

Policy Brief

Addressing the Underutilization of Internationally Educated Health Professionals in Canada: What the Data Does and Doesn't Tell Us

March 2022





World
Education
Services

Addressing the Underutilization of Internationally Educated Health Professionals (IEHPs) in Canada:

What the Data Does and Doesn't Tell Us

Contents

Executive Summary	3
I. Addressing the Underutilization of IEHPs: The Importance of Data	4
Definitions.	4
II. Mapping Existing IEHP Data and Identifying the Gaps	6
A. Key Data Sources and Limitations	6
B. Number of IEHPs in Canada	8
C. Number of IEHPs Entering Canada	9
D. Underemployment Among IEHPs	11
E. Licensure Data	12
F. Race, Gender, and Immigration Status	13
III. Recommendations	14
IV. Conclusion	16
Bibliography	17

Executive Summary

As Canada continues to grapple with the COVID-19 pandemic, the country must ensure that it has enough qualified health professionals to respond to its population's needs. Capitalizing on the skills and experience of internationally educated health professionals (IEHPs) demands equitable policies and programs, which in turn require timely, comprehensive, integrated data. This brief will help researchers and policymakers understand the extent of skill underutilization of IEHPs, the scope and the limitations of existing data, and where improvements can be most impactful.

IEHPs play a vital role in Canada's health care system, yet nearly half of these skilled professionals are unemployed or underemployed. While numerous data sources capture specific aspects of the IEHP landscape, it is nearly impossible to ascertain just how many IEHPs are in the country, how many are practicing in their intended professions, how many are attempting to re-enter their professions, or the extent to which downward mobility and de-skilling are occurring because of skill underutilization.

Although much is understood about both the contributions of IEHPs and the underutilization of their skills, existing data do not convey the full scope of the issue. For example, existing data confirm that a sizable number of IEHPs enter Canada each year, both permanently and temporarily, yet our analysis shows that these data are likely a substantial underestimation. Existing data also show that many IEHPs face significant barriers to licensure and re-entry into their professions, resulting in widespread skill underutilization. However, current tracking and reporting of licensure and registration processes is disjointed and lacks critical information, such as disaggregated demographic data, that is essential to addressing these barriers.

Data also show that IEHPs are more likely than their Canadian-trained counterparts to be underemployed and that factors including race, gender, and immigration status intersect to affect career opportunities and employment outcomes. However, our understanding of the true scope of this issue is hindered by a lack of demographic data.

This policy brief concludes with several detailed recommendations for improvements to data collection, linkage, and reporting processes specifically aimed at addressing the data gaps the brief identifies.

I. Addressing the Underutilization of IEHPs: The Importance of Data

IEHPs are a critical element of Canada's health care system, and their contributions are key to addressing the country's growing health care needs. According to Statistics Canada, immigrants account for over 25 percent of the country's health care and social assistance workforce, and every year thousands more individuals with international health education and training enter the country as both temporary and permanent residents (Statistics Canada 2021).

Yet, despite our increasing need for health care workers, nearly half (47 percent) of IEHPs are either unemployed or underemployed; that is, they are working in positions that don't fully utilize their skills and experience (Statistics Canada 2020).

It is difficult, however, to grasp the true size of this underutilized yet valuable talent pool, or to develop effective and coherent strategies for their integration into the health care system, because the answers to many basic data questions are unclear or unavailable.

Real-time, evidence-based information on IEHPs—including their immigration status, education and training, and licensure status, as well as disaggregated demographic data—is key to creating and implementing more equitable policies and programming.

This policy brief highlights what the available data tell us about the underutilization of IEHPs in Canada. It also points out critical data gaps that hinder the development of effective, evidence-informed strategies, and proposes ways in which those gaps can be addressed.

The COVID-19 pandemic has moved inequality and exclusion to the forefront of policy debates and public awareness, while highlighting the grave consequences of inadequate access to health care, including in the long-term care (LTC) sector. It is more imperative than ever to ensure that enough qualified health professionals, both domestically and internationally trained, are available to respond to the needs of residents and to the needs of our health care system.

Definitions

Internationally educated health professionals (IEHPs): Individuals with international credentials in health professions that are regulated in Canada, such as medicine, nursing, dentistry, pharmacy, midwifery, sonography, laboratory and medical technology, and others

Immigrants: For the purposes of this brief, the term “immigrants” includes individuals who are permanent residents or naturalized citizens, as well as temporary residents who are in Canada on a work or student permit, a refugee claim, or as a family member of another temporary resident (Statistics Canada 2017)

Underemployment: Employment that does not fully use an individual's education, skills, and experience, or part-time employment of someone who is available to work full-time

Underutilization: Defined by Statistics Canada in the context of health professions as people with post-secondary health education who are either unemployed or employed in positions that require only a high school diploma (Hou and Schimmele 2020)

Commensurate employment: Employment conditions (including skill requirements, level of responsibility, and compensation) that are proportionate to an individual's education, training, and experience

Health care sector: For the purposes of this policy brief, the health care sector in Canada comprises individuals and organizations engaged in providing diagnosis, treatment, and support care, including long-term care

Numerous data sources each capture small pieces of the IEHP landscape in Canada. But because the data are collected by several different government and non-governmental agencies, over differing time periods, using significantly different methodologies, it is impossible to determine how many IEHPs are in the country, how many are practicing their intended profession, how many are attempting to re-enter their profession, or the true extent of de-skilling and downward mobility.

II. Mapping Existing IEHP Data and Identifying the Gaps

A. Key Data Sources and Limitations

Federal Government Sources

Immigration, Refugees and Citizenship Canada (IRCC)	
Description	Limitations
Collects annual intake data on immigrants and refugees to Canada, including their highest level of education, “skill level,” and the intended occupation of permanent and temporary residents.	<ul style="list-style-type: none">• IRCC data do not provide a complete picture of the number of immigrants and refugees in the country who are in the process of attempting to re-enter the profession in which they had trained, or the number of those who are ultimately successful or unsuccessful in this process.• IRCC data do not systematically document the specific educational qualifications (“field of study”) of incoming residents across different immigration streams.• Data are not systematically disaggregated by race or ethnicity.
Statistics Canada	
Description	Limitations
Collects and analyzes data on citizens, permanent residents, temporary work/study permit holders, as well as refugees and refugee claimants, by profession. Conducts the census every five years, which includes reliable occupation and field of study data.	<ul style="list-style-type: none">• Data are frequently drawn from the five-year census program, which means that analysis done toward the end of the census period uses older data. This does not provide a real-time picture.• While Statistics Canada collects relevant data on IEHPs, some information is only accessible by submitting specific data requests on a cost-recovery basis.
Labour Force Survey (LFS)	
Description	Limitations
The monthly LFS from Statistics Canada provides estimates for levels of employment and unemployment by industry, occupation, public/private sector, hours worked, and more.	<ul style="list-style-type: none">• LFS methodology does not ask respondents if they are temporary work or study permit holders, and sample sizes are limited.

Longitudinal Immigration Database (IMDB)

Description	Limitations
Statistics Canada’s IMDB combines information from IRCC files and CRA tax data over 35 years. It tracks economic outcomes for both immigrants and non-permanent residents and can be used to answer a broad range of research questions. The IMDB uses the Social Data Linkage Environment to facilitate linkages with auxiliary data files.	<ul style="list-style-type: none">• Data are limited to Canada’s tax filing population.

Other Data Sources

Provincial occupational regulatory bodies

Description	Limitations
<p>Occupational regulatory bodies in the health professions collect data on individuals, including IEHPs, seeking professional licensure.</p> <p>Regulatory bodies are subject to fair access legislation in Alberta, Manitoba, Ontario, Quebec, and Nova Scotia, but reporting requirements vary. In Ontario, for instance, occupational regulatory bodies are mandated by provincial legislation to report annually to the Office of the Fairness Commissioner (OFC), which assesses the registration process for transparency, objectivity, impartiality, and fairness.</p>	<ul style="list-style-type: none">• In some cases, data reports from regulatory bodies provide the annual number of IEHPs who have applied for and/or obtained professional registration. However, reporting processes are not standardized between health professions or between provinces because of differences in governing legislation, hindering comparative analysis.• Some reports do not explain differences between application and registration numbers of internationally educated applicants, or reasons for unsuccessful applications.• There is not an effective linkage between regulator data on IEHPs who obtain registration and data from other sources on IEHP employment outcomes.• Data made available for public use are sometimes dated. As of 2021, the Office of the Manitoba Fairness Commissioner reports were available online only up to 2017.

Canadian Institute for Health Information (CIHI)

Description	Limitations
Provides data and information used to improve Canada’s health care system. CIHI maintains a Health Workforce Database that includes aggregate and record-level data on 30 groups of health care providers nationally, drawing on data from provincial and territorial regulatory bodies, professional associations, and government.	<ul style="list-style-type: none">• Only tracks those who are already registered in Canada. CIHI data do not provide any information about IEHPs licensed in other countries who are attempting to re-register here.

Canadian Resident Matching Service (CaRMS)

Description	Limitations
CaRMS is a national organization that provides a matching service for mandatory medical residency training. Most internationally trained physicians (ITPs) are required to complete residency training in Canada, and every year CaRMS tracks the number of ITPs who are successfully matched to residency positions.	<ul style="list-style-type: none">Both Canadians who studied medicine abroad and immigrant physicians already licensed to practice in other jurisdictions are designated as “international medical graduates” (IMGs), obscuring the number of immigrant physicians that are matched to medical residency positions.

While incomplete, the available data nonetheless point to a large potential health human resource of IEHPs that is drastically underutilized, to the detriment of Canada’s health care system. The following sections provide an overview of what the available data tell us about the potential size of that talent pool, the underemployment of IEHPs, and the professional registration process; they also highlight where critical data gaps exist.

B. Number of IEHPs in Canada

The critical role of immigrants and refugees in the Canadian health care system is well documented. Labour Force Survey data from 2017 showed that roughly 10 percent of working adults in Canada were employed in health occupations, and that immigrants accounted for a full 25 percent of Canada’s health care and social services workforce.

Specifically, immigrants make up:

- About **9 percent** of registered nurses licensed to practice in Canada (CIHI 2020)
- About **19 percent** of physicians licensed to practice in Canada (CMA 2019)
- About **33 percent** of nurse aides, orderlies, and patient service associates (occupations that do not require a licence) (Statistics Canada 2020)

In addition, there are striking patterns of overrepresentation in certain fields and locations. In Toronto, Vancouver, and Calgary, more than **70 percent** of nurse aides, orderlies, and patient service workers are immigrants. Internationally educated physicians, on the other hand, are overrepresented in rural areas and in certain provinces. For example, in Saskatchewan, which actively recruits ITPs¹ to meet needs in underserved communities, **52 percent** of all physicians are internationally trained, compared with **31 percent** in Ontario, and just **10 percent** in Quebec.

Data Gaps

While the data tell us how many immigrants have been licensed to practice in Canada, the data do not tell us how many IEHPs are living in Canada that could potentially become registered to practice here. To determine the existing talent pool of IEHPs living in Canada, both temporarily and permanently, we need more comprehensive data.

C. Number of IEHPs Entering Canada

According to IRCC,² the following IEHPs became permanent residents (PR) between 2015 and 2020:

- 13,070 nurses (including Registered Nurses (RNs), Licensed Practical Nurses (LPNs), and Registered Psychiatric Nurses)
- 5,135 doctors (including 2,325 specialty physicians)
- 2,020 dentists
- 1,705 pharmacists
- 1,565 physiotherapists and occupational therapists
- 1,035 nurse aides, orderlies, and personal support staff

However, these data show only permanent residents who specifically declared their intended occupation at the time of arrival. Other data sources tell a very different story about the size of the potential talent pool.

1 The **Practice-Ready Assessment (PRA)** program from the Medical Council of Canada's National Assessment Collaboration (NAC) is one means of recruiting ITPs into underserved areas. The program provides a route to licensure for ITPs who have already completed residency and practiced independently in another jurisdiction for a period of time. PRA candidates are assessed over a period of 12 weeks for their competence in appropriate clinical skills and knowledge. Once licensed, they must fulfill a "Return of Service" of 2 to 4 years in an underserved community of the province.

2 **Government of Canada** - Admissions of Permanent Residents by Province/Territory of Intended Destination and by Intended Occupation (4-Digit NOC). English/XLS file.

For example, in 2019, IRCC reported that only 205 new permanent residents in Ontario declared nursing as their intended occupation. Yet in that same year the College of Nurses of Ontario (CNO) reported that more than 14,000 internationally educated nurses (IENs) were actively pursuing professional registration, including more than 4,500 new applicants that year. Another data source, Ontario Health’s [Access Centre for Internationally Educated Health Professionals](#), indicates that 860 IENs signed up with the centre in 2019, with a total of 3,194 IENs signing up between 2017 and 2021.

While many of these IENs may have arrived in previous years, some of the discrepancies between these numbers may be the result of IENs arriving initially as temporary workers, especially as caregivers. Detailed information about individuals’ educational backgrounds (field of study) is only collected by IRCC at the point of landing for Principal Applicants for Express Entry, meaning that field of study data for individuals entering Canada as temporary residents is not systematically collected.

People with Post-secondary Education in a Health-Related Field	Underutilization Rate
Immigrants educated in another country	47%
Racialized populations	39%
Immigrants who received their highest level of education in Canada	33%
Women	31%
Canadian-born and -educated individuals	28%

Source: [Statistics Canada](#) – Adults with a health education but not working in health occupations.
 Note: There is overlap among these categories.

This is significant, because research shows that from 1993 to 2015, 46 percent of women who entered Canada temporarily through the Live-in Caregiver Program (LCP) and intended to work in care held a bachelor’s degree (Lightman 2021), and Statistics Canada data show that many would likely have had nursing backgrounds. According to a 2020 Statistics Canada COVID-19 study, 25 percent of recent immigrants working as nurse aides, orderlies, or patient service associates/personal support workers have at least a bachelor’s degree, and of those, 69 percent hold a nursing degree.

In IEN focus groups conducted by WES in 2021, a large proportion of participants were working as caregivers while pursuing nursing registration. Several had come to Canada as international students in gerontology programs because this was a pathway to professional registration. Yet the official data do not tell this story. In Ontario, [IRCC data](#) on intended occupations of temporary workers, including caregivers, show that between 2015 and 2021, only 10 declared their intended occupation as Registered Nurse/Registered Psychiatric Nurse, and none as Licensed Practical Nurse (Statistics Canada 2021).

Data Gaps

To fully understand what untapped health human resources are available in Canada, we need detailed data for all incoming health professionals regarding their educational qualifications, licensure status in other jurisdictions, and intended occupation. We need this data for all immigration categories IEHPs may arrive under: temporary workers (especially caregivers), permanent residents, refugees or refugee claimants, and international students. Given the limitations of existing data sources, a cross-tabulation of IRCC data and census data on occupation and field of study may be the most effective way to gauge the number of IEHPs in the country. This analysis can be conducted when 2021 census data are released.

D. Underemployment Among IEHPs

As noted earlier, IEHPs are significantly more likely to be underemployed or unemployed than individuals educated in Canada. Only 41 percent of immigrants with health education are working in health care, compared with 58 percent of Canadian-born individuals with similar education (Hou & Schimmele 2020).

Overall, nearly half of all immigrants with a health education are underutilized in Canada; some work part-time but are available to work full-time. While immigrants trained abroad have the highest rates of underutilization among all those with post-secondary education in health, the data below show that the intersectionality of immigration status, gender, and race are all factors affecting employment outcomes.

In 2015, Ontario's Office of the Fairness Commissioner (OFC) released a paper detailing the rate at which immigrants were securing employment within their regulated professions at a level appropriate to their training. This is referred to as the "employment match rate." The paper [showed](#) that IEHPs were significantly less likely to work in their fields than their Canadian-born counterparts.³

- A total of 54 percent of university-educated immigrant nurses were working in their field, compared with 72 percent of Canadian-born and -educated nurses.
- In medicine, just 37 percent of internationally trained physicians were working as physicians in Canada, compared with 55 percent of their Canadian-born and -educated peers.
- IEHPs were more likely than their Canadian-born counterparts of similar training and experience to enter lower wage occupations outside of the health sector.

³ The OFC study analyzes 15 professions that require a university education and are regulated in Canada.

Statistics Canada data suggest that by 2021, the gap in employment rates may have widened in some professions. As of 2021, only 37 percent of those with a bachelor's degree or higher in a professional nursing program earned in another country were working in their field, compared with 78 percent of those trained domestically.

Data Gaps

Employment match rate studies such as the 2015 OFC initiative have effectively highlighted the low success rate of IEHPs securing commensurate employment in their fields. However, the data that informed the OFC study is more than 10 years old. Replicating such studies with the latest census data would fill an important information gap by providing a more current picture of how many IEHPs are working in their fields. This would help to inform policies aimed at improving employment outcomes of IEHPs in their intended professions.

E. Licensure Data

Well-documented systemic barriers hinder IEHPs from demonstrating that they meet Canadian regulatory standards. These barriers include expensive qualifying exams, extremely limited access to residency training or other clinical requirements, and few options for obtaining and demonstrating the competencies assumed to be gained only through “Canadian experience.” In general, there is insufficient access to bridging programs to fill specific training gaps, as well as limited recognition of the transferable skills of IEHPs seeking related health care work outside of their original profession (Covell et al 2016).

In Nova Scotia, for example, provincial government data show that IEHPs applying for professional registration face processing times nearly **three times** longer, on average, than those of domestic applicants. In 2017, internationally educated respiratory therapists in the province faced application processing times **six times** longer than the processing times of those who qualified in Canada.

In 2020, IENs actively **pursuing registration** in Ontario numbered 14,633. In that same year, only 2,123 became eligible to register.

The available data on internationally trained physicians (ITPs) also demonstrate that they face additional obstacles to meeting the requirements to practice medicine compared with domestically trained physicians. For instance, there is a separate and much smaller pool of residency positions that are open to ITPs. This becomes a barrier as ITPs are generally required to complete one year of postgraduate training, active medical practice, or a clerkship in Canada to meet requirements for professional licensure. In 2020, only 418 ITPs out of 1,928 (22 percent) obtained a residency position, while 2,895 Canadian medical graduate applicants out of 3,101 (93 percent) obtained a position. Of the spaces reserved for ITPs, the majority were filled by Canadians—not immigrant physicians—who had gone abroad to study medicine (CaRMS 2020).

There are several **ongoing** legal challenges alleging systemic discrimination against ITPs seeking licensure through residency in Canada, based on the fact that ITPs and graduates of Canadian medical schools are provided with significantly different and unequal opportunities after meeting the same qualification requirements, including passing the requisite Canadian medical examinations.

Data Gaps

There is a need for more data and analysis of the challenges IEHPs face in the licensure process. Improved data could point to measures that would streamline registration processes. Additionally, there is not an effective data linkage between regulator data on IEHPs who apply for registration, those who succeed in obtaining registration, and data from other sources on IEHP employment outcomes. Finally, it is important to apply a race, gender, and immigration analytical lens to the collection of data to monitor and address inequities that enable systemic forms of discrimination to occur.

F. Race, Gender, and Immigration Status

Race, gender, and immigration status intersect to impact career pathways and outcomes. Care work is a feminized, underpaid, and undervalued part of the labour market. Women—particularly racialized women and racialized immigrant women—are overrepresented in some care-based health occupations, such as nurse aides, orderlies, and patient service associates or personal support workers.

A **workforce analysis** conducted by the Canadian Centre for Policy Alternatives found that 86 percent of frontline workers in nursing homes and 89 percent of workers in home care are women. Racialized women make up a full 33 percent of nurse aides, orderlies, and patient service associates; and 38 percent of home support workers, housekeepers, and related occupations (CCPA 2020). As indicated above, a proportion of the women in these roles also hold nursing degrees from other countries.

Data Gaps

Despite the clear overrepresentation of racialized immigrant women in certain health professions, data on career pathways and employment outcomes for IEHPs in Canada are not consistently disaggregated by gender, race/ethnicity, or immigration status. Better disaggregated data are needed to improve our understanding of how gender, race, and immigration status intersect and impact IEHP licensure and employment outcomes, and to inform workforce policy.

III. Recommendations

While much is known about both the contributions and the underutilization of IEHPs in Canada, existing data fail to capture the full scope of the issue.

The limitations of health workforce data are highlighted in a 2021 [appeal](#) by the Canadian Health Workforce Network (CHWN), which is calling on the federal government to play a leadership role in addressing critical health workforce data gaps.

In 2021, over 50 organizations signed on to a parallel [call for better, more timely, and comprehensive data on IEHPs](#) to support systems-wide reforms. That effort laid out a set of recommendations for a national strategy on the effective integration of IEHPs into the country's health human resource pool.

Formulating an effective national strategy, including on the programmatic and policy level, must begin with a deep understanding of the problem based on accurate, comprehensive, and meaningful data.

1. Improve IRCC's data collection on educational background and intended occupation for all classes of immigrants. This would include:
 - Collecting the type and level of health care education or training (field of study), licensure status in other jurisdictions, and intended occupation of all IEHP migrants to Canada, including all immigration categories: temporary workers (especially caregivers), permanent residents (including Secondary Applicants through Express Entry), refugees/claimants, and international students
 - Tracking IEHPs who transition from temporary work/study permit holder to permanent residency/citizenship status
 - Continuing IRCC's collaboration with Statistics Canada to develop the Longitudinal Immigration Database (IMDB) and supporting enhanced data exchanges, for example, through the Social Data Linkage Environment
2. Implement Statistics Canada's [Disaggregated Data Action Plan](#) announced in the 2021 federal budget.*
3. Improve and standardize reporting processes for occupational regulatory bodies.
4. Require provincial occupational regulatory bodies to collect data on IEHPs seeking registration in health care professions.

* **Note:** The implementation of the Disaggregated Data Action Plan, combined with recent investments in the Centre for Gender, Diversity and Inclusion Statistics (CGDIS) and the expert Advisory Committee on Ethnocultural and Immigration Statistics, will support more effective statistical analysis of underutilization and labour market segmentation of IEHPs by race, gender, and immigration status.

- 5.** Standardize data reporting requirements for occupational regulatory bodies across health professions and among provinces to show:
 - How many IEHPs have applied for professional registration in relation to the total applicant pool
 - The number of successful/unsuccessful IEHP applicants each year
 - Disaggregated demographics on successful/unsuccessful applicants
 - How long the application/assessment process takes
- 6.** Link data on applications and registrations from occupational regulatory bodies to data on employment outcomes.

IV. Conclusion

Existing data show that underutilization of IEHP skills and experience remains a critical issue, and that race, gender, and immigration status barriers are keeping people who have the skills we need underemployed.

However, because of data limitations, we simply don't know how many IEHPs are in the country (temporarily or permanently), how many successfully re-enter their careers, or how long it takes them to become licensed. Additionally, we do not have adequate documentation of the effects of intersectionality on career pathways and employment outcomes; the impacts of downward mobility, de-skilling, and underemployment; and the personal, social, and economic costs to IEHPs and Canadian society.

Understanding the scope, scale, and nature of the IEHP human resource pool and the underutilization of IEHP skills across a range of health professions is essential to informing the planning and policy measures necessary to equitably rebuild Canada's health workforce.

At a time when the pandemic has taken a severe toll on the existing workforce and a global shortage of skilled health care workers is looming, all stakeholders—including policymakers, politicians, employers, health educators, and professional regulators—must collaborate to prioritize actionable, evidence-based strategies that accelerate the entry of IEHPs into our health workforce and allow Canada to retain the skilled health care professionals choosing to make this country home.

Authors:

Caroline Ewen, Manager, Policy & Advocacy

Joan Atlin, Director, Strategy, Policy & Research

Karl Flecker, Associate Director, Policy & Advocacy

Bibliography

- Alboim, Naomi, Karen Cohl, and Tommy Pham. "Equitable Access: Implementing the Temporary Resident to Permanent Resident Pathway." Ryerson University, Toronto, Ontario, Canada, June 2021. https://www.ryerson.ca/content/dam/cerc-migration/Policy/CERCMigration_PolicyPaper03_June2021.pdf.
- Augustine, Hon. Jean. "Employment Match Rates in the Regulated Professions: Trends and Policy Implications." *Canadian Public Policy* 41(1). 2015. <https://doi.org/10.3138/cpp.2014-085>.
- Block, Sheila and Simran Dhunna. "Face to face with COVID-19: How do we care for care workers?" *The Monitor*. Canadian Centre for Policy Alternatives (CCPA). April 6, 2020. <https://monitormag.ca/articles/face-to-face-with-covid-19-how-do-we-care-for-care-workers/>.
- Canadian Health Workforce Network (CHWN). "Call to Action – Help our Healthcare Heroes Now! A call to action for better planning, better care and better work through better data." 2021. <https://www.hhr-rhs.ca/en/petition.html>.
- Canadian Institute for Health Information (CIHI). 2020. <https://www.cihi.ca/en/nursing-in-canada-2019>.
- Canadian Medical Association (CMA). "Canadian Physician Resources – 2019 basic facts." 2019. <https://www.cma.ca/quick-facts-canadas-physicians>.
- Canadian Resident Matching Service (CaRMS). "2020 R-1 match data snapshot." April 15, 2020. <https://www.carms.ca/news/2020-r-1-match-data-snapshot/>.
- College of Nurses of Ontario (CNO). "Fair Registration Practices Report – College of Nurses of Ontario 2019." 2019. <https://www.cno.org/globalassets/1-whatiscno/newsreleasesandnotices/notices/nursing-fair-registration-practices-report-2019.pdf>.
- College of Nurses of Ontario (CNO). "Fair Registration Practices Report – College of Nurses of Ontario 2020." 2020. <https://www.cno.org/globalassets/1-whatiscno/newsreleasesandnotices/notices/fair-registration-practices-report-2020.pdf>.
- Conference Board of Canada. "Meeting the Care Needs of Canada's Aging Population." July 2018. <https://www.cma.ca/meeting-care-needs-canadas-aging-population>.
- Cornelissen, Louis. "Insights on Canadian Society: Profile of immigrants in nursing and health care support occupations." Statistics Canada. May 28, 2021. <https://www150.statcan.gc.ca/n1/pub/75-006-x/2021001/article/00004-eng.htm>.
- Covell, Christine L., Elena Neiterman, and Ivy Lynn Bourgeault. "Scoping review about the professional integration of internationally educated health professionals." *Hum Resource Health* June 17, 2016. <https://doi.org/10.1186/s12960-016-0135-6>.
- Global News*. "Foreign-trained doctors file B.C. human rights complaint, claiming systemic discrimination." June 26, 2020. <https://globalnews.ca/news/7114162/b-c-foreign-trained-doctors-human-rights-complaint/>.
- Government of Canada. Budget 2021 - Part 3: A Resilient and Inclusive Recovery. 2021. <https://www.budget.canada.ca/2021/report-rapport/p3-en.html>.
- Government of Canada. Temporary Residents: Temporary Foreign Worker Program (TFWP) and International Mobility Program (IMP) Work Permit Holders – Monthly IRCC Updates - Canada - Temporary Foreign Worker Program work permit holders by gender, occupational skill level and year in which permit(s) became effective. English/XLS file [Data table]. <https://open.canada.ca/data/en/dataset/360024f2-17e9-4558-bfc1-3616485d65b9/resource/880e786d-9d33-4397-a37d-4de021247172>.

- Government of Canada. Canada - Temporary Foreign Worker Program work permit holders by province/territory of intended destination, intended occupation (4-digit NOC 2011) and year in which permit(s) became effective, January 2015 – July 2021. English/XLS file [Data table]. https://open.canada.ca/data/en/dataset/360024f2-17e9-4558-bfc1-3616485d65b9/resource/4ff7924d-d606-4320-85e2-581af8f12b6b?inner_span=True.
- Government of Nova Scotia. Fair Registration Practices – Reports, Ministry of Labour and Advanced Education. 2021. <https://novascotia.ca/lae/fair-registration-practices/reports.asp>.
- Harun, Rafael and Margaret Walton-Roberts. “Assessing the Contribution of Immigrants to Canada’s Nursing and Health Care Support Occupations: A Multi Scalar Analysis.” Hum Resource Health November 15, 2021 (preprint). <https://doi.org/10.21203/rs.3.rs-1035034/v1>.
- Hou, Feng. “Transition from temporary foreign workers to permanent residents.” Statistics Canada. StatCan Blog. May 25, 2017. <https://www150.statcan.gc.ca/n1/daily-quotidien/170525/dq170525e-eng.htm>.
- Hou, Feng and Christoph Schimmele. “Adults with a health education but not working in health occupations.” Statistics Canada. April 29, 2020. <https://www150.statcan.gc.ca/n1/pub/45-28-0001/2020001/article/00004-eng.htm>.
- Lightman, Naomi. “Does Care Count for Less? Tracing the Income Trajectories of Low Status Female Immigrant Workers in Canada, 1993–2015.” *Can. Stud. Popul.* 48, 29–57. April 1, 2021. <https://link.springer.com/article/10.1007%2Fs42650-021-00040-4>.
- McKenzie, Kwame. “Race and ethnicity data collection during COVID-19 in Canada: if you are not counted you cannot count on the pandemic response: The Impact of COVID-19 in Racialized Communities.” Royal Society of Canada. November 12, 2020. <https://rsc-src.ca/en/race-and-ethnicity-data-collection-during-covid-19-in-canada-if-you-are-not-counted-you-cannot-count>.
- Office of the Manitoba Fairness Commissioner. Data Reports. 2021. https://www.gov.mb.ca/frpo/reports/annualreports/omfc_report_minister_2021.pdf.
- Statistics Canada. Dictionary, Census of Population, 2016: Immigrant Status. 2017. <https://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop148-eng.cfm>.
- Statistics Canada. “Longitudinal Immigration Database (IMDB) Technical Report, 2019.” <https://www150.statcan.gc.ca/n1/pub/11-633-x/2021002/sec1-eng.htm>.
- Statistics Canada. “Immigrants nearly three times more likely to experience persistent overqualification than non-immigrants.” September 2, 2020. <https://www150.statcan.gc.ca/n1/daily-quotidien/200902/dq200902a-eng.htm>.
- Statistics Canada. 2021 Census dissemination planning: Release plans. <https://www12.statcan.gc.ca/census-recensement/2021/ref/prodserv/release-diffusion-eng.cfm>.
- Statistics Canada. “Statistics Canada and disaggregated data: Responding to data needs during COVID-19.” 2020. <https://www.statcan.gc.ca/eng/transparency-accountability/disaggregated-data>.
- Statistics Canada. Admissions of Permanent Residents by Province/Territory of Intended Destination and by Intended Occupation (4-Digit NOC) - English/XLS file [Data table]. 2021. <https://open.canada.ca/data/en/dataset/f7e5498e-0ad8-4417-85c9-9b8aff9b9eda>.
- Turcotte, Martin and Katherine Savage. “The contribution of immigrants and population groups designated as visible minorities to nurse aide, orderly and patient service associate occupations.” Statistics Canada. June 22, 2020. <https://www150.statcan.gc.ca/n1/pub/45-28-0001/2020001/article/00036-eng.htm>.
- Yssaad, Lahouaria and Andrew Fields. “The Canadian Immigrant Labour Market: Recent Trends from 2006 to 2017.” Statistics Canada. December 24, 2018. <https://www150.statcan.gc.ca/n1/pub/71-606-x/71-606-x2018001-eng.htm>.