territories	-0.108**	0.037
Period of immigration (ref: before 2000)		
2016-2021	-0.146***	0.008
2010-2015	-0.056***	0.008
2000-2009	-0.024***	0.007
Immigration class (ref: Federal skilled worker program)		
Provincial programs	0.000	0.007
Other economic immigrants	-0.025***	0.007
Family immigrants	-0.085***	0.006
Refugees, humanitarian category	-0.078***	0.011
Immigrants arrived before 1980	-0.087***	0.020
Language (ref: English mother tongue)		
Other mother tongue, does not speak English or French	-0.251***	0.020
Other mother tongue, speaks English and French	0.024	0.013
Other mother tongue, speaks French	0.087***	0.019
Other mother tongue, speaks English	-0.009	0.006
French mother tongue	0.064***	0.018

continued

TABLE 7
Continued

	Marginal effect	Standard Error
Population groups (ref: non-racialized, non-Indigenous)		
South Asian	0.054***	0.010
Chinese	-0.082***	0.012
Black	0.043***	0.012
Filipino	0.024*	0.010
Arab and West Asian	0.020	0.010
Latin American	-0.095***	0.018
Southeast Asian	0.005	0.019
Korean and Japanese	-0.048**	0.018
Other racialized population groups	0.004	0.016
Educational level (ref: degree in medicine, dentistry, or optometry)		
Postsecondary below bachelor's degree	-0.202***	0.014
Bachelor's degree	-0.075***	0.014
Graduate degree, not in medicine	-0.066***	0.014
Region of education (ref: Asia)		
English speaking Western countries	0.101***	0.009
French speaking European countries	0.072***	0.021
Other European countries	-0.009	0.011
Caribbean, Central and South America	0.057***	0.014
Africa	0.118***	0.010
Major field of study (ref: other health field)		
Medicine/medical field	0.137***	0.017
Nursing	0.289***	0.006
Therapeutic services	0.175***	0.025
Laboratory /diagnostics	0.074***	0.013
Pharmacy	0.184***	0.009
Personal support work	0.158***	0.016
Dentistry	0.155***	0.014

*statistically significant at $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Sample size is 48,303. Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses provided. In these cases, individuals in the category "non-binary persons" are distributed into the other two gender categories and are denoted by the "+" symbol.

Source: Statistics Canada, 2021 Census of Population.

Results for educational characteristics also reveal some interesting findings. First, compared to IEHPs with a degree in medicine, dentistry, or optometry, IEHPs with other levels of education were significantly less likely to obtain employment in a health occupation. The disadvantage was greatest for IEHPs with a postsecondary credential below the bachelor's level who were about 20 percentage points less likely to be employed in a health occupation than their counterparts with a degree in medicine, dentistry, or optometry. Additionally, compared to IEHPs who received their education in Asia, IEHPs from most other regions of education were more likely to be employed in a health occupation. One exception was IEHPs who had studied in other European countries whose likelihood of being employed in a health occupation was not statistically different from their counterparts who had studied in Asia.

The findings on field of study indicated that, relative to IEHPs who studied in other health fields of study, those who studied medicine, nursing, therapeutic services, laboratory/diagnostics, pharmacy, personal support work, or dentistry fields were more likely to be employed in health occupations. Notably, IEHPs who had studied nursing were about 29 percentage points more likely to be employed in a health occupation than their counterparts who had studied other health fields.

The second regression model predicts associations between various characteristics and the type of health occupation of IEHPs based on skill level (Table 8). Among IEHPs, men were about 6 percentage points more likely than women to be employed in professional health occupations. Men were also less likely than women to be employed in technical or lower-skilled health occupations. Across age groups, IEHPs in the middle age groups (30 to 39 and 40 to 49) were more likely than IEHPs aged 50 or older to be employed in professional health occupations and less likely to be employed in technical health occupations.

Compared to IEHPs in Ontario, IEHPs residing in Nova Scotia, Manitoba, Saskatchewan, Alberta, and the territories were less likely to be employed in managerial health occupations. Additionally, IEHPs in Prince Edward Island, Quebec, Manitoba, Saskatchewan, and Alberta were less likely than their counterparts in Ontario to be employed in professional health occupations. For technical health occupations, IEHPs in Prince Edward Island, Quebec, Manitoba, Saskatchewan, and Alberta were more likely to be working in this type of occupation than their counterparts in Ontario. Additionally, IEHPs residing in Quebec, Manitoba, Alberta, British Columbia, and the territories were more likely and IEHPs in Prince Edward Island were less likely to be employed in lower-skilled health occupations compared to IEHPs in Ontario.

Differences were also observed across population groups. IEHPs from nearly all racialized population groups were less likely to work in professional health occupations compared to their non-racialized, non-Indigenous counterparts; notably, Filipino IEHPs were 28 percentage points less likely to be employed in professional health occupations than non-racialized, non-Indigenous IEHPs. One exception was for Arab and West Asian IEHPs who did not differ

TABLE 8

Multinomial logistic regression predicting the type of health occupation (skill level) of IEHPs aged 18 to 64 who were employed in health occupations in the census reference week, Canada, 2021

	Managerial		Professional		Technical		Lower skilled	
	Marginal Effect	Standard Error	Marginal Effect	Standard Error	Marginal Effect	Standard Error	Marginal Effect	Standard Error
Men+ (ref: Women+)	0.004*	0.002	0.063***	0.006	-0.064***	0.006	-0.003*	0.002
Age groups (ref: >= 50)								
18 to 29	-0.006	0.003	-0.006	0.015	0.014	0.015	-0.003	0.004
30 to 39	-0.001	0.002	0.075***	0.008	-0.066***	0.008	-0.008***	0.002
40 to 49	0.002	0.002	0.060***	0.007	-0.058***	0.007	-0.004	0.002
Province of residence (ref: Ontario)								
Newfoundland and Labrador	-0.007	0.012	0.016	0.036	-0.044	0.037	0.034	0.019
Prince Edward Island	-0.005	0.013	-0.109*	0.053	0.120*	0.051	-0.005***	0.001
Nova Scotia	-0.013***	0.004	-0.025	0.021	0.016	0.022	0.022*	0.009
New Brunswick	-0.008	0.008	0.038	0.033	-0.031	0.032	0.000	0.006
Quebec	-0.005	0.004	-0.081***	0.015	0.070***	0.015	0.016***	0.004
Manitoba	-0.013***	0.003	-0.066***	0.013	0.041**	0.013	0.038***	0.006
Saskatchewan	-0.015***	0.002	-0.051***	0.014	0.061***	0.014	0.005	0.004
Alberta	-0.007***	0.002	-0.044***	0.007	0.046***	0.007	0.005**	0.002
British Columbia	-0.004	0.002	0.001	0.008	-0.014	0.007	0.016***	0.002
Territories	-0.014**	0.005	-0.014	0.045	-0.018	0.048	0.046*	0.023
Population groups (ref: non-racialized, non-Indigenous)								
South Asian	-0.006	0.003	-0.060***	0.012	0.068***	0.012	-0.002	0.003
Chinese	-0.008	0.004	-0.113***	0.017	0.124***	0.017	-0.004	0.004
Black	-0.007	0.004	-0.098***	0.014	0.090***	0.014	0.015*	0.007
Filipino	-0.011**	0.004	-0.282***	0.013	0.289***	0.013	0.005	0.003
Arab and West Asian	-0.008*	0.004	0.020	0.012	-0.012	0.012	0.000	0.004
Latin American	-0.011	0.006	-0.152***	0.025	0.153***	0.025	0.010	0.010
Southeast Asian	-0.011	0.006	-0.128***	0.023	0.120***	0.024	0.019*	0.009
Korean and Japanese	-0.014**	0.005	-0.071**	0.026	0.090***	0.026	-0.005	0.005
Other racialized population groups	-0.010	0.006	-0.127***	0.020	0.137***	0.020	0.000	0.004
Period of immigration (ref: before 2000)								
2016-2021	-0.002	0.003	-0.261***	0.010	0.256***	0.010	0.007*	0.003
2010-2015	-0.002	0.003	-0.135***	0.010	0.137***	0.009	0.000	0.002
2000-2009	-0.001	0.002	-0.056***	0.008	0.058***	0.008	-0.002	0.002
Immigration class (ref: Federal skilled worker program)								
Provincial programs	-0.001	0.003	0.007	0.008	-0.007	0.008	0.001	0.002
Other economic immigrants	-0.003	0.003	-0.058***	0.009	0.049***	0.008	0.013***	0.002
Family immigrants	-0.002	0.002	-0.057***	0.008	0.053***	0.008	0.006**	0.002
Refugees, humanitarian category	0.002	0.004	-0.127***	0.013	0.122***	0.013	0.003	0.003
Immigrants arrived before 1980	-0.004	0.004	-0.043	0.028	0.047	0.028	0.000	0.006

continued

TABLE 8

Continued

	Managerial		Professional		Technical		Lower skilled	
	Marginal Effect	Standard Error	Marginal Effect	Standard Error	Marginal Effect	Standard Error	Marginal Effect	Standard Error
Language (ref: English mother tongue)								
Other mother tongue, does not speak English or French	0.036	0.034	-0.243***	0.071	0.199**	0.069	0.007	0.021
Other mother tongue, speaks English and French	-0.004	0.004	0.025	0.016	-0.014	0.016	-0.007	0.003
Other mother tongue, speaks French	-0.009*	0.005	-0.069**	0.024	0.089***	0.024	-0.011***	0.003
Other mother tongue, speaks English	-0.002	0.002	-0.015*	0.007	0.018**	0.007	-0.001	0.002
French mother tongue	0.005	0.007	-0.068**	0.023	0.074***	0.023	-0.011***	0.003
Educational level (ref: degree in medicine, dentistry, or optometry)								
Postsecondary below bachelor's degree	-0.001	0.003	-0.448***	0.015	0.440***	0.015	0.008	0.005
Bachelor's degree	0.004	0.004	-0.252***	0.016	0.248***	0.016	0.000	0.005
Graduate degree, not in medicine	0.017***	0.005	-0.151***	0.016	0.135***	0.016	-0.002	0.005
Region of education (ref: Asia)								
English speaking Western countries	0.013***	0.003	0.230***	0.011	-0.236***	0.011	-0.006	0.003
French speaking European countries	-0.001	0.005	0.286***	0.021	-0.286***	0.020	0.001	0.009
Other European countries	0.002	0.003	-0.004	0.015	0.002	0.016	0.000	0.005
Caribbean, Central and South America	-0.003	0.004	0.072***	0.019	-0.066***	0.019	-0.003	0.005
Africa	-0.005*	0.003	0.119***	0.013	-0.110***	0.013	-0.004	0.004
Major field of study (ref: other health field)								
Medicine/medical field	0.005	0.005	-0.066***	0.017	0.074***	0.017	-0.012***	0.003
Nursing	0.000	0.002	0.189***	0.007	-0.185***	0.007	-0.003	0.002
Therapeutic services	-0.008	0.004	0.110***	0.026	-0.109***	0.027	0.006	0.011
Laboratory /diagnostics	0.004	0.007	-0.267***	0.017	0.272***	0.017	-0.009*	0.004
Pharmacy	-0.008***	0.002	0.161***	0.010	-0.140***	0.010	-0.012***	0.003
Personal support work	0.002	0.012	-0.232***	0.031	0.202***	0.030	0.028**	0.009
Dentistry	-0.003	0.003	-0.176***	0.012	0.190***	0.013	-0.011***	0.003

*statistically significant at p<0.05, **p<0.01, ***p<0.001

Note: Sample size is 27,888. Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses provided. In these cases, individuals in the category "non-binary persons" are distributed into the other two gender categories and are denoted by the "+" symbol.

Source: Statistics Canada, 2021 Census of Population.

significantly from non-racialized, non-Indigenous IEHPs in their employment in professional health occupations. The results also indicated that Black and Southeast Asian IEHPs were more likely to be employed in lower-skilled health occupations than non-racialized, non-Indigenous IEHPs after controlling for other characteristics.

All IEHPs who arrived in Canada after 2000 were less likely to be employed in professional health occupations relative to IEHPs who arrived before 2000. This difference was particularly large for recent immigrants (who arrived between 2016 and 2021) who were 26 percentage points less likely to be employed in professional health occupations than their more established counterparts. Additionally, the most recently arrived IEHPs were more likely than IEHPs who immigrated before 2000 to be employed in lower-skilled occupations, although this difference was small (about 0.7 percentage points less likely).

Across most language groups, IEHPs were less likely to be employed in professional health occupations and more likely to be employed in technical health occupations compared to IEHPs whose mother tongue was English. One exception was for IEHPs with a mother tongue in a non-official language who spoke both English and French. They were as likely as their counterparts whose mother tongue was English to be employed in a professional health occupation. Additionally, although the differences were small, IEHPs whose mother tongue was a non-official language but could speak French and those whose mother tongue was French were less likely to be employed in lower-skilled health occupations compared to IEHPs whose mother tongue was English.

Relative to IEHPs who arrived under the FSW program, those who arrived under other economic immigration programs, the family class, or refugee or humanitarian classes were less likely to be employed in professional health occupations. For example, IEHPs who arrived under refugee or humanitarian admission programs were about 12 percentage points less likely to be employed in professional health occupations than their counterparts who arrived under the FSW program. Additionally, IEHPs who arrived under other economic immigration programs, the family class, or refugees or humanitarian classes were more likely to be employed in technical health occupations than those who arrived under the FSW program.

In terms of educational differences, IEHPs with a level of education that was not a degree in medicine, dentistry, or optometry were less likely to be employed in professional health occupations than IEHPs with this type of degree. Additionally, IEHPs who did not have a degree in medicine, dentistry, or optometry were more likely to be employed in technical health occupations than their counterparts with a degree in medicine, dentistry, or optometry. Interestingly, results predicting the likelihood of working in lower-skilled health occupations indicated that there were no statistically significant differences between IEHPs with a degree in medicine, dentistry, or optometry and IEHPs with other education levels.

IEHPs from several regions of education—English-speaking Western countries, French-speaking European countries, Caribbean, Central and South American countries, and African countries—were more likely to be employed in professional health occupations than their counterparts who were educated in Asian countries. Additionally, IEHPs who had studied in these four regions were less likely to be employed in technical health occupations than IEHPs who had studied in Asia. There were no differences across regions of education in the likelihood of working in lower-skilled health occupations.

IEHPs who studied nursing, therapeutic services, and pharmacy fields were more likely to be employed in professional health occupations than their counterparts who had studied ‘other’ health fields. Interestingly, IEHPs who had studied medicine or dentistry fields were less likely to be employed in professional health occupations than IEHPs who had studied other health fields. IEHPs who studied dentistry were about 17 percentage points less likely and IEHPs who studied medicine were about 7 percentage points less likely than their counterparts who had studied ‘other’ health fields to be employed in a professional health occupation. Additionally, IEHPs who had studied nursing, therapeutic services, and pharmacy were less likely to be employed in technical health occupations than IEHPs who had studied ‘other’ health fields.

The last model predicts the log annual earnings of IEHPs aged 18 to 64 (Table 9). In addition to examining the relationships between sociodemographic and educational characteristics with the earnings of IEHPs, an additional model determines the associations between the type of occupation and earnings. Generally, the results indicated that IEHP men were associated with 0.269 log-point (or 31%) higher annual earnings than IEHP women when differences in other sociodemographic characteristics were taken into account; this difference increased slightly when the type of health occupation was accounted for in the second model. IEHPs aged 18 to 29 and 30 to 39 were associated with much lower annual earnings than IEHPs aged 50 or older.

Compared to IEHPs in Ontario, IEHPs residing in Newfoundland and Labrador earned more (Model 1); however, when the type of health occupation was added to the model (Table 9, Model 2) this difference was no longer statistically significant. This result indicates that earnings differences between IEHPs in these two provinces are attributable to differences in the types of health occupations they hold. IEHPs residing in Saskatchewan, Alberta, British Columbia, and the territories earned more on average than IEHPs in Ontario, even when controlling for differences in types of occupations. Conversely, IEHPs in Quebec earned less than their Ontario counterparts when accounting for sociodemographic, educational, and occupational differences.

Additionally, most racialized population groups earned less than non-racialized, non-Indigenous IEHPs in 2020. Results from Model 2 indicated that only the earnings of IEHPs from Latin America, Southeast Asia, and other racialized population groups did not statistically differ from the earnings of non-racialized, non-Indigenous IEHPs. The largest earnings disadvantages were observed for Arab and West Asian and Chinese IEHPs.

TABLE 9

Ordinary Least Squares (OLS) regression predicting log earnings of IEHPs aged 18 to 64 who were employed during the census reference week, Canada, 2020

	Model 1		Model 2	
	Coefficient	Standard Error	Coefficient	Standard Error
Men+ (ref: Women+)	0.269***	0.012	0.289***	0.011
Age groups (ref: >= 50)				
18 to 29	-0.455***	0.029	-0.434***	0.028
30 to 39	-0.173***	0.016	-0.211***	0.016
40 to 49	0.031*	0.014	-0.011	0.013
Province of residence (ref: Ontario)				
Newfoundland and Labrador	0.325*	0.131	0.245	0.126
Prince Edward Island	-0.135	0.105	-0.112	0.101
Nova Scotia	0.057	0.049	0.040	0.048
New Brunswick	0.057	0.074	0.045	0.070
Quebec	-0.198***	0.025	-0.141***	0.024
Manitoba	-0.020	0.026	0.018	0.024
Saskatchewan	0.127***	0.030	0.123***	0.029
Alberta	0.098***	0.015	0.118***	0.014
British Columbia	0.066***	0.014	0.071***	0.014
Territories	0.348***	0.089	0.415***	0.087
Population groups (ref: non-racialized, non-Indigenous)				
South Asian	-0.094***	0.025	-0.096***	0.024
Chinese	-0.321***	0.032	-0.240***	0.031
Black	-0.160***	0.029	-0.129***	0.028
Filipino	-0.027	0.025	0.058*	0.024
Arab and West Asian	-0.320***	0.028	-0.332***	0.027
Latin American	-0.130**	0.042	-0.042	0.040
Southeast Asian	-0.098*	0.043	-0.060	0.042
Korean and Japanese	-0.285***	0.044	-0.225***	0.042
Other racialized population groups	-0.098**	0.037	-0.053	0.036
Period of immigration (ref: before 2000)				
2016–2021	-0.497***	0.021	-0.339***	0.020
2010–2015	-0.231***	0.019	-0.158***	0.018
2000–2009	-0.086***	0.017	-0.052**	0.016
Immigration class (ref: Federal skilled worker program)				
Provincial programs	0.068***	0.017	0.062***	0.017
Other economic immigrants	0.047**	0.017	0.082***	0.016
Family immigrants	-0.124***	0.015	-0.061***	0.015
Refugees, humanitarian category	-0.184***	0.026	-0.102***	0.024
Immigrants arrived before 1980	-0.114*	0.050	-0.057	0.050

continued

TABLE 9
Continued

	Model 1		Model 2	
	Coefficient	Standard Error	Coefficient	Standard Error
Language (ref: English mother tongue)				
Other mother tongue, does not speak English or French	-0.641***	0.067	-0.502***	0.067
Other mother tongue, speaks English and French	0.113***	0.032	0.092**	0.031
Other mother tongue, speaks French	0.022	0.043	0.013	0.041
Other mother tongue, speaks English	-0.052***	0.013	-0.046***	0.013
French mother tongue	0.148***	0.043	0.141***	0.041
Educational level (ref: degree in medicine, dentistry, or optometry)				
Postsecondary below bachelor's degree	-0.182***	0.035	0.048	0.035
Bachelor's degree	0.018	0.036	0.140***	0.035
Graduate degree, not in medicine	0.118**	0.037	0.213***	0.037
Region of education (ref: Asia)				
English speaking Western countries	0.312***	0.024	0.183***	0.023
French speaking European countries	0.308***	0.050	0.173***	0.048
Other European countries	0.029	0.029	0.037	0.027
Caribbean, Central and South America	0.108**	0.037	0.063	0.035
Africa	0.145***	0.028	0.038	0.027
Major field of study (ref: other health field)				
Medicine/medical field	0.254***	0.039	0.203***	0.039
Nursing	0.309***	0.013	0.100***	0.013
Therapeutic services	0.191***	0.044	0.058	0.043
Laboratory /diagnostics	0.203***	0.026	0.235***	0.026
Pharmacy	0.230***	0.021	0.078***	0.021
Personal support work	0.091**	0.033	0.043	0.032
Dentistry	-0.101***	0.030	-0.100***	0.030
Occupational skill levels (ref: Non-health occupation)				
Health managerial occupations			0.685***	0.052
Health professional occupations			0.769***	0.013
Technical health occupations			0.243***	0.012
Lower skilled health occupations			0.010	0.060
Intercept	10.698***	0.046	10.261***	0.046

*statistically significant at $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Sample size is 45,066. Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses provided. In these cases, individuals in the category "non-binary persons" are distributed into the other two gender categories and are denoted by the "+" symbol.

Source: Statistics Canada, 2021 Census of Population

The period during which IEHPs arrived in Canada was also significantly associated with their earnings. All IEHP groups that arrived after 2000 earned less than their counterparts who arrived before 2000. Recent immigrants had the largest earnings gap with IEHPs who arrived pre-2000. Generally, these results indicate that the more years IEHPs have resided in Canada, the higher their earnings. Immigration class also revealed some interesting results. IEHPs who immigrated under provincial programs or other economic immigration programs earned slightly more than IEHPs who immigrated under the FSW program. However, IEHPs who arrived under the family class or the refugee or humanitarian classes earned less than their counterparts who immigrated under the FSW program.

Some earnings differences were observed across language groups. IEHPs whose mother tongue was French or whose mother tongue was a non-official language but could speak English and French earned more than their counterparts whose mother tongue was English (Table 9, Model 2). However, IEHPs whose mother tongue was a non-official language who could speak English or who could not speak English or French earned less than IEHPs whose mother tongue was English after controlling for other characteristics.

Across education levels, IEHPs with a postsecondary credential below the bachelor's level earned less than IEHPs with a degree in medicine, dentistry, or optometry. However, when the type of health occupation was controlled for in Model 2, this difference was no longer statistically significant. Interestingly, when sociodemographic, educational, and occupational differences were accounted for, IEHPs with a bachelor's degree and IEHPs with a graduate degree that was not in medicine, dentistry, or optometry earned more than their counterparts with a degree in medicine, dentistry, or optometry.

IEHPs who were educated in Caribbean, Central, or South American countries or African countries earned more than their counterparts who were educated in Asia in Model 1. However, after accounting for differences in the type of occupations they held, these earnings differences were no longer statistically significant. Model 2 results indicated that IEHPs who studied in English-speaking Western countries or French-speaking European countries earned more than IEHPs who studied in Asia, even when occupational differences were controlled in the model. The field of study results also revealed that IEHPs who had studied medicine, nursing, laboratory/diagnostics, or pharmacy fields earned more than their counterparts who had studied other health fields while IEHPs who had studied dentistry earned less (Table 9, Model 2).

Finally, results from Model 2 indicated that IEHPs who were employed in managerial, professional, or technical health occupations earned more than their counterparts who were employed in non-health occupations. The earnings of IEHPs who were employed in lower-skill health occupations did not differ significantly from IEHPs employed in non-health occupations after accounting for other sociodemographic and educational characteristics.



DISCUSSION

This study provides new information about the number of IEHPs who resided in Canada using 2021 Census of Population data. Detailed information about the characteristics of IEHPs was presented, allowing for insights into the sociodemographic and educational makeup of this population. Additionally, recent information about the extent to which IEHPs were employed in occupations relevant to their educational training was presented. The disaggregation of these results by key sociodemographic, educational, and immigration characteristics provides greater insight into differences in the labour market outcomes of IEHPs in Canada.

The results indicated that there were an estimated 259,695 IEHPs residing in Canada in 2021. The highest numbers of IEHPs resided in more populated jurisdictions which have higher numbers of immigrants generally. Notably, nearly half of IEHPs resided in Ontario (116,310), while both British Columbia and Alberta had over 40,000 IEHPs; Quebec had just over 30,000 IEHPs. Smaller jurisdictions, such as provinces in the Atlantic region and the territories had the lowest numbers of IEHPs in Canada, ranging from about 475 in Prince Edward Island to 3,195 in Nova Scotia.

The profile of IEHPs revealed that about one-third had studied nursing, and over 1 in 10 reported that they studied medicine. Very small proportions of IEHPs had studied in therapeutic services or personal support work fields.¹³ Of note, over half of IEHPs in Prince Edward Island had studied nursing, while Ontario had the highest proportions of IEHPs who had studied dentistry or pharmacy.

Over one-third of IEHPs had a bachelor's degree, and about 2 in 10 had a degree in medicine, dentistry, or optometry. A notable proportion of IEHPs—about one-quarter—also held a postsecondary credential below the bachelor's level. Across jurisdictions, a higher proportion of IEHPs in Newfoundland and Labrador, Ontario, and New Brunswick had a degree in medicine, dentistry, or optometry compared to Canada overall. The majority of IEHPs received their education in Asia, while just over 1 in 10 studied in an English-speaking Western country. The proportion of IEHPs who had studied in an English-speaking Western country was highest in New Brunswick (21.3%), while the highest proportion of IEHPs who had studied in French-speaking European countries resided in Quebec (12.7%).

¹³ While NPR IEHPs were not studied in this paper, they also had very small proportions who had studied therapeutic services (0.7%) or personal support work fields (3.0%).

The majority of IEHPs—about 7 in 10—were women, although there were some variations across jurisdictions. For example, Newfoundland and Labrador and New Brunswick had smaller proportions of IEHPs who were women. Additionally, most IEHPs were under the age of 50 in 2021. However, compared to Canada overall, there were larger proportions of IEHPs in British Columbia and New Brunswick aged 50 or older. Nearly one-third of IEHPs had recently arrived in Canada (between 2016 and 2021) and the majority entered Canada under either the FSW or provincial programs. Interestingly, some provinces seemed to have a greater reliance on provincial programs for bringing IEHPs to Canada—over half of the IEHPs in Prince Edward Island, Quebec, Manitoba, and Saskatchewan arrived under this program. In contrast, the majority of IEHPs in Ontario arrived under either the FSW program or the family class.

Most IEHPs were able to speak at least one of Canada's official languages, with the majority reporting another mother tongue, but proficiency in English. Additionally, about one-quarter of IEHPs were Filipino, although this group represented a higher proportion of IEHPs in Manitoba and the territories. South Asians accounted for just over 2 in 10 IEHPs, the second largest population group at the national level; however, there were higher proportions of South Asian IEHPs in Prince Edward Island and Ontario.

In 2021, over half of the IEHPs—57.7 percent—were employed in health occupations. Newfoundland and Labrador had the highest proportion of IEHPs working in health occupations compared to other jurisdictions (73.8%), while more than 6 in 10 IEHPs in Prince Edward Island, Nova Scotia, and Saskatchewan were also employed in health occupations. Nearly one-third of IEHPs worked in professional health occupations, and almost one-quarter were employed in technical health occupations. Very small proportions of IEHPs were employed in management or lower-skilled health occupations—under 1 percent for each occupation type.

The results also showed that many IEHPs in Canada were over-educated for their jobs as notable proportions with a university degree were working in technical health occupations that require lower levels of education than professional health occupations. However, very small proportions of IEHPs with a university degree were employed in lower skilled health occupations.

The labour market outcomes of IEHPs differed across sociodemographic, educational, and immigration characteristics. After accounting for other factors, the regression results indicated that IEHPs in Newfoundland and Labrador, Nova Scotia, and Saskatchewan were more likely than their Ontario counterparts to be employed in a health occupation. However, IEHPs residing in Quebec and the territories were less likely than their Ontario counterparts to be employed in a health occupation. IEHPs in several jurisdictions (Prince Edward Island, Quebec, Manitoba, Saskatchewan, Alberta) were less likely to be employed in professional health occupations than IEHPs in Ontario. The provincial and territorial results also showed some earnings differences—IEHPs in Saskatchewan, Alberta, British Columbia, and the territories earned more than their counterparts in Ontario.

Previous research has indicated women who have a health education are largely underutilized in the Canadian labour market (Hou and Schimmele, 2020). This study indicates that among IEHPs, men were less likely than women to be employed in a health occupation, but they were more likely than women to be employed in managerial or professional health occupations. Conversely, men were less likely than women to work in technical or lower-skilled health occupations. The results also indicated that among IEHPs, men earned more than women, even after accounting for differences in the type of health occupation they held.

While some population groups were less likely to be employed in a health occupation compared to non-racialized, non-Indigenous IEHPs, there were some exceptions—South Asian, Black, and Filipino IEHPs were more likely than their non-racialized, non-Indigenous counterparts to be employed in a health occupation. However, IEHPs in most population groups were less likely to work in professional health occupations compared to non-racialized, non-Indigenous IEHPs, with Filipino IEHPs having the greatest disadvantage. One exception was among Arab and West Asian IEHPs whose likelihood of being employed in a professional health occupation did not differ significantly from non-racialized, non-Indigenous IEHPs. The results also indicated that Black and Southeast Asian IEHPs were more likely to be employed in lower-skilled health occupations than their non-racialized, non-Indigenous counterparts. Moreover, there was an earnings disadvantage for most racialized population groups, with Arab and West Asian and Chinese IEHPs having the largest earnings gaps with their non-racialized, non-Indigenous counterparts.

Language also mattered to employment outcomes of IEHPs—those whose mother tongue was a non-official language and who did not speak English or French were less likely to obtain employment in a health occupation than their counterparts whose mother tongue was English. IEHPs whose mother tongue was French or whose mother tongue was a non-official language but could speak both English and French also had higher earnings compared to IEHPs whose mother tongue was English, indicating an earnings advantage for IEHPs with proficiency in French. IEHPs in other language groups were less likely to be employed in professional health occupations and more likely to be employed in technical health occupations than IEHPs whose mother tongue was English. IEHPs who could not speak either English or French had a particular employment disadvantage which included the largest earnings gap with IEHPs whose mother tongue was English.

Immigration characteristics were also associated with the labour outcomes of IEHPs. IEHPs who recently arrived in Canada (between 2016 and 2021) had several employment disadvantages compared to their counterparts who had arrived in Canada in earlier years. IEHPs who arrived between 2016 and 2021 had lower employment rates and higher unemployment rates than IEHPs who arrived in earlier years and were also less likely than their counterparts who had immigrated prior to 2000 to obtain employment in a health occupation. More recent cohorts of IEHPs were less likely to be employed in professional health occupations and more likely

to hold technical and lower-skilled health occupations than their counterparts who arrived in Canada before 2000. Recently arrived IEHPs also had the largest earnings gap with immigrants who arrived in Canada prior to 2000. Generally, these results indicated that the more years an IEHP has resided in Canada, the greater their earnings and likelihood of working in a health occupation.

IEHPs who arrived under most immigration classes were less likely than their counterparts who immigrated under the FSW program to obtain employment in a health occupation. However, those who arrived through provincial programs did not differ significantly from those who arrived under the FSW program in this outcome. Additionally, IEHPs who arrived under provincial programs earned more than those who immigrated under the FSW program. In contrast, IEHPs who arrived under the family class or refugee or humanitarian classes were at a particular employment disadvantage as they were less likely to obtain employment in a health occupation, more likely to obtain employment in lower-skilled health occupations, and earned less than their counterparts who immigrated to Canada under the FSW program.

Employment outcomes also differed by education level. IEHPs whose highest educational credential was a bachelor's degree had the highest employment rate, while IEHPs with a degree in medicine, dentistry, or optometry had the highest unemployment rate. IEHPs with other levels of education were less likely to be employed in a health occupation and less likely to be employed in professional health occupations than IEHPs with a degree in medicine, dentistry, or optometry. However, while the descriptive results indicated that IEHPs with a degree in medicine, dentistry, or optometry had the highest earnings on average, when other characteristics were controlled for, including the type of health occupation held, IEHPs with a bachelor's degree or graduate degree that was not in medicine, dentistry, or optometry earned more than IEHPs with a degree in medicine, dentistry, or optometry.

Supporting previous research that found the region of education mattered to the employment outcomes of IEHPs (e.g., Girard and Smith, 2013; Hou and Schimmele, 2020), results from this study revealed that IEHPs who obtained their education in French-speaking European countries had the highest employment rate compared to other regions of education. IEHPs who were educated in most regions were more likely to obtain employment in a health occupation than their counterparts who were educated in Asia. Region of education was also associated with the type of health occupation IEHPs held—those from English-speaking Western countries, French-speaking European countries, Caribbean, Central and South American countries, and African countries were more likely to be employed in professional health occupations than their counterparts who were educated in Asian countries. Furthermore, IEHPs who had studied in English-speaking Western countries or French-speaking European countries had higher earnings than their counterparts who were educated in Asia.

The results showed that IEHPs who studied in all major health fields of study were more likely to be employed in health occupations compared to IEHPs who had studied 'other' health fields. However, IEHPs who had studied nursing tended to have better labour market outcomes than IEHPs from other fields of study. First, IEHPs with educational training in nursing had the second lowest unemployment rate (6.0%) and second highest employment rate (79.6%) compared to IEHPs with a background in other fields. Among IEHPs who were employed, over two-thirds of those with a nursing education were employed in a health occupation—a higher percentage than IEHPs from all other fields of study. Over one-third (35.3%) were employed in professional health occupations and an additional 31.3% worked in technical health fields. Their top five occupations were registered nurses and registered psychiatric nurses (34%); nurse aides, orderlies, and patient service associates (21%); licensed practical nurses (8%); light duty cleaners (2%); and social and community service workers (2%). On average, IEHPs with a nursing background earned more (\$56,500) than most other IEHPs, except for those who studied medicine or pharmacy fields.

In contrast, IEHPs with educational training in medicine had a lower employment rate (73.2%) than IEHPs who had studied in most other fields; only IEHPs who had studied dentistry or personal support work had lower rates of employment. Among those who were employed, over half of IEHPs who studied medicine were employed in professional health occupations. Further examination of employment by educational background indicated that just over 1 in 10 IEHPs who had a degree in medicine, dentistry, or optometry worked in technical health occupations, indicating some degree of underemployment among these workers. Their top five occupations were general practitioners and family physicians (28%); specialists in clinical and laboratory medicine (13%); nurse aides, orderlies, and patient service associates (4%); registered nurses and registered psychiatric nurses (4%); and medical sonographers (3%). Employed IEHPs with an educational background in medicine earned more than other employed IEHPs on average.

Lastly, the type of health occupation an IEHP held was a significant predictor of their earnings in Canada. Those who were employed in managerial, professional, or technical health occupations earned more than their counterparts employed in non-health occupations. However, there was no statistically significant difference between the earnings of IEHPs employed in lower-skilled health occupations and IEHPs employed in non-health occupations. These results indicate that employment in higher-skilled health occupations corresponds to an earnings advantage for IEHPs.

While this study provides updated information on the characteristics and labour market outcomes of IEHPs in Canada, there are some limitations. First, the results are cross-sectional and therefore changes in the employment of IEHPs across time cannot be followed. Second, while the labour market outcomes provide a picture of the extent to which IEHPs are employed in occupations relevant to their educational training, this report does not provide specific information on occupational matching. However, this could be addressed in future research,

such as more detailed analyses of the inconsistencies between the type of health education IEHPs have and their occupations in Canada. For example, further investigation into the extent to which IEHPs trained in medicine are employed as physicians, or the proportion of IEHPs who studied nursing and are employed as nurses would provide greater insight into the underemployment and occupational matching of IEHPs in Canada. Third, an examination of the inconsistencies between fields of study and education levels would also be useful; for example, determining the number of IEHPs educated in medical fields but who report a bachelor's degree or lower as their highest level of education, and whether these differences show a pattern by region of education.

Addressing these information gaps would allow policymakers to better understand the labour market integration of IEHPs into Canada's health workforce. Additionally, this study did not examine non-permanent residents who were internationally educated health care professionals. The 2021 census data show that the number of NPR IEHPs was sizable (35,580) and about 74% of them were employed with a relatively high concentration working as nurse aides, orderlies, or patient service associates. To better understand the landscape of IEHPs, further studies should examine the transition of NPR IEHPs to permanent residency and their retention in health occupations. As this report focuses on providing new information on the landscape of IEHPs, future studies may offer further detailed analyses of specific population groups such as gender groups, racialized population groups, and their intersectionality.



CONCLUSION

While immigrants who were educated outside of Canada have a long history of contributing to Canada's labour force, detailed information on the labour market outcomes of those with training and qualifications in health fields is limited. This type of information is needed amid labour shortages in the health care sector, particularly in the wake of the COVID-19 pandemic. This study provides new information about the profile of IEHPs in Canada and their labour market outcomes, with results disaggregated by sociodemographic, educational, and immigration characteristics.

Generally, the results found that 57.7% of IEHPs in Canada were employed in health occupations in 2021, with most concentrated in professional health occupations. However, some groups of IEHPs experienced better outcomes than others. For example, among IEHPs in Canada, women were less likely to obtain employment in a professional health occupation and recently arrived IEHPs (who arrived in Canada between 2016 and 2021) had several employment disadvantages compared to their counterparts who arrived in earlier years.

Findings from this study can help to inform policymakers about the degree to which IEHPs are not using their skills and educational training in the health sector and which groups of IEHPs may be experiencing greater barriers to entering health occupations in Canada. The results will also be of importance to IEHPs themselves, as well as to employers of health care professionals.



REFERENCES

- Augustine, J. and Commissioner, F. 2015. "Employment Match Rates in the Regulated Professions: Trends and Policy Implications." *Canadian Public Policy*, 41, S28–S47. <http://www.jstor.org/stable/43697449>
- Bauder, H. 2003. "'Brain Abuse', or the Devaluation of Immigrant Labour in Canada." *Antipode*, 35(4), 699–717. DOI: [10.1046/j.1467-8330.2003.00346.x](https://doi.org/10.1046/j.1467-8330.2003.00346.x)
- Bourgeault, I. 2013. "Ethical considerations for Effective Health Human Resources Planning and Management." *Healthcare Management Forum*, 26(2), 65–67.
- Campbell-Page, R.M., J. Tepper, A.G. Klei, B. Hodges, M. Alsuwaidan, D.H. Bayoumy, J.A. Page and D.C. Cole. 2013. "Foreign-trained medical professionals: Wanted or not? A case study of Canada." *Journal of Global Health* 3(2): 020304.
- Cornelissen, L. 2023. *Choosing the reference population for census statistics on language of work*. Catalogue no. 89-657-X2023004. Ottawa: Statistics Canada.
- Cornelissen, L. 2021. "Profile of Immigrants in Nursing and Health Care Support Occupations." *Insights on Canadian Society*. Catalogue no. 75-006-X. Ottawa: Statistics Canada.
- Covell, C.L, M-D. Primeau, K. Kilpatrick, and I. St-Pierre. 2017. "Internationally educated nurses in Canada: predictors of workforce integration." *Human Resources for Health*, 15(1). DOI: [10.1186/s12960-017-0201-8](https://doi.org/10.1186/s12960-017-0201-8)
- Covell, C.L., E. Neiterman, and I.L. Bourgeault. 2016. "Scoping review about the professional integration of internationally educated health professionals." *Human Resources for Health* 14, 38.
- Darzi, A. and T. Evans. 2016. "The global shortage of health workers—an opportunity to transform care." *The Lancet* 388(10060): 2576–2577.
- Dumont, J-C., P. Zurn, J. Church, and C. LeThi. 2008. *International Mobility of Health Professionals and Health Workforce Management in Canada: Myths and Realities*. OECD Health Working Papers No. 40. Paris: OECD.
- Employment and Social Development Canada (ESDC). 2022. *Government of Canada launches call for proposals to help internationally educated professionals work in Canadian healthcare*. News Release. Dec. 5, 2022. <https://www.canada.ca/en/employment-social-development/news/2022/12/government-of-canada-launches-call-for-proposals-to-help-internationally-educated-professionals-work-in-canadian-healthcare.html>
- Employment and Social Development Canada (ESDC). 2023. *Learn more about foreign credential recognition in Canada*. Available at: <https://www.canada.ca/en/employment-social-development/programs/foreign-credential-recognition.html>
- Girard, M. and M. Smith. 2013. "Working in a regulated occupation in Canada: An immigrant-native born comparison." *Journal of International Migration and Integration*, 14: 219–244.
- Government of New Brunswick. n.d. *Immigration and Settlement in New Brunswick: Internationally Educated Healthcare Professionals (IEHPs)*. Available at: https://www.welcomenb.ca/content/wel-bien/en/international_nurses.html

- Government of Saskatchewan. 2022. *Regulatory Changes, Additional Supports to Reduce Credential Recognition Challenges Face by Out-of-Province Workers*. December 6. Available at: <https://www.saskatchewan.ca/government/news-and-media/2022/december/06/regulatory-changes-additional-supports-to-reduce-credential-recognition-challenges-faced-by-outofpro>
- Grez, E.E., P.A. Gamboa, and S.Purewal. 2023. *The Myth of Canada: The Exclusion of Internationally Trained Physicians*. https://radiussfu.com/wp-content/uploads/2023/02/The-Myth-Of-Canada_DIGITAL.pdf
- Guo, Z. 2009. "Difference, Deficiency, and Devaluation: Tracing the Roots of Non-Recognition of Foreign Credentials for Immigrant Professionals in Canada." *Canadian Journal for the Study of Adult Education*, 22: 37–52.
- Harun, R. and M. Walton-Roberts. 2022. "Assessing the Contribution of Immigrants to Canada's Nursing and Health Care Support Occupations: A Multi-Scalar Analysis." *Human Resources for Health*, 20:53. DOI: <https://doi.org/10.1186/s12960-022-00748-7>
- Hou, F. and C. Schimmele. 2020. "Adults with a Health Education but not Working in Health Occupations." *StatCan COVID-19: Data to Insights for a Better Canada*. Catalogue no. 45280001. Ottawa: Statistics Canada.
- Houle, R. and Yssaad. 2010. "Recognition of Newcomers" Foreign Credentials and Work Experience." *Perspectives on Labour and Income*, 11(9), 18–33. Ottawa: Statistics Canada.
- Murphy, G.T., T. Sampalli, L.B. Bearskin, N. Cashen, G. Cummings, A.E. Rose et al. 2022. "Investing in Canada's nursing workforce post-pandemic: A call to action." *FACETS*, 7: 1051–1120.
- Tardif, A., B. Gupta, L. McNeely, and W. Feeney. 2022. "Impact of the COVID-19 pandemic on the health workforce in Canada." *Healthcare Quarterly*, 25(1): 17–20.
- Tilson, D. 2009. *Recognizing Success: A Report on Improving Foreign Credential Recognition*. Report of the Standing Committee on Citizenship and Immigration. November 2009. 40th Parliament, 2nd session, House of Commons. Available at: <https://www.noscommunes.ca/Content/Committee/402/CIMM/Reports/RP4227034/cimmp13/cimmp13-e.pdf>
- Turcotte, M. and K. Savage. 2020. "The Contribution of Immigrants and Population Groups Designated as Visible Minorities to Nurse Aide, Orderly and Patient Service Associate Occupations." *StatCan COVID-19: Data to Insights for a Better Canada*. Catalogue no. 45280001. Ottawa: Statistics Canada.
- Walton-Roberts. 2023. "The Future of Health Care Work and the Place of Migrant Workers within It: Internationally Educated Nurses in Ontario Canada during the COVID-19 Pandemic." *Journal of Immigrant and Refugee Studies*, DOI: [10.1080/15562948.2022.2153393](https://doi.org/10.1080/15562948.2022.2153393)
- Walton-Roberts, M. (Ed). 2022. "Global Migration." *Gender and Health Professional Credentials: Transnational Value Transfers and Losses*. University of Toronto Press.
- Wang, Y., R.L. Vijendra Das, T. Lapa, P. Marosan, R. Pawliuk, H.D. Chable, et al. 2023. "Career Development of International Medical Graduates in Canada: Status of the Unmatched." *Humanities and Social Sciences Communications*, 10:38. DOI: <https://doi.org/10.1057/s41599-023-01534-z>
- World Education Services. 2023. *Summary of Recent Provincial Initiatives Supporting Internationally Educated Health Professionals (IEHPs)*. Available at: https://i5d8m7g6.rocketcdn.me/wp-content/uploads/2023/07/Provincial-IEHP-Initiatives_ESDC-Comp_July-2023.pdf
- World Education Services. 2022. *Addressing the Underutilization of Internationally Educated Health Professionals in Canada: What the Data Does and Doesn't Tell Us*. Policy Brief. March 2022. Available at: <https://knowledge.wes.org/canada-report-addressing-the-underutilization-of-iehps-in-canada.html>

APPENDIX TABLE 1

Health-related fields of study of internationally educated health care professionals, based on the 2021 Classification of Instructional Programs

CIP code	Field of study
31.05	Sports, kinesiology, and physical education/physical fitness
42.28	Clinical, counselling and applied psychology
51.00	General health services/allied health/health sciences
51.01	Chiropractic (DC)
51.02	Communication disorders sciences and services
51.04	Dentistry (DDS, DMD)
51.05	Advanced/graduate dentistry and oral sciences (Cert., MS, MSc, PhD)
51.06	Dental support services and allied professions
51.07	Health and medical administrative services
51.08	Allied health and medical assisting services
51.09	Allied health diagnostic, intervention and treatment professions
51.10	Clinical/medical laboratory science/research and allied professions
51.11	Health/medical preparatory programs
51.12	Medicine
51.14	Medical clinical sciences/graduate medical studies
51.15	Mental and social health services and allied professions
51.17	Optometry (OD)
51.18	Ophthalmic and optometric support services and allied professions
51.20	Pharmacy, pharmaceutical sciences and administration
51.22	Public health
51.23	Rehabilitation and therapeutic professions
51.26	Health aides/attendants/orderlies
51.27	Medical illustration and informatics
51.31	Dietetics and clinical nutrition services
51.32	Health professions education, ethics, and humanities
51.33	Alternative and complementary medicine and medical systems
51.34	Alternative and complementary medical support services
51.35	Somatic bodywork and related therapeutic services
51.36	Movement and mind-body therapies
51.37	Energy-based and biologically-based therapies
51.38	Registered nursing, nursing administration, nursing research and clinical nursing
51.39	Practical nursing, vocational nursing and nursing assistants
51.99	Health professions and related programs, other
60.01	Dental residency/fellowship programs
60.07	Nurse practitioner residency/fellowship programs
60.08	Pharmacy residency/fellowship programs
60.09	Physician assistant residency/fellowship programs
60.99	Health professions residency/fellowship programs, other
61.01	Combined medical residency/fellowship programs
61.02	Multiple-pathway medical fellowship programs
61.03	Allergy and immunology residency/fellowship programs
61.04	Anesthesiology residency/fellowship programs
61.05	Dermatology residency/fellowship programs

continued

APPENDIX TABLE 1

Continued

CIP code	Field of study
61.06	Emergency medicine residency/fellowship programs
61.07	Family medicine residency/fellowship programs
61.08	Internal medicine residency/fellowship programs
61.09	Medical genetics and genomics residency/fellowship programs
61.10	Neurological surgery residency/fellowship programs
61.11	Neurology residency/fellowship programs
61.12	Nuclear medicine residency/fellowship programs
61.13	Obstetrics and gynecology residency/fellowship programs
61.14	Ophthalmology residency/fellowship programs
61.15	Orthopedic surgery residency/fellowship programs
61.16	Osteopathic medicine residency/fellowship programs
61.17	Otolaryngology residency/fellowship programs
61.18	Pathology residency/fellowship programs
61.19	Pediatrics residency/fellowship programs
61.20	Physical medicine and rehabilitation residency/fellowship programs
61.21	Plastic surgery residency/fellowship programs
61.22	Podiatric medicine residency/fellowship programs
61.23	Preventive medicine residency/fellowship programs
61.24	Psychiatry residency/fellowship programs
61.25	Radiation oncology residency/fellowship programs
61.26	Radiology residency/fellowship programs
61.27	Surgery residency/fellowship programs
61.28	Urology residency/fellowship programs
61.99	Medical residency/fellowship programs, other

APPENDIX TABLE 2

Definition of broad fields of study, based on 2021 Classification of Instructional Programs

Broad field of study	CIP code	CIP field of study
Medicine/medical field	51.12	Medicine
	61.01	Combined medical residency/fellowship programs
	61.02	Multiple-pathway medical fellowship programs
	61.03	Allergy and immunology residency/fellowship programs
	61.04	Anesthesiology residency/fellowship programs
	61.05	Dermatology residency/fellowship programs
	61.06	Emergency medicine residency/fellowship programs
	61.07	Family medicine residency/fellowship programs
	61.08	Internal medicine residency/fellowship programs
	61.09	Medical genetics and genomics residency/fellowship programs
	61.10	Neurological surgery residency/fellowship programs
	61.11	Neurology residency/fellowship programs
	61.12	Nuclear medicine residency/fellowship programs
	61.13	Obstetrics and gynecology residency/fellowship programs
	61.14	Ophthalmology residency/fellowship programs
	61.15	Orthopedic surgery residency/fellowship programs
	61.16	Osteopathic medicine residency/fellowship programs
	61.17	Otolaryngology residency/fellowship programs
	61.18	Pathology residency/fellowship programs
	61.19	Pediatrics residency/fellowship programs
	61.20	Physical medicine and rehabilitation residency/fellowship programs
	61.21	Plastic surgery residency/fellowship programs
	61.22	Podiatric medicine residency/fellowship programs
	61.23	Preventive medicine residency/fellowship programs
	61.24	Psychiatry residency/fellowship programs
	61.25	Radiation oncology residency/fellowship programs
	61.26	Radiology residency/fellowship programs
	61.27	Surgery residency/fellowship programs
	61.28	Urology residency/fellowship programs
61.99	Medical residency/fellowship programs, other	
Nurses	51.3801	Registered nursing/registered nurse (RN, ASN, BSN, BScN, MSN, MScN)
	51.3802	Nursing administration (Cert., MSN, MS, MScN, MSc, PhD)
	51.3803	Adult health nurse/nursing
	51.3804	Nurse anesthetist
	51.3805	Primary health care nurse/nursing and family practice nurse/nursing
	51.3806	Maternal/child health and neonatal nurse/nursing
	51.3807	Nurse midwife/nursing midwifery
	51.3808	Nursing science (MS, MSc, PhD)
	51.3809	Pediatric nurse/nursing
	51.3810	Psychiatric/mental health nurse/nursing
	51.3811	Public health/community nurse/nursing
	51.3812	Perioperative/operating room and surgical nurse/nursing
	51.3813	Clinical nurse specialist
	51.3814	Critical care nurse/nursing
	51.3815	Occupational and environmental health nurse/nursing
	51.3816	Emergency room/trauma nurse/nursing

continued

APPENDIX TABLE 2

Continued

Broad field of study	CIP code	CIP field of study
	51.3818	Nursing practice
	51.3819	Palliative care nurse/nursing
	51.3821	Geriatric nurse/nursing
	51.3823	Registered psychiatric nurse/nursingCAN
	51.3824	Forensic nursing
	51.3899	Registered nursing, nursing administration, nursing research and clinical nursing, other
	60.0700	Nurse practitioner residency/fellowship programs
	51.3900	Practical nursing, vocational nursing and nursing assistants
	51.3901	Licensed practical/vocational nurse training
Therapeutic services	51.23	Rehabilitation and therapeutic professions
	51.2306	Occupational therapist
	51.2309	Physiotherapist
	51.09	Allied health diagnostic, intervention and treatment professions
	51.0908	Respiratory care therapy/therapist
Laboratory/diagnostics	51.10	Clinical/medical laboratory science/research and allied professions
	51.09	Allied health diagnostic, intervention and treatment professions
	51.0912	Physician assistant
Pharmacy	51.20	Pharmacy, pharmaceutical sciences and administration
	60.08	Pharmacy residency/fellowship programs
Personal Support Work	51.26	Health aides/attendants/orderlies
Dentistry	51.04	Dentistry (DDS, DMD)
	51.05	Advanced/graduate dentistry and oral sciences (Cert., MS, MSc, PhD)
	51.06	Dental support services and allied professions

APPENDIX TABLE 3

List of occupations identified as health occupations, based on 2021 National Occupational Classification (NOC)

NOC major group	"NOC code (5-digit)"	Occupation title
Specialized middle management occupations in health care	30010	Managers in health care
Professional occupations in health	31100	Specialists in clinical and laboratory medicine
	31101	Specialists in surgery
	31102	General practitioners and family physicians
	31110	Dentists
	31111	Optometrists
	31112	Audiologists and speech-language pathologists
	31120	Pharmacists
	31200	Psychologists
	31202	Physiotherapists
	31203	Occupational therapists
	31204	Kinesiologists and other professional occupations in therapy and assessment
	31209	Other professional occupations in health diagnosing and treating
	31300	Nursing coordinators and supervisors
	31301	Registered nurses and registered psychiatric nurses
	31302	Nurse practitioners
31303	Physician assistants, midwives, and allied health professionals	
Technical occupations in health	32100	Opticians
	32101	Licensed practical nurses
	32102	Paramedical occupations
	32103	Respiratory therapists, clinical perfusionists, and cardiopulmonary
	32109	Other technical occupations in therapy and assessment
	32110	Denturists
	32111	Dental hygienists and dental therapists
	32120	Medical laboratory technologists
	32121	Medical radiation technologists
	32122	Medical sonographers
	32123	Cardiology technologists and electrophysiological diagnostic technologists
	32124	Pharmacy technicians
	32129	Other medical technologists and technicians
	Assisting occupations in support of health services	33100
33101		Medical laboratory assistants and related technical occupations
33102		Nurse aides, orderlies, and patient service associates
33103		Pharmacy technical assistants and pharmacy assistants
33109		Other assisting occupations in support of health services
Occupations in education, law and social, community and government services	44101	Home support workers, caregivers, and related occupations

APPENDIX TABLE 4

Population counts of IEHPs for selected sociodemographic and educational characteristics, IEHPs aged 18 to 64, Canada and the provinces/territories, 2021

	Canada	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Territories
Gender	count											
Men+	74,770	300	160	1,065	560	9,355	33,275	3,480	2,350	11,640	12,425	170
Women+	184,920	470	310	2,130	965	21,245	83,035	8,195	4,930	30,395	32,805	440
Current age												
18-29	15,935	45	10	225	75	1,215	8,065	610	470	2,575	2,615	30
30-39	80,665	260	230	1,280	395	10,045	33,505	5,200	3,095	14,710	11,710	235
40-49	76,025	215	95	730	460	10,055	32,680	3,220	1,935	13,800	12,685	155
50-59	63,090	155	95	675	405	6,905	30,105	2,050	1,360	8,225	12,970	135
60+	23,980	90	50	280	185	2,370	11,950	605	420	2,720	5,255	50
Age at immigration												
<= 24	39,870	120	25	335	175	2,885	20,615	1,530	885	5,660	7,565	75
25 to 34	129,650	345	245	1,690	565	15,770	57,000	6,395	3,790	22,130	21,400	330
35 to 44	69,515	225	125	855	515	9,390	29,735	2,955	1,980	11,305	12,295	145
45 +	20,650	85	75	320	265	2,550	8,965	800	625	2,945	3,980	50
Period of immigration												
2016-2021	83,345	325	310	1,655	655	11,680	33,965	4,470	2,720	15,125	12,200	240
2010-2015	62,715	190	70	585	350	7,215	25,095	3,850	2,855	12,490	9,895	130
2000-2009	68,135	150	60	570	320	7,945	33,050	2,430	1,225	9,585	12,655	150
Before 2000	45,490	110	40	395	200	3,755	24,200	925	480	4,830	10,485	85
Immigration class												
Federal skilled workers	83,780	255	60	700	270	2,525	47,575	1,690	1,305	13,850	15,440	115
Provincial Nominee program	52,205	265	315	1,380	700	16,340	8,410	6,910	3,845	7,255	6,610	175
Other economic immigrants	44,405	65	15	280	135	2,195	21,150	540	635	9,255	10,025	120
Family immigrants	58,890	140	65	585	315	6,470	28,070	2,150	1,240	9,175	10,515	160
Refugees, humanitarian category	16,725	35	0	190	70	2,780	9,375	275	220	2,020	1,745	25
Immigrants arrived before 1980	3,690	15	15	65	35	290	1,730	120	40	485	895	0

continued

APPENDIX TABLE 4
Continued

Language	Canada	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Territories
English mother tongue	58,120	265	135	965	500	3,330	26,435	2,350	1,895	11,170	10,900	165
French mother tongue	8,565	10	0	45	100	6,700	1,085	60	25	270	250	15
Other mother tongue, speaks English	169,175	465	310	2,085	765	5,300	84,060	9,020	5,235	29,510	32,040	395
Other mother tongue, speaks French	5,945	0	0	0	30	5,750	110	0	10	25	10	0
Other mother tongue, speaks English and French	13,790	20	10	65	110	9,145	2,930	135	55	690	610	15
Other mother tongue, does not speak English or French	4,100	0	20	30	20	370	1,685	105	65	370	1,415	10
Population groups												
Non-racialized, non-Indigenous	50,310	195	120	860	520	9,890	20,195	1,550	925	6,230	9,690	135
South Asian	56,695	160	155	720	170	1,630	32,495	2,460	2,000	9,595	7,210	105
Chinese	18,750	30	45	130	50	1,330	8,760	185	195	1,560	6,465	0
Black	16,475	100	10	195	160	4,190	5,980	780	575	3,550	895	50
Filipino	66,220	170	90	675	280	4,070	24,200	5,575	2,905	15,240	12,755	265
Arab and West Asian	28,155	95	25	370	185	5,930	15,100	445	295	2,445	3,260	0
Latin American	8,015	0	10	55	40	2,350	3,235	170	110	1,075	960	10
Southeast Asian	3,775	10	0	50	25	445	1,535	190	125	690	710	10
Korean and Japanese	5,395	0	0	65	50	220	1,985	120	20	770	2,145	10
Other racialized population groups	5,910	10	15	85	50	525	2,825	205	140	880	1,150	20
Educational level												
Postsecondary below bachelor's degree	64,170	155	115	685	465	9,550	26,635	2,640	1,600	9,975	12,130	215
Bachelor's degree	97,570	230	210	1,265	420	9,605	40,430	6,100	3,280	18,745	17,035	255
Graduate degree (not in medicine)	44,630	120	105	550	270	5,665	21,610	1,365	1,035	6,005	7,840	70
Degree in medicine, dentistry, or optometry	53,325	270	50	695	365	5,775	27,635	1,580	1,360	7,305	8,225	60
Region of education												
English speaking Western countries	29,305	130	55	510	325	1,240	14,415	660	530	4,205	7,195	40
French speaking European countries	5,045	10	0	20	65	3,895	510	25	0	140	345	35
Other European countries	22,645	40	35	330	165	3,320	11,140	755	395	2,665	3,750	70
Caribbean, Central and South America	14,755	55	10	135	85	4,345	6,535	330	175	1,650	1,420	20
Africa	25,115	135	35	340	230	6,970	8,620	1,115	885	4,665	2,110	25
Asia	162,720	410	335	1,875	655	10,820	75,080	8,790	5,300	28,705	30,345	415

Note: Sample size is 63,098. Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses provided. In these cases, individuals in the category "non-binary persons" are distributed into the other two gender categories and are denoted by the "+" symbol.

Source: Statistics Canada, 2021 Census of Population.