

Retention in Healthcare

Migration Costs and System Perspectives



The Future Skills Centre (FSC) is a forward-thinking centre for research and collaboration dedicated to driving innovation in skills development so that everyone in Canada can be prepared for the future of work. We partner with policymakers, researchers, practitioners, employers and labour, and post-secondary institutions to solve pressing labour market challenges and ensure that everyone can benefit from relevant lifelong learning opportunities. We are founded by a consortium whose members are Toronto Metropolitan University, Blueprint, and Signal49 Research, and are funded by the Government of Canada's Future Skills Program.

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Key findings

- Health workforce migration—within and between provinces, and internationally—has measurable impacts on health systems yet remains poorly understood at the national level. Data confirm that health professionals do move across jurisdictions, creating cost and capacity pressures. However, limited data availability and fragmented, inconsistent collection practices restrict understanding of the scale, patterns, and drivers of this movement.
- Decisions to migrate are driven by a consistent set of structural and workplace factors. Compensation differences, variation in scope of practice, access to professional development, job availability, and workplace culture materially influence whether health professionals remain in place, relocate within Canada, or leave the country.
- Workforce instability generates considerable system-level costs, driven primarily by turnover rather than migration alone. Each health professional who leaves a role triggers replacement costs—estimated at \$118,000 to \$158,000 per physician and \$38,000 to \$140,000 per nurse—regardless of whether the move occurs within a province, between provinces, or internationally.
- When professionals leave Canada, these costs are compounded by the loss of public investment in education and training. For physicians, this investment ranges from \$553,000 to \$1,011,000 per individual, depending on the specialty and length of training, with total losses from outmigration exceeding \$66.1 million in 2023. While measured migration flows are relatively modest, broader evidence suggests that turnover within and across organizations is far more pervasive, making it the more substantial source of system pressure.
- Efforts to improve retention are constrained by fragmented accountability across Canada's systems of immigration, professional registration, and healthcare. Responsibility for workforce retention is diffused across regulators, educators, employers, and governments, each holding partial and unique mandates. No single body is explicitly accountable for monitoring workforce movement or coordinating retention strategies across Canada, limiting the system's ability to respond effectively.



Stabilizing workforce capacity

Over the past several decades, Canada's healthcare systems have delivered remarkable advances, with healthcare workers implementing life-extending and life-saving interventions that have transformed patient outcomes across the country.

These advances have introduced new pressures. As demand for care increases, the pressures shaping the future of the system are also intensifying.

Canada's population is aging rapidly. Human resource shortages in healthcare persist, with recent estimates suggesting that to meet current demand the system would need tens of thousands of additional health professionals across multiple occupations.¹ Healthcare costs and overall spending in the system are rising, while demand for services continues to grow.²

Together, these forces are redefining what sustainable, high-quality care looks like in Canada. The challenge is clear. How do we build a system that meets today's demands while preparing for tomorrow's realities?

Of the pressures facing the system, addressing workforce shortages is among the most immediately actionable solutions. Governments have several policy levers available, including expanding training pathways, supporting improvements to international credential recognition, modernizing the scope of practice, and strengthening retention.³ However, not all solutions produce results at the same pace.

This means the system must act along two tracks at once: deliver results where the impact is immediate, while also strengthening the foundations that enable the health workforce's long-term sustainability.

In this context, we undertook an examination of the cost of turnover and outmigration among Canadian healthcare workers, as well as how regulatory bodies and training organizations monitor and respond to workforce exits. Our approach combined a quantitative cost-consequence analysis with qualitative insights from interviews with 18 representatives from national associations and provincial and territorial regulatory bodies and seven focus groups involving 32 participants from educational organizations. Full methodological details are provided in Appendix A.

1 Health Canada, "Caring for Canadians."

2 Statistics Canada, "Workforce Renewal in Health Occupations"; Canadian Institute for Health Information, "Health Workforce, 2024: Supply and Direct Care"; Public Health Agency of Canada, "Aging and Chronic Diseases"; Canadian Institute for Health Information, "Spending Trends in Health Service Delivery, 2025."

3 News.Ontario.ca, "Ontario and Alberta Partnering to Create More Opportunities for Internationally Trained Skilled Workers"; Post-Secondary Education and Future Skills, "New Regulations Streamline Pathway for International Credentials"; Canada, "Evaluation of the Foreign Credential Recognition Program, 2025."

Recruitment and retention: Complementary levers

Recruitment of healthcare workers from other regions across Canada and from other countries provides an inflow of skilled workers to supplement existing workforces and the regional supply generated through domestic education and training. From a domestic recruitment lens, there are four major strategies, each with its own systemic effect, time horizon, and risk profile. These include redistribution, targeted distribution, pipeline expansion, and participation and re-entry strategies. See Table 1 for a detailed list of domestic healthcare recruitment approaches in Canada.

Another approach to addressing workforce shortages is international recruitment. Over the past decade, governments have increasingly relied on this strategy to supplement domestic training capacity.⁴ Internationally educated healthcare professionals (IEHPs) in licensed occupations play a key role in filling gaps left by limited domestic education pipelines and recruitment capacity.

This need is evident across professions such as family medicine, nursing, physiotherapy, pharmacy, and occupational therapy. A 2025 Health Canada report estimates there is a supply–demand gap of approximately 74,500 healthcare professionals, while only 20,395 graduates entered these fields.⁵

International recruitment can occur through active and passive pathways. Active recruitment involves targeted, employer- or jurisdiction-driven efforts to attract IEHPs to specific roles (e.g., recruitment campaigns or direct outreach), whereas passive recruitment refers to IEHPs independently immigrating to Canada through broader immigration streams, such as economic, family reunification, or refugee pathways, and subsequently seeking employment in the health sector.⁶ Distinguishing between these pathways is important, as they raise different policy, ethical, and workforce planning considerations.

Table 1
Healthcare worker recruitment strategies

Recruitment category	Primary objective	Capacity impact	Time horizon	Key risks/ trade-offs
Redistribution strategies	Reallocate existing workers across jurisdictions or sectors	No net national gain; shifts shortages geographically	Immediate	Wage competition, interprovincial inequity, workforce churn, system cost escalation
Targeted distribution strategies	Improve alignment between workforce and population needs	Improves allocation efficiency but limits net supply gains	Short to medium term	Retention challenges; reliance on ongoing incentives; uneven service continuity
Pipeline expansion strategies	Increase long-term domestic supply	Increases future net supply	Medium to long term	Delayed impact; education capacity constraints; fiscal cost
Participation and re-entry strategies	Increase labour force participation of existing professionals	Modest short-term supply gains	Short term	Often temporary; dependent on improved working conditions or wages

Source: Signal49 Research.

4 Employment and Social Development Canada, “Government Helping 6600 Internationally Educated Healthcare Professionals Work in Canada.”
5 Health Canada, “Caring for Canadians.”
6 Health Canada, “Ethical Framework for the Recruitment and Retention of Internationally Educated Health Professionals in Canada.”

How many internationally educated healthcare professionals are in Canada?

According to the 2021 Census, there were an estimated 259,695 internationally educated healthcare professionals (IEHPs) in Canada, that year, approximately one-third of whom were internationally educated nurses (IENs).⁷ However, this estimate has important limitations. Census data excludes many temporary residents, including international students and individuals arriving through streams such as caregiving, many of whom have healthcare training. This means the number of IEHPs in Canada is likely underestimated, particularly given that many internationally educated professionals initially enter Canada as temporary residents before transitioning to permanent residency.

Canada attracts IEHPs for a number of reasons. These reflect both health system needs and factors influencing individual migration decisions.

Health system drivers (why Canada recruits internationally educated healthcare professionals):

Domestic training capacity is insufficient to meet demand, particularly given an aging population with increasingly complex healthcare needs.⁸

- Shortages persist across occupations; for example, in 2025, there were 13,538 unfilled positions among nurses and allied health professionals.⁹
- Ongoing attraction and retention challenges in rural and remote communities have led some provinces to recruit internationally (e.g., Newfoundland and Labrador's Designated Countries Pathway).¹⁰

Pull factors influencing internationally educated healthcare professionals' migration decisions:¹¹

- Better remuneration
- Safer working and living environments
- Opportunities for professional development and career advancement
- Improved working conditions and facilities
- Higher standards of living

To work in Canada in their profession, IEHPs with training in licensed occupations must gain Canadian licensure.¹² This process is time-intensive, expensive, and complex.¹³ The process's success rate across healthcare roles is limited, with only 42 per cent of IEHPs employed in Canada working in healthcare occupations.¹⁴ Systemic barriers to licensure for IEHPs in Canada likely explain why our research found that 7 per cent of immigrants working in healthcare roles migrate onward within the first five years of their arrival in Canada.¹⁵

7 Frank and others, *Internationally Educated Health Care Professionals in Canada*.

8 Signal49 Research, *From Shortages to Solutions: Tackling Canada's Critical Gaps in Healthcare, Trades, and Tech*.

9 Signal49 Research. Note: These official figures do not include Canadian born individuals who received their highest medical degree outside of Canada. These individuals would be considered IEHPs by provincial licensure bodies, but are not included in these figures.

10 The Government of Newfoundland and Labrador, "The Government of Newfoundland and Labrador Expanding Recruitment Efforts."

11 Tam and others, *Empirically Evaluating the WHO Global Code of Practice on the International Recruitment of Health Personnel's Impact on Four High-Income Countries Four Years after Adoption*.

12 There are some limited exceptions to this where national or provincial/territorial regulatory bodies have established Mutual Recognition Agreements with other countries. For example the National Dental Examining Board of Canada recognizes accredited dental programs in the US, Australia, Ireland, and New Zealand. The National Dental Examining Board of Canada, "Entry-to-Practice."

13 Ewen and others, *Counting on Care: A Survey of Internationally Educated Nurses Not Working as Nurses in Ontario*; Crea-Arsenio and others, "The Changing Profile of the Internationally Educated Nurse Workforce."

14 Frank and others, *Internationally Educated Health Care Professionals in Canada*.

15 Signal49 Research, *The Leaky Bucket 2025: Retention Challenges in Highly Skilled Immigrants and In-Demand Occupations*.

A 2025 estimate points to a national shortfall of more than 22,800 primary care physician positions. As Canada graduates roughly 1,300 primary care physicians each year, domestic supply alone cannot close this gap in the near term.¹⁶

International recruitment is not optional—it is necessary. Yet IEHPs face barriers on their path to practice. One key structural challenge lies in the decentralized nature of Canada's healthcare system. Provinces and territories operate under distinct regulatory and funding frameworks, leading to inconsistent registration requirements across jurisdictions. These system-level barriers are compounded by additional challenges, including costly and, in some cases, duplicative language proficiency exams, adaptation to Canadian clinical and professional norms, and the personal and financial strain associated with migration and disrupted careers.¹⁷

Major policy reforms and registration modernization initiatives introduced in recent years have led to faster credential recognition, expedited licensing processes, and more-structured integration pathways for some IEHPs.¹⁸ However, professional associations, including the Registered Nurses' Association of Ontario, have cautioned against treating international recruitment as the central strategy for expanding healthcare workforce capacity.¹⁹ The association argues that stabilizing the workforce requires a broader approach, including increased domestic training capacity, improved retention, and efforts to address the working conditions that drive professionals out of the system.

This perspective is reflected in Health Canada's Ethical Recruitment Framework, which emphasizes "health workforce sustainability," defined as a jurisdiction's ability to develop and maintain a workforce capable of meeting the population's needs, thereby reducing reliance on active international recruitment.²⁰ Among these strategies, strengthening retention stands out as one of the most immediate and controllable levers available to governments.

Retention operates across multiple dimensions at both individual and organizational levels and considers multiple factors. Healthcare professions have long identified the need to address issues with job satisfaction, burnout, and work-life balance. The COVID-19 pandemic intensified the urgency as sick leave, burnout, and retirements increased throughout the sector during and after the pandemic.²¹ Understanding these drivers requires a data-driven approach that identifies where action will have the greatest impact. However, Canada lacks consistent, system-level data on how many health professionals are leaving their roles or moving across jurisdictions. As a result, workforce planning, staffing, deployment, and training decisions are often made without the evidence needed to target interventions effectively.

16 Leiva Tobelem and others, *Expanding Healthcare Capacity in Canada*.

17 Future Skills Centre, "Pathways for Internationally Educated Health Care Professionals."

18 Chiu and others, *Licensure Pathways for Internationally Educated Nurses*; Employment and Social Development Canada, "Evaluation of the Foreign Credential Recognition Program, 2025"; Touchstone Institute, "Practice Ready Ontario (PRO)."

19 RNAO, "Recruiting and Retention."

20 Health Canada, "Ethical Framework for the Recruitment and Retention of Internationally Educated Health Professionals in Canada."

21 Baumann and Crea-Arsenio, *The Crisis in the Nursing Labour Market*.

Measuring the cost of workforce loss

Understanding workforce instability—including turnover, role changes, and movement across jurisdictions and countries—is central to assessing the cost and impact of workforce loss. Retention data remain fragmented across provinces, professions, and regulatory bodies. While licensure transfers and renewals capture elements of workforce movement, these data are not consistently standardized or reported nationally.

To address this gap, Signal49 developed an [interactive map](#) of Canada that tracks intra-provincial/territorial movement, interprovincial/territorial migration, and outmigration across key regulated healthcare professions, including physicians, nurses, pharmacists, medical radiation and imaging technologists (MRTs), occupational therapists, physiotherapists, and dentists. The tool incorporates training origin and regional workforce characteristics to provide a clearer picture of where pressures are intensifying.



Definitions of migration

Intra-provincial/territorial migration: This indicator captures healthcare workers (domestic and internationally educated) who move between health regions within the same province. It is measured at the point of arrival in the destination region and includes only those entering that region. It does not capture individuals leaving a region, as their destination is not tracked, and excludes any movement to or from other provinces.

Interprovincial/territorial migration: This indicator captures healthcare workers (domestic and internationally trained) who move from a health region in one province to a health region in another. It is measured at the point of arrival in the destination province and health region and includes only those entering from outside the province. It does not capture individuals leaving a province, as their destination is not tracked, and excludes movement within the same province.

Outmigration: This indicator captures healthcare workers who leave a health region or province to work in another country. It is measured based on license cancellations where individuals indicate—such as through self-reporting—an intention to migrate or work outside of Canada and includes only those exiting the country. It does not capture individuals entering Canada from abroad. When a license cancellation cannot be confirmed to reflect an individual leaving the country, outmigration is not reported.

Workforce turnover: Costs and system consequences

Some forms of mobility are necessary and can strengthen system performance, such as retirement at expected career stages, career advancement, geographic redistribution to improve patient access, or replacing underperforming staff. However, even routine turnover affects continuity of care, organizational stability, and system costs. When workforce mobility is unplanned or increases, its impacts extend beyond individuals’ roles to patients, remaining providers, and overall system capacity.

Turnover rates are difficult to measure and vary widely by profession and practice setting. Of the seven regulated roles reviewed, only three had recent Canadian data on turnover.

A 2026 Ontario-based study estimating annual turnover rates found that hospital-based nurse turnover ranges from 15 to 44 per cent, while home care nurses experience rates between 25 and 31 per cent. For hospital-based physicians, annual turnover is lower, estimated at 5 to 7 per cent.²²

Pharmacist turnover data are also limited. A single provincial model estimates annual turnover of between 2.9 and 3.1 per cent, driven by aging, mortality, changes in work status, and net interprovincial migration.²³

Evidence for other professions remains fragmented. Research on Canadian rehabilitation professionals, primarily occupational therapists, suggests that 10 to 15 per cent leave their jobs over a two-year period.²⁴ Medical radiation technologists do not have national turnover data, but a 2025 report estimates vacancy rates of between 8 and 15 per cent.²⁵ While vacancy is not equivalent to turnover, it provides a practical stand-in for gauging workforce pressures when national turnover data are unavailable.

The financial implications of turnover

Direct costs of turnover

The direct cost of a turnover in healthcare is the total cost of replacing a departing employee, including the cost of hiring, recruitment, and the time it takes to conduct interviews and reference checks. It also extends to the costs of onboarding and training new staff.

See Table 2 for a complete list of the five categories of direct turnover costs.

Table 2
Five categories of direct turnover costs

Component	Description	Cost elements
Recruitment and attraction	Resources required to source and attract candidates	Recruitment efforts, HR personnel time, advertising campaigns, job fairs, outreach activities, recruitment materials
Vacancy and service disruption	Costs incurred while position remains unfilled	Temporary or agency staff, overtime payments, reduced service capacity, including closed beds
Hiring and onboarding	Administrative and financial costs of securing a new hire	Interviewing time, employment processing, signing bonuses and incentives
Orientation and training	Investment required before full productivity	Training personnel salaries, educational supplies, equipment, preceptors, and supervision time
Exit and transition	Costs associated with managing departure	Administrative expenses, personnel time for termination and exit communications

Source: Signal49 Research.

22 Zagrodney and others, *The Cost of Turnover in Home Healthcare*.
23 Peachey and others, *Workforce Planning for Pharmacists and Pharmacy Technicians in New Brunswick*.
24 Yeoh and others, *Unveiling the Exodus*.
25 Canadian Association of Medical Radiation Technologists, *Medical Radiation Technologist Workforce Crisis*.

Indirect costs of turnover

High turnover can compromise the quality of care, contributing to higher mortality rates, increased medical errors, and reduced care continuity for patients. It is also associated with lower patient satisfaction and declines in staff productivity.²⁶

Turnover also places more pressure on the professionals who remain. Workloads increase, morale declines, and burnout accelerates, conditions that make further departures more likely. Left unaddressed, turnover can become self-reinforcing, destabilizing teams, and weakening system performance over time.²⁷

Currently, credible estimates of direct workforce turnover costs exist for only two health professions in Canada: physicians and nurses. Available evidence suggests turnover costs range from \$118,448 to \$158,588 per physician and \$38,000 to \$140,000 per nurse, expressed in 2025 dollars.²⁸ These estimates vary widely, depending on factors such as role, level of specialization, replacement timelines, recruitment and onboarding costs, and the extent of the lost productivity during vacancies.

The limited availability of Canadian data on the turnover costs associated with many health professions reflects structural fragmentation in how workforce information is collected, governed, and reported across healthcare organizations and regulatory bodies. In the absence of coordinated, standardized reporting requirements, turnover is not consistently measured or valued as a system-level indicator. Much of the available evidence is drawn from United States health systems, where costing models reflect a more market-oriented financing structure, including private insurance revenue, employer-sponsored coverage, and out-of-pocket payments. Applying these estimates in the Canadian context introduces systematic distortion, as they embed cost components that are not directly comparable. This limits policymakers' ability to accurately assess the financial implications of

workforce instability, weakens the business case for retention-focused investments, and constrains the design of targeted, evidence-based interventions. Strengthening national approaches to turnover cost measurement would enable more-accurate system planning and support more-effective retention strategies.

See Appendix A for a complete list of modelling components and limitations.

Losing talent, losing investment: The cost of outmigration

Outmigration includes professionals who leave Canada to practice abroad. It also includes those who remain resident in Canada, in border provinces, but who cross international borders to work, most often in the United States.²⁹ Assessing the system-level costs associated with workforce outmigration requires distinguishing between the costs that apply across all health professionals and those that vary based on the training pathway.

At a minimum, any departure generates turnover-related costs for the employing organization. Beyond these workplace impacts, health professionals also represent public investment at the federal or provincial/territorial level through education and training supports. When individuals leave the country, the direct and indirect costs to the public health system include the immediate organizational costs associated with losing a health professional and the longer-term public investment implications.

For domestically trained professionals, provincial/territorial governments provide funding to secondary institutions to support health education programs. These allocations typically follow established funding formulas that cover institutional operating costs and provide per-student funding based on enrolment and instructional expenses. Table 3 provides a list of estimated provincial/territorial government contributions by role.

26 De Vries and others, *The Race to Retain Healthcare Workers*.

27 De Vries and others, *The Race to Retain Healthcare Workers*; Zaheer and others, "Turnover Intention of Hospital Staff in Ontario, Canada."

28 Hartsell and Noecker, *Quantifying the Cost of Advanced Practice Provider Turnover*; Duffield and others, "A Comparative Review of Nurse Turnover Rates and Costs across Countries"; Zagrodny and others, "The Cost of Turnover in Home Healthcare."

29 Ariste, "Distribution and Migration of Recent Healthcare Graduates in Canada"; Freeman and others, "Canadian Nurse Graduates Considering Migrating Abroad for Work."

Table 3

Provincial contribution estimates for healthcare worker training

Role	Education characteristics	Estimated provincial contribution (average)
Physician	Three-year undergraduate	\$318,493
Physician	Four-year undergraduate	\$424,658
Physician	One-year post-graduate residency	\$117,400
Physician: family medicine	Post-graduate residency	\$234,800
Physician: specialist	Five-year post-graduate residency	\$587,000
Nurses	University program	\$20,416–\$31,196
Nurses	College program	\$15,026.36–\$22,866.20
Nurses: critical care	–	\$22,866–\$35,932
Pharmacists	–	\$14,046–\$32,502
Dentists	–	\$14,046–\$32,502
Occupational therapists	–	\$14,046–\$32,502
Physiotherapists	–	\$14,046–\$32,502
Medical radiation technologists	–	\$4,083–\$27,929

Source: Signal49 Research.

For health professionals who are immigrants to Canada, the structure of public investment differs from that of domestically trained professionals. At the national level, funding is provided by Immigration, Refugees and Citizenship Canada (IRCC) or Employment and Social Development Canada (ESDC) for general settlement support services and some targeted credential recognition support programming. These services are designed to help newcomers adapt to life in Canada and may include language training, employment assistance, housing supports, orientation services, and targeted programming for youth and seniors.³⁰

Based on average per-client settlement expenditures from IRCC, we estimate that the outmigration of an IEHP represents approximately \$2,878 per individual in federal settlement-related investment.³¹ While modest in the context of overall federal spending, direct per-individual education subsidies are generally not the primary federal cost driver for this group. Instead, federal investments (including those from IRCC, ESDC, and Health Canada) are more commonly directed toward system-level initiatives such as programs that support international credential recognition, and targeted grants and incentive programs intended to facilitate workforce integration.³²

30 Immigration, Refugees, and Citizenship Canada, "Learn about Funding Processes for Settlement Services."

31 Estimates are based on total settlement service cost from 2020–2022 divided by total unique users of settlement services 2020–2022. These figures include only individuals with Permanent Resident (PR) status and also include non-healthcare workers.

32 Employment and Social Development Canada, "Government Helping 6600 Internationally Educated Healthcare Professionals Work in Canada."

What does worker migration cost the system?

In Canada, reliable national data on interprovincial/territorial migration and international outmigration are only available for physicians and do not include training origin. In 2023, 69 family physicians moved between provinces and 17 left the country. During the same period, 109 specialists migrated interprovincially and 67 migrated out of the country.

In percentage terms, these flows represent a small share of Canada's overall physician workforce. However, even limited movement can generate measurable system impacts, particularly when concentrated in specific regions, specialties, or time periods, or when migration results in the loss of domestically trained professionals.

Based on our model's assumptions and parameters, these 262 physicians' movements in one year are estimated to have generated approximately \$36.2 million in turnover-related costs to provincial health systems and over \$66.1 million in lost provincial education investment associated with the outmigration of domestically trained workers. Assuming a 27 per cent representation of internationally trained workers who are physicians, the associated IRCC settlement-related investment loss would have totaled \$60,438. These estimates illustrate that while the outward migration volumes are modest, the loss of each individual represents a considerable financial investment of between \$553,000 to \$1,011,000.

At the provincial level, interprovincial migration data for nursing is available for Saskatchewan and Quebec only, reflecting broader limitations in workforce mobility data across professions. In Saskatchewan, 19 nurses migrated to other provinces in 2024 and eight migrated in 2025, generating estimated turnover costs ranging from \$285,000 to \$434,000 in 2024 and between \$120,000 and \$182,000 in 2025. In Quebec, 254 domestically trained licensed practical nurses migrated out of province in 2024 and 253 migrated out in 2025, generating estimated turnover costs ranging from \$3.81 million to \$5.80 million in 2024 and from \$3.80 million to \$5.78 million in 2025.

While the observed flows are limited in the available administrative data, applying population-level estimates suggests there have been substantially larger movements across the full nursing workforce. 2021 Census data indicate a 0.7 per cent one-year and a 3.0 per cent five-year interprovincial migration rate for nursing occupations (NOC 301).³³ Applied to the Canadian Institute of Health Information's (CIHI) estimate of 292,859 registered nurses, nurse practitioners, and registered psychiatric nurses, this corresponds to approximately 2,050 nurses moving between provinces annually and nearly 8,800 over a five-year period.³⁴ These estimates highlight that even relatively low migration rates can translate into meaningful workforce redistribution at scale. However, these figures should be interpreted with caution. Census-based mobility measures rely on self-reported place of residence rather than actual workforce participation and may therefore capture individuals who have moved but are not actively working or licensed in the destination province. In addition, the Census groups' multiple nursing roles within a single occupational category may obscure differences in mobility patterns across professions. This means these estimates may not align precisely with licensure-based measures of workforce movement and should be interpreted as broad indicators of potential mobility rather than as confirmed workforce flows.

Similar patterns are observed across other regulated health professions. Census data indicate that annual interprovincial/territorial migration rates vary by occupation, ranging from approximately 0.8 per cent among medical radiation technologists to 2.0 per cent among physicians (NOC 311), with pharmacists at 0.9 per cent, and occupational therapists and physiotherapists at 1.1 per cent.³⁵ Over a five-year period, cumulative migration increases to between roughly 3 per cent (e.g., medical radiation technologists) and nearly 8 per cent for physicians.³⁶ These rates are small in percentage terms, but they nonetheless reinforce that workforce mobility is a persistent feature of Canada's healthcare labour market and can produce meaningful redistribution effects at scale.

33 Statistics Canada, "Interprovincial Labour Mobility in Canada, by Occupation and Education."

34 Canadian Institute for Health Information, "Data Tables—Nursing in Canada."

35 Statistics Canada, "Interprovincial Labour Mobility in Canada, by Occupation and Education."

36 Statistics Canada.

Taken together, these findings suggest that interprovincial/territorial mobility contributes to the redistribution of an already constrained workforce, and that both interprovincial/territorial and international movement generate measurable system costs. More broadly, these findings point to a larger underlying dynamic: Observable migration flows likely capture only a portion of overall workforce instability. Compared with migration, workforce turnover within organizations and sectors represents more-frequent and often less-visible pressure on health system capacity, with attrition rates in healthcare populations ranging widely and migration constituting only one component of overall workforce loss.³⁷ Policies focused solely on limiting cross-border or interprovincial/territorial movement may have limited impact unless they are paired with broader efforts to reduce avoidable turnover and strengthen retention within the system.



What causes worker migration?

We conducted 50 interviews and focus groups with regulatory bodies, national associations, and educational organizations to understand why healthcare workers move within Canada or leave the country (See Appendix A). We also sought to understand where the responsibility for tracking healthcare worker migration lies and what needs to be done at a system-level to address retention.

Healthcare worker movement has individual and systemic drivers

Healthcare workers' movements are shaped by a complex interaction of individual and systemic factors, each pointing to different priorities, solutions, and responsible actors. Addressing retention requires accounting for these factors and coordinating action across institutions and jurisdictions. At the individual level, we heard that decisions to move within or between provinces are often shaped by personal and social factors. These may include family considerations, lifestyle preferences, and an individual's sense of connection to their home community relative to the province or region in which they trained.

We heard that post-graduation mobility within and between provinces is often shaped by opportunities, familiarity, and personal connections. Health professional education programs are not evenly distributed across Canada, and many institutions are concentrated in urban centers. This explains why students frequently relocate to pursue training. Clinical placements and rotations play an important anchoring role. Exposure to local practice environments, professional networks, and early employment pathways increases the likelihood that graduates remain in their province or community of training. Educators consistently report that learners who train in a given city often establish their first roles there, reflecting both labour demand and the relationships developed during clinical experience.

37 Wynendaale and others, "Understanding Turnover in Healthcare and Welfare Sectors of High-Income Countries"; Castro Lopes and others, "A Rapid Review of the Rate of Attrition from the Health Workforce"; Wuliji and others, "Migration as a Form of Workforce Attrition."

We heard that when graduates do relocate after completing their studies, their movement is often driven by a desire to return home to serve their community. In some cases, return migration is formalized through provincial/territorial training agreements that require graduates to practice in their home jurisdiction. Personal factors such as employment opportunities for spouses or partners were also frequently cited as decisive in shaping post-graduation location decisions.

Beyond personal considerations, interviews and focus groups also brought forward a number of systemic factors contributing to the turnover and movement of workers across Canada's healthcare systems.

- **Compensation:** The regulators and educators we spoke to both pointed to material offers such as substantial one-time signing bonuses, relocation incentives, and yearly wage gaps between provinces as primary catalysts of interprovincial/territorial movement. This is particularly at risk of happening in border towns and between neighbouring provinces. For example, cross-border movement of MRTs was reported between Ontario and Quebec, where first-year MRTs in Ontario begin at an hourly rate of \$38.27, compared to equivalent MRTs in Quebec who start at \$27.71 per hour.³⁸
- **Scope of practice:** The ability to practice to full scope, with appropriate autonomy, is a key driver of workforce mobility. Variability in scope of practice across jurisdictions influences where professionals choose to work, often favouring environments and jurisdictions that allow them to fully apply their training and skills. This is particularly evident in pharmacy, where roles have expanded unevenly. For example, pharmacists in Alberta can order and interpret lab tests, while those in Ontario cannot. Differences in autonomy and role design also drive movement across care settings, such as from hospital to community practice.
- **Opportunities for professional development and mentorship:** The educators we spoke to consistently identified mentorship and defined career pathways as crucial factors shaping workforce mobility. Larger health systems often provide greater peer networks, structured professional development opportunities, internal mobility, and comprehensive benefits, making them attractive destinations for health professionals seeking advancement. In contrast, smaller or solo-practice settings may offer fewer opportunities for collaboration and progression, which can contribute to movement away from smaller organizations or communities. For highly specialized practitioners, acquiring advanced skills frequently requires mobility within Canada or internationally, as access to specialized training and case volume is concentrated in select centres.
- **Employment opportunities:** Educators also told us that job availability is a primary determinant of whether graduates remain in or leave a jurisdiction. For example, an educator in Manitoba told us that strong province-wide demand for graduates in their program has supported high in-province retention. In contrast, an educator from Prince Edward Island shared that the prevalence of part-time roles locally contributes to graduates accepting full-time opportunities in other provinces. Availability of positions with hours of work that match pre-graduation expectations plays a vital role in shaping early career mobility decisions.
- **Toxic workplace cultures combined with chronic workload pressures:** The educators and regulators we interviewed emphasized that unhealthy work environments, including bullying, harassment, poor recognition, and limited psychological safety, interact with chronic understaffing, escalating workloads, and insufficient organizational support to drive workforce movement. These conditions contribute to burnout, moral distress, and disillusionment, leading some clinicians to leave their roles for other jurisdictions, sectors, or professions.

38 CAMRT, *Salary Scale Analysis For Medical Imaging and Radiation Technologists and Therapists*; 2025 figures used.

- **Expectations of a new generation:** We heard that new clinicians' work expectations differ from those of prior generations and have the potential to remodel the workforce. System leaders identified that flexibility in work is a major priority among new healthcare workers. One pharmacy educator noted that there had been a change in new grads from their program, as they are now looking for high-paid, short-term locum positions over full-time positions. Educators reported that graduates increasingly prioritized flexibility in shift patterns, work location, and blend or prioritize part-time over full-time roles. The lack of flexible models in workplaces alienates workers, especially parents and mid-career returnees.

We should recognize that certain aspects of this movement benefit Canada's healthcare systems. For example, a healthcare worker who moved to train in a city and then returned to their rural or northern community provides a much-needed resource to areas where it is difficult to attract healthcare workers not of the community. Labour mobility also allows for provinces with smaller populations or less training capacity to attract and retain health professionals. A good example is the Atlantic Registry initiative which allows physicians to move and work between the Atlantic provinces.³⁹

However, the use of incentives and bonuses to attract healthcare workers from a finite, in-demand pool often results in redistribution rather than net system gain. While these approaches can be effective in the short term, they do not address the underlying drivers of the movement identified in this research, including differences in scope of practice, workplace conditions, career development opportunities, and job quality. As a result, incentives alone may shift workforce pressures between jurisdictions without improving overall system stability.

More broadly, our findings suggest that no single intervention is sufficient to address retention challenges. Stabilizing the workforce requires a coordinated approach that balances compensation, working conditions, professional opportunities, and system design to create environments where health professionals can build sustainable careers.

Internationally educated health professionals' movements are distinct

We heard from interviewees that IEHPs make decisions on where to settle and where to stay based on two critical factors: speed and ease of licensure, and community connections.

Licensure for physicians, nurses, pharmacists, dentists, MRTs, physiotherapists, and occupational therapists is set by provincial/territorial regulators. This means there are distinct licensure processes for IEHPs in each province/territory that can vary in cost, length, and complexity.⁴⁰

The healthcare educators and regulators we interviewed noted that IEHPs were attracted to provinces with the most straightforward licensure process, or the licensure process with the best outcomes. Practice-ready assessment (PRA) programs, available in multiple provinces, provide an accelerated pathway to licensure for internationally trained physicians; however, implementation models vary widely. Nova Scotia is often cited as a leading example due to its collaborative PACE (Practice-Ready Assessment and Clinical Education) model, which brings together provincial/territorial health workforce planners, the Nova Scotia Health Authority, regulatory bodies, and employers to support a more coordinated and streamlined pathway into practice.⁴¹ These differences in licensure processes and implementation models across provinces influence where IEHPs choose to settle and practise and can contribute to the uneven distribution of internationally trained professionals across the country.

39 The Council of Atlantic Premiers, "Atlantic Physician Registry Launches"

40 An exception to this is the Association of Canadian Occupational Therapy Regulatory Organizations (ACOTRO) Memorandum of Understanding. This states that occupational therapists who are licensed in a primary jurisdiction may deliver remote services to clients who are physically located in a secondary jurisdiction without being registered/licensed in the secondary jurisdiction. Association of Canadian Occupational Therapy Regulatory Organizations, "Memorandum of Understanding: Cross-Jurisdictional Remote Practice in Occupational Therapy in Canada."

41 Physician Assessment Centre of Excellence (PACE), "Physicians PACE Assessment Program"; Nova Scotia Health, "Nova Scotia Practice Ready Assessment Program Offers an Important Pathway for Recruitment of Family Doctors in Rural Nova Scotia | Nova Scotia Health."

Communities with diverse, multicultural populations are also decisive pulls for IEHPs, according to educators and regulatory bodies. Beyond place of initial arrival, this sense of belonging was reported as a cause for secondary migration within Canada for IEHPs. IEHPs often settle or move to communities with diverse populations, friends and family with shared backgrounds, and access to international food, and religious and cultural institutions.

Missed opportunities in migration data

While Canada's current data on workforce migration is limited, there is a clear opportunity to capture and link more-relevant and actionable information. Regulatory bodies report having limited data-informed insight into the drivers of migration, as this information is not routinely or systematically collected. However, when healthcare workers move between provinces or leave the country, they typically request transcripts from educational institutions or record transfers from regulatory bodies. While these administrative processes may capture destination, they do not capture the reasons for migration. Incorporating a standardized question on reasons for relocation into these processes would provide valuable insights and support more-targeted retention strategies.

At the same time, self-reported reasons for migration are subject to recall bias and may not fully capture the underlying drivers of mobility. Pairing this information with observed administrative data on workforce movement, such as licensing transfers and employment outcomes, would provide a more-complete and reliable picture of migration patterns and their underlying causes.

Who is responsible for retention?

"It's not our mandate... Our mandate... is focused on the public [safety]."

Provincial Regulator of Dentists

Regulatory bodies indicated that understanding, monitoring, and addressing retention is not within their mandate as outlined in provincial legislation. While they acknowledge their role in the discussion, they reported lacking legislative authority to collect, analyze, or report retention data, and many placed responsibilities with provincial governments as the stewards of policy, funding, and intervention. However, we did not interview provincial government representatives, as the study was designed to focus on regulatory bodies, governing organizations, and educational organizations as key actors in shaping workforce pathways and professional oversight and did not include policy actors within its sampling frame. Therefore, we are unable to assess how responsibility for retention is currently assigned or operationalized at the provincial level.

The interpretation of the mandate to protect the public also varied between regulatory bodies, even within the same profession. For example, one body in Quebec interpreted this mandate as including efforts to address workforce supply and retention to ensure safe and timely access to care. Other regulators framed their mandate more narrowly, focusing on individual practitioner competence and disciplinary oversight, without extending responsibility to system-level issues such as workforce availability or access to services. These differing interpretations contribute to an environment where responsibility is unclear and poorly defined across actors. While human resource planning in healthcare is primarily a provincial responsibility, addressing retention and workforce movement at a system-level requires coordination across jurisdictions and actors.

"...monitoring of where new grads are, it really isn't any of our business... we can't even technically find out who passed the [nursing qualifying exam] because there's no obligation from the provincial regulatory body to tell us"

Nurse Educator

The educators we spoke to equally asserted that they are not responsible for the retention of healthcare workers after graduation. They are focused on retaining students, faculty, and clinical placement partnerships, but their training mandate ends after graduation. Educators do see the value in understanding retention as they see the downstream effects of healthcare worker turnover on educator supply, placement capacity, and community service missions, which are all critical to training the next generation of healthcare workers. But training organizations are partners, not owners, in workforce retention efforts. Educators told us that retention is best addressed by provincial/territorial regulatory bodies and employers. Regulatory bodies have mandatory record-keeping processes, while employers are the ones who observe staff retention and movement into and out of the organization.

Across stakeholders, there was no consistent or shared understanding of who is responsible for monitoring and addressing workforce retention. This fragmentation in perceived roles and responsibilities limits the ability to collect and use retention data effectively, contributing to gaps in workforce planning across Canada's health systems.

While healthcare system actors, including governments, employers, educators, and regulators, all play a role in retention, no single body is currently mandated to lead the collection and coordination of retention data. As the current stewards of licensure data, provincial/territorial regulatory bodies are well positioned to play a leading role in strengthening retention monitoring. However, enabling this role would require addressing key barriers, including improving coordination across system partners and advancing the standardization of how retention-related data is collected and shared to support system-wide tracking, in line with emerging pan-Canadian data strategies.⁴²

Regulatory bodies are best positioned to collect and distribute retention data

Regulatory bodies have a mandate to protect the public. Monitoring retention to support the overall health of the healthcare system can reasonably be interpreted as part of this mandate. Adopting a more-coordinated approach across Canada, similar to the one taken in Quebec, would enable regulators to strengthen the consistency of data collection. In alignment with emerging pan-Canadian efforts, this could support the adoption of common data standards and improve the ability to build a national picture of workforce retention.⁴³

Regulatory bodies already have much of the necessary information to track retention. Through yearly re-licensing processes, regulators track annual entries and exits of healthcare workers, producing high-level counts and age distributions to inform system planning. Regulators also reported being able to identify whether healthcare workers were trained in other provinces or internationally. This licensure data is critical to calculating turnover and vacancy rates and to informing retention strategies.

However, this data is not consistently reported or analyzed across provinces or healthcare roles, and the absence of a pan-Canadian unique identifier for healthcare workers further limits the ability to track individuals across jurisdictions. Together, these gaps lead to a fragmented understanding of workforce mobility and constrain efforts to manage equitable access to care across Canada.

Many regulators noted participating in the Canadian Institute for Health Information's healthcare human resources data collection, which was widely viewed as an important step toward improving the national monitoring and reporting of workforce data.⁴⁴ However, regulators noted that, in practice, reporting is often constrained to a subset of standardized data fields shared across jurisdictions. While the CIHI standard is designed to support more-detailed and granular data collection, its implementation varies across organizations. Factors such as system limitations, vendor constraints, and resource

42 Health Workforce Canada, "Pan-Canadian Health Workforce Data Strategy."

43 Health Workforce Canada, "Pan-Canadian Health Workforce Data Strategy."

44 Canadian Institute for Health Information, "The State of the Health Workforce in Canada, 2024."

considerations can affect the extent to which the full standard is adopted. As a result, national reporting often reflects high-level indicators and may not capture the more-detailed, role-specific, or regional insights required for targeted retention planning. Despite these challenges, CIHI's work represents the most substantial effort to date to standardize health workforce data nationally.

Strengthening the pan-Canadian data infrastructure could build on this foundation. For example, the use of unique identifiers for healthcare workers could enable more-consistent tracking of workforce movement across jurisdictions. Existing initiatives, such as the Medical Identification Number for Canada (MINC) system for physicians and emerging efforts such as a national nursing registry (e.g., Nursys), demonstrate the potential to support more-coordinated and granular workforce planning.

But they need the mandate and capacity supports to do so successfully

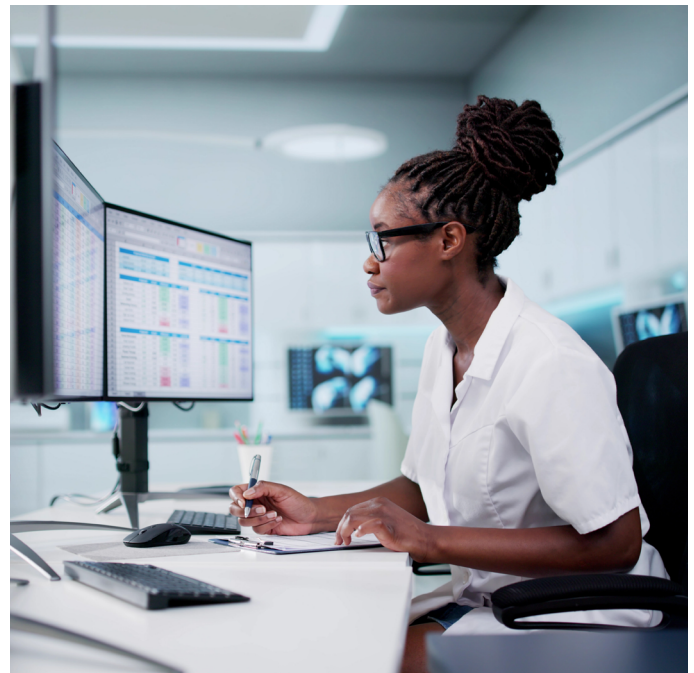
While we recognize that provincial/territorial regulatory bodies are well positioned to take on this responsibility, a number of barriers need to be addressed to facilitate this.

Mandate clarification: The formal incorporation of retention data collection into regulators' mandates is warranted. For the purposes of this study, retention data refers to information that enables tracking workforce entry, exit, and movement over time, such as licensure status, registration history, practice location, and employment characteristics. Many of these data elements are already reflected in existing standards, such as the CIHI Health Workforce Information Minimum Data Set.⁴⁵ However, regulators noted that without clear statutory authority, collecting and using this data for system-level analysis may be considered an inappropriate use of public funds.

They also emphasized the need to adhere to strict individual privacy requirements. In addition, the absence of a pan-Canadian unique identifier limits the ability to track individuals across jurisdictions over time, constraining the effective use of retention data.

Address resource and staffing constraints: In taking on this mandate, regulators would require research and data science professionals to update systems and meaningfully analyze and present the data they collect, which is largely beyond the scope of current budgets.

Inter-jurisdictional standard-setting issues: Provincial/territorial regulators need to overcome regional variation that undermines the collection of national data. A good example of this inter-jurisdictional understanding is the Association of Canadian Occupational Therapy Regulatory Organizations collaborating on a memorandum of understanding over inter-jurisdictional remote work arrangements.⁴⁶



45 Canadian Institute for Health Information. "Health Workforce Information Minimum Data Set (HWI MDS) Implementation Toolkit."

46 Association of Canadian Occupational Therapy Regulatory Organizations, "Memorandum of Understanding: Cross-Jurisdictional Remote Practice in Occupational Therapy in Canada."

Creating change to retain healthcare workers

Healthcare workforce retention is shaped by a complex set of interconnected factors, including compensation, working conditions, professional opportunities, system design, and data limitations. No single intervention is sufficient, and effective strategies must balance these priorities and be coordinated across actors and jurisdictions.

This analysis contributes to ongoing national efforts to strengthen Canada's health workforce, including Healthcare Excellence Canada's work on workforce sustainability and the establishment of Health Workforce Canada to strengthen health workforce data and planning. Healthcare Excellence Canada does this by quantifying the fiscal consequences of workforce movement for a subset of healthcare professionals and by identifying the accountability gaps that constrain action.⁴⁷ Together, these findings point to a set of practical, role-specific actions that can be advanced within Canada's decentralized healthcare system.



Policy-makers

- **Designate clear provincial/territorial accountability for a retention strategy and outcomes:** Provincial/territorial governments can formally assign responsibility for a healthcare workforce retention strategy and performance monitoring to a defined authority within the health portfolio (e.g., health workforce planning functions within ministries or health authorities). These entities could work in collaboration with regulatory bodies, data stewards such as the Canadian Institute for Health Information, and other system partners to consolidate and analyze workforce data, establish measurable retention targets, and publicly report on progress. Strengthening coordination across these actors would support a more consistent and pan-Canadian understanding of workforce retention.
- **Formalize coordination across existing workforce institutions:** A provincial or territorially convened coordination mechanism could bring together regional health authorities, regulatory bodies, and system-level organizations to integrate workforce data, align planning assumptions, and reduce siloed decision-making. While elements of this approach exist across organizations such as Ontario Health, CIHI, and emerging national bodies like Health Workforce Canada, there is no single mechanism that consistently integrates employment, licensure, and activity data to support retention planning.⁴⁸ Strengthening coordination across these inputs would improve visibility into workforce dynamics without duplicating existing mandates.
- **Renew investment and modernize funding structures:** Persistent workforce shortages make it difficult for health systems to retain staff. Stakeholders emphasize that funding should prioritize closing workforce gaps and wage gaps, filling vacant positions, and improving workplace conditions, particularly in hospital settings. Modernizing funding structures also involves reviewing how existing resources are allocated, including assessing the effectiveness of currently funded support programs for IEHPs.

⁴⁷ Healthcare Excellence Canada, *Six Strategies for Strengthening the Workforce*.

⁴⁸ Health Workforce Canada, "Pan-Canadian Health Workforce Data Strategy"; Ontario Health, "Open Data"; Canadian Institute for Health Information, "Data Standards."

- **Incorporate workforce turnover costs into planning and funding decisions:** Provincial/territorial governments can integrate turnover-related costs and lost public investment into workforce planning models to better assess the fiscal impact of mobility and to prioritize retention-focused investments. This could include embedding turnover cost assumptions into workforce forecasting models, linking administrative data (e.g., licensure, employment, and education data) to estimate mobility-related costs over time, and using these estimates to inform funding allocations, business cases, and evaluate retention initiatives.

Employers

- **Formalize and expand early career and transition supports for internationally educated health professionals:** Health employers can integrate or expand structured mentorship and transition programs for new graduates and IEHPs during their first year of practice, such as the Canadian Association of Schools of Nursing's IEN Mentorship Program and Ontario's Pathways to Practice initiative. To support these programs, employers could incorporate protected time for mentorship within staffing models. However, given existing workforce shortages, this will likely require targeted funding, backfill support, or compensation mechanisms to ensure experienced clinicians can take on mentorship roles without exacerbating staffing pressures.
- **Address workplace conditions that are driving avoidable turnover:** Address issues such as bullying and harassment through clear action and accountability and prioritize mental well-being and manageable workloads to reduce burnout. Establishing structured mechanisms such as exit interviews or departure surveys can help employers better understand the drivers of turnover and identify areas for improvement. When leaders actively listen, respond to concerns, and recognize the contributions of all members of the healthcare team, these practices work together to create workplaces where staff feel valued and are more likely to stay.

- **Strengthen community integration and retention supports for internationally educated health professionals:** Employers and communities can expand targeted supports, including mentorship, peer networks, and culturally responsive services, to improve the long-term retention of internationally educated professionals beyond their initial recruitment.

Provincial/territorial regulators

- **Improve and standardize data collection on workforce movement:** Provincial and territorial governments, in collaboration with regulatory bodies, CIHI, and other system partners, can advance more-consistent collection of workforce movement data. This includes aligning data fields related to licensure transfer, renewal, and cancellation, such as destination, training origin, and reasons for movement, through pan-Canadian data standards and coordination efforts. Strengthening the implementation and adoption of these standards would support more-consistent, aggregated reporting of mobility trends and improve the evidence base for workforce planning across jurisdictions.
- **Identify the scope of practice misalignment contributing to mobility:** Regulatory bodies can collaborate across provinces/territories to review the material differences in scope of practice that may be influencing interprovincial/territorial movement. Where discrepancies are found to be driving workforce instability, regulators can provide formal guidance to governments on potential alignment or modernization.

- **Improve consistency in credential recognition pathways across jurisdictions:** Differences in licensure processes, timelines, and outcomes across provinces contribute to inefficiencies and may drive the secondary migration of internationally educated healthcare professionals within Canada. While full harmonization of regulatory requirements remains unlikely in the near term, provincial and territorial governments, in collaboration with regulators, can take incremental steps to improve consistency. These include increasing the transparency of licensure requirements and timelines, expanding the use of common assessment tools and practice-ready assessment models, and leveraging pan-Canadian tables (e.g., federal, provincial, and territorial forums) to share leading practices and identify opportunities for alignment. Long term, the federal government can support this work through targeted funding and incentives tied to improvements in credential recognition processes.

Educational institutions

- **Use placement design to support regional workforce stability:** Educational institutions can expand programs such as Ontario's Learn and Stay grants for medical students who commit to practicing locally to strengthen the connection between the training location and early career employment, especially outside major urban centres.⁴⁹ Strengthening this connection can increase the likelihood that graduates remain in the communities where they train, supporting longer-term retention and reducing early career outmigration. At the same time, workforce planning can recognize that not all trainees will remain in the jurisdictions where they are educated and that interprovincial/territorial mobility plays a key role in meeting system-wide needs. As such, placement and training strategies are best designed to support a balanced and coordinated distribution of health professionals across regions.

49 News.Ontario.Ca, "Ontario Expanding Learn and Stay Grant to Train More Family Doctors in Ontario."



Appendix A

Methodology

This appendix provides methodological detail supporting the quantitative cost-modelling and qualitative findings presented in the report.

About the research

This research was a mixed-methods study designed to answer the following research questions:

- What is the total cost associated with the turnover and outmigration of Canadian physicians, nurses, pharmacists, medical radiation and imaging technologists, occupational therapists, physiotherapists, and dentists?
- How do healthcare regulatory bodies and training organizations monitor and address the Canadian physicians, nurses, pharmacists, medical radiation and imaging technologists, occupational therapists, physiotherapists, and dentists who are leaving their healthcare systems?

We sought to answer these questions through a quantitative cost-consequence analysis and through interviews and focus groups with healthcare educators for training organizations, provincial/territorial regulatory bodies, and national governing bodies.

A research advisory board (RAB), composed of subject matter experts across the healthcare system, provided guidance throughout the study. The RAB contributed to the refinement of the research questions, methodological design, interpretation of findings, and review of the final results.

The quantitative and qualitative data were analyzed using a complementary mixed-methods approach, with integration occurring during interpretation. Quantitative cost estimates provided a system-level perspective on the scale of the workforce movement, while qualitative findings from the interviews and focus groups were used to contextualize these patterns and explain the underlying drivers, data gaps, and organizational roles.

Detailed methods

Literature review

The literature review was conducted to contextualize workforce migration and retention within Canada's healthcare system and to inform both the quantitative cost-modelling and qualitative inquiry. Specifically, the review sought to identify existing evidence on turnover rates, migration patterns, workforce mobility drivers, cost estimation approaches, scope of practice variation, and retention interventions across regulated health professions.

Analytic framework

The literature review was designed to define the research gaps, examine the current landscape of healthcare worker outmigration and interprovincial/territorial movement, and inform the development of the quantitative model and the qualitative research instruments.

The review was guided by four core questions:

- What are the federal and provincial/territorial investments associated with training healthcare professionals across the seven roles studied?
- What data sources exist to track the outmigration and interprovincial/territorial migration of healthcare workers?
- How are these data sources used to monitor workforce movement and by which organizations?
- What public information is available from training organizations and regulatory bodies regarding retention and outmigration?

Each source was assessed for its relevance to workforce mobility, data transparency, methodological rigor, jurisdictional applicability to Canada's publicly funded health system, and contribution to identifying evidence gaps.

Literature inclusion and exclusion criteria

Sources were included if they (1) focused on the regulated health professions relevant to the seven roles examined, (2) addressed workforce mobility, migration, retention, turnover, or cost modelling, and (3) were applicable to the Canadian context or comparable publicly funded health systems. Both recent and foundational sources were considered where they contributed to understanding the data sources or the methodological approaches. Sources were excluded if they (1) focused solely on unregulated occupations, (2) were not relevant to workforce movement or retention, (3) lacked sufficient methodological detail or transparency, or (4) were not available in English or French.

Sources

The review included both academic and grey literature. Academic sources consisted of peer-reviewed journal articles and research papers focused on workforce mobility, turnover, retention, and cost modelling. Grey literature included government reports, policy briefs, regulatory publications, professional association reports, and publicly available workforce data documentation.

Sources were identified through structured database searches (including PubMed, Scopus, and Google Scholar), targeted searches of federal and provincial/territorial government websites, regulatory bodies, national health organizations, and professional associations, and scanning reference lists of relevant publications.

The review included 60 sources, consistent with the scope outlined in the project proposal.

Role of the literature review in the research design

The literature review served four functions:

- To outline pre-existing data sources and methods used to track healthcare human resources and workforce movement.
- To identify gaps in national reporting and standardization of migration and retention data.
- To inform the structure and variables included in the quantitative cost-consequence model.
- To guide the development of the qualitative interview and focus group instruments.

The review established the conceptual and methodological foundation for subsequent quantitative analysis and qualitative inquiry.

Cost calculations

Turnover costs were estimated using a component-based modelling approach that captured the direct employer-level expenditures associated with replacing a departing health professional. The cost inputs were drawn from the available Canadian literature, where possible, and supplemented with United States-based estimates when Canadian data were unavailable. The direct cost categories included recruitment and advertising, vacancy-related expenses such as overtime and temporary staffing, hiring and onboarding, orientation and training, and exit and transition processes. Where international estimates were used, United States dollar figures were converted to Canadian dollars using the January 2026 exchange rate of 1.38. Use of United States data was limited to cost components most comparable to Canadian employer-incurred expenditures, with further assumptions and limitations described below. In cases where detailed cost breakdowns were not available, estimates were adjusted to reflect the Canadian publicly funded context, recognizing that United States estimates may incorporate revenue-related components not applicable to Canada's publicly funded system.

Provincial/territorial investment estimates were calculated based on provincial/territorial government sources, the Association of Faculties of Medicine of Canada, and the most recent national report on the cost of training health professionals. Funding amounts reflect institutional operating grants allocated through established provincial/territorial funding formulas, including per-student funding tied to enrolment and instructional costs. These estimates exclude tuition paid by students and additional grant funding received by institutions or learners. Where recent national averages were unavailable, the most recent reported figures were adjusted to the current year, using inflation and compared against available provincial/territorial data to ensure consistency.

Modelling assumptions

Cost conversion rate: International turnover cost estimates were drawn exclusively from United States data due to limited comparable figures from other jurisdictions. Reported amounts in United States dollars were converted to Canadian dollars using the January 2026 exchange rate of 1.38.

Provincial/territorial contribution of education: Data were drawn from the Nova Scotia Department of Advanced Education, the Association of Faculties of Medicine of Canada, and Health Canada's most recent national report, "Overview of the Cost of Training Health Professionals."¹ Where a current national average contribution by role was not available, the most recent national estimate was adjusted to the current year using inflation and, where possible, validated against available provincial/territorial data.

Outmigration cost estimates:

Outmigration cost estimates were developed to capture the financial implications associated with healthcare professionals leaving Canada. These estimates included direct turnover costs incurred by employers and public investment losses associated with education and training, with additional consideration given to federal settlement-related expenditures for internationally educated healthcare professionals (IEHPs).

Scope of outmigration:

Outmigration was defined as the permanent or long-term exit of healthcare professionals from Canada's workforce, as indicated by licence cancellation with stated intent to practice abroad or through available administrative data. Temporary or short-term international work arrangements (e.g., cross-border commuting) were not systematically captured due to data limitations.

Applying turnover costs:

All outmigration events were assumed to trigger full replacement costs at the organizational level. As such, outmigration-related turnover costs were calculated using the same role-specific cost ranges applied in the turnover model. These costs included recruitment, onboarding, vacancy coverage, training, and associated administrative expenses borne by employers.

Provincial/territorial education investment:

For domestically trained healthcare professionals, outmigration results in the loss of public investment in education and training. These costs were estimated using per-capita provincial/territorial funding contributions by role, derived from available government reporting, national estimates, and inflation-adjusted historical figures.

- Education investment losses were applied only to domestically trained professionals who exited the country.
- Estimates reflected institutional funding contributions and did not include private tuition or indirect educational costs.

Internationally educated healthcare professionals:

For IEHPs, public investment was estimated differently to reflect federal settlement-related expenditures rather than direct education funding.

- A per-capita estimate of federal settlement service costs was applied to IEHP outmigration, based on total program expenditures divided by the number of users over a defined period.
- These estimates did not include broader system-level investments such as credential recognition programs or targeted integration initiatives, which were not attributable at the individual level.

1 Health Canada, *Overview of the Cost of Training Health Professionals*.

Workforce composition assumptions:

Where training origin (domestic vs internationally educated) was not directly observable in the data, proportions were estimated using available national workforce statistics. These proportions were applied to outmigration flows to allocate costs between domestically trained professionals and IEHPs.

Migration flow limitations:

Reliable national outmigration data are limited and primarily available for physicians. For other professions, modelling relied on partial provincial data, proxy indicators, or extrapolation from available workforce statistics. As a result:

- Outmigration volumes may be underestimated due to incomplete reporting or unobserved exits.
- Licence cancellation data may not fully capture all workforce departures or differentiate between the types of exit (e.g., retirement vs migration).

Cost attribution approach:

All outmigration costs were attributed at the point of exit and treated as immediate system losses. The model does not account for potential long-term offsets, such as return migration, skills remittances, or future re-entry into the Canadian workforce.

Exclusions:

The model does not quantify the broader macroeconomic or system-level impacts of outmigration, including the effects on service access, productivity, or downstream patient outcomes. As such, the estimates should be interpreted as conservative representations of the direct fiscal impact.

Model limitations

Data availability and comparability constraints: There is no standardized national framework for tracking turnover rates, migration flows, or associated costs across professions and jurisdictions. As a result, estimates rely on incomplete provincial/territorial data and, in some cases, United States-based cost figures. Differences in health system financing structures, reporting practices, and available role-specific data limit comparability and may affect the precision of our estimates.

Modelling assumptions and funding variability: Provincial/territorial education investment estimates are based on reported funding quantities, national averages reported in the literature, and inflation adjustments where recent data were unavailable. While these estimates may not fully capture institutional variation, program-specific funding differences, or recent policy changes, they provide the most recent reportable provincial/territorial contributions.

Scope of cost measurement: The analysis focuses primarily on direct turnover costs and estimated public education investments. Broader indirect and long-term system impacts, including productivity losses, service disruption, and patient outcome effects, were not monetized. As a result, total system costs may be understated.

Generalized provincial/territorial education contribution

estimates: Pharmacists, dentists, occupational therapists, physiotherapists and MRTs' provincial/territorial contributions were generated from a generalized university or college-based healthcare role contribution figure from Health Canada's "Overview of the Cost of Training Health Professionals."² Due to the lack of detailed reporting on these figures, our estimated range may be higher or lower than some provincial/territorial contribution ranges.

Qualitative methodology

Interview and focus group guides

The interview and focus group guides were developed based on the research questions and were reviewed by Research Advisory Board members (see the full list in the Acknowledgments). To address these research questions, participant discussions focused on:

- The healthcare human resources context setting and general sentiments.
- The movement of healthcare workers (intra-provincial/territorial, interprovincial/territorial, and outmigration).
- Defining, monitoring, and understanding the retention of healthcare workers.
- Actions and changes related to the movement and retention of healthcare workers.

All interview and focus group participants were acting in their capacity as professionals (e.g., as part of their job) rather than as private individuals, so ethics approval was not sought for this project. All interviewees and focus group participants were guaranteed confidentiality and reminded of their right to withdraw consent to participate.

Selection for interviews

We sought 21 interviews with the national associations and provincial/territorial regulatory bodies representing professionals in the seven healthcare roles investigated (physicians, nurses, dentists, pharmacists, MRTs, occupational therapists and physiotherapists). Eighteen interviews were completed, resulting in 13.8 hours of interviews covering 259 pages of transcript totalling 118,215 words.

The organizations interviewed included national associations and provincial/territorial regulatory bodies from across Canada. The data on the interview participants are presented in tables 1 to 3 as aggregate data to protect confidentiality and anonymity.

Across the seven healthcare professions included in the study, there are ten provincial/territorial regulatory bodies for each profession, for a total of seventy. We also included seven national healthcare associations. From this group, our sample represented 23 per cent of all possible organizations, which provided broad national coverage and supported thematic saturation. Territorial regulatory authorities were not included because, in those regions, regulatory responsibility is held directly by the territorial governments rather than by independent regulatory bodies.

2 Health Canada.

Table 1

Regulatory body participation in interviews by healthcare role

Healthcare role	Number of interview participants
Physicians	2
Nurses	3
Dentists	3
Pharmacists	2
MRTs	3
Occupational therapists	2
Physical therapists	3
Total	18

Source: Signal49 Research.

Table 2

Interview participation by regulatory organization type

Healthcare organization	Number of Interview participants
National governing bodies	7
Provincial regulatory bodies	11
Total	18

Source: Signal49 Research.

Table 3

Educator participation in focus groups and interviews by healthcare role

Healthcare role	Number of focus group and interview participants
Physicians	5
Nurses	5
Dentists	3
Pharmacists	5
MRTs	5
Occupational therapists	4
Physical therapists	5
Total	32

Source: Signal49 Research.

Selection for focus groups

Seven focus groups were completed for this project with 32 participants, which resulted in a total of 16.9 hours of focus-groups recording and 306 pages of transcript, totalling 156,022 words.

We sought to hold seven focus groups with educators from healthcare training organizations. We sought a total of 35 participants across those groups. The focus groups were organized by healthcare role, with faculty and administrative leadership from healthcare educational institutions across Canada invited to participate. The data on focus group participants are presented in tables 4 and 5 as aggregate data to protect confidentiality and anonymity.

Table 4

Regulatory body participation in interviews by region

Region	Number of interview participants
Atlantic	4
British Columbia	2
Prairies	2
Quebec	1
Ontario	3
Canada	6
Total	18

Source: Signal49 Research.

Table 5

Educator participation in focus groups and interviews by region

Region	Number of focus group and interview participants
Atlantic	5
British Columbia	2
Prairies	7
Quebec	5
Ontario	13
Total	32

Source: Signal49 Research.

Based on a total of 182 accredited programs in Canada across the seven healthcare roles, we achieved 18 per cent representativeness across this group, providing sufficient population coverage and saturation of the research themes. We did not include territorial training organizations in the focus groups as these courses achieved accreditation through partnership with larger training organizations in other provinces.

Recruitment for interviews

To build the recruitment list for the interviews, we relied on public records of healthcare governing bodies and provincial/territorial regulatory bodies. In selecting candidates for the interviews, we sought representatives from every national governing body. The remaining interviews aimed for regional representation. A randomizer function in Microsoft Excel was used to select the remaining provincial/territorial regulatory bodies to interview by region. In the instance of a declined invitation to participate, or non-response, we selected a provincial/territorial regulatory body, using the randomizer function in Excel.

Initial invitations to participate in an interview were sent via email to all potential interviewees between August 21, 2025, and September 10, 2025. These emails were followed up a maximum of two times after a non-response that lasted longer than two weeks. In the case where three emails were not responded to, we followed up via phone with a maximum of two phone calls. A maximum total of six contact points elicited a sufficient acceptance rate of our target populations.

Of the 27 candidates approached, 18 accepted invitations to be interviewed. The response rate was 67 per cent. Eighteen interviews were conducted from August 25, 2025, to January 20, 2026. All interviews were conducted by MS Teams videoconferencing software. Interviews lasted approximately 60 minutes and were transcribed and anonymized.

Recruitment for focus groups

To build the recruitment list for the focus groups, we relied on the public records of accredited healthcare training programs for the seven healthcare occupations at the centre of this study. We sought regional representation across five regions and used a randomized selection process to identify participating educational institutions. Where invitations were declined or unanswered, alternate institutions from the same region were selected using the same method.

Initial invitations to participate in a focus group were sent via email to all potential focus group participants between August 21, 2025, and September 10, 2025. These emails were followed up a maximum of two times after a non-response that lasted longer than two weeks. In the case where three emails were not responded to, we followed up via phone with a maximum of two phone calls. A maximum total of six contact points elicited a sufficient acceptance rate of our target populations.

Of the 63 people approached, 32 accepted invitations to participate in a focus group. The response rate was 51 per cent. Seven focus groups were conducted from November 3, 2025, to November 30, 2025. Twelve individuals could not attend the original focus group date, so we hosted 12 supplementary 1:1 interviews, using the same focus group guide between December 1, 2025, and January 20, 2026. All focus groups were conducted by MS Teams videoconferencing software. Focus groups lasted approximately 90 minutes and were transcribed and anonymized.

Analysis

Text from the interview and focus group transcripts was coded and analyzed using NVivo software. Coding themes were developed through a mix of deductive and inductive coding. First the deductive codes were developed based on the research questions and a literature review, followed by the inductive coding process that included an exploratory examination of the interview and focus group transcripts. Iterative inter-rater reliability tests were run to ensure coding was consistent across three researchers. Themes were examined based on frequency by comparing differences in perspectives and experiences between the interview and focus group participants.

The qualitative findings reflect perspectives from Canada's provinces only. Territorial regulatory authorities and training organizations were not included due to governance structure differences. The territories were removed from the qualitative portion of this research for the reasons stated above.

Appendix B

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