



Health Human Resources Plan Department of Health and Community Services Comprehensive Final Interim Report

May 2025

Note: The comprehensive final interim report excludes the physician workforce which will be included as a future update.

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Executive Summary

The recruitment and retention of the health care workforce remains a significant challenge, not just in Newfoundland and Labrador (NL), but globally. As such, the Department of Health and Community Services (HCS) commissioned Deloitte to conduct a comprehensive analysis of the health workforce in the province over the next 10-years and provide recommendations to address projected workforce gaps. The resulting Health Human Resources (HHR) Plan models the supply¹ and demand of 21 health occupations and 36 physician specialties in-scope to identify priority workforce imbalances. Drawing on stakeholder input and best practices from other jurisdictions, this HHR Plan recommends key policy options to address the gaps to create a more resilient and sustainable health care system.

The Health Accord NL is the key driver for the development of this HHR Plan. As outlined in Call to Action (CTA) 10.4, the Health Accord NL identified the need to develop comprehensive strategies to engage, stabilize, and retain the current and future health and social system workforce over the next decade. This includes creating a health care environment that enables all providers to work at the highest scope of their practice, values leadership and inspires those with potential to lead, and supports providers to deliver equitable, interprofessional care.

Objectives

The HHR challenges facing the province are complex and require a multi-faceted approach to address. Consequently, the HHR Plan was developed under the leadership and guidance of a Steering Committee comprised of senior leaders from HCS and Newfoundland and Labrador Health Services (NLHS), and had the following objectives:

- Develop a workforce modelling methodology to assess the supply and demand of the health workforce until 2032 to inform the current priorities of the health workforce and provide a dynamic workforce planning tool for long-term resource planning;
- Conduct a detailed gap analysis of the supply and demand of the health care workforce in Newfoundland and Labrador for the next 10 years, including a review of current models, metrics, methodologies, and assumptions used in determining the allocation of resources;
- Consult with key health system stakeholders and conduct an environmental scan to understand best practices for effectively addressing workforce shortages and health human resources strategies in other jurisdictions; and,

¹ In this report, supply refers to the size of the workforce.

- Based on the current and projected supply gaps, establish quantitative recruitment goals for each occupation over a ten-year period and identify the key strategies to align workforce supply with demand.

Meeting the Unique Needs of Newfoundland and Labrador

Given NL's unique health care context with an aging population, the increasing incidence of chronic disease, and the challenge of managing the delivery of services across a large and disperse geography, ensuring there is an appropriate supply of health care professionals to continue to meet the future demands of the provincial health care system is of utmost priority. Acknowledging the high proportion of the population that is seniors (65 years of age +) in NL compared to the rest of Canada, the province is expected to experience a range of health care challenges stemming from its aging demographics, with age-related diseases expected to experience the greatest growth over the next decade. These health system implications are further exacerbated when paired with the imminent workforce shortages that coincide with retirement-aged health care professionals.

The Health Accord NL was created in November 2020 to reimagine the health care system across the province over the next 10-years. The final report was released in February 2022, containing 59 Calls to Action (CTAs) that are aimed at improving health care service delivery and access within the province, through rebalancing the health care system and improving the health of Newfoundlanders and Labradorians. In addition to a number of CTAs directly related to HHR planning (CTA 10.4, 10.6 –10.14), a subset of CTAs was identified as key considerations for the development of the HHR Plan due to their potential to significantly reshape the demand for and supply of health occupations once implemented: CTA 7.2, 8.1, 8.2, 9.1, 9.10, 9.13, 9.14, and 9.15. Within this HHR Plan, the analysis seeks to understand and incorporate the projected health system impacts on demand associated with each of these CTAs for the relevant health occupations in-scope.

As part of the mandate of HCS, there have been significant investments and effort expended to address these known health workforce challenges. Acknowledging the current challenges with the recruitment and retention of health care professionals in the province, HCS has already embarked on a number of actions aimed at addressing the gaps in supply prior to the development of this HHR Plan. These actions are focused on building quality workplaces, establishing appropriate workforce supply, strengthening workforce supply, enhancing leadership and management, and maintaining robust planning and evidence. This HHR Plan supplements HCS' existing efforts to strengthen the provincial health workforce.

Actions and challenges are not static. Much has happened between the drafting and finalization of this Plan (e.g., ratification of new collective agreements, introduction of new initiatives, etc.). These actions will likely have a positive impact on workforce recruitment and retention.

The Importance of Stakeholder Input

Addressing the issue of HHR recruitment and retention requires collaboration amongst many stakeholders. As such, extensive engagement was undertaken with over 50 stakeholder groups with representation from GNL, NLHS, and many other organizations including unions, higher education institutions, regulatory bodies, professional associations, and Indigenous communities. Stakeholders were asked to provide input on the proposed modelling methodologies and variables and to share insights, priorities, challenges, and workforce trends related to the health occupations in-scope. In some cases, they were also asked to provide additional data sources to support analyses. Stakeholders highlighted the importance of resolving issues with recruitment and retention, improving the provider experience, and addressing the unique challenges associated with the delivery of health care in rural, remote, Indigenous, and Labrador communities as key priorities to strengthen the provincial health workforce.

Modelling Supply and Demand

A general workforce modelling approach for supply and demand was used for all health occupations and physician specialties in-scope. Given the variability in the data available to estimate demand and the data received to estimate supply, methodological details vary from profession to profession. The supply projections are based on a stock and flow model using data from GNL, professional associations, and Canada's 2021 Census of Population. The inflow and outflow components vary by health occupation, including school leavers, immigration, retirements, and net switchers.² On the demand side, a demand driver was determined for all health occupations and physician specialties to estimate the growth in demand over the forecast period. For physicians, that demand driver is, in most cases, the growth in encounters based on changing population demographics. For some professions, the demand driver is inflation-adjusted spending on health care, among other drivers. These projections are then adjusted according to any in-flight or planned workforce initiatives or Health Accord NL CTAs that are anticipated to have a quantifiable effect on the health workforce by the end of the forecast period in 2032.

Across all professions modelled in this report, the vast majority are expected to have varying degrees of workforce shortages throughout the 10-year forecast period. To address these projected imbalances effectively and proactively, it is important for GNL to anticipate when the projected supply will no longer be able

² Please refer to the definitions provided in the **Estimating Supply for Home Support Workers, Advanced Care Paramedics, Primary Care Paramedics, and Pharmacy Technicians** section of the report for further clarity on what each inflow and outflow component means.

to meet projected demand, so that rectifying measures can be put into place well in advance to avoid impacting access to high quality health services.

Environmental Scan

In addition to the stakeholder input and the modelling of the supply/demand gaps, an environmental scan provided important input into the recommendations contained in this HHR Plan. All jurisdictions analyzed have developed strategies or plans to address the challenges experienced with HHR. The challenges currently being faced in Canada are also being experienced around the globe, including an aging workforce feeling burnt out following the pandemic which has resulted in an exodus of workers from the health system and major gaps in many disciplines. It was found that all plans are organized around three common pillars: retaining and supporting the existing workforce, attracting new talent to the health system, and redesigning the system or work to change the way resources are utilized. These pillars have shaped the combination of strategies necessary to support NL's HHR planning journey.

Workforce Recommendations and Conclusions

It is recommended that NL should focus on retaining the existing pool of health care professionals working in the province today. This includes ensuring that current health care professionals have a positive employee experience, are compensated appropriately, feel supported in their work, and have the resilience and mental health tools to work in a sustainable way for the long-term. This will require activities such as providing ongoing training and development opportunities, recognizing and rewarding achievements, and addressing factors that contribute to burnout and turnover.

Secondly, there is a need to continue to invest in recruitment to ensure there is a steady pipeline of health care professionals to sustain the workforce into the future. As current health care professionals move towards retirement or choose more flexible working options, it is essential to invest in recruitment efforts, particularly recruitment targeted at undersupplied health occupations and regions. This will involve targeted local and international recruitment campaigns, partnering with educational institutions, offering competitive compensation packages, and highlighting the meaningful and rewarding aspects of a career in health care.

Retention and recruitment involve many traditional HR tools and programs such as a review of compensation, financial incentives, employee satisfaction and wellness. Recognizing the unique context of NL, which includes rural and remote communities, Indigenous communities, and comparatively high provincial rates of child and senior poverty, the health care system must consider non-traditional strategies. These strategies are necessary to build upon current successes and implement initiatives that will prepare the province for the future of health care. Two key non-traditional strategies are automation and re-thinking work.

To close the gaps between supply and demand for critical health occupations, GNL should look at ways to automate non-clinical aspects of some professions to free up time that could support an improved work-life balance for health professionals and allow them to focus on patient care. Automation often aims to reduce the administrative burden of repetitive tasks on health care professionals, allowing them to focus on more complex and value-added aspects of their roles.

For health occupations with larger gaps, it is recommended that GNL re-think the way these health professionals work – either through re-architecting the work itself or through the development of alternate service delivery models. This involves reimagining the delivery of health care services to optimize efficiency and effectiveness. It entails exploring where and how work gets done to fundamentally change the way resources are utilized within the system. Examples include adopting telehealth options, interdisciplinary collaboration, flexible scheduling, and utilizing advanced technologies to streamline processes and enhance patient care, while also enhancing the provider experience. Automation and re-thinking work will be especially critical in rural and remote communities where solutions such as virtual health care, virtual monitoring and other novel health care technologies can be employed.

The myriad of strategies and recommendations outlined in this HHR Plan encompass the demographic, cultural, generational, and unique circumstances for rural, remote, Labrador, and Indigenous partners. They can deliver benefits over a range of timeframes, which are stratified within the Plan based on the time to benefit realization, into short- (one to two years), and medium- (three to five years) term. HCS and/or NLHS may choose to implement the recommendations over a longer period (six or more years) or to stagger the implementations, based on capacity, funding, or other limitations. However, it is possible to realize benefits from all the recommendations outlined for each health occupation and physician speciality in-scope within five years of commencing implementation.

Concluding Remarks

Informed by a comprehensive analysis of the HHR in the province, this HHR Plan highlights the need for action to address the workforce challenges facing the province. The Plan has identified several key challenges, including the aging population, the need to address workforce shortages, and the need for better coordination and integration of services in order to continue to deliver effective care and meet the future health care demands of the population.

The general and occupation-specific recommendations put forward in this HHR Plan provide a roadmap to ensure that the province has a sustainable and effective health care workforce that can meet the needs of its population now and in the future.

Background & Context

In response to the Government of Newfoundland and Labrador's (GNL or 'Government') announcement of steps to improve access to primary health care in Newfoundland and Labrador (NL), the Department of Health and Community Services (HCS or 'Department') contracted Deloitte to conduct a comprehensive analysis of the health workforce over the next 10-years and provide recommendations on how to resolve the projected workforce gaps identified in this report – the Health Human Resources (HHR) Plan. Recognizing the aging population and shifting demographics in the province, the goal of the HHR Plan is to assist GNL in providing the right care for the province's residents, in the right place, at the right time, by the most appropriate provider. The HHR Plan, along with the other measures announced in October 2021, will serve as part of the foundation upon which to address the recommendations from the Health Accord NL. Specifically, the HHR Plan responds to the Call to Action (CTA) 10.4, which outlines GNL's key objectives related to HHR planning.

HCS is committed to resolving the province's ongoing challenges related to health workforce shortages. NL's rapidly aging population necessitates a workforce that can meet the complex health care needs associated with this demographic shift.

NL is not alone in facing workforce shortages, as the shortage of HHR is a significant issue across Canada and globally. According to the Canadian Nurses Association, the country was estimated to have a shortage of 60,000 registered nurses (RN) in 2022.³ This shortage is due to a combination of factors, including an aging population, an aging workforce, and a lack of investment in health care education and training. These trends are becoming increasingly pervasive across the entire national health workforce. Globally, the World Health Organization estimates a shortage of 18 million health care workers by 2030⁴, with the greatest shortages in low- and middle-income countries. This shortage of health care workers has significant implications for the accessibility and quality of health care services, particularly in underserved and marginalized communities. Addressing this issue will require a multi-faceted approach, including investments in health care education and training, policies to improve working conditions and retention of health care workers, and efforts to address systemic inequalities in the health care workforce.

³ <https://cna-aiic.ca/~media/cna/page-content/pdf-en/2019/02/06/18/31/nursing-workforce-status-report-e.pdf>

⁴ https://www.who.int/hrh/resources/global_strategy_workforce2030_14_print.pdf?ua=1

In April 2023, GNL established the provincial health authority, Newfoundland and Labrador Health Services (NLHS), created through the consolidation of the four regional health authorities (RHAs) and the Newfoundland and Labrador Centre for Health Information (NLCHI). The effective use of HHR was one driver for the formation of NLHS – a single entity with one Human Resources function and one Medical Services function should reduce (and hopefully eliminate) competition for scarce resources between service delivery regions. It also enables improved resource sharing and depth of specialized capabilities through the establishment of provincial programs and strategic health networks. As this new entity is aimed at streamlining programs and services, it was identified that an evaluation of HHR within the province will help ensure consistent and quality health care delivery across the province to support this period of transition. This HHR Plan represents a significant investment by GNL, in collaboration with key NLHS stakeholders. It aims to achieve a vision wherein workforce shortages are addressed, and equitable access, quality, and future readiness of the health care system are ensured.

In accordance with this vision, this HHR Plan is informed by evidence-informed workforce strategies to meet the evolving care needs of the population and to support the realization of the Health Accord NL CTAs with significant workforce implications. CTA 10.4 identifies a need to create a long-term health workforce plan that will deliver the skills and capabilities essential to a reimagined health system. Enabling new models of care and supporting true interdisciplinary practice where all providers are productive, valued, and utilized to their full scope is an important part of this plan.

Beyond specific recommendations on workforce readiness, the Health Accord NL brought a significant focus to the social, economic, and environmental factors that have the greatest impact on the health and well-being of Newfoundlanders and Labradorians. This focus, coupled with improving access to interdisciplinary primary care, improved seniors care, a new governance approach, and rebalancing the health system, sets the foundation for long-term system change.

Collectively, the Health Accord NL CTAs are aimed at improving health outcomes. As such, the goal of this HHR Plan is to bring an approach to workforce modelling that will provide HCS with the tools necessary for linking workforce and service delivery policy choices with population health outcomes, by identifying the key gaps and strategies for strengthening the provincial health workforce.

The HHR Plan was developed under the leadership and guidance of a Steering Committee co-chaired by senior leaders from HCS, Health Transformation (HT), and NLHS. The Steering Committee was comprised of leaders representing Health Workforce Planning, Recruitment and Retention, Human Resources, and Medical Services. The group met bi-weekly to provide input to the process, work products, and deliverables developed. The Steering Committee was supported

by two Working Groups – a Medical Services Working Group and a Data Working Group – which were engaged regularly to support modelling methodology and data collection efforts, and to refine and validate workforce projections.

In developing this HHR Plan, HCS identified 21 in-scope health occupations and 36 physician specialties for the gap analysis of supply and demand and strategy development. These professions were selected for having the highest rates of vacancies and constitute a significant proportion of the private and public health workforce in the province. This list encompasses medicine, nursing, long-term care, personal care home staff, home and community support, paramedicine, laboratory medicine, diagnostic imaging, allied health, and specialist acute services, with the vast majority experiencing severe challenges with recruitment and retention. The full list of occupations and specialties is provided in Table 1 and Table 2 below, respectively.

Table 1: In-Scope Health Occupations

ID	Profession
1	Nurse Practitioners
2	Registered Nurses
3	Licensed Practical Nurses
4	Personal Care Attendants
5	Home Support Workers
6	Advanced Care Paramedics
7	Primary Care Paramedics
8	Medical Laboratory Technologists
9	Laboratory Assistants
10	Medical Radiation Technologists
11	Clinical Psychologists
12	Social Workers
13	Occupational Therapists
14	Pharmacists
15	Pharmacy Technicians
16	Physiotherapists
17	Respiratory Therapists
18	Radiation Therapists
19	Dosimetrists
20	Medical Physicists
21	Cardiac Perfusionists

Table 2: In-Scope Physician Specialties

ID	Speciality
1	Clinical specialists
1.1	Anesthesiology
1.2	Cardiology
1.3	Critical care medicine
1.4	Dermatology
1.5	Emergency medicine
1.6	Endocrinology and metabolism
1.7	Family medicine
1.8	Gastroenterology
1.9	General internal medicine
1.10	Geriatric medicine
1.11	Hematology
1.12	Infectious diseases
1.13	Medical oncology
1.14	Nephrology
1.15	Neurology
1.16	Nuclear medicine
1.17	Palliative medicine
1.18	Pediatrics
1.19	Physical medicine and rehabilitation
1.20	Psychiatry
1.21	Radiation oncology
1.22	Radiology
1.23	Respirology
1.24	Rheumatology
2	Laboratory specialists
2.1	Pathology
3	Surgical specialists
3.1	Cardiac surgery
3.2	General surgery
3.3	Neurosurgery
3.4	Obstetrics and gynecology
3.5	Ophthalmology
3.6	Orthopedic surgery

ID	Specialty
3.7	Otolaryngology (ENT)
3.8	Plastic surgery
3.9	Thoracic surgery
3.10	Urology
3.11	Vascular surgery

Of the above-listed physician specialties, the full demand analysis was undertaken for 26 physician specialties, while a partial demand analysis was undertaken for 10 physician specialties for more details on the supply and demand analysis, please refer to the **Workforce Modelling Approach** section.

Objectives & Approach

HCS engaged Deloitte to develop an HHR Plan to provide a comprehensive outlook of the state of HHR in the province over the next 10-years. The following four objectives guided the development of the HHR Plan:

Objective 1: A detailed gap analysis of the supply and demand of the physician and health care workforce in NL for the next 10 years, including a review of current models, metrics, methodologies and assumptions used in determining allocation of resources.

Deloitte employed a data-driven approach based on labour economics to create a stock and flow model that assesses the current and future workforce needs and is adaptable and responsive to health system changes. Stakeholder input was instrumental in shaping this methodology to ensure its relevance and effectiveness in capturing each health occupation's key supply and demand drivers.

Deloitte forecasted anticipated demand for the public and private health workforce based on historical practice patterns and trends over a five-year period (2018-2022) and evaluated it against the available supply. This analysis identified workforce imbalances projected to occur by 2032, and Deloitte made recommendations to close those gaps.

The analysis established a baseline for the current structure of the health care system, which serves as a point of comparison for alternative scenarios that consider policy innovations. This process involved defining a desired future state of the system based on key recommendations and Health Accord NL Calls to Action, as well as any ongoing or planned workforce initiatives that will have a significant impact on the supply of and demand for health care professionals.

Objective 2: Evidence that is informed by consultation by key health system stakeholders and an environmental scan of HHR plans to understand best practices for effectively addressing workforce shortages and HHR strategies in other jurisdictions.

Deloitte engaged with various stakeholder groups from HCS, HT, NLHS, and other organizations to gather their input and ideas for improving the health care workforce (see detailed information in **Appendix B: Stakeholder Consultations**). Additionally, an environmental scan was conducted to identify the state of HHR plans as well as best practices and initiatives from other provinces and countries.

Objective 3: Workforce modelling and workload measurement tools that support long term resource planning for physicians and the health care workforce.

Models and tools should be responsive and adaptable to system changes and be easily updated on an annual or periodic basis, as necessary, by GNL.

Deloitte developed a dynamic workforce planning tool that is capable of analyzing the supply of and demand for the health occupations in-scope to help inform future priorities of the health workforce. This tool ultimately enables HCS to engage in long-term resource planning to strengthen their HHR planning processes and future-proof the sustainability of the health system.

Objective 4: Based on the current and projected supply gaps, establish quantitative recruitment goals for each occupation over a ten-year period and identify the key strategies to align workforce supply.

Deloitte evaluated the identified gaps for each year in the forecast period and recommended potential strategies to address the projected health workforce imbalances. To bridge these gaps effectively, the recommendations address demographic, cultural, and generational trends as well as the unique opportunities for the provision of care in rural and remote communities, Labrador, for Indigenous stakeholders and other underrepresented groups. The recommendations also identify opportunities to improve engagement and relationship-building with current and prospective employees and consider linkages with the education system, the regulatory environment, immigration, and compensation structures to align with the evolving needs of the province's population.

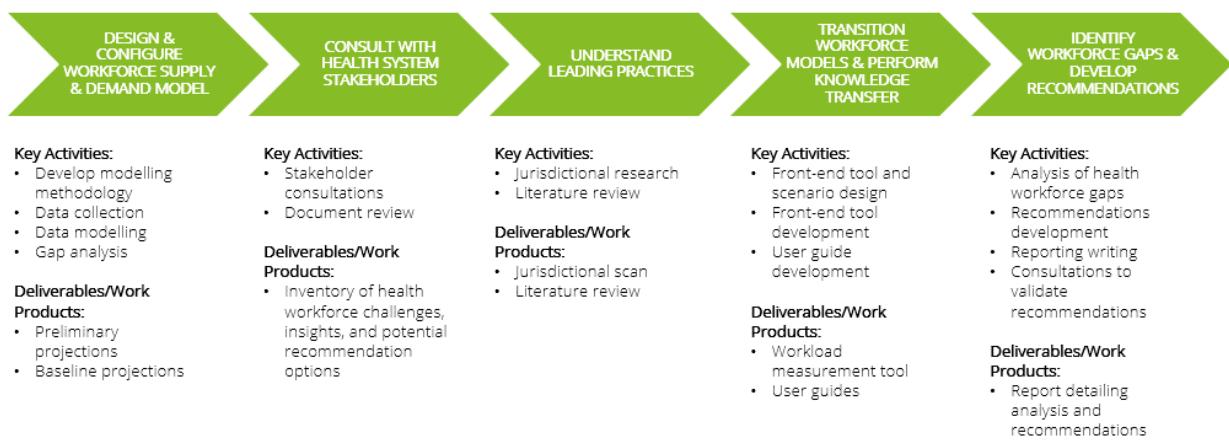
This HHR Plan was developed over a year-long period, beginning in March 2023 and concluding in April 2024. Over the course of this work, Deloitte provided decision-support to a Steering Committee and Working Groups comprised of representatives from HCS and NLHS to complete the following key activities:

- Aligning on the modelling methodology and inputs used for the analysis, supporting data collection efforts, and refining and validating the preliminary and final workforce projections;

- Identifying key stakeholders for engagement and learning from stakeholder consultations;
- Developing and validating the workforce planning tool design, including considerations for how the tool will be used to support long-term resource planning; and,
- Providing input to and validation of workforce recommendations.

The key activities undertaken and work products developed are summarized in Figure 1 below.

Figure 1: Project Approach



Current State Analysis

The unique health care context of NL dictates that the aging population will be the key demand driver for health care services over the next decade. These health system implications are further exacerbated when paired with the imminent workforce shortages that coincide with retirement-aged health care professionals. As part of the mandate of HCS, there have been significant investments and effort expended to address the known health workforce challenges, which establishes the starting point for the workforce recommendations outlined in this report. Acknowledging the Health Accord NL and all current and planned workforce initiatives developed by HCS, this section is intended to provide an overview of what has been done to date, what challenges remain, and why this HHR Plan is needed.

Actions and challenges are not static. Much has happened between the drafting and finalization of this Plan (e.g. ratification of new collective agreements, introduction of new initiatives, etc.). These actions will likely have a positive impact on workforce recruitment and retention.

Health System Context

Demographics and Population Health

The 2022 population of NL was 541,391, and it is projected to stay relatively constant through to 2032, growing at a rate of 0.63% annually 556,719.⁵ Across the five health zones, most of the population currently resides in the Eastern Urban (218,372) and Eastern Rural (103,818) zones, followed by the Central (90,968), Western (75,900), and Labrador-Grenfell (36,921) zones. The Eastern Urban zone is expected to experience the greatest population growth over the next decade, growing at a rate of 6.3% to a population of 232,067 by 2032. The remaining four zones are expected to experience varying levels of population decline, with the Eastern Rural zone declining at a rate of 3.5%, Central zone at 4.3%, Western zone at 3.0%, and Labrador-Grenfell zone at 1.0%. These projections are outlined in Table 3 through Table 7 below.

The most significant population trend of note for NL is the growing proportion of the population over the age of 65. In 2022, there were 123,899 adults over the age of 65, which represents 23.6% of the province's total population. By 2032, this percentage is expected to increase to 29.1%. In comparison, the percentage of the Canadian population over the age of 65 was 19.0% in 2022⁶. By zone, the number of adults over the age of 65 in Eastern Urban is projected to increase by

Number of adults over the age of 65 by zone in 2022:

- Eastern Urban Zone: 37,997
- Eastern Rural Zone: 31,431
- Central Zone: 26,443
- Western Zone: 21,562
- Labrador-Grenfell Zone: 6,466

Total NL population over 65 in 2022: 123,899

Number of adults projected over the age of 65 by zone in 2032:

- Eastern Urban Zone: 49,941
- Eastern Rural Zone: 37,984
- Central Zone: 31,600
- Western Zone: 26,244
- Labrador-Grenfell Zone: 8,039

Total NL population over 65 in 2032: 153,808

⁵ NL Department of Finance, Medium Population Forecast. Note: current and forecasted population numbers were updated since the writing of this report. As of June 2024 the population was reported as 543,132 increasing to 556,719 by 2032.

⁶ [Canada's aging population—what does it mean for GNL finances? | Fraser Institute](#)

31.4%, followed by Labrador-Grenfell (24.3%), Western (21.7%), Eastern Rural (20.8%), and Central (21.7%) by 2032.

Acknowledging the high proportion of the population that is seniors in NL compared to the rest of Canada, the province is expected to experience a range of health care challenges stemming from its aging demographics.

The province's growing elderly population places increasing demands on health care services, from managing a higher prevalence of chronic diseases to addressing long-term care needs. There will be an increased demand for the provision of specialized care for age-related mental health issues and cognitive disorders, along with a concerted effort to combat the potential health care workforce shortages that coincide with retirement-aged health care professionals. Furthermore, the geographic distribution of the aging population, with many residing in rural and remote areas, adds complexity to health care delivery. The need for social support, end-of-life care, and cost-effective health care models further compounds these challenges. Effective strategies must be developed to ensure that the province's health care system can meet the unique and evolving needs of its older residents while maintaining a high standard of care and support.

Table 3: Eastern Urban Zone 10-Year Population Demographics by Age Cohort⁷

Year	Total	Age Cohort																		
		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-90	90+
2022	218,372	9,145	10,632	11,267	11,635	13,903	16,305	16,203	15,941	15,441	14,632	15,059	15,592	14,620	12,837	10,582	7,346	4,093	2,014	1,125
2023	219,650	9,196	10,554	11,051	11,672	13,544	16,278	16,534	16,113	15,582	14,676	14,892	15,490	14,878	13,038	10,737	7,844	4,366	2,085	1,120
2024	220,920	9,229	10,366	10,967	11,784	13,146	16,200	16,839	16,195	15,874	14,656	14,875	15,159	15,138	13,310	10,992	8,247	4,648	2,180	1,115
2025	222,474	9,365	10,183	10,880	11,936	12,652	16,081	17,147	16,447	16,117	14,786	14,765	15,113	15,267	13,537	11,234	8,663	4,893	2,309	1,099
2026	223,602	9,416	9,959	10,911	11,867	12,449	15,701	17,375	16,744	16,285	14,883	14,590	15,061	15,384	13,838	11,375	8,893	5,363	2,387	1,121
2027	224,986	9,330	9,928	11,052	11,779	12,224	15,370	17,648	16,985	16,455	15,101	14,440	15,104	15,343	14,076	11,613	9,077	5,808	2,514	1,139
2028	226,302	9,319	10,008	10,991	11,576	12,268	15,021	17,664	17,365	16,658	15,260	14,504	14,955	15,261	14,337	11,807	9,234	6,209	2,695	1,170
2029	227,872	9,311	10,087	10,840	11,517	12,413	14,675	17,670	17,758	16,789	15,581	14,518	14,971	14,961	14,610	12,076	9,469	6,540	2,878	1,208
2030	229,366	9,284	10,253	10,673	11,441	12,584	14,185	17,572	18,115	17,052	15,831	14,664	14,877	14,935	14,749	12,295	9,694	6,874	3,039	1,249
2031	230,783	9,236	10,354	10,489	11,501	12,545	14,028	17,273	18,445	17,421	16,038	14,796	14,738	14,914	14,888	12,588	9,833	7,068	3,343	1,285
2032	232,067	9,171	10,281	10,483	11,662	12,463	13,807	16,952	18,764	17,695	16,223	15,029	14,618	14,978	14,867	12,821	10,054	7,229	3,629	1,341

⁷ NL Department of Finance, Medium Population Forecast

Table 4: Eastern Rural Zone 10-Year Population Demographics by Age Cohort⁸

Year	Age Cohort																			
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-90	90+
2022	103,818	3,323	3,934	4,722	5,214	5,005	3,723	3,857	4,243	4,816	6,228	8,169	9,270	9,883	9,987	9,097	6,338	3,368	1,675	966
2023	103,470	3,235	3,839	4,604	5,085	5,108	3,835	3,796	4,114	4,640	6,019	7,994	9,064	9,862	9,944	9,262	6,740	3,615	1,769	945
2024	103,119	3,181	3,705	4,515	5,017	5,151	3,937	3,751	3,991	4,533	5,847	7,660	8,920	9,849	9,842	9,482	7,126	3,799	1,876	937
2025	102,838	3,095	3,623	4,382	4,972	5,179	4,069	3,681	3,984	4,360	5,672	7,458	8,665	9,806	9,805	9,591	7,565	4,015	1,978	938
2026	102,387	3,021	3,535	4,277	4,893	5,114	4,243	3,665	3,908	4,226	5,601	7,151	8,415	9,655	9,760	9,615	7,851	4,406	2,101	950
2027	102,027	2,997	3,420	4,207	4,825	5,064	4,361	3,668	3,869	4,141	5,481	6,826	8,311	9,494	9,730	9,590	8,034	4,839	2,200	970
2028	101,607	3,007	3,333	4,117	4,709	4,948	4,482	3,785	3,809	4,015	5,314	6,626	8,146	9,299	9,723	9,569	8,197	5,151	2,372	1,005
2029	101,278	3,029	3,285	3,991	4,631	4,900	4,563	3,908	3,778	3,903	5,223	6,464	7,825	9,169	9,726	9,493	8,402	5,448	2,495	1,045
2030	100,923	3,058	3,201	3,910	4,501	4,867	4,623	4,052	3,703	3,895	5,064	6,296	7,632	8,927	9,691	9,480	8,511	5,784	2,645	1,083
2031	100,534	3,087	3,135	3,835	4,410	4,806	4,595	4,262	3,701	3,825	4,945	6,240	7,340	8,690	9,566	9,465	8,555	6,025	2,918	1,134
2032	100,101	3,119	3,114	3,721	4,340	4,740	4,576	4,399	3,703	3,788	4,871	6,129	7,022	8,595	9,417	9,453	8,551	6,177	3,211	1,175

Table 5: Central Zone 10-Year Population Demographics by Age Cohort⁹

Year	Age Cohort																			
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-90	90+
2022	90,968	2,888	3,485	4,133	4,585	4,742	3,177	3,562	4,017	4,537	5,761	7,261	7,921	8,456	8,289	7,308	5,306	3,146	1,596	798
2023	90,576	2,796	3,432	3,991	4,486	4,766	3,400	3,546	3,830	4,444	5,482	7,051	7,833	8,359	8,350	7,455	5,613	3,262	1,675	805
2024	90,172	2,746	3,296	3,910	4,413	4,678	3,694	3,463	3,738	4,381	5,228	6,782	7,780	8,243	8,368	7,613	5,858	3,400	1,749	832
2025	89,829	2,689	3,237	3,775	4,384	4,598	3,964	3,289	3,828	4,296	4,969	6,510	7,649	8,186	8,365	7,700	6,190	3,501	1,850	849
2026	89,368	2,621	3,170	3,675	4,359	4,430	4,256	3,222	3,755	4,253	4,771	6,173	7,531	8,023	8,394	7,777	6,297	3,899	1,895	867
2027	88,976	2,610	3,098	3,655	4,242	4,309	4,440	3,257	3,755	4,123	4,616	5,875	7,377	8,011	8,320	7,800	6,442	4,167	1,996	883
2028	88,542	2,630	3,005	3,610	4,104	4,219	4,479	3,491	3,745	3,940	4,528	5,599	7,175	7,933	8,234	7,869	6,581	4,407	2,075	918
2029	88,190	2,663	2,961	3,479	4,030	4,162	4,428	3,812	3,675	3,859	4,471	5,354	6,914	7,891	8,130	7,898	6,731	4,600	2,173	959
2030	87,825	2,703	2,908	3,426	3,897	4,137	4,373	4,104	3,497	3,954	4,391	5,096	6,645	7,772	8,081	7,905	6,819	4,866	2,245	1,006
2031	87,443	2,746	2,847	3,371	3,809	4,123	4,240	4,441	3,441	3,893	4,360	4,904	6,317	7,665	7,935	7,947	6,902	4,965	2,513	1,024
2032	87,024	2,785	2,840	3,298	3,790	4,015	4,135	4,651	3,485	3,898	4,233	4,751	6,025	7,518	7,932	7,883	6,934	5,088	2,696	1,067

Table 6: Western Zone 10-Year Population Demographics by Age Cohort¹⁰

Year	Age Cohort																			
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-90	90+
2022	75,900	2,339	2,917	3,403	3,670	3,963	3,318	3,569	3,424	3,834	4,491	5,687	6,625	7,098	6,991	5,940	4,248	2,363	1,346	674
2023	75,678	2,278	2,878	3,335	3,572	3,931	3,424	3,546	3,390	3,816	4,302	5,442	6,501	7,060	7,040	6,055	4,552	2,480	1,386	690
2024	75,434	2,220	2,809	3,245	3,543	3,848	3,553	3,569	3,413	3,744	4,135	5,253	6,318	6,985	7,009	6,198	4,804	2,665	1,430	693
2025	75,265	2,267	2,659	3,169	3,547	3,751	3,701	3,465	3,532	3,655	4,094	5,014	6,106	6,961	6,963	6,312	5,034	2,872	1,451	712

⁸ NL Department of Finance, Medium Population Forecast⁹ NL Department of Finance, Medium Population Forecast¹⁰ NL Department of Finance, Medium Population Forecast

Year	Age Cohort																			
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-90	90+
2026	74,984	2,321	2,538	3,096	3,539	3,633	3,739	3,452	3,589	3,609	3,967	4,850	5,908	6,840	6,959	6,425	5,191	3,118	1,469	741
2027	74,754	2,308	2,489	3,040	3,483	3,526	3,818	3,433	3,736	3,517	3,920	4,605	5,779	6,677	6,962	6,565	5,234	3,357	1,523	782
2028	74,490	2,319	2,433	3,006	3,419	3,434	3,801	3,551	3,720	3,487	3,906	4,416	5,537	6,562	6,932	6,619	5,347	3,598	1,605	798
2029	74,291	2,338	2,383	2,947	3,339	3,416	3,746	3,699	3,757	3,522	3,841	4,255	5,358	6,388	6,867	6,600	5,484	3,804	1,735	812
2030	74,084	2,355	2,438	2,796	3,267	3,424	3,668	3,863	3,653	3,646	3,753	4,217	5,122	6,183	6,850	6,562	5,597	3,991	1,874	825
2031	73,859	2,372	2,506	2,682	3,199	3,427	3,577	3,929	3,658	3,719	3,713	4,098	4,967	5,993	6,742	6,572	5,709	4,116	2,040	840
2032	73,578	2,384	2,501	2,636	3,145	3,373	3,478	4,026	3,645	3,875	3,623	4,052	4,726	5,870	6,589	6,583	5,836	4,155	2,202	879

Table 7: Labrador-Grenfell Zone 10-Year Population Demographics by Age Cohort¹¹

Year	Age Cohort																			
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-90	90+
2022	36,921	1,807	2,167	2,309	2,191	2,399	1,892	2,272	2,345	2,289	2,574	2,880	2,810	2,520	2,246	1,846	1,200	669	336	169
2023	36,843	1,772	2,097	2,327	2,195	2,386	1,964	2,168	2,338	2,334	2,464	2,783	2,818	2,546	2,257	1,905	1,276	688	356	169
2024	36,792	1,759	2,025	2,311	2,217	2,309	2,126	2,073	2,331	2,334	2,382	2,743	2,794	2,558	2,248	1,948	1,347	744	372	171
2025	36,757	1,749	1,996	2,231	2,301	2,207	2,275	1,965	2,366	2,339	2,315	2,672	2,769	2,568	2,270	1,952	1,425	804	388	165
2026	36,670	1,729	1,947	2,193	2,328	2,203	2,309	1,928	2,350	2,354	2,239	2,566	2,787	2,584	2,278	1,956	1,470	867	407	175
2027	36,629	1,705	1,884	2,212	2,332	2,163	2,394	1,957	2,321	2,306	2,211	2,507	2,723	2,617	2,288	1,952	1,523	918	428	188
2028	36,575	1,702	1,853	2,145	2,357	2,170	2,390	2,034	2,222	2,304	2,257	2,406	2,635	2,624	2,316	1,970	1,571	977	442	200
2029	36,563	1,708	1,846	2,080	2,345	2,197	2,326	2,216	2,130	2,305	2,262	2,326	2,598	2,611	2,330	1,968	1,602	1,033	478	202
2030	36,557	1,717	1,836	2,056	2,267	2,286	2,235	2,379	2,025	2,341	2,268	2,264	2,536	2,585	2,351	1,988	1,609	1,089	518	207
2031	36,547	1,729	1,822	2,013	2,232	2,319	2,244	2,427	2,001	2,335	2,290	2,192	2,439	2,610	2,369	2,001	1,614	1,128	561	221
2032	36,538	1,742	1,803	1,953	2,258	2,330	2,204	2,524	2,034	2,306	2,245	2,169	2,384	2,547	2,407	2,015	1,614	1,168	596	239

Disease Prevalence Trends

Considering the provincial population trends, the 10-year disease forecast predicts that age-related diseases are expected to experience the greatest growth over the next decade. As the population of NL ages, the prevalence of neurological and cognitive diseases such as dementia, delirium, mental illness, and neurogenerative disorders, is expected to increase between 30-45% from 2022 to 2032.^{12,13,14} Likewise, other health issues that are more prevalent in older age cohorts such as fall-related injuries, urinary incontinence, cataracts, and osteoporosis are expected to rise by 20-30%.^{15,16,17} Cardiovascular conditions such as heart failure, stroke, transient ischemic attack, and peripheral

¹¹ NL Department of Finance, Medium Population Forecast

¹² NL Department of Finance, Medium Population Forecast

¹³ CIHI POP Grouper Methodology

¹⁴ Forecasts by Deloitte

¹⁵ NL Department of Finance, Medium Population Forecast

¹⁶ CIHI POP Grouper Methodology

¹⁷ Forecasts by Deloitte

venous diseases will also experience an increase of more than 20%, along with urologic conditions such as bladder cancer and chronic kidney disease or failure as outlined in Table 8 below.^{18,19,20} As a result, the demand for health professions that provide services related to the diagnosis, treatment, and management of aging-related diseases will be expected to grow accordingly as population projections serve as one of the key demand drivers within the modelling methodology outlined in the **Overview of Methodology and Data Sources** section below.

Table 8: Top 10-Year Growth in Disease Prevalence^{21,22,23}

ID	Health Condition	Percent change in the number of individuals experiencing this health condition (2022 to 2032)
1	Dementia (including Alzheimer's disease)	45%
2	Autoimmune skin disorder	39%
3	Neurological, sensory, cognitive sign/symptom	35%
4	Fracture of the femur	34%
5	Delirium	34%
6	Mental disability resulting from brain injury or other illness	33%
7	Urinary incontinence (stress)	31%
8	Palliative state	31%
9	Heart failure	30%
10	Osteoporosis	30%
11	Stroke	28%
12	Transient ischemic attack	28%
13	Peripheral venous disease/phlebitis/thrombophlebitis/deep vein thrombosis	27%
14	Cataract/lens disorder	26%
15	Parkinson's disease/parkinsonism	26%
16	Hereditary/degenerative condition of the nervous system	26%

¹⁸ NL Department of Finance, Medium Population Forecast¹⁹ CIHI POP Grouper Methodology²⁰ Forecasts by Deloitte²¹ NL Department of Finance, Medium Population Forecast²² CIHI POP Grouper Methodology²³ Forecasts by Deloitte

ID	Health Condition	Percent change in the number of individuals experiencing this health condition (2022 to 2032)
17	Bladder cancer	24%
18	Chronic kidney disease/failure	24%
19	Paralytic syndrome/spinal cord injury	22%
20	Cerebrovascular disorder (excluding stroke)	22%

Conversely, the population of NL under the age of 18 will decline across most zones over the forecast period. Therefore, the prevalence of health conditions associated with younger populations such as eating disorders, emotional and behavioural disorders, and developmental disorders (including autism spectrum disorder) is predicted to decline over the next 10-years. However, it must be noted that these conditions are also becoming increasingly prevalent in youth due to the underlying social and environmental factors that contribute to the development of these conditions, such as poverty, access to health care, and social isolation. Thus, although it is forecasted that these conditions are still expected to decline overall, the extent of the decline will be dependent on the continued investment in preventative measures, early detection, and effective treatment options for children and adolescents.

Health Accord NL

Health Accord NL was created in November 2020 to reimagine the health care system across the province over the next 10-years. Its mandate is to deliver a 10-year Health Accord NL with short-, medium, and long-term goals to address the key health care challenges in the province, such as the number of patients unattached to primary care providers, poor provincial health, drastic demographic changes, and the difficulties recruiting and retaining health professionals. The final report was released in February 2022, with the implementation blueprint outlining the funding and legislative changes required to enact these changes released in June 2022.

“Health Accord NL places the person and the family at the centre. Their health is influenced by the community in which they live; the medical and social systems that serve them; the social, economic, and environmental factors to which they are exposed; and the pathways that facilitate connections among these various elements that support health.”

Health Accord NL

Within the Health Accord NL, there are 59 Calls to Action (CTAs) aimed at improving health care service delivery and access within the province, through rebalancing the health care system and improving the health of Newfoundlanders and Labradorians. These CTAs span the continuum of care, including the social determinants of health (SDH), the health of children, the aging population, community care, hospital services, quality health care, digital technology, workforce readiness, education, finances and interdependence with the federal government, and governance.

In addition to a number of CTAs directly related to HHR planning (CTA 10.4, 10.6, 10.7, 10.8, 10.9, 10.10, 10.11, 10.12, 10.13, 10.14), a subset of CTAs was identified as key considerations for the development of the HHR Plan due to their potential to significantly reshape the demand for and supply of health occupations once implemented:

1. **CTA 7.2:** Develop one model of community health services for children and youth with complex health needs and a more integrated approach to respond to the health needs of children and youth in care.
2. **CTA 8.1:** Develop and implement a formal Provincial Seniors Care Program to address the critical needs of our population.
3. **CTA 8.2:** Implement and support an integrated continuum of care to improve the effectiveness and efficiency of care delivery, improve health and social outcomes for older adults and older adults with disabilities, and support older adults to age in place with dignity and autonomy.
4. **CTA 9.1:** Connect every resident of NL to a Family Care Team, providing a central touchpoint of access and a continuum of care.
5. **CTA 9.10:** Establish pathology and laboratory medicine as a provincial networked service based on hub-and-spoke modelling.
6. **CTA 9.13:** Renew hospital services by improving coordination and flow of health and social system information between hospitals and the community and by maximizing the use of integrated digital technology and information systems.
7. **CTA 9.14:** Develop and implement a five-year plan for improvement in mortality rates for cancer, cardiac disease, and stroke over the next ten years, led by the provincial programs for these disease entities.
8. **CTA 9.15:** Design one provincial, modern, integrated air, and road ambulance system with a central medical dispatch.

Collectively, these CTAs carry significant workforce implications once implemented. Within this HHR Plan, the analysis seeks to understand and incorporate the projected health system impacts on demand associated with each of these CTAs for the relevant health occupations in-scope.

CTA 7.2 speaks to GNL's plans to develop a new service delivery model for child health services that links health and education to enhance the continuity of care for youth and adolescents with complex needs. This program is anticipated to influence demand for interdisciplinary care teams responsible for providing wraparound, holistic and timely physical and mental health services for this demographic.

To reduce long-term care wait times and the duration of alternate level of care (ALC) stays, GNL aims to adopt the new model of senior care outlined in CTAs 8.1 and 8.2. These CTAs address the development of a geriatric informed Seniors Care Program for the frail elderly in the province and an enhanced continuum of care and support for aging adults. These initiatives are intended to provide an integrated, community-based approach to supporting aging at home, encouraging the provision of care close to home, and providing innovative models of home support delivery. This program is anticipated to influence demand for interdisciplinary care teams involved in geriatric care or those health occupations that support aging in place, aligned to the increased prevalence of aging related health conditions in older age cohorts.

To address the issue of unattached patients in the province, GNL is creating 35 Family Care Teams (FCT) to increase access to primary care as outlined in CTA 9.1. These large strategic shifts in health service delivery and models of care indicate there will be a change in staffing ratios of physicians to other health care professionals that will impact demand via changes in resource utilization and the diseases most impacted by improved access to primary health.

GNL is making a significant investment in modernizing health information technology (IT) systems, through the implementation of a new provincial Hospital Information System (HIS)²⁴ and Integrated Capacity Management (ICM) system, in addition to adopting the widespread use of virtual care and remote patient monitoring technologies to empower providers to deliver care more efficiently and improve patient outcomes as outlined in CTA 9.14. The adoption of digital health technologies will ensure better resource management, greater clinical efficiency, less waste in the health system, and will serve to mitigate inequalities in access to care in underserved areas, influencing the demand for health occupations that can provide effective care remotely.

GNL is committed to the reorganization of health centres and hospitals to match current and future needs. Through these investments into new health infrastructure builds, CTA 9.15 identifies the potential to decrease the mortality rates for cancer, cardiac disease, and stroke over the next ten years through greater access to health services, thereby impacting demand due to the shifts in the prevalence of certain disease rates within the province and the improvement of health outcomes.

²⁴ GNL HIS approval is still pending at the time of report publishing.

With the recent establishment of the new provincial health authority, the opportunity to create new provincial services to alleviate the current gaps in service delivery in the province is described in CTAs 9.10 and 9.15. The provincial pathology and laboratory network and the provincial integrated ambulance system are expected to redistribute the demand for laboratory medicine and paramedicine professionals within the province to improve the long-term quality of these services.

Throughout the Health Human Resources Plan (HHRP) the impact of the Health Accord on the workforce has been quantified wherever possible based on the progress of CTA implementation and the availability of data and supporting evidence. The CTAs that have quantifiable impact for individual health occupations at the time of writing and as described in Appendix A is non exhaustive. As GNL progresses with implementing the Health Accord and new data becomes available additional quantifiable impacts to the health workforce can be expected.

Workforce Initiatives

Acknowledging the current challenges with the recruitment and retention of health care professionals in the province, HCS has already embarked on a number of actions and initiatives aimed at addressing the gaps in supply and demand prior to the development of this HHR Plan. For example, HCS has established a Provincial Health Professional Recruitment and Retention Office to oversee the strategy development, implementation, and performance monitoring of recruitment and retention initiatives. In addition, to address workforce productivity, NLHS is transitioning from Meditech to a new provincial HIS within all acute care hospital settings across the province. Concurrently, NLHS is implementing an ICM system in multiple sites across the province to provide greater oversight for capacity planning, enterprise visibility, and workforce management.

In addition, several strategic plans have been released in the past several years, including the Strategic Health Workforce Plan 2015-2018²⁵ developed in 2015 by HCS, and the Rural NL Physician Recruitment and Retention Plan released by Memorial University (MUN) Faculty of Medicine in 2021, which outlines goals and potential actions to address priority issues facing the provincial health workforce.

A Health Human Resource Framework has been developed by the HHR Sub-Table of the Health Transformation Table. This Framework will guide the implementation of key workforce strategies that will ensure the province meets the needs of our people, communities, and workforce. The Framework has six pillars: Quality Workplaces, Workforce Supply, Workforce Capacity, Leadership

²⁵ <https://www.gov.nl.ca/hcs/shwp/>

and Management, Human Resource Planning and Communications. A list of current and planned actions is summarized below:

Quality Workplaces

This pillar addresses creating a work setting that takes a strategic and comprehensive approach to providing the physical, cultural, psychosocial, and work-job design conditions that maximize the health and well-being of health providers, quality of patient and client outcomes and organizational performance, through:

- Establishment of the HCS Manager of Retention position to focus on retaining health care professionals;
- Outreach efforts to collaborate with various stakeholders, including family practice networks, health zones, immigration authorities, municipalities, and community partners to enhance retention strategies;
- Childcare options for health care workers announced;
- Self-scheduling guidelines and the prevention of 24-hour shift guidelines developed for Registered Nurses and Nurse Practitioners;
- Registered Nurse Think Tank initiatives implemented to address issues with recruitment and retention;
- NLHS Psychological Health and Safety Program action plan developed to prioritize mental well-being in the workplace;
- Establishment of Retention Task Force in NLHS;
- "Grow Your Own" Initiative under development in NLHS;
- Competitive collective agreements ratified with Newfoundland and Labrador Association of Public and Private Employees (NAPE), Canadian Union of Public Employees (CUPE), Registered Nurses' Union Newfoundland and Labrador (RNUNL), and Association of Allied Health Professionals NL (AAHP);
- Blended Capitation Model (BCM) for Family Physicians, Alternate Payment Plans (APP) and payment codes for virtual care developed; and,
- NLHS adoption of a Just Culture Framework.

Workforce Supply

This pillar ensures an appropriate supply of qualified health professionals to work in NL, and implements effective recruitment and retention strategies, through the following initiatives:

- Local, national and international recruitment initiatives such as:
 - "Extraordinary Every Day Campaign" aimed at national and international recruitment efforts;
 - Hosting and attending recruitment job fairs and engagement sessions targeting health care professionals;
 - International Personal Care Attendant Program (IPCA) partnership with Keyin College;

- Establishment of the Health Professional Navigator position aimed at helping international health professionals navigate the recruitment and/or licensing pathways;
- Recruitment initiatives in India and Jamaica ongoing;
- Building Health Career Pathways for High School Student under development;
- Community Toolkit under development;
- Partnerships with organizations such as Talentlift and Work Global on international recruitment; and,
- Assisting Ukrainian health professionals in obtaining employment, including the Ukrainian Physician Licensure Support Program to assist displaced Ukrainian physicians in obtaining licensure to practice medicine in NL.
- Expanding the province's education capacity through:
 - Increasing the number of seats across multiple educational programs, including family medicine, undergraduate medical seats, nurse practitioner, registered nurse, practical nursing, and personal care attendant programs;
 - Additional one-time annual funding of \$10,000 to \$30,000 per students for radiation therapy seats to support a cohort of three graduates per academic year;
 - Studies on attrition, midwifery education and interprofessional education; and,
 - Continued emphasis on clinical practice education and investments in HSPnet.
- Offering a variety of financial incentives including:
 - Health professional student bursaries for numerous health professions including physicians, nurses, and allied health professionals;
 - Longstanding seat purchase agreements for occupational therapy and physiotherapy at Dalhousie University;
 - Incentives with return-in-service agreements for experienced health professionals (e.g., Come Home Year incentives, rural and remote incentives, signing bonuses, retention incentives, long-term care incentives);
 - A number of physician incentives aimed at providing funding to practice in rural and remote areas, establish new clinics, and to support the licensure of International Medical Graduates (IMGs);
 - Salary advance for employees of NLHS to be used for educational purposes, which allows employees to finance a planned leave of absence to complete an education program on a full-time basis; and,
 - Relocation assistance programs.
- Policy and legislative changes to enhance the licensure process for a number of health occupations including:

- Provincial Health Professional Recruitment and Retention Office (HCS) and Physician Executive Recruitment Team (NLHS) established to create a comprehensive provincial approach to recruitment and retention;
- Collaboration with regulatory bodies and navigation support to improve licensure processes for licensed professionals;
- Focus on licensure pathways and foreign credential recognition particularly for Internationally Educated Nurses (IENs), including proposed amendments to the Medical Act and Fair Registration Practices Act;
- Proposed amendments to allow additional pathways for physicians to practice in the province; and,
- Implementation of a Supervised Practice Experience Program (SPEP) to assist nurses in gaining practice hours.²⁶

Workforce Capacity

This pillar recognizes that productive health professionals need to be working to their full scope of practice in an efficient health and community services system designed to meet the health needs of the population. Initiatives include:

- Alignment with Health Accord NL and Family Care Team Framework²⁷ to guide health care workforce development;
- Developing legislation to expand the scope of practice of registered nurses, pharmacists, and licensed practical nurses;
- Initiatives to increase the number of nurse practitioners in the health care system, including the introduction of nurse practitioner-led clinics under the provincial health authority;
- Physician Assistants Pilot Program launched;
- Registered Nurse Locum Pilot Initiative launched in the Labrador-Grenfell Zone;
- NLHS scope of practice project – expanding licensed practical nurse role on Acute Care Medicine Unit ongoing;
- Integrated Capacity Management solutions underway;
- Adoption of ServiceNow software to streamline provincial recruitment processes;
- Introduction of new Health Information System underway; and,
- Launched Physician Geriatric Medicine Program and expanded Care for the Elderly Training Program.

Leadership and Management

This pillar acknowledges the importance of having leaders with the skills to effectively manage, motivate, and support the health workforce. To date, NLHS has adopted the following initiatives:

²⁶ <https://crnnl.ca/site/uploads/2023/04/supervised-practice-experience-program-spep.pdf>

²⁷ <https://www.gov.nl.ca/hcs/files/2023-Family-Care-Teams-A-Health-Policy-Framework-for-NL.pdf>

- "LEADS in a Caring Environment" as the provincial leadership development framework;
- Establishment of Health Transformation Division under the Executive Council – Cabinet Secretariat;
- Establishment of the HHR Sub-Table under the Health Transformation Table;
- NLHS key executive and senior director positions in place;
- Financial recognition of mentors in recent Registered Nurse collective agreement; and,
- NLHS Retention Task Force has leadership as one of its four pillars.

Acknowledging CTA 42, which describes the Health Accord NL's plans to create an environment that values leadership and management and inspires those with potential to lead, there is a recognized need for the development of an intentional and coordinated leadership strategy within the province. This includes creating value in management positions and succession planning for those with leadership and management potential to receive training and mentorship.

Human Resource Planning

This pillar outlines how proactive planning and evidence are necessary to support effective health system decision making through the following initiatives:

- Awarding a contract to Deloitte for the development of a HHR Plan to guide workforce planning and resource allocation;
- Establishment of a shared database using ServiceNow for NLHS, NLCHI (now part of NLHS) and HCS for tracking recruitment and retention indicators, facilitating data reporting and forecasting;
- Collection and analysis of workforce data including budgeted position needs, vacancy and employee record-level data, health workforce key performance indicators (KPIs);
- Completion of a Social Worker Workforce Model Report projecting supply and demand to 2036 to support NAPE Working Groups²⁸;
- NLHS held 2023 Innovation Summit; and,
- Health leadership participation in the Research Exchange Group on HHR.

Communications

The final pillar describes the provincial efforts focused on enhancing internal and external communications regarding the health workforce, including:

- A public relations firm is working with the Province and NLHS to:
 - Develop NL's recruitment value proposition;
 - Develop a strategic marketing plan including identifying recruitment markets nationally and internationally;

²⁸ <https://www.gov.nl.ca/hcs/files/SW-Workforce-Model-Final-Report-FINAL.pdf>

- Provide advice and support for marketing and recruitment campaigns; and,
- Develop a communications strategy focused on retention to promote and recognize the extraordinary workforce in the province.
- The Province has established a Health Care Actions website to provide timely updates on key health initiatives in the Province;
- NLHS 5 to 1 employee newsletter is published regularly; and,
- There are regular NLHS all staff and management meetings with the CEO.

This HHR Plan is intended to complement any subsequent health workforce projects, such as the Request for Proposals (RFP) that has been issued by HCS to undertake a core staffing analysis of the registered nurse (RN) workforce in select sites throughout the province. This subsequent analysis will include a review of client factors, staffing factors, organizational factors, and other factors that contribute to the workload of RNs.

We also acknowledge that GNL is embarking on an evaluation of core staffing in long-term care following the conclusion of this HHR Plan. Although that work is not currently at a maturity level to allow comment in this report, we believe GNL is equipped with the necessary resources and tools to develop evidence-informed recommendations around staffing ratios in this sector.

Collectively, these actions demonstrate GNL's commitment to evidence-based planning, data-driven decision-making, and strategic initiatives aimed at enhancing health care workforce recruitment and retention efforts. The establishment of specialized offices, development of new policies, investment into education, and continued collaboration with NLHS and other relevant partners contribute to a comprehensive approach to health care workforce management in NL.

Stakeholder Consultation

GNL recognizes the criticality of stakeholder input in the development of this HHR Plan. As such, extensive engagement was undertaken with over 50 stakeholder groups with representation from GNL, NLHS, and many other organizations. Stakeholder input highlighted that resolving issues with recruitment and retention, improving the provider experience, and addressing the unique challenges associated with the delivery of health care in rural, remote, Indigenous, and Labrador communities are key priorities to strengthen the provincial health workforce.

Stakeholder Engagement Approach

Over a span of 20-weeks, extensive stakeholder consultation was undertaken to supplement the quantitative analysis performed on the supply and demand of the health workforce. Deloitte, in collaboration with HCS, identified key stakeholder groups from GNL, NLHS, and external organizations such as unions, higher education institutions, regulatory bodies, professional associations, and Indigenous communities. Stakeholders were selected for engagement based on the extent to which they will be significantly impacted by, or able to influence, the HHR Plan. They were asked to provide input on the proposed modelling methodologies and variables and to share insights, priorities, challenges, and workforce trends related to the health occupations in-scope. In some cases, they were also asked to provide additional data sources to support analyses.

Stakeholder groups were engaged through a series of focus groups and online surveys. The level of engagement of individual health occupation stakeholder groups was also calibrated based on their relative proportions of the provincial health workforce. Overall, 263 individuals representing 55 stakeholder groups were engaged through more than 60 focus groups. An additional 350 individuals provided input through an online survey. A comprehensive stakeholder engagement list and schedule are provided in [Appendix B: Stakeholder Consultations](#).

Stakeholder Insight Themes

Several key themes emerged from the focus groups and surveys conducted with implications that span the entire health workforce: recruitment, retention, improving the provider experience, and addressing the unique challenges associated with the delivery of health care in rural, remote, Indigenous, and Labrador communities. Highlights of stakeholder consultations with respect to each of these themes are provided below.

Recruitment

The recruitment of health professionals is becoming increasingly challenging, not only within NL but across the country as well. Stakeholders acknowledge that health workforce shortages are due to a variety of factors, including the increasing demands on the health care system due to the aging population, limited local and national training program capacity, and competition with other jurisdictions and the private sector to attract talent. There has also been a significant shift amongst recent graduates entering the workforce away from working long hours and managing high patient volumes, with limited relief or time-off. As new and experienced professionals alike increasingly value better work-life balance and flexible schedules, health systems must adapt to these expectations in order to recruit talent from the limited health human resources pool available within Canada.

Educational partners shared concerns about how low enrolment and graduation rates from the education sector are becoming increasingly worrisome trends. For example, in 2022 GNL commissioned the Attrition Project Report²⁹ in collaboration with the Centre of Nursing Studies (CNS) on Practical Nursing (PN) program attrition rates. This report found that between the fall of 2018 and 2021, there were 1,324 students enrolled in the PN program within the province; however, with an overall attrition rate of 50.3%, only 657 new licensed practical nurses (LPN) graduated from the program in that timespan. Relatedly, there was concern over challenges in filling Memorial University's (MUN) family medicine residency program. In the 2022-2023 academic year, 10 of the 35 seats available to Canadian students remained unfilled after the first round of Canadian Resident Matching Service (CaRMS) matching, with one seat unfilled after the second round. As local education programs represent a primary source of supply for a number of health occupations in the province, these challenges pose significant threats to future supply stability.

Similarly, for health occupations that require students to travel outside the province to pursue their studies, such as medical physicists, radiation therapists, dosimetrists, and cardiac perfusionists, obtaining a spot in those programs for NL students is becoming increasingly challenging due to the competitive nature of these programs and the limited availability of educational institutions that offer these highly specialized programs. Likewise, NL faces fierce competition in attracting graduates of these programs, as these positions remain in high demand nationally.

Stakeholders attributed this decline in attracting graduates to poor recruiting experiences, including a lack of clarity regarding available roles, uncertainty and delayed communication regarding job offers, and cumbersome acceptance processes. Stakeholders also voiced that high burnout rates and poor working

²⁹ Attrition Project Report: Practical Nursing Program (2022) provided by J. O'Malley on 22, June 2023.

environments detract prospective candidates from entering the health workforce, affecting both student enrolment and professional attrition rates.

Competitive compensation is also crucial for recruiting specialized health care professionals. To attract top talent to NL, GNL must achieve wage parity with other jurisdictions and the private sector. Current market adjustment policies, which are non-pensionable, create a significant barrier to recruitment and retention. Fair and equitable compensation will be a critical component of NL's recruitment strategy for difficult-to-recruit health care professions.

Retention

Stakeholders across the health workforce highlighted challenges associated with retaining health professionals. Experienced health professionals are increasingly seeking opportunities for greater career advancement and flexibility. Anecdotal evidence points to increasing caseload sizes and workloads that have contributed to burnout, leaving many health practitioners feeling overworked and overwhelmed. The current demands of the health care system have reached a point where providers' physical and emotional well-being are at risk, which, in turn, negatively impacts retention.

As a result, the consensus of the stakeholders engaged is that the province is witnessing a trend of health professionals opting to switch career paths, taking early retirement, or exiting the public system in favour of better working conditions elsewhere. Recognizing the urgency of addressing this challenge, stakeholders emphasized the need for systemic changes, such as improved staffing levels, workload management, and support mechanisms to alleviate the burden on health care professionals and safeguard health care system sustainability.

Stakeholders described challenges in maintaining existing staffing levels. A lack of career mobility opportunities was cited as a common factor dissuading health professionals from remaining in their current roles. In contrast, stakeholders identified improved professional advancement opportunities and more attractive career pathways within professions such as LPNs and personal care attendants (PCA) as measures through which to support both recruitment and retention. Furthermore, stakeholders representing allied health and nursing professions voiced that increased access to continuing education and training opportunities would support career development and, in turn, individual retention.

The inflexibility of shift work and insufficient relief were often cited as reasons for employees leaving the public system for the private sector, agency work, or alternate career pathways. Stakeholders suggested that more flexible working arrangements (e.g., casual roles, condensed shifts, flexible scheduling) and protected paid time-off that can better accommodate personal schedules, responsibilities, and preferences would increase job satisfaction and retention.

Improving the Provider Experience

As a response to recruitment and retention challenges, several stakeholder groups spoke to the need to improve the provider experience. They noted that improving the provider experience for health care professionals is crucial, given the direct impact of experience on quality of patient care, workforce turnover, resource utilization, and the culture of innovation and collaboration. By exploring alternative approaches, including novel care models and innovative technologies, stakeholder believe GNL has the potential to bring about significant improvements in the working conditions of the health care workforce.

Stakeholders representing frontline occupations voiced that a reduction in non-direct patient care activities would greatly improve the provider experience. In a recent survey conducted by the Newfoundland and Labrador Medical Association (NLMA), 70% of family medicine physicians cited administrative burden as the leading cause of job dissatisfaction and poor work-life balance. Similarly, an estimated 50% of RN time is spent on non-nursing activities according to the ThinkWell Nursing Workforce Research³⁰ Report. As a result, RNs are not able to practice at their full scope, which affects their job satisfaction and contributes to burnout. Stakeholders emphasized that reducing non-clinical tasks would allow them to spend more time doing what they value most – whether that is delivering more direct patient care, spending more time with their existing caseload, engaging in academia, or improving their work-life balance.

Across all health occupations in-scope, stakeholders expressed the need for providers to work to their full scopes of practice to foster greater job satisfaction and enhance the quality of care provided. Stakeholders also raised a need to optimize the skill mix of health professionals to better support providers in utilizing their full range of skills and knowledge, and to foster a greater sense of autonomy in their careers. Likewise, ensuring that responsibilities are appropriately distributed based on training and expertise would allow health care professionals to focus on the tasks they are best qualified for, enabling improved workflows when applied in interdisciplinary, team-based care settings.

Rural, Remote, Indigenous, and Labrador Settings

Through engagement with Indigenous health care partners from the Qalipu First Nation, Mushuau Innu Nation, and the Nunatsiavut Government, it was voiced that a tripartite partnership between GNL, NLHS, and Indigenous communities represents a key mechanism through which to enhance autonomous delivery of on-reserve health services. Through continued collaboration, GNL can support the creation of Indigenous-led initiatives and programs that address the talent gap for Indigenous health professionals and meet the unique needs of Indigenous communities.

³⁰ ThinkWell Nursing Workforce Research (2023) provided by J. O'Malley on 15 June 2023.

Access to primary care in rural and remote communities was raised as a key issue, particularly for Labrador and Indigenous partners. Stakeholders identified key enablers of success in addressing gaps in primary care in these regions to include access to affordable and safe housing, ensuring they have adequate relief, and offering cultural sensitivity training so that providers are equipped to provide more culturally relevant and appropriate care. Applying a provincial lens to healthcare issues in Indigenous communities and Labrador, we heard insights into how physically and emotionally challenging it is for residents to travel to St. John's for tertiary care, as access to specialized services within the province are localized in the urban centres. However, it is important to note that challenges facing both Labrador and each Indigenous community have their own unique nuances.

To support the recruitment of new health care professionals in rural and remote communities, stakeholders shared that it is vital to acknowledge and celebrate the contributions of the health professionals currently working in these communities. Fostering a sense of community and belonging plays a crucial role in retaining physicians, for example, once they have joined these communities. It was also expressed that, beyond traditional compensation incentives, housing and relief supports will serve as key recruitment and retention levers to drive greater integration of health professionals within rural and remote communities.

Within Indigenous communities, the recruitment of health professionals is critical to enabling continued or improved access to on-reserve primary care. In response to various HHR challenges, Indigenous partners expressed the need to recruit, retain, and culturally educate both non-Indigenous and Indigenous health professionals. Stakeholders emphasized the importance of training health care professionals in culturally relevant approaches to medicine and Indigenous practices. Understanding and respecting the cultural traditions, beliefs, and practices of Indigenous communities through cultural competence is crucial for health care professionals as it improves health outcomes, reduces disparities, and fosters trust while emphasizing respect and dignity, creating a more inclusive health care environment.

Additionally, GNL should seek opportunities to support Indigenous communities in developing their talent by providing health education bursaries for and prioritizing the acceptance of Indigenous applicants in relevant training programs. This would help to reduce barriers that Indigenous students or practitioners may face when seeking opportunities to advance their careers. It was expressed that Indigenous communities would benefit from increased involvement in the hiring process of health professionals to identify applicants who are a cultural fit for their community. Through these approaches, health professionals who wish to work in Indigenous communities will enhance their ability to provide culturally sensitive care. This, in turn, will help build stronger relationships of trust and acceptance within the Indigenous communities they serve, ultimately contributing to improved retention rates.

Modelling Methodology

This section describes the general workforce modelling approach for supply and demand for all health occupations and physician specialties. Given variability in the data available to estimate demand and the data received from the various stakeholders to estimate supply, methodological details vary from profession to profession. These differences are explained in greater detail below.

Workforce Modelling Approach

Supply Analysis

The supply projections for each health occupation and physician specialty are based on a stock and flow model. The methodology for this model is described in more detail below. Excluded from this methodology are home support workers, advanced care paramedics, primary care paramedics, and pharmacy technicians which relied on a different approach due to data constraints. In these cases, detailed data in the format required was not readily available from GNL, professional associations, or regulatory bodies. Consequently, data from Statistics Canada's 2021 Census of Population was used to estimate supply.

General Approach

Step 1: Determine the supply of professionals from 2018 to 2022 by age, gender, and health zone, including those employed outside NLHS where data is available.

Step 2: Forecast inflows and outflows based on the four-year average inflows and outflows by age, gender, and health zone over the 2019-2022 period. This projection is adjusted to account for unavailable data. It is also adjusted for outliers which are significantly different from the other years. Consequently, different years are occasionally used to estimate the average inflows and outflows. Where possible assumptions were validated with stakeholders.

Step 3: Forecast out supply using the following equation:

$$\text{Supply}_{\text{Year } x} = (\text{Supply}_{\text{Year } x-1}) + (\text{Average Inflows}) - (\text{Average Outflows})$$

The inflow and outflow components vary by health occupation. For some professions, the historical inflow and outflow data provided did not contain information on the reason for entry or exit from the profession, and for other professions, the reason for entry and exit was available. The supply was projected at every age category. For example, everyone who is 35 in 2022 will be 36 in 2023, 37 in 2024, and so on.

Step 4: Based on the historical supply data provided, retirements are projected based on the estimated retirement age per profession. The projected retirement age varies by health occupation and by zone.

Estimating Supply for Home Support Workers, Advanced Care Paramedics, Primary Care Paramedics, and Pharmacy Technicians

Given that the analysis of supply for these four professions relied on data from the Statistics Canada 2021 Census of Population, the methodology varied from that for the other occupations. Rather than taking the four-year historical average of inflows and outflows to project out supply, the following four inflow and outflow components were estimated separately: school leavers, immigration, net switchers, and retirements. These four components capture all the inflows and outflows possible given the data available from Statistics Canada and ESDC.

Step 1: Forecast school leavers. School leavers were estimated based on Employment and Social Development Canada's (ESDC) Canadian Occupational Projection System (COPS) school leaver projections for Canada. School leavers are defined as "people leaving their full-time education programs (either as dropouts or graduates) to participate in the labour force".³¹

Step 2: Forecast immigration: Immigration was estimated based on the average annual number of immigrants in NL by NOC (National Occupational Classification) code over the 2016-2021 period available from Statistics Canada. Immigration includes only international immigration into the province.

Step 3: Forecast retirements. Retirements are calculated by forecasting the annual supply over the age of 55 and applying average retirement rates specific to each profession and to NL, which are estimated using Statistics Canada data, to the workforce over the age of 65.

Step 4: Forecast net switchers. Net switchers are defined as the difference between other job seekers, and emigration and in-service mortality.

$$\text{Net Switchers} = (\text{Other Job Seekers}) - (\text{Emigration and In-service Mortality})$$

Net switchers is a positive number if other job seekers is greater than emigration and in-service mortality, and a negative number if emigration and in-service mortality is greater than other job seekers.

Other job seekers include occupational movers (individuals who change occupations without leaving the labour market),³² net re-entrants (individuals who had previously left the labour force and return to participate in the labour

³¹ Job Seekers (2022-2031) - Canadian Occupational Projection System (COPS) - Canada.ca (esdc.gc.ca)

³² Occupational movers are those who were already working in another role (i.e., were already a part of the labour force), and begin working in a new occupation without leaving the workforce in between.

market), and working students (students who work while going to school).³³ Emigration refers to people who left Canada. In-service mortality refers to people who die while in service (i.e., people who die while working in a specific occupation). Employment and Social Development Canada's (ESDC's) Canadian Occupational Protection System (COPS) provides information for both other job seekers, and emigration and in-service mortality in Canada.

Step 5: Using the formula below, starting supply, school leavers, immigration, retirements, and net switchers are combined to forecast supply over the coming decade.

$$Supply_{Year X} = (Supply_{Year X-1}) + (Immigration_{Year X}) + (School Leavers_{Year X}) \\ + (Net Switchers_{Year X}) - (Retirements_{Year X})$$

Demand Analysis

For all health occupations and physician specialties, a demand driver is determined to estimate the growth in demand over the forecast period. For physicians, that demand driver is, in most cases, the growth in encounters based on changing population demographics. For some professions, the demand driver is inflation-adjusted spending on health care. Some other demand drivers are also used. More detail on the specific demand driver used for each health occupation and physician specialty is highlighted in **Appendix A: Detailed Analysis and Recommendations by Health Occupation** of the report.

Below are the general steps taken to forecast demand for all health occupations and physician specialties.

Step 1: Determine the demand driver and the annual growth in demand for each zone based on the demand driver.

Overall, there are five different demand drivers used in estimating the demand for different health occupations and physician specialties.

1. Growth in physician encounters (i.e., patient visits)
2. Growth in inflation adjusted health care spending
3. Growth in the demand for a closely related physician specialty
4. Growth in certain health conditions
5. Population growth

Step 2: Estimate starting demand. For all professions and physician specialties, the starting point for demand is the starting supply plus any vacancies. For physicians, information on vacancies was gathered from the Work in NL website on July 31, 2023, as no other vacancy data was provided. For the remaining health occupations, 2022 point in time vacancies were provided by HCS.

³³ Job Seekers (2022-2031) - Canadian Occupational Projection System (COPS) - Canada.ca (esdc.gc.ca)

Step 3: Forecast demand. Once the starting demand and the growth in demand are estimated, the following equation is used to estimate demand over the forecast period.

$$\text{Demand}_{2023} = [(\text{Supply}_{2022}) + (\text{Vacancies}_{2022})] \times (\text{Growth in Demand Driver}_{2023})$$

$$\text{Demand}_{\text{Year } x} = (\text{Demand}_{\text{Year } x-1}) \times (\text{Growth in Demand Driver}_{\text{Year } x})$$

Of the above-listed physician specialties, the full demand analysis was undertaken for 26 physician specialties, while a partial demand analysis was undertaken for 10 physician specialties for which the supply in 2022 was low or for which very few encounters were captured by the CIHI (CIHI) POP Grouper Methodology. According to the Population Grouping Methodology Information Sheet, The POP Grouper “uses clinical and demographic data to build clinical profiles and predict population health care needs”.³⁴ For the purpose of this analysis, the POP Grouper was used to provide estimates of the number of individuals with each of the 226 diseases captured within the methodology as well as encounter estimates by physician specialty, disease, age, gender, and zone.

Structure of the Supply and Demand Analysis Section

For each health occupation and physician specialty, the Supply and Demand Analysis section in **Appendix A: Detailed Analysis and Recommendations by Health Occupation** is structured to include:

- A more detailed overview of the methodology to estimate supply and demand, including the data sources used.
- The preliminary projections, which are based on historical trends and do not include any inflight workforce initiatives.
- The base case projections, which include the impacts of inflight workforce initiatives and quantifiable Health Accord NL CTAs.

Data Limitations

Supply Data

Physicians

- To be included in the revised final report.

Other Health Occupations

- For home support workers (HSW), advanced care paramedics (ACP), primary care paramedics (PCP) and pharmacy technicians, the supply data in the format required for this analysis was not available from the

³⁴ [Population Grouping Methodology in Action \(cihi.ca\)](http://www.cihi.ca)

respective stakeholders. Thus Statistics Canada 2021 Census of Population data was used.

- For pharmacists, and occupational therapists (OT), the supply data in the format required for this analysis was not available from the respective stakeholders. Thus, data from the CIHI highlighting the supply, inflows and outflows for these two occupations was used.³⁵
- For some health occupations, the reason for entry and exit into the profession could not be identified. Thus, it is only possible to identify the following inflows and outflows in the forecast:
 - Inflows: reflects all entries into the profession
 - Retirements: estimated as a result of the flow through of ages (i.e., everyone who is 64 one year are assumed to be 65 the next and are predicted to eventually exit the workforce during the forecast period).
 - Other outflows: reflect all other exits from the profession. Other outflows also likely include exits due to retirements but, given that it isn't possible to identify the reason for exit in the historical outflow data, it is impossible to isolate those other exits due to retirement in the forecast.
- For some health occupations, the difference between the supply year over year did not quite match the sum of the inflows and outflows highlighted. Thus, "other net migrations" were estimated to correct for this slight discrepancy.

Demand Data

Physicians

- To be included in the revised final report.

Other Health Occupations

- The CIHI POP Grouper Methodology, which was used to estimate the encounters by physician specialty and thus estimate demand for physicians, does not estimate encounters with other health occupations. Consequently, different demand drivers were isolated for the other in-scope health occupations. Data limitations across the professions also resulted in the creation of more than one demand methodology for the other health occupations.

More detailed information on the exact approach and limitations for each occupation, is provided in the **Overview of Methodology and Data Sources** section in **Appendix A: Detailed Analysis and Recommendations by Health Occupation**.

³⁵ [Health workforce: Data tables | CIHI](#)

Summary of the Supply and Demand Analysis

This section includes a summary of the supply and demand analysis for the 21 health occupations and 36 physician specialties (to be included in final report), and highlights which professions are expected to see the greatest gap between supply and demand over the coming decade. All numbers highlighted in the tables below include the base case scenario (i.e., any quantifiable inflight workforce initiative and Health Accord NL CTAs).

Physicians

Table 9: Final Provincial Gap Analysis in 2032 – Physicians

To be included in the revised final report.

Other Health Occupations

Table 10: Final Provincial Gap Analysis in 2032 – Other Health Occupations

Occupation	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	2032 Gap as a Percent of Supply ³⁶
Advanced care paramedics	100	136	36	142	344	202	142%
Home support workers	6,167	6,167	NA ³⁷	3,849	8,281	4,432	115%
Cardiac perfusionists	5	7	2	4	8	4	100%
Dosimetrists	6	6	0	5.4	10.5	5	94%
Clinical psychologists	51	82	31	46	87	41	89%
Occupational therapist	223	242	19	221	287	66	30%
Medical laboratory assistants	226	248	22	228	294	66	29%
Pharmacists	744	850	106	778	998	220	28%

³⁶ Due to rounding, the gap as a percent of supply may not perfectly match the ratio of the numbers listed in the table. The percentage is calculated as the 2032 gap divided by the 2032 supply. For example, for advanced care paramedics, the gap as a percent of supply is estimated as 202 (2032 gap) divided by 142 (2032 supply).

³⁷ Data on total vacancies, public and private sector vacancies, is split by NOC code, which does not always match the occupation in question. While the supply of HSWs corresponds to employment numbers captured in the 2021 Census under NOC code 4410: HSWs, caregivers and related occupations, more information is required to split the vacancies by health zone requires additional information that was not provided through this data source. Distributing vacancies by zone using population or the split of the current workforce is not appropriate in this case as vacancies often do not correlate with the size of the population or the workforce. Consequently, due to data limitations on vacancies, demand is likely underestimated by several hundred vacancies.

Occupation	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	2032 Gap as a Percent of Supply ³⁶
Radiation therapists	25	32	7	37	47	10	27%
Medical radiation technologists	377	410	33	384	481	97	25%
Pharmacy technicians	265	319	54	311	382	71	23%
Registered nurses	5,611	6,299	688	6,196	7,453	1,257	20%
Medical physicists	7	8	1	10	12	2	20%
Medical laboratory technologists	479	502	23	505	584	79	16%
Physiotherapists	345	363	18	380	434	54	14%
Licensed practical nurses	2,288	2,601	313	2,803	3,146	343	12%
Personal care attendants	2,032	2,259	227	2,936	3,065	129	4%
Respiratory therapists	105	113	8	132	135	3	2%
Primary care paramedics	476	498	22	672	662	-10	-1%
Nurse practitioners	201	249	48	404	394	-10	-2%
Social workers	1,720	1,778	58	1,887	1,821	-66	-3%

The health occupations that are predicted to see the largest gap as a percent of supply in 2032, after incorporating the impacts of the items included in the base case scenario, are ACPs, HSWs, cardiac perfusionists, dosimetrists, and clinical psychologists.

As the province transforms its ambulance system, the demand for ACPs and PCPs will shift dramatically relative to today. As a result, the province will need significantly more ACPs to meet the rising demand caused by the transformation of the ambulance system.

The aging population is predicted to affect both supply of and demand for HSWs. On the supply side, a significant portion of the workforce is expected to reach retirement age over the forecast period. On the demand side, the aging population will cause demand to rise significantly over the coming decade. In

addition, the number of net switchers is predicted to remain elevated over the forecast period. The HSW role is sometimes used as transitory employment while working towards gaining the accreditations necessary to work in a higher paying health occupation.

The demand for cardiac surgeons is expected to rise over the course of the forecast period as the prevalence of cardiovascular disease in the population is expected to rise as NL's population over 65 continues to rise. Consequently, as the demand for cardiac surgeons rises, so too will the demand for cardiac perfusionists. On the other hand, supply is predicted to decline as at least one cardiac perfusionist is expected to retire over the course of the forecast period.

For dosimetrists, the predicted rise in demand for radiation oncologists will continue to drive demand for this occupation. In addition, the opening of the new Cancer Care Western facility in Corner Brook in June 2024 is expected to further drive demand for dosimetrists. On the other hand, at least one individual is predicted to reach retirement age over the course of the forecast period, which means supply is expected to decline while demand is predicted to rise, causing the gap between supply and demand to increase significantly by 2032.

Clinical psychologists are currently facing a crisis as supply has declined in recent years, while demand has risen. If trends continue into the future, supply is predicted to continue falling while demand is expected to continue rising. The new market adjustments and Come Home Year incentives are not predicted to have a large enough impact on the supply of clinical psychologists to close the gap.

The only health occupations expected to see a surplus of supply by 2032 are PCPs, social workers (SW), and nurse practitioners (NP). As the province transforms its ambulance system, the demand for PCPs is predicted to shift due to the expansion of ACP utilization in the new ambulance staffing model. NL has had a steady inflow of SWs in the past and if these trends continue into the future, the supply of SWs overall is expected to surpass demand. With the increase to the number of NP seats and the implementation of the base case items, the gap for NPs is expected to close.

The numbers highlighted above are estimates of the gap between supply and demand based on various assumptions. Thus, changing the modelling assumptions would impact the projections. The modelling exercise should be viewed as directional, especially for large volume professions (e.g., RNs and HSWs). More detailed information on the supply and demand analysis for each of the 21 health occupations can be found in **Appendix A: Detailed Analysis and Recommendations by Health Occupation**.

Environmental Scan

In addition to the stakeholder input and the modelling of the supply/demand gaps, an environmental scan provided important input into the recommendations contained in this report. The objectives of the environmental scan were to understand the state of HHR plans in other Canadian and international jurisdictions; identify the initiatives underway in other jurisdictions to address issues similar to those being experienced in NL (including initiatives focused on rural, remote and Indigenous communities); and understand innovative approaches being implemented in other jurisdictions that are yielding positive HHR benefits.

Canadian and International Environmental Scan Methodology

Using information available in the public domain, HHR-related documents were gathered from across Canada as well as select international jurisdictions with HHR challenges and significant rural and remote and/or Indigenous populations. Specifically, New Zealand, Australia, the United Kingdom (UK), and the United States were selected as relevant international jurisdictions due to having some or all of: similarly funded and structured universal health care environments, cultural diversity, rural and remote populations, demographic makeup and leading innovations.

Three primary information sources were used in the conduct of the environmental scan:

- HHR strategies and plans published by Canadian and select international jurisdictions;
- Academic research and health industry reports and articles; and
- Engagement with Deloitte subject matter experts in health and social services as well as HR practices to identify emerging HHR trends within and beyond Canada.

Environmental Scan Overview

Every Canadian jurisdiction is experiencing HHR challenges. An aging workforce feeling burnt out following the pandemic has resulted in an exodus from the health system and major gaps in many disciplines. The challenges currently faced in Canada are also being experienced around the globe.

All Canadian jurisdictions have developed HHR strategies or plans. Some have developed a standalone plan focused on HR (PEI, NS, SK, AB, BC); others have identified HR as a critical issue in their broad, province-wide health plans (NB, ON, MB). PEI has the only publicly available plan that includes occupation-level forecasting similar to NL's plan. It includes 122 health occupations with demand

based on clinical and preventive services. However, even that plan includes only high-level recommendations that are not occupation specific.

Most of the documents available in the public domain are high level strategies that have been developed over the past 12-24 months; hence, peer-reviewed evaluations of initiatives or programs are rarely available. The common objective of the strategies and plans is to ensure there are enough health care professionals with the right skills and competencies to meet the needs of their aging population.

Most of these HHR documents organize their initiatives around three pillars or priority areas: retain and support the existing workforce; attract new talent to the health system; and redesign the system or work to change the way resources are utilized. The focus of these pillars and examples of initiatives are provided below.

Retain and Support the Existing Workforce

Given the global shortage of some health occupations, this pillar is much more prominent than had been the case in previous iterations of HHR plans. It encompasses wide-ranging initiatives including paying retention incentives, increasing total compensation, helping workers to be more resilient, improving workplace conditions by creating culturally sensitive spaces, implementing modern technologies and reducing administrative burden as examples.

Some specific examples of initiatives to retain and support workers include:

- The Ottawa Hospital implemented a resiliency training program that includes the Mental Health Continuum Model and workshops to build coping skills. Staff evaluations of the program showed improved coping strategies, reduced stigma around mental health, and increased ability to help peers in distress.³⁸
- Nova Scotia created a program to "Reduce Unnecessary Administrative Burden for Doctors". This program involves 45 initiatives with a goal to reduce red tape by 400,000 hours a year, the equivalent of 1.2 million patient visits. This goal is expected to be reached by the end of 2024. As of September 2023, more than 200,000 hours a year have been saved.³⁹
 - As one of the initiatives to eliminate physician administrative burden, Nova Scotia passed legislation to limit circumstances under which employers can require sick notes from employees, which reduced the number of appointments booked with the sole purpose of getting a medical note.
- The Northwest Territories' Department of Health has created support programs for leaders transitioning into higher-level positions, including

³⁸ [Synopsis 43-1 - EN \(cpa.ca\)](#)

³⁹ <https://beta.novascotia.ca/sites/default/files/documents/1-3600/patients-paperwork-reducing-red-tape-physicians-november-2023-en.pdf>

the Management and Leadership Navigation Program and the Executive Leadership Integration Program.⁴⁰

- British Columbia's (BC) "Physician Practice Enhancement Program" provides support and resources to help physicians improve their clinical practice and enhance patient care. The program includes initiatives such as peer-to-peer coaching, clinical practice guidelines, and quality improvement tools.⁴¹
- The UK's National Health Service (NHS) is creating new apprenticeships and alternative routes into professional roles from entry-level roles to managerial roles and senior clinical positions, including doctors and dentists, nurses and midwives, and other professional groups. This will create stronger career pathways and give trainees exposure into what a career at the NHS would look like to retain them in the public system long-term.^{42, 43}

The time to realize the benefits of these retention-related initiatives can vary significantly. Some of the compensation-related initiatives and other point solutions (like eliminating the need for physicians to complete a particular form) can have immediate impacts. Others that require investments in physical or technology infrastructure can take years.

Attract New Talent to the Health System

Many programs and initiatives are being implemented to attract retired workers back to the health system, attract non-health workers to the health system, and attract workers in other provinces or countries to move to the jurisdiction. Common strategies include offering competitive compensation, strengthening capacity through education, engaging in targeted recruitment strategies executed by dedicated recruitment teams and through engaging with communities, and targeting specific international jurisdictions, as well as providing additional benefits such as spousal employment support, child care, and practice or licensing support for health care professionals.

Some specific examples of initiatives to attract talent include:

1. Ontario's "HealthForceOntario Marketing and Recruitment Agency" is responsible for promoting careers in health care and recruiting health care professionals to work in Ontario. The agency uses a variety of marketing and recruitment strategies, including social media campaigns, job fairs, and targeted recruitment of health care professionals from other countries.⁴⁴

⁴⁰ https://cahs-acss.ca/wp-content/uploads/2023/04/CAHS-Health-Workforce-Pathways-Forward-EN_Final_Apr-4.pdf

⁴¹ <https://news.gov.bc.ca/files/BCHealthHumanResourcesStrategy-Sept2022.pdf>

⁴² <https://www.england.nhs.uk/wp-content/uploads/2020/07/We-Are-The-NHS-Action-For-All-Of-Us-FINAL-March-21.pdf>

⁴³ NHS England » NHS Long Term Workforce Plan

⁴⁴ <https://www.healthforceontario.ca/UserFiles/file/PRC/recruitment-essentials-rr-en.pdf>

- Manitoba offers financial incentives for retired nurses to return as coaches, mentors, and educators to support new nurses and improve retention rates.
- BC's Provincial Health Human Resources Coordination Centre is creating a framework to standardize training, including professional upgrading and micro-credentialing, for high demand health occupations to support the flexibility of the workforce and make it more responsive to future health challenges.⁴¹
- New Zealand established pathways for the return of health care workers back into the system. They lowered barriers to re-entry in high priority health areas for those who have retired or left the health care industry by providing flexible working options and career development support.^{45, 46}
- As part of the UK's NHS international nursing recruitment strategy, local communities have created recruitment hubs in proximity to corresponding hospitals, to serve as a support system when new international employees move to the UK.⁴²

Some of the recruitment initiatives can deliver benefits in the short-term while others can take many months or years.

Redesign the System or Work to Change the Way Resources are Utilized

When retention and recruitment activities are unlikely to close major supply/demand gaps, jurisdictions are fundamentally rethinking the way work gets done. There are many examples of leveraging new models of care or innovative technologies in the delivery of services to improve workflows, automate repetitive tasks, and improve health outcomes.

Some specific examples of system or work redesign include:

2. New Brunswick's "Modernization of Laboratory Medicine", a comprehensive province-wide modernization program, was established to deal with the impending shortage of medical laboratory technologists (MLTs). A new service delivery model is being developed with enabling technology to allow the same or improved service levels to be delivered with far fewer MLTs.
3. The Ottawa Hospital is piloting a Generative Artificial Intelligence (AI) 'digital team mate' that reaches out to patients who have been discharged following heart surgery. Work that would otherwise be undertaken by a nurse (or not at all if resources were not available) is completed by a chatbot that can engage in a natural conversation ensuring patients are adhering to post-discharge protocols.

⁴⁵ PowerPoint Presentation (tewhatuora.govt.nz)

⁴⁶ <https://www.health.govt.nz/our-work/health-workforce/health-workforce-strategic-framework/journey-health-workforce-strategic-framework>

4. The UK leverages Medical Realities, the world's leading surgical Virtual Reality (VR) video content, to pioneer solutions in the world of immersive surgical training for medical trainees. The VR simulations replicate real-world medical scenarios and allow students and health care practitioners alike to practice in a safe virtual setting. The learning modules are accredited by the Royal College of Surgeons of England.⁴⁷

Generally, initiatives under this pillar take many months or years to deliver benefits. The exception is some automation tools that can change the way work gets done in a few short months.

Common HHR Elements

Within and across these three pillars of retention, recruitment and redesign, there are five elements that are consistent across jurisdictions:

- **Education and training:** The HHR strategies or plans recognize the importance of education and training in ensuring that health care professionals have the necessary skills and competencies to provide quality care. This includes increasing the number of training programs or seats, providing enhanced funding for education and training, and promoting lifelong learning. 'Train and retain' is a focus of some provinces – ensuring individuals from the province who are trained in the province stay and practice after graduating.
- **Collaborative practice:** The strategies or plans emphasize the importance of collaborative practice and team-based care to improve patient outcomes. This includes promoting interprofessional education, developing collaborative practice models, and supporting the integration of multiple health care professionals into primary care teams.
- **Workforce planning:** All the strategies or plans emphasize the importance of workforce planning to ensure that there are enough health care professionals to meet the needs of the population. This includes identifying current and future workforce needs, developing recruitment and retention strategies, and monitoring workforce trends.
- **Health workforce data to inform workforce planning:** The strategies or plans highlight the importance of collecting and analyzing health workforce data to inform decision-making. This includes developing health workforce information systems, monitoring workforce trends, and evaluating the impact of health workforce policies and programs.
- **Diversity and inclusion:** The strategies or plans recognize the importance of diversity and inclusion in the health care workforce. This includes promoting cultural competence, increasing the representation of underrepresented groups, and addressing biases and discrimination,

⁴⁷ <https://www.medicalrealities.com/>

A specific area of diversity and inclusion that is critical in NL and many other jurisdictions is the focus on rural and remote and/or Indigenous populations and communities.

Out-of-the-Box Ideas

Every health organization in Canada is focused on a multitude of strategies to deal with their HHR challenges. A few health organizations and some non-health organizations dealing with hard-to-attract and -retain occupations are having provocative discussions about a new talent proposition. Recognizing that GNL is seeking potential opportunities to implement HHR innovations, here are some out-of-the-box ideas to consider integrating into the province's recruitment and retention efforts:

- **Imagine you're a health professional...**
 - **Recruitment:** You're a soon-to-graduate nurse practitioner. You see a job ad that reads like a personalized 'love letter'. It includes pictures of the team you'll be working with and the community where you'll live. It says we hope you have experience in these three areas.
 - **Recruitment/Retention:** You're a social worker contemplating a job in a remote community. A concierge or navigator is assigned to support you through the entire hiring process and your first year of settling in – they embrace your entire life. In addition to answering any questions about the job, they help your family find employment, child care, housing, and anything else you need to settle into a new community.
 - **Retention:** You're a nurse who is dealing with an intense patient situation. Your immediate supervisor finds moments every time you need to help you unload and debrief so you're ready to face the next challenge.
- **Imagine you're a health authority...**
 - **Recruitment/Retention:** You say, "anyone with certain qualifications can have a job." After assessing the individual's capabilities and understanding their personal aspirations, you provide a rapid reskilling program to fill any gaps to allow the individual to get 'a' job. With good career management, the individual will eventually get to their desired job.
 - **Recruitment/Re-think Roles:** You go to the market to hire skills, rather than fill roles. It requires a deep understanding of the skills required to provide patient care, and an openness to fundamentally rethink roles.
 - **Re-think Roles:** You have completely rethought a role, say registered nurses. The new role considers the wellbeing of the individual, the need for work to be meaningful, the need for

flexibility, and the opportunity for individuals to progress in their career.

- **Recruitment/Retention:** You recognize that not everyone in your organization celebrates Christmas. Each employee is given 10 personal holidays throughout the year, that they can take at a time that suits their personal preference.

To our knowledge, these strategies haven't been implemented anywhere in the health system in Canada. Bold strategies like these could differentiate NL from other jurisdictions by offering a more human, personalized experience. They require the health system to be open to fundamentally rethinking some long-standing approaches and beliefs. If GNL wants to take a different path from their competitor jurisdictions, there is an opportunity to create a safe space to explore some of these areas.

Strategies in Rural and Remote Communities

HHR strategies that are specific to rural, remote, and Indigenous communities, where health care professions are often undersupplied and face unique recruitment and retention challenges, include:

5. Manitoba's "Rural and Northern Health Care Framework" is a comprehensive approach to addressing the unique health human resource challenges faced by rural and northern communities in Manitoba. The framework includes initiatives such as expanding the scope of practice for certain health care professionals, providing incentives for health care professionals to work in rural and northern areas, and developing community-led models of care.
6. Seven out of 12 medical schools with family medicine post-graduate medical education programs in Canada have created reserved seats for rural students and a specialized application form for prospective rural students.
7. Australia is piloting new AI technology that provides prompts to rural health care professionals during echocardiograms, such as where to hold the ultrasound probe and the amount of pressure needed. This innovation aims to fill workforce gaps for sonographers and can potentially be adapted for other body scans in the future.⁴⁸
8. The United States developed new accredited and sustainable rural residency programs in psychiatry, general surgery, and other high demand specialties to increase the supply of the rural specialist physician workforce.^{49, 50}

⁴⁸ <https://amp.abc.net.au/article/102123878>

⁴⁹ <https://bhw.hrsa.gov/sites/default/files/bureau-health-workforce/about-us/hhs-health-workforce-strategic-plan-2021.pdf>

⁵⁰ <https://journals.stfm.org/familymedicine/2020/july-august/evans-2019-0447/#:~:text=To%20address%20this%2C%20some%20schools%20developed%20targeted%20admissions,in%20urban%20underserved%20areas%2C%20and%20in%20primary%20care.>

9. Australia's National Medical Workforce Strategy 2021-2031 includes plans to create new training pathways where medical education can be done almost entirely in rural and remote areas. This will be achieved through collaboration between the Department of Education, Skills and Employment, medical schools and a proposed national workforce planning and advisory body.⁵¹

Collaboration with Indigenous Partners

HHR plans in many jurisdictions include initiatives aimed at increasing Indigenous representation in the medical workforce through early interventions. These include partnerships with Indigenous communities in medical workforce planning and flexible and supported pathways for Indigenous students and health professionals.

Examples of collaboration efforts with Indigenous partners are provided below.

Indigenous Partnership in Workforce Planning

- In BC, the First Nations Health Authority (FNHA) and the Ministry of Health are working to create an organizational standard to achieve cultural safety and humility across the health sector.⁵²
- Indigenous practices will be embedded across the BC health sector, and the FNHA will clarify common definitions and concepts to shift behaviours away from implicit and explicit anti-Indigenous racism.⁵²
- The Health Demand and Supply Utilisation Patterns Planning (HeaDS UPP) Tool in Australia is incorporating Indigenous workforce and service data to better serve Indigenous health needs.⁵¹ This tool brings health data together to visually highlight how the community uses and accesses health services and the health workforce.⁵³
- Australia developed its 10-year National Medical Workforce Strategy at the same time as the National Aboriginal and Torres Strait Islander Health Workforce Strategic Framework and Implementation Plan 2021–2023 to align with Indigenous health leaders.⁵¹
- Australia is also developing and implementing a National Medical Workforce Data Strategy to create governance and accountability frameworks to manage Indigenous health data sets and maintain Indigenous data sovereignty.⁵¹

⁵¹ <https://www.health.gov.au/sites/default/files/documents/2022/03/national-medical-workforce-strategy-2021-2031.pdf>

⁵² https://cahs-acss.ca/wp-content/uploads/2023/04/CAHS-Health-Workforce-Pathways-Forward-EN_Final_Apr-4.pdf

⁵³ [HeaDS UPP \(health.gov.au\)](https://health.gov.au)

Flexible and Supported Pathways

- The University of Toronto's Summer Mentorship Program exposes Indigenous high school students to health sciences and provides role models by highlighting Indigenous health leaders.⁵⁴
- The Northwest Territories' Graduate Transition program supports Indigenous post-secondary students starting health careers to gain the skills needed to succeed in their field.
- Ongomiizwin Health Services, which is a part of the University of Manitoba's Health Sciences Centre, offers training and education programs for health care professionals and students, with a focus on Indigenous health and cultural safety. They also conduct research on Indigenous health and health care practices, with the goal of improving health outcomes for Indigenous communities.⁵⁵
- The Northwest Territories' Department of Health has created a formalized Leadership Mentorship Program and Indigenous Management Development and Training Program to match trainees with Elders and culturally safe supervisors for coaching and mentorship.⁵⁶
- BC health authorities hired Indigenous Employee Experience advisors to enhance the workforce experience and career development of Indigenous health professionals.
- A new community-based program at Brandon University in Manitoba provides Indigenous students while undertaking work-integrated learning and training within their own communities to earn a Bachelor of Arts or Science and a Bachelor of Education.⁵²
- New Zealand plans to leverage the kaiāwhina workforce, a non-regulated occupation in the health and disability sector, which includes a large percentage of Māori and Pacific Islander peoples, in nursing, midwifery, and allied health occupations to provide new career paths and fill workforce gaps.⁴⁵
- As Indigenous medical students have expressed the challenge of balancing cultural and community obligations with medical education and training, there is a desire for more flexible, supported pathways, including flexibility in training posts. Australia's Leadership in Indigenous Medical Education (LIME) Network's database details alternate pathways for Aboriginal and Torres Strait Islander peoples to enter the medical field.⁵¹

In summary, by tailoring their HHR plans and strategies to their unique contexts, other jurisdictions focus on addressing the specific needs of their populations and improving the quality of care provided.

⁵⁴ Summer Mentorship Program | Temerty Faculty of Medicine (utoronto.ca)

⁵⁵ Health Services | Ongomiizwin – Indigenous Institute of Health and Healing | University of Manitoba (umanitoba.ca)

⁵⁶ <https://www.fin.gov.nt.ca/en/services/diversity-and-inclusion/living-well-together>

The occupation-specific recommendations contained in **Appendix A: detailed Analysis and Recommendations by Health Occupation** have carefully considered the unique NL context in each occupation and the initiatives and programs being trialed or implemented in other jurisdictions. We fully appreciate the need to tailor the recommendations to address the size and scale of the supply/demand gap and address the specific concerns raised by stakeholders.

Workforce Conclusions and Recommendations

Workforce Conclusions

The key driver of the development of this HHR Plan is the Health Accord NL CTA 10.4, which called for the development of a long-term HHR Plan. The recommendations outlined in the plan represent a substantial investment in the health and well-being of the people of NL, and a commitment to enhancing the quality and accessibility of healthcare services in the province. The use of non-traditional strategies alongside GNL's current efforts are essential due to restricted supply, limited budget, increasing demand, and outdated, inefficient practices that need modernization. Given NL's unique health care context of facing numerous challenges including lower life expectancy, poor health outcomes, mental health concerns, and the challenge of managing the delivery of services across a large and disperse geography, ensuring there is an appropriate supply of health care professionals to continue to meet the future demands of the provincial health care system is of utmost priority.

Across all professions modelled in this report, the vast majority are expected to have varying degrees of workforce shortages throughout the 10-year forecast period. To address these projected imbalances both effectively and proactively, it is important for GNL to anticipate when the projected supply will no longer be able to meet projected demand, so that rectifying measures can be put into place well in advance to avoid impacting access to high quality health services.

Within **Appendix A: detailed Analysis and Recommendations by Health Occupation**, there are certain professions, such as RNs, radiation therapists (RT), and clinical psychologists, that are currently experiencing significant gaps in their workforces. Short-term strategies focused on recruitment and retention should be prioritized to stabilize these workforces in the interim while more robust and sustainable strategies are being implemented. For other professions, gaps that are projected to widen and shrink in response to new workforce initiatives that will take effect in the next few years will require medium-term planning to minimize the impact felt on the health workforce. This includes NPs, whose gap is expected to peak in 2025 before leveling out by 2032. Meanwhile, some professions, like ACPs and HSWs, are experiencing a gap that is widening exponentially over time due to system changes resulting in shifts in workforce patterns and demand drivers. These changes will require long-term solutions to counteract their effects on the system.

A small number of professions are projected to experience an oversupply during the forecast period, such as social workers and primary care paramedics. These professions in surplus have been identified to help rebalance the demand for other professions that are expected to face shortages. Leveraging innovative strategies to retrain, upskill, or expand their scope of practice, oversupplied professions can help alleviate some of the demands on other professions while advancing their practice.

Workforce Strategies and Recommendations

To address the priority workforce gaps, **Appendix A: Detailed Analysis and Recommendations by Health Occupation** contains occupation- and specialty-specific recommendations that are tailored to the NL context and the specific occupation. The sections below outline key strategies that summarize the recommendations and cut across occupations – all focused on rebalancing the supply and demand of the province’s health workforce. The strategies and recommendations take into consideration stakeholder input, the supply/demand analysis, and learnings from other jurisdictions. The strategies and recommendations have been organized around four key themes: Retention, Recruitment, Automation and Re-Think Work.

A number of these recommendations have been implemented to some extent by GNL (see **Workforce Initiatives** for further details). However, there are opportunities to expand the implementation of the recommendation across additional in-scope occupations.

As a practice seen in all jurisdictions, GNL should continue its focus on **retaining** the existing pool of health care professionals working in the province today. This should be the top priority – ensuring that current health care professionals have a positive employee experience, are compensated appropriately, feel supported in their work, and have the resilience and mental health tools to work in a sustainable way for the long-term. This will require activities such as providing ongoing training and development opportunities, recognizing and rewarding achievements, and addressing factors that contribute to burnout and turnover.

Secondly, there is a need to continue to invest in **recruitment** to ensure there is a steady pipeline of resources to sustain the workforce into the future. As current health care professionals move towards retirement or choose more flexible working options, it is essential to invest in recruitment efforts, particularly recruitment targeted at undersupplied health occupations and regions. This could involve adding capacity in the education sector, the creation of new local programs, targeted local, national, and international recruitment campaigns, partnering with educational institutions, offering competitive compensation packages, and highlighting the meaningful and rewarding aspects of a career in health care.

Retention and recruitment involve many traditional HR tools and programs such as a review of compensation, financial incentives, employee satisfaction and wellness. Recognizing the unique context of NL, including the rural and remote communities, Indigenous communities and comparatively high provincial rates of child and senior poverty, the initiatives undertaken by HCS to date, and the recommendations from the Health Accord NL, non-traditional strategies will be necessary to build upon current successes while creating initiatives that will prepare NL for the future of health care. Two such non-traditional strategies are automation and re-thinking work.

GNL is embarking on a digital transformation of the provincial health care system in alignment with Health Accord NL CTA 9.13, which outlines the province's ambitious plans to renew hospital services by improving coordination and flow of health and social system information between hospitals and the community and by maximizing the use of integrated digital technology and information systems. To close the gaps between supply and demand for critical health occupations, GNL should look at ways to **automate** non-clinical aspects of some professions to free up time that could support an improved work-life balance for health professionals and allow them to focus on patient care. Automation often aims to reduce the burden of repetitive tasks on health care professionals, allowing them to focus on more complex and value-added aspects of their roles.

For health occupations with larger gaps, it is recommended that GNL **re-think** the way these health professionals work – either through re-architecting the work itself or through the development of alternate service delivery models. This involves reimagining the delivery of health care services to optimize efficiency and effectiveness. It entails exploring where and how work gets done to fundamentally change the way resources are utilized within the system. Examples include adopting virtual care options, interdisciplinary collaboration, flexible scheduling, and utilizing advanced technologies to streamline processes and enhance patient care, while also enhancing the provider experience.

Automation and re-thinking work will be especially critical in rural and remote communities where solutions such as virtual health care, virtual monitoring and other novel health care technologies can be employed.

The myriad of strategies and recommendations can deliver benefits over a range of timeframes. Below, we have stratified strategies based on the time to benefit realization, into short- (one to two years), and medium- (three to five years) term, in alignment with the timescales used by the Health Accord NL. HCS and/or NLHS may choose to implement the recommendations over a longer period (six or more years) or to stagger the implementations, based on capacity, funding, or other limitations. However, it is possible to realize benefits from all the recommendations below and in **Appendix A: Detailed Analysis and Recommendations by Health Occupation** five years after commencing

implementation. These recommendations encompass the demographic, cultural, generational, and unique circumstances for rural, remote, Labrador, and Indigenous stakeholders and are evaluated based on the success, cost-effectiveness, and efficiency to implement. They include strategies related to retention, recruitment, automation and re-thinking work.

Short-term Recommendations (1-2 years to benefits realization)

For those professions that are currently facing significant gaps and/or are projected to experience a sudden increase in gap size over the first several years of the forecast period, it is recommended that short-term strategies focused on recruitment and retention are prioritized due to having immediate impacts on addressing the workforce imbalances identified.

As mentioned previously, the most efficient way to strengthen supply is through retaining the existing workforce. Therefore, those strategies that have immediate impacts on retention should be prioritized. Likewise, for those professions where the existing workforce is insufficient to meet current demands, such as clinical psychologists, an immediate focus on recruitment will be necessary to complement the retention efforts being deployed in parallel.

S1: Offer Competitive Total Compensation

To attract and retain top talent, offering competitive compensation and benefits is a key factor, especially when aiming to entice prospective employees to the public sector. As health care professionals are in high demand, both nationally and globally, ensuring they are compensated appropriately will complement both recruitment and retention efforts. This includes health care coverage, retirement plans, and paid time off. This is especially true for highly specialized roles or those that require advanced degrees or certifications such as cancer and cardiac care professions. Key professions where competitive total compensation is a critical consideration are:

- Cardiac perfusionists
- Dosimetrists
- Medical physicists
- Radiation therapists

These professions are all trained out-of-province in limited and highly competitive training programs. As such, NL historically has and will continue to face strong competition from other jurisdictions to attract and retain these professions until they are offered nationally competitive compensation. Current market adjustment policies for these professions, which are non-pensionable, pose a significant barrier to recruitment and retention. Fair and equitable compensation will be a critical component of NL's recruitment and retention strategy for difficult-to-recruit health care professions.

For other highly skilled professions in which there is a local or Atlantic training presence that have a greater supply of health care professionals nationally, compensation that is on par with other Atlantic provinces will support the recruitment and retention of NL graduates within the public system.

Stakeholders across professions shared that NL students who want to remain in-province post-graduation sometimes end up pursuing positions elsewhere due to being offered a more competitive compensation package. Key professions targeted include:

- Clinical psychologists
- Occupational therapists
- Pharmacists
- Physiotherapists

For other health occupations that tend to recruit from the province's local supply, competitive compensation in the form of hourly wages and benefits that exceed those offered by other sectors such as retail, food services, and early childhood education, is critical to the recruitment and retention of these workforces. These occupations are:

- Home support workers
- Personal care attendants

Those working in these positions need to be incentivized to pursue/remain in a physically demanding occupation that requires workers to work overnights and weekends.

S1.1: Offer Monetary Recruitment and Retention Incentives

To address the persistent challenges of recruitment and retention in the province, GNL currently provides various forms of financial incentives to healthcare professionals (see **Workforce Initiatives** for further details). Many of these compensation-related initiatives would be considered short-term strategies. This includes offering additional signing bonuses, retention incentives, and bursaries to attract new employees into the system and to reduce turnover of existing staff. There are various types of bonuses that could be offered including: signing bonuses for difficult to fill positions, relocation assistance to cover the cost of moving expenses, bonuses to work in specific care settings such as LTC, and rural and remote bonuses. Many of these bonus types are already offered within the province; however, it is recommended to conduct a review to assess the effectiveness of existing incentives. Furthermore, there are additional opportunities to expand eligibility to include more health professional groups or to increase the bonus amounts for specific professions.

In terms of retention incentives, those typically offered are awarded based on years of service; however, others are awarded to those who meet or exceed certain performance goals as a way to incentivize employees. Bursaries can be

offered to students pursuing education or training both locally and out-of-province to fund their studies at different stages of their educational journeys, including diploma or undergraduate, post-graduate, or residency levels.

Some innovative strategies for compensation-related initiatives include continuing education signing bonuses, which include tuition reimbursement, paid time off for continuing education courses, or access to on-site training and development programs. Others offer student loan repayment, where health care organizations will offer to loan repayment as a signing bonus, which is particularly attractive to recent graduates who may be burdened with significant student loan debt.

Despite requiring an initial investment, these incentives have inherent cost savings benefits as it will cost less than recruiting and training new employees in the medium- and long-term.⁵⁷ Furthermore, there is opportunities to pair each incentive type with return-in-service agreements, in exchange for a number of years committed to working within the province or specific region. These strategies are particularly valuable for rural, remote, Labrador, and Indigenous postings, as they will help attract health care professionals to move and practice within these typically underserved regions.

S1.2: Offer Non-Monetary Recruitment and Retention Incentives

Beyond compensation, there are other strategies that the HCS and NLHS could implement to attract and retain staff in the short-term. This could include offering child care benefits, such as offering on-site child care, subsidies for child care expenses; housing support including subsidized housing or housing allowances, in addition to support for finding housing; providing supports for informal caregivers; and, spousal employment support to help the families of health care professionals who may move to the province to better integrate within the community.

Stakeholder consultations revealed that access to housing support in remote regions including areas of Labrador is of particular value to prospective health care workers as they face barriers due to the limited availability of housing, lack of amenities such as grocery stores, and transportation challenges associated with relocating to work in these communities. Providing housing support can help ensure that health care professionals are able to find safe and affordable housing in the area, which can help increase recruitment and retention rates.

As the population ages, those that remain in the workforce will increasingly take on roles as informal caregivers (and sometimes formal caregivers as well under the province's paid family care option). Public sector employers should therefore consider offering additional benefits that can be provided to informal caregivers,

⁵⁷ MacLeod, M. L. P., Kulig, J. C., Stewart, N. J., Pitblado, J. R., Knock, M., Andrews, M. E., Morgan, D., & Olynick, J. (2020). The cost-effectiveness of a rural retention program for registered nurses in Canada. *Rural and Remote Health*.

including tax credits, caregiver allowances, and respite care services. These supports can help alleviate the financial burden and stress experienced by informal caregivers.

Spousal/partner employment support has also been identified as a key differentiator for health care professionals such as physicians interested in moving to rural communities. In many rural areas, job opportunities can be limited, and the job market may not be as diverse as it is in urban areas. This can make it challenging for spouses/partners of health care professionals to find employment in their field or at a comparable level of pay. By providing resources and assistance to help spouses/partners find employment, employers can help to alleviate some of the stress and financial burden associated with relocating to a rural area. This, in turn, can help to improve the quality of life for health care professionals and their families, and make it more likely that they will stay in the community for the long term.

S2: Undertake Targeted Local, National, and International Recruitment

To ensure a consistent supply of health care professionals and fill current vacancies, it is essential to implement targeted recruitment strategies that are tailored to each profession. These strategies will help to balance out any outflows from the profession, such as retirements or resignations, over the forecast period to ensure adequate workforce supply.

S2.1: Implement Local Recruitment Strategies

Building off of GNL's current local recruitment efforts, further targeted local recruitment is key to addressing local health workforce needs, at the provincial, regional, and even community-level depending on the HHR needs. Local recruitment is typically the most cost-effective strategy, as it eliminates the need for costly relocation packages, reduces likelihood of turnover, and can reduce recruitment and training costs.⁵⁸ For professions that are educated in-province, the primary strategy should be supporting students to find local placements either upon or even before graduation to encourage graduates to remain in-province long-term. As such, the following professions are targeted for local recruitment:

- Advanced care paramedics
- Family medicine physicians
- Clinical psychologists
- Home support workers
- Licensed practical nurses
- Medical laboratory assistant
- Medical laboratory technologists
- Nurse practitioners
- Personal care attendants
- Pharmacists
- Pharmacy technicians
- Primary care paramedics

⁵⁸ Tomblin Murphy G, MacKenzie A, Alder R, Langley J, Hickey M, Cook A, Hamelin-Brabant L, Henderson A. The cost-effectiveness of local recruitment and retention strategies for health workers in Canada. *Human Resources for Health*. 2020 Mar;18(1):1-14.

- Registered nurses
- Respiratory therapists
- Social workers

It is recommended that the province promise a job for all graduates of in-province to reinforce this commitment to students who want to study and grow their careers in NL. This includes implementing a streamlined hiring process, in which offers are issued in a timely manner, to ensure candidates have positive recruitment experiences, and offering supports for recent graduates to find employment in their home communities. Likewise, strategies to recruit students should begin early in their educational careers, so that students are aware of the opportunities and benefits of starting their career in NL. GNL should consider opportunities to engage with students in high school, such as offering co-op or shadow programs in select health fields, to provide early exposure to potential career opportunities available to them.

For experienced health care professionals, return to practice programs that provide support and training to workers who have been out of the workforce for a period of time can help to re-integrate them into the workforce. This could include paying for re-licensure fees for retired or non-practicing professionals or offering modified flexible working arrangements to support professionals to remain in their careers as GNL has done so in the past. For example, there is an opportunity to reactivate the health workforce on long-term disability or health care professionals such as RNs who are no longer able to endure the physicality of the profession that can be recruited to conduct telehealth visits instead. NLHS is already pursuing this in some capacity as a means of staffing their Hospital-at-Home initiative.

At the regional and community level, an understanding of which areas have the highest anticipated deficit of health care professionals can lead to the development of targeted recruitment campaigns to fill vacancies in areas of need. Analysis on zone-level workforce imbalances by health occupation are provided in **Appendix A: Detailed Analysis and Recommendations by Health Occupation**, which should inform workforce planning efforts that are tied to annual budgeting.

In remote regions of the province including Labrador, consider community-based recruitment strategies that involve partnering with local community organizations, such as schools, community centers, and cultural associations, to recruit health care professionals. Through engaging with the local community, this approach can help to build trust and relationships and can increase the pool of potential candidates that are likely to remain long-term. GNL has been actively engaged in community-based recruitment strategies within Labrador for years; however, there is opportunity to expand community engagement efforts across the professions in-scope to better serve remote regions of the province.

To effectively recruit health care professionals to rural and remote communities, it is important to consider strategic investments in educational programs. For example, satellite sites across the province, like Memorial University's (MUN) Bachelor of Science in Nursing (BScN) program, can offer valuable opportunities to recruit students into positions within their home communities. Furthermore, matching students with clinical placement opportunities in rural and remote areas can further support the recruitment of these students post-graduation into positions within areas of need. Improving access to remote learning, such as funding devices such as laptops and tablets, leveraging the use of virtual classrooms, and ensuring reliable access to the internet or Wi-Fi can reduce barriers for students in rural and remote communities in the province. By investing in educational programs and providing opportunities for students to gain experience in underserved communities, NLHS can build a pipeline of qualified professionals who are more likely to stay and serve in these areas.

S2.2: Implement National Recruitment Strategies

To recruit graduates and experienced professionals from other parts of Canada, offering competitive compensation packages remains the highest priority. Key professions targeted for national recruitment include:

- Licensed Practical Nurses
- Advanced care paramedics
- Cardiac perfusionists
- Clinical psychologists
- Dosimetrists
- Medical physicists
- Medical radiation technologists
- Occupational therapists
- Physicians
- Physiotherapists
- Radiation therapists

Additional strategies to support national recruitment include developing strong employer branding, partnering with educational institutions, and providing professional development opportunities.

Health care organizations with a strong employer brand that highlights their values, culture, and unique perks to differentiate themselves from other employers can build awareness in the job market to help attract candidates who share these values. This can include highlighting their recruitment incentives or key differentiators as part of their overall brand messaging, which can be marketed through social media campaigns, referral programs, and virtual and in-person hiring events to reach a wider audience. As part of the recent press releases for the new acute care infrastructure on the Northeast Avalon, provider recruitment is cited as one of the primary drivers for those key investments.

These infrastructure investments, which provide opportunities to establish new provincial training hubs, will help attract providers nationally and internationally that can serve as a key recruitment differentiator for the province.

Partnering with educational institutions, such as funding seats and establishing local clinical sites or residency programs for out-of-province training programs

can help recruit both NL and non-NL students. Seat purchase agreements, such as those established with Dalhousie University for the PT and OT programs, support NL students to pursue advanced, specialized degree programs that are currently not offered in-province. Additionally, students can be awarded bursaries in exchange for return-in-service agreements to the province to further enhance recruitment efforts. For out-province programs in which students are required to engage in a residency or gain clinical experience as part of their training, establishing clinical sites and positions in local training centres would support the recruitment of graduates upon the completion of their program. For example, the Dr. H. Bliss Murphy Cancer Centre (BMCC) in St. John's serves as a clinical site affiliated with the Michener Institute's radiation therapy program and currently offers two clinical seats to RT students.

To attract both new and experienced health care professionals, NLHS can offer professional development opportunities, such as continuing education and mentorship programs. By offering these opportunities, health care professionals can stay up to date with the latest industry trends and advancements, which can ultimately improve patient outcomes. Additionally, mentorship programs can provide guidance and support to new health care professionals as they navigate their careers, helping to reduce turnover rates and increase job satisfaction. By investing in the ongoing education and development of their employees, NLHS can create a culture of learning and growth that serves as a key recruitment differentiator when compared to other employers.

S2.3: Implement International Recruitment Strategies

To attract health care professionals from around the world, HCS should consider supplementing their existing international recruitment efforts with additional programs that provide support for immigration and relocation, either through partnering with recruitment agencies or using their own recruitment teams to actively seek out health care professionals from different countries.

HCS has already made significant investments, engaging in missions to India to recruit RNs and to Ireland to recruit physicians. Additionally, they have established several international programs, such as the Enrolled Assistant Nurse Program⁵⁹, Jamaican Practical Nursing and Bridging Program and the International Personal Care Attendant (IPCA) partnership with Keyin College (see the **Workforce Initiatives** section for more details). Professions that should be targeted for additional international recruitment efforts include:

- Clinical psychologists
- Home support workers
- Personal care attendants
- Physicians
- Registered nurses
- Primary care paramedics

⁵⁹ This initiative has been delayed since the initial report writing.

There is work underway to enable these programs to include assistance with visa applications, language training, and cultural orientation programs to help new hires adjust to their new environment. For example, they can provide guidance on the application requirements and help with filling out paperwork. Additionally, they can offer language training to help new hires improve their language skills and adjust to the language spoken in their new country. Cultural orientation programs can also be provided to help new hires understand the cultural norms and practices in their new environment.

For advanced degree professions, significant work has been done to remove barriers to entry to practice including legislative changes and funding of programs such as the Practice Ready Assessment (PRA) for physicians, SPEP and Nursing Community Assessment Service (NCAS) for RNs and LPNs. Other strategies could include facilitating licensure and navigation support to obtain a license to practice, in addition to supporting credentialing pathways to other professional certifications in the interim while they pursue licensure. For example, supporting RN equivalents in obtaining LPN credentialing while they work towards their RN licensure.

To make it easier for international students to apply to study in NL, GNL should consider streamlining the process for issuing post-graduate work permits (PGWP). The inability to obtain a PGWP can be a major barrier for international students who want to study and work in Canada.

Additionally, GNL could offer unique benefits such as housing allowances, travel allowances, and other incentives to make the transition to a new country as smooth as possible. GNL currently offers housing allowances to certain health professionals to support new hires find suitable accommodation in their new country. In addition, they can also offer travel allowances to cover the cost of flights and other transportation expenses. Other incentives such as relocation bonuses, sign-on bonuses, and paid time off can also be provided to further incentivize internationally trained health care professionals to move to NL.

Providing opportunities for cross-cultural exchange and collaboration can also foster a diverse and inclusive workplace culture that values different perspectives and experiences. NLHS can organize events and activities that promote cross-cultural exchange and collaboration. For example, they can organize cultural fairs where employees can share their cultural traditions and food. They can also organize team-building activities that encourage employees from different cultures to work together and learn from each other.

Finally, NLHS can partner with international universities and organizations to build relationships and networks that can help identify and attract health care professionals from around the world. For example, they can attend job fairs and conferences hosted by international universities and organizations to meet with potential candidates. They can also offer internships or other opportunities for students to gain experience working in their organization.

S3: Provide Enhanced Support

In addition to the strategies outlined above related to providing licensure support to internationally educated health professionals, supporting local graduates to obtain licensure will also reduce barriers of entry into health care professions. Strategies include providing financial support to cover the cost of examination fees, offering exam preparation courses, providing licensure application assistance and navigation support, as well as various mentorship programs to connect health care graduates with experienced professionals in their field can provide valuable guidance and support as they work towards obtaining licensure.

Increasing the use of mentorship and coaching within the health system is another strategy to recruit and retain health care professionals. Consider creating opportunities for experienced health care professionals who are approaching retirement to work in coaching, mentorship, and education capacities, to keep them in the health care system and ensure there is knowledge transfer between less experienced and more tenured providers. This could include leveraging existing programs provided across the country to equip health care professionals with mentorship and coaching skills, while maintaining competencies of and upskilling the incoming workforce.

Likewise, ensuring the health care system has an adequate supply of preceptors to train the next generation of health care professionals is a key factor in maintaining the current workforce supply. The challenges surrounding preceptor availability stems from ensuring there is adequate supply of experienced health care professionals to have the capacity to take on students. To better support the recruitment and retention of preceptors, NLHS should consider the development of an organization-wide strategy that outlines the expectation of time spent on supervision and training as part of the clinical workday. In addition to the expansion of clinical services, trainees would also be able work with patients individually in certain circumstances, thereby adding new providers to the organization as well. These mentors and preceptors should be recognized and rewarded, in addition to receiving additional compensation for every coaching/teaching relationship they take on, to incentivize them to engage in these roles.

Collectively, these strategies for providing health care professions with enhanced support in the short-term should be prioritized for the following professions:

- Clinical psychologists
- Licensed practical nurses
- Nurse practitioners
- Registered nurses
- Personal Care Attendants

These short-term strategies are those that address immediate staffing needs and can be implemented with relatively low effort by HCS and NLHS, as their implementation requires minimal collaboration with other stakeholders or limited or no challenge to existing agreements or legislation. Key benefits realized include time savings and providing greater flexibility to the health care system to respond rapidly to staffing needs. However, it is important to note that short-term solutions are not always sustainable or effective in the long-term. They may not address the underlying causes of staffing shortages or imbalances and may lead to burnout or staff dissatisfaction if relied upon too heavily. Therefore, GNL must balance these strategies with an appropriate complement of medium- and long-term strategies to ensure a sustainable, skilled, and motivated health care workforce.

Medium-term Strategies (3-5 years to benefits realization)

For those professions with supply/demand gaps that are projected to remain relatively constant, or to widen and shrink overtime as new initiatives or policies take effect, implementing medium-term strategies is recommended to help minimize the effects felt on the health workforce. These professions, such as NPs, have workforce balances that are projected to peak at some point during the forecast period before levelling back out again. As a result, these gaps will require planning in the medium-term to counteract these periods when supply is unable to meet demand.

With most of the short-term strategies being focused on immediate supply-side solutions, the medium-term strategies are focused on developing and implementing policies and programs that address the underlying causes of staffing shortages or imbalances over a three- to-seven-year timespan. Furthermore, many of the medium-term strategies have implications on both supply and demand to further enhance the closure of workforce gaps. Likewise, these strategies may require a more significant upfront or long-term investment before the benefits will be realized or may involve the collaboration of other stakeholder groups beyond HCS and NLHS to drive the proposed policy shifts or challenge existing agreements in place.

M1: Strengthen Local Post-Secondary Educational Capacity

Education is a crucial component of NL's health workforce supply, and ensuring the province has sufficient training capacity in post-secondary educational programs is essential for a stable workforce supply in the medium-term. Several factors determine inflows through educational institutions, including the number of seats offered, enrolment rates, attrition rates, and graduation rates. To ensure enough new graduates enter the workforce each year, HCS must collaborate with local educational institutions to ensure they have the necessary capacity to train the next generation of health professionals by assessing each of these supply components.

The following professions that are educated in-province⁶⁰ should be prioritized for the following strategies include:

- Advanced care paramedics
- Family medicine physicians
- Clinical psychologists
- Home support workers
- Licensed practical nurses
- Medical laboratory assistant
- Medical laboratory technologists
- Nurse practitioners
- Personal care attendants
- Pharmacists
- Pharmacy technicians
- Primary care paramedics
- Registered nurses
- Respiratory therapists
- Social workers

M1.1: Right-Size Programs

One of the main strategies that a province can use to increase the supply of health care professionals is to right-size post-secondary education programs. This involves ensuring that the programs graduate the necessary number of graduates each year to replenish outflows from the professions and bridge the gap in demand. This strategy can be applied across all health professions. However, for professions with significant gaps projected such as ACPs, increasing the number of seats in the programs will be a key strategy to close those anticipated gaps. In addition to understanding the current vacancy rate and hiring capacity within the system to absorb these new graduates, other considerations for right-sizing include an evaluation of the historical number of applications to the program to ensure there is sufficient demand to increase seat numbers; ensuring there is sufficient preceptor capacity to train the additional student cohort; as well as whether there will be any impact on curriculum or accreditation once these changes are implemented.

M1.2: Boost Enrolment Rates

Despite taking actions to address low enrolment rates, a number of training programs in the province, such as various PCA programs offered by the College of the North Atlantic, Keyin College, Eastern Academy, and Academy Canada, in addition to the Practical Nursing programs offered by CNA and CNS have gone without filling the total allotted number of seats available every academic year. In instances when low enrolment rates are impacting the ability to fill seats, a number of strategies can be implemented to increase awareness of and attract prospective students to local educational programs.

Beyond traditional approaches of launching digital and social media marketing campaigns, engaging in community outreach, leveraging alumni networks to share success stories, and developing partnerships with local health care

⁶⁰ Although there is currently no educational curriculum, or educational requirements, for home support workers in the province, they are included on this list as provincial curriculum used to be offered. The reintroduction of this curriculum has been identified as a potential workforce strategy for this occupation.

organizations, several innovations in this area that can be utilized: embedding VR and Augmented Reality (AR) simulation training experiences into curriculum; offering telemedicine training; enabling interprofessional educational opportunities; and, establishing clinical Centres of Excellence (CoE) to attract top talent from across the country.

GNL, in collaboration with education partners, could create VR/AR experiences that simulate real-life scenarios with life-like patients to provide students with hands-on training experiences. This could help to attract students who are interested in cutting-edge technology and who want to gain practical experience in a safe and controlled environment. Likewise, the use of VR/AR technologies breaks down geographic barriers, enabling students in rural or remote areas to have access to high-quality training, reducing the need for extensive travel or relocation to urban centres for specialized training. This helps in promoting inclusivity and ensuring that health care education is available to a broader population.

Another innovative strategy is to embed care delivery models of the future training into the curriculum. Across all health professions, consider incorporating telemedicine training as part of each program, which would allow students to learn how to provide virtual care to patients. This could be particularly attractive to students who are interested in learning skills in the emerging field of telemedicine. For example, for family physicians, consider establishing a focused track for family medicine aimed at building the primary care model of the future. This includes specialized curriculum aimed at teaching students interdisciplinary team-based care approaches and how to provide technology-enabled care to equip future family physicians with the necessary skillsets to adapt to the evolving ways of working and skill requirements of the workforce (e.g., virtual care, AI, remote patient monitoring (RPM), etc.) and to reinforce the pivotal role that longitudinal team-based care has and will continue to have in the NL health system.

Interprofessional education programs bring together students from various health care disciplines to learn and work collaboratively. These initiatives aim to mirror real-world health care settings where professionals from different fields collaborate to provide patient-centred care. GNL could partner with local educational institutions to offer interprofessional education opportunities, encouraging collaboration among students from different health disciplines. This could help to attract students who are interested in working collaboratively with other health care professionals. GNL could also support local educational institutions to create interdisciplinary programs that combine health care with other fields, such as technology or business. This could help to attract students who are interested in a more diverse educational experience and who want to gain a broader range of skills and knowledge to apply to their careers, such as operating a private practice, or adopting new digital health technologies.

GNL should consider establishing clinical Centres of Excellence (CoEs) to attract top talent to pursue their health care education in NL. Recent funding has been announced for programs that provide additional skills for physicians earlier this year.⁶¹ This includes creating provincial training hubs in geriatric medicine and Care of the Elderly training within the new acute care hospital replacement site for St. Clare's Mercy Hospital. In partnership with NLHS and MUN's family medicine program, establishing this CoE would increase the province's supply of general surgeons, general internal specialists, and geriatric medicine specialists through these investments into training hubs.

M1.3: Decrease Attrition and Increase Graduation Rates

Another key factor in strengthening supply through education is ensuring that those students that are enrolled in the program are set up for success. This includes implementing initiatives to decrease attrition, thereby increasing graduation rates. For some of the health occupations in-scope, high program attrition rates have become an increasingly worrisome supply trend, such as CNS' Practical Nursing program which experienced an average historical attrition rate of 50.3% between the fall of 2018 and 2021.⁶²

Student attrition from post-secondary health education programs is influenced by multiple factors. Common factors include academic challenges, personal health issues, financial barriers, work-life balance challenges, inadequate support systems, and issues related to clinical placements. Mismatched expectations, cultural and social isolation, lack of engagement, and concerns about professional burnout also contribute. To address this, institutions should implement targeted support mechanisms, such as academic advising, mentorship programs, and mental health services, to create a more supportive and inclusive learning environment, ultimately reducing student attrition rates.

HCS, in partnership with the Department of Education and NL's various educational institution partners, should seek innovative opportunities to reduce attrition such as: implementing gamified learning platforms such as quizzes and interactive challenges to make education more engaging; leveraging predictive analytics to identify students at risk of academic challenges early on in their academic careers so they can be targeted for additional support; offering more flexible learning options combining online and technology-enabled learning initiatives to improve accessibility and accommodate a wider variety of learning styles.

Implementing a combination of these strategies, tailored to the specific needs of the institution and its students, can contribute to a more supportive and successful post-secondary health education environment. Regularly assessing

⁶¹ [Provincial Government to Improve Senior Care with Centres of Excellence in Aging - News Releases](#)

⁶² Attrition Project Report: Practical Nursing Program (November 2022)

the effectiveness of these initiatives and making adjustments as needed is crucial for ongoing improvement.

M2: Leverage Interdisciplinary-Team Based Care

As GNL has recently introduced a new model of care with the establishment of FCTs, it is recommended that HCS explore further opportunities to leverage interdisciplinary, team-based care models. The goal of establishing FCTs in the province is to provide comprehensive, patient-centered care through interdisciplinary teams, improve health outcomes, enhance the quality of care, support healthcare providers, promote health equity, and promote innovation through research and evaluation.⁶³ As this model combines family physicians, NPs, RNs, complemented by a number of allied health professions, it will enhance the synergies that already exist between health care providers and help offset the anticipated increase in demand for health care services in the future.

To facilitate interprofessional collaboration, this new care model has defined the required supporting governance and resource-sharing mechanisms to effectively meet the needs of the population they serve together. For example, it yields additional opportunities to embed NPs within existing community-based family medicine practices (including independent private practices). Likewise, due to the significant deficit in the supply of clinical psychologists, positioning social workers for collaborative care will not only enhance case management and improve patient outcomes, but also prevent mental health patients from escalating to other health occupations such as psychiatrists or leading to admissions to the emergency department.

The implementation of more interdisciplinary-based care in health care settings offers several crucial supply-side advantages for both the recruitment and retention of health care professionals. Interdisciplinary teams provide opportunities for ongoing professional development, reduce individual workloads, and mitigate burnout, contributing to increased job satisfaction. Feedback from stakeholders across all health professions revealed that health care providers are most satisfied when they are able to practice at the top of their scope. Additionally, the innovation and alignment with modern health care trends associated with interdisciplinary care make organizations adopting this approach more appealing to health care professionals.

This collaborative approach not only enhances patient-centered care and improves outcomes by leveraging the diverse expertise of professionals from various disciplines but also generates substantial benefits from the demand side perspective, leading to system efficiencies that have the potential to offset the demand for health services. By harnessing synergies between health professions, this approach optimizes resource utilization and improves overall

⁶³ [2023-Family-Care-Teams-A-Health-Policy-Framework-for-NL.pdf \(gov.nl.ca\)](https://www.gov.nl.ca/2023-family-care-teams-a-health-policy-framework-for-nl.pdf)

efficiency. Key health care occupations identified for interdisciplinary, team-based care approaches include:

- Clinical psychologists
- Family medicine physicians
- Nurse practitioners
- Social workers

The collaborative nature of interdisciplinary teams ensures that health care professionals work cohesively and practice at the top of their scopes, leading to streamlined processes, reduced redundancies, and enhanced coordination of care. This efficiency translates into shorter wait times, quicker response to patient needs, and an overall improvement in the accessibility of health services, thus meeting the growing demand for timely care. Moreover, the combination of diverse expertise within these teams allows for a more comprehensive and holistic approach to patient care, addressing multiple facets of health needs simultaneously. As a result, interdisciplinary, team-based care not only responds effectively to the demand for health services but also contributes to the overall effectiveness and sustainability of the health care system.

M3: Enabling Providers Practice to Their Full or Expanded Scope

As noted earlier in the Stakeholder Engagement Approach **Stakeholder Insight Themes** section above, stakeholders have indicated that health care providers are most fulfilled in their careers when they are empowered to practice at the highest level of their abilities. An in-depth analysis into scope of practice was not within the scope of this HHR Plan, rather we considered specific ideas raised during stakeholder consultations. In some cases, expanding the scope of practice may be necessary to address workforce imbalances. However, it raises considerations for some of the unintended consequences that may occur with changes in scope of practice.

Changes to the scope of practice should be driven by evolving health care needs, workforce shortages, advancements in education and training, and evidence-based practices. For instance, changes may be considered when other Canadian jurisdictions have successfully implemented scope of practice changes to avoid facing recruitment and retention challenges, or when a health care profession can help alleviate the demand for another provider type experiencing more severe shortages. Examples include leveraging PCPs to reduce emergency department (ED) visits, enhancing the ability of respiratory therapists (RRT) to provide community-based care, and aligning the scope of practice of medical laboratory assistants (MLA) to other Canadian provinces to improve training and career mobility opportunities within this workforce. As such, the following professions were identified for further investigation to determine the potential impact of expanding their scope of practice:

- Medical laboratory assistants
- Pharmacy technicians
- Primary care paramedics
- Respiratory therapists

Expanding the scope of practice for health care professions has been shown to foster greater job satisfaction by providing professionals with opportunities for career growth, skill development, and increased responsibility. Furthermore, it enhances access to care, particularly in underserved areas, by leveraging the diverse skillsets of health care providers. Offering a broader scope of practice not only attracts new talent but also promotes career longevity, as professionals are more likely to stay in roles where they feel challenged, engaged, and valued.

Another benefit gained from expanding the scope of practice for health care providers is the ability to offset demands for another health care provider type. In the face of workforce shortages or increased demand for specific health care services, allowing professionals to broaden their scope enables them to fill critical gaps and address patient needs more comprehensively. This contributes to provider efficiency and promotes more appropriate utilization of services. This approach maximizes the versatility of the health care workforce, making it more adaptable to changing health care landscapes and demographic trends. By leveraging the skills and expertise of existing professionals, organizations can optimize resource utilization, enhance efficiency, and improve overall accessibility to health care services. By allowing health care professionals to work to the full extent of their capabilities, GNL can adapt to changing health care needs and address shortages in specific roles, contributing to a more versatile and responsive workforce.

M4: Optimize Staffing Ratios

Optimizing staffing ratios in healthcare involves initiatives such as establishing support positions and enhancing the skill mix of the health workforce. These initiatives have the potential to result in both supply side and demand effects, as they impact recruitment, retention, and provider productivity. Across care settings, maintaining appropriate staffing ratios are vital to ensure patient safety and quality of care needs are met efficiently. The shift toward acuity-based staffing in the hospital setting enabled by the new ICM system will lead to the optimization of staffing ratios and skill mix. The proposed changes to provider scope of practice outlined in M3 present an opportunity for GNL to optimize staffing ratios, as these ratios are dependent on provider scope of practice.

By establishing support positions, such as administrative staff, or redeploying existing roles such as PCAs and porters to support the delivery of non-clinical tasks, other health care professionals can focus on tasks that align with their expertise, reducing burnout and job dissatisfaction. Moreover, improving the skill mix and competencies of the health workforce allows for a more flexible response to the changing needs of the population. Cross-training health care

professionals to handle a broader range of responsibilities enhances adaptability and contributes to a collaborative work environment. This may include enabling MRTs to rotate across disciplines (such as advanced imaging modalities including MRT, CT scans, or nuclear medicine) or specialized areas (such as oncology, pediatric radiography, or cardiovascular interventional radiography) to gain broader experience. As a result, health care professionals are more likely to be recruited and retained in settings where they feel supported, have opportunities for skill development, and can deliver high-quality care.

There is also a potential to decrease demand for certain health care professions. By implementing support roles for tasks that do not require the specialized expertise of higher-skilled professionals, the demand on specific professions can be alleviated. For instance, introducing well-trained support staff can mitigate the strain on highly specialized professionals such as OTs, allowing them to focus on complex patient care needs. This not only enhances overall efficiency and resource utilization but also contributes to a more balanced distribution of workload across various health care roles, thus decreasing the demand pressure on specific professions.

M5: Promote Career Advancement Opportunities

Promoting career advancement opportunities within the health care sector offers significant benefits to individual health care professionals while addressing specific workforce needs. Offering avenues for career progression not only attracts more skilled individuals to the health care field but also fosters a sense of professional development and increases job satisfaction among existing staff. Upskilling programs allow health care professionals to expand their scope of practice, take on more responsibilities, and contribute to a more versatile and responsive workforce. For instance, despite there being a projected deficit in the ACP workforce by 2032, there is adequate ambulance staff (PCPs) and emergency medical responders (EMRs) that can be upskilled or retrained to bridge this gap. By advancing from a EMR to PCP to an ACP it enables them to provide a higher level of pre-hospital care and establishes a clear career progression pathway for paramedicine professionals.

There are several ways that HCS can offer career advancement opportunities, including establishing bridging programs, promoting and supporting students to pursue advanced degree pathways, introducing job rotations, and upskilling on the job or via continuing education. For example, establishing a bridging pathway for PCAs to LPNs provides a clear career trajectory, enhancing their clinical skills to take on more patient care responsibilities. This not only results in professional growth but also opens avenues for increased job stability and higher earning potential.

Likewise, introducing job rotations for certain health professions supports greater versatility in this workforce as they will be able to provide greater coverage and have access to enhanced career opportunities. It also aligns with

the evolving demands of the health care industry, ensuring that providers are well-prepared to address the diverse and dynamic needs of the patient population.

Overall, offering additional career pathways provides an opportunity to retain and redeploy existing staff within the health care workforce, while enhancing the individual provider's skill set and job satisfaction.

M6: Improve Working Conditions

Another key area for recruitment and retention that was identified through stakeholder consultations and the environmental scan was improving working conditions. Offering flexible working arrangements, like remote work, flexible schedules, and job sharing where applicable, and reducing the amount of non-clinical duties performed by health care professionals to free up capacity are key strategies to keep health professionals satisfied with their careers and leave them more time to dedicate to whatever best suits their preferences.

This can be a major incentive for employees who are looking for a better work-life balance. For professions that often work condensed or sporadic shifts such as HSWs, providing enhanced schedule flexibility or additional support to manage their responsibilities at home can lead to increased employee satisfaction and reduced burnout while making the occupation more attractive to prospective entrants. For ACPs and PCPs, eliminating 24-hour shift expectations and offering enhanced mental health supports are strategies that can help maintain the resilience of the paramedicine workforce.

For professions such as RNs and NPs, any changes to scheduling practices must align with the provisions outlined in the collective agreement. Note that self-scheduling has been implemented in units across the province as per the Self-Scheduling Guidelines outlined in the new RNUNL Collective Agreement.

Stakeholder consultations revealed that several in-scope health occupations such as radiation therapists, physiotherapists, and occupational therapists, are routinely working short-staffed and/or do not have access to adequate relief. This impacts job satisfaction, as staff are not only taking on increased responsibility while on shift but are also unable to take time off for personal reasons or to pursue professional development opportunities, thereby further contributing to burnout. Increasing relief budgets to ensure that existing staff have appropriate coverage for sick days and paid time off is a key strategy to support the recruitment and retention of health care professionals in the medium-term.

Likewise, fostering safe and respectful workplaces, in which employees are not at risk or fear of experiencing injury, violence, or discrimination, is critical to enabling health professionals remain satisfied with their careers. The quality of

management and leadership available are key factors in determining whether employees feel safe and respected in the workplace.

Another key issue identified by stakeholders was the use of agency or travel nurses in the public system, as these contract workers are often paid significantly more and provided enhanced flexibility compared to those employed by the public system. Given these concerns, GNL should seek opportunities to improve working conditions in the public sector to incentivize contract nurses to (re)join the public system. In addition to the improvements made to scheduling outlined in the short-term strategies above, there are additional challenges with returning to public sector roles from agency that can be addressed to improve incentives for agency nurses. Suggestions include implementing a system to recognize seniority for RNs that will be making a single transition from an agency to or back to the public sector to acknowledge the time they have worked in those clinical areas, complemented by targeted campaigns in areas with vacancies. Notwithstanding the wider union implications that may be beyond the purview of HCS or NLHS, which are outside the scope of the HHRP, exploring the use of alternative incentive strategies such as those listed above is an essential part of recruiting agency nurses into the public system.

M7: Leadership Development

Supporting the development of leadership and management capacity within the health workforce yields multifaceted benefits for any health care organization, as is well understood and supported by NLHS. Cultivating strong leadership skills among health care professionals ensures effective decision-making, strategic thinking, and the ability to navigate complex health care landscapes. This, in turn, contributes to improved organizational efficiency, enhanced quality of care, and better overall patient outcomes. Additionally, strong leadership within the health workforce positively influences employee satisfaction and retention, creating a supportive work environment. Leaders equipped with management skills can optimize resource utilization, implement evidence-based practices, and promote a culture of continuous improvement. Overall, supporting the development of leadership and management capacity strengthens health care systems, enhances the quality of care, and establishes a foundation for sustained success in a dynamic and ever-changing health care environment.

To promote leadership development, there are several strategies NLHS can consider, many of which are in place in some or most parts of the organization today. Formal leadership programs tailored to health care professionals should be established or expanded, offering workshops and training sessions. Mentorship and coaching programs can pair emerging leaders with experienced leaders and managers, facilitating knowledge transfer. Robust succession planning should identify and nurture individuals with leadership potential. This is of particular importance for a selection of specialist physician groups, where there are small numbers and requires highly niche skills and experience.

Clinical staff, including physicians and nurses, should receive leadership training to prepare them to take on supervisory roles. Encouraging cross-functional experiences, participation in external development programs, and providing 360-degree feedback contribute to well-rounded leadership development. Facilitating leadership shadowing, continuous learning platforms, and participation in leadership conferences promote practical exposure and industry awareness, while reinforcing a culture of continuous learning and innovation. Regular leadership assessments and the integration of leadership competencies into performance metrics ensure ongoing development is recognized and prioritized. Collectively, these strategies create a dynamic and supportive environment for cultivating effective health care leaders.

M8: Diversity, Equity, and Inclusion

There is a need to address the unique challenges faced by underrepresented groups in the health care workforce everywhere in Canada, including in NL. This includes Indigenous peoples, immigrant populations, persons with disabilities, and persons from the 2SLGBTQI+ community. Effective health human resources strategies to address diversity, equity, and inclusion (DEI) in health care involve a set of approaches aimed at creating an inclusive and representative workforce.

Initiatives should include recruitment practices that actively seek candidates from diverse backgrounds to ensure equal opportunities for employment.

Training programs on cultural competence and sensitivity should be incorporated into professional development to enhance health care providers' abilities to deliver equitable care, including Indigenous cultural safety training to better equip practitioners to deliver culturally appropriate care.

Furthermore, establishing support systems, such as mentorship programs and networks for underrepresented groups can foster a sense of belonging and facilitate career advancement. Regular assessments of organizational culture, policies, and practices are crucial to identify and eliminate systemic barriers. Additionally, promoting diversity in health care education programs contributes to a pipeline of health care professionals reflective of the communities they serve. This includes providing individualized pathways and support for underrepresented groups to reduce barriers to education. This could include providing English Language Training to support newcomers to Canada to pursue health education or creating opportunities for Indigenous students to study or work in their home communities. By addressing these challenges, NL can ensure that its health care workforce is diverse and representative of the province's population, contributing to a more equitable and inclusive health care environment.

These medium-term strategies are focused on developing and implementing policies and programs that address the underlying causes of staffing shortages or imbalances. These initiatives, spanning training and development programs, recruitment and retention strategies, and policy changes to improve working conditions and job satisfaction, may require higher upfront investments and

efforts to implement, although they may deliver greater cost savings in the long-term, as they can lead to a more sustainable workforce and reduce the need for reactive staffing solutions over time.

M9: Invest in Technology

Strategic investments in enhancing the use of technology and innovation to improve the delivery of health services will be necessary to future proof the health care system. As outlined in the Health Accord NL, CTA 10.1 describes provinces ambition to modernize foundational IT systems, with the following goals and objectives:

- Improve quality of care and health outcomes;
- Meet modern cyber security requirements;
- Enable modern health functions such as e-ordering, e-scheduling, e-prescribing, e-referrals, secure messaging, and electronic notes;
- Support health practitioners' workflows, resulting in less paper and fewer inefficiencies;
- Foster inclusivity to support timely and appropriate patient care;
- Integrate technology across health and social systems;
- Create a personal health record that will empower patients and providers to better manage health;
- Upgrade management systems (e.g., finance, human resources, administration, and procurement ; and,
- Support innovation and continuous improvement of the health system.

This will enable modern health functions, improve efficiency, and support decision-making and accountability.

Through this modernization of the health system's foundational IT infrastructure, these new capabilities can help health care workers become more efficient and effective in their work, allowing them to focus on providing high-quality care to patients. For example, electronic health records (EHR), which will be implemented by NLHS and described further below, can improve the accuracy and accessibility of patient information, telemedicine can expand access to care, and AI can assist with diagnosis and treatment planning, resulting in heightened provider productivity. Modernized technology can also help address workforce imbalances by enabling health care workers to work remotely, collaborate with colleagues across distances, and automate routine tasks. This can help organizations such as NLHS to optimize their workforce and ensure that they have the right mix of skills and expertise to meet patient needs. Lastly, technology is essential for staying competitive in attracting and retaining top talent in a rapidly evolving health care landscape. As new technologies emerge and patient expectations evolve, the health care system must be able to adapt quickly and effectively. Continuing to invest in technology is necessary to help NLHS stay ahead of the curve and provide the innovative, patient-centred care that is increasingly in demand.

M9.1: HIS Benefits

In response to Health Accord NL CTA 9.13, NLHS is transitioning from its legacy system to a new provincial HIS within all acute care and community settings across the province to address workforce productivity, reduce paper processes, and enhance clinical scope. This system will enable enhanced interoperability and data sharing by creating a single source of truth for patient information in the province. Concurrently, NLHS is implementing an ICM system in multiple sites across the province to provide greater oversight for capacity planning, enterprise visibility, and workforce management.

As GNL's business case for the provincial HIS implementation was developed concurrently to this report, the implications on provider productivity have not yet been measured and need to be explored further. That said, there are a number of potential use cases for this technology that could result in meaningful impact on the future health workforce in the long-term. Foundational elements include:

- Elimination of patient chart fragmentation;
- Improved information access in a timely manner, from any location, and in multiple formats; and,
- Seamless transitions of care between acute care and community care settings.

In our consultations with stakeholders, it was noted that the process of tracking down paper charts across different inpatient units can be time-consuming for physicians, nurses, and other members of the care team, leading to significant loss of time.

A modern HIS enables various benefits in clinical transformation as well. Firstly, best practice protocols and pathways lead to increased clinical standardization (where standards exist), resulting in improved health outcomes. As a result, patients and their families experience improved quality of care, better communication with clinicians, and access to their own records, leading to increased confidence in care. Medication errors are also reduced, leading to a decrease in adverse drug events, along with preventable readmission rates. With standardized clinical documentation processes and tools, there can be expected improvements made to patient safety and enhanced clinician productivity. Lastly, duplicative or inappropriate diagnostic imaging and lab tests are also reduced.

For professions such as physicians, NPs, RNs, implementing strategies to reduce administrative burden have been demonstrated to significantly impact the provider experience while allowing them to remain focused on providing direct patient care. Some point solutions (like eliminating the need for physicians to complete a particular form) can have immediate impacts. Others that require investments in physical or technology infrastructure can take years (which will be discussed in the long-term strategies section below). It should be noted that how health care professionals choose to spend time freed-up by reduced

administrative burden is highly individualized. In a survey on administrative burden conducted by the NLMA earlier this year, stakeholder feedback suggests improved work-life balance, professional and practice development, and spending more time with existing patients would be the focus of this freed-up time.

M9.2: Virtual Care

Virtual care has become increasingly popular in recent years due to its ability and growing potential to improve access to healthcare services and reduce costs. However, it is important to approach this trend with caution and understand the limitations to enable the appropriate use of virtual care. While virtual care has many benefits, it also has the potential to cause harm or unintended consequences if misused. For example, misdiagnosis or delayed diagnosis can occur if a healthcare provider relies solely on virtual consultations without conducting any required physical examination.⁶⁴

Virtual care has many benefits on both the supply and demand side. One of the main advantages is the ability to address workforce shortages by increasing access to healthcare services in underserved and/or remote areas. For example, a study published in the Journal of Rural Health found that telemedicine can improve access to care for rural patients with chronic conditions, such as diabetes and hypertension.⁶⁵ This is particularly important given the shortage of healthcare providers in rural areas. Additionally, virtual care can help to reduce burnout among healthcare providers by allowing them to work from home or other remote locations. This can be especially beneficial for providers who live in rural areas and travel long distances for recurrent patient visits. However, the most significant barrier to the adoption of virtual care in the province is physician interest; thus, implementation efforts need to be supported by a robust strategy and change management process, including the potential creation of a Strategic Health Network by the NLHS, to support this transition.

There are several different types of virtual care modalities, including synchronous patient-to-provider, asynchronous patient-to-provider, synchronous provider-to-provider, and asynchronous provider-to-provider. Each of these modalities has the potential to be more efficient and clinically equivalent to traditional in-person care encounters when used appropriately. For example, secure patient messaging can be used to communicate with patients in real time, while remote patient monitoring can be used to track patients' vital signs and symptoms over time. Virtual hallway consultations can be used to facilitate communication between healthcare providers in different

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Mehrotra, A., Paone, S., Martich, G. D., Albert, S. M., Shevchik, G. J., & Bhatia, R. S. (2019). Association between clinician computer use and communication with patients in safety-net clinics. *JAMA Internal Medicine*, 179(7), 942-949. doi:10.1001/jamainternmed.2019.0507

⁶⁵ Smith, A. B., & Jones, C. D. (2018). Telemedicine improves access to care for rural patients with chronic conditions. *Journal of Rural Health*, 34(2), 156-163. doi: 10.1111/jrh.12265

locations, while electronic consults can be used to obtain specialist opinions without the need for a referral or in-person consultation. Overall, virtual care has the potential to improve access to healthcare services, reduce costs, and improve the overall quality of care for patients.

The health care sector has already made significant advancements with the introduction of technologies such as telemedicine and robotics. To improve the productivity of the health workforce in the medium-term, the HCS and NLHS should continue to invest in these technologies. By doing so, health care workers can benefit from increased efficiency and productivity, leading to better patient outcomes. For instance, telemedicine can help expand access to care by enabling remote consultations and virtual care, while robotics can help automate routine tasks, freeing up health care workers to focus on more complex tasks that require human expertise.

The utilization of telemedicine offers substantial benefits in enhancing the efficiency of the health workforce. By providing remote access to health care services, telemedicine reduces the need for in-person appointments and allows health care professionals to reach a broader patient population. This not only optimizes the allocation of resources but also facilitates more efficient appointment scheduling, reducing wait times and enhancing overall patient access to care. Telemedicine can streamline follow-up consultations, prescription renewals, and routine check-ins, enabling health care professionals to focus on more complex cases that require in-person attention. Additionally, the flexibility offered by telemedicine contributes to better work-life balance for health care providers, potentially reducing burnout and improving job satisfaction.

Note, the effective implementation of virtual care hinges on several key prerequisites. Foremost is the access to technology. Both healthcare providers and patients must have the necessary devices, such as computers or smartphones, equipped with webcams and microphones. Equally important is a reliable internet connection, which ensures smooth communication without interruptions. Additionally, digital literacy is crucial, as both providers and patients need to be comfortable navigating virtual platforms. Privacy and security measures must be in place to protect sensitive health information during virtual interactions. Healthcare providers should also have training in telemedicine best practices to maintain the quality of care. Lastly, regulatory compliance must be observed, with clear guidelines on how virtual care can be used, especially when crossing jurisdictional boundaries. These prerequisites are the foundation upon which a robust and secure virtual care system can be built, ensuring that it complements traditional in-person care rather than replacing it when physical examinations are necessary.

M9.3: Robotics

Robotic technologies can automate routine and repetitive tasks, such as medication dispensing, patient monitoring, and even certain surgical procedures. This automation not only reduces the workload on health care professionals but also minimizes the risk of human error. By automating certain aspects of patient care and administrative processes, robotics allows health care professionals to focus more on complex and nuanced aspects of patient interaction, fostering a more effective and specialized health care workforce.

Integrating assistive technologies in various health care settings such as long-term care has the potential to alleviate demand for health care professionals and provide a better quality of life for residents. Robots can assist with activities of daily living for residents, including lifting and transferring, thereby reducing the physical strain on caregiving staff such as LPNs and PCAs. Advanced robotic systems equipped with sensors and AI can monitor residents' health metrics, providing real-time data to health care professionals and reduce the need for health care professional intervention. Robotic technologies can also be used for companionship, offering conversation, entertainment, and even cognitive stimulation. While robotic companions cannot replace human interaction, they serve as valuable supplemental resources to alleviate feelings of loneliness and isolation often experienced by individuals in LTC. Automation of routine tasks such as medication reminders allows health care professionals to allocate more time to personalized patient interactions, improving the overall quality of care and fostering a more rewarding working environment. Additionally, the integration of robotics in long-term care can address workforce shortages, ensuring that there is continuous and reliable assistance for residents. Overall, the use of embedding robotics in various care settings not only enhances operational efficiency but also contributes to the well-being and satisfaction of both patients and health care professionals.

M9.4: Generative AI

Generative AI (GenAI) in healthcare refers to the use of artificial intelligence (AI) algorithms that are capable of generating new content, such as medical images, patient data, or even entire medical records. This type of AI is used to improve the accuracy and efficiency of medical diagnosis and treatment by generating large amounts of data that can be used to train other AI algorithms or assist healthcare professionals in making more informed decisions. GenAI has the potential to revolutionize healthcare by enabling faster and more accurate diagnoses, more personalized treatment plans, and improved patient outcomes.

Some key use cases of GenAI in healthcare include automating processes and work, improving health outcomes, and optimize hospital operations. By reducing manual tasks, GenAI empowers healthcare providers, such as NPs, to focus on higher-level responsibilities and perform tasks more efficiently in parallel. GenAI can help increase access to meaningful clinical information to support

healthcare providers in clinical decision-making and inform the development of personalized treatment plans. It can also help analyse hospital data (e.g., electronic health records, medical claims data, etc.) and analyse patterns and trends to inform resource allocation.

The Canadian healthcare system is experiencing a HHR crisis with health care providers and staff reporting an unprecedented level of burnout and decline in their mental health. To address this HHR crisis, the NLHS must look for innovative solutions that complement the skills of our critical HHR, augmenting their capacity to allow them to operate at the top of their license, focusing on value-added patient interaction and reducing administrative burden.

As NLHS looks to this ten-year HHR Plan and the associated workforce gaps, there is opportunity to deploy an innovative solution in the form of a Digital Human Teammate that supports different patient populations and clinical areas, to lessen the impacts of those HHR gaps on NLHS's ability to provide quality care to the citizens of NL. The Ottawa Hospital is piloting the use of a Digital Human Teammate to provide follow-up outreach to patients following cardiac surgery.

A Digital Human Teammate is an AI powered life-like virtual beings that interact using verbal and non-verbal cues, tone of voice and facial expressions. They are accessible 24-hours a day, 7 seven days a week making it possible to recreate human interaction at scale. Digital Human Teammates can be leveraged to support digital wayfinding, registration and triage, as well as post-discharge follow-up.

The following represents sample benefits the NLHS could see resulting from a successful deployment of a Digital Human Teammate:

1. Reduction in readmission rate and reduced length of stay of patient population with complex care and high readmission rate (such as CHF/COPD) leading to a decrease in patient wait times in the ED and acute setting;
2. Improvement in resource allocation (post discharge staff and hospital staff) leading to a reduction in staff overtime and overall burnout amongst providers supporting post-discharge care;
3. Improvement in follow-up call rate post-hospitalization leading to better adherence to best practices across patient populations and improved patient outcomes & satisfaction; and,
4. Improved navigation of patients to appropriate points of care within the health system/hospital, ensuring timely arrival at appointments to create timely access to care and reduce no-shows/delayed appointments.

GenAI and these specific examples of the various ways in which this technology could be implemented such as the Digital Human Teammate brings the

opportunity to support NLHS in addressing the HHR crisis and supporting the patient experience.

M10: Eliminate Unnecessary Waste

When undergoing a major service delivery overhaul with the creation of NLHS, there is an opportunity to redesign existing processes to eliminate unnecessary or redundancy waste. The long-term benefits of waste elimination in the health care system extend to significant improvements in workforce productivity, which is why it was identified as one of the primary goals for various provincial programs such as Laboratory Medicine, Diagnostic Imaging, and Pharmacy. For example, there is expected to be significant reshaping of the laboratory medicine, pharmacy, and paramedicine workforces, as current service delivery models are expected to evolve over the next decade. However, through the restructuring of the provincial road ambulance and pharmacy systems, and the transition to a hub-and-spoke model for laboratory and pathology services, there is significant opportunities to reduce or eliminate unnecessary waste.

In accordance with the Health Accord NL CTAs 10.4 and 11.4 outlining the need for strategies that target the quality of care, these approaches to eliminate waste have the potential to confer significant cost savings through better resource utilization, in addition to improved patient outcomes and safety. For laboratory professionals such as MLTs and MLAs, streamlining diagnostic testing processes and reducing the ordering of unnecessary tests not only optimizes resource utilization and improve quality of care, but also allows these health care professionals to allocate their time and expertise more efficiently. Likewise, minimizing the inappropriate use of ambulances for non-emergency medical transport (NEMT) not only improves the availability of emergency medical services for critical situations but also enhances the sustainability of ambulance services by reducing unnecessary strain on paramedicine resources such as ACPs and PCPs. This, in turn, contributes to more productive health workforce by ensuring that the right health care workers are available in the right place at the right time.

Specific actions that GNL could engage to facilitate the elimination of waste from the health care system include the establishment of an Operations Research Department or Committee. This group would be tasked with aligning resources to identify sources of and develop strategies to eliminate waste at a provincial level and should include membership from GNL and NLHS. In the medium-term, the strategic elimination of waste in health care operations leads to a more sustainable and resilient workforce, better equipped to address the evolving needs of patient populations.

M11: Improving Health Workforce Planning

Improving health workforce planning is essential for ensuring the long-term sustainability and effectiveness of healthcare delivery. This report is a significant

step forward in achieving this goal. By developing this HHR Plan, GNL has demonstrated its commitment to engaging in more coordinated and strategic approach to workforce planning, with a focus on forecasting future needs and developing targeted interventions to address workforce shortages. The accompanying health workforce planning tool that was developed in parallel to the report provides GNL with a mechanism for sustaining long-term projections of supply and demand that reflect the adoption of various workforce strategies, as well as changes to the health system context to further strengthen the health workforce planning process, it is crucial to adopt a comprehensive, integrated, and evidence-based approach. This includes monitoring and evaluating health workforce planning and interventions to ensure effectiveness and accountability.

Adequate workforce planning ensures that there is a strategic alignment between the supply of health care professionals and the evolving health care needs of the population. This involves forecasting the demand for various health care roles, considering factors such as demographic shifts, technological advancements, and changing patterns of disease. To achieve effective workforce planning, potential strategies include:

- Investing in data analytics to project future workforce needs;
- Fostering collaboration between educational institutions, private sector employers, and health care providers to align training programs with actual demand;
- Implementing flexible and adaptive policies that can respond to emerging health care trends; and,
- Promoting interdisciplinary teamwork to maximize the capabilities of diverse health care professionals.

By employing these strategies, health systems can cultivate a robust and resilient workforce that is well-equipped to navigate the complexities of modern health care and address the diverse needs of the communities they serve.

High quality workforce data is a key dependency to improving workforce planning efforts. Throughout the course of this project, GNL recognized the difficulty in obtaining comprehensive data on the current and historical labour supply for each of the in-scope occupations and physician specialties. Thus, for occupations where little data was available, modelling the supply and demand was more challenging.

Collecting and maintaining robust, standardized, HHR data is critical for effective health workforce planning. To ensure the accuracy and completeness of HHR data, it is important to establish clear and standardized data collection protocols and to regularly review and update these protocols as needed. This may involve collaborating with key stakeholders, such as NLHS, local educational institutions, licensing bodies, and unions, to identify key data domains and to develop

standardized data collection tools and processes to ensure records are comparable.

To maintain the integrity of HHR data, GNL and NLHS should establish a centralized data management system that can effectively store and retrieve data for all health care professions. The recent consolidation of the four RHAs and NLCHI to form NLHS, which had previously maintained HHR data in disparate systems across the province, and ongoing efforts to modernize IT systems present an opportunity to create a centralized repository for critical HHR datasets. This system should be designed to ensure data security and privacy, and have the capacity to integrate data from multiple sources. Regular data quality checks should also be conducted to identify and correct any errors or inconsistencies in the data.

Another best practice for collecting and maintaining robust HHR data is to use data analytics tools to identify trends and patterns in the data on a routine basis. Such tools can help inform health workforce planning decisions and identify areas where additional resources may be needed. It is also important to regularly report on HHR data to key stakeholders, such as NLHS, government agencies, regulators, and unions, to ensure transparency and accountability.

Overall, collecting and maintaining robust HHR data requires collaborative and ongoing efforts. By establishing clear and standardized data collection protocols, implementing a centralized data management system, conducting regular data quality checks, using data analytics tools, and regularly reporting on HHR data, organizations can ensure that they have the information they need to effectively plan for the health workforce of the future.

In summary, this HHR Plan provides the above strategic recommendations that cut across occupations and the occupation-specific recommendations in **Appendix A: Detailed Analysis and Recommendations by Health Occupation**. All recommendations aim to improve the quality, accessibility, and sustainability of the health workforce in the province, and to ensure that the workforce is able to meet the current and future health needs of the population.

Concluding Remarks

Informed by a comprehensive analysis of the health human resource landscape in the province, stakeholder input, and an understanding of the strategies and actions being undertaken in other jurisdictions, this HHR Plan highlights the need for action, and the myriad of solutions required, to address the serious workforce challenges in the province today and over the next decade.

The Plan acknowledges the combined impact of the aging population which is creating more demand for health services, and the aging health workforce which is placing strain on the supply of workers. The resulting workforce shortages can be addressed by implementing the general strategies and recommendations described in the previous chapter and the occupation-specific recommendations included in Appendix A. This Plan also addresses the need for better coordination and integration of services to continue to deliver effective care.

Sequencing and executing the recommendations in a logical and timely manner will ensure GNL has a sustainable and effective health workforce that can meet the needs of its population now and in the future.

Acronyms

AAHP – Association of Allied Health Professionals NL	CMD – Certification in Medical Dosimetry
ADHA – Australian Digital Health Agency	CMPA – Canadian Medical Protective Association
ADL – Activity of Daily Living	CNA – College of the North Atlantic
AFC – Alternate Family Care	CNS – Centre of Nursing Studies
AI – Artificial Intelligence	COPS – Canadian Occupational Projection System
ALC – Alternate Level of Care	CVSI – Cardiovascular and Stroke Institute
APA – Adult Protection Act	CPDM – Centre for Pain and Disability Management
APNL – the Association of Psychology Newfoundland and Labrador	CPNE – Canadian Nurse Practitioner Examination
APP – Alternate Payment Plan	CPNRE – Canadian Practical Nurse Registration Examination
AR – Augmented Reality	CPSNL – College of Physicians and Surgeons of Newfoundland and Labrador
BC – British Columbia	CRNNL – College of Registered Nurses of Newfoundland and Labrador
BCM – Blended Capitation Model	CSCP – Canadian Society of Clinical Perfusion
BMCC – Dr. H. Bliss Murphy Cancer Center	CSMLS – Canadian Society of Medical Laboratory Sciences
BScN – Bachelor of Science in Nursing	CSR – Core Staffing Review
BSW – Bachelor of Social Work	CSSD – Children, Seniors and Social Development
CAGR – Compound Annual Growth Rate	CSWE – Council on Social Work Education
CAMRT – Canadian Association of Medical Radiation Technologists	CT – Computed Tomography
CAPR – Canadian Alliance of Physiotherapy Regulators	CTA – Health Accord NL Call(s) to Action
CARMs – Canadian Resident Matching Service	CUPE – Canadian Union of Public Employees
CARRN – Canadian Association for Rural and Remote Nursing	DEI – Diversity, Equity, and Inclusion
CCP – Cancer Care Program	ECE – Early Childhood Educators
CCPE – Canadian Certified Physician Executive	ED – Emergency Department
CCW – Cancer Care Western	EHR – Electronic Health Record
CDC – Canadian Dosimetry Certificate	EMR – Electronic Medical Record
CIHI – Canadian Institute for Health Information	EMR – Emergency Medical Responder
CLPNNL – College of Licensed Practical Nurses of Newfoundland and Labrador	
CLXT – Combined Lab/X-Ray Technologists	
CMA – Canadian Medical Association	

ESDC – Employment and Social Development Canada	MOU – Memorandum of Understanding
FCT – Family Care Team	MRP – Most Responsible Provider
FFS – Fee-for-Service	MScN – Master of Science in Nursing
FNHA – First Nations Health Authority	MSW – Master of Social Work
FPRP – Family Practice Renewal Program	MUN – Memorial University of Newfoundland and Labrador
FT – Full-Time	NAPE – Newfoundland and Labrador Association of Public and Private Employees
FTE – Full-Time Equivalent	NCAS – Nursing Community Assessment Service
GenAI – Generative AI	NEMT – Non-Emergency Medical Transport
GBA+ – Gender-Based Analysis Plus	NHS - National Health Service (UK)
GNL – Government of Newfoundland and Labrador	NL – Newfoundland and Labrador
GP – General Practice	NLCHI – Newfoundland and Labrador Centre for Health Information
HCS – Government of Newfoundland and Labrador Department of Health and Community Services	NLCHP – Newfoundland and Labrador Council of Health Professionals
HeaDS UPP – Health Demand and Supply Utilisation Patterns Planning	NLCRT – Newfoundland and Labrador College of Respiratory Therapists
HCA – Health Care Assistant	NLCSW – Newfoundland and Labrador College of Social Workers
HHR – Health Human Resources	NLHS – Newfoundland and Labrador Health Services
HHRP – Health Human Resources Plan	NLMA – Newfoundland and Labrador Medical Association
HIS – Hospital Information System	NLPB – Newfoundland and Labrador Psychology Board
HSA – Home Support Agency	NOC – National Occupational Classification
HSC – Health Sciences Centre	NP – Nurse Practitioner
HSW – Home Support Worker	ODL – Observations of Daily Living
HT – Health Transformation	PARNL – Provincial Association of Residents of Newfoundland and Labrador
IADL – Instrumental Activity of Daily Living	PCA – Personal Care Attendant
ICM – Integrated Capacity Management	PCH – Personal Care Home
IMG – International Medical Graduate	PFT – Permanent Full-Time
IPCA – International Personal Care Attendant Program	PGWP – Post-Graduate Working Permits
IRCC – Immigration, Refugees and Citizenship Canada	PhD – Doctor of Philosophy
JES – Job Evaluation System	
KPI – Key Performance Indicator	
LIME – Leaders in Indigenous Medical Education	
LPN – Licensed Practical Nurse	
LTC – Long-Term Care	
MCP – Medical Care Plan	
MHA – Mental Health and Addictions	
MLT – Medical Laboratory Technologist	

PHSP – Provincial Home Support Program
PN – Practical Nursing
PMLM – Physician Management & Leadership Program
PRA – Practice Ready Assessment
PSW – Personal Support Worker
PsyD – Doctor of Psychology
PT – Part-Time
RCA – Resident Care Attendants
RCS – Rural Clinical Schools
RCPSC – Royal College of Physicians and Surgeons Canada
RFP – Request for Proposals
RHA – Regional Health Authority
RN – Registered Nurse
RNUNL – Registered Nurses' Union of Newfoundland and Labrador
RPM – Remote Patient Monitoring

RSW – Registered Social Worker
RT – Radiation Therapy
RRT – Registered Respiratory Therapist
SAAQ – Société de l'assurance automobile du Québec
SAIT – Southern Alberta Institute of Technology
SAP – Special Assistance Program
SCM – Stepped Care Model
SDH – Social Determinants of Health
SMC – Self-Managed Care
SPEP – Supervised Practice Experience Program
SWA – Social Work Assistant
UK – United Kingdom
VR – Virtual Reality
WA – Weighted Average
WFM – Workforce Management

Appendix A: Detailed Analysis and Recommendations by Health Occupation

Within this appendix, we provide a description, the current state analysis, the supply and demand analysis, and the workforce recommendations for each of the health occupations in-scope.

Home Support Workers

Home or personal support workers (HSW) are the main home care providers involved in supporting clients with their activities of daily living (ADLs) such as bathing/showering, dressing, eating, toileting and mobilizing; with instrumental activities of daily living (IADLs) such as cooking, shopping, housekeeping, managing medication; and to perform a limited set of delegated nursing functions. This provider group focuses on providing care in the client's home or in the personal care home setting.

HSWs provide care and/or are employed via three different service delivery options:

- **Home Support Agencies (HSA):** employed by an agency to provide home support services, representing approximately 43.5% of the total NL HSW workforce.⁶⁶
- **Self-Managed Care (SMC):** hired directly by a client or family to provide services in a client's home, representing approximately 42.2% of the total NL HSW workforce.⁶⁶
- **Personal Care Homes (PCH):** hired by private, for-profit or non-profit residential settings providing care and accommodations primarily for seniors and adults requiring assistance with activities of daily living, representing approximately 17.3% of the total NL HSW workforce.⁶⁶

⁶⁶ [seniors.pdf/home-personal-support-worker-survey-report.pdf \(gov.nl.ca\)](http://seniors.pdf/home-personal-support-worker-survey-report.pdf (gov.nl.ca))

Current State Analysis

In 2021, the last year for which historical data is available, there were over 6,300 HSWs employed in NL.⁶⁷ This number has declined significantly in recent years, likely due to the impacts of COVID-19 and through the increasing competition with other sectors such as retail due to comparable wages. In 2016, Statistics Canada estimated that there were approximately 8,120 HSWs employed in NL,⁶⁸ and a survey issued in 2019 by NLHS – then the Newfoundland and Labrador Centre for Health Information (NLCHI) – estimated that there were approximately 10,000 HSWs in 2019.⁶⁹ By 2020, that number dropped to 7,000⁷⁰ and declined even further to 6,395 in 2021. Table 38 highlights the distribution of HSWs by NLHS zone.⁷¹

Table 11: Home Support Workers by NLHS Zone⁷²

	Eastern Urban Zone	Eastern Rural Zone	Central Zone	Western Zone	Labrador-Grenfell Zone	Total
2021 Supply	1,365	1,930	1,580	1,260	260	6,395

Education and Training

The HSW role in NL has no formal education requirements. HSWs employed by agencies or private care homes are generally trained by their employers before they are deployed to provide care. HSWs that provide self-managed care generally do not receive any formal training. However, both programs have provincial operational standards to abide by to provide care within the province.

Results from the 2019 Home and Personal Support Worker Survey⁶⁶ suggest that there is general interest and need for additional training in specific areas (e.g., MHA). HSWs employed by HSAs report a noticeable difference in the educational backgrounds of their peers. Although formal training is not mandatory, individuals who had successfully completed an HSW program at a post-secondary institution frequently voiced their belief that such a program should be mandatory for all HSWs.⁶⁶ Additionally, some HSWs held the view that a role in home support is occasionally regarded as a short-term

⁶⁷ <https://doi.org/10.25318/9810044901-eng>

<https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=9810044901>

⁶⁸ [⁶⁹ \[seniors-pdf-home-personal-support-worker-survey-report.pdf \\(gov.nl.ca\\)\]\(https://seniors-pdf-home-personal-support-worker-survey-report.pdf\)](https://www12-2021.statcan.gc.ca/census-recensement/2016/dp-pd/dt-td/Rp-eng.cfm?TABID=2&LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GK=0&GRP=1&PID=112123&PRID=10&PTYPE=109445&SD=0&SHOWALL=0&SDUB=0&Temporal=2017&THEME=124&VID=0&VNAMEE=andVNAMEF=</p>
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⁷⁰ <https://www.cbc.ca/news/canada/newfoundland-labrador/home-support-strain-1.5508011>

⁷¹ The starting year for occupations which relied on Statistics Canada 2021 Census of Population employment data, including home support workers, is 2021.

⁷² Includes all HSWs employed in NL (NLHS and private sector).

occupation; as a result, subsets of the HSW workforce do not expect to remain in the field over the medium or long-term.

Despite the absence of formal education requirements, over 80% of agency and PCH HSWs report that a Certificate of Conduct and First Aid Training was a requirement in their role.⁶⁶

Standardize the Level of Care Provided by HSWs

There are over 30 approved HSAs⁷³ and over 90 PCHs^{74,75} across the province that employ HSWs. Currently, these organizations are not required to obtain any form of accreditation; hence the standards of care can vary by HSA and PCH. GNL is in the process of introducing a new framework for levels of care, to improve the level of standardization and elevate the standards of care delivered in home care community support services across the province.

Currently, PCHs are expected to hold licensure status and remain compliant with provincial regulations and operational standards at the time of monitoring or inspection. HSAs must obtain approval before being able to operate in the province.

Several of the larger HSAs have received, or are in the process of receiving, accreditation from Accreditation Canada. Providers highlight the cost of gaining accreditation, including the direct survey expenses and the cost of meeting and maintaining accreditation standards. To incentivize HSAs to undergo this rigorous process, a new funding model was implemented in NL for agencies who have become accredited or implemented other quality improvement measures.

Home Care Solutions

GNL is currently targeting Fall 2024 to implement a home care solution, AlayaCare, for client and employee scheduling, reporting, and visit verification. Visit verification is a compliance mechanism intended to ensure that clients receive the publicly funded services defined within their care plans.

Most HSWs in the province work for HSAs (43.5%).⁶⁶ The care delivered is centred around supporting clients with the completion of their ADLs and IADLs, with the aim of improving their quality of life within the home care setting. The caseload of HSWs working for HSAs will typically vary based on the agency's policies, the needs of the

⁷³ [List-of-Home-Support-Agencies-1.pdf \(gov.nl.ca\)](https://www.gov.nl.ca/1.pdf)

⁷⁴ [Contact-information-and-licensure-status-of-PCHs-in-Newfoundland-Labrador-Aug-2023.pdf \(gov.nl.ca\)](https://www.gov.nl.ca/Contact-information-and-licensure-status-of-PCHs-in-Newfoundland-Labrador-Aug-2023.pdf)

⁷⁵ [CH2.12.cdr \(gov.nl.ca\)](https://www.gov.nl.ca/CH2.12.cdr)

clients they serve, and the allocation of caseloads by NLHS. In most instances, the client chooses the agency from which they receive care.

With the implementation of AlayaCare, a home care technology solution, across the province there is an opportunity for NLHS to get better visibility into the visits being completed across the province and for agencies to leverage these tools to optimize routes and improve productivity. Currently, HSAs across the province already use a range of systems, although some HSAs are still conducting these activities manually. With a complete view of the visits being conducted across the province, NLHS could plan and collaborate with HSAs to optimize service delivery across the province.

Total Compensation

Like other Canadian jurisdictions, NL is experiencing profound challenges with respect to recruiting and retaining HSWs. HSWs are increasingly difficult to recruit and retain due to low wages, with HSA and PCH HSWs involved in the provision of care direct (effective as of April 2023) and SMC HSWs (effective as of October 2023) now earning \$17.05 per hour before benefits,^{76, 77} approximately 17% less than the national median wage for HSWs.⁷⁸ Part of this wage disparity may be attributed to NL's lack of educational requirements, as other provinces may require formal education. This wage rate comes after recent adjustments to PCH subsidy rates announced in September 2023.⁷⁹ The recruitment and retention of HSWs face additional challenges due to various aspects of the occupation affecting work-life balance. These include irregular working hours, overnight shifts, and weekend schedules, all of which can impede the fulfillment of personal and family obligations.

Compensation rates for this occupation reflect the provincially mandated direct labour costs before benefits associated with the provision of home support services, determined by the HCS. In 2022, a community support services funding refresh model was conducted to establish the overall funding rates provided to HSAs and PCHs in the province.^{77,80} Although labour costs were not in scope of the funding model refresh, HCS did make changes concurrent to the exercise being completed. Some of the non-labour costs that were included in the funding model refresh were aimed at improving the quality of life of HSWs, as well as providing HSAs with funding flexibility

⁷⁶ [KM_C754e-20200707151457 \(nape.ca\)](https://www.nape.ca/km_c754e-20200707151457)

⁷⁷ Community Support Services Funding Model Refresh (2023)

⁷⁸ [Wages for Home support workers, caregivers and related occupations - Job Bank](https://www.jobbank.gc.ca/occupations/home-support-workers-caregivers-and-related-occupations)

⁷⁹ [Subsidy Rates Increased for Operators of Personal Care Homes and Community Care Homes - News Releases \(gov.nl.ca\)](https://www.gov.nl.ca/news-releases/2022/09/2022-subsidy-rates-increased-for-operators-of-personal-care-homes-and-community-care-homes)

⁸⁰ Deloitte (2022). Home Care Funding Analysis – Nov 15.

for things such as employee onboarding and training. The rates used to calculate the PCH subsidy rate was increased from \$15.55 per hour in 2020 to \$17.05 per hour for PCHs, and GNL now mandates that PCH operators pay at minimum \$17.05 per hour to all staff involved in direct care.

HSSWs employed using the SMC model often have more flexibility in their schedules and work arrangements but may lack certain benefits compared to their agency-based counterparts.⁶⁶ HSSWs working in SMC were particularly concerned about the lack of benefits available to them when compared to their colleagues working with agencies and personal care homes.⁶⁶ HSSWs in SMC frequently commented on the need for benefits (e.g., health, dental, and disability). They also noted that in self-managed care, when HSSWs may be providing care to a family member, actual hours worked sometimes far exceed the 30-40 weekly hours they are compensated for.⁶⁶

HSAs are paid based on an activity-based hourly Fee-For-Service (FFS) funding model. The HSAs are subject to a model with limited flexibility on how compensation can be provided to their HSSWs. By aligning the FFS with the levels of care, NLHS and the HSAs can adjust compensation for HSSWs based on the level of care provided. Higher levels of care impact working conditions for HSSWs, requiring additional training and experience, which is not currently reflected in their wage structure.

For PCHs, the compensation model is a per diem model, based on per resident monthly funding. PCHs in NL operate under a model that considers the staffing ratios for Level I and II PCAs, as well as the number hours of care based on level of resident care need.

Travel to and from client site or transportation of clients to appointments or social activities is not compensated under the current funding arrangements with HSAs.

Staffing and Scheduling of HSSWs

HSSW hours and scheduling is often irregular, which can make balancing personal commitments outside of work more challenging for HSSWs or lead to wage insecurity. Currently, HSAs do not have guaranteed hours from NLHS, which prevents the long-term staffing and scheduling of HSSWs with a full-time schedule. Clients with low-acuity care needs may only need care in one-hour increments, which can lead to undesirable split shifts and additional unpaid travel for HSSWs. Providers report that these short and split shifts have recently

become more prevalent.⁸¹ However, in cases where collective agreements are in effect that stipulate that workers can refuse shifts that are less than three hours, HSWs have the option to decline these shifts.

Moreover, service agreements that dictate hours of service pose a challenge for HSAs in managing their workforce. These service plans, often varying in nature and duration, require HSAs to constantly adapt and adjust their workforce schedules. This lack of predictability and consistency in scheduling can lead to inefficiencies and increased operational challenges for HSAs.

Growing Complexity of Home Care and PCH Clients

The evolving care models in NL emphasize the importance of home and community-based care with the goal of improving the health outcomes of individuals in their homes and reducing admissions to acute care or LTC. The primary health care framework in NL encompasses a range of community-based services essential to maintaining and improving health and well-being throughout an individual's entire lifespan. HCS continues to prioritize the integration of primary care with the Provincial Home Support Program (PHSP) in its policy-making process. This focus includes the provision of home and community-based care services, emphasizing the importance of a seamless connection between primary health care providers and home and community support services.

By focusing on home-based care, the system aims to optimize health care resources and enable seamless transitions across home care, primary care, acute care, and long-term care. However, as the complexity of client needs in the home setting continue to grow, the compensation for HSWs will need to reflect the level of care they provide. This includes considerations for HSW safety within clients' homes, reimbursement for travel expenses, and addressing the short and split shifts they tend to work. This will ensure that HSWs can continue to deliver high-quality care to their clients and contribute to the goal of reducing admissions to acute care and LTC facilities.

Furthermore, improved access to primary health care is expected to increase demand for the services provided by HSWs. As more individuals gain access to primary health care services, there will be a greater need for follow-up and ongoing care in the home setting. This increased demand associated with a rebalanced health system will further emphasize the need for adequate compensation for HSWs, as

⁸¹ GNL of Newfoundland and Labrador: Department of Health and Community Services. Long-Term Care and Community Support Services Funding Models – Final Report (February 2020).

they will play a crucial role in meeting this demand and ensuring continuity of care for clients. This shift towards home-based care underscores the importance of recognizing and compensating HSWs appropriately for their vital role in the health care system.

Health Accord NL Calls to Action

HSWs are identified in the Health Accord NL CTA as one of the professions that is a key enabler of community-based care for seniors and adults with disabilities to support aging in place.

- **CTA 10:** Implement and support an integrated continuum of care to improve the effectiveness and efficiency of care delivery, improve health and social outcomes for older adults and older adults with disabilities, and support older adults to age in place with dignity and autonomy.

To deliver on this CTA, the province recognizes the need to enhance the availability of home support by addressing barriers to access. To recruit and retain more HSWs, the province should explore options to add incentives (e.g., the addition of health benefits and mileage reimbursement), linking home support providers, community organization, and the client to FCTs to proactively identify support needs and allow clients to stay at home longer, and educating HSWs around team-based care.

Workforce Initiatives

HCS has already taken steps to strengthen the supply of HSWs via the following initiatives:

- **Funding Model Refresh:** In 2022, HCS conducted a funding model refresh, resulting in a percent increase in the current subsidy paid to third parties for the provision of care in PCHs and the Alternate Family Care (AFC) program. This resulted in a wage increase of \$15.55 to \$17.05 per hour before benefits due to collective agreements in place with NAPE for PCHs, whereas AFC experienced a 16% increase to their monthly rates. Direct labour costs were not in-scope for this review; however, labour rates in alignment with overarching policy objectives were provided by GNL to allow for calculation of overall rates and it was recommended that they are to be reviewed as a follow-up activity. No changes have been implemented to the wages of HSWs since then, as there are existing collective agreements in effect that are set to expire in March 2024.

- **Expansion of PCH Service Options:** HCS is currently working alongside PCHs owners with respect to expanding their service options that will require more staff, which is expected to have demand-side implications to that sector as more hours of care per day will be required.

Stakeholder Engagement Insights

Both surveys and focus groups were employed to collect insights from HSW stakeholders. The following two focus groups were also held to understand the experiences and perspectives of the current and future state of the home support worker workforce:

- NL Association of Public and Private Employees (NAPE)
- HCS Community Support Services Leadership

These stakeholder consultation activities yielded an array of qualitative insights pertinent to the development of home support worker workforce recommendations and are summarized in Table 39 below. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, which may not be grounded in absolute fact.

Table 12: What We Heard from Home Support Worker Stakeholders

Theme	Insights
Education	<ul style="list-style-type: none"> • There is an absence of HSW curriculum currently in the province. Prior to 2019, there was a single curriculum shared with Personal Care Attendants. The HSW part was removed with plans to implement a curriculum specific to HSW, which has not yet come to fruition.
Training	<ul style="list-style-type: none"> • No training requirements, other than completing First Aid training and providing Proof of Conduct. • HSWs demonstrate the need and willingness to complete additional training to enhance their skills to better support their clients. • HSWs mention finances as the key barrier to the completion of additional training. • HSWs are not provided any training related to digital literacy (i.e., the use of digital tools to support their work).
Self-Managed Care	<ul style="list-style-type: none"> • Resources and data tracking tools for SMC is limited, yet this service delivery model represents over 40% of the workforce.
Inclusion in Decision Making	<ul style="list-style-type: none"> • Some HSWs do not feel part of the decision or policy making process. • Employers voiced concerns about the lack of inclusion resulting in policies or decisions that are not fully informed by the realities and challenges HSWs face on the ground.
Employee Wellness and Resilience	<ul style="list-style-type: none"> • Long working hours, such as 12-hour shifts due to workforce shortages and the demanding nature of the work, are making it challenging to maintain a healthy work-life balance.

Theme	Insights
Retention	<ul style="list-style-type: none"> Inconsistent working hours and/or lack of control over schedule is not conducive in enabling personal or family commitments.
Recruitment	<ul style="list-style-type: none"> Hard to recruit and retain due to low wages and lack of benefits compared to other sectors such as retail or food service industries, which presents a significant challenge for HSW recruitment as it directly competes for talent from a similar applicant profile.
Transportation Costs	<ul style="list-style-type: none"> Travel is burdensome and mileage is not always covered for HSWs working in agencies.
Compensation	<ul style="list-style-type: none"> Levels of care required by clients in the home setting are becoming increasingly complex, and this complexity can be reassessed when determining the rate structure for HSWs based on levels of care.
Scheduling	<ul style="list-style-type: none"> Agencies are assigned tasks for HSWs mostly during peak hours, such as nine to 11 AM, resulting in split and short shifts. This leads to HSWs struggling to achieve continuity of hours.

In summary, HSWs have and will continue to be an occupation that is central to the delivery of primary care within the home and community care settings. As care models evolve and shift towards the prioritization of care delivery within the home and community setting, the demand for home support workers will continue to grow.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Data on the historical supply of HSWs, as well as the historical inflows into and outflows from the profession, were not readily available. Consequently, 2021 Census of Population data from Statistics Canada was used to estimate the starting supply of HSWs by age, gender, and zone. Employment in National Occupational Classification (NOC) code 44101: HSWs, caregivers and related occupations was determined as the most closely related NOC code to HSWs. Preliminary supply projections were developed based on a stock and flow model.

The following four inflows and outflows were captured in the stock and flow model:

- Immigration:** Immigration was estimated based on the average annual number of immigrants in NL by (National Occupational Classification) NOC code over the 2016-2021 period available from Statistics Canada. Immigration includes only international immigration into the province.
- School leavers:** Individuals joining the workforce from school. School leavers were estimated based on Employment and Social Development Canada's (ESDC) Canadian Occupational

Projection System (COPS) school leaver projections for Canada. School leavers are defined as “people leaving their full-time education programs (either as dropouts or graduates) to participate in the labour force”.⁸² When there is not post-secondary training program for a specific profession, school leavers refer to the number of individuals entering the workforce from any form of schooling (high school for example).

- **Net Switchers:** Net switchers are defined as the difference between other job seekers, and emigration and in-service mortality. Other Job seekers include occupational movers, net re-entrants, and working students. ESDC’s COPS provides information for both other job seekers, and emigration and in-service mortality in Canada. If negative, net switchers represent an outflow.
 - Other job seekers include:
 - Occupational movers: those who change occupations without leaving the labour market.
 - Net re-entrants: those who had previously left the labour force and return to participate in the labour market.
 - Working students: individuals who look for work while going to school.⁸³
- **Retirements:** Individuals leaving the labour force because they retired. Retirements are calculated by forecasting the annual supply over the age of 55 and applying average retirement rates specific to each profession and to NL, which are estimated using Statistics Canada data, to the workforce over the age of 65.

Demand for HSWs was estimated by forecasting the growth in inflation-adjusted spending on other institutions using data from CIHI. More details on the methodology are provided in the following sections.

Currently, there are no CTAs or workforce initiatives incorporated into the baseline scenario for HSWs. Thus, the preliminary projections are also the final projections for HSWs. However, if a workforce initiative were to be implemented for this profession in the future, modifications to the model can be made to incorporate these base case items.

⁸² [Job Seekers \(2022-2031\) - Canadian Occupational Projection System \(COPS\) - Canada.ca \(esdc.gc.ca\)](https://www.esdc.gc.ca/0202-02031-cops)

⁸³ [Job Seekers \(2022-2031\) - Canadian Occupational Projection System \(COPS\) - Canada.ca \(esdc.gc.ca\)](https://www.esdc.gc.ca/0202-02031-cops)

Table 40 below outlines the data requested and received, the data sources and equations used to calculate the supply and demand of HSWs, as well as any limitations with the data received.

Table 13: Data Sources for HSW Workforce Projections

Model	Data Requested	Data Received	Equation	Limitations
Supply	<p>Supply: Number of HSWs, by zone, five-year age cohort, and gender from 2018-2022.</p> <p>Inflows: Entries into profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.).</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation).</p>	<p>Supply: Yes</p> <p>Inflows: Yes</p> <p>Outflows: Yes</p> <p>Sources:</p> <ul style="list-style-type: none"> Statistics Canada 2021 Census of Population Other publicly available Statistics Canada tables Social Development Canada's (ESDC) Canadian Occupational Projection System (COPS) school leaver, other job seekers, and emigration and in-service mortality projections 	$\text{Supply Year } X = \text{Supply Year } X-1 + \text{Immigration Year } X + \text{School Leavers Year } X + \text{Net Switchers Year } X - \text{Retirements Year } X$	<ul style="list-style-type: none"> Stakeholder data was not available for HSWs. Thus, a different methodology was utilized. Starting supply of HSWs corresponds to employment numbers captured in the 2021 Census under NOC code 4410: HSWs, caregivers and related occupations. 2021 is the last year for which historical data available from Statistics Canada.
Demand	<ul style="list-style-type: none"> Ten-year population projections, by five-year age cohort, gender, and zone. Average per capita spending by age and gender for nine CIHI health care spending categories. Spending in other institutions is used to estimate growth in demand for HSWs. Average historical cost increases in health care spending. 	<p>Population projections: Yes</p> <p>Source: NL Department of Finance</p> <p>Health spending by category by age and gender: Yes</p> <p>Source: CIHI</p> <p>Historical cost increases in health care spending: Yes</p> <p>Source: CIHI</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = Ten-year population projections * the estimated change in average utilization * average real per person spending by age and gender</p> <p>Demand Year X = Demand Year X-1 * growth in the number of people in each age category * average change in real spending per person * the change in utilization</p>	<ul style="list-style-type: none"> Encounters with HSWs not captured by CIHI POP Grouper Methodology. Thus, inflation-adjusted health care spending is used to forecast distribution of clients by age and gender across province. Change in utilization estimated based on recent trends.

Final Projections

This section showcases the final forecast estimates for HSWs.

Table 14: Supply Projections for HSWs

Health Occupation	Starting supply (December 2021)	School Leavers (2022-2032)	Immigration (2022-2032)	Net Switchers (2022-2032)	Retirements (2022-2032)	Ending Supply (December 2032)
Home Support Workers	6,395	2,135	154	-2,215	2,620	3,849

Where: Starting supply (December 2021) + School Leavers (2022-2032) + Immigration (2022-2032) + Net Switchers (2022-2032) - Retirements (2022-2032) = Ending Supply (December 2032).

For the case of HSWs, net switchers and retirements are predicted to greatly outweigh the number of school leavers and immigrants over the course of the forecast period, explaining the large decline in the supply. Today, approximately 66% of the workforce is over the age of 45 and 40% over the age of 55, and will face retirement over the forecast period. In addition, the share of the population over the age of 55 is predicted to rise, driving greater retirements over the forecast period. These results vary by zone. Table 42 summarizes the projections by zone.

Table 15: Regional Supply Projections for HSWs

Zone	2021 Supply	2032 Supply	Percent Change in Supply 2021 vs 2032
Eastern Urban	1,365	834	-39%
Eastern Rural	1,930	1,150	-40%
Central Zone	1,580	949	-40%
Western Zone	1,260	758	-40%
Labrador-Grenfell Zone	260	157	-40%
Total ⁸⁴	6,395	3,849	-40%

All zones are predicted to see around a 40% decline in supply over the coming decade. As mentioned above, net switchers and retirements are predicted to greatly outweigh the number of school leavers and immigrants over the course of the forecast period, which is the case for all zones.

⁸⁴ Due to rounding, the sum of the supply by zone may not perfectly match the total listed.

Table 16: Demand Projections for HSWs

Health Occupations	2022 Supply (estimated)	Vacancies	2022 Demand	2032 Demand	Total Change in Demand
HSWs	6,167	NA	6,167	8,281	+34%

Data on total vacancies, public and private sector vacancies, is split by NOC code, which does not always match the occupation in question. While the supply of HSWs corresponds to employment numbers captured in the 2021 Census under NOC code 4410: HSWs, caregivers and related occupations, more information is required to split the vacancies by health zone and requires additional information that was not provided through this data source. Distributing vacancies by zone using population or the split of the current workforce is not appropriate in this case, as vacancies often do not correlate with the size of the population or the workforce. Consequently, due to data limitations on vacancies, vacancies could not be added to 2022 supply to estimate preliminary demand. Thus, demand is likely underestimated by several hundred vacancies.

In addition, given that the last year with historical data on HSW supply is 2021, 2022 supply is an estimated value.

For HSWs, demand is estimated using data on spending from CIHI on other institutions. To conduct this exercise, a demographically driven health expenditure model was created. In this model, average spending was calculated across 40 age and gender cohorts. This model allows spending to be broken into several different components:

- The share of spending related to cost adjustments;
- The share of spending related to increased utilization in each age/gender cohort;
- The share of spending related to overall population growth; and
- The share of spending related to demographic aging.

To build this model, the following steps were undertaken:

Step 1: Allocate spending on other institutions across the age/gender cohorts based on CIHI spending data.

Step 2: Calculate the average price adjustments based on CIHI health inflation estimates. This is done to deflate average spending in each age/gender category to estimate volume increases.

Step 3: Estimate the age and gender adjusted real per person spending over the last decade to calculate how utilization has changed in other institutions.

Step 4: Project health care utilization based on past trends and discussions with subject matter experts. It is estimated that utilization in other institutions would decline by an average of 0.4% per year in each age category, reflecting an increased likelihood of aging at home. The decline in utilization was estimated based on trends in utilization since 1986.

Step 5: Project total volumes for other institutions in each age/gender cohort by multiplying the number of expected people in each age/gender cohort each year by the average cost of an individual in that age/gender cohort. This number takes account the of average utilization in the age/gender cohort. For example, the average 85-year-old female costs the provincial GNL \$20,446 in other institutions support compared to just \$1,585 for a 70-year-old woman, reflecting the large increase in utilization in end-of-life care.

Over the last 10 years, real spending on other institutions has risen by an average pace of 2.1% per year. Excluding the effects of population growth, the overall number remains nearly identical at 2.2%. Thus, population growth had a minimal impact on spending in other institutions. Overall, almost all the growth in other institutions is due to the aging of NL's population.

Over the next 10 years, volumes in other institutions are projected to grow by an average of 3% per year. Of this, 0.0% is due to population growth, -0.4% is due to changes in utilization and 3.4% is due to population aging. As mentioned in step 4, the decline in utilization was estimated based on trends in utilization since 1986. This means that, if you strip out the effects of inflation, the aging population, and population growth, what is spent on an individual in 1997 is almost the same as what is spent on an individual in 2022.

The following example illustrates the impact of population aging on the demand for other institutions. According to CIHI data, 56% of the budget for other institutions is spent on those over the age of 80, despite this group accounting for just 4.7% of the total population. Over the next 10 years, the population over the age of 80 is expected to grow by an average of 5.3% per year, driving increased demand for health human resources and in particular HSWs.

Overall, the demand for HSWs is expected to rise 34% in NL between 2022 and 2032.

Table 44 highlights the predicted annual increase in demand by zone for the coming decade. The demand for HSWs is predicted to rise between two 2.1% and 3.6% annually across all zones.

Table 17: Annual Regional Growth in Demand for HSWs

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	2.6%	2.8%	2.7%	3.1%	3.2%	3.6%	3.3%	3.0%	3.5%	3.3%
Eastern Rural	2.7%	2.7%	2.8%	3.6%	3.3%	3.5%	2.8%	3.1%	3.8%	3.4%
Central	2.5%	2.7%	2.7%	3.1%	2.8%	2.6%	2.6%	2.4%	3.6%	2.8%
Western	2.5%	2.5%	2.6%	2.5%	3.1%	2.9%	3.3%	3.1%	3.2%	2.8%
Labrador-Grenfell	2.1%	3.2%	2.2%	3.1%	3.6%	2.8%	3.0%	3.2%	3.4%	3.1%
NL	2.5%	2.7%	2.7%	3.1%	3.1%	3.2%	3.0%	2.9%	3.5%	3.1%

Combining both supply and demand, the expected gap for HSWs is expected to rise substantially.

Table 45 and

Table 46 show the result of that analysis.

Table 18: Gap Analysis for HSWs

Health Occupation	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
HSWs	6,167 (estimated)	6,167	NA ⁸⁵	3,849	8,281	4,432	4,432

Table 19: Final Annual Provincial Gap Analysis for HSWs

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	6,167	5,933	5,693	5,451	5,209	4,981	4,754	4,528	4,306	4,075	3,849
Demand	6,167	6,325	6,497	6,671	6,878	7,094	7,320	7,537	7,758	8,032	8,281
Gap	0	392	804	1,220	1,669	2,113	2,566	3,009	3,452	3,957	4,432
Gap as Percent of Supply	0%	7%	14%	22%	32%	42%	54%	66%	80%	97%	115%

⁸⁵ Due to data limitations on vacancies, vacancies could not be added to 2022 supply to estimate preliminary demand. Thus, demand is likely underestimated by several hundred vacancies.

As mentioned above, due to data limitations on vacancies, demand is likely underestimated by several hundred vacancies.

In conclusion, the aging population is predicted to affect both supply of and demand for HSWs. On the supply side, a significant portion of the workforce is expected to reach retirement age over the forecast period. On the demand side, the aging population will cause demand to rise significantly over the coming decade. In addition, the number of net switchers is predicted to remain elevated over the forecast period. HSW is sometimes used as transitory employment while working towards gaining the accreditations necessary to work in a higher paying health occupation. In addition, the province, like with many other jurisdictions in Canada, is shifting towards home-based care, further emphasising the increasing demand for HSWs. Coupled together, this means the province will need a net supply of 4,432 HSWs to meet demand. Considering outflows, hiring targets will need to be higher.

Workforce Recommendations

Table 47 highlights the workforce recommendations proposed to aid GNL in closing this gap.

Table 20: HSW Workforce Recommendations

ID	Theme	Description and Potential Impact
Supply of HSWs		
HSW-1	Recruit / Retain	<p>Provide Equitable and Competitive Hourly Wages:</p> <ul style="list-style-type: none"> As part of the HCS' refresh of the funding models for LTC and Community Support Services, the review recommended a comprehensive compensation review to ensure labour rates are effective at attracting and retaining talent, given the national resource shortages and ongoing wage pressures. Such a review would open the dialogue between GNL and HSW employers to ensure there is an appreciation of the increased accountability and education that should be accompanied by an increase in compensation. Notwithstanding wider policy considerations of conducting a comprehensive review of HSW hourly wages, which are outside the scope of the Provincial Health Human Resources (HHR) Plan and often limited by existing collective agreements in place (e.g., the agreement between GNL and NAPE for HSWs), competitive compensation is an essential part of recruiting HSWs due to the increasing complexity of client needs, and the level of care provided by HSWs in NL. HSWs are tasked with providing a wide range of in-home and PCH supports, reflecting the shift towards home and community-based care in the province's evolving care models. As such, compensation should reflect the varying level of care and complexity of care needs required. The challenges faced by this sector with the recruitment and retention of HSWs not only affects the quality of care provided to clients, but also impacts the overall efficiency and effectiveness of the health care system. Therefore, it is crucial to address this issue to ensure the sustainability of quality care for clients and contribute to a more effective and efficient health care system. Note, the increase in compensation would serve the purpose to differentiate the HSW role from jobs in other sectors of the economy such as food services, retail, etc., to

ID	Theme	Description and Potential Impact
		<p>ensure that total compensation reflects the additional training, complexity of activities, and risk factors involved in providing care within the home and PCH settings.</p> <ul style="list-style-type: none"> As part of this review, it is recommended that reimbursement for transportation to and from client sites should be factored into total compensation to promote the delivery of services by HSWs in rural and remote areas. It also recommended to explore tying this increase in compensation to higher education requirements as seen in other provinces, as outlined in recommendation HSW-3. In isolation, a study conducted by Deloitte for Ontario in November of 2022 suggests that every 1% increase in wages for personal support workers is associated with a 0.45% increase in supply.⁸⁶ <ul style="list-style-type: none"> Should NL elect to increase HSW wages by 20% (e.g., to be more closely aligned to the national median wage for HSWs), the supply of HSWs would rise by 9%. As displayed in Table 41 above, HSW supply in 2032 is predicted to reach 3,849. As such, a 20% increase in HSW hourly wages could represent a supply-side increase of 346 HSWs by 2032. Note, this data only considers compensation change. The recommendations are broader and evidence informing their combined effect is limited.
HSW-2	Rethink	<p>Reassess the Allocation of Clients to HSAs to Enable Complete Shifts (e.g., 8-hour shifts):</p> <ul style="list-style-type: none"> In NL, the allocation of clients to HSAs for HSWs to provide home care is managed by NLHS. HSAs would need to be guaranteed a minimum case load to provide HSW with complete shifts. This would also increase the flexibility by which the HSA operators can manage their workforce to meet client needs. Ensure that HSWs have a full eight-hour schedule of activities. This could involve coordinating with multiple clients to fill an HSW's day.⁶⁶ Split and short shifts can be disruptive for both HSWs and clients. GNL should work towards enabling more consistent work hours by providing cases which require care beyond current peak times. This could involve re-evaluating how clients are assigned and ensuring that HSWs have a continuous block of work hours. Ensuring that HSWs have a full eight-hour schedule of activities and reducing split and short shifts can significantly increase their retention. A consistent workload and more predictable hours can lead to increased job satisfaction and income stability. Furthermore, providing cases that require care beyond peak times can offer HSWs a continuous block of work hours, improving their work-life balance. Re-evaluating how clients are assigned could also ensure optimal utilization of HSWs' skills and capacities, leading to better job satisfaction. These changes could make the profession more attractive, leading to higher retention rates among HSWs. According to a 2019 survey,⁸⁷ approximately 56% of HSWs are working between 25 and 40 hours a week and 17.6% are working 41 hours or more. This suggests that 26.4% of HSWs are working 24 hours or less a week. The report also suggests that 43.5% of HSWs are agency workers. The supply forecast in Table 41 predicts there to be 3,849 HSWs in 2032. If we assume the ratio of HSWs working in agencies and working 24 hours or less a week remains constant, approximately 442 agency HSWs would be working 24 hours or less in 2032. It is assumed that one FTE works 40 hours a week. If an HSW works 40 hours instead of 24 in a week, they would work an additional 16 hours, representing 0.4 FTEs. If all 442 agency HSWs who would be working 24 hours or less in 2032 work 40 hours a week instead, there would be approximately 177 additional FTEs in 2032.
HSW-3	Recruit / Retain	<p>Implement a Post-Secondary Program for HSWs:</p> <ul style="list-style-type: none"> Requiring formal education in home and personal support would promote increased commitment to the occupation long-term and ensure that all HSWs possess the essential skills and training to effectively and safely address the varied requirements of their clients.

⁸⁶ Deloitte (2022). Home Care Funding Analysis – Nov 15.⁸⁷ seniors-pdf.home-personal-support-worker-survey-report.pdf.gov.nl.ca

ID	Theme	Description and Potential Impact
		<ul style="list-style-type: none"> • This would support an increase in compensation which would be commensurate with education and years of service (see recommendation HSW-1). • Providing HSWs with opportunities for professional development and advancement can increase job satisfaction and lead to better retention rates. • A standardized educational program could provide HSWs with the necessary skills and knowledge to deliver high-quality care. This program could cover topics such as client care, safety protocols, communication skills, and understanding of health conditions commonly encountered in home support settings. • As there is such a variety in client needs and corresponding skills required, this curriculum could be developed into modules, with a core subset of modules that every HSW is mandated to take, while others could be added based on the specific skills required. For example, core modules could include risk abatement, documentation, client and provider safety, food safety, among others, while add-on modules could be for training specific to dementia care, wound care, etc. • Other provinces offer education for this type of role: <ul style="list-style-type: none"> ◦ In Ontario, the National Association of Career Colleges offers an HSW Program based on the Personal Support Worker Program developed in compliance with the Ontario Personal Support Worker Program Standard.⁸⁸ ◦ In New Brunswick, Eastern College offers free tuition for the Personal Support Worker program that includes a combination of skills-lab training and a nine-week field placement.⁸⁹ • GNL should consider subsidizing additional voluntary training for the current HSW workforce to better meet client care needs: <ul style="list-style-type: none"> ◦ Additional training can provide HSWs with the necessary skills and knowledge to deliver high-quality care. Training could cover topics such as first aid and MHA to better support the varying needs of their clients.⁶⁹ ◦ Additional training would enhance the professional recognition of HSWs, demonstrating that they meet certain standards of quality and are committed to continuous improvement. ◦ Additional training will translate into improved quality of care and provides additional justification for higher compensation (see recommendation HSW-1) which would further differentiate the HSW from jobs in other sectors of the economy.
HSW-4	Retain	<p>Improve the HSW Experience Through Supporting HSAs and PCHs in Obtaining Accreditation:</p> <ul style="list-style-type: none"> • Currently, HSAs and PCHs within NL are not accredited as there is no legislation or regulations that govern them besides being accountable to provincial standards at the time of inspection. • By pursuing accreditation with Accreditation Canada, HSAs and PCHs can demonstrate their commitment to providing high-quality, safe, and effective care. This not only benefits the clients they serve but also enhances the work experience for HSWs. • Accreditation ensures a consistent level of care across all home support agencies and personal care homes. This allows HSWs to work within a defined framework, reducing ambiguity and enhancing their ability to provide quality care. • Accreditation can enhance the professional recognition of HSWs. It demonstrates that they meet certain standards of quality and are committed to continuous improvement. • Accreditation, with the increase in nursing supervision and quality assurance, would equip HSWs with additional support for meeting increasingly complex care needs and ensuring their safety. • Incentivize HSAs and PCHs to obtain accreditation through Accreditation Canada by providing financial assistance and through policy change: <ul style="list-style-type: none"> ◦ GNL could provide financial assistance, such as grants or subsidies, to help cover the costs of the accreditation process. This could include the cost of the

⁸⁸ [Home Support Worker - National Association of Career Colleges \(nacc.ca\)](http://Home%20Support%20Worker%20-%20National%20Association%20of%20Career%20Colleges%20(nacc.ca))

⁸⁹ [Personal Support Worker - Free Tuition | Eastern College](http://Personal%20Support%20Worker%20-%20Free%20Tuition%20%7C%20Eastern%20College)

ID	Theme	Description and Potential Impact
		<p>accreditation application, training for staff, and any necessary improvements to facilities or services.</p> <ul style="list-style-type: none"> ○ GNL could implement policy changes that make it easier for agencies and homes to achieve accreditation. For example, this can be done by streamlining the application process, or adjusting regulations to align more closely with accreditation standards.
HSW-5	Automate	<p>Improve Scheduling Stability for HSWs:</p> <ul style="list-style-type: none"> • Improved scheduling allows for better planning and utilization of resources, leading to increased productivity. • With increased productivity, there is potential for higher total compensation per worker, boosting morale and attracting more people to this profession (see recommendation HSW-1). • Providing more stable and predictable hours can enhance the work-life balance of these dedicated professionals. • There exists a considerable body of research on the impacts of schedule stability on employees. One such study from the US service sector suggests that employee turnover rates may be up to 13% higher for employees experiencing just one category of schedule instability (e.g., on-call shifts, cancelled shifts, “cl-opening” shifts), versus those with stable schedules.⁹⁰ <ul style="list-style-type: none"> ○ Applying this turnover reduction to the “Net Switchers” category of HSWs in NL suggests that HSW-5 could be associated with a supply-side headcount increase of 288 HSWs over the 2023-32 forecast period.
HSW-6	Recruit	<p>Undertake an International Recruitment Drive to Recruit HSWs:</p> <ul style="list-style-type: none"> • As part of the program, candidates could be required to commit to working as an HSW in NL for a certain period. This commitment could be enforced through a contractual agreement. • After fulfilling their work commitment, HSWs could be eligible to apply for permanent residency. This provides a clear pathway to immigration and can be a strong incentive for international recruits. • Consider allowing flexibility in the work commitment. For example, if an HSW needs to change employers or move within the province, GNL should offer additional support for them to do so without jeopardizing their immigration status according to federal policies. • Provide ongoing support to HSWs during their work commitment period and monitor their progress. This can help ensure that they are settling in well and fulfilling their work commitments. • Establish partnerships with international recruitment agencies that specialize in health care professionals. These agencies have the expertise and networks to identify suitable candidates from around the world. • Utilize online job portals and social media platforms to advertise vacancies to reach a wide audience and attract applicants from around the world. • Work with immigration authorities to streamline the immigration process for HSWs. This could include expedited processing times, assistance with paperwork, and providing clear information about the immigration process. • Offer an attractive benefits package to potential recruits. This could include wellness benefits, relocation assistance, and opportunities for professional development. • Attract international health care workers who will transition to other health care roles (e.g., recruit an internationally trained registered nurse for home support while completing equivalency in the province).

⁹⁰ [Uncertain Time: Precarious Schedules and Job Turnover in the US Service Sector – ILR Review](#)

Nurse Practitioners (NPs)

Nurse practitioners (NPs) are entrusted with the task of providing comprehensive health assessments and care to their patients.⁹¹ They work independently to diagnose conditions, prescribe medications, order diagnostic tests and treatments, evaluate treatments, and provide follow-up care. NPs deliver care across a range of settings, including primary and acute care, specialty-based advanced nursing practices, and stand-alone clinics. They work as part of multidisciplinary teams, autonomously performing activities within their scope of practice, and consulting with members of the health team on clinical practice.

In addition to their clinical responsibilities, NPs also play a vital role in health promotion, education, prevention, and rehabilitation. They may also support clinical specialties and participate in research initiatives, integrating research into nursing practice. NPs are involved in recommending policy changes related to health issues and therapeutic regimes based on evidence-based practice.

All NPs practicing in NL are licensed by the College of Registered Nurses of Newfoundland and Labrador (CRNNL) and those that work for Newfoundland and Labrador Health Services (NLHS) are members of the Registered Nurses' Union of Newfoundland and Labrador (RNUNL). NPs working in other sectors may be non-unionized or members of another union.

Current State Analysis

As of December 2022, there were 201 NPs practicing in NL, distributed by NLHS health zone as shown in Table 48. This includes all NPs registered at the CRNNL that are currently employed in NL. If the employer was "Outside of NL" or "Not Employed" in the data provided by the CRNNL, they were excluded from the analysis. In 2022, approximately 80% of the 201 NPs were working for the NLHS. The remaining 20% were either working in an educational institution, were self employed or identified "other" as their employer.⁹² Most NPs within the province graduated from Memorial University's (MUN) School of Nursing, which offers a Master of Science in Nursing (MScN) program with a Nurse Practitioner diploma stream.

⁹¹ [Job Class Profile \(gov.nl.ca\)](https://www.gov.nl.ca)

⁹² The "other" category is meant for employers within NL that are not NLHS.

Table 21: Nurse Practitioners by NLHS Zone⁹³

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2022 Supply	97	25	35	28	16	201

Family Care Teams

Currently, NPs in NL are employed in acute care, long-term care (LTC), and community settings, emergency departments (EDs), and other specialty program areas, such as urology, cardiology, nephrology, long-term care, MHA, or with the 811 HealthLine.⁹⁴ However, given GNL's recent shift towards interdisciplinary models of primary care through the expansion of Family Care Teams (FCTs) and leveraging the use of NP-led clinics, NL is projected to experience a significant increase in demand for NPs over the next 10 years.

Like other Canadian jurisdictions, NL is experiencing profound challenges with respect to patient attachment to longitudinal primary care. While estimates of the number of people without a family medicine physician vary, approximately 84,000 individuals have self-registered on GNL's unattached patient registry (i.e., Patient Connect NL as at February 2024), with approximately 44,500 waiting to be attached. To help meet the primary care needs of residents throughout the province, HCS announced plans to establish 35 FCTs in accordance with Health Accord NL Call to Action (CTA) 9.1.

These FCTs are composed of multi-disciplinary health professionals, including family medicine physicians, NPs, Registered Nurses (RNs), and an array of allied health professions who work together to meet GNL's primary health care needs in a community setting, with NP-led clinics as an important element. By embedding NPs within FCTs in a service delivery model that permits them to serve as Most Responsible Provider (MRP), FCTs can service patient rosters that are larger than those of family medicine physicians practicing independently – particularly in rural and remote areas. Under the blended capitation model (BCM), family medicine physicians will also have the ability to augment their community-based private practice by hiring or contracting NPs to perform patient care and deliver follow-ups. Under this model, NPs will remain salaried, although the services they provide can be billed to Medical Care Plan (MCP) via the physician.

⁹³ Includes all NPs employed in NL (NLHS and private sector). Excludes NPs employed outside of NL or not employed.

⁹⁴ [Provincial GNL Announces Steps to Increase Number of Nurse Practitioners - News Releases](#)

Through the continued expansion of the use and role of NPs in the provincial health system, it will be particularly important to ensure NPs are set up for optimal success at the outset. This includes ensuring all health care providers are practicing to their full scope and are supported by adequate support staff and structures. Likewise, the introduction of a new model of primary care provides an opportunity to offer greater flexibility and autonomy than has historically been permitted within traditional care settings to incentivize NPs to work in public, community-based care. Recognizing the critical role that NPs play in enabling this transition, it will be imperative that managers, other clinical staff, and patients alike respect NPs as independent clinicians. This recognition is essential to cultivate a positive working environment conducive to achieving GNL's health care goals in relation to patient attachment and improved access to primary care.

Education

MUN's NP program has historically admitted 20 NP students each year, with an average of 90 applicants annually from 2018-2022. During this time span, an average of 70% of graduates resided in NL, and 5% resided elsewhere, with the remaining 25% either graduating late or lost to attrition. Given the anticipated growth in demand for NPs, the program's capacity was increased to 40 seats, and required NL residency to be considered for admission in the 2022/23 academic year.

When this policy took effect, the program experienced a short-term decrease in applicants caused by out-of-province students no longer being eligible to apply. However, implementing this policy is expected to increase the number of graduates that remain in-province post-graduation in the long-term. Despite this, all 20 additional seats were filled in the first year of the policy taking effect which provides a promising outlook for the province's supply of locally trained NPs to address this workforce gap.

Health Accord NL Calls to Action

Several Health Accord CTAs carry implications for the supply and demand of NPs in NL:

- **CTA 8.1:** Develop and implement a formal Provincial Seniors Care Program to address the critical need of our population.
- **CTA 8.2:** Implement and support an integrated continuum of care to improve the effectiveness and efficiency of care delivery, improve health and social outcomes for older adults and older adults with disabilities, and support older adults to age in place with dignity and autonomy.

- **CTA 9.1:** Connect every resident of Newfoundland and Labrador to a FCT providing a central touchpoint of access and a continuum of care.
- **CTA 9.14:** Develop and implement a five-year plan for improvement in mortality rates for cancer, cardiac disease, and stroke over the next 10 years, led by the provincial programs for these disease entities.

Implementation of the Provincial Seniors Care Program through CTA 8.1, and the integrated continuum of care for older adults through CTA 8.2, has the potential to yield multiple benefits for the NL health system; for example EDs certified as “Senior Friendly” (without which, misdiagnoses and inappropriate care may be more frequent), and reduced demands for Alternate Level of Care (ALC) beds and resources (as many older ALC patients can return home or to a lower level of care with appropriate, geriatric-focused discharge planning).

Implications of these CTAs on the NP workforce include an expected increase in demand stemming from support teams that are to be embedded at frailty units at the three regional hospitals, as well as in Labrador. For the purpose of this Health Human Resources Plan (HHRP), the implementation of CTA 8.1 and CTA 8.2 is quantified as demand for a series of additional NP positions across each NLHS health zone.

Similarly, CTA 9.1 is likely to result in increased demand for NPs to meet GNL’s goal of providing every resident with equitable access to primary care through a FCT. As 45,400 NL residents are still waiting to be attached to a family medicine physician according to Patient Connect NL data, and many more are unable to access one in a timely manner, this points to an urgent need for more primary health care providers adopting an integrated approach that includes social supports and services. In shifting away from the physician-centric delivery models of the past, implementation of CTA 9.1 is likely to significantly increase demand for NPs. As such, Base Case Projections for NPs assume one-time demand-side additions in 2024 and 2025.

In addition, CTA 9.14 signals the need for a five-year improvement plan for cancer, cardiac disease, and stroke mortality rates over the next 10 years – led by corresponding provincial programs. This is aimed at improving access to services delivered by these programs. For the purposes of this HHR Plan, improved access to cancer, cardiac disease, and stroke services is represented by the construction of a new acute care and cancer care facility in Corner Brook. More specifically, quantitative analysis incorporates this CTA in the form of a

one-time, demand-side addition of three NPs in the Western Zone, intended to quantify future NP staffing needs at this new facility.

Workforce Initiatives

In August 2023, GNL ratified a new collective agreement with the RNUNL that established pay scales for NPs. This new agreement provides significant pay increases with a focus on permanent full-time employment. Through this latest round of negotiations, appropriate compensation was identified as being key to stabilizing the nursing workforce and getting nurses to remain in, or take, permanent full-time positions. In addition to these changes made to remuneration, hours of work, employee benefits and general working conditions, HCS has pursued an array of ongoing initiatives aimed at strengthening the supply of NPs given the aforementioned challenges with primary care attachment and efforts to expand FCTs:

- **Increased capacity in MUN's NP program:** Doubled program capacity from 20 to 40 seats at a cost of \$2.2M for the 2023/24 academic year.
- **NP student grant:** Students can receive grants of up to \$10,000.
- **Signing bonuses:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions, and tiered to address geographic considerations with an associated return-in-service of one or two years.
- **Steps to increase number of NPs in the health care system:** By embedding NPs in FCTs and introducing several NP-led clinics under the provincial health authority.
- **Family Care Team incentives:** Based on geographic location and range from \$20,000 to \$40,000, incentives are available for NPs (including new graduates, existing employees and retired employees) who commit to work within a FCT for a one-year return in service with an option to extend the incentive for a second year. An additional \$10,000 incentive is available for NPs who commit to completing advanced airway management training and provide coverage in a rural emergency department.
- **Additional benefits:** GNL recently announced a new child care initiative for health care professionals, and commitment to offering 24/7 mental health supports.

In addition to these programs, HCS had implemented the following one-time retention and recruitment incentives aimed at NPs:

- **Come Home Year Incentives:** NPs can receive \$60,000 for a three-year return-in-service agreement.

- **Retention Incentives:** Available to permanent or temporary NPs for a minimum of a one-year return-in-service commitment; ended on January 31, 2023.
- **Additional Signing Bonuses:** Offered to casual NPs to accept a full-time or part-time position in an 'area of need' with an associated return-in-service of one year; ended on January 31, 2023.
- **Double Rate Overtime:** Offered for vacation period for NPs; ended on January 31, 2023.
- **Reimburse Licensing Fees:** Available to retired NPs who wish to return to the workforce; ended on January 31, 2023.

The extent to which these workforce initiatives can be quantified in future forecasts of the supply of NPs is discussed in a subsequent section of this HHRP.

Stakeholder Engagement Insights

Five stakeholder focus groups were conducted to understand the experiences and perspectives of the current and future NP workforce:

- Registered Nurses' Union Newfoundland and Labrador (RNUNL)
- College of Registered Nurses of Newfoundland and Labrador (CRNNL)
- Memorial University (MUN) Faculty of Nursing and Centre for Nursing Studies (CNS) staff
- Newfoundland and Labrador Health Services (NLHS) Nursing Professional Practice Consultants
- Family Care Teams (GNL and NLHS Leadership)

In addition, 10 individuals responded to the focus group follow-up survey with additional insights. These stakeholder consultation activities yielded an array of qualitative insights pertinent to the development of NP workforce recommendations – summarized in Table 49 below. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, and may not be grounded in absolute fact.

Table 22: What We Heard from NP Stakeholders

Theme	Insights
Career Mobility	<ol style="list-style-type: none"> 1. The move to one category of NPs (e.g., generalist vs. family (all ages), adult, pediatric, etc.) should enhance the ability of NPs to move more seamlessly between positions according to stakeholders. This work is happening nationally and will harmonize the NP category of practice across the country. 2. When asked about career mobility opportunities in NL, stakeholders voiced that there are very few opportunities for NPs outside of a purely clinical role due to

Theme	Insights
	<p>CRNNL licensure requirements for practice hours. For example, NP faculty who teach the NP program or management positions that manage other NPs can claim currency hours; however, if that same faculty member is teaching the Bachelor of Science in Nursing (BScN) program or managing RNs, they cannot claim currency hours.</p>
Impact of FCTs	<ul style="list-style-type: none"> Stakeholders shared concerns that the transition towards FCTs may require NPs to undertake additional training to ensure they have all the competencies for community-based care (e.g., when moving from acute care). This could require continuing education to ensure competencies are maintained. It is perceived that the impact of FCTs will be positive for the NP workforce. Despite there being expected role changes which require ongoing professional development, there are very few legislative barriers impeding NPs from working to their full scope of practice. When asked about measures that need to be in place to set NPs up for success in FCTs, stakeholders shared NPs must be provided access to the provincial Electronic Medical Record (EMR) to improve efficiency, enable timely and accurate information, and document best practices to avoid unnecessary administrative burden.
Flexibility / Autonomy	<ul style="list-style-type: none"> A lack of flexibility and autonomy over scheduling is a primary factor causing full-time permanent NPs to choose casual employment, or to leave the public system altogether for private work due to the higher income, flexible work schedule, site of work, and control over daily work/tasks. It was voiced that there is too much involvement from managers in determining schedules, length of appointments, number of visits per day, type of visit, etc. There can be accountability without micromanagement. Stakeholders shared that a potential solution would be more flexible scheduling, including the appropriate use of virtual care and place of work (e.g., to increase coverage in rural areas). Ensuring leadership and managers are prioritizing nursing staff and involving them at the decision-making table are steps that will move current health care settings toward one where NPs feel heard, supported, and empowered.
Recruitment and Retention	<ul style="list-style-type: none"> Currently, it is perceived that there are inadequate support resources for NPs. Consistent and strong clerical and nursing support are critical to set NPs up for success. Likewise, it is perceived that there is a lack of support for professional development. To pursue advanced education opportunities such as the NP designation, many students are forced, and sometimes encouraged by managers, to resign their positions to accommodate their education/ training. This is problematic, as it deters others from seeking continuing education opportunities and creates an unpleasant experience for members of a highly valued and skilled health profession. The processes in place to support new hires are not sufficient to successfully enable their transition into the workforce. As a result, stakeholders highlighted that there is need for improved orientation, introduction of mentorship programs, supernumerary programs, and general additional support for new NPs.
Compensation	<ul style="list-style-type: none"> Prior to the recent new collective agreement, NP compensation in NL was the lowest in the country, and NPs were excluded from other funding models deployed in the province. Signed in August 2023, the new collective agreement outlines new pay scales to address the disparities in nationally competitive compensation. GNL's introduction of a Blended Capitation Model (BCM) for physician remuneration will be a positive development for the NP profession, as it provides

Theme	Insights
Data Tracking	<p>additional opportunities for salaried NPs to work in community-based primary care settings as part of an interdisciplinary care team.</p> <ul style="list-style-type: none"> Continued recruitment and retention incentives paired with improved compensation that is closer to the national average was shared by stakeholders as being the best method to fill primary health care positions for NPs.
Respect in the Workplace	<ul style="list-style-type: none"> Stakeholders shared that, despite there being several recruitment and retention incentives available for NPs, the progress tracking and evaluation of these initiatives to assess whether they have achieved their intended outcomes has often proven to be ineffective. There is a desire for out-of-the-box incentives, backed by firm timelines and real accountability to measure effectiveness.
Scope of Work	<ul style="list-style-type: none"> NPs are often leveraged as a support position, especially in rural and remote regions with minimal support staff. Managers and other clinical staff use them to fill gaps at their discretion instead of respecting the NP scope of practice, and responsibilities within their own caseloads. Stakeholders voiced the need for NPs to be respected and treated appropriately as independent practitioners. NPs often feel frustrated and undervalued, as they are orienting, training, and working alongside agency nurses who are making up to three times more in wages and are sometimes doing so while underqualified. There is a perception among NPs of being undervalued and undercompensated, at the expense of their own mental and physical health. As a result, stakeholders shared that they fear many are considering leaving their positions for a more flexible employment arrangement, a different employer or career, or early retirement. There are several factors impacting the intentions of NPs regarding their careers: many have reported feeling undervalued, unappreciated, being subject to an unsafe work environment, have had little to no work-life balance and flexibility, and face a lack of opportunities for professional development. These stressors have been shown in the literature to have a significant impact on turnover intentions. <ul style="list-style-type: none"> It is expected that all health care professionals will work to their full scope now and in the future as outlined in the Health Accord NL. Scope of practice for all NPs will continue to grow and evolve as determined by the CRNNL. Care models need to shift to better support NPs as they care for an increasingly complex and acute aging demographic. For example, there is a need for ample and appropriate core staffing and the ability to anticipate additional needs based on acuity forecasting.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary projections of the supply of and demand for NPs were developed based on historical practice patterns and trends. The following inflows and outflows were captured in the supply data received from the CRNNL:

- Inflows: migrations (international and interprovincial), school leavers (graduates from school who enter the workforce), re-entry
- Outflows: resignations

The supply includes all NPs registered at the CRNNL for which a location of work within NL was identified. If no location of work was indicated in the data provided by the CRNNL, they were excluded from the analysis.⁹⁵

However, some inflows and outflows were not directly captured in the data. For NPs from 2018-2022, there were individuals who were registered one year and not the next but were not labelled as a resignation in the data. These individuals were captured as "other outflows" in the analysis.

In addition, the only outflow captured in the data provided by the CRNNL was "resignations". Consequently, it is highly probable that retirements are also being captured within resignations.

These preliminary projections were then augmented, wherever possible, based on the availability of supporting data and analysis, to reflect inflight or recently implemented policy initiatives to form a baseline scenario.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 50 below outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for NPs, as well as any limitations or caveats of the data.

⁹⁵ The scope of this work was to identify the supply and demand of all nurses working in NL, not just public sector nurses. Thus, agency nurses who list NL as their place of work were included in the analysis.

Table 23: Data Sources for Nurse Practitioner Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of nurse practitioners, by zone, five-year age cohort, and gender from 2018-2022</p> <p>Inflows: Entries into the profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.)</p> <p>Outflows: Exits from the profession, split by reason for exit (retirement, emigration, other resignation)</p>	<p>Supply: Yes</p> <p>Inflows: Yes</p> <p>Outflows: Yes</p> <p>Source: CRNNL</p>	$\text{Supply Year } X = \text{Supply Year } X-1 + \text{four-year average inflows} - \text{four-year average outflows}$	<ul style="list-style-type: none"> Some inflows and outflows were not directly captured in the data. By comparing user IDs from year to year and between designations, other outflows were estimated. The only outflow captured in the data provided was "resignations". Thus, it's highly probable that retirements are also being captured within resignations.
Demand	<ul style="list-style-type: none"> 10 -year population projections, by five-year age cohort, gender, and zone Average per capita spending by age and gender for nine CIHI health care spending categories. Spending in other institutions, hospital and total health care spending are used to estimate growth in demand for NPs Average historical cost increases in health care spending. 	<p>Population projections: Yes</p> <p>Source: NL Department of Finance</p> <p>Health spending by category by age and gender:</p> <p>Source: CIHI</p> <p>Historical cost increases in health care spending.</p> <p>Source: CIHI</p>	$\text{Demand 2022} = \text{supply 2022} + \text{vacancies 2022}$ <p>Growth in demand (2023-2032) = 10-year population projections * the estimated change in average utilization * average real per person spending by age and gender</p> $\text{Demand Year } X = \text{Demand Year } X-1 * \text{growth in the number of people in each age category} * \text{average change in real spending per person} * \text{the change in utilization}$	<ul style="list-style-type: none"> Encounters with NPs are not captured by the CIHI POP Grouper Methodology. Thus, the weighted average inflation-adjusted health care spending (i.e., volumes) is used to forecast distribution of patients by age and gender across NL. Change in utilization estimated based on recent trends.

Preliminary Projections

This section provides the preliminary forecast estimates for NPs.

Table 24: Preliminary Supply Projections for Nurse Practitioners

Health Occupation	Starting supply (Dec. 2022)	Migrations (2023-2032)	School Leavers (2023-2032)	Re-Entries (2023-2032)	Resignations (2023-2032)	Retirements (2023-2032) ⁹⁶	Other Net Migrations (2023-2032)	Ending Supply (Dec. 2032)
Nurse Practitioners	201	15	183	23	10	19	-87	304

Where: Starting supply (Dec. 2022) + Migrations (2023-2032) + School Leavers (2023-2032) + Re-Entries (2023-2032) - Resignations (2023-2032) - Retirements (2023-2032) + Other Net Migrations (2023-2032) = Ending Supply (Dec. 2032)

In the preliminary projections, the supply of NPs is predicted to rise by approximately 52% over the forecast period. With the increase of NP seats in the province in the past five years, school leavers are predicted to be the most important driver of growth for the supply of NPs. These results vary by zone, as shown in Table 52 below.

Table 25: Regional Preliminary Supply Projections for Nurse Practitioners

Zone	2018 Supply	2022 Supply	2032 Supply	Percent Change in Supply 2018 vs 2022	Percent Change in Supply 2022 vs 2032
Eastern Urban	69	97	151	+41%	+56%
Eastern Rural	17	25	43	+47%	+72%
Central Zone	28	35	42	+25%	+20%
Western Zone	19	28	50	+47%	+79%
Labrador-Grenfell Zone	19	16	19	-16%	+19%
Total⁹⁷	152	201	304	+32%	+52%

The Western and Eastern Rural zones are predicted to see the largest increase in supply, with preliminary supply expected to rise 79% and

⁹⁶ For some health occupations, including NPs, the reason for exit from the profession could not be identified. Thus, retirements were estimated as a result of the flow through of ages (i.e., everyone who is 64 one year are assumed to be 65 the next and are predicted to eventually exit the workforce during the forecast period). In the data provided by the CRNNL, resignations were the only outflow captured. Resignations likely include exits due to retirements but, given that it isn't possible to identify the reason for exit in the historical outflow data, it is impossible to isolate those other exits due to retirement in the forecast. Thus, historical and forecasted resignations likely capture a significant portion of retirements. The retirements captured in Table 44 include only the retirements estimated from the flow through of ages.

⁹⁷ Due to rounding, the sum of the supply by zone may not perfectly match the total listed.

72%, respectively, between 2022 and 2032. While supply is predicted to increase in most zones, it is expected to decline in Labrador-Grenfell if historical supply trends continue in the future.

Table 26: Preliminary Demand Projections for Nurse Practitioners

Health Occupation	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Nurse Practitioners	201	48	249	289	+16%

Permanent vacancies are added to 2022 supply to estimate the starting demand. For the case of NPs, RNs, and LPNs, casual vacancies were removed from the demand estimates. For NPs, demand is estimated using data on health care spending from CIHI. To estimate the growth in health care spending in NL, a demographically driven health expenditure model was created. In this model, average spending was calculated across 40 age and gender cohorts. This model allows spending to be broken into several different components:

- The share of spending related to cost adjustments;
- The share of spending related to increased utilization in each age/gender cohort;
- The share of spending related to overall population growth; and
- The share of spending related to demographic aging.

To build this model, the following steps were undertaken:

Step 1: Allocate health care spending by category across the age/gender cohorts based on CIHI spending data.

Step 2: Calculate the average price adjustments based on CIHI health inflation (CPI) estimates. This is done to deflate average spending in each age/gender category to estimate volume increases (i.e., inflation adjusted spending).

Step 3: Estimate the age and gender adjusted real per person spending over the last decade to calculate how utilization has changed.

Step 4: Project health care utilization for the relevant spending categories based on past trends and discussions with subject matter experts.

CIHI identifies four places of work for NPs: hospitals, community, long-term care (LTC)/nursing homes, and other. These four places of work were mapped to three health care spending categories:⁹⁸

- Hospitals to spending on hospitals
- LTC/nursing homes to spending on other institutions
- Community and other to total health care spending

Utilization in hospitals is estimated to decline by 0.08% per year of the forecast in each age category to reflect expected productivity improvements. It is estimated that utilization in other institutions would decline by an average of 0.4% per year in each age category, reflecting an increased likelihood of aging at home. For health care spending in the province overall, utilization is predicted to increase by approximately 0.6% on average. Spending on overall health care is the sum of spending in all nine categories, which means the utilization impact varies slightly by age cohort and gender. Utilization projections were based on utilization trends since 1986.

Step 5: Project total volumes (i.e., inflation-adjusted spending) for hospitals, other institutions, and health care overall in each age/gender cohort. This is done by multiplying the number of expected people in each age/gender cohort each year by the average cost of an individual in that age/gender cohort. Volumes account for past utilization trends, the impact of aging, and population growth. Thus, the change in volumes reflects the true change in demand.

The following tables and accompanying descriptive text highlight the change in real per capita health care spending (i.e., volumes) over the past decade and over the coming decade. The total change in volumes is followed by a breakdown of the impacts of population aging, population growth and changes in utilization on changes in volumes. These tables are not cumulative; they simply highlight the breakdown of the impacts feeding into the growth in volumes.

Impacts over the past ten years

Table 54 below highlights the change in volumes (i.e., inflation-adjusted, or real, spending) over the past 10 years.

⁹⁸ The spending categories do not map one for one to the places of work. A best estimate of a mapping was thus conducted. Thus, four places of work had to be mapped to three health care spending categories (both community and other was mapped to “total health care spending”).

Table 27: Average Compound Annual Growth Rate (CAGR) in Volumes, 2012 to 2022

Spending Category	CAGR in Real Spending (i.e., Volumes) 2012-2022
Hospitals	0.8%
Other Institutions	2.1%
Total Health Care	1.2%

Excluding the effects of population growth, the overall numbers remained nearly identical for all three spending categories as population growth (in CAGR) was close to zero between 2012 and 2022. Table 55 below highlights the change in volumes over the last decade if the effects of population growth were not accounted for.

Table 28: Average CAGR in Volumes, Excluding Population Growth, 2012 to 2022

Spending Category	CAGR in Real Spending (i.e., Volumes) 2012-2022, Excluding Population Growth
Hospitals	0.8%
Other Institutions	2.2%
Total Health Care	1.2%

In all three categories, the majority, if not all, of the growth in volumes over the past decade was due to an aging population.

Impacts over the next ten years

Over the next 10 years volumes in the three relevant categories are predicted to grow in accordance with the numbers highlighted in Table 56 below.

Table 29: Average CAGR in Volumes, 2022 to 2032

Spending Category	CAGR in Real Spending (i.e., Volumes) 2022-2032
Hospitals	1.5%
Other Institutions	3.0%
Total Health Care	1.5%

For all three categories, 0.0% of the change in volumes is due to population growth. As mentioned in Step 4, utilization in hospitals is estimated to decline by 0.08% per year, utilization in other institutions

is predicted to decline by an average of 0.4% per year, and for health care spending overall, utilization is predicted to increase by approximately 0.6%. These utilization estimates were based on trends in utilization observed since 1986.

As with the past 10 years, population growth is not predicted to have any impact on volumes as population growth is predicted to remain close to zero from now until 2032.

The aging of the population is expected to have the following average impacts over the coming decade.

Table 30: Average Impact of Population Aging on the Growth in Volumes, 2022-2032

Spending Category	Impact of Population Aging, 2022-2032
Hospitals	1.6%
Other Institutions	3.4%
Total Health Care	0.9%

Step 6: Estimate the weighted average growth in volumes. As mentioned in Step 4, CIHI identifies four places of work for NPs. Table 58 summarizes the percent of NPs working in each setting in 2022 according to CIHI. These were the weights used to calculate the weighted average growth in volumes, which, in turn, was the growth rate applied to the demand for NPs.

Table 31: CIHI's Split of Nurse Practitioners by Place of Work in 2022

	Hospital	Community Health	Nursing Home/LTC	Other
Nurse Practitioners	41%	33%	9%	17%

The formula used to estimate the weighted average (WA) growth in volumes in health care for NPs (i.e., the weighted average growth in inflation adjusted spending for NPs) is as follows:

Weighted Average

$$\begin{aligned}
 & \frac{(\text{Hospital Weight} \times \text{Hospital Volumes}) + (\text{Community Weight} \times \text{Total Health Care Volumes}) + \\
 & \quad ((\text{LTC Weight} \times \text{Other Institution Volumes}) + (\text{Other Weight} \times \text{Total Health Care Volumes}))}{\text{Hospital Weight} + \text{Community Weight} + \text{LTC Weight} + \text{Other Weight}}
 \end{aligned}$$

Over the entire forecast period, demand for NPs in NL is expected to increase by approximately 16%. Table 59 shows the predicted annual increase in health care spending, which in this case is used as a proxy to estimate growth in demand by zone for the forecast period.

Table 32: Annual Regional Growth in Demand for Nurse Practitioners

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban Zone	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.7%	1.8%	1.7%
Eastern Rural Zone	1.5%	1.4%	1.5%	1.6%	1.5%	1.5%	1.3%	1.3%	1.5%	1.2%
Central Zone	1.2%	1.3%	1.3%	1.4%	1.2%	1.2%	1.1%	1.1%	1.3%	1.0%
Western Zone	1.4%	1.4%	1.4%	1.3%	1.4%	1.3%	1.4%	1.3%	1.2%	1.0%
Labrador-Grenfell Zone	1.0%	1.3%	1.2%	1.2%	1.3%	1.2%	1.2%	1.3%	1.3%	1.2%
Newfoundland and Labrador	1.5%	1.5%	1.6%	1.6%	1.6%	1.5%	1.5%	1.4%	1.5%	1.4%

Table 59 above suggests that the growth in demand is expected to lie between one and two percent for all zones, with a slightly greater increase in demand predicted for the Eastern Urban zone as the population is predicted to rise most in that zone.

Table 33: Preliminary Gap Analysis for Nurse Practitioners

Specialty	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Nurse Practitioners	201	249	48	304	289	-15 (slight oversupply)	-63

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022.

Base Case Projections

The CTA and workforce initiatives listed below are reflective of stakeholder feedback. In addition, sufficient quantitative data existed for their impact to be incorporated in supply and demand projections. Overall, the policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

- **Demand Analysis:**

- NPs will be embedded in the 35 FCTs throughout the province, along with other health care professionals, to address the issue of unattached patients in the province (i.e., CTA 9.1).
- At the time of writing, NLHS had completed planning for 14 FCTs that considered the unique needs of specific communities with respect to population demographics and access to existing primary health services.
- The unmet demand from the already planned FCTs would be reflected in the vacancies.
- The proposed FCTs for which staffing plans are not yet developed/ finalized reflect the unmet need for family medicine physicians above and beyond the vacancies. Demand modelling extrapolated the resourcing requirements identified in planned FCTs to estimate the needs for the remaining FCTs based on communities with comparable populations and geographic catchment areas.
- The new acute care and Cancer Care Western facility in Corner Brook will require NPs (i.e., CTA 9.14).
- Establishment of frailty unit support teams including NPs at each of the three regional hospitals in Eastern-Urban Zone, Central Zone, and Western Zone (i.e., CTA 8.1 and 8.2).

- **Supply Analysis:**

- The implications of doubling the capacity of MUN's NP program from 20 to 40 seats in the 2023/24 academic year.

Table 61 highlights the assumptions used to help quantify base case items for NPs.

Table 34: Base Case Assumptions for Nurse Practitioners

Base Case Item	Workforce Impact Assumptions	Impact on Headcount
Health Accord NL CTA Demand 8.1 and 8.2: Provincial Seniors Care Program	<ul style="list-style-type: none"> Embedded within frailty unit support teams (one team at three Regional Hospitals) in addition to Labrador 	<ul style="list-style-type: none"> Eastern Urban <ul style="list-style-type: none"> 2024: +3 Central <ul style="list-style-type: none"> 2026: +1 Western <ul style="list-style-type: none"> 2025: +1 Labrador-Grenfell <ul style="list-style-type: none"> 2026: +1
Health Accord NL CTA Demand 9.1: Integration into Family Care Teams	<ul style="list-style-type: none"> One time – 50% in 2024 and 50% in 2025 At reporting, 19 FCTs have been funded, of which 14 are operational or partially operational. However, NLHS outlined the composition of 12 FCTs planned for geographies across the province. Thus, for the remaining 23 teams, the average staffing ratio for similar teams was applied. Outliers were excluded from averages Only the impacts of the 23 FCTs for which data was not available at reporting were included in the base case 	<ul style="list-style-type: none"> Eastern Urban <ul style="list-style-type: none"> 2024: +8 2025: +8 Eastern Rural <ul style="list-style-type: none"> 2024: +4 2025: +4 Central <ul style="list-style-type: none"> 2024: +16 2025: +16 Western <ul style="list-style-type: none"> 2024: +9 2025: +9 Labrador-Grenfell <ul style="list-style-type: none"> 2024: +10 2025: +10
Health Accord NL CTA Demand 9.14: New acute care and Cancer Care Western facility in Corner Brook	<ul style="list-style-type: none"> One-time addition when the facility opens in June 2024 	<ul style="list-style-type: none"> Western <ul style="list-style-type: none"> 2024: +3
Doubled the capacity of MUN's nurse practitioner program from 20 to 40 seats in the 2023-24 academic year	<ul style="list-style-type: none"> The three-year program launched in the 2023-24 academic year. The first cohort of 10 full-time (FT) students is expected to graduate in May 2026, with an attrition rate of 11.4% translating to five additional FT students. The first cohort of 30 part-time students (PT) is expected to graduate in May 2027, with an attrition rate of 25% translating to 15 additional PT students. Over the last five academic years, on average 70% (14 additional) students are PT and 30% (6 additional) are FT 	<ul style="list-style-type: none"> Eastern Urban: <ul style="list-style-type: none"> 2026: +2 2027: +8 2028 onwards: +8 Eastern Rural: <ul style="list-style-type: none"> 2026: +1 2027: +2 2028 onwards: +2 Central: <ul style="list-style-type: none"> 2026: +1 2027: +3 2028 onwards: +4 Western: <ul style="list-style-type: none"> 2026: +1 2027: +2 2028 onwards: +2 Labrador-Grenfell: <ul style="list-style-type: none"> 2026: +0.4 2027: +1

Base Case Item	Workforce Impact Assumptions	Impact on Headcount
	<ul style="list-style-type: none"> • The plan is to allocate graduates by zone based on the current distribution of nurse practitioners in the province. 	<ul style="list-style-type: none"> ◦ 2028 onwards +1

Table 62 summarizes the annual quantitative impacts for each of the base case items included in the NP analysis.

Table 35: Annual Quantitative Impacts of the Base Case Items for Nurse Practitioners

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Doubled capacity of MUN's NP program in 2023-24	0	0	0	4	21	37	53	68	84	100
Total Supply Impacts	0	0	0	4	21	37	53	68	84	100
Health Accord NL CTA 8.1 and 8.2: Provincial Seniors Care Program	0	3	4	6	6	6	6	6	6	6
Health Accord NL CTA 9.1: Integration into Family Care Teams	0	48	96	96	96	96	96	96	96	96
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	0	3	3	3	3	3	3	3	3	3
Total Demand Impacts	0	54	103	105						

The items in Table 62 above highlight the annual quantitative impacts of each base case item.

Table 36: Final Annual Provincial Gap Analysis for Nurse Practitioners

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	201	210	221	232	247	274	301	327	353	379	404
Demand	249	253	310	363	369	373	377	381	385	390	394
Gap	48	43	89	131	122	99	76	54	32	11	-10
Gap as a Percent of Supply	24%	20%	40%	56%	49%	36%	25%	17%	9%	3%	-2%

In the first few years of the forecast, the gap between supply and demand is rising due to the timing of the different supply and demand base case items. The impact to demand of incorporating NPs into FCTs will be realized before the impact of doubling the capacity of MUN's NP program in 2023/24. Overall, the 2032 gap between supply and demand rises from an oversupply of -15 (the preliminary gap estimated for 2032 as highlighted in Table 35) to an over supply of 10 as the base case items are incorporated.

Despite there being a slight oversupply by the end of the forecast period, we must acknowledge the significant gap projected for this workforce in one to two-years time. The following section highlights the workforce recommendations proposed to help GNL in closing this gap in the short- and medium-term.

Workforce Recommendations

As discussed above, several health system transformation priorities and initiatives carry significant implications for both the demand and supply of NPs in NL. The adoption of alternatives to physician and hospital-centric models of care towards the provision of collaborative, interdisciplinary team-based care will increasingly utilize various nursing disciplines to enable success. In addition, the creation of a Provincial Seniors Care Program is expected to further increase demand for NPs.

The following recommendations detailed within Table 64 address the projected deficit of NPs that is expected to peak in 2025 and eventually stabilize by the end of the forecast period in 2032. The primary strategy in the short- and medium-term is to ensure the retention of NPs within the province given growing competition from other provinces.⁹⁹ These recommendations seek to complement or enhance the steps already taken by HCS and NLHS to strengthen the NP workforce, which include increasing capacity in MUN's NP program, and exploring a wide range of financial incentives to address recruitment and/or retention.

Table 37: Nurse Practitioner Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Demand for NPs		
NP-1	Recruit / Retain	<p>Embed NPs in Community Family Medicine Practices with Team-Based Care:</p> <ul style="list-style-type: none"> Given the potential impact of FCTs in resolving the challenge of unattached patients in the province and supporting the provision of timely, comprehensive, and coordinated care,

⁹⁹ [Nurse practitioner announcement leaves family medicine physicians feeling devalued, disrespected | CBC News](#)

ID	Theme	Recommendation and Potential Impact
		<p>GNL should seek additional opportunities to embed NPs within existing community-based family medicine practices (including independent private practices) to support team-based care delivery.</p> <ul style="list-style-type: none"> Under BCM, family medicine physicians will have the ability to augment their practice by hiring or contracting NPs to assist with patient care and delivering follow-ups. NPs employed in these settings will remain salaried but will be attached to family medicine physicians for billing purposes and can carry out MRP roles. This team-based approach to community-based family medicine carries similarities with FCTs, where NPs work to their full scope of practice and collaborate in patient care. While current policy direction remains that NPs working in primary care settings are salaried, it is recommended that GNL explores the use of alternative salaried funding options to support NPs to practice at their full scope, in addition GNL should explore creating alternative employment options for those who may otherwise seek casual work or not to practice. This approach recognizes GNL's policy position and preferences as well as the current realities of the nursing workforce. Under BCM, family medicine practices can expand their patient roster by up to 900 patients per NP. Based on the recommendations for Family Medicine Physicians (FP-2), the application of relatively conservative assumptions reveals the opportunity to off-set demand for family medicine physicians through team-based care. A similar assumption may be applied to RNs to off-set demand for NPs through the inclusion in the team-based care. For example, if 25% of care teams employ an RN, the NP can focus their work on unique NP requirements, this could translate to each NP having 25% more capacity to care for patients, increasing the potential patient roster to 1,125 patients per NP to translate to approximately two NPs that GNL would not need to recruit. In addition to promoting recruitment, this further supports recommendation NP-4 to promote the career pathway for RNs to NPs by including RNs in the model of care and encouraging all team members to work to their full scope within the community care setting to improve job satisfaction. HCS and NLHS should leverage existing governance and organizational structures (e.g., the Family Practice Renewal Program and Primary Health Care Strategic Health Networks) as well as affiliation agreements with community-based family medicine physicians and NPs to identify and implement opportunities to strengthen team-based care.
NP-2	Rethink / Automate	<p>Reduce NPs' Administrative Burden:</p> <ul style="list-style-type: none"> It is assumed that NPs in community family medicine practices engaging in team-based care models will have a similar administrative burden as family medicine physicians who spend an average of 10.8 hours per week on administrative tasks according to a survey administered by the Newfoundland and Labrador Medical Association (NLMA). This analysis is extensible to NPs, who share similar responsibilities and associated administrative burden of documenting patient care activities, prescription and referral management. Approximately half this time is believed to be inefficient (i.e., eliminated without negative impact, streamlined through improved processes or technology, or delegated to another health occupation). Reducing administrative tasks will contribute to improved job satisfaction, work-life balance, and by extension support the retention of NPs. NPs can focus working hours on the delivery of direct patient care. However, an absence of data on the relationship between administrative burden and retention means it is not possible to quantify implications to supply. Providing financial support to address administrative challenges could potentially free up more time for NPs to focus on patient care and achieve a better work-life balance. This could also enhance the attractiveness of the NP role in NL, while reducing burnout and the risk of NPs leaving the field. These advantages collectively contribute to improving access to health care. The College of Family Medicine Physicians of Canada has

ID	Theme	Recommendation and Potential Impact
<p>recommended the following steps to reduce administrative burden, which can be leveraged for NPs and other health occupations within the province:¹⁰⁰</p> <ul style="list-style-type: none"> ○ Dedicated funding must be targeted to projects that: <ul style="list-style-type: none"> ▪ Identify and eliminate unnecessary forms. ▪ Simplify forms or reduce unnecessary aspects of forms where elimination is not possible. ▪ Fairly compensate physicians for filling out forms that cannot be eliminated or simplified. ▪ Offer funding for the administrative staff needed to conduct this work. ○ Federal funding should be earmarked to pilot projects within the provinces/territories to employ medical scribes within family practices and measure their effectiveness and impact. ● Initiatives to reduce administrative burden of similar roles have been conducted and have successfully reduced administrative burden. For example, the Province of Nova Scotia simplified the use of forms for physicians. To date, more than 100,000 hours have been saved from actions fully implemented and measured.¹⁰¹ ● Similar to family medicine physicians, reasonable assumptions can be applied to quantify the NP resources that could be repurposed to meet the expanding needs of the patient population and thereby offset recruitment to meet the projected increase in demand. ● Reducing administrative burden has the potential to offset demand for approximately 2.5 Community Family Medicine Practices assuming: <ul style="list-style-type: none"> ○ 49 working weeks per year and 40 hours of clinical hours per week; ○ 49% of administrative burden can be relieved through elimination, automation, or delegation; and, ○ 17% of freed-up NP time is dedicated to taking on new patients. 		
Supply of NPs		
NP-3	Rethink	<p>Leverage Experienced NPs in Recruitment, Coaching, Mentorship and Education:</p> <ul style="list-style-type: none"> ● Within the new collective agreement for nursing, the importance of the role of the preceptor and mentorship was identified. As part of this agreement, GNL committed to establishing a Mentorship Program Pilot Project in partnership with NLHS to support nurses transition to new practice environments by April 1, 2024. ● It is recommended that the pilot leverage experienced NPs in recruitment initiatives, particularly in support of growing a pipeline from RNs to NPs and for retaining NPs within the public system; use current NPs to show other nursing professions the roles and opportunities available to them. ● Create opportunities for NPs who are approaching retirement to work in coaching, mentorship, and education capacities, to not only help retain them in the health care system longer but also to preserve knowledge transfer between less experienced and more tenured nurses. ● Leverage existing programs provided across the country to equip NPs practicing in NL with mentorship and coaching skills.^{102,103,104} By increasing the types of roles available for NPs, this will impact the workforce skills rather than meet supply and demand challenges. ● All roles for NPs related to coaching, mentorship and education will aid in maintaining competencies for the incoming NPs. This will also demonstrate opportunities for career progression within the NP field. Retired or resigned NPs can be recruited in these roles to aid in upskilling the incoming workforce.
NP-4	Recruit	<p>Promote Career Pathways from RN to NP:</p> <ul style="list-style-type: none"> ● RNs are seeking opportunities to elevate their career, opting at times for opportunities outside of the public sector (e.g., agency nursing). Instead of losing these experienced

¹⁰⁰ [Transforming the Foundation of Canada's Health Care System \(cfpc.ca\)](https://www.cfpc.ca/transforming-the-foundation-of-canadas-health-care-system)

¹⁰¹ [Reducing physician administrative burden | Doctors Nova Scotia \(doctorsns.com\)](https://www.doctorsns.com/reducing-physician-administrative-burden)

¹⁰² [Mentorship Package - FINAL June 27 2019.pdf \(rnao.ca\)](https://www.rnao.ca/mentorship-package)

¹⁰³ [Preceptor-Mentor Training Program - The Canadian Nurse Educator Institute \(CNEI\) \(casn.ca\)](https://www.cnei.ca/preceptor-mentor-training-program)

¹⁰⁴ [Mentorship Program - Canadian Nurses Association \(cna-aiic.ca\)](https://www.cna-aiic.ca/mentorship-program)

ID	Theme	Recommendation and Potential Impact
		<p>nurses, GNL has an opportunity to support and encourage these RNs to advance their nursing careers by becoming NPs.</p> <ul style="list-style-type: none"> • Through recognizing their contributions to the provincial medical workforce, it is recommended that continued financial incentives, educational bursaries, and support from career advisors to promote career progression to NPs be implemented to help retain nurses in the public sector. • Some innovative strategies seen in other Canadian and United States jurisdictions include offering accelerated NP programs, bridging programs, loan forgiveness programs in exchange for return-in-service agreements to work in underserved areas, in addition to a variety of online curriculum options. • NPs practicing in NL currently have one of the highest scopes of practice in Canada: they can practice autonomously, prescribe medications, order diagnostic tests, and refer patients to specialists without needing physician oversight. This expanded role allows NPs to enhance their skills, leading to increased job satisfaction and offering opportunities for career development. • Making the NP career pathway more attractive to RNs can be achieved by ensuring that NP compensation is aligned with other provinces. Fair and equitable compensation that reflects the increased scope of practice would attract more aspiring NPs to the profession. <ul style="list-style-type: none"> ◦ Despite receiving higher compensation in the last round of collective bargaining that took place in August 2023, there was recognition that additional bargaining needs to be conducted to evaluate compensation further, including the evaluation of the Job Evaluation System (JES) classification levels of NPs within the province. • In Canada, NPs are the fastest growing nursing designation (growth of 10.7% from 2020 to 2021)¹⁰⁵ indicating a desire for RNs to pursue the RN to NP career pathway. • Although RNs who train to become NPs takes individual RNs from the RN workforce, it provides a retention strategy to keep nurses – at all levels – within the public sector workforce. • Quantifying the potential impact of promoting career pathways for RNs on the NP workforce is difficult. If GNL continues to focus on RN recruitment strategies and specifically recruiting into the NP program, then it can reasonably expect to increase its NP applicant pool and continue to fill the program. This may result in considering the further addition of seats in the NP program.
NP-5	Recruit	<p>Support NP Students During their Studies, through Graduation, and Obtaining Licensure:</p> <ul style="list-style-type: none"> • As several years of prior nursing experience is a prerequisite for the NP program, prospective NP students often must leave their current positions or reduce their overall number of hours worked to pursue their advanced degree program. • Nursing stakeholders shared that this often poses a barrier to entry into the profession, and may limit students' abilities to graduate on-time or maintain their status as a full-time student. • Offering greater flexibility for NP students to maintain their employment as RNs while completing their studies may decrease the financial barriers associated with the program. This may include guaranteeing approved leave while completing their clinical placements, or increasing scheduling flexibility (as outlined in RN-4) to enable those students to better manage their schedules around classes and other clinical responsibilities. • To practice in the province, NPs must meet all licensure requirements, including passing the licensing exam, and maintain a current license (including interim licenses).¹⁰⁶ • Licensing exams are currently offered two times throughout the year (May and October), decreasing the opportunities and flexibility for quick entry to practice. Continuing to offer the Canadian Nurse Practitioner Examination (CNPE) with a virtual option and flexible timing to align with the increase in demand and supply of NPs can increase their entry to

¹⁰⁵ <https://www.cna-aiic.ca/en/nursing/regulated-nursing-in-canada/nursing-statistics>

¹⁰⁶ [standards-of-practice-for-rns-and-nps.pdf \(crn-nl.ca\)](https://www.crn-nl.ca/standards-of-practice-for-rns-and-nps.pdf)

ID	Theme	Recommendation and Potential Impact
		<p>practice. For example: If two additional dates or flexible dates were offered, NPs may be able to enter practice up to five months earlier.</p>
NP-6	Recruit	<p>Consider Creating Geriatric Education Curriculum for NPs:</p> <ul style="list-style-type: none"> With the announcement regarding the province's plan for improving Senior Care through Centres of Excellence (CoE) in Aging,¹⁰⁷ the Health Accord outlines the need for 60 geriatric-educated NPs who will be distributed across regional centres and FCTs. The MUN NP program is the most important driver of growth of the supply of NPs for the province. Recognizing this critical source of supply, GNL has increased the number of seats in the NP program from 20 to 40 starting in 2023/24. As the current NP curriculum has shifted away from a specialized approach, NP graduates over the next five-years are expected to be generalists. Given the high expected demand for NPs in Senior Care in the province in the short- and medium- term, it is recommended that GNL supports the development of a training program specific to geriatrics for NPs, similar to the plans for a new Geriatric Medicine Training Program for family physicians.¹⁰⁷ This training could be delivered concurrently to NP education or post-graduation as continuing education to rapidly upskill the current NP workforce. This program would provide NPs with additional knowledge and skills needed to provide high-quality care to older adults, which will improve health care outcomes, improve quality of life and help enable seniors to maintain their independence longer. By implementing this program, the current supply of NPs within the public system should be sufficient to account for the 60 geriatric-specialized NP positions required to staff these CoEs across the province.
NP-7	Recruit	<p>Promote Enticing NP Career Options in Rural and Remote Areas:</p> <ul style="list-style-type: none"> As noted above, HCS implemented retention and recruitment bonuses aimed at NPs. Data measuring the outcomes since the implementation of the bonuses is not available. However, if a similar uptake is seen as with family medicine physicians, there is potential for the Come Home Year Incentives, Retention Incentives, and Signing Bonuses to impact the supply of NPs. Despite these incentives, there remains an existing challenge with recruiting NPs within rural areas of the province. Note there are limited specific incentives or roles in rural areas. To promote rural practice settings and roles, GNL can consider creating specific roles for NPs to support the delivery of care in rural and remote areas (e.g., Labrador) by enabling them to practice to their full scope as they manage care for rural areas from a hub area leveraging virtual technology for care. Virtual care can replace a portion of the visits, such as routine follow-ups or coverage by another NP (i.e., if the primary care provider is unavailable). This program can entice NPs as it will be located in more populated areas that typically present fewer recruitment challenges, but it will enable the NP to be responsible for the coverage of a rural area and continue to provide NP-led primary care when there are absences (e.g., leave of absence, vacation, etc.). Quantifying the potential impact of these specific recruitment strategies in rural areas is difficult; however, it can be directly linked with the number of unmet vacancies that these types of roles would directly target. For example, currently there are eight NP vacancies related to rural and remote primary care in the Labrador-Grenfell zone. Directly recruiting into these roles with an alternate care model can fill all vacancies with the appropriate recruitment strategies.¹⁰⁸

¹⁰⁷ [Provincial Government to Improve Senior Care with Centres of Excellence in Aging - News Releases](#)

¹⁰⁸ Nurse practitioner vacancy data shared by Department of Health and Community Services on April 1st, 2023

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> • Note there has been research conducted by the Canadian Association for Rural and Remote Nursing (CARRN) which highlights the types of roles NPs can play in rural and remote areas.^{109,110} • Measures have been taken by the Government of Alberta to educate the population in rural and remote areas about the role of the NP, further promoting the credibility and the use of this type of resource, by patients directly and in physician clinics.¹¹¹ Highly valuing the role in these communities has led to the increased retention of NPs in rural and remote areas.

¹⁰⁹[CARRN RR discussion doc final LR-2.pdf](#)

¹¹⁰[CARRN RR framework doc final LR-2 1.pdf](#)

¹¹¹[Nurse Practitioners in Rural and Remote Communities - Rural Health Professions Action Plan \(rhpap.ca\)](#)

Registered Nurses (RNs)

Registered nurses (RNs) are responsible for providing direct patient care to patients across the provincial health and social services system. Duties may include assessment, evaluation, and implementation of patient care plans, often as part of highly collaborative interdisciplinary health care teams. RNs support patients with care, comfort, and nurturing, in addition to maintaining accurate health records and administering medications and treatments, and educating and counselling patients on their diagnoses, procedures, treatments, and therapies. RNs are typically staffed on a shift basis and may be assigned as an "in-charge nurse" or team leader.

In Newfoundland and Labrador (NL), RNs are categorized in various levels based on Job Evaluation System (JES): Registered Nurse I, Registered Nurse IB, Registered Nurse IC, Registered Nurse II, Registered Nurse IIC, Registered Nurse IID. Additional RN classifications in NL based on focus disciplines include Community Health RN (I and II), Disease Control RN Specialist, Infection Control RN, Public Health RN (I and II) and Psychiatric RN (I, II, IIB, IID).

RNs practicing in NL must, at a minimum, hold an undergraduate degree or three-year diploma in nursing, are licensed by the College of Registered Nurses of Newfoundland and Labrador (CRNNL). RNs practicing in certain disciplines may also require additional certifications, such as a Canadian Nurses Association post-basic certification in Psychiatric and Mental Health Nursing. Additionally, RNs that are employed by Newfoundland and Labrador Health Services (NLHS) are required to be members of the Registered Nurses' Union of Newfoundland and Labrador (RNUNL) by their employer.

Current State Analysis

As of December 2022, there are 5,611 RNs practicing in NL, distributed by NLHS health zone per Table 65. This includes all RNs registered at the CRNNL that are currently employed in NL. If the employer was "Outside of NL" or "Not Employed" in the data provided by the CRNNL, they were excluded from the analysis. In 2022, approximately 90% of the employed RNs working within NL were working for the NLHS. The remaining 10% (approximately 600 RNs in 2022) were either working in an educational institution, were self employed or stated "other" as their employer.¹¹² In addition to drawing from Memorial University's (MUN) School of Nursing, Centre for Nursing Studies (CNS), and Western Regional School of Nursing, GNL also recruits from across Canada, and sources Internationally

¹¹² The "other" category is meant for employers within NL that are not NLHS.

Educated Nurses (IENs) through various international recruitment missions and other initiatives (see **Workforce Initiatives** section below).

Table 38: Registered Nurses by NLHS Zone¹¹³

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2022 Supply	3,105	642	709	821	335	5,611

As of the 2023-2024 academic year, there are currently 363 registered nursing seats in the province. MUN's Faculty of Nursing St. John's campus has 53 seats in the four-year Bachelor of Science in Nursing (BScN) program, and 32 seats in the accelerated program. The Gander, Grand Falls-Windsor, and Happy Valley-Goose Bay satellite campuses have 24, 28, and 20 seats, respectively. The CNS program in St. John's has 137 seats, while the Western Regional School of Nursing in Corner Brook has 61 seats in the four-year BScN program, and eight seats in the accelerated program.

Key Workforce Trends Impacting the Recruitment and Retention of RNs in NL

The nursing workforce in NL is facing a complex set of challenges, staffing shortages have strained a health care system that was already facing the growing demands of an aging population, increased need for primary care capacity, and the threat of future public health emergencies. Stakeholders believe there to be a trend of exiting employees and full-time staff moving to casual positions which may be exacerbating staffing shortages and adversely affecting employers' ability to provide comprehensive health services in the province.

One of the main challenges experienced by the RN workforce in NL is casualization, becoming popular trends amongst new graduates and established professionals alike. As of October 2022, casual nurses represented 26% of the RN workforce in the province, and NL has a higher proportion of casual RNs than any other Canadian province or territory.¹¹⁴ Nurses shared that one of the outcomes of the staffing shortage and the resulting increase in workloads and stress has been the loss of permanent full-time nurses to casual positions. As a result, 90% of casual employees reported that they work casual by choice and prefer to work in a casual position.¹¹⁴

¹¹³ Includes all RNs employed in NL (NLHS and private sector). Excludes RNs employed outside of NL or not employed.

¹¹⁴ [Nursing Workforce Final With Appendix.docx \(gov.nl.ca\)](https://www.gov.nl.ca/nursing-workforce-final-with-appendix.docx)

At one time there was a perception that casualization is a generational issue. Per recent ThinkWell Nursing Workforce Research, 69% of MUN's (BScN) students who were surveyed cited a desire to have a better work-life balance, and 46% plan to pursue casual positions because of a fear of being denied leave and wanting time off for family and other commitments.¹¹⁴ However, 20% of the full-time permanent nurses surveyed indicated that they intend to leave their permanent position to work casual.

Nurses are being drawn to casual positions for a variety of reasons, but the most significant motivator is to regain control over their scheduling and achieve a better work-life balance. The desire for flexibility is most often tied to a need to achieve work-life balance, to safeguard mental health and avoid burnout, or out of necessity due to child care and/or eldercare responsibilities.¹¹⁴

Another emerging concern in NL expressed by stakeholders is their belief that the impact of agency or travel nursing on the RN workforce is growing, as they perceive that RNs are being drawn out of the public system in high volumes. As health care staffing shortages continue within the province, the utilization of agency or travel nurses has seen a corresponding rise. These nurses, employed by private agencies and contracted by the public system, are hired to fill staffing gaps and provide relief for full-time nursing staff. The appeal of considerably higher pay and greater flexibility makes agency or travel nursing an attractive option, particularly for younger nurses.¹¹⁴ According to the most recent research, 34% of BScN students surveyed expressed intentions to work for a travel agency right after graduating.¹¹⁴

However, this has sparked frustration and feelings of being undervalued amongst existing RNs, who find themselves responsible for training agency nurses which are often earning significantly more while sometimes lacking the necessary qualifications. Beyond this wage disparity, stakeholders shared the tension between permanent nursing staff and agency nurses is further exacerbated when they are awarded priority shifts and necessitates permanent staff members to float to unfamiliar floors because of contractual clauses (see Table 66). The net result is a notable decline in the morale of full-time nursing staff, illustrating the detrimental impact of continued agency nurse utilization on GNL's nursing workforce recruitment and retention efforts.

Additionally, the ThinkWell report highlights opportunities to reduce non-nursing duties. The responsibility of non-nursing tasks detracts from a nurse's ability to provide quality care and manage their workload¹¹⁴. Although these tasks could be delegated to other health

care workers, nurses are often required to perform them due to staffing shortages. These tasks include clerical work and operational activities and non-clinical patient-related activities. It is necessary to decrease the amount of clerical work for RNs so that they can concentrate on providing quality care to patients.

To bridge the projected gap of RNs within the system by 2032, GNL should invest in opportunities beyond compensation, such as increasing flexibility in scheduling and improving work-life balance, to incentivize agency nurses to re-join the public system and casual registered nurses to take permanent full-time positions. This includes having more autonomy over their schedules, access to time off to support child care and elder care responsibilities and preventing burnout through prioritizing employee mental health. With these initiatives in place, the public system will become a more attractive employer for RNs who are entering the workforce directly from university or from the private sector, while retaining the province's existing supply of experienced, dedicated RNs with the skills to provide high quality, safe, timely public health care.

Health Accord NL Calls to Action

Several CTAs from Health Accord NL carry implications for the supply and demand of RNs in NL (see Base Case Projections and Table 79 below for further detail):

- **CTA 9.1:** Connect every resident of Newfoundland and Labrador to a Family Care Team (FCT) providing a central touchpoint of access and a continuum of care.
- **CTA 9.13:** Renew hospital services by improving coordination and flow of health and social system information between hospitals and the community and by maximizing the use of integrated digital technology and information systems.
- **CTA 9.14:** Develop and implement a five-year plan for improvement in mortality rates for cancer, cardiac disease, and stroke over the next 10 years, led by the provincial programs for these disease entities.

CTA 9.1 is likely to result in increased demand for RNs to meet GNL's goal of providing every resident with equitable access to primary care through a FCT. As 45,400 NL residents are still waiting to be attached to a family medicine physician according to Patient Connect NL data, and many more are unable to access one in a timely manner, points to an urgent need for more primary health care providers adopting an integrated approach that includes social supports and services. In shifting away from physician-centric delivery models of the past, implementation of CTA 9.1 is likely to significantly increase demand for

RNs. As such, Base Case Projections for RNs assume one-time demand-side additions in 2024 and 2025, with headcount varying across NLHS health zones.

Like many other health care professions in NL, RNs can anticipate multiple benefits from implementation of CTA 9.13. Through the implementation of a new provincial HIS and ICM system, visibility into RN workloads will be improved, and RN productivity will be increased through streamlined workflows.

Lastly, CTA 9.14 signals the need for a five-year improvement plan for cancer, cardiac disease, and stroke mortality rates over the next 10 years – led by corresponding provincial programs. This is aimed to achieve improved access to services delivered by these programs. For the purposes of this HHRP, improved access to cancer, cardiac disease, and stroke services is represented by the construction of a new acute care and cancer care facility in Corner Brook. Expected to open in June 2024, quantitative analysis incorporates this CTA in the form of a one-time, demand-side addition of 35 RNs in the Western Zone, intended to quantify future RN staffing needs at this new facility. Although staffing needs have not yet been determined, other infrastructure investments within the province that are expected to increase the demand for RNs include the replacement build of St. Clare's Mercy hospital and the establishment of the Cardiovascular Centre of Excellence in St. John's.

Workforce Initiatives

In August 2023, GNL ratified a new collective agreement with the RNUNL which represents a turning point for RN recruitment and retention in the province. This new agreement provides significant pay increases with the following key components:

- Two per cent wage increase each year for four years (2022-2026);
- One-time employee recognition bonus payment of \$2,000; and
- Long Service Pay Premium:
 1. 15-year premium: 1%
 2. 20-year premium: 15-year premium plus 2%
 3. 25-year premium: 20-year premium plus 2%

Through this latest round of negotiations, appropriate compensation was identified as being key to stabilizing the nursing workforce and getting nurses to remain in, or take, permanent full-time positions. In addition to the changes made to renumeration, hours of work, employee benefits, and general working conditions, HCS has pursued

an array of ongoing initiatives aimed at strengthening the supply of RNs which are listed below:

- **Increased Capacity in MUN's Registered Nursing Program:** Added an additional 72 RN program seats across three satellite sites at the Gander, Grand Falls-Windsor, and Labrador-Grenfell campuses for the 2022-2023 academic year at MUN's BScN program.
- **Supervised Practice Experience Program (SPEP):** Approved by CRNNL, program to assist local and IENs and residents of the province that meet educational requirement but do not meet the currency of practice hours required for re-entry to practice.
- **Facilitating licensure and navigation support to obtain a license:** Offered for international and Canadian RNs.
- **Expanded scope of practice:** Amendments to the Registered Nurses Regulations were published giving RNs who meet the requirements the ability to prescribe and refer patients to specialists, in accordance with the regulations.
- **International recruitment missions:** Various RN recruitment trips conducted in India in 2022 and 2023 with additional trips being planned.
- **Signing bonuses:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions, and tiered to address geographic considerations with an associated return-in-service of one or two years.
- **RN Locum Premium:** A \$25 per hour premium for NLHS employees who accept locum positions in Labrador-Grenfell.
- **Educational Salary Advance:** Allows employees to finance a planned leave of absence, of between six and 24 months, to complete an education program on a full-time basis.
- **Labrador Benefits Agreement:** Offering employee and dependent allowances, travel allowance, and extra paid leave.
- **Relocation Assistance:** Available to RNs who intend to relocate for their position.
- **Nursing Community Assessment Service (NCAS) Initiative:** NCAS provides a competency assessment for RNs and LPNs seeking licensure in NL and is an opportunity to be assessed as an RN and LPN at the same time via a dual-track assessment. Candidates registering for dual-role assessment must be referred by the CRNNL and College of Licensed Practical Nurses of Newfoundland and Labrador (CLPNNL) and will need to meet the specific requirements set by both regulators to obtain the referral. Once completed, NCAS will send results for the RN assessment to CRNNL and the results of the LPN assessment to CLPNNL. The cost of the assessment

is approximately \$3,000 per candidate. HCS has partnered with NLHS to provide an incentive for eligible IENs to complete NCAS service commitment with NLHS upon licensure.

- **Various Registered Nurse Think Tank and Research initiatives:** Think Tank event was held in April 2022 to gather key stakeholders to identify issues and concerns, listen to the lived experience of registered nurses, identify solutions to address recruitment and retention concerns, and generate thoughtful discussions and strategic planning around short-term measures to improve the workplace and retention of nursing professionals in NL. HCS commissioned ThinkWell to write the Nursing Workforce Research report in May 2023 summarizing the current state of the nursing workforce in the province, particularly the casual nursing trend.
- **Nursing Mental Health Working Group:** Established four recommendations to improve access to mental health supports, which was recently approved and are being addressed by at the Senior Joint Quality Work Life Committee between HCS, NLHS and RNUNL. Implementation is ongoing.
- **Additional benefits:** GNL recently announced a new child care initiative for health care professionals.

In addition to these programs, HCS has implemented the following one-time retention and recruitment incentives aimed at RNs:

- **Come Home Year Incentives:** RNs can receive \$50,000 for a three-year return-in-service agreement.
- **Long-Term Care Retention Incentives:** Up to \$3,000 dollars available to RNs working in LTC.
- **Long-Term Care Recruitment/Signing Bonuses:** Up to \$8,000 dollars available to RNs working in LTC.
- **Retention Incentives:** Available to permanent or temporary RNs for a minimum of a one-year return-in-service commitment, ended on January 31, 2023.
- **Double Rate Overtime:** Provided for vacation period for RNs, ended on January 31, 2023.
- **Reimburse Licensing Fees for Retired RNs:** Available to those who had previously retired and wish to return to the workforce, ended on January 31, 2023.

The extent to which these workforce initiatives can be quantified in future forecasts of the supply of RNs is discussed later in this section.

Stakeholder Engagement Insights

The following four stakeholder groups were engaged via focus groups to understand the experiences and perspectives of the current and future RN workforce:

- Registered Nurses' Union Newfoundland and Labrador (RNUNL)
- College of Registered Nurses of Newfoundland and Labrador (CRNNL)
- Memorial University (MUN) Faculty of Nursing and Centre for Nursing Studies (CNS) Staff
- NL Health Services (NLHS) Nursing Professional Practice Consultants

In addition, 10 individuals responded to the focus group follow-up survey with additional insights. These stakeholder consultation activities yielded an array of qualitative insights pertinent to the development of RN workforce recommendations and are summarized in Table 66 below. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, which may not be grounded in absolute fact.

Table 39: What We Heard from Registered Nurse Stakeholders

Theme	Insights
Recruitment	<ul style="list-style-type: none"> • Stakeholders feel that there is a missed opportunity to hire local graduates. It is perceived that there is not enough being done to support the students already here to pursue careers in NL. • There are concerns that the information provided to BScN students about the clinical placement opportunities available to them is not adequate, nor are they aware of hiring practices and benefits of permanent employment. • New nursing graduates would greatly benefit from having a consistent contact such as HR navigators. Likewise, KPIs could be developed for expected response times from HR to streamline nursing application processes. • Negative media is impacting recruitment into nursing schools and likely impacting retention of RNs due to the negative perception of the profession, including high workload and patient acuity with low compensation.
International Recruitment	<ul style="list-style-type: none"> • Stakeholders voiced frustrations that there has been a pattern of failure to deliver on recruitment promises, which also affects GNL's ability to retain, as retention starts from the time of recruitment – especially for IENs. • NL should avoid becoming a gateway to the rest of Canada for IENs, which is what is currently happening. • Feedback from the nursing union indicated several examples that resulted in unfulfilled recruitment commitments including: <ul style="list-style-type: none"> ◦ IENs are told their families will find employment but this rarely comes to fruition; ◦ IENs require greater investment of time and resources to be successful but requests to extend orientation go unfulfilled or no mentoring is available; ◦ They are forced to work alone well before they are safe or comfortable enough to do so, which leads to turnover; and,

Theme	Insights
Retention	<ul style="list-style-type: none"> <li data-bbox="473 343 1203 399">○ They are promised child care or assistance in finding child care and when they get here they are told nothing is available. <li data-bbox="377 399 1203 489">● This is further compounded by the high cost of living in NL and the rest of Canada, which makes it even more challenging for IENs to remain in-province long-term. <li data-bbox="377 518 1235 597">● There are several reasons that result in a permanent RN resigning; the most commons reasons are denial of leave, mandated overtime, and lack of flexibility from employers. <li data-bbox="377 597 1235 687">● Access to leave (e.g., sick, family, annual) is supposed to be one of the biggest benefits of accepting a permanent job. Therefore, it is critical to ensure RNs can access the leave granted to them for them to remain in a permanent position. <li data-bbox="377 687 1235 777">● Likewise, public sector employers frequently hold back from releasing staff and deny position protection, which also contributes to the resignation of permanent employees according to stakeholders. <li data-bbox="377 777 1235 911">● Stakeholders shared that GNL's focus on recruitment fails to acknowledge those who are currently within the system; the recruitment bonuses have caused RNs that are currently within the system to subsequently resign or retire early due to feeling unappreciated, undercompensated, and undervalued.
Agency Nursing	<ul style="list-style-type: none"> <li data-bbox="377 938 1235 994">● It was heard from stakeholders that using agency nurses as a solution to the staffing crisis is directly impacting retention efforts. <li data-bbox="377 994 1235 1084">● Use of agency nurses has increased the number of RN registrants from out of province, making it difficult to determine how many RNs are in the provincial workforce. <li data-bbox="377 1084 1235 1219">● Agency nurses, given they practice across sites and services, may not receive the same training on the technology, tools, and procedures of the unit/service they are deployed to, leading to employed nurses spending additional time training, or covering for activities which should have been completed by the agency nurse. <li data-bbox="377 1219 1235 1309">● RNs are feeling frustrated and undervalued, as they are orienting, training, and working alongside agency nurses who are making up to three times more in wages and are sometimes doing so while underqualified. <li data-bbox="377 1309 1235 1376">● Beyond the pay gap, agency nurses are getting priority shifts over permanent RNs and requiring them to float to unfamiliar floors due to contract clauses. <li data-bbox="377 1376 1235 1444">● Taken together, feedback from stakeholders indicated that the continued use of agency nurses has a profound impact on the morale of full-time nursing staff. <li data-bbox="377 1444 1235 1534">● Stakeholders are worried for the stability of the public health care system when agency work is so lucrative. If GNL is to protect and foster the public health care system, the use of agency nurses must stop.
Casualization	<ul style="list-style-type: none"> <li data-bbox="377 1545 1235 1702">● The growth in casual employment by choice is a growing, and concerning, trend. Historically, novice nurses would begin their careers as casual employees because limited permanent positions were available or they preferred flexibility as a new nurse before settling into a permanent position with a pension, set schedule, accrued seniority and health benefits. <li data-bbox="377 1702 1235 1837">● Currently, up to a quarter of the RNs in the province are employed casually despite there being opportunities for full-time positions. Stakeholders reported that RNs are switching from full-time to casual positions by choice, with mid-career RNs increasingly opting for pension payouts in exchange for greater flexibility. <li data-bbox="377 1837 1235 1971">● RNs are preferring casual to full-time employment as casual nurses cannot be mandated to work and have no obligation to the employer (and vice-versa). This is often the only way they can access time off and have predictable schedules to meet demands outside of work. <li data-bbox="377 1971 1203 2028">● This, in turn, creates tension amongst remaining permanent staff who grow frustrated to the point where they are considering going casual themselves.

Theme	Insights
Respect in the Workplace	<ul style="list-style-type: none"> Although casualization has likely helped retain RNs in the system (not in permanencies but in the public system overall), the negative effect of casualization is that it takes a reliable workforce with a consistent schedule out of the system. As the proportion of casual RNs grow, there are fewer permanent staff left. Many immediate and short-term solutions to stabilize the workforce rely on keeping casual RNs within the public system and incentivizing them to take permanent positions, or at the very least more shifts. Stakeholders shared that there is a perception among RNs of feeling undervalued and undercompensated, at the expense of their own mental and physical health. As a result, many are considering leaving their positions for a more flexible employment style, a different employer or career, or early retirement. There are several factors impacting the intentions of RNs regarding their careers - many have reported feeling undervalued, unappreciated, being subject to an unsafe work environment, have had little to no work-life balance and flexibility, and face a lack of opportunities for professional development. These stressors have been shown in the literature to have a significant impact on turnover intentions. Stakeholders advocate for GNL to offer healthier and more supportive workplaces; otherwise the nursing workforce will not stabilize until the culture is focused on improving violence in the workplace, general working conditions, and overall work-life balance. Ensuring leadership and managers are prioritizing nursing staff and involving them at the decision-making table are steps that will move current health care settings toward one where RNs feel heard, supported, and empowered.
Scope of Practice	<ul style="list-style-type: none"> Stakeholders shared that the recent amendments to the Registered Nurses Regulations enabling nurse prescribing will likely result in an increased workload and pressures in the short term. However, there is potential for an improved scope and sense of empowerment in the future. Despite the new scope of practice, these additional responsibilities are not yet reflected in the Job Classifications within the Job Evaluation System. According to stakeholders, this creates uncertainty around how the changes will impact compensation, workload, and additional educational requirements. Adding skills such as prescribing, ordering interventions, and simple suturing to a general RNs scope may have implications on nursing Job Classifications. These skills are currently performed by Regional Nurses who often practice in rural and northern communities and thus have higher scopes of practice, with a unique classification that comes with a higher rate of pay. Stakeholders advocate that RNs cannot take on increased scope without acknowledgement that it is adding to their already high workloads. They will need employer support to ensure they complete the proper education and receive adequate clinical experience to safely practice new skills. Support staff may need to be supplemented if RNs are balancing new skills and pre-existing workload to ensure safe quality care is maintained.
Collaboration	<ul style="list-style-type: none"> Prior to the creation of NLHS, there has been a historical lack of collaboration between the health zones (formerly RHAs) resulting in inconsistent procedures and lack of coordination in delivering patient care, potentially resulting in inconsistent patient care and inefficient use of resources.
Succession Planning	<ul style="list-style-type: none"> New graduates, international nurses and agency nurses are entering the workforce, but more experienced professionals are leaving through retirement, resulting in minimal mentorship and expertise to upskill the inflows.

Theme	Insights
Scheduling	<ul style="list-style-type: none"> Nurses are looking for more flexibility in scheduling due to family obligations and other commitments, which is a challenge because of the restrictive nature of the 12-week schedules. Nurses report both a lack of flexibility and autonomy in shift scheduling. Self-scheduling has been implemented in units across the province as per the Self-Scheduling Guidelines outlined in the new RNUNL Collective Agreement; however, the process remains manual, where nurses input their availability and preferences into a paper form, which is then manually input into Microsoft Excel or a Workforce Management (WFM) solution. A downside of flexible scheduling was raised where nurses would sometimes need to take on shifts in different units/services to enable flexible scheduling. This may impact continuity of care, patient outcomes and overall productivity.
Child Care	<ul style="list-style-type: none"> Prior to November 2023, the current system did not offer child care for nurses and arranging child care outside of work is challenging due to nurses being called in or having unpredictable schedules.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary projections of the supply of and demand for RNs were developed based on historical practice patterns and trends. The following inflows and outflows were captured in the supply data received from the CRNNL:

- Inflows: migrations (international and interprovincial), school leavers (graduates from school who enter the workforce), re-entry
- Outflows: resignations

The supply includes all RNs registered at the CRNNL for which a location of work within NL was identified. If no location of work was indicated in the data provided by the CRNNL, they were excluded from the analysis.¹¹⁵

However, some inflows and outflows were not directly captured in the data. For RNs, from 2018-2022, there were individuals that were registered one year and not the next but were not labelled as a resignation in the data. These individuals were captured as "other outflows" in the analysis. There is also a subset of RNs that became NPs from one year to the next. Those individuals were not identified directly in the data, but by comparing user IDs and designations from year to year, it was possible to manually identify RNs that became NPs from one year to the next. This additional outflow for RNs was

¹¹⁵ The scope of this work was to identify the supply and demand of all nurses working in NL, not just public sector nurses. Thus, agency nurses who list NL as their place of work were included in the analysis.

captured in the analysis. Finally, there was a set of individuals that were labelled as a renewal one year, but not labelled as an inflow (migration, from school, or re-entry) in the data. This subset of RNs was captured as "other inflows" in the analysis.

In addition, the only outflow captured in the data provided by the CRNNL was "resignations". Consequently, it is highly probable that retirements are also being captured within resignations.

These preliminary projections were then augmented, wherever possible, based on the availability of supporting data and analysis, to reflect inflight or recently implemented policy initiatives to form a baseline scenario.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 67 below outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for RNs, as well as any limitations or caveats of the data.

Table 40: Data Sources for Registered Nurse Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of RNs, by zone, five-year age cohort, and gender from 2018-2022.</p> <p>Inflows: Entries into profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.).</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation).</p>	<p>Supply: Yes</p> <p>Inflows: Yes</p> <p>Outflows: Yes</p>	$\text{Supply Year X} = \text{Supply Year X-1} + \text{four-year average inflows} - \text{four-year average outflows}$	<ul style="list-style-type: none"> Some inflows and outflows were not directly captured in the data. By comparing user IDs from year to year and between designations, other outflows, other inflows, and RNs becoming NPs were estimated. The only outflow captured in the data provided was "resignations". Thus, it's highly probable that retirements are also being captured within resignations.
Demand	<ul style="list-style-type: none"> 10-year population projections, by five-year age cohort, gender, and zone. Average per capita spending by age and gender for nine CIHI health care spending categories. Spending in other institutions, hospital and total health care spending are used to estimate growth in demand for RNs. Average historical cost increases in health care spending. 	<p>Population projections: Yes <u>Source:</u> NL Department of Finance</p> <p>Health spending by category by age and gender: Yes <u>Source:</u> CIHI</p> <p>Historical cost increases in health care spending: Yes <u>Source:</u> CIHI</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = 10-year population projections * the estimated change in average utilization * average real per person spending by age and gender.</p> <p>Demand Year X = Demand Year X-1 * growth in the number of people in each age category * average change in real spending per person * the change in utilization</p>	<ul style="list-style-type: none"> Encounters with RNs are not captured by the CIHI POP Grouper Methodology. Thus, the weighted average inflation-adjusted health care spending (i.e., volumes) is used to forecast distribution of patients by age and gender across NL. Change in utilization estimated based on recent trends.

Preliminary Projections

This section showcases the preliminary forecast estimates for RNs.

Table 41: Preliminary Supply Projections for Registered Nurses

Health Occupation	Starting supply (Dec. 2022)	Migrations (2023-2032)	School Leavers (2023-2032)	Re-Entries (2023-2032)	Other Inflows (2023-2032)	Resignations (2023-2032)	RNs Becoming NPs (2023-2032)	Retirements (2023-2032) ¹¹⁶	Other Net Migrations (2023-2032)	Ending Supply (Dec. 2032)
Registered Nurses	5,611	205	1,952	483	388	605	180	96	-2,065	5,702

Where: Starting supply (Dec. 2022) + Migrations (2023-2032) + School Leavers (2023-2032) + Re-Entries (2023-2032) + Other Inflows (2023-2032) - Resignations (2023-2032) - RNs becoming NPs (2023-2032) - Retirements (2023-2032) + Other Net Migrations (2023-2032) = Ending Supply (Dec. 2032)

Between 2022 and 2032, the preliminary supply of RNs is expected to increase 1.4%, with school leavers contributing most to the rise in demand. These results vary by zone. Table 69 below highlights the predicted growth in supply by health zone.

Table 42: Regional Preliminary Supply Projections for Registered Nurses

Zone	2018 Supply	2022 Supply	2032 Supply	Percent Change in Supply 2018 vs 2022	Percent Change in Supply 2022 vs 2032
Eastern Urban	3,133	3,105	3,126	-0.9%	+0.7%
Eastern Rural	665	642	660	-3.5%	+2.9%
Central	759	709	727	-6.6%	+2.5%
Western	812	821	876	+1.1%	+6.7%
Labrador-Grenfell	278	335	303	-11.5%	-9.3%
Total ¹¹⁷	5,747	5,611	5,692	-2.4%	+1.4%

¹¹⁶ For some health occupations, including RNs, the reason for exit from the profession could not be identified. Thus, retirements were estimated as a result of the flow through of ages (i.e., everyone who is 64 one year are assumed to be 65 the next and are predicted to eventually exit the workforce during the forecast period). In the data provided by the CRNNL, resignations were the only outflow captured. Resignations likely include exits due to retirements but, given that it isn't possible to identify the reason for exit in the historical outflow data, it is impossible to isolate those other exits due to retirement in the forecast. Thus, historical and forecasted resignations likely capture a significant portion of retirements. The retirements captured in Table 44 include only the retirements estimated from the flow through of ages.

¹¹⁷ Due to rounding, the sum of the supply by zone may not perfectly match the total listed.

Over the past five years, the supply of RNs has declined in NL. While that negative trend is predicted to continue in Labrador-Grenfell, the supply of RNs is expected to increase in the other four health zones over the course of the forecast period, with the Western zone predicted to see the largest growth.

Table 43: Preliminary Demand Projections for Registered Nurses

Health Occupation	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Registered Nurses	5,611	688	6,299	7,358	+17%

Permanent vacancies are added on to 2022 supply to estimate the starting demand. For the case of NPs, RNs, and LPNs, casual vacancies were removed from the demand estimates. For RNs, demand is estimated using data on health care spending from CIHI. To estimate the growth in health care spending in NL, a demographically driven health expenditure model was created. In this model, average spending was calculated across 40 age and gender cohorts. This model allows spending to be broken into several different components:

- The share of spending related to cost adjustments (inflation);
- The share of spending related to increased utilization in each age/gender cohort;
- The share of spending related to overall population growth; and
- The share of spending related to demographic aging.

To build this model, the following steps were undertaken:

Step 1: Allocate health care spending by category across the age/gender cohorts based on CIHI spending data.

Step 2: Calculate the average price adjustments based on CIHI health inflation (CPI) estimates. This is done to deflate average spending in each age/gender category to estimate volume increases (i.e., inflation adjusted spending).

Step 3: Estimate the age and gender adjusted real per person spending over the last decade to calculate how utilization has changed.

Step 4: Project health care utilization for the relevant spending categories based on past trends and discussions with subject matter experts.

CIHI identifies four places of work for RNs: hospitals, community, long term care (LTC)/nursing homes, and other. These four places of work were mapped to three health care spending categories:¹¹⁸

- Hospitals to spending on hospitals
- LTC/nursing homes to spending on other institutions
- Community and other to total health care spending

Utilization in hospitals is estimated to decline by 0.08% per year of the forecast in each age category to reflect expected productivity improvements. It is estimated that utilization in other institutions would decline by an average of 0.4% per year in each age category, reflecting an increased likelihood of aging at home. For health care spending in the province overall, utilization is predicted to increase by approximately 0.6% on average. Spending on overall health care overall is the sum of spending in all nine categories, which means the utilization impact varies slightly by age cohort and gender. Utilization projections were based on utilization trends since 1986.

Step 5: Project total volumes (i.e., inflation-adjusted spending) for hospitals, other institutions, and health care overall in each age/gender cohort. This is done by multiplying the number of expected people in each age/gender cohort each year by the average cost of an individual in that age/gender cohort. Volumes account for past utilization trends, the impact of aging, and population growth. Thus, the change in volumes reflects the true change in demand.

The following tables and accompanying descriptive text highlight the change in real per capita health care spending (i.e., volumes) over the past decade and over the coming decade. The total change in volumes is followed by a breakdown of the impacts of population aging, population growth and changes in utilization on changes in volumes. These tables are not cumulative. They simply highlight the breakdown of the impacts feeding into the growth in volumes.

Impacts over the past ten years

Table 71 below highlights the change in volumes (i.e., inflation-adjusted, or real, spending) over the past 10 years.

¹¹⁸ The spending categories do not map one for one to the places of work. A best estimate of a mapping was thus conducted. Thus, four places of work had to be mapped to three health care spending categories (both community and other was mapped to “total health care spending”).

Table 44: Average Compound Annual Growth Rate (CAGR) in Volumes, 2012 to 2022

Spending Category	CAGR in Real Spending (i.e., Volumes) 2012-2022
Hospitals	0.8%
Other Institutions	2.1%
Total Health Care	1.2%

Excluding the effects of population growth, the overall numbers remained nearly identical for all three spending categories as population growth (in CAGR) was close to zero between 2012 and 2022. Table 72 below highlights the change in volumes over the last decade if the effects of population growth were not accounted for.

Table 45: Average CAGR in Volumes, Excluding Population Growth, 2012 to 2022

Spending Category	CAGR in Real Spending (i.e., Volumes) 2012-2022, Excluding Population Growth
Hospitals	0.8%
Other Institutions	2.2%
Total Health Care	1.2%

In all three categories, a majority, if not all, of the growth in volumes over the past decade was due to an aging population.

Impacts over the next ten years

Over the next 10 years volumes in the three relevant categories are predicted to grow in accordance with the numbers highlighted in Table 73 below.

Table 46: Average CAGR in Volumes, 2022 to 2032

Spending Category	CAGR in Real Spending (i.e., Volumes) 2022-2032
Hospitals	1.5%
Other Institutions	3.0%
Total Health Care	1.5%

For all three categories, 0.0% of the change in volumes is due to population growth. As mentioned in Step 4, utilization in hospitals is estimated to decline by 0.08% per year, utilization in other institutions

is predicted to decline by an average of 0.4% per year, and for health care spending overall, utilization is predicted to increase by approximately 0.6%. These utilization estimates were based on trends in utilization observed since 1986.

Like with the past 10 years, population growth is not predicted to have any impact on volumes as population growth is predicted to remain close to zero from now until 2032.

The aging of the population is expected to have the following average impacts over the coming decade.

Table 47: Average Impact of Population Aging on the Growth in Volumes, 2022-2032

Spending Category	Impact of Population Aging, 2022-2032
Hospitals	1.6%
Other Institutions	3.4%
Total Health Care	0.9%

Step 6: Estimate the weighted average growth in volumes. As mentioned in Step 4, CIHI identifies four places of work for RNs. Table 75 summarizes the percent of RNs working in each setting in 2022 according to CIHI. These were the weights used to calculate the weighted average growth in volumes, which, in turn, was the growth rate applied to the demand for RNs.

Table 48: CIHI's Split of Registered Nurses by Place of Work in 2022

	Hospital	Community Health	Nursing Home/LTC	Other
Registered Nurses	66%	15%	7%	12%

The formula used to estimate the weighted average (WA) growth in volumes in health care for RNs (i.e., the weighted average growth in inflation adjusted spending for RNs) is as follows:

Weighted Average

$$= \frac{(\text{Hospital Weight} \times \text{Hospital Volumes}) + (\text{Community Weight} \times \text{Total Health Care Volumes}) + ((\text{LTC Weight} \times \text{Other Institution Volumes}) + (\text{Other Weight} \times \text{Total Health Care Volumes}))}{\text{Hospital Weight} + \text{Community Weight} + \text{LTC Weight} + \text{Other Weight}}$$

From 2022 to 2032, the weighted average growth in volumes (i.e., the demand for RNs in NL) is expected to increase by approximately 17%.

Table 76 showcases the predicted annual increase in health care spending, which in this case is used as a proxy with which to estimate growth in demand, by zone for the forecast period.

Table 49: Annual Regional Growth in Demand for Registered Nurses

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	1.8%	1.8%	1.9%	1.8%	1.8%	1.8%	1.8%	1.7%	1.7%	1.6%
Eastern Rural	1.5%	1.4%	1.5%	1.6%	1.5%	1.5%	1.3%	1.3%	1.4%	1.2%
Central	1.3%	1.3%	1.3%	1.4%	1.2%	1.2%	1.1%	1.1%	1.3%	1.0%
Western	1.4%	1.4%	1.5%	1.4%	1.4%	1.3%	1.4%	1.3%	1.2%	1.0%
Labrador-Grenfell	1.1%	1.4%	1.2%	1.2%	1.3%	1.3%	1.2%	1.2%	1.3%	1.1%
Newfoundland and Labrador	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.5%	1.5%	1.4%

Table 76 above suggests that the growth in demand is expected to lie between one and two percent for all zones, with a slightly greater increase in demand predicted for the Eastern Urban zone.

Table 50: Preliminary Gap Analysis for Registered Nurses

Health Occupation	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Registered Nurses	5,611	6,299	688	5,692	7,358	1,666	142%

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022. Although the supply of RN is predicted to increase by 1.4% over the coming decade, demand is projected to greatly outpace supply. Driving most of the increase in demand, as mentioned above, is NL's aging population.

Base Case Projections

For RNs, the Health Accord NL CTA and workforce initiatives listed below are reflective of stakeholder feedback. In addition, sufficient quantitative data existed for their impact to be incorporated in supply and demand projections. Overall, the policy initiatives selected to be

included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

- **Demand Analysis:**

- RNs will be embedded in the 35 FCTs throughout the province, along with other health care professionals, to address the issue of unattached patients in the province (i.e., CTA 9.1). The unmet demand from the already planned for FCTs would be reflected in the vacancies. However, the proposed FCTs for which staffing plans are not yet finalized reflect the unmet need for RNs above and beyond the vacancies.
- The new acute care and Cancer Care Western facility in Corner Brook will require RNs (i.e., CTA 9.14).

- **Supply Analysis:**

- Uptake of the Come Home Year Incentives.
- Uptake of the long-term care recruitment/signing bonuses of up to \$8,000 dollars available to RNs.
- The additional 72 RN program seats across three satellite sites for the 2022-23 academic year.
- The RN recruitment missions to India planned in fall 2023.

Table 78 highlights the assumptions used to help quantify base case items for RNs.

Table 51: Base Case Assumptions for Registered Nurses

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL CTA 9.1: Integration	Demand	<ul style="list-style-type: none"> • One time – 50% in 2024 and 50% in 2025. 	<ul style="list-style-type: none"> • Eastern Urban <ul style="list-style-type: none"> ○ 2024: +3 ○ 2025: +3

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
into Family Care Teams		<ul style="list-style-type: none"> At reporting, 19 FCTs have been funded, of which 14 are operational or partially operational. However, NLHS outlined the composition of 12 FCTs planned for geographies across the province. Thus, for the remaining 23 teams, the average staffing ratio for similar teams was applied. Outliers were excluded from averages Only the impacts of the 23 FCTs for which data was not available at reporting were included in the base case 	<ul style="list-style-type: none"> Eastern Rural <ul style="list-style-type: none"> 2024: +3 2025: +3 Central <ul style="list-style-type: none"> 2024: +11 2025: + 11 Western <ul style="list-style-type: none"> 2024: +6 2025: +6 Labrador-Grenfell <ul style="list-style-type: none"> 2024: +7 2025: +7
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	Demand	<ul style="list-style-type: none"> One-time addition when facility opens in June 2024. 	<ul style="list-style-type: none"> Western <ul style="list-style-type: none"> 2024: +35
Come Home Year - \$50,000 for a three-year return-in-service agreement for registered nurses	Supply	<ul style="list-style-type: none"> One-time incentive. Impact sustained for three years due to return-in-service agreement. 7.7% turnover rate following end of contract, based on Eastern Health's overall hires turnover rate for RNs. 	<ul style="list-style-type: none"> Eastern Urban <ul style="list-style-type: none"> 2023: +21 Eastern Rural <ul style="list-style-type: none"> 2023: +2 2024: +1
Long-term care: recruitment/signing bonuses of up to \$8,000 dollars available to RNs	Supply	<ul style="list-style-type: none"> One-time incentive. Impact sustained for one year due to return-in-service agreement. 7.7% turnover rate following end of contract, based on Eastern Health's overall hires turnover rate for RNs. 	<ul style="list-style-type: none"> Eastern Urban <ul style="list-style-type: none"> 2023: +32 Central <ul style="list-style-type: none"> 2023: +9 Western <ul style="list-style-type: none"> 2023: +15
Added an additional 72 RN program seats across three satellite sites for the 2022-23 academic year	Supply	<ul style="list-style-type: none"> Four year program launched in 2022-23 academic year, with first cohort expected to graduate in May 2026. Central campuses have an average enrollment rate of 81.4% (42) of total seats (52). Labrador-Grenfell campus has an average enrollment rate of 35% (7) of total seats (20). 20.2% attrition rate. 85% expected to remain in-province post-graduation. Allocate graduates by zone based on current distribution of RNs in the province. 	<ul style="list-style-type: none"> Central <ul style="list-style-type: none"> 2026: +44 2027: +25 2028 onward: +29 Labrador-Grenfell <ul style="list-style-type: none"> 2026: +7 2027: + 3 2028 onward: +5

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
RN recruitment missions to India planned in fall 2023	Supply	<ul style="list-style-type: none"> 200 RNs expected to arrive to NL by summer 2024. 7.7% turnover rate following end of contract, based on Eastern Health's overall hires turnover rate for registered nurses. Allocate new hires graduates by zone based on current distribution of RNs in the province. 	<ul style="list-style-type: none"> Eastern Urban <ul style="list-style-type: none"> 2024: +102 Eastern Rural <ul style="list-style-type: none"> 2024: +21 Central <ul style="list-style-type: none"> 2024: +23 Western <ul style="list-style-type: none"> 2024: +27 Labrador-Grenfell <ul style="list-style-type: none"> 2024: +11

Table 79 illustrates the annual quantitative impacts for each of the base case items included in the RN analysis.

Table 52: Annual Quantitative Impacts of the Base Case Items for Registered Nurses

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Come Home Year - \$50,000 for a three-year return	23	24	24	22	22	22	22	22	22	22
Long-term care: recruitment bonuses of up to \$8,000	56	52	52	52	52	52	52	52	52	52
Added 72 RN program seats across three satellite sites	0	0	0	51	79	113	146	179	213	246
RN recruitment missions to India	0	185	185	185	185	185	185	185	185	185
Total Supply Impacts	79	260	260	310	337	371	404	438	471	505
Health Accord NL CTA 9.1: Integration into Family Care Teams	0	30	60	60	60	60	60	60	60	60
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	0	35	35	35	35	35	35	35	35	35
Total Demand Impacts	0	65	95							

The items in Table 79 above highlight the annual quantitative impacts of each base case item.

The base case item that is predicted to have the greatest impact on supply is the addition of 72 RN program seats across three satellite sites. The base case item that is expected to have the greatest impact on demand is the integration of RNs into the FCTs.

After incorporating the base case items into the analysis, demand rises to 7,674 for the province as a whole and supply rises to 6,196. Table 80 highlights the gap analysis over the course of the forecast.

Table 53: Final Annual Provincial Gap Analysis for Registered Nurses

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	5,611	5,702	5,896	5,908	5,970	6,009	6,051	6,091	6,129	6,164	6,196
Demand	6,299	6,399	6,567	6,704	6,812	6,919	7,027	7,137	7,242	7,352	7,453
Gap	688	697	671	796	842	910	976	1,046	1,113	1,188	1,257
Gap as a Percent of Supply	12%	12%	11%	13%	14%	15%	16%	17%	18%	19%	20%

While the gap continues to rise over the forecast period after accounting for the quantified base case impacts, the total supply impacts of the base case outweigh the total demand impacts. Consequently, the gap between supply and demand declines from the preliminary estimation of 1,666 (as shown in Table 77) to 1,257 after incorporating the base case items.

The following section highlights the workforce recommendations proposed to further help GNL in closing the gap.

Workforce Recommendations

As discussed above, several health system transformation priorities and initiatives carry significant implications for both the demand and supply of RNs in NL. These include shifts away from physician and hospital-centric service delivery models of the past towards the provision collaborative, interdisciplinary team-based care which will increasingly utilize various nursing disciplines to enable success. However, the magnitude of expected future gaps between RN supply and demand over the short- to medium-term can perhaps be viewed as less acute versus those in other nursing disciplines (e.g., RN gap of 17% of supply, versus NP gap of 61% of supply in 2025).

To address the projected deficit of RNs, GNL should pursue the recommendations described in Table 81. These recommendations seek to complement or enhance the steps already taken by HCS and NLHS to strengthen the RN workforce, which include increasing capacity in MUN's BScN program, creation of the SPEP, expanded scopes of practice, international recruitment missions, and a wide variety of financial incentives.

Table 54: Registered Nurses Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Demand for RNs		
RN-1	Recruit	<p>Increase Adoption of New Delivery Models in Acute Care by focusing on Personal Care Attendants (PCA) Recruitment:</p> <ul style="list-style-type: none"> • An important feature of future delivery models includes leveraging all team members full scope of practice. As such, increasing the use of PCAs within the delivery of acute care, these providers can focus on providing patient care specifically activities of daily living, body care, housekeeping that do not require an RN skill level to complete. Results from studies¹¹⁹ indicate that there is often a misuse of approximately 90-minutes of RN time per day for activities that do not require their education or expertise. • To enhance the focus and time allocation of RNs on high-value tasks, it is recommended to prioritize the recruitment of non-RN nursing support, through utilizing the roles of PCAs. This recommendation aims to supplement the current skill mix in acute care by increasing the proportion of PCAs. This approach helps prevent any decline in nursing skills, rather than reducing or replacing the existing complement of RNs and LPNs. • Although it is difficult to determine how much RN time can be redirected to patient care, the application of conservative assumptions reveals an opportunity to offset demand for RNs through the adoption of new care delivery models in the hospital care settings. For example, if each RN reduced their time spent on miscellaneous tasks with the support of a PCA from 90-minutes to 30-minutes, this would save each nurse in the hospital care setting one hour per shift to focus on RN-specific tasks. In turn, this could translate into taking on additional patient care tasks by leveraging the PCA skill mix. This recommendation has the potential to offset demand for over 341 RNs assuming: <ul style="list-style-type: none"> ◦ RNs in the hospital care settings only; ◦ FT employment (approximately 1,950 hours/year); and ◦ One hour of time saved per nurse per 12-hour shift. • This recommendation will also be dependent upon the ongoing recruitment and retention of PCAs in the hospital care settings and defining roles and responsibilities for the new roles that will augment the delivery model (e.g., clearly define how the PCA role works on tasks associate with increasing RN capacity). • It is important to note that this recommendation is not intended to impact the complement of RNs and LPNs in acute care settings; it's meant to add onto the existing skill mix by increasing the number of PCAs to avoid the deterioration of nursing care. • Other Canadian jurisdictions such as Ontario, Quebec, and Alberta have successfully implemented PCAs in the hospital-setting. Over 14% of PCAs in Alberta work in the hospital-setting.¹²⁰ • Note: PCAs are referred to as Personal Support Workers (PSW) in most Canadians provinces. • Note: CIHI currently captures PSW data for Alberta.¹²¹

¹¹⁹ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8518809/>

¹²⁰ Personal support workers | CIHI

¹²¹ [Recommendations for Advancing Pan-Canadian Data Capture for Personal Support Workers \(Updated July 2023\) \(cihi.ca\)](https://www.cihi.ca/en/recommendations-advancing-pan-canadian-data-capture-personal-support-workers)

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> Note: HCS will be conducting a subsequent analysis on skill mix of the RN workforce concurrently to this report to identify the appropriate core staffing model. As such, any recommendations related to skill mix (i.e., RN, LPN and PCA) and the implications thereof are outside the scope of this HHRP.
RN-2 Rethink / Automate Reduce RNs Administrative Burden:		
		<ul style="list-style-type: none"> In recent decades, there has been a change in practice due to the implementation of Electronic Health Records (EHRs), which has been seen to improve communication and efficiency by streamlining workflow processes and reducing medication administration errors. Establishing a modern provincial HIS can automate RN administration responsibilities (e.g., filling out forms, requesting consults, entering, or actioning orders, communication and coordination, handover, requesting medications, and documentation) through integrated devices in acute care settings. Reducing administrative burden can also contribute to job satisfaction and work-life balance, supporting retention in turn. However, an absence of data on the relationship between administrative burden and retention means it is not possible to quantify the implications to the supply. To successfully realize the benefits of digital technology in reducing administrative burden for RNs, organizations will need to involve RNs in designing future workflows to ensure they are focused on streamlining, rather than adding, administrative tasks. Research suggests that RNs spend 26-41%¹²² of their time doing administrative tasks in acute care settings. This translates to up to 4.9 hours of time spent on administrative tasks during a 12-hour shift. If that time was reduced post-implementation, it could be conservatively assumed that one half-hour of work per nurse in acute care is saved. How RNs choose to spend time freed-up by reduced administrative burden will be highly individualized, but it can be assumed that at least part of this time will be reallocated to direct patient care or teaching and mentoring duties. Taking on additional patient care tasks, has the potential to offset demand for approximately 166 RNs assuming: <ul style="list-style-type: none"> RNs in acute care settings only; FT employment (approximately 1,872 hours/year); and, One half-hour saved per nurse per 12-hour shift. During implementation of EHRs there is usually a period of time before and a stabilization period after implementation where health human resources experience an increase in workload associated with the new system and the related training required to learn the new system. There will be a stabilization period before the EHR or HIS will enable RNs to realize administrative benefits.
Supply of RNs		
RN-3 Recruit Attract Agency and Casual Nurses to Full-Time NLHS Positions:		<ul style="list-style-type: none"> Agency nursing has become increasingly appealing to nurses in the province, as it offers considerably higher pay and significantly more flexibility. Likewise, the perceived working conditions and inflexibility of permanent full-time (PFT) positions for RNs has contributed to the rise in the percentage of the RN workforce in casual roles to nearly 25%. It is recommended that GNL and NLHS take immediate action to attract RN talent to or back to PFT positions within the public system. Given these ongoing recruitment and retention challenges, has been a shift for NLHS in filling vacancies with agency nurses. Often, agency nurses are based in local communities or have previously worked within NLHS system and are potential candidates to recruit back into the public system.

¹²²

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6371290/#:~:text=Studies%20reported%20nurses%20spent%202026.2,time%20on%20documentation51%2C52>

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> • Recently, Nova Scotia announced¹²³ more drastic steps to curtail the use of agency travel nurses, including limiting the time a nurse can work in that capacity and prohibiting recent graduates from becoming travel nurses for one year. • From a recruiting perspective, the following incentives should be prioritized to address the historical reasons for switching to agency or casual nursing: <ul style="list-style-type: none"> ◦ Continue to offer compensation incentives for return to service as a main driver for agency nurses was compensation; ◦ Continue to enhance the benefits provided to PFT positions to attract casual nurses into more permanent roles; and, ◦ Improve scheduling flexibility (RN-4) to offer similar advantages to agencies and casualization. • Indeed, there are additional challenges with returning to public sector roles from agency that can be addressed to improve recruitment efforts, in addition to the aforementioned focus areas: <ul style="list-style-type: none"> ◦ Implement a system to recognize seniority for RNs that will be making a single transition from an agency to or back to the public sector to acknowledge the time they have worked in those clinical areas; ◦ Implement a system to recognize return to pension for RNs that will be making a single transition from an agency back to the public sector to acknowledge the time they have worked in those clinical areas; and ◦ Ongoing target campaigns focused on agency or casual RNs working in areas with a vacancy and offering positions early. <ul style="list-style-type: none"> ▪ Notwithstanding the wider union and pension implications that may be beyond the purview of HCS or NLHS, which are outside the scope of the Provincial Health HR Plan, exploring the use of alternative incentive strategies such as those listed above are an essential part of recruiting agency nurses into the public system. • Estimating the potential impact of these specific recruitment strategies for agency and casual nurses is difficult and has many factors to consider; however, it can be directly linked with the number of unmet vacancies that these types of roles would directly target.
RN-4	Retain / Rethink	<p>Increase Self-Service Functionalities for the Scheduling of RNs across NL:</p> <ul style="list-style-type: none"> • As noted in the Stakeholder Engagement Insights section (see Table 66) and in recent analysis, 51% of nurses feel that their work schedules do not have the flexibility required to meet their personal lives which has negative impacts to work-life balance and thus job satisfaction. This is reported as a driver of RNs either resigning from their roles as RNs, shifting to agency roles or reducing their schedules from full-time or part-time down to casual positions. The shift to casual positions in 2022, represented 25% of the nursing workforce in the province.¹²⁴ • To date there has been limited opportunities implemented to improve self-service scheduling functionalities (i.e., shift swapping, time off requests, mobile access, etc.) which provide RNs with more control and flexibility over their schedules. There is an opportunity to strengthen the scheduling strategies and WFM solutions in the province. The following strategies should be considered: <ul style="list-style-type: none"> ◦ Introduce self-service functionalities by leveraging the existing workforce management solutions that can enable required union rules to streamline the process for all staff that includes using prediction tools to schedule staff more effectively; ◦ Automate call-out systems to reduce administrative workload on managing systems; ◦ Employ strategies to equitable access to time off to support RNs work-life balance; and,

¹²³ New Approach to Hiring Travel Nurses (<https://novascotia.ca/news/release/?id=20231204002>)

¹²⁴ [Nursing Workforce Final With Appendix.docx](#) (gov.nl.ca)

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> ○ Create new hybrid roles for RNs to support virtual strategies and Hospital at Home models of care to create opportunities for more flexible work. ● GNL's retention strategies should seek to improve schedule flexibility. Increased shift schedule flexibility is noted as a feature that can positively impact retention by providing RNs with influence over their shift schedules to aid in adjusting work around their personal lives. This has also been shown to reduce feelings of stress.¹²⁵ ● Estimating the potential impact of introducing self-service functionalities for RNs, is difficult given the aggregated nature of workforce inflow and outflow. However, if GNL were to successfully implement WFM solutions which enable self-service functionalities throughout regions, then it could reasonably expect to increase supply by recruiting 327 RNs that have reduced their schedules from casual to full-time (FT) assuming 51% of the casual supply RNs left their FT roles due to inflexibility in scheduling and return to FT roles. ● In addition, if GNL successfully implements self-service functionalities throughout the regions and care settings it can be assumed that they will be able to reduce the rate of resignation and improve RN retention in their roles. For example, if on average 25% of the future RN workforce will convert to casual roles and that is decreased to 12.5%, then it can be assumed that approximately 615 RNs will be retained in their full-time role.
RN-5	Recruit/Retain	<p>Provide Additional Support for RNs:</p> <ul style="list-style-type: none"> ● To increase the attractiveness of the RN profession for prospective recruits and to retain the existing workforce, consider offering non-monetary incentives to support these professionals in maintaining a better work-life balance and improve overall quality of life. ● This could include offering child care benefits, such as offering on-site child care, subsidies for child care expenses; housing support including subsidized housing or housing allowances, in addition to support for finding housing; additional benefits for informal caregivers; and, spousal employment support to help the families of health care professionals who may move to the province to better integrate within the community. ● According to stakeholder consultations, RNs who are interested in working in remote regions, including areas of Labrador, face numerous challenges such as limited availability of housing, lack of amenities like grocery stores, and transportation difficulties. Providing housing support can address these challenges and help ensure that health care professionals can find safe and affordable housing in the area. This, in turn, can help increase recruitment and retention rates within these regions. ● As the population ages, those RNs who remain in the workforce more often take on roles as informal caregivers, which can cause financial burden and stress. To support these caregivers, additional benefits such as tax credits, caregiver allowances, and respite care services can be offered. ● Spousal/partner employment can be a challenge for RNs considering a move to rural communities due to limited job opportunities. Employers can provide resources and assistance to help alleviate the stress and financial burden associated with relocating to a rural area, improve the quality of life for health care professionals and their families, and increase the likelihood of long-term retention. ● Reducing the financial burden on nursing students is a crucial strategy for encouraging them to pursue careers in nursing. This can be achieved by increasing bursaries available to nursing students and ensuring that nursing students are paid for their clinical work-terms, which can cost up to \$1,200. Compensating nursing students for their work, similar to other disciplines, would help make nursing education more accessible. ● Additionally, addressing the high cost of housing, which serves as a significant deterrent for students considering moving to Central or Labrador, is critical for maintaining supply within these regions. This could be addressed by providing nursing students with housing subsidies to pursue clinical placements in rural and remote areas.

¹²⁵ <https://www.sciencedirect.com/science/article/pii/S0020748916000717#bib0105>

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> Given that the supply for RNs was 93% women in 2022, with almost half being of child-bearing age, there is an overwhelming need from this segment of the workforce to have adequate child care support to work to their full capacity, especially for those that work non-regular hours. In addition, RNs often are challenged with returning to work after parental leave due to challenges with child care. Following the recent announcement by GNL announcing a new child care initiative for health care professionals,¹²⁶ it is recommended that HCS and NLHS continue to develop convenient child care options for RNs, including: <ul style="list-style-type: none"> Provide on-site, flexible, child care to support RNs and reduce the related stress from balancing work and family responsibilities; Partner with local child care facilities to create priority enrolment for RNs, which will help them manage their child care responsibilities and improve their work-life balance; Work with child care providers at local day-cares and negotiate flexible hours that can help accommodate RNs working long shifts and offer back-up care, as needed; and Introduce financial support for child care while on-site child care is in development. According to the ThinkWell Nursing Workforce Research, only 37% of RNs polled in the province feel safe at work¹¹⁴. Improving workplace safety through ensuring safe staffing levels, violence prevention training, and creating a supportive organizational culture that fosters a sense of safety and respect in the workplace will support the long-term recruitment and retention of RNs. Estimating the potential impact of these enhanced supports on RN recruitment and retention is difficult as it is highly dependent on individual factors, however, this has the opportunity to impact 3,579 of the future RN workforce, indicating the magnitude of impact that this recommendation can have on improving job-satisfaction and ultimately retain more nurses.
RN-6	Retain / Recruit	<p>Leverage Experienced RNs in Recruitment, Coaching, Mentorship, and Education:</p> <ul style="list-style-type: none"> Leverage experienced RNs in recruitment initiatives, particularly in support of growing a pipeline from LPNs to RNs. Use current RNs to show other nursing and health care occupations the roles and opportunities available to them. Consider incentives to encourage RNs to take on these roles. Create opportunities for RNs who are approaching retirement to work in coaching, mentorship, and education capacities, to keep them in the health care system and ensure there is knowledge transfer between newer and more tenured nurses. Introduce Health Leadership programs within the province to encourage RNs to participate in opportunities for continuous development and prepare them for leadership, teaching, and education roles within the system. This can improve job-satisfaction and improve retention among the RN workforce. By increasing the types of roles available for RNs, this will impact the workforce skills rather than meet supply and demand challenges. All roles for RNs related to coaching, mentorship and education will aid in maintaining competencies for the incoming RNs (e.g., introduce clinical orientation nurses that have a flexible schedule for 8hr shifts five days per week to lead orientation for new staff or students within a certain clinical area). This will also demonstrate opportunities for career progression within the RN field. Retired or resigned RNs can be recruited in these roles to aid in upskilling the incoming workforce. Leverage existing programs provided across the country to equip NL RNs with mentorship and coaching skills.^{127,128}

¹²⁶ [Media Advisory: Premier to Announce Child Care Initiative for Health Care Professionals - News Releases \(gov.nl.ca\)](#)

¹²⁷ [Preceptor-Mentor Training Program - The Canadian Nurse Educator Institute \(CNEI\) \(casn.ca\)](#)

¹²⁸ [Mentorship Program - Canadian Nurses Association \(cna-aiic.ca\)](#)

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none">• By supporting experienced RNs with staying in practice in new roles, there could be an increase in the number re-entry to practice (recruitment) and a reduction in exits from RN roles (retention) of graduates on an annual basis. For example, if additional roles are created for experienced RNs who have since left their roles and were directly recruited into the role, this could translate into 114 RNs returning to the workforce based on the new roles, if the current 8% of RNs returning is increase by a conservative 2%.

Licensed Practical Nurses (LPNs)

Licensed practical nurses (LPNs) are an integral member of the care team in a variety of care settings, including acute, community, and long-term care (LTC). They work in conjunction with RNs and physicians to adhere to a care plan for each patient or resident. LPNs are responsible for providing practical nursing care during the assessment process, assisting in implementing care plans, collaborating with members of the health care team, and contributing to the treatment of patients. All duties must be performed within the scope of practice and can be carried out in various settings, including LTC, community, and acute care.

Those with supervisory roles are responsible for overseeing and coordinating nursing functions for other LPNs and support staff within their scope of practice. Their duties include providing practical nursing care during the assessment process, assisting with the implementation of care plans, collaborating with members of the health care team, and contributing to the treatment of patients.

In NL, LPNs are categorized in various levels based on Job Evaluation System (JES): Licensed Practical Nurse I (LPN I), Licensed Practical Nurse II (LPN II), Operating Room Technician, Orthopedic Technologist, Psychiatric Licensed Practical Nurse I, Psychiatric Licensed Practical Nurse II, Psychiatric Licensed Practical Nurse III, Psychiatric Licensed Practical Nurse IIIC, Psychiatric Therapy Aide, Urology Technician I, Urology Technician II, and Urodynamics Technician.

All LPNs practicing in the province are licensed by the College of Licensed Practical Nurses of Newfoundland and Labrador (CLPNNL).

Current State Analysis

As of December 2022, there are 2,288 LPNs practicing in Newfoundland and Labrador (NL), according to Table 82. In addition to drawing from Centre for Nursing Studies (CNS) and the College of the North Atlantic (CNA), GNL also recruits nationally and sources internationally educated nurses (IENs) through various international recruitment missions and initiatives (see **Workforce Initiatives** for further detail).

Table 55: Licensed Practical Nurses by NLHS Zone¹²⁹

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2022 Supply	709	471	490	423	194	2,288

Education

Within NL, practical nursing education is offered through CNS and its brokered partner, CNA. Despite provincial data that shows around 220-340 admissions annually in the past five years, the supply of locally trained LPNs has been on the decline over the past five years due to the challenges experienced with filling the seats, program attrition, and inability of the program to secure permanent funding.¹³⁰

Between the fall of 2018 and 2021, there were 1,324 students enrolled in the Practical Nursing (PN) program within the province. However, with an overall attrition rate of 50.3%, only 657 new LPNs graduated from the program in that timespan.¹³⁰ Likewise, despite the addition of 92 additional practical nursing seats across five satellite campuses for the 2022-2023 academic year, many of those seats remain unfilled. Overall, recruitment has become an issue for the PN program, with declining application rates and the trend of interested applicants who do apply and get accepted into the program being difficult to retain for the full duration of their studies.

Another prominent concern that has affected the enrollment rates of the PN program of the provincial PN program has been the inability of the program to secure permanent funding from the Department of Education. Stakeholders shared how the PN program within the province have historically not been well funded. This funding instability makes it challenging to commit to budgets for experienced staff, which in turn affects student recruitment. CNA stakeholders have observed a direct correlation between lower enrollment rates and academic years when guaranteed funding was not secured. Therefore, securing more permanent funding for this vital pipeline of LPN graduates is a critical aspect of strengthening this workforce.

Working Conditions in Long-Term Care

Most LPNs in the province work in LTC settings (see Table 92), yet an increasing number of LPNs are leaving LTC to work in the acute care setting. Stakeholder consultations revealed that this migration may be due to the inability to practice to their full scope, the lack of career

¹²⁹ Includes all LPNs employed in NL (NLHS and private sector). Excludes LPNs employed outside of NL or not employed.

¹³⁰ Attrition Project Report: Practical Nursing Program (November 2022)

advancement opportunities, and challenging working conditions. Many LPNs feel that are not able to work to their full scope within LTC, citing reasons such as being understaffed, or because the provincial health care system has not kept up with the profession's expanding scope of practice. With few LPN II positions existing in the province, some LPNs remain in the same position for the duration of their careers due to the limited availability career advancement or laddering opportunities. When paired with the demanding working conditions such as mandated long shifts, excessive overtime, and lack of relief that are pervasive in LTC, retaining this workforce has become increasing challenging. Therefore, to retain the LPN workforce, GNL should prioritize improving working conditions in LTC settings.

Improving the flexibility of work can contribute to greater job satisfaction for both full-time and temporary call-in LPNs. Unlike the casual Registered Nurse (RN) workforce in NL, temporary call-in LPNs are unable to refuse shifts to their current respective collective agreements. This scheduling unpredictability contributes to poor work-life balance due to always having to be available without guaranteed shifts according to stakeholders. Offering more flexible working arrangements, such as condensed shifts or providing support with child or elder care responsibilities, can support LPNs to better manage their schedules to meet family obligations or better suit their preferences.

Health Accord NL Calls to Action

Several Calls to Action (CTA) from the Health Accord NL carry implications for the supply of and demand for LPNs in NL (see Base Case Projections and Table 96 below for further detail):

- **CTA 8.1:** Develop and implement a formal Provincial Seniors Care Program to address the critical need of our population.
- **CTA 8.2:** Implement and support an integrated continuum of care to improve the effectiveness and efficiency of care delivery, improve health and social outcomes for older adults and older adults with disabilities, and support older adults to age in place with dignity and autonomy.
- **CTA 9.14:** Develop and implement a five-year plan for improvement in mortality rates for cancer, cardiac disease, and stroke over the next 10 years, led by the provincial programs for these disease entities.

Once implemented, the Provincial Seniors Care Program through CTA 8.1, and the integrated continuum of care for older adults through CTA 8.2, have the potential to realize multiple benefits for the NL system: emergency departments certified as "Senior Friendly" (without

which, misdiagnoses and inappropriate care may be more frequent), and reduced demands for Alternate Level of Care (ALC) beds and resources (as many older ALC patients can return home or to a lower level of care with appropriate, geriatric-focused discharge planning).

Considering that LPNs predominantly work in LTC settings, and that these CTA are in part intended to support alternative care models and deliver additional supports to enable elderly patients to remain living independently in their homes longer, there is the potential to see a shift in demand for LPNs away from traditional LTC settings and into the community once these CTA are fully implemented.

Additionally, CTA 9.14 signals the need for a five-year improvement plan for cancer, cardiac disease, and stroke mortality rates over the next 10 years – led by corresponding provincial programs. This is aimed to achieve improved access to services delivered by these programs. For the purposes of this HHR Plan, improved access to cancer, cardiac disease, and stroke services is represented by the construction of a new acute care and cancer care facility in Corner Brook. More specifically, quantitative analysis incorporates this CTA in the form of a one-time, demand-side addition of three LPNs in the Western Zone, intended to quantify future LPN staffing needs at this new facility.

Workforce Initiatives

In September 2023, GNL signed a Memorandum of Understanding (MOU) with Newfoundland and Labrador Association of Public and Private Employees (NAPE) and Canadian Union of Public Employees Newfoundland and Labrador (CUPE) to address recruitment and retention issues for LPNs. The agreement includes:

- Fixed adjustment of \$2.48-\$3.11/hour (depending on classification) in addition to current collective agreement wage increases; and,
- Up to a 5% increase for LPNs with 15-25 years of service in NL as an LPN.

In addition to this new agreement, the Department of Health and Community Services (HCS) has pursued an array of ongoing initiatives aimed at strengthening the supply of LPNs:

- **Increased Capacity in PN Program:** Added an additional 92 practical nursing program seats across five campuses, including Carbonear, Bay St. George, Burin, Gander, and St. Anthony for the 2022-23 academic year.

- **Nursing Community Assessment Service (NCAS) Initiative:** NCAS provides a competency assessment for RNs and LPNs seeking licensure in NL and is an opportunity to be assessed as an RN and LPN at the same time via a dual-track assessment. Candidates registering for dual-role assessment must be referred by the College of Registered Nurses of Newfoundland and Labrador (CRNNL) and CLPNNL and will need to meet the specific requirements set by both regulators to obtain the referral. Once completed, NCAS will send results for the RN assessment to CRNNL and the results of the LPN assessment to CLPNNL. The cost of the assessment is approximately \$3,000 per candidate.
- **Long-Term Care Review:** Contract was issued to conduct a review of LTC in the province, including Personal Care Homes (PCH), that aims to identify opportunities to improve quality of care and the quality of life of residents, enhance staff engagement, and improve the staff experiences at work.
- **Jamaican Practical Nursing and Bridging Program:** CNS offering a PN program in Jamaica with one cohort of 120 seats starting in September 2024¹³¹. NLHS and CNS also offering bridging program for Enrolled Assistant Nurses from Jamaica to become LPNs, with 150 seats between 2023-2024 and 2024-2025 academic years.
- **International Recruitment Missions:** LPN recruitment trips conducted in Jamaica in with additional trips being planned.

In addition to these programs, HCS has implemented the following one-time retention and recruitment incentives aimed at LPNs:

- **Signing Bonus Program:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions, and tiered to address geographic considerations with an associated return-in-service of one or two years.
- **Health Professional Bursaries:** \$5,000 to bursaries are awarded for difficult to fill positions, available to PN students who sign a service agreement for two years of service commitment post-graduation.
- **Come Home Year Incentives:** LPNs can receive \$50,000 for a three-year return-in-service agreement.
- **Long-Term Care Retention Incentives:** Up to \$1,950 dollars available to LPNs working in LTC.
- **Long-Term Care Recruitment/Signing Bonuses:** Up to \$5,200 dollars available to LPNs.

¹³¹ When the data was first collected, the program was expected to begin in September 2024. However, as of the publication of this report, it is uncertain whether the program will be implemented as scheduled.

- **Retention Incentives:** Available to permanent or temporary LPNs for a minimum of a one-year return-in-service commitment, ended on January 31, 2023.

The extent to which these workforce initiatives can be quantified in future forecasts of the supply of LPNs is discussed later in this section.

Stakeholder Engagement Insights

The following five stakeholder groups were engaged via focus groups to understand the experiences and perspectives of the current and future LPN workforce:

- College of Licensed Practical Nurses of Newfoundland and Labrador (CLPNNL)
- College of the North Atlantic (CNA) and Centre for Nursing Studies (CNS) Staff
- Newfoundland and Labrador Health Services (NLHS) Nursing Professional Practice Consultants
- Newfoundland and Labrador Association of Public and Private Employees (NAPE)
- Canadian Union of Public Employees Newfoundland and Labrador (CUPE)

In addition, 11 individuals responded to the focus group follow-up survey with additional insights. These stakeholder consultation activities yielded an array of qualitative insights pertinent to the development of LPN workforce recommendations and are summarized in Table 83 below. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, which may not be grounded in absolute fact.

Table 56: What We Heard from LPN Stakeholders

Theme	Insights
Recruitment	<ul style="list-style-type: none"> • There is a workforce shortage due to the lack of local students to fill current seats. Stakeholders perceive that GNL is not fully utilizing clinical placement opportunities to attract students. • Enrollment is further challenged by all clinical placements being unpaid; recruitment efforts could be strengthened if paid preceptorships opportunities were made available to students. • Long recruitment processes and release times, and unavailability to recruit were cited as key issues affecting recruitment. • Recruitment efforts can be enhanced via the development of work-life balance plan, continue to work with immigration for IENs, and to work with high schools to offer shadowing programs to increase awareness of the job opportunities in this profession.

Theme	Insights
Retention	<ul style="list-style-type: none"> Stakeholders shared that despite GNL's efforts spent on recruitment and retention, they will only be successful once LPNs have an environment in which they feel safe, supported, and properly resourced/staffed. Stakeholders voiced concerns that focusing on recruitment efforts without a long-term plan creates division in the workplace and rarely bridges the gap. Too often, LPNs will be recruited to a facility or floor or position only to see and existing staff leave due to lack of work-life balance, inadequate pay, unmanageable workloads, or burnout. Work-life balance, adequate staffing levels, being able to work to full scope of practice, adequate time and supports to provide the care necessary for residents/patients, ability to upskill/retrain, and generally feeling supported and recognized by the employer have all been identified as key aspects requested by LPNs, particularly in recent years. Constant turnover of staff and lack of relief were cited as key issues affecting retention. Relief plans need to be looked at across the system, as the expectation should no longer be not needing to replace people without affecting service.
International Recruitment	<ul style="list-style-type: none"> The recruitment of LPNs is also incredibly important to bridging workforce gaps and recruiting internationally is a crucial strategy for NL. However, stakeholders reported that IENs are often recruited and not welcomed or supported adequately once they arrive in terms of language barriers, cultural barriers, and supports such as child care and housing. International recruitment needs to be thought of as a continuum so that IENs feel welcomed and supported by their employer in the community, so that they are more likely to remain and encourage others to come and remain in-province. NL competes with larger, more diverse urban centres that have larger cultural and religious support networks and communities for newcomers. In order to retain these IENs, GNL must go above and beyond to support them once they arrive to work here.
Bonuses/Incentives	<ul style="list-style-type: none"> Currently, the approach to health human resource planning is very much reactive. Part of the piecemeal approach adopted in recent months has been the implementation of short-term retention and recruitment bonuses and initiatives for LPNs. These one-off solutions have created tensions in the workplace in terms of who gets them versus who does not, and new LPNs versus those who have an existing connection to the system. The other issue with retention and recruitment bonuses is that it usually results in a "bidding war" with other provinces according to stakeholders. The amount of administrative work, confusion, and frustration that these one-off initiatives create is immense.
Scope of Work/Skill Mix	<ul style="list-style-type: none"> LPNs are often not allowed or able to work to the full scope of practice, either because they are understaffed, or the provincial health care system has not kept up with the expanding scope of practice. For example, stakeholders shared that the skill mix and staffing ratios are far outdated in LTC as resident acuity and complexity has increased since it was determined over a decade ago. However, NL has the highest regulated staff mix in the country which would suggest that this is appropriate for increased acuity. A comprehensive review of scope of practice, skill mix, resident to staff ratios would be beneficial to validate that NL is following best practices, but also to ensure the workforce reflects the needs of patients, clients, and residents.
Education, Upskilling, and Training	<ul style="list-style-type: none"> In recent years, GNL has engaged with unions and other stakeholders about the education, upskilling, and training of the current and future LPN workforce in a way that addresses labour issues in health care.

Theme	Insights
	<ul style="list-style-type: none"> There is anecdotal evidence that supports LPNs who are able to train in-province are more likely to stay and work and build connections to the health care system and the communities in which they work. Ensuring that the province's education sector is properly funded, resourced, and provides the programs needed to support, fill, and bridge the gaps is an integral aspect of ensuring the LPN workforce remains sustainable into the future. For example, through close collaboration between the union and GNL, there was an increase made in the total number of seats for LPNs across the province to deal with the medium to long-term shortage of that classification of worker in the province. Despite the current challenges experienced with filling seats, it intended that this approach will successfully result in LPNs graduating and accepting jobs here in NL. Opportunities for current LPNs to upskill and retrain must also be made more readily available and accessible. These employees understand how the system works, have an attachment to the workplace, and have a skill set that lends itself to further training and professional development. Giving them opportunities to advance their training and employment opportunities will be a positive development, and will give LPN options to learn and grow while building and strengthening their connections to the health system. Not only do opportunities for training/upskilling need to exist, but existing and prospective LPNs need the supports and incentives required to follow this path, such as tuition support, grants, stipends, and educational leave to create a working environment conducive to continued development.
Agency/Travel Nurses	<ul style="list-style-type: none"> Recent health human resource and labour challenges in the health care system have also opened the door for the privatization of health care services across Canada, especially in LTC settings. Due to the urgent need for LPNs, NLHS has entered contracts with travel health care service providers in the Western Zone as a short-term solution. The pay disparity between agency nurses and public sector nurses has had a negative impact on morale as these travel nurses make considerably more for doing the same work as local LPNs, creating tension in the workplace.
Data Tracking	<ul style="list-style-type: none"> There is a recognized need for better information technologies to enable the data tracking, management, transparency of service trends and workloads in an accurate, timely and useful manner. There are currently challenges as it relates to human resources and workforce planning, anticipating future needs, and being reactive when acute human resource challenges arise. Likewise, subjective information from LPNs in terms of surveys, exit surveys/interviews, and polling and questionnaires of prospective students in the province who are studying to enter the health care workforce is another data source that needs to be more proactively leveraged to create a short medium or long-term approach to workforce planning, to better understand who the workforce is, what the challenges are, and where future challenges/pressures/gaps lie. This data must also be shared with key stakeholders in a timely, consistent, and transparent manner so that everyone has equal visibility and is provided informed, valuable, and timely feedback and information for dealing with upcoming human resource challenges and stressors.
Engagement	<ul style="list-style-type: none"> Frontline LPNs are uniquely positioned to provide key insight on the subjective side of the data and analysis. Frontline workers have a unique perspective and can provide solutions that may not be readily apparent to management, GNL, or others. Consultation must be done in a way that allows for LPNs to speak freely without fear of recrimination but also in a way that ensures that their input is seen as

Theme	Insights
Child Care	<p>valuable and wanted, to enhance engagement and give them a sense of ownership over the system and the decisions being made.</p> <ul style="list-style-type: none"> Prior to November 2023, the system did not offer child care for nurses and arranging child care outside of work is challenging due to nurses being called in or having unpredictable schedules. Historically, access to affordable, high quality, regulated child care has been flagged as a major issue for LPNs. With the recent announcement of the child care initiative for health care professionals, onsite/adjacent child care would be a major selling point for retaining and recruiting LPNs.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary projections of the supply of and demand for LPNs were developed based on historical practice patterns and trends. The following inflows and outflows were captured in the supply data received from the CLPNNL:

- Inflows: new graduates who licensed, immigration, and return to practice.
- Outflows: LPNs who moved, resignations, retirements, and other outflows.

This includes all LPNs registered at the CLPNNL for which a location of work within NL was identified. If the location of work identified was "outside NL" in the data provided by the CLPNNL, they were excluded from the analysis.¹³²

However, some inflows and outflows were not directly captured in the data. In the data provided by the CLPNNL, the change in the supply from year-to-year did not always match the sum of the inflows and outflows. Representatives at the CLPNNL confirmed that inflows and outflows are self-reported data, and, consequently, are more subject to error. This explains why the numbers do not add up exactly and discrepancies exists. To correct for this discrepancy, "other net migrations" were estimated over the history and over the forecast period.

In addition, the supply numbers provided were not split by age, gender and the five health zones. A few steps were undertaken to organize the supply data by age, gender and health zone.

¹³² The scope of this work was to identify the supply and demand of all nurses working in NL, not just public sector nurses. Thus, agency nurses who list NL as their place of work were included in the analysis.

- The supply in the former Eastern RHA was split into two: Eastern Urban and Eastern Rural. The overall population split between Eastern Urban and Eastern Rural was used to do that split. This split was validated with the ratios provided in the CLPNNL 2022-2023 annual report. The percent split estimated using population is similar to the split provided in the annual report.
- Using the percent split by age and gender for the province as a whole, which was provided by the CLPNNL, the total supply of LPNs by zone was allocated across the age cohorts and genders.

For the case of LPNs, the four years used to estimate average inflows and outflows were 2018-2021 rather than 2019-2022, like with most other professions, as the PN program was extended to five semesters causing inflows to be much lower than average in 2022.

These preliminary projections were then augmented, wherever possible, based on the availability of supporting data and analysis, to reflect inflight or recently implemented policy initiatives to form a baseline scenario.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 84 below outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for family medicine physicians, as well as any limitations or caveats of the data.

Table 57: Data Sources for Licensed Practical Nurse Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	Supply: Number of LPNs, by zone, five-year age cohort, and gender from 2018-2022.	Supply: Yes. However, only total supply for the previous four RHAs as well as private nurses,	Supply Year X = Supply Year X-1 + four-year average inflows –	• Supply was not split by age, gender and the five new health zones. Consequently, using

Model	Data Requested	Data Received?	Equation	Limitations
	<p>Inflows: Entries into the profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.).</p> <p>Outflows: Exits from the profession, split by reason for exit (retirement, emigration, other resignation).</p>	<p>which were not split by zone, was provided. Only gender and age ratios for the NL as a whole were provided. Supply was consequently not split by age, gender, and the five new health zones.</p> <p>Inflows: Yes. However, inflows were shared at the provider level and included the city in which they resided and not the zone in which they practiced.</p> <p>Outflows: Yes. However, outflows were shared at the provider level and included the city in which they resided and not the zone in which they practiced.</p>	<p>four-year average outflows</p>	<p>ratios for NL as a whole, the supply by RHA was split by age and gender. Supply was only provided for the four former RHAs. using overall population split in NL, the supply of LPNs in the Eastern RHA was allocated between Eastern Urban and Rural.</p> <ul style="list-style-type: none"> Some inflows and outflows were not captured in the data. Consequently “other net migrations” were estimated to correct for this limitation.

Source: CLPNNL

Demand	<ul style="list-style-type: none"> Ten-year population projections, by five-year age cohort, gender, and zone Average per capita spending by age and gender for nine CIHI health care spending categories. Spending in other institutions, hospital and total health care spending are used to estimate growth in demand for LPNs. Average historical cost increases in health care spending. 	<p>Population projections: Yes <u>Source:</u> NL Department of Finance</p> <p>Health spending by category by age and gender: Yes <u>Source:</u> CIHI</p> <p>Historical cost increases in health care spending: Yes <u>Source:</u> CIHI</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = Ten-year population projections * the estimated change in average utilization * average real per person spending by age and gender</p> <p>Demand Year X = Demand Year X-1 * growth in the number of people in each age category * average change in real spending per person * the change in utilization</p>	<ul style="list-style-type: none"> Encounters with LPNs are not captured by the CIHI POP Grouper Methodology. Thus, the weighted average inflation-adjusted health care spending (i.e., volumes) is used to forecast distribution of patients by age and gender across NL. Change in utilization estimated based on recent trends.
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Preliminary Projections

This section showcases the preliminary forecast estimates for LPNs.

Table 58: Preliminary Supply Projections for Licensed Practical Nurses

Health Occupation	Starting supply (2022)	New Grads (2023-2032)	Immigration (2023-2032)	Return to Practice (2023-2032)	Moved out of Province	Resignations (2023-2032)	Retirements (2023-2032)	Other Outflows (2023-2032)	Other Net Migrations (2023-2032)	Ending Supply (2032)
Licensed Practical Nurses	2,288	1,625	198	538	50	53	301	1,320	-549	2,375 ¹³³

Where: Starting supply (2022) + New Grads (2023-2032) + Immigration (2023-2032) + Return to Practice (2023-2032) - Moved out of Province - Resignations (2023-2032) - Retirements (2023-2032) - Other Outflows (2023-2032) + Other Net Migrations (2023-2032) = Ending Supply (2032)

The preliminary supply of LPNs is predicted to rise 3.8%, with new graduates entering the workforce driving most of the growth. While other outflows and retirements are predicted to be important, inflows are expected to outweigh outflows. These results vary by zone. Table 86 summarizes the projections by zone.

Table 59: Regional Preliminary Supply Projections for Licensed Practical Nurses

Zone	2018 Supply	2021 Supply	2022 Supply	2032 Supply	Percent Change in Supply 2018 vs 2022	Percent Change in Supply 2022 vs 2032
Eastern Urban	713	761	709	796	-0.6%	+12.2%
Eastern Rural	474	506	471	512	-0.6%	+8.5%
Central	560	532	490	451	-12.5%	-7.9%
Western	412	416	423	432	+2.7%	+2.1%
Labrador-Grenfell	186	190	194	184	+4.3%	-5.0%
Total¹³⁴	2,345	2,405	2,288	2,375	-2.5%	+3.8%

The 2021 supply was included in Table 86 above as 2022 supply was not necessarily reflective of historical averages. As mentioned previously, 2022 inflows were not representative of historical trends as there was little inflows from school due to the increase in the length of the PN program in NL.

¹³³ Due to rounding, the sum of the components may not perfectly equal the ending supply.

¹³⁴ Due to rounding, the sum of the supply by zone may not perfectly match the total listed.

The Eastern Urban and Rural zones are predicted to see the greatest increase in supply over the course of the forecast period if historical trends were to continue into the future.

Table 60: Preliminary Demand Projections for Licensed Practical Nurses

Health Occupation	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Licensed Practical Nurses	2,288	313	2,601	3,128	+20.3%

Permanent vacancies are added on to 2022 supply to estimate the starting demand. For the case of NPs, RNs, and LPNs, casual vacancies were removed from the demand estimates. For LPNs, demand is estimated using data on health care spending from CIHI. To estimate the growth in health care spending in NL, a demographically driven health expenditure model was created. In this model, average spending was calculated across 40 age and gender cohorts. This model allows spending to be broken into several different components:

- The share of spending related to cost adjustments;
- The share of spending related to increased utilization in each age/gender cohort;
- The share of spending related to overall population growth; and
- The share of spending related to demographic aging.

To build this model, the following steps were undertaken:

Step 1: Allocate health care spending by category across the age/gender cohorts based on CIHI spending data.

Step 2: Calculate the average price adjustments based on CIHI health inflation (CPI) estimates. This is done to deflate average spending in each age/gender category to estimate volume increases (i.e., inflation adjusted spending).

Step 3: Estimate the age and gender adjusted real per person spending over the last decade to calculate how utilization has changed.

Step 4: Project health care utilization for the relevant spending categories based on past trends and discussions with subject matter experts.

CIHI identifies four places of work for LPNs: hospitals, community, long term care (LTC)/nursing homes, and other. These four places of work were mapped to three health care spending categories:¹³⁵

- Hospitals to spending on hospitals
- LTC/nursing homes to spending on other institutions
- Community and other to total health care spending

Utilization in hospitals is estimated to decline by 0.08% per year of the forecast in each age category to reflect expected productivity improvements. It is estimated that utilization in other institutions would decline by an average of 0.4% per year in each age category, reflecting an increased likelihood of aging at home. For health care spending in the province overall, utilization is predicted to increase by approximately 0.6% on average. Spending on overall health care is the sum of spending in all nine categories, which means the utilization impact varies slightly by age cohort and gender. Utilization projections were based on utilization trends since 1986.

Step 5: Project total volumes (i.e., inflation-adjusted spending) for hospitals, other institutions, and health care overall in each age/gender cohort. This is done by multiplying the number of expected people in each age/gender cohort each year by the average cost of an individual in that age/gender cohort. Volumes account for past utilization trends, the impact of aging, and population growth. Thus, the change in volumes reflects the true change in demand.

The following tables and accompanying descriptive text highlight the change in real per capita health care spending (i.e., volumes) over the past decade and over the coming decade. The total change in volumes is followed by a breakdown of the impacts of population aging, population growth and changes in utilization on changes in volumes. These tables are not cumulative. They simply highlight the breakdown of the impacts feeding into the growth in volumes.

Impacts over the past ten years

Table 88 below highlights the change in volumes (i.e., inflation-adjusted, or real, spending) over the past 10 years.

¹³⁵ The spending categories do not map one for one to the places of work. A best estimate of a mapping was thus conducted. Thus, four places of work had to be mapped to three health care spending categories (both community and other was mapped to “total health care spending”).

Table 61: Average Compound Annual Growth Rate (CAGR) in Volumes, 2012 to 2022

Spending Category	CAGR in Real Spending (i.e., Volumes) 2012-2022
Hospitals	0.8%
Other Institutions	2.1%
Total Health Care	1.2%

Excluding the effects of population growth, the overall numbers remained nearly identical for all three spending categories as population growth (in CAGR) was close to zero between 2012 and 2022. Table 89 below highlights the change in volumes over the last decade if the effects of population growth were not accounted for.

Table 62: Average CAGR in Volumes, Excluding Population Growth, 2012 to 2022

Spending Category	CAGR in Real Spending (i.e., Volumes) 2012-2022, Excluding Population Growth
Hospitals	0.8%
Other Institutions	2.2%
Total Health Care	1.2%

In all three categories, a majority, if not all, of the growth in volumes over the past decade was due to an aging population.

Impacts over the next ten years

Over the next 10 years volumes in the three relevant categories are predicted to grow in accordance with the numbers highlighted in Table 90 below.

Table 63: Average CAGR in Volumes, 2022 to 2032

Spending Category	CAGR in Real Spending (i.e., Volumes) 2022-2032
Hospitals	1.5%
Other Institutions	3.0%
Total Health Care	1.5%

For all three categories, 0.0% of the change in volumes is due to population growth. As mentioned in step 4, utilization in hospitals is estimated to decline by 0.08% per year, utilization in other institutions

is predicted to decline by an average of 0.4% per year, and for health care spending overall, utilization is predicted to increase by approximately 0.6%. These utilization estimates were based on trends in utilization observed since 1986.

Like with the past 10 years, population growth is not predicted to have any impact on volumes as population growth is predicted to remain close to zero from now until 2032.

The aging of the population is expected to have the following average impacts over the coming decade.

Table 64: Average Impact of Population Aging on the Growth in Volumes, 2022-2032

Spending Category	Impact of Population Aging, 2022-2032
Hospitals	1.6%
Other Institutions	3.4%
Total Health Care	0.9%

Step 6: Estimate the weighted average growth in volumes. As mentioned in step 4, CIHI identifies four places of work for LPNs. Table 92 below summarizes the percent of LPNs working in each setting in 2022 according to CIHI. These were the weights used to calculate the weighted average growth in volumes, which, in turn, was the growth rate applied to the demand for LPNs.

Table 65: CIHI's Split of Licensed Practical Nurses by Place of Work in 2022

	Hospital	Community Health	Nursing Home/LTC	Other
Licensed Practical Nurses	32%	7%	56%	4%

The formula used to estimate the weighted average (WA) growth in volumes in health care for LPNs (i.e., the weighted average growth in inflation adjusted spending for LPNs) is as follows:

Weighted Average

$$\begin{aligned}
 & \frac{(\text{Hospital Weight} \times \text{Hospital Volumes}) + (\text{Community Weight} \times \text{Total Health Care Volumes}) + \\
 & \quad ((\text{LTC Weight} \times \text{Other Institution Volumes}) + (\text{Other Weight} \times \text{Total Health Care Volumes}))}{\text{Hospital Weight} + \text{Community Weight} + \text{LTC Weight} + \text{Other Weight}}
 \end{aligned}$$

Over the entire forecast period, demand for LPNs in NL is expected to increase by approximately 20%. Table 93 showcases the predicted annual increase in health care spending, which in this case is used as a proxy with which to estimate growth in demand by zone for the forecast period.

Table 66: Regional Growth in Demand for Licensed Practical Nurses

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	2.0%	2.0%	2.0%	2.1%	2.1%	2.2%	2.2%	2.0%	2.2%	2.0%
Eastern Rural	1.8%	1.8%	1.9%	2.1%	2.0%	2.1%	1.7%	1.8%	2.1%	1.8%
Central	1.6%	1.7%	1.7%	1.9%	1.7%	1.6%	1.5%	1.5%	1.9%	1.5%
Western	1.7%	1.7%	1.8%	1.7%	1.9%	1.8%	1.9%	1.8%	1.8%	1.5%
Labrador-Grenfell	1.3%	1.8%	1.4%	1.6%	1.8%	1.6%	1.7%	1.7%	1.8%	1.6%
Newfoundland and Labrador	1.8%	1.8%	1.8%	1.9%	1.9%	1.9%	1.9%	1.8%	2.0%	1.8%

Table 93 above suggests that the growth in demand is expected to lie between one and slightly above two percent for all zones, with a slightly greater increase in demand predicted for the Eastern Urban zone.

Table 67: Preliminary Gap Analysis for Licensed Practical Nurses

Health Occupation	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Licensed Practical Nurses	2,288	2,601	313	2,375	3,128	753	440

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022. Although the supply of LPNs is predicted to increase by 3.8% over the coming decade, demand is predicted to greatly outpace supply. Driving most of the increase in demand is the aging population.

Base Case Projections

The Health Accord NL CTA and workforce initiatives listed below are reflective of stakeholder feedback. In addition, sufficient quantitative data existed for their impact to be incorporated in supply and demand projections. Overall, the policy initiatives selected to be

included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

- **Demand Analysis:**
 - The new acute care and Cancer Care Western facility in Corner Brook will require LPNs (i.e., CTA 9.14)
- **Supply Analysis:**
 - The addition of 92 PN program seats across five campuses for the 2022-23 academic year;
 - Uptake of the Jamaica PN program initiative; and,
 - Uptake of the Come Home Year Incentive.

Table 95 highlights the assumptions used to help quantify base case items for LPNs.

Table 68: Base Case Assumptions for Licensed Practical Nurses

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	Demand	<ul style="list-style-type: none"> • One-time addition when facility opens in June 2024 	<ul style="list-style-type: none"> • Western Zone <ul style="list-style-type: none"> ◦ 2024: +18
Come Home Year - \$50,000 for a three-year return-in-service agreement for licensed practical nurses	Supply	<ul style="list-style-type: none"> • One-time incentive • Impact sustained for three years due to return-in-service agreement • 20.3% turnover rate following end of contract, based on Eastern Health's overall hires turnover rate for licensed practical nurses 	<ul style="list-style-type: none"> • Eastern Urban <ul style="list-style-type: none"> ◦ 2024: +9
Jamaica practical nurse program initiative	Supply	<ul style="list-style-type: none"> • 120 LPNs starting the program in September 2023 	<ul style="list-style-type: none"> • Eastern Urban <ul style="list-style-type: none"> ◦ 2025: +15 • Eastern Rural

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
		<ul style="list-style-type: none"> • 19-month program, which means the first cohort will graduate in May 2025 • 21% attrition rate • 83% CRPNE exam pass rate • 60.7% return to NL rate post-graduation • Allocate graduates by zones based on current distribution of LPNs in the province 	<ul style="list-style-type: none"> • 2025: +10 • Central ◦ 2025: +10 • Western ◦ 2025: +9 • Labrador-Grenfell ◦ 2025: +4
Added an additional 92 practical nursing program seats across five campuses for the 2022-23 academic year		<ul style="list-style-type: none"> • 19-month program launched in 2022-23 academic year, with first cohort of expected graduates in May 2024 • Attrition rate dependent on the zone: <ul style="list-style-type: none"> ◦ Eastern Rural: 50.3% ◦ Central: 54.29% ◦ Western: 25% ◦ Labrador-Grenfell: 12.5% • 80% expected to remain in-province post-graduation • Assume LPNs remain in the zone in which they are educated 	<ul style="list-style-type: none"> • Eastern Rural <ul style="list-style-type: none"> ◦ 2024: +8 ◦ 2025 onwards: +12 • Central <ul style="list-style-type: none"> ◦ 2024 onwards: +13 • Western <ul style="list-style-type: none"> ◦ 2024 onwards: +10 • Labrador-Grenfell <ul style="list-style-type: none"> ◦ 2024 onwards: +6

Table 96 illustrates the annual quantitative impacts for each of the base case items included in the LPN analysis.

Table 69: Annual Quantitative Impacts of the Base Case Items for LPNs

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Come Home Year - \$50,000 for a three-year return	0	9	9	9	7	7	7	7	7	7
Jamaica practical nurse program initiative	0	0	48	48	48	48	48	48	48	48
Added an additional 92 practical nursing program seats across five campuses for the 2022-23 academic year	0	36	75	114	154	193	232	271	310	349
Total Supply Impacts	0	45	132	171	208	248	287	326	365	404
Health Accord NL CTA 9.14	0	18	18	18	18	18	18	18	18	18
Total Demand Impacts	0	18	18	18	18	18	18	18	18	18

Table 96 above highlights the annual quantitative impacts of each base case item.

The base case item that is predicted to have the greatest impact on supply is the addition of additional 92 practical nursing program seats across five campuses for the 2022-23 academic year.

After incorporating the base case items into the analysis, demand rises to 3,155 for the province as a whole and supply rises to 2,779. Table 97 highlights the gap analysis over the course of the forecast.

Table 70: Final Annual Provincial Gap Analysis for Licensed Practical Nurses

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	2,288	2,260	2,301	2,389	2,432	2,476	2,526	2,586	2,649	2,713	2,779
Demand	2,601	2,647	2,713	2,762	2,816	2,870	2,925	2,979	3,032	3,092	3,146
Gap	313	387	412	373	384	394	399	393	383	379	367
Gap as a Percent of Supply	14%	17%	18%	16%	16%	16%	16%	15%	14%	14%	13%

The gap between supply and demand rises and declines throughout the forecast period due to the timing of the different supply and demand base case items. Overall, the 2032 gap between supply and demand decreases from 753 to 367 as the base case items are incorporated. However, the gap is still predicted to represent approximately 13% of supply in 2032.

The following section highlights additional workforce recommendations proposed to help GNL continue to close the gap.

Workforce Recommendations

As discussed above, several health system transformation priorities and initiatives carry significant implications for both the demand and supply of LPNs in NL. These include shifts away from physician and hospital-centric service delivery models of the past towards the provision collaborative, interdisciplinary team-based care which will increasingly utilize various nursing disciplines to enable success.

However, the magnitude of expected future gaps between LPN supply and demand over the short- to medium-term can perhaps be viewed as less acute versus those in other nursing disciplines (e.g., RN gap of 13% of supply, versus NP gap of 56% of supply in 2025).

To address the projected deficit of LPNs, GNL should pursue the recommendations described in Table 98. These recommendations seek to complement or enhance the steps already taken by HCS and NLHS to strengthen the LPN workforce, which include increasing capacity in CNS' PN program, expanded scopes of practice, international recruitment missions, and a wide variety of financial incentives.

Table 71: Licensed Practical Nurses Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Supply of LPNs		
LPN-1	Recruit	<p>Enable Upward Mobility for PCAs to become LPNs:</p> <ul style="list-style-type: none"> • To address this issue, it is recommended that a bridging program be established. This program would allow PCAs to leverage their experience and knowledge, providing them with an accelerated pathway to becoming LPNs. The curriculum could include advanced courses in patient care, medication administration, and specialized care procedures, combined with practical clinical experiences. • Implementing such a program would not only provide PCAs with a clear and accessible career progression pathway but also help maintain a steady supply of skilled health care workers in the public sector. • As such, by setting a pathway for PCAs to become LPNs, GNL would effectively be retaining PCAs in the public system over the course of the PN program, increasing the supply by the number of PCAs looking to advance their career, multiplied by the length of the program. This would assume that the program would enable PCAs to work near to full time as PCAs to maintain a steady income while completing the program.

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> • Note: Promoting the career pathway from PCA to LPN may initially lead to a reduction in the PCA workforce. However, when combined with other PCA workforce strategies outlined in Table 112, the gap can be filled. The projected workforce gap for PCAs is 129 after incorporating the base case items, which represents approximately 4.4% of the projected supply in 2032. In contrast, the LPN workforce is projected to face a larger gap by 2032, with a shortfall of 352 LPNs (see Table 97). This represents about 14% of the projected LPN supply in 2032. Therefore, encouraging PCAs to advance their careers to become LPNs not only helps address the shortage in the LPN workforce but also creates opportunities for new entrants into the PCA role. This balanced approach can ensure a steady supply of both PCAs and LPNs in the long term and underscores the importance of a comprehensive strategy that addresses both recruitment and retention in these critical health care roles.
LPN-2	Recruit	<p>Improve the Flexibility of the LPN Program:</p> <ul style="list-style-type: none"> • Considering the high attrition rates of the PN program, with an estimated 50.3% of students overall being lost to attrition during the span of the fall 2018 and 2021 intake classes, implementing a second, smaller intake annually in January would help incentivize previously enrolled students to complete their LPN education, as suggested in the Attrition Project Report of the PN program.¹³⁶ • Currently, when students leave the program at any point during the year, they are not able to return until the next academic year. • Despite there being a multitude of reasons why students choose to leave the program, such as academic failure and personal reasons, increased flexibility from a class and clinical scheduling perspective may benefit students who have work and family commitments.¹³⁶ • By creating a second intake in January, students wishing to return to the program can do so, which may allow them to graduate in a timelier manner. At the same time, the program may also attract new students in the winter cohort. • Along with offering a smaller, off cycle, cohort, flexibility with clinical placements and classes becomes a possibility, which may also appeal to faculty members. • In addition to the second intake in January, create a part-time option for the program, which would most likely lower attrition rates since many students have competing demands that cause them to leave before completing the program. • In general, data indicates that attrition is the highest after the first and second semesters of the program, which is when students are expected to complete their theory-based courses. On average, the average attrition rate during these semesters is 2.63%.¹³⁶ • If those students that were lost in the early stages of the program were able to return within the same academic year, it has the potential to decrease the program's overall attrition rate by 2.63%, which would result in an additional 36 LPNs entering the workforce by 2032. • The cumulative quantitative impacts of the 2.63% decrease in program attrition is reflected in Table 99 below. • Note: For students who did not complete the PN program and for whatever reason do not want to finish the program, consider redirecting these students to an alternative career in health care as a PCA. This can be accomplished through targeted recruitment for the PCA program aimed at those who did not graduate, or through establishing a fast-track pathway for students who have completed at minimum one semester of the PN program as outlined in PCA-3.
LPN-3	Recruit / Retain	<p>Empower LPNs in LTC Settings:</p> <ul style="list-style-type: none"> • Gerontology nursing involves providing health care to older adults, taking into account their age-related characteristics and specific health care requirements. With an aging population, GNL should work with the providers of educational programs to provide a specialized course for Gerontology Nursing for LPNs. This program would aim to equip

¹³⁶ Attrition Project Report: Practical Nursing Program (2022) provided by J. O'Malley on 22, June 2023.

ID	Theme	Recommendation and Potential Impact
		<p>LPNs with the additional skills necessary to provide specialized care to older residents, with a leadership component given the enhance role of the LPN in the LTC setting. See existing programs within GNL¹³⁷ and from the Canadian Nurses Association Gerontology Practical Nurse Certified Canada Program¹³⁸ which can be provided by educational providers for LPNs across NL.</p> <ul style="list-style-type: none"> • Additionally, explore programs aimed at supporting LPNs excel in their leadership roles in LTC. These programs have been effective in improving the work environment of nurses at the participating homes.¹³⁹ • Create avenues for formal and informal recognition of LPNs' efforts and achievements. Formal appreciation can include initiatives such as an employee award program with clear criteria and team events. Informal appreciation can involve one-on-one chats with employees and passing along positive feedback, as well as expressing gratitude day-to-day. Another effective way to recognize LPNs and the invaluable work they do in the province is by giving them opportunities to participate in decision-making, whether it is at the unit level or geographic zone. • Finally, as shown in Canadian HHR plans, the creation of mental health and resilience training is associated with a stronger ability to manage stress. Develop and implement resilience training for LPNs working in long-term care so that they are equipped with the necessary tools to prevent burnout and respond when experiencing burnout, as well as tools to support their peers. • Ensure that there are dedicated points of contact and liaisons in place to support LPNs when they are facing crises and dealing with high-stress situations.
LPN-4	Retain	<p>Offer Child Care Support for LPNs:</p> <ul style="list-style-type: none"> • Similar to the current workforce initiatives being developed for RNs involve child care benefits, consider partnering with local child care facilities to create priority enrolment for LPNs, which will help them manage their child care responsibilities and improve their work-life balance. • Work with child care providers at local day-cares and negotiate flexible hours that can help accommodate LPNs working long shifts and offer back-up care, as needed. <ul style="list-style-type: none"> ◦ Given that the supply for LPNs is similar to that of the RNs, which was 93% women in 2022, with almost half being of child-bearing age, there is an overwhelming need from this segment of the workforce to have adequate child care support to work to their full capacity, especially for those that work non-regular hours. In addition, LPNs often are challenged with returning to work after parental leave due to challenges with child care. ◦ Following the recent announcement by GNL announcing a new child care initiative for health care professionals,¹⁴⁰ it is recommended that HCS and NLHS continue to develop convenient child care options for LPNs, including: <ul style="list-style-type: none"> ▪ Provide on-site, flexible, child care to support LPNs and reduce the related stress from balancing work and family responsibilities; ▪ Partner with local child care facilities to create priority enrolment for LPNs, which will help them manage their child care responsibilities and improve their work-life balance; ▪ Work with child care providers at local day-cares and negotiate flexible hours that can help accommodate LPNs working long shifts and offer back-up care, as needed; and ▪ Introduce financial support for child care while on-site child care is in development. • Estimating the potential impact of child care support on LPN retention is difficult as it is highly dependent on individual factors; however, this has the opportunity to impact 1,448

¹³⁷ Post-Basic Gerontology Program - Centre for Nursing Studies (easternhealth.ca)

¹³⁸ Canadian Gerontological Nursing Association - Home (cgna.net)

¹³⁹ Advancing Nursing Leadership in Long-Term Care.pdf (rnao.ca)

¹⁴⁰ Media Advisory: Premier to Announce Child Care Initiative for Health Care Professionals -

News Releases (gov.nl.ca)

ID	Theme	Recommendation and Potential Impact
		of the future LPN workforce, indicating the magnitude of impact that this recommendation can have on improving job satisfaction and ultimately retain more practical nurses.
LPN-5	Retain	<p>Prepare LPNs for Leadership Positions in LTC Settings:</p> <ul style="list-style-type: none"> • Leverage experienced LPNs in recruitment initiatives, particularly in support of growing a pipeline for LPNs. Use current LPNs to show students opportunities available to them. Consider incentives to encourage LPNs to take on these roles. • Develop a training program to better prepare LPNs for leadership positions within LTC settings, in collaboration with professional association leaders. This would result in stronger ability to work and thrive in LTC settings and improve retention rates in LTC.

Table 72: Annual Impacts of Decreased LPN Program Attrition on Graduation Projections

The following table outlines the projected annual impacts to the LPN workforce from the proposed changes to the PN program outlined in recommendations LPN-2 above. As outlined in Table 99 below, implementing this initiative alone would reduce the size of the gap of the LPN workforce to 330 LPNs by 2032.

Recommendation	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Improve the flexibility of the LPN Program through addition of January intake (2.63% decrease in attrition)	0	0	0	5	10	16	21	26	31	36
New Supply	2,260	2,301	2,389	2,437	2,487	2,541	2,606	2,675	2,745	2,816
Demand¹⁴¹	2,647	2,713	2,762	2,816	2,870	2,925	2,979	3,032	3,092	3,146
New Gap	387	412	373	379	383	384	373	357	347	330

¹⁴¹ Note that demand is not affected here.

Personal Care Attendants (PCAs)

In Newfoundland and Labrador (NL), a personal care attendant (PCA) is defined as a health care professional who participates in the delivery of holistic client-centered care through an interdisciplinary approach. They provide personal and supportive care to patients and residents through the performance of clerical, social, and personal care activities to meet their physical, emotional, social, and spiritual needs.¹⁴²

PCAs responsibilities often include assisting patients and Long-Term Care (LTC) residents in all activities of daily living (ADLs) including bathing, dressing, and bathroom assistance. They also assist with transferring patients, providing fluids, tidying resident rooms and work areas, restocking supplies, delivering and assisting with meals, and monitoring vitals, among other tasks.

Current State Analysis

As of December 2022, there are 2,032 PCAs practicing in NL, distributed by NLHS health zone per, according to Table 100. This only includes PCAs working in the public sector (i.e., for NLHS). PCAs who work outside of NLHS were not included in this analysis due to data limitations. In addition to drawing from local supply sources including training programs offered by College of the North Atlantic (CNA), Keyin College, Eastern Academy, and Academy Canada, GNL also has invested in various international recruitment pathways for PCAs (see **Workforce Initiatives** below for further details).

Table 73: Personal Care Attendants by NLHS Zone¹⁴³

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2022 Supply	892	323	317	393	115	2,032

Long-Term Care

In NL, the demand for PCAs in LTC is growing. However, the sector is facing challenges related to waitlists and bed availability. This is largely due to staffing issues, which affect PCAs as well as other highly utilized occupations in LTC. The increasing demand for LTC services, coupled with staffing shortages, has resulted in long wait times for patients. This situation underscores the need for a sufficient supply of skilled

¹⁴² [Job Class Profile \(gov.nl.ca\)](https://www.gov.nl.ca)

¹⁴³ Includes only PCAs employed by NLHS (i.e., public sector PCAs).

health care workers, including PCAs, to ensure the provision of quality care.

Recognizing these challenges, GNL has initiated a comprehensive, holistic review of the LTC sector.¹⁴⁴ The review aims to identify opportunities to improve quality of care and the quality of life of residents, enhance staff engagement, and improve the staff experiences at work. Review outcomes may potentially result in policy changes affecting the demand for PCAs and other LTC professions and could provide valuable insights into how to address these issues effectively.

In addition to recruitment and retention incentives for PCAs in LTC, GNL should explore other mechanisms to train and retain PCAs in LTC settings. For instance, GNL should explore implementing strategies to retain PCAs in the LTC sector as those seen in other jurisdictions, such as Ontario's apprenticeship programs in which the government has implemented a Personal Support Worker (PSW) apprenticeship program that combines on-the-job training with classroom instruction.¹⁴⁵ This program allows individuals to earn while they learn and provides a clear career path for PSWs.

As NL experiences a growing need for PCAs, especially in LTC, alternative educational programs can be explored to help bridge the gap for PCAs.

Local Educational Programs

In NL, becoming a PCA involves completing a certificate program. There are four main PCA educational pathways in the province that each follow the provincially recognized curriculum: CNA, Keyin College, Eastern Academy, and Academy Canada. These programs typically last two semesters (30 weeks).

In NL, attracting PCAs to educational programs is a significant challenge. The number of seats within PCA programs is determined by enrolment rather than predetermined targets, and these programs often operate under capacity due to declining interest and competition with other sectors. One such competing sector is Early Childhood Education. Early Childhood Educators (ECEs) and PCAs have a similar profile and thus these programs compete for the same pool of applicants. GNL has invested heavily in the Early Childhood Education sector to improve access to affordable child care. For

¹⁴⁴ [Review of Long-Term Care and Personal Care Home Programs in the Province Underway - News Releases \(gov.nl.ca\)](#)

¹⁴⁵ Ontario Personal Support Worker Apprenticeship Program." Ontario.ca, Government of Ontario, 2021, www.ontario.ca/page/ontario-personal-support-worker-apprenticeship-program.

instance, the ECE Graduate Bursary Program aids candidates who have obtained a diploma in Early Childhood Education. GNL has reached an agreement with the federal GNL to provide \$10-a-day child care by 2023, which is expected to increase demand for child care services, and has the potential to pull further supply away from the PCA workforce.

PCA compensation and working hours relative to ECEs also drives this increased competition. With raises that were announced in April 2023, the base rate for an ECE II with a two-year diploma is \$25.00 an hour.^{146,147} In contrast, the average hourly rate for a PCA is between \$22.41–\$24.69 per hour in the public sector.¹⁴⁸ In terms of working hours, ECEs generally work Monday to Friday during the daytime, whereas PCAs may be expected to over overnight and on weekends. This difference in compensation, paired with work-life balance, has the potential to influence prospective students' career choices, drawing them away from PCA programs and towards roles as ECEs.

Although the ECE program is two-years in contrast to the standard 30-week program for PCA training, there is other similarities drawn to professions with no formal education requirements such as Home Support Workers (HSWs) who are now paid \$17.05 an hour in the province. In order to recruit in the PCA field, further increases in wages must be explored.

GNL recognizes that ECEs, HSWs, and PCAs are all essential professions that contribute significantly to the functioning and value of the health care system. GNL's initiatives aim to address workforce demands in these sectors and ensure quality services for all residents. Therefore, there are opportunities for GNL to consider support measures specific to PCAs to attract more applicants to this occupation.

In NL, while PCAs can take on enhanced roles such as providing orientation or teaching, or acting as supervisors, there are currently no formal career pathways or bridging programs specifically designed for PCAs to transition into Licensed Practical Nurse (LPN) or Registered Nurse (RN) roles. This means that PCAs who wish to become LPNs or RNs typically need to pursue these qualifications independently, often starting from the beginning of nursing programs.

¹⁴⁶ [Early Childhood Educator Wage Grid - Education \(gov.nl.ca\)](#)

¹⁴⁷ [Provincial GNL Implements New Wage Grid for Early Childhood Educators in Ongoing Commitment to Increase Capacity in Affordable Child Care - News Releases](#)

¹⁴⁸ Average Personal Care Attendant Wages in NL provided by J. O'Malley on September 20, 2023

A lack of formal career transition pathways may present challenges for PCAs seeking advancement within the health care field.

Other Canadian jurisdictions have implemented successful strategies to attract more individuals to the PCA profession. For example, Ontario has invested over \$1.3 billion since October 2020 to temporarily enhance wages for PSWs and direct support workers.¹⁴⁹ This temporary wage enhancement includes increases of \$3 per hour for eligible workers in home and community care, \$3 per hour for eligible workers in long-term care, \$2 per hour for eligible workers in public hospitals, and \$3 per hour for eligible workers in children, community, and social services providing personal direct support services. This increase is aimed at attracting and retaining workers in these critical sectors. The success of this strategy can be measured by the stabilization of the workforce, the attraction of new workers to the profession, and the retention of existing workers.

However, while these wage enhancements have been beneficial, some advocates argue that additional change is needed. For instance, they suggest that consistent training and certification of PCAs would let support agencies hire and retain qualified staff.¹⁵⁰ Adopting similar strategies in NL could help increase enrolment in PCA programs and ensure a steady supply of skilled health care workers in the public sector. GNL should pursue both compensation enhancements and improvements in working conditions to attract a new generation of PCAs.

Educational Programs for International Students

The International PCA (IPCA) Program offered by Keyin College in partnership with the Centre for Nursing Studies (CNS) is an educational program and pathway for individuals living outside of Canada to gain permanent residency and the necessary skills and knowledge to make a significant impact in the health care sector.¹⁵¹ This program, which leads to a diploma, was offered to address the increasing demand for qualified health care workers in both public and private health care facilities across NL.

Although the program, which is in its early stages, uses the same curriculum of those being delivered in the province, it is designed with flexibility in mind to cater to the diverse needs and circumstances of students. It offers various delivery methods, including online, hybrid,

¹⁴⁹ [Ontario Extending Temporary Wage Enhancement for Personal Support Workers | Ontario Newsroom](#)

¹⁵⁰ [Care hasn't improved after Ontario's 2021 PSW changes, advocates say | CBC News](#)

¹⁵¹ Note, this program is intended for international students from pre-defined jurisdictions, see International PCA "Pilot Project" provided by the A. Wells on June 22, 2023

or fully on-campus options. To enhance its accessibility, several funding options have been available. With 37 students arriving in the 2023-2024 academic year, the first cohort of graduates is expected in January 2024; however, it is challenging to determine outcomes at this stage due to the program's novelty. The program is expected to enable graduates to enter the job market with adequate skills, but specific outcomes and lessons learned will become clearer as the program matures and the first cohort of students graduate. Currently, NL faces a growing shortage of PCAs, due to a limited local supply influenced by multiple factors, including unattractive compensation and benefits, and competition with different sectors in public services (see Table 102 for additional detail). Historical trends have led to this imbalance, and it is crucial for GNL to keep these factors in mind when planning for the future. Based on the outcomes of this program, extending and funding pilot programs with a proven track record should remain a priority for GNL. These initiatives could help address the current imbalances and ensure a steady supply of skilled health care workers in the public sector.

International Recruitment

Private training institutions in NL are also facing significant challenges. Current study visa policies for shorter programs and the ineligibility for post-graduate working permits (PGWPs) result in missed enrolment opportunities for prospective international students, particularly for PCAs. This not only impacts the institution's student intake, but also limits the diversity of experience that international students bring to the educational environment.

Other Canadian jurisdictions have successfully addressed similar challenges. For instance, in response to the COVID-19 pandemic, Immigration, Refugees and Citizenship Canada (IRCC) implemented temporary policy changes allowing international students to complete a portion of their studies online while overseas and still be eligible to apply for a work permit after graduation.¹⁵² Moreover, IRCC announced that international graduates with a recently expired or expiring PGWP will qualify for an additional or extended work permit to stay longer and gain additional work experience for up to 18 months.¹⁵³ Adopting similar flexible policies could significantly enhance NL's attractiveness as a study destination for international students.

¹⁵² <https://www.cicnews.com/2020/05/canada-announces-major-study-and-work-visa-change-for-fall-2020-0514355.html#gs.5mr9pu>

¹⁵³ [Canada announces extension of post-graduation work permits for up to 18 months to retain high-skilled talent - Canada.ca](https://www.canada.ca/en/immigration-refugees-citizenship/corporate/immigration-refugees-citizenship/canada-announces-extension-post-graduation-work-permits-up-18-months-retain-high-skilled-talent-canada.ca)

Career Mobility

In NL, PCAs face a significant barrier to career advancement. Currently, there is no established program that provides upward mobility for PCAs to become LPNs. This serves as a barrier for those interested in upskilling while retaining their employment as PCAs. There is funding available through NLHS for a salary advance program where employees can access up to two-thirds of their salary while on education leave and pay it back overtime; however, additional options should be required to provide flexible.

This gap in the educational pathway forces PCAs to leave their positions in the public sector and return to school for a complete PN program. This not only disrupts their personal lives but also contributes to public sector supply shortages, impacting delivery of care.

In other Canadian jurisdictions, programs have been established to enable upward mobility while maintaining PCAs in the workforce. For example, Okanagan College offers an Access to Practical Nursing Diploma program that allows Health Care Assistants (HCAs) and Resident Care Attendants (RCAs) to ladder into a new career as an LPN.¹⁵⁴

Rural and Remote Areas

Preliminary projections predict the average number of PCAs in the province to increase by 28% from 2022 to 2032. However, a contrasting trend is expected in the Labrador-Grenfell Zone, where the preliminary supply of PCAs is predicted to decrease by 5% during the same period, if historical trends continue into the future. This discrepancy can be attributed to several workforce challenges unique to rural and northern areas. Stakeholders in rural and remote areas cite difficulties in attracting and retaining health care professionals due to factors such as geographic isolation, limited access to amenities, and fewer professional development opportunities. This is particularly true for PCAs, who may find more attractive employment opportunities in urban areas.

In 2022, just over 9% of the PCA workforce in Labrador-Grenfell was 60 years of age or older. In the other four health zones, 7% or less of the PCA workforce was over the age of 60, meaning more PCAs are expected to retire over the course of the forecast period in Labrador-Grenfell. With higher retirement rates and lower inflow rates than other zones, preliminary projections suggest the supply of PCAs will decline in Labrador-Grenfell. These conditions highlight the need for

¹⁵⁴ [Access to Practical Nursing | Okanagan College](#)

targeted strategies to address the unique workforce challenges in rural and northern regions like Labrador-Grenfell.

Table 74: Personal Care Attendants by NLHS Zone and Sector

	Eastern Urban	Eastern Rural	Central	Western	Labrador- Grenfell	Total	Percent LTC ¹⁵⁵	Percent Other ¹⁵⁶
2022 Supply	892	323	317	393	115	2,032	39%	61%

Note: Percent Other may include LTC beds in acute care facilities

Health Accord NL Calls to Action

Several Calls to Action (CTA) from Health Accord NL carry implications for the supply and demand of PCAs in NL (see Base Case Projections and Table 110 below for further detail):

- **CTA 8.1:** Develop and implement a formal Provincial Seniors Care Program to address the critical need of our population.
- **CTA 8.2:** Implement and support an integrated continuum of care to improve the effectiveness and efficiency of care delivery, improve health and social outcomes for older adults and older adults with disabilities, and support older adults to age in place with dignity and autonomy.
- **CTA 9.14:** Develop and implement a five-year plan for improvement in mortality rates for cancer, cardiac disease, and stroke over the next 10 years, led by the provincial programs for these disease entities.

The implementations of the Provincial Seniors Care Program through CTA 8.1, and the integrated continuum of care for older adults through CTA 8.2, have the potential to realize multiple benefits for the NL system: emergency departments certified as "Senior Friendly" (without which, misdiagnoses and inappropriate care may be more frequent), and reduced demands for Alternate Level of Care (ALC) beds and resources (as many older ALC patients can return home or to a lower level of care with appropriate, geriatric-focused discharge planning). Considering that a large portion of PCAs work in the LTC setting, and that these CTA are in part intended to support alternative care models and deliver additional supports to enable elderly patients to remain living in their homes longer, there is the potential to see a shift in demand for PCAs away from traditional LTC settings and into the community once these CTA are fully implemented.

¹⁵⁵ Based on the split in the Eastern zone (Eastern Urban and Rural combined)

¹⁵⁶ Ibid

Additionally, CTA 9.14 signals the need for a five-year improvement plan for cancer, cardiac disease, and stroke mortality rates over the next 10 years – led by corresponding provincial programs. This is aimed to achieve improved access to services delivered by these programs. For the purposes of this HHR Plan, improved access to cancer, cardiac disease, and stroke services is represented by the construction of a new acute care and cancer care facility in Corner Brook. More specifically, quantitative analysis incorporates this CTA in the form of a one-time, demand-side addition of 28 PCAs in the Western Zone.

Workforce Initiatives

As previously discussed in the Current State Analysis section, the Department of Health and Community Services (HCS) has established an IPCA program in partnership with Keyin College and Eastern Zones aimed at strengthening the supply of PCAs through international recruitment.

HCS has also issued to conduct a review of LTC in the province that aims to identify opportunities to improve quality of care and the quality of life of residents, enhance staff engagement, and improve the staff experiences at work.

In addition to this program, HCS has implemented the following retention and recruitment bonuses aimed at PCAs:

- **Health Professional Bursaries:** \$5,000 to bursaries are awarded for difficult to fill positions, available to PCA students who sign a service agreement for two years of service commitment post-graduation.
- **Long-Term Care Retention Incentives:** Up to \$1,650 available to PCAs.
- **Long-Term Care Recruitment/Signing Bonuses:** Up to \$4,300 available to PCAs.
- **Retention Bonuses:** Available to permanent or temporary PCAs for a minimum of a one-year return-in-service commitment, which ended on January 31, 2023.

The extent to which these workforce initiatives can be quantified in future forecasts of the supply of PCAs is discussed later in this section.

Stakeholder Engagement Insights

The following six stakeholder groups were engaged via focus groups to understand the experiences and perspectives of the current and future PCA workforce:

- NL Association of Public and Private Employees (NAPE)
- Canadian Union of Public Employees Newfoundland and Labrador (CUPE)
- College of the North Atlantic (CNA)
- Keyin College
- Eastern Academy
- Academy Canada

In addition, eight individuals responded to the focus group follow-up survey with additional insights. These stakeholder consultation activities yielded an array of qualitative insights pertinent to the development of PCA workforce recommendations and are summarized in Table 102 below. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, which may not be grounded in absolute fact.

Table 75: What We Heard from PCA Stakeholders

Theme	Insights
Recruitment	<ul style="list-style-type: none"> • Challenging for international students to obtain study visas as they are ineligible to obtain PGWPs due to short length of training programs; therefore, they must get a work permit through an employer which poses a barrier to entry to the profession.
	<ul style="list-style-type: none"> • Prospective students for the ECE and PCA programs have a similar profile and thus compete for the same pool of applicants. ECEs in the province have access to graduation bursaries and the sector recently announced the \$10-a-day federal child care benefit. The investments made in other sectors such as education are drawing prospective students away from PCA programs.
Education	<ul style="list-style-type: none"> • Post-secondary educational institutions that provide PCA training are challenged with recruiting local talent under the current circumstances in which paygrade is comparatively low for a position that requires a college education. As a result, despite there being an abundance of PCA seats available in the province, class sizes are typically determined by the number of enrolments received.
Employee Wellness and Resilience	<ul style="list-style-type: none"> • Long working hours and overtime due to workforce shortages and the demanding nature of the work are making it challenging to maintain a healthy work-life balance.
Recognition	<ul style="list-style-type: none"> • Some PCAs recounted how they are often called upon to complete orientation of new staff, while still completing all their own work without receiving any recognition support or compensation – unlike some other providers.
Rural and Remote	<ul style="list-style-type: none"> • Many factors keep PCAs out of rural and remote areas, including limited access to housing.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary projections of the supply of and demand for PCAs were developed based on historical practice patterns and trends. The following inflows and outflows were captured in the supply data received from NLHS:

- Inflows: new hires, rehired retirees, and rehires
- Outflows: resignations, and retirements

For the case of PCAs, only public sector employees (i.e., only PCAs employed by NLHS) are captured in the supply. In addition, some inflows and outflows were not directly captured in the data. In the historical data provided, a slight discrepancy existed between change in the supply year-over-year and the difference between inflows and outflows. Consequently, to ensure the change in the stock of PCAs was equal to the difference between the inflows and the outflows year-over-year in the historical data, “other net migrations” were estimated.

These preliminary projections were then augmented, wherever possible, based on the availability of supporting data and analysis, to reflect inflight or recently implemented policy initiatives to form a baseline scenario.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 103 below outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for PCAs, as well as any limitations or caveats of the data.

Table 76: Data Sources for Personal Care Attendant Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of PCAs, by zone, five-year age cohort, and gender from 2018-2022.</p> <p>Inflows: Entries into profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.)</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation).</p>	<p>Supply: Yes</p> <p>Inflows: Yes</p> <p>Outflows: Yes</p> <p><u>Source:</u> NLHS</p>	<p>Supply Year X = Supply Year X-1 + four-year average inflows – four-year average outflows</p>	<ul style="list-style-type: none"> Some inflows and outflows were not directly captured in the data. Thus, “other net migrations” were estimated to ensure the change in the supply was equal to the difference between the inflows and the outflows historically. For the case of PCAs, only public sector employees (i.e., only PCAs employed by NLHS) are captured in the supply.
Demand	<ul style="list-style-type: none"> Ten-year population projections, by five-year age cohort, gender, and zone Average per capita spending by age and gender for nine CIHI health care spending categories. Spending in other institutions, is used to estimate growth in demand for PCAs. Average historical cost increases in health care spending. 	<p>Population projections: Yes</p> <p><u>Source:</u> NL Department of Finance</p> <p>Health spending by category by age and gender: Yes</p> <p><u>Source:</u> CIHI</p> <p>Historical cost increases in health care spending: Yes</p> <p><u>Source:</u> CIHI</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = 10-year population projections * the estimated change in average utilization * average real per person spending by age and gender</p> <p>Demand Year X = Demand Year X-1 * growth in the number of people in each age category * average change in real spending per person * the change in utilization</p>	<ul style="list-style-type: none"> Encounters with PCAs are not captured by the CIHI POP Grouper Methodology. Thus, the inflation-adjusted spending on other institutions (i.e., volumes) is used to forecast distribution of patients by age and gender across NL. Change in utilization estimated based on recent trends.

Preliminary Projections

This section showcases the preliminary forecast estimates for PCAs.

Note, the projected number of resignations, which stands at 1,500 between 2022 and 2032, is substantial when compared to the starting supply of 2,032 PCAs. This represents a significant portion, nearly 74% of the initial workforce, exiting their roles over this period. Given this high attrition rate, retention strategies should be a priority in workforce planning. Efforts should focus on creating a supportive

work environment that encourages PCAs to continue in their roles. By prioritizing the retention of the current workforce, GNL can maintain a stable supply of PCAs and maintain the quality of care provided to the community.

Table 77: Preliminary Supply Projections for Personal Care Attendants

Health Occupation	Starting supply (Dec. 2022)	New Hires (2023-2032)	Rehired Retirees (2023-2032)	Rehires (2023-2032)	Resignations (2023-2032)	Retirements (2023-2032)	Other Net Migrations (2023-2032)	Ending Supply (Dec. 2032)
Personal Care Attendants	2,032	3,005	18	418	1,500	204	-1,165	2,603

Where: Starting supply (Dec. 2022) + New Hires (2023-2032) + Rehired Retirees (2023-2032) + Rehires (2023-2032) - Resignations (2023-2032) - Retirements (2023-2032) + Other Net Migrations (2023-2032) = Ending Supply (Dec. 2032)

The preliminary projections predict the supply of PCAs to increase 28% between 2022 and 2032. New hires are predicted to drive most of the growth in supply over the coming decade. These results vary by zone. Table 105 summarizes the projections by zone.

Table 78: Regional Preliminary Supply Projections for Personal Care Attendants

Zone	2018 Supply	2022 Supply	2032 Supply	Percent Change in Supply 2018 vs 2022	Percent Change in Supply 2022 vs 2032
Eastern Urban	641	892	1,237	+39%	+39%
Eastern Rural	276	323	389	+17%	+20%
Central	254	317	399	+25%	+26%
Western ¹⁵⁷	300	380	465	+27%	+22%
Labrador-Grenfell ¹⁵⁸	114	120	114	+5%	-5%
Total¹⁵⁹	1,585	2,032	2,603	+28%	+28%

All zones but Labrador-Grenfell are predicted to see an increase in the supply of PCAs over the course of the forecast period. The Eastern

¹⁵⁷ 2023 supply was provided for the Western and Labrador-Grenfell zones. Consequently, 2023 supply was accounted for in these two zones when forecasting supply. 2023 supply of PCAs in Western = 393 and 2023 supply of PCAs in Labrador-Grenfell = 115.

¹⁵⁸ Ibid

¹⁵⁹ Due to rounding, the sum of the supply by zone may not perfectly match the total listed.

Urban zone is expected to see the largest increase, followed by the Central zone.

Table 79: Preliminary Demand Projections for Personal Care Attendants

Health Occupation	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Personal Care Attendants	2,032	227	2,259	3,037	+34%

Vacancies are added on to 2022 supply to estimate the starting demand. Vacancy data was provided by NLHS. For PCAs, demand is estimated using data on spending from CIHI on other institutions. To do this, a demographically driven health expenditure model was created. In this model, average spending was calculated across 40 age and gender cohorts. This model allows spending to be broken into several different components:

- The share of spending related to cost adjustments;
- The share of spending related to increased utilization in each age/gender cohort;
- The share of spending related to overall population growth; and
- The share of spending related to demographic aging.

To build this model, the following steps were undertaken:

Step 1: Allocate spending on other institutions across the age/gender cohorts based on CIHI spending data.

Step 2: Calculate the average price adjustments based on CIHI health inflation (CPI) estimates. This is done to deflate average spending in each age/gender category to estimate volume increases (i.e., inflation adjusted spending).

Step 3: Estimate the age and gender adjusted real (inflation-adjusted) per person spending over the last decade to calculate how utilization has changed in other institutions.

Step 4: Project health care utilization based on past trends and discussions with subject matter experts. It is estimated that utilization in other institutions would decline by an average of 0.4% per year in each age category, reflecting an increased likelihood of aging at home. The decline in utilization was estimated based on trends in utilization since 1986.

Step 5: Project total volumes for other institutions in each age/gender cohort by multiplying the number of expected people in each age/gender cohort each year by the average cost of an individual in that age/gender cohort. This number takes account of average utilization in the age/gender cohort.

Over the last 10 years, real spending on other institutions has risen by an average pace of 2.1% per year. Excluding the effects of population growth, the overall number remains nearly identical at 2.2%. Subtracting the impact of aging, spending on other institutions would have remained constant.

Over the next 10 years, volumes in other institutions are projected to grow by an average of 3% per year. Of this, 0.0% is due to population growth, -0.4% is due to changes in utilization and 3.4% is due to population aging. As mentioned in step 4, the decline in utilization was estimated based on trends in utilization since 1986. This means that, if you strip out the effects of inflation, the aging population, and population growth, what is spent on an individual in 1997 is almost the same as what is spent on an individual in 2022.

The following example illustrates the impact of population aging on the demand for other institutions. According to CIHI data, 56% of the budget for other institutions is spent on those over the age of 80 despite this group accounting for just 4.7% of the total population. Over the next 10 years, the population over the age of 80 is expected to grow by an average of 5.3% per year and the population of 85–89-year-olds (one of the highest cost cohorts) is projected to grow by 5.9%, driving increased demand for health human resources and in particular home support workers.

Over the entire forecast period, demand for PCAs in NL is expected to increase by approximately 34%.

Table 107 showcases the predicted annual increase in inflation-adjusted spending (i.e., volumes) in other institutions, which in this case is used as a proxy with which to estimate growth in demand by zone for the forecast period.

Table 80: Regional Growth in Demand for Personal Care Attendants

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	2.6%	2.8%	2.7%	3.1%	3.2%	3.6%	3.3%	3.0%	3.5%	3.3%
Eastern Rural	2.7%	2.7%	2.8%	3.6%	3.3%	3.5%	2.8%	3.1%	3.8%	3.4%
Central	2.5%	2.7%	2.7%	3.1%	2.8%	2.6%	2.6%	2.4%	3.6%	2.8%
Western	2.5%	2.5%	2.6%	2.5%	3.1%	2.9%	3.3%	3.1%	3.2%	2.8%
Labrador-Grenfell	2.1%	3.2%	2.2%	3.1%	3.6%	2.8%	3.0%	3.2%	3.4%	3.1%
Newfoundland and Labrador	2.5%	2.8%	2.6%	3.0%	3.2%	3.3%	3.1%	3.0%	3.5%	3.1%

The demand for PCAs is predicted to rise between 2.1% and 3.8% annually across all zones. In all zones, the aging of the population will have the greatest impact in the growth in volumes in other institutions and consequently on the demand for PCAs.

Table 81: Preliminary Gap Analysis for Personal Care Attendants

Health Occupation	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Personal Care Attendants	2,032	2,249	227	2,603	3,037	434	207

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022. Both the preliminary supply of and demand for PCAs is predicted to rise 34% between 2022 and 2032, causing the gap between supply and demand to increase by approximately 207 in NL as a whole. Driving the increase in supply, as mentioned above, is the increase in new hires, and driving the increase in demand is the aging population in NL.

Base Case Projections

For PCAs, the Health Accord NL CTA and workforce initiatives listed below are reflective of stakeholder feedback. In addition, sufficient quantitative data existed for their impact to be incorporated in supply and demand projections. Overall, the policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;

- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

- **Demand Analysis:**
 - The new acute care and Cancer Care Western facility in Corner Brook will require PCAs (i.e., CTA 9.14).
- **Supply Analysis:**
 - Uptake of the long-term care recruitment/signing bonuses of up to \$5,200 dollars available to PCAs.
 - The IPCA program partnership Keyin College and Eastern Health.

Table 109 below highlights the assumptions used to help quantify base case items for PCAs.

Table 82: Base Case Assumptions for Personal Care Attendants

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	Demand	<ul style="list-style-type: none"> One-time addition when facility opens in June 2024 	<ul style="list-style-type: none"> Western Zone <ul style="list-style-type: none"> 2024: +28
IPCA partnership Keyin College and Eastern Health	Supply	<ul style="list-style-type: none"> 227 PCAs graduating by 2025 (37 in the first year, and then 95 each year thereafter) Eight-month program, with first cohort graduating January 2024 10% attrition rate (graduation rate of 90%) 100% return to NL rate post-graduating Allocate graduates by zones based on current PCA vacancies in the province (LGH (32) and CH (48) only) 	<ul style="list-style-type: none"> Central <ul style="list-style-type: none"> 2024: +19 2025 and 2026: +50 Labrador-Grenfell <ul style="list-style-type: none"> 2024: +14 2025 and 2026: +35
Long-term care: recruitment/signing bonuses of up to \$5,200 dollars available to PCAs	Supply	<ul style="list-style-type: none"> One-time incentive Impact sustained for one year due to return-in-service agreement 11.1% turnover rate following end of contract, based on Eastern Health's overall hires turnover rate for PCAs 	<ul style="list-style-type: none"> Eastern Urban <ul style="list-style-type: none"> 2023: +99 Central <ul style="list-style-type: none"> 2023: +22 Western <ul style="list-style-type: none"> 2024: +24

Table 110 illustrates the annual quantitative impacts for each of the base case items included in the PCA analysis.

Table 83: Annual Quantitative Impacts of the Base Case Items for Personal Care Attendants

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
IPCA partnership Keyin College and Eastern Health	0	33	119	204	204	204	204	204	204	204
Long-term care: recruitment/signing bonuses of up to \$5,200 dollars available to PCAs	121	132	129	129	129	129	129	129	129	129
Total Supply Impacts	121	165	248	333						
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility	0	28	28	28	28	28	28	28	28	28
Total Demand Impacts	0	28								

The items in Table 110 above highlight the annual quantitative impacts of each base case item. The base case item that is predicted to have the greatest impact is the IPCA partnership Keyin College and Eastern Health.

After incorporating the base case items into the analysis, demand rises to 3,065 for the province as a whole and supply rises to 2,936. Table 111 highlights the gap analysis over the course of the forecast.

Table 84: Final Annual Provincial Gap Analysis for Personal Care Attendants

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	2,032	2,183	2,271	2,408	2,551	2,612	2,675	2,739	2,805	2,870	2,936
Demand	2,259	2,316	2,408	2,471	2,545	2,625	2,710	2,792	2,874	2,973	3,065
Gap	227	133	137	63	-6	13	35	53	69	103	129
Gap as a Percent of Supply	11.2%	6.1%	6.0%	2.6%	-0.2%	0.5%	1.3%	1.9%	2.5%	3.6%	4.4%

Overall, the 2032 gap between supply and demand declines from 434 (the preliminary gap between supply and demand in 2032 as stated in

Table 108) to 129 as the base case items are incorporated. For PCAs, supply side base case impacts are expected to outweigh demand side impacts, which explains why the gap is predicted to narrow by the end of the forecast period. By 2032, the gap is predicted to represent 4.4% of supply, a decline from the 11.2% in 2022.

Workforce Recommendations

While the health system transformation priorities and initiatives described above carry some level of implications for PCAs, the gap remains below 10% in each year of the forecast period, which contrasts with NPs, RNs, and LPNs where gaps are at least 10% (and, in some cases, much larger). PCAs are also expected to see supply surpass demand in 2026, while demand is consistently above supply for NPs, RNs, and LPNs.

To address the projected deficit of PCAs, GNL should pursue the recommendations described in Table 112. These recommendations seek to complement retention bonuses issued to PCAs already introduced by HCS and NLHS, and to further strengthen the PCA workforce in NL.

Table 85: Personal Care Attendants Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Demand for PCAs		
PCA-1	Retain	<p>Integrate Assistive Technologies and Robotics in LTC to Reduce PCA Workload:</p> <ul style="list-style-type: none"> • This could include: <ul style="list-style-type: none"> ○ Mobility aids and devices such as lift chairs, adjustable beds, and mobility scooters, which can help residents move around more independently, reducing the need for PCA assistance. ○ Smart home devices such as smart beds, lighting, and temperature controls, which can improve residents' comfort and safety, reducing the need for PCA intervention. ○ Emerging mobility tech includes applications like autonomous wheelchairs, advanced prosthetics,¹⁶⁰ balancing aids, and "smart" canes¹⁶¹ to support patients/residents with mobilization. ○ Remote monitoring technologies, such as sensors and cameras, can help PCAs/PSWs to monitor residents remotely and detect changes in their health status. This technology can help to prevent falls, reduce the risk of infections, and improve resident safety. ○ Wearable devices, such as smartwatches and fitness trackers, can help PCAs to monitor residents' health and activity levels and provide early intervention, which can improve health outcomes. • Additionally, measures to decrease seniors' social isolation can improve the quality of life of residents:

¹⁶⁰ [WIPO Report Finds Significant Growth in Assistive Technologies as they Find Greater Application in Consumer Goods](#)

¹⁶¹ [Inventions boom in 'assistive tech' offers wider benefits for all | UN News](#)

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> ○ Robots like Grace, a humanoid robot, are designed to keep seniors' company and help break social isolation.¹⁶² Grace is designed to listen when people speak, then generate a response. ○ Virtual Reality (VR) and Augmented Reality (AR) technologies can provide interactive and immersive experiences that can help residents feel more connected to the world outside the LTC home. ○ Use "telepresence" robots that prop up tablets so residents can chat with friends and family virtually, without having to hold or operate the devices themselves.¹⁶³ Certain telepresence robots can mobilize independently between residents' rooms, reducing the need for PCAs intervention.¹⁶⁴ ● Note that these activities are intended to augment, not replace, socialization provided by PCAs. ● As such, improving the PCA employee experience with assistive technologies can increase retention of PCAs in supporting with ADLs and socialization activities. ● Implementing innovative assistive technologies can significantly enhance the role of PCAs in care delivery, making the occupation more attractive while improving the quality of care provided to residents.

Supply of PCAs

PCA-2	Rethink	<p>Deliver Onsite Training in LTC Homes:</p> <ul style="list-style-type: none"> ● To address the growing need for PCAs in NL, particularly in LTC, it is recommended to develop a comprehensive and flexible educational program tailored specifically for this group. This program could leverage a blended learning approach, combining online and in-person training, to accommodate the schedules of working PCAs. The curriculum could focus on the unique needs of LTC residents, with specialized courses in geriatric care, dementia care, and end-of-life care. ● Rethink training by delivering internal onsite programming in LTC homes, pairing future PCAs with a trainer over three months, and then allowing them to work independently for three months. This allows for work-integrated learning and gives students the opportunity to become familiar and comfortable with their future work environment. ● As this initiative entails HCS making an initial investment in PCAs, a return-in-service agreement in LTC can be established upon completion of the training to further strengthen the PCA workforce. ● In addition to academic training, the program could also provide ongoing professional development opportunities for PCA educators such as mentorship programs, and clear career progression pathways. This would not only enhance the skills of existing PCAs but also improve job satisfaction and retention rates. Retain existing PCAs by creating trainer positions in LTC, with increased pay to reflect the additional responsibilities, thereby creating a pathway for them to become PCA educators. ● Those involved in training other PCAs should be provided recognition and compensated accordingly. ● Similar initiatives have been deployed in Canadian jurisdictions, including the Ontario program to increase hands-on training opportunities for PSWs in LTC.¹⁶⁵
PCA-3	Recruit	<p>Divert Local LPN Applicants to PCA Recruitment:</p> <ul style="list-style-type: none"> ● Over the past five years, there has been an average of 466 applicants to the provincial PN program (2018-2022).¹³⁶ In this same time span, 265 students on average were admitted to the program.¹³⁶

¹⁶² [Meet Grace, the humanoid robot offering companionship in a Montreal nursing home | CBC News](#)

¹⁶³ [Robots with iPads help B.C. long-term care residents connect with loved ones | Globalnews.ca](#)

¹⁶⁴ [Welcome to the Future: Robots in Long-term Care | Providence Health Care Research Institute \(providenceresearch.ca\)](#)

¹⁶⁵ [Ontario Launches Program to Increase Hands-On Training Opportunities for More PSWs and Nurses | Ontario Newsroom](#)

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> This implies that there are approximately 200 students each year that have expressed interest in pursuing a career in practical nursing, yet for a multitude of potential reasons (i.e., academic qualifications, lack of relevant experience) were unsuccessful in the admissions process. This presents an opportunity for GNL to identify a potential local pool of health care-interested job seekers that may be interested in alternative employment and educational opportunities to support them to build their competencies for re-application or to explore a new career path altogether. The PN program should explore the following options to increase interest in the PCA program: <ul style="list-style-type: none"> For applicants to the LPN Program who are unsuccessful in the admission process or during the PN program, re-direct them to careers as personal care attendants (PCAs). This also presents as an easier route to entry for international nurses while waiting for equivalencies; During the application process, collect consent from applicants to be assessed for other programs such as the PCA program using the same application so that applicants do not need to apply twice; and/or Establish a pathway for students who were previously enrolled in the PN program and did not complete to fast-track their PCA program. As a result, there is a potential to add 200 new PCAs to the workforce each year by leveraging this local applicant pool. Assuming that starting in the 2024-25 academic year, 25% (50) of this pool take the initiative to apply, and a further 25% successfully enroll and graduate from the program, this would result in a net new supply of 112 PCAs to the workforce by 2032. This pathway could be further strengthened if there was an established pathway from PCA to LPN as outlined in PCA-3. Note: Increasing the supply of PCAs may influence the demand for LPNs in the province, especially in team-based care environments.
PCA-4	Retain	<p>Enable Upward Mobility for PCAs to Become LPNs:</p> <ul style="list-style-type: none"> To address this issue, it is recommended that a bridging program be established. This program would allow PCAs to leverage their experience and knowledge, providing them with an accelerated pathway to becoming LPNs. The curriculum could include advanced courses in patient care, medication administration, and specialized care procedures, combined with practical clinical experiences. Implementing such a program would not only provide PCAs with a clear and accessible career progression pathway but also help maintain a steady supply of skilled health care workers in the public sector. As such, by setting a pathway for PCAs to become LPNs, GNL would effectively be retaining PCAs in the public over the course of the PN program, increasing the supply by the number of PCAs looking to advance their career, multiplied by the length of the program. This would assume that the program would enable PCAs to work near to full time as PCAs to maintain a steady income while completing the program. Note: Promoting the career pathway from PCA to LPN may initially lead to a reduction in the PCA workforce. However, when combined with other PCA workforce strategies, the gap can be filled. The projected workforce gap for PCAs is 129 after incorporating the base case items, which represents approximately 4.4% of the projected supply in 2032. In contrast, the LPN workforce is projected to face a larger gap by 2032, with a shortfall of 352 LPNs (see Table 97). This represents about 14% of the projected LPN supply in 2032. Therefore, encouraging PCAs to advance their careers to become LPNs not only helps address the shortage in the LPN workforce but also creates opportunities for new entrants into the PCA role. This balanced approach can ensure a steady supply of both PCAs and LPNs in the long term and underscores the importance of a comprehensive strategy that addresses both recruitment and retention in these critical health care roles.

ID	Theme	Recommendation and Potential Impact
PCA-5	Recruit	<p>Extend the IPCA Pilot Program:</p> <ul style="list-style-type: none"> • In the Central zone, the IPCA program's expected outcome (see Table 110) is to add 19 PCAs in 2024 and an additional 50 PCAs each in 2025 and 2026. In the Labrador-Grenfell region, the IPCA program intends to increase the supply by 14 PCAs in 2024 and by another 35 PCAs each in 2025 and 2026. Despite being a smaller region, this planned increase demonstrates a commitment to enhancing PCA services in Labrador-Grenfell. • Assessing the outcomes of the pilot program, as well as updating and extending the program to enable an incoming cohort of students year-over-year and maintain a steady inflow of PCAs to address the growing demand across all zones and settings can eliminate the expected gap of 129 PCAs in 2032. • As such, increasing the inflow of PCAs by extending the addition of 95 IPCA seats until 2032 has the potential to increase the supply by 300 PCAs in Central and 212 in Labrador-Grenfell, by sustaining a similar cohort of students year-over-year between 2027 and 2032.
PCA-6	Retain	<p>Recruit and Train PCA Mentors:</p> <ul style="list-style-type: none"> • Recruit and train PCA mentors that would train international health professionals in PCA work. Trainers would be recruited based on having previous training experience or other relevant previous experience and skills. Trainers would be provided a premium for taking on the role. • Provide PCAs with a new career path as trainers, allowing them to build new skills. • As such, this would increase retention among the over 1,500 PCAs who will voluntarily exit (i.e., resign) the supply between 2022 and 2032, by providing a pathway for career growth with an enhanced role, increasing compensation with a premium for trainers, and increasing overall job satisfaction.
PCA-7	Recruit	<p>Considering the Rural and Remote nature of Labrador-Grenfell, additional strategies could include:</p> <ul style="list-style-type: none"> • Providing subsidized or affordable housing options for PCAs could make relocating to Labrador-Grenfell more attractive. This could be particularly beneficial for those coming from urban areas where housing costs may be higher. • Establish a relocation package for IPAC to locate or relocate to Labrador following the completion of their program, in addition to offering rotations in Labrador as part of their studies. • Offering transportation assistance or allowances could help mitigate the challenges of commuting in rural areas. • Engagement with education system, such as local high schools, about increasing awareness of careers in health care or even offering some courses to accelerate entry to PCA programs. • Implementing a rural allowance to compensate for the additional challenges of working in a remote area. This could make positions in Labrador-Grenfell more financially competitive. • Facilitation programs that help new PCAs integrate into the local community. This could include welcome events, local tours, or buddy systems with established community members. • Training PCAs in telehealth could ensure that they are equipped to provide care and support other health care providers. Providing telehealth tools can enable the PCA to communicate with other types of providers (i.e., NPs, RNs) to provide information on the patient's condition. • Providing support for spouses and children (including job search assistance or school integration programs) can make the transition smoother and increase retention. • Note: Given the projected 5% decrease in the number of PCAs in Labrador-Grenfell from 2022 to 2032, GNL will need to continue devising strategies that enhance the appeal of the Labrador-Grenfell zone for potential PCAs.

Respiratory Therapists

Registered respiratory therapists (RRT) primarily work in acute and critical care settings, and are responsible for managing and monitoring mechanical ventilation, performing respiratory assessments, administering respiratory treatments, providing airway management, and collaborating with the health care team. They play a critical role in optimizing respiratory function, assessing lung health, delivering essential treatments, ensuring airway clearance, and developing individualized care plans to support patients in the Intensive Care Unit (ICU).

Based on the Job Evaluation System (JES), RRTs are also responsible for performing specialized medical and diagnostic tests and procedures to evaluate patients' respiratory status and operate equipment and computerized programs to obtain patients' lung flows, volumes and diffusion to obtain diagnosis of respiratory abnormalities in Pulmonary Function Laboratory. Work also involves assessment, treatment, evaluation of care, and education for patients with cardiopulmonary disorders.

Those in advanced roles, such as RRT IIs and IIBs, may be responsible for advanced professional leadership and administrative work in developing, implementing, and coordinating respiratory therapy services. This includes creating protocols, guidelines, and quality initiatives to enhance patient care, as well as providing education and support to respiratory therapists and other health care professionals. In addition to clinical responsibilities, the role may involve acting as a clinical leader across multiple sites or overseeing the development of the entire respiratory therapy program within a multi-site organization.^{166,167}

RRTs primarily work in Intensive Care Units (ICUs), however they can work within specialized areas such as the Pulmonary Functions Laboratory, Emergency, or other areas, or serve as part of a Respiratory Therapy team to rotate through these areas as assigned.¹⁶⁸

The Newfoundland and Labrador Council of Health Professionals (NLCHP) is the regulatory body overseeing the practice of respiratory therapy in NL. Under the Health Professionals Act, the NLCHP is tasked with setting the standards for safe and ethical respiratory therapy practice. It governs its members to ensure that only those who meet specific criteria can enter the profession and that practicing

¹⁶⁶ [Job Class Profile \(gov.nl.ca\)](http://gov.nl.ca)

¹⁶⁷ [Job Class Profile \(gov.nl.ca\)](http://gov.nl.ca)

¹⁶⁸ [Job Class Profile \(gov.nl.ca\)](http://gov.nl.ca)

RRTs maintain their competency level. In collaboration with the College of Respiratory Therapists (NLCRT), the Council forms committees to handle matters such as registration, complaints, and discipline.¹⁶⁹

Current State Analysis

As of December 2022, there were 105 public sector RRTs in NL, distributed by NLHS zone as displayed in Table 113. NLHS typically recruits RRTs as graduates of the College of the North Atlantic's (CNA) Respiratory Therapy three-year diploma program.

Table 86: Public Sector Respiratory Therapists by NLHS Zone¹⁷⁰

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2022 Supply	70	9	12	9	5	105

In March 2022, the NLCHP noted there were 159 RRTs in the province (public and private).¹⁷¹ Approximately 75-85% of RRTs work in the public system, with the majority working in acute and critical care due to high demand and vacancy levels.¹⁷² In the private sector, most RRTs work with chronic clients, most often within their homes or private clinics.

The RRT profession is undergoing a national overhaul of its core competency framework.¹⁷³ This framework is used to inform national exams and define the scope of practice for entry-level RRTs.

COVID-19

The COVID-19 pandemic has had a significant impact on the RRT workforce, as the need for mechanical ventilation of acutely ill patients has been exacerbated. Respiratory therapists play a crucial role in the management of COVID-19 patients, as they are responsible for providing oxygen therapy, administering medications, and managing mechanical ventilation. In Canada, recent literature has highlighted the challenges faced by RRTs in managing the influx of COVID-19 patients. For example, a study published in the Canadian Journal of Respiratory

¹⁶⁹ [Home page \(nlcrt.ca\)](http://nlcrt.ca)

¹⁷⁰ Includes only RRTs employed by NLHS (i.e., public sector RRTs). Includes full-time and part-time RRTs.

¹⁷¹ Data provided by HCS, on January 25, 2024.

¹⁷² Data provided by NLCHP, on April 18, 2023

¹⁷³ [National Competency Profile/Framework – The National Alliance of Respiratory Therapy Regulatory Bodies \(nartrb.ca\)](http://nartrb.ca)

Therapy found that RRTs working in acute care settings reported increased workload and stress levels due to the pandemic.¹⁷⁴

Education

NLHS typically recruits RRTs as graduates of the CNA Respiratory Therapy three-year diploma program. However, the program's accreditation was revoked between 2018 to 2019 because accreditors found that several requirements did not meet the accreditation standards.

Despite these challenges with accreditation, CNA continued to guarantee the local supply of RRT graduates via an agreement with the Southern Alberta Institute of Technology (SAIT) to establish their program in NL using CNA's resources while their program was revised and updated, which trained five students in 2018 and 13 in 2019. As a result of the reaccreditation of the CNA Respiratory Therapy program in 2019, an additional 10 students graduated in June 2023, all of which gained employment in-province.

On average, the program graduates 9.5 graduates each year between 2022 and 2023 despite offering 12 seats.¹⁷⁵ The program typically has an average attrition rate of 20.8%, however the class cohort starting in 2021 experienced an attrition rate of 83.3%.¹⁷⁵ It is important to note that most of the attrition for the 2021 cohort occurred during the COVID-19 pandemic. Exit interviews conducted cited that online course delivery due to COVID and the content load along with long virtual days were cited as problematic.

As a means to address to increase potential graduates for the 2024 cohort, CNA launched a Fast Track group targeting students that possessed Kinesiology degrees. Selecting applicants with this degree allowed exemptions to be granted for the academic courses in Year 1 of the program such as math, communications and biology.

The Fast Track students started the Respiratory Therapy program early May 2022 and joined the 2 remaining 2021 cohort in mid-September 2022. In essence the Fast track group had condensed instruction for Respiratory Therapy specific courses during the period May-September. This unique student cohort went on to complete regular semesters for Year 2/3.

¹⁷⁴ Chen, Y. W., Ehmann, M. R., & Yergens, D. W. (2020). The impact of COVID-19 on respiratory therapist workload and stress levels in Canada. *Canadian Journal of Respiratory Therapy*, 56(4), 59-63. <https://doi.org/10.29390/cjrt-2020-023>

¹⁷⁵ CNA RRT Program graduation rate data provided by B. Elliot on October 22, 2023.

Compensation

The Association of Allied Health Professionals NL (AAHP) has reported that respiratory therapists in NL receive some of the lowest pay in the country. To address this issue, the Association requested that the profession receive a market adjustment to prevent further staff departures.¹⁷⁶ A market adjustment is a form of additional remuneration that is based on current market conditions. Market adjustments may be approved to address recruitment and retention challenges for officially classified positions that meet the criteria for a market-based adjustment as established by Treasury Board and subjected to the approval process. Market adjustments consider the comparative value of positions that are the same between other jurisdictions within Canada. New market adjustments were approved in January 2023, which are non-pensionable and approved for 2-years.

While other allied health professions saw an increase in compensation following the implementation of the JES, according to the stakeholders engaged (see Table 114), the JES resulted in a significant decrease in compensation (approximately \$10,000) for this group. As a result, compensation has been a contentious issue and a deterrent for people considering joining this health occupation.

The COVID-19 pandemic heightened this challenging situation as Respiratory Therapy faced increased demands and was recognized as an essential service, while other allied health disciplines that transitioned to remote work during the peak of the pandemic. This was perceived as very demoralizing for RRT staff (see Table 114 for further details). Additionally, the training for RRTs is substantial, and efforts to recruit individuals in rural areas have been challenging due to the lack of additional compensation.

Community Care

The LTC and community support services system provides services to seniors, adults and children with disabilities, and individuals requiring Respiratory Therapy services while at home or following hospitalization. This includes services provided in the home, residential options, personal care homes and long-term care facilities. However, with minimal resources allocated to community, this has been identified as a service gap in the Eastern Urban Zone.

The JES is used to classify and evaluate work across organizations, but it may not capture the full scope of an RRT's duties, particularly those performed in a community setting. As described by stakeholder in Table 114, the JES does reflect the work done by RRTs in the

¹⁷⁶ [More than 10% of N.L. respiratory therapists resigned this fall, says association | CBC News](#)

community, as at the time that the JES was developed, RRTs were not yet employed within the community. This could include home visits, patient education, coordination with other health care providers, and other tasks that are critical to providing comprehensive care to patients outside of traditional health care facilities. This discrepancy could contribute to the challenges in recruitment and retention of RRTs, as well as issues related to compensation and workload.

INSPIRED Program

NLHS (formerly Eastern Health) launched a community-based Comprehensive Respiratory Care Provincial Program. One of the main elements of this program is the INSPIRED COPD Outreach Program. INSPIRED stands for Implementing a Novel and Supportive Program of Individualized Care for Patients and Families Living with Respiratory Disease.¹⁷⁷

The INSPIRED program is designed to support those living with Chronic Obstructive Pulmonary Disease (COPD) in their own homes by providing them with the tools and education to better self-manage and prevent disease exacerbation. In 2021, the NLHS (formerly Eastern Health) reported that there were 39, 852 people in NL living with COPD.¹⁷⁸ Services from the INSPIRED program are provided by a dual-trained RRT and certified respiratory educator. The RRT works in collaboration with the patient's primary care provider to treat the patient.

In the INSPIRED program, a RRT collaborates with the patient and their primary care provider to create an action plan, discuss advanced care planning, and assist patients in navigating the health system. The program is currently delivered either in-person or virtually for more remote zones.

The opportunity to leverage virtual health for RRTs across the province is significant. By expanding the virtual delivery of the INSPIRED program, RRTs can reach more patients, particularly those in remote areas who may not have easy access to in-person services. This not only enhances accessibility but also allows for efficient resource allocation, as RRTs can provide services without the need for travel.

This initiative represents a more sustainable model of care and has the potential to revolutionize lung health care in the province by fully

¹⁷⁷ [Eastern Health Launches Community-Based Respiratory Program - News Centre](#)

¹⁷⁸ Comprehensive Respiratory Care – Changing the Future of Respiratory Disease in Newfoundland and Labrador (2021)

integrating virtual health into the delivery of respiratory therapy services.

Health Accord NL Calls to Action

Several CTAs from Health Accord NL carry implications for the supply and demand of RRTs in NL:

- **CTA 9.1:** Connect every resident of NL to a FCT providing a central touchpoint of access and a continuum of care.
- **CTA 10.12:** Develop and deliver education and continuing education programs that use an integrated, inclusive, and collaborative care model where practitioners learn and practice together. This requires integration across curricula and across programs throughout the learning experience.
- **CTA: 15.4:** Enable team members to work to their full scope of practice to include preventative care and chronic disease management.
- **CTA 15.7:** Expand and strengthen prevention programs including the INSPIRE/COPD-outreach programs.

CTA 9.1 and 10.12 outlines GNL's plan to increase attachment to primary care delivered in collaborative, community-based settings and the upskilling of providers to deliver care using a multi-disciplinary team-based approach. Considering the integration of RRTs into community-based care via the INSPIRED program over the next 10 years, there will be a greater demand and focus on leveraging RRTs in community settings to enhance access to respiratory services within the province.

Lastly, 15.4 and 15.7 outlines the importance of enabling team members to work to their full scope of practice to include preventative care and chronic disease management and GNL's plans to expand provincial programs such as INSPIRE/COPD-outreach. With the increasing prevalence of chronic diseases such as COPD, asthma, and cystic fibrosis, there is a growing demand for RRTs who can provide specialized care and management for these conditions. By enabling RRTs to work to their full scope of practice to include management of neuromuscular disease and/or spinal cord injury, preventative care and chronic disease management, they can play a more active role in the management and prevention of these conditions, which can lead to better health outcomes for patients and potentially reduce the burden on the health care system. This can also create opportunities for RRTs to work in new settings, such as primary care clinics and community health centers, which can help to improve access to respiratory services in rural and remote areas. Likewise, early evidence has shown that these provincial programs have had

significant reduction in emergency department (ED) visits and hospitalizations, thus improving the quality of care for patients with chronic respiratory conditions.

Workforce Initiatives

To address RRT recruitment and retention in NL, the Department of Health and Community Services (HCS) introduced a number of initiatives to strengthen the supply of RRTs in the province:

- **Come Home Year Incentive:** Offered for \$50,000 in exchange for three-years of service, offered in 2022 one-time.
- **New Collective Agreement:** New collective agreement signed for AAHP. Effective April 1, 2024, an hourly, pensionable wage adjustment will be paid to employees being paid a labour market adjustment. This wage adjustment will replace the labour market adjustment that was approved in January 2023, which awarded RRTs new non-pensionable market adjustments with amounts ranging between \$10,000 and \$16,000 based on classification to supplement their salaries in response to market conditions.

In an effort to address the recruitment of RRT graduates in NL, HCS and NLHS have implemented initiatives to recruit RRT graduates:

- **Signing Bonuses:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions, and tiered to address geographic considerations with an associated return-in-service of one or two years.
- **Health Professional Bursaries:** \$5,000 to \$10,000 bursaries are awarded for difficult to fill positions, available to RRT students who sign a service agreement for one or two years of service commitment post-graduation.
- **Proactive Recruitment Strategies:** Historically, NLHS engaged with CNA's RRT graduating class in January to discuss job opportunities. However, this schedule was "accelerated," with meetings planned for early December.¹⁷⁹

These initiatives are designed to attract new graduates and secure their commitment to the public system.¹⁸⁰

¹⁷⁹

[Eastern Health - Careers](#)

¹⁸⁰ [Bursaries / Incentives - Health and Community Services \(gov.nl.ca\)](#)

Stakeholder Engagement Insights

The following six stakeholder groups were engaged via focus groups to understand the experiences and perspectives of the current and future RRT workforce:

- College of the North Atlantic (CNA) Staff
- NL Council of Health Professionals (NLCHP)
- NL Association of Public and Private Employees (NAPE)
- Association of Allied Health Professionals NL (AAHP)
- NLHS Respiratory Therapy Professional Practice Consultants
- Comprehensive Respiratory Care Provincial Program

In addition, seven individuals responded to the focus group follow-up survey with additional insights. These stakeholder consultation activities yielded an array of qualitative insights pertinent to the development of RRT workforce recommendations – summarized in Table 114. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, which may not be grounded in absolute fact.

Table 87: What We Heard from Respiratory Therapist Stakeholders

Theme	Insights
Job Evaluation System and Compensation	<ul style="list-style-type: none"> 3. Stakeholders express their concern that the JES review failed to accurately acknowledge the crucial role and broad responsibilities of RRTs, leading to compensation that is below the national average. Consequently, the profession receives non-pensionable market adjustments. 4. As a result, many stakeholders feel that the JES audit process is not transparent. 5. This discrepancy in compensation further highlights the need for a comprehensive reassessment of the JES review to ensure fair and equitable remuneration for RRTs.
Impacts of COVID-19	<ul style="list-style-type: none"> 6. The COVID-19 pandemic only exacerbated this contentious issue surrounding compensation as Respiratory Therapy faced increased demands and was recognized as an essential service, while other allied health disciplines were deployed remotely at the height of the pandemic. This was perceived as very demoralizing for RRT staff
Staffing and Coverage	<ul style="list-style-type: none"> 7. There is a need to increase staffing for 24-hour ICU coverage in the Western zone to match the level of care provided in the Eastern zones.
Education and Training	<ul style="list-style-type: none"> 8. Stakeholders believe that the CNA Respiratory Program should progress to a degree as entry to practice, as the current program is often challenged with meeting curriculum with a restricted time frame (3 years) as the national curriculum changes. 9. Detailed planning is required for education-related actions, such as increasing seats in programs and funding for post-secondary institutions offering Respiratory Therapy programs.
Recruitment and Retention Barriers	<ul style="list-style-type: none"> 10. The JES review has resulted in a wage disparity between RRTs in NL and other parts of Canada, making recruitment and retention challenging as the NLHS must compete with other provinces and the private sector for talent.

Theme	Insights
Impact of Health Accord NL Calls to Action	11. The attractiveness of careers and lack of lead-time for institutions to improve their curriculum and increase training are also barriers.
	12. RRTs will be better enabled to practice to their full scope of practice, including primary care chronic disease prevention and management, increased presence of anaesthesia assistants, endoscopy rooms, and community health. There will be more collaboration across health care teams with individual practitioners' roles maximized within the teams.
Workforce Trends	<p>13. Many RRTs are leaving the field for career mobility opportunities such as upskilling to anaesthesia assistants or moving into other classification altogether such as cardiovascular technologists and cardiac perfusionists.</p> <p>14. The NLHS high vacancy rate is attributed to factors such as poor morale, maternity leave due to being a predominantly female workforce, increased workload but minimal new positions, and other COVID-19 pandemic related challenges.</p> <p>15. In the coming years, stakeholder believe there will be a significant number of retirements among RRTs, and current enrolment in RRT educational programs may not meet RRT demands. There is also a trend of new graduates moving out of province due to pay inequity.</p> <p>16. Other trends include globalization of the workforce, the need for a renewed focus on retention, and a shift from historical employer choice to employee choice.</p>

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary projections of the supply of and demand for RRTs were developed based on historical practice patterns and trends. Data on the supply of RRTs in NL was provided by NLHS. Consequently, the supply captures only the stock of public sector RRTs. The following inflows and outflows were captured:

- Inflows: new hires, rehired retirees, and rehires
- Outflows: resignations and retirements

Some inflows and outflows were not directly captured in the data. In the historical data provided, a slight discrepancy existed between change in the supply year over year and the difference between inflows and outflows. Consequently, to ensure the change in the stock of RRTs was equal to the difference between the inflows and the outflows year over year in the historical data, "other net migrations" were estimated.

These preliminary projections were then augmented, wherever possible, based on the availability of supporting data and analysis, to reflect inflight or recently implemented policy initiatives to form a baseline scenario.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Impact supply or demand projections after December 31, 2022;
- Have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 115 below outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for RRTs, as well as any limitations or caveats of the data.

Table 88: Data Sources for Respiratory Therapist Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of respiratory therapists, by zone, five-year age cohort, and gender from 2018-2022.</p> <p>Inflows: Entries into profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.)</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation).</p>	<p>Supply: Yes</p> <p>Inflows: Yes</p> <p>Outflows: Yes</p>	<p>Supply Year X = Supply Year X-1 + four-year average inflows – four-year average outflows</p>	<ul style="list-style-type: none"> Some inflows and outflows were not directly captured in the data. Thus, “other net migrations” were estimated to ensure the change in the supply was equal to the difference between the inflows and the outflows historically.
Demand	<ul style="list-style-type: none"> 10-year population projections, by five-year age cohort, gender, and zone. Prevalence of CIHI POP Grouper respiratory and cardiovascular health conditions. 	<p>Population projections: Yes</p> <p>Source: NL Department of Finance</p> <p>Health spending by category by age and gender: Yes</p> <p>Source: CIHI POP Grouper Methodology</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = 2022 prevalence rate of respiratory and cardiovascular health conditions * population by age, gender and zone (2023-2032) = predicted growth in the prevalence of respiratory and cardiovascular health conditions treated by respiratory therapists</p> <p>Demand Year X = Demand Year X-1 * predicted growth in the prevalence of respiratory and cardiovascular health conditions in Year X</p>	<ul style="list-style-type: none"> Encounters with respiratory therapists are not captured by the CIHI POP Grouper Methodology. However, the CIHI POP Grouper Methodology captures the number of individuals by age, gender and zone with different respiratory and cardiovascular conditions. Thus, the predicted growth in the prevalence of respiratory and cardiovascular health conditions is used as a proxy for respiratory therapist demand growth.

Preliminary Projections

Beginning with a summary of supply in Table 116, this section showcases the preliminary forecast estimates for RRTs.

Table 89: Preliminary Supply Projections for Respiratory Therapists

Health Occupation	Starting supply (Dec. 2022)	New Hires (2023-2032)	Rehired Retirees (2023-2032)	Rehires (2023-2032)	Resignations (2023-2032)	Retirements (2023-2032)	Other Net Migrations (2023-2032)	Ending Supply (Dec. 2032)
Respiratory Therapists	105	56	5	35	75	7	-9	110

Where: Starting supply (Dec. 2022) + New Hires (2023-2032) + Rehired Retirees (2023-2032) + Rehires (2023-2032) - Resignations (2023-2032) - Retirements (2023-2032) + Other Net Migrations (2023-2032) = Ending Supply (Dec. 2032)

The preliminary projections predict the supply of RRTs to increase 5% between 2022 and 2032. New hires and rehires are expected to drive most of the growth in supply. While resignations and retirements are predicted to be important, inflows are expected to outweigh outflows, explaining the increase in preliminary supply. Contrary to stakeholder beliefs, relatively few retirements are expected in the RRT workforce over the next 10 years. Based on historical trends, resignations are expected to be a significantly higher contributor to supply outflows than retirements.

These results are expected to vary by zone. Table 117 summarizes the preliminary projections by zone.

Table 90: Regional Preliminary Supply Projections for Respiratory Therapists

Zone	2018 Supply	2022 Supply	2032 Supply	Percent Change in Supply 2018 vs 2022	Percent Change in Supply 2022 vs 2032 ¹⁸¹
Eastern Urban	71	70	72	-1.4%	+2.7%
Eastern Rural	8	9	10	+12.5%	+10.7%
Central	15	12	12	-20.0%	-2.2%
Western ¹⁸²	8	9	9	+12.5%	+3.4%
Labrador-Grenfell ¹⁸³	4	5	7	+25.0%	40.7%
Total¹⁸⁴	106	105	110	-0.9%	4.7%

If historical inflow and outflow patterns continue into the future, the Central zone is the only one expected to face a decline in supply.

Table 91: Preliminary Demand Projections for Respiratory Therapists

Health Occupation	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Respiratory Therapists	105	8	113	125	+11%

As of 2022, there were eight RRT vacancies in the public sector. Vacancies are added to 2022 supply to estimate the starting demand. Vacancy data was provided by NLHS. These vacancies are reflective of the challenging recruitment and retention environment faced by this profession. They are also influenced by workforce trends and conditions such as poor morale, maternity leave due to being a predominantly female workforce, increased workload but minimal new positions, and other COVID-19 pandemic related challenges (see Table 114 for more details).

Based on discussions with respiratory therapist stakeholders, it was determined that the demand for RRTs is primarily driven by the

¹⁸¹ Due to rounding, some of the percent changes between 2022 and 2032 do not always match the percent change with the whole number stated in the table

¹⁸² 2023 supply was provided for the Western and Labrador-Grenfell zones. Consequently, 2023 supply was accounted for in these two zones when forecasting supply. 2023 supply of respiratory therapists in Western = 8 and 2023 supply of respiratory therapists in Labrador-Grenfell = 7.

¹⁸³ Ibid

¹⁸⁴ Due to rounding, the sum of the supply by zone may not perfectly match the total listed.

prevalence of respiratory and cardiovascular illnesses. Thus, for RRTs, demand is estimated using the growth in the prevalence of respiratory and cardiovascular health conditions identified in the CIHI POP Grouper Methodology. The following CIHI POP Grouper Methodology health conditions were considered in the demand analysis and are respiratory and cardiovascular in nature:

- Acute ENT, upper respiratory condition (including benign neoplasm, croup)
- Acute and other respiratory disease/disorder
- Acute infectious/parasitic respiratory disease (excluding pneumonia)
- Acute myocardial infarction/shock/arrest
- Aortic aneurysm
- Arrhythmia
- Asthma
- Cardiac valve disease
- Chronic obstructive pulmonary disease (COPD)
- Chronic upper respiratory condition (including tonsillitis)
- Congenital disorder of the respiratory system
- Coronary artery disease
- Heart failure
- Lung cancer
- Malformation of the cardiovascular system
- Other heart disease
- Pneumonia
- Pulmonary hypertension
- Respiratory failure
- Sign/symptom of the cardiovascular system
- Sign/symptom of the respiratory system
- Unstable angina

The CIHI POP Grouper Methodology estimates the number of individuals (the prevalence) of these conditions by age cohort, gender and zone for 2022. Using the population estimates for 2022 provided by the NL Department of Finance, the prevalence rate for each health condition (i.e., the percent of individuals with each condition), at each age/gender cohort and in each zone is calculated for 2022.

The prevalence forecast for the above-mentioned health conditions, at each age/gender cohort and in each zone, is then estimated using the population forecast for each zone provided by the NL Department of Finance. By summing across the age/gender cohorts, the total number of individuals with each respiratory and cardiovascular health condition, by zone, from 2022 to 2023 is calculated.

Finally, the weighted average forecasted growth in respiratory and cardiovascular health conditions is calculated and used as a proxy for the growth in demand for RRTs.

Table 119 highlights the predicted weighted average growth in respiratory and cardiovascular health conditions, and consequently the growth in demand for RRTs, by zone from 2023 to 2032.

Table 92: Annual Regional Growth in Demand for Respiratory Therapists

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	1.4%	1.4%	1.4%	1.3%	1.4%	1.3%	1.4%	1.3%	1.3%	1.2%
Eastern Rural	0.5%	0.5%	0.6%	0.5%	0.4%	0.4%	0.3%	0.3%	0.3%	0.1%
Central	0.5%	0.5%	0.5%	0.5%	0.4%	0.3%	0.3%	0.3%	0.3%	0.1%
Western	0.7%	0.7%	0.7%	0.7%	0.7%	0.6%	0.6%	0.5%	0.5%	0.3%
Labrador-Grenfell	0.7%	0.8%	0.7%	0.6%	0.5%	0.6%	0.5%	0.5%	0.5%	0.3%
Newfoundland and Labrador	1.1%	1.1%	1.2%	1.1%	1.1%	1.0%	1.1%	1.0%	1.0%	0.9%

The demand for RRTs is predicted to increase between 0% and 1% for all zones except the Eastern Urban zone. Given that RRTs treat illnesses observed across all age cohorts, overall population growth is driving growth in RRTs along with the aging population. With population predicted to rise most in the Eastern Urban zone, so is the demand for RRTs.

Table 93: Preliminary Gap Analysis for Respiratory Therapists

Health Occupation	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Respiratory Therapists	105	113	8	110	125	15	7

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022. The growth in preliminary demand (+11%) is predicted to outweigh the growth in preliminary supply (+5%). Thus, the gap between supply and demand is predicted to rise by seven (7) between 2022 and 2032.

Base Case Projections

For RRTs, the Health Accord NL CTA and workforce initiatives listed below are reflective of stakeholder feedback. In addition, sufficient quantitative data existed for their impact to be incorporated in supply and demand projections. Overall, the policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

- **Demand Analysis:**
 - The new acute care and cancer care Western facility in Corner Brook will require RRTs (i.e., CTA 9.14)
 - The development of a Comprehensive Respiratory Care Provincial Program embedding RRTs within community-based care settings
- **Supply Analysis:**
 - New hire uptake of new non-pensionable market adjustments (ranging between \$10,000 and \$16,000) approved in January 2023
 - Uptake of Come Home Year Incentives

Table 121 highlights the assumptions used to help quantify base case items for RRTs.

Table 94: Base Case Assumptions for Respiratory Therapists

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL CTA 9.14: new acute care and cancer care Western facility in Corner Brook	Demand	<ul style="list-style-type: none"> One-time addition when facility opens in June 2024 	<ul style="list-style-type: none"> Western <ul style="list-style-type: none"> 2024: +1
Comprehensive Respiratory Care Provincial Program embedding respiratory therapists within community-based care settings	Demand	<ul style="list-style-type: none"> Estimates one net new RRT in each zone immediately and another at the five-year mark solely dedicated to community-based programming 	<ul style="list-style-type: none"> Eastern Urban <ul style="list-style-type: none"> 2027: +1 Central <ul style="list-style-type: none"> 2023: +1 2027: +1 Western <ul style="list-style-type: none"> 2023: +1 2027: +1 Labrador-Grenfell <ul style="list-style-type: none"> 2023: +1 2027: +1
New market adjustments (\$10,000 - \$16,000). Non-pensionable. Approved in January 2023. Impact on new hires only	Supply	<ul style="list-style-type: none"> 6.7% attrition rate following end of contract, based on Eastern zone's (formerly Eastern Health) overall hires turnover rate for RRTs 	<ul style="list-style-type: none"> Eastern Urban <ul style="list-style-type: none"> 2023: +18 Central <ul style="list-style-type: none"> 2023: +2
Come Home Year - \$50,000 for a three-year return-in-service agreement for respiratory therapists	Supply	<ul style="list-style-type: none"> One-time incentive Impact sustained for three years due to return-in-service agreement 6.7% turnover rate following end of contract, based on Eastern zone's (formerly Eastern Health) overall hires turnover rate for RRTs 	<ul style="list-style-type: none"> Eastern Urban <ul style="list-style-type: none"> 2023: +4

While some items were not included in the base case at the time of the analysis as they did not meet the three above-mentioned inclusion criteria, the following could have an impact on the demand analysis for RRTs: the new Cardiovascular and Stroke Institute, the replacement of the St. Clare's Mercy Hospital, the expansion of the emergency department at the Health Sciences Centre in St. John's, etc.

Table 122 illustrates the annual quantitative impacts for each of the base case items included in the RRT analysis.

Table 95: Annual Quantitative Impacts of the Base Case Items for Respiratory Therapists

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
New market adjustments Impact on new hires only	20	19	19	19	19	19	19	19	19	19
Come Home Year - \$50,000 for a three-year return-in-service agreement for respiratory therapists	4	4	4	4	4	4	4	4	4	4
Total Supply Impacts	24	23	23	22						
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility	0	1	1	1	1	1	1	1	1	1
Comprehensive Respiratory Care Provincial Program	4	4	4	4	9	9	9	9	9	9
Total Demand Impacts	4	5	5	5	10	10	10	10	10	10

The base case item that is predicted to have the greatest impact on supply is the new market adjustment for new hires, and the item that is predicted to have the greatest impact on demand is the Comprehensive Respiratory Care Provincial Program.

After incorporating the base case items into the analysis, demand rises to 135 for the province as a whole and supply rises to 132. Table 123 highlights the gap analysis over the course of the forecast.

Table 96: Final Annual Provincial Gap Analysis for Respiratory Therapists

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	105	129	129	130	130	131	132	132	132	132	132
Demand	113	118	120	122	123	129	131	132	133	134	135
Gap	8	-11	-9	-8	-7	-2	-1	0	1	2	3
Gap as a Percent of Supply	7.6%	-8.5%	-7.0%	-6.2%	-5.4%	-1.5%	-0.8%	0.0%	0.8%	1.5%	2.3%

With the incorporation of the base case items, the gap between supply and demand declines from 15 (the gap in 2032 without the base case) to three (the gap in 2032 once the base case is incorporated). In the case of RRTs, the supply side base case impacts are expected to outweigh the demand side impacts, which explains why the gap is predicted to close by the end of the forecast period. By 2032, the gap is predicted to represent 2.3% of supply, a decline from 7.6% in 2022.

Workforce Recommendations

RRTs should play an enhanced role in preventive care, health promotion, and patient education to reduce hospital visits. The INSPIRED program can be leveraged for this purpose and for telemedicine consultations. A comprehensive review of the JES involving RRT professionals can help increase the supply of RRTs. Collaborations with educational institutions can increase seats in Respiratory Therapy programs and develop training for expanded roles in primary care and community health. Recommendations related to change in practice for RRTs and enhancing the supply of the occupation are described below in Table 124.

Table 97: Respiratory Therapist Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Demand for Respiratory Therapists		
RRT-1	Rethink	<p>Enhance RRTs' Role in Preventive Care, Health Promotion, and Patient Education:</p> <ul style="list-style-type: none"> RRTs should play a more active role in preventive care and health promotion programs to reduce the overall incidence of respiratory diseases. This could involve public health initiatives aimed at smoking cessation, pollution control, and promoting healthy lifestyles. RRTs should also be involved in developing and delivering comprehensive patient education programs. They can teach patients how to use certain respiratory devices or manage their symptoms. This reduces the need for hospital visits and RRT interventions over time.

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> • RRTs can provide educational programs to patients with specific conditions such as asthma and cystic fibrosis.¹⁸⁵ • The INSPIRED program, which is currently delivered either in-person or virtually for more remote regions, can be leveraged to enhance these efforts. By extending the INSPIRED program across the province, RRTs can reach more patients, particularly those in remote areas who may not have easy access to in-person services. This not only enhances accessibility but also allows for efficient resource allocation, as RRTs can provide services without the need for travel. This initiative represents a more sustainable model of care and has the potential to revolutionize lung health care in the province by fully integrating virtual health into the delivery of respiratory therapy services. • As such, enhancing the RRT's role by enabling this health occupation to play a broader role in community health and prevention, the increase in preventative education can reduce the demand of RRTs over time by five RRTs annually in the acute care setting, assuming: <ul style="list-style-type: none"> ◦ The INSPIRED Program can be extended across the province and the role of the RRT in the community setting can focus on preventive care and patient education, and assuming the recent success with the INSPIRED program will yield similar results to clients across the province. ◦ With over 39,000 individuals in the province living with COPD, if an additional 1,950 participants (5% of the COPD population) were to sign up to the program, NL would experience 1,070 fewer hospitalizations.^{186,187} With an average LOS of 9.7 days,¹⁸⁸ assuming on average two RRT treatments and/or interventions per day at 0.5 hour each, this would reduce demand by 5 FTEs in the acute care setting which is equivalent to 10,379 hours less of work each year. ◦ Note: This is assuming FTE translates to 1,950 working hours per year for unionized roles.
RRT-2	Rethink	<p>Adopt Telemedicine for Patient Consultations and Follow-Ups:</p> <ul style="list-style-type: none"> • Implement a telemedicine program for patient consultations and follow-ups, leveraging the existing INSPIRED program. This could involve investing in necessary technology and training for RRTs and other health care staff. Also, ensure patients have access to the necessary technology and support to use telemedicine services. The INSPIRED program, which is currently delivered either in-person or virtually for more remote regions, can be expanded to cover the entire province using telemedicine. • By leveraging the INSPIRED program, RRTs can reach more patients, particularly those in remote areas who may not have easy access to in-person services. This not only enhances accessibility but also allows for efficient resource allocation, as RRTs can provide services without the need for travel. This initiative represents a more sustainable model of care and has the potential to revolutionize lung health care in the province by fully integrating virtual health into the delivery of respiratory therapy services. • As such, by leveraging the pre-existing INSPIRED program across the province, demand for RRTs can be decreased over time by optimizing care delivery in a virtual setting or with remote patient monitoring, to reduce the demand for RRTs. <ul style="list-style-type: none"> ◦ Estimating the potential impact of virtual telemonitoring is difficult given the current role of the RRT in primary care and virtual care, which is not extended across the province. Note, the minimal gap between supply and demand for RRTs in the province provides an opportunity to extend the scope of RRTs in the community setting. ◦ The outcomes of the INSPIRED program should be measured and leveraged to redefine the role of RRTs in primary care across the province, determining the

¹⁸⁵ [RRTs Find Challenges and Rewards Specializing in Cystic Fibrosis - AARC](#)¹⁸⁶ Comprehensive Respiratory Care (CRC) Program: INSPIRED Program Snapshot: November 2019 to July 2023¹⁸⁷ https://www.healthaccordnl.ca/wp-content/uploads/manual-uploads/Comprehensive_Respiratory_Care_The_Future_of_Respiratory_Disease-Presentation.pdf¹⁸⁸ NL Centre for Health Information (2018/19).

ID	Theme	Recommendation and Potential Impact
<p>potential to offload respiratory-related care from Registered Nurses (RNs) in Family Care Teams (FCT) across the province.</p>		
Supply of Respiratory Therapists		
RRT-3	Retain / Recruit	<p>Provide Equitable and Pensionable Market Adjustments:</p> <ul style="list-style-type: none"> The Job Class Profile for RRTs I, II, and IIB determines the pay level received based on the point band they're assigned to. Stakeholders shared how the profession's responsibilities have shifted since the last JES evaluation, which are not yet reflected in its scoring, and therefore, pay level assigned. This is particularly critical to enable RRTs enhanced role in community-based, primary care through the provincial expansion of the INSPIRED program. Being non-pensionable, this market adjustment does not fully address the gap in compensation between RRTs working in the public sector and those working in private, community-based settings. Considering the high volume of resignations predicted for this profession between 2022-2023 (see Table 116), it is likely that many RRTs may turn to other jurisdictions, professions, or private sector employers in search of improved compensation and benefits. Considering the challenges associated with the timeliness and interdepartmental dependencies associated with submitting a proposal to the Treasury Board to reevaluate the JES scoring for RRTs, our recommendation is to ensure those market adjustments provided result in the HCS' intended outcomes of enhancing recruitment and retention through offering equitable and pensionable compensation. Notwithstanding wider policy considerations on the pensionability of market adjustments, which are outside the scope of the Provincial Health HR Plan, competitive compensation that is on par with other Atlantic provinces, in addition to the private sector, is an essential part of recruiting RRTs. Additionally, as part of this review process, HCS may want to consider supplementing this compensation package with additional recruitment and retention incentives to further strengthen supply, such as including a signing bonus or retention incentive in exchange for a return-in-service agreement. The average Canadian voluntary turnover rate in Canada is 15.5%.¹⁸⁹ With 75 RRT resignations projected over the next decade, this profession far exceeds the national turnover average at 37.3% (see Table 116). If these measures were implemented to increase compensation for RRTs, the NHLS could expect resignation trends to follow more closely to the national benchmark, thereby slowing outflows through resignation to 31 RRTs over the next 10-years. Through implementing this recommendation, NLHS can be reasonably expected to slow outflows from the profession and eliminate the current deficit of RRTs.
RRT-4	Recruit	<p>Increase the Number of In-Province RRT Seats in College Programs:</p> <ul style="list-style-type: none"> Despite the CNA Respiratory Therapy program offering 12 seats to prospective RRT students since the reinstalment of the new program in 2019, historically, the program graduates 9.5 students on average each year between 2022 and 2023.¹⁹⁰ In 2024, only five students are expected to graduate and enter the workforce, due to high attrition rates associated with online course delivery due to COVID-19. Of those students who do graduate, NL has a high retention rate, with 88% and 100% of graduates being retained in 2022 and 2023, respectively. As the program has only recently regained its accreditation in 2019, both enrolment and attrition rates were likely affected by this loss of accreditation, in addition to the effects caused by COVID-19. As the program has now secured its accredited status until reassessment in 2024, CNA should focus its efforts on improving program enrolment and attrition rates to bolster local RRT supply. This could include the selection of preferred candidates, engaging in

¹⁸⁹ [2023 Canadian Turnover Trends | Mercer \(imercer.com\)](https://www.mercer.com/canada-turnover-trends)

¹⁹⁰ CNA RRT Program graduation rate data provided by B. Elliot on October 22, 2023.

ID	Theme	Recommendation and Potential Impact
		<p>local recruitment campaigns, and offering additional workforce incentives or bursaries to attract students to the profession.</p> <ul style="list-style-type: none"> As the role of the RRT can be further extended into primary care and virtual care, consider incorporating relevant content into the curriculum to support the justification of increasing the total compensation of RRTs in the province to generate additional interest in this profession. By reducing program attrition rates, GNL has an opportunity to add an additional two RRTs to the workforce each year given the current size of the program. Through these improvements made to attrition rates, there is also an opportunity for HCS to collaborate with CNA to increase seats in RRT programs and secure funding to support these expansions. As such, increasing the number of seats within the RRT programs from 12 to 15 could lead to increased supply within the province by three RRTs annually, assuming: <ul style="list-style-type: none"> The new graduates will be offered employment in the province following graduation; The new graduates will remain in the province with improvements to total compensation; and, The new graduates will be equipped to work in rural and remote areas, and using virtual tools to support the FCTs.
RRT-5	Rethink	<p>Enable RRTs to Work to Full Scope of Practice in the Community Setting:</p> <ul style="list-style-type: none"> Develop training programs to prepare RRTs to work to their full scope in primary care chronic disease prevention and management, and increased presence within community health. This could involve collaborations with educational institutions to design and implement these training programs. It could also involve partnerships with health care providers and community organizations to provide practical training opportunities in a community setting. By recognizing and supporting RRTs' full scope of practice, we can increase the supply of RRTs in the community setting. This not only enhances the accessibility and quality of respiratory care services in the community but also provides new career opportunities for RRTs, potentially attracting more individuals to this profession. Estimating the potential impact of the expansion of the RRT role into the community setting is difficult to measure as the INSPIRED program outcomes have not yet been measured. The retention of the RRT workforce related to this recommendation will be further enabled with the RRT-3: Re-evaluate the JES review and the potential subsequent increase in total compensation.

Social Workers

In Newfoundland and Labrador (NL), social workers (SWs) play a crucial role in providing support, advocacy, and resources to individuals and communities in need. The majority of SWs in NL are employed by Newfoundland and Labrador Health Services (NLHS), followed by the Department of Children, Seniors and Social Development (CSSD) – their roles and responsibilities differ based on the specific settings and populations they serve. Other employers include the education sector, community organizations, private practices, federal and municipal governments, and other organizations.

There are numerous classifications where a Registered Social Worker (RSW) is required such as: Social Worker I, Social Worker II, Social Worker III, Social Worker IIIA, and Social Work Program Coordinator, Regional Social Work Coordinator.¹⁹¹ While the majority of certain classifications, such as Addictions Officer, Mental Health Counsellor, and Mental Health Crisis Intervener, have other options for formal education or certifications (e.g., clinical psychology or clinical counselling).

For those working in the NLHS, these SWs play a vital role in various health care settings including hospitals, clinics, and mental health facilities. They are responsible for providing a wide range of services, including conducting psychosocial assessments, offering counseling, intervening in crises, and providing support to patients, their families, and communities. The SWs collaborate closely with multidisciplinary teams to develop and implement holistic treatment plans that address the social and emotional needs of patients. They often serve as advocates and educators, helping patients navigate the complexities of the health care system and connecting them with essential community resources to support their overall well-being and recovery journey. Responsibilities may include intake/assessment and placement, case management, case planning, individual and group counselling, court work, discharge planning, coordination with other service providers, and the provision of education, consultation, guidance, and counselling to clients, the general public and external agencies.¹⁹²

SWs working for CSSD generally work in child protection, adult protection, or in the community. Child protection SWs play a crucial role in safeguarding children who are at risk of abuse, neglect, or exploitation. These SWs conduct thorough assessments,

¹⁹¹ [Job Class Profiles - Treasury Board Secretariat \(gov.nl.ca\)](#)

¹⁹² [Job Class Profile \(gov.nl.ca\)](#)

investigations, and case management to ensure the protection of vulnerable children and provide support to families facing crises. They work closely with various professionals, including law enforcement, educators, and health care providers, to coordinate services and interventions that promote the welfare of children and families in need. Child protection SWs may also be involved in court proceedings, foster care placements, and family reunification efforts to advocate for the best interests of children under their care.

SWs also play a pivotal role in adult protection services, as mandated by the Adult Protection Act (APA). This legislation empowers SWs to intervene and provide necessary support to adults who are at risk of abuse, neglect, or self-neglect and who are unable to protect themselves due to physical or mental incapacity. SWs in adult protection services conduct assessments, coordinate care plans, and collaborate with other agencies to ensure the safety and well-being of vulnerable adults. They are committed to upholding the dignity and rights of individuals, while working within the framework of the Adult Protection Act to provide timely and effective interventions. Their expertise and dedication are crucial in safeguarding the most vulnerable members of society and promoting their overall well-being.

Community SWs focus on delivering essential support and services to individuals, families, and communities to foster social inclusion, empowerment, and overall well-being. These SWs operate in diverse areas such as income support, housing assistance, disability services, and community development, aiming to address social issues and advocate for policy changes that enhance the quality of life for vulnerable populations. Community SWs collaborate with community organizations, government agencies, and stakeholders to provide counseling, advocacy, and educational resources that help individuals navigate available social services and build resilience in the face of challenges. Their dedication to promoting social justice and advocating for vulnerable populations contributes to creating more inclusive and supportive communities in the province.

All SWs in NL are expected to hold a Bachelor of Social Work (BSW) or Master of Social Work (MSW) degree. The specific Job Class Profiles for the profession may specify either bachelor's or master's level qualifications depending on the role and responsibilities associated with the position. NLHS and CSSD typically recruit SWs from Memorial University's (MUN) School of Social Work.

The Newfoundland and Labrador College of Social Workers (NLCSW) regulates the practice of social work in the province, which grants the Registered Social Worker (RSW) designation to applicants who meet

the registration requirements. The RSW designation is required to use the title 'social worker' or to practice within the scope of the social work profession in NL. For applicants educated in another jurisdiction, they require official transcripts indicating a master's degree or bachelor's degree in social work accredited by the Council on Social Work Education (CSWE) to register.

Current State Analysis

As of December 2022, there were 1,720 SWs in NL, distributed by NLHS zone as shown in Table 125.

Table 98: Social Workers by NLHS Zone¹⁹³

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2022 Supply ¹⁹⁴	952	189	185	212	182	1,720

The 1,720 social workers are split by employer as follows:

Table 99: Social Workers by Employer¹⁹⁵

	NLHS	CSSD	Other
Social Workers	36.4%	36.8%	26.8%

Education and Upskilling

In NL, social work education is offered through MUN's School of Social Work. MUN offers two BSW programs – one as a first degree and one as a second degree. MUN also offers a MSW program to those who have completed their BSW, as well as a Doctor of Philosophy (PhD) program of Social Work.

In NL, SWs typically do not specialize during their Bachelor of Social Work (BSW) program. That program provides a generalist foundation in social work practice, theory, and skills.

After completing their BSW, SWs may choose to pursue specialized training or certifications in areas such as child welfare, mental health and addictions (MHA), or gerontology through post-graduate studies or continuing education programs. Specialization allows SWs to

¹⁹³ Includes all SWs working in NL.

¹⁹⁴ The supply of social workers excludes any professionals who were categories as "out of province" in the data provided by the NL College of Social Workers.

¹⁹⁵ [SW Workforce Model Report 2022.doc \(gov.nl.ca\)](https://www.gov.nl.ca)

deepen their knowledge and skills in specific areas of practice to better meet the needs of their clients.

In 2022, HCS commissioned the Social Worker Workforce Model Report¹⁹⁶ that projected supply and demand of the SW workforce to 2036 to support union working groups from the Allied Health Professionals Association (AAHP), the Canadian Union of Public Employees (CUPE), and the Newfoundland and Labrador Association of Public and Private Employees Health Professionals (NAPE). As an outcome of this study, there has been an increase in the number of seats at MUN School of Social Work, which has since resulted in some alignment between workforce needs and training.

Concerns were raised by stakeholders about the coordination of student services, a cornerstone for developing the next generation of SWs, which is believed to be significantly under-resourced. Adequate support and guidance are essential for social work students to gain practical experience and integrate successfully into professional roles. The current shortfall in resources has implications not only for the quality of training but also for the capacity of the health care and social systems to sustain a pipeline of well-prepared SWs. Investment in this area is an investment in the future of social work and should be prioritized to ensure a consistent and high-quality standard of care across the province.

Stakeholders also identified that there is a critical need for ongoing education and upskilling among SWs in NL. As social issues evolve and new research emerges, continuous professional development is vital for SWs to stay current and effective in their practice. However, opportunities for advanced training and skill development are often limited, due in part to fiscal constraints and a lack of structured programs provided by employers. Enhancing resources for professional development is essential for fostering a workforce that is resilient, adaptable, and equipped to meet the changing needs of the populations they serve.

Rural, Remote, and Labrador

The retention of SWs in the rural and remote regions of NL, and particularly in Labrador, presents unique challenges that require nuanced strategies to overcome. Among these, the "fly-in, fly-out" model, often employed for medical communities in Labrador, adds a layer of complexity to health care delivery. This model, while providing critical services, can disrupt the continuity of care and relationship-building crucial for social work, especially within Indigenous

¹⁹⁶ [SW Workforce Model Report 2022.doc \(gov.nl.ca\)](http://gov.nl.ca)

communities where culturally sensitive and consistent care is paramount to instilling trust and promoting better health outcomes.

In rural and remote regions, SWs are tasked with navigating the social determinants of health (SDH) that disproportionately affect remote communities, including poverty, limited access to comprehensive health care, and the profound impacts of social isolation. These factors often culminate in a high volume of inappropriate emergency department (ED) referrals, revealing a gap in available community-based support and preventive care. The scarcity of resources can lead to SWs feeling inadequately equipped to address the complex needs of their clients, without having access to additional supports.

Burnout is a critical issue in these settings, as SWs frequently face overwhelming caseloads due to the lack of available staff and the expansive geographic areas they must cover. The demanding workload, coupled with the psychological strain of providing care to vulnerable populations, such as those with multifaceted health and social needs, exacerbates job dissatisfaction and turnover.

Furthermore, SWs in rural and remote communities may experience personal social isolation, impacting their ability to establish and maintain a sense of connection with the community and their clients. This isolation, paired with limited opportunities for career advancement and professional development in remote regions, can lead to feelings of stagnation and a desire for relocation.

To improve the retention of SWs in these challenging environments, a multifaceted approach is necessary. This should include the provision of comprehensive support systems for SWs, opportunities for shared community engagement with local populations, and culturally appropriate training to enhance the delivery of care to Indigenous communities. Additionally, establishing clear paths for career advancement and ensuring access to continuous professional development are pivotal in helping SWs find fulfillment and sustainability in their roles. Such efforts are crucial not only for the wellbeing of the SWs but also for the continued health and social cohesion of the communities they serve.

Mental Health and Addictions

SWs in NL are at the forefront of dealing with MHA issues. The NLHS employs SWs who work in the provision of specialized clinical therapeutic interventions, both within community and acute care settings. They play a pivotal role in early intervention and prevention, particularly for individuals who may not yet have a formal diagnosis. However, access to MHA support services is limited, especially for

children and seniors, which poses a significant challenge in addressing MHA issues in a timely manner and places additional workloads on SWs as they manage increasingly larger caseloads with complex needs.

The situation is further complicated by long waitlists for psychiatric care and a shortage of primary care physicians who can facilitate referral processes and follow-ups. As a result, the NLHS has been using an increasing number of SWs III to backfill some of the clinical psychology vacancies without disrupting service for clients. Despite having strong, interprofessional team collaboration, the lack of psychologists remains a significant challenge. The continued backfilling of clinical psychology positions for substantial periods of time without stabilizing the positions for SWs creates instability in the workforce and more importantly for clients as SWs III move to private practice or to permanent full-time (PFT) positions in search of job security and professional development opportunities.

The current landscape presents a pivotal opportunity to enhance collaboration across various health care professionals in the field of mental health. There is a critical need for the integration of efforts from clinical psychologists and psychiatrists to bolster the support network surrounding SWs. A collaborative model might include shared training initiatives, interdisciplinary case reviews, and consistent communication channels, ensuring a unified approach to patient care. Moreover, there is a compelling case for advocating policy reforms aimed at enhancing access to mental health service and reducing wait times.

As SWs continue to navigate the complexities of MHA care, continuing to foster partnerships with other health care professionals and advocating for infrastructural changes are paramount. Embracing a multidisciplinary approach and advocating for system-level enhancements will bolster the ability of SWs to provide holistic, integrated care. Such concerted efforts are critical in optimizing the use of the limited psychology resources within the public system and ensuring the diverse and complex needs of individuals with MHA issues are adequately met.

Caseload Sizes and Burnout

The increasing demand for SWs across various sectors in NL, including social services, health care, and other government services such as education, is putting a strain on an already limited workforce. SWs are dealing with burgeoning caseloads that often encompass a range of complex needs. The difficulties in obtaining timely referrals to other providers exacerbate these challenges. Recent data suggests a

concerning number of vacancies for SW positions throughout the province, with a significant percentage remaining unfilled within NLHS and CSSD. This shortfall is driving many SWs to consider the private sector, which presents a further challenge to maintaining a robust public social work force.

A national survey from 2018 indicated that the vast majority of SWs in child welfare felt overwhelmed by their workloads, and nearly half of those who left the profession cited burnout or vicarious trauma as their reasons. This sentiment is mirrored in the turnover rates for SWs, including various levels of practice, within the health care system. These rates have fluctuated over the years, with notable increases that underscore the urgency of addressing the issue. Turnover not only disrupts continuity of care but also emphasizes the pressing need for systemic changes to support SWs and mitigate the high levels of burnout and job turnover.

Likewise, the Adult Protection Act (APA) in NL has had a significant direct impact on SW caseloads, particularly in community support programs (CSP), personal care homes (PCH), long-term care (LTC), and acute care settings. The APA is a legislative requirement that specifically mandates the involvement of SWs in its implementation. However, the operationalization of the APA within the health care system has been fraught with challenges including increased caseloads, complex case management, and the need for interdisciplinary collaboration. SWs are often at the forefront of addressing these issues, which can strain resources and impact the overall effectiveness of service delivery.

SWs frequently transition to different positions within the same classification or community, suggesting that the issues are not with the nature of the work itself but with the demanding conditions under which they operate. The critical nature of social work, coupled with substantial workloads and high expectations of accountability, has led to pronounced recruitment and retention challenges. Tackling these challenges is imperative to improve working conditions and sustain the public social work workforce in NL. A pivotal step towards this goal is the management of caseload sizes, which could significantly enhance work conditions and prevent burnout, thereby bolstering the stability and effectiveness of the social work profession in the province.

Health Accord NL Calls to Action

Several Calls to Action (CTAs) from Health Accord NL carry implications for the supply and demand of SWs in NL:

- **CTA 6.1:** Increase awareness and understanding of the social determinants of health (SDH) to change attitudes and bring about action among decision-makers regarding the direct impact on population health as well as community and economic well-being.
- **CTA 6.2:** Integrate the social determinants of health together with a rebalanced health system into all governance, policy, program, and infrastructure decisions that influence health.
- **CTA 6.3:** Ensure that Newfoundlanders and Labradorians have a liveable and predictable basic income to support their health and well-being, integrated with provincial programming to improve food security and housing security.
- **CTA 7.2** Develop one model of community health services for children and youth with complex health needs and a more integrated approach to respond to health needs of children and youth in care.
- **CTA 8.1:** Develop and implement a formal Provincial Seniors Care Program to address the critical need of our population.
- **CTA 8.2:** Implement and support an integrated continuum of care to improve the effectiveness and efficiency of care delivery, improve health and social outcomes for older adults and older adults with disabilities, and support older adults to age in place with dignity and autonomy.
- **CTA 9.1:** Connect every resident of NL to a FCT providing a central touchpoint of access and a continuum of care.
- **CTA 10.12:** Develop and deliver education and continuing education programs that use an integrated, inclusive, and collaborative care model where practitioners learn and practice together. This requires integration across curricula and across programs throughout the learning experience.

There are several recommendations in the Health Accord NL focused on increasing spending in social programs to elicit a downstream impact in the health sector. CTAs 6.1, 6.2, and 6.3 outline the importance of focusing on the SDHs such as education, housing, and income security to have a significant impact on poverty reduction and improve the overall well-being of individuals and communities. With higher levels of education, individuals may be better equipped to navigate complex social systems and may require less support from SWs. Likewise, reduced homelessness and poverty may lead to fewer individuals requiring social services. By prioritizing efforts to address the root cause of many of the health issues facing NL today, these CTAs have the potential to reshape demand so that SWs can continue to focus on other areas of need, such as MHA support.

CTA 7.2 speaks to GNL's plans to develop a new service delivery model for child health services that links health and education to enhance the continuity of care for youth and adolescents with complex needs. This program is anticipated to influence demand for interdisciplinary care teams responsible for providing wraparound, holistic and timely physical and mental health services for this demographic, with SWs being one of the key roles involved in the new care delivery model.

CTA 8.1 and 8.2 detail GNL's aspiration to establish an integrated continuum of care for older adults and individuals with disabilities. For SWs serving as case managers across a variety of care settings, such as community, personal care homes (PCH), and long-term care (LTC), this may entail additional demands for the coordination and delivery of services across care settings. SWs will continue to be actively involved in interdisciplinary collaboration with other health care professionals, with the potential for greater collaboration with those professions involved in the delivery of aging-related services. By assuming this coordination function and working across the continuum of care, SWs can help facilitate seamless transitions between care settings and care team providers, to ultimately enhance the overall quality of care for older adults and individuals with disabilities.

CTA 9.1 aims to connect every resident of NL to a Family Care Team (FCT) providing a central touchpoint of access and a continuum of care. SWs are integral members of these FCTs, providing social support, patient and family education, conducting risk assessments, assisting clients in navigating and accessing required community services, helping clients recognize, develop and utilize support networks and initiating appropriate community referrals.

CTA 10.12 focuses on education and continuing education programs that use an integrated, inclusive, and collaborative care model. For SWs, this means enhanced opportunities for specialized and interdisciplinary learning and to practice alongside other health care professions. This will enhance their skills and knowledge, promote collaboration, and ultimately improve patient care.

Workforce Initiatives

With SWs playing a critical role in several sectors within the province spanning education, social services and health care, HCS has already taken steps to strengthen the supply of SWs via the following initiative:

- **Social Worker Workforce Model Report:** HCS released a report, completed on May 31, 2022, that projected supply and demand to 2036 to support NAPE Working Groups.¹⁹⁷

In addition, a number of broad initiatives and financial incentives aimed at health professionals apply to the SW workforce including:

- **Signing Bonus Program:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions, and tiered to address geographic considerations with an associated return-in-service of one or two years¹⁹⁸.
- **Health Professional Bursaries:** \$5,000 to \$10,000 bursaries are awarded for difficult-to-fill positions, available to social work students who sign a service agreement for one or two years of service post-graduation.
- **Relocation Assistance:** Provided financial assistance to health care professionals to assist them in moving to a new region for employment;
- **Educational Salary Advance:** Allows employees to finance a planned leave of absence, of between six and 24 months, to complete an education program on a full-time basis; and,
- **Labrador Benefits Agreement:** Offered to health care professionals who accept positions in Labrador and provides employee and dependent allowances, travel allowance, and extra paid leave.

Stakeholder Engagement Insights

Eight stakeholder groups were engaged via focus groups to help understand the experiences and perspectives of the current and future SW workforce:

- Memorial University Staff (MUN)
- NL College of Social Workers (NLCSW)
- Department of Children, Seniors and Social Development (CSSD)
- Association of Allied Health Professionals NL (AAHP-NL)
- NL Association of Public and Private Employees (NAPE)
- Canadian Union of Public Employees (CUPE)
- NLHS Social Work Professional Practice Consultants
- Family Care Teams (GNL and NLHS Leadership)

In addition, 13 stakeholders responded to the focus group follow-up survey with additional insights. These stakeholder consultation

¹⁹⁷ [SW Workforce Model Report 2022.doc \(gov.nl.ca\)](https://www.gov.nl.ca/hcs/grantsfunding/bursaries/#sign)

¹⁹⁸ <https://www.gov.nl.ca/hcs/grantsfunding/bursaries/#sign>

activities yielded an array of qualitative insights pertinent to the development of the SW workforce recommendations, as summarized in Table 127 below. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, and may not be grounded in absolute fact.

Table 100: What We Heard from Social Worker Stakeholders

Theme	Insights
Market Adjustments and Job Evaluation System (JES)	<ul style="list-style-type: none"> Recruitment and retention strategies must address market equity and include adjustments to pay and modifications to the JES to ensure it is equitable and reflective of the complexity of social work. The current JES system is dysfunctional as it fails to account for the complexity of social work positions, contributing to morale and retention issues. There is a significant need for clinical education resources and a consistent approach to onboarding and orientation for SWs, as well as a need to navigate the challenges posed by various union representations. The classification system should be reviewed to allow for nuances within disciplines and to permit SWs to educate others on their role and impact. <p>17. Addressing classification system challenges and making appropriate market adjustments for SWs are key to improving the workforce.</p>
Education	<ul style="list-style-type: none"> There is currently a lack of resourcing for clinical education for the profession. Despite being the largest allied health profession group in the province, there are no dedicated field coordinator resources for SWs. A consistent process for student services and matching for field practicums is essential, as is investing in students as part of the recruitment strategy. <p>18. It has been recommended that increasing the enrolment size of social work classes needs to become a priority, as the shortages of SWs is already being felt in many locations across the province, ranging from rural to urban settings.</p>
Role Clarity	<ul style="list-style-type: none"> The critical role of SWs throughout employer organizations is not widely understood, and legislative changes often impact resource allocation for social work without sufficient operational support. Expectations are shifting towards more encompassing titles for positions, such as 'Advanced Mental Health Practitioners', to address recruitment and retention challenges in advanced clinical areas. <p>19. A comprehensive review of the scope of practice is needed to enable SWs to work at the top of their scope and to ensure they are appropriately resourced.</p>
MHA	<ul style="list-style-type: none"> Long waitlists for psychiatric care and a shortage of primary care physicians in NL complicate the referral process and follow-up care for patients with MHA issues. NLHS increasingly relies on SW III to fill clinical psychology vacancies to maintain client services. The practice of using SWs to temporarily cover clinical psychology roles without offering job stability leads to workforce instability. <p>20. This instability is worsened as experienced SW III seek more stable opportunities in private practice or PFT positions, driven by the need for job security and professional growth.</p>

Theme	Insights
Health Accord	<ul style="list-style-type: none"> The principles and direction of Health Accord NL should be considered, which emphasize the social determinants of health and patient/client-centered care in addition to the traditional focus on disease prevalence as a major factor in forecasting health care demand. It is necessary to transition from a disease-based, acute care-centered health system to one that focuses on prevention, community-based services, and the integration of health and social systems. <p>21. Access to care, prevention, and community-based services have a significant impact on human resource planning and cannot be fulfilled solely through a per population health care delivery model.</p>
Rural and Remote	<ul style="list-style-type: none"> The complexities of remote/rural practice must be taken into account, acknowledging that even with a sufficient supply of SWs, high vacancy rates can persist across some geographical areas. <p>22. It is important to consider the implications of a provincial health authority versus regional authorities on the movement and retention of SWs.</p>
Interdisciplinary Team-Based Care	<ul style="list-style-type: none"> In community-based settings, SWs are more frequently becoming a part of patient care teams. These teams are currently being set up throughout the province and it is likely they will expand further over the decade. There is an expectation that this model will take into account the implications of team-based care, recognizing that health care teams extend beyond physicians and nurses to include a wide range of professionals such as SWs. <p>23. A shift towards more team-based care requires a greater recognition of the unique skill sets that allied health professionals, including SWs, bring to health care.</p>

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary projections of the supply of and demand for SWs were developed based on historical practice patterns and trends.

Data from 2022 was provided by the NLCSW and 2018-2021 data was available from the 2022 Social Work Workforce Model Report. From that Report, only total inflows and outflows were available. While some inflows were split by reason for entry in the 2022 data provided by the NLCSW, to ensure consistency across the years, only total inflows and outflows could be estimated.

In addition, the four years used to estimate SW average inflows and outflows were 2018-2021 rather than 2019-2022, as 2022 exits were not representative of the historical average.

These preliminary projections were then augmented, wherever possible, based on the availability of supporting data and analysis, to

reflect inflight or recently implemented policy initiatives to form a baseline scenario.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 128 below outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for SWs, as well as any limitations or caveats of the data.

Table 101: Data Sources for Social Worker Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of SWs, by zone, five-year age cohort, and gender from 2018-2022.</p> <p>Inflows: Entries into profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.)</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation).</p>	<p>Supply: Yes</p> <p>Inflows: Only total entries, not split by reason for entry to workforce</p> <p>Outflows: Only total exits, not split by reason for exit from workforce</p> <p>Sources: 2022 data: NLCSW 2018-2021 data: Social Work Workforce Model Report, 2022</p>	$\text{Supply Year X} = \text{Supply Year X-1} + \text{four-year average inflows} - \text{four-year average outflows}$	<ul style="list-style-type: none"> • Could not determine reason for entry or exit.
Demand	<ul style="list-style-type: none"> • 10-year population projections, by five-year age cohort, gender, and zone. 	<p>Population projections: Yes</p> <p>Source: NL Department of Finance</p>	$\text{Demand 2022} = \text{supply 2022} + \text{vacancies 2022}$ $\text{Growth in demand (2023-2032)} = \text{population growth}$ $\text{Demand Year X} = \text{Demand Year X-1} * \text{growth in encounters Year X}$	<ul style="list-style-type: none"> • Encounters with SWs are not captured by the CIHI POP Grouper Methodology. Thus, given the wide array of types of clients seen by SWs and the inability to link SWs to specific diseases, population growth was used as a proxy to estimate the growth in demand.

Preliminary Projections

This section provides the preliminary forecast estimates for SWs, beginning with a summary of future supply in Table 129.

Table 102: Preliminary Supply Projections for Social Workers

Health Occupation	Starting Supply (December 2022)	Inflows (2023-2032)	Retirements (2023-2032)	Other Outflows (2023-2032)	Ending Supply (December 2032)
Social Workers	1,720	1,294	123	1,016	1,887

Where: Starting supply (December 2022) + Inflows (2023-2032) - Retirements (2023-2032) - Other Outflows (2023-2032) = Ending Supply (December 2032)

Over the course of the forecast period, the supply of SWs is predicted to increase 10%. The retirements identified in Table 129 above highlight the retirements estimated from the flow through over ages over the forecast period (i.e., as people hit retirement age over the forecast period). However, given that the reason for entry into or exit from the profession was not included in the analysis for SWs due to data limitations, other outflows likely include a significant portion of retirements. These results vary by zone as shown in Table 130 below.

Table 103: Regional Preliminary Supply Projections for Social Workers

Zone	2018 Supply	2022 Supply	2032 Supply	Percent Change in Supply 2018 vs 2022	Percent Change in Supply 2022 vs 2032
Eastern Urban	859	952	1,044	+11%	+10%
Eastern Rural	171	189	209	+11%	+11%
Central	167	185	204	+11%	+10%
Western	191	212	230	+11%	+8%
Labrador-Grenfell	164	182	200	+11%	+10%
Total¹⁹⁹	1,552	1,720	1,887	+11%	+10%

If supply were to follow historical trends, all zones would see an increase in the supply of SWs over the forecast period.

¹⁹⁹ Due to rounding, the sum of the supply by zone may not perfectly match the total listed.

Table 104: Preliminary Demand Projections for Social Workers

Health Occupation	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Social Workers	1,720	58	1,778	1,815	+2%

Public sector vacancies are added to 2022 supply to estimate the starting demand. Vacancy data was provided by NLHS. Given the wide array of types of clients seen by SWs and the inability to link SWs to specific diseases, population growth was used as a proxy to estimate the growth in demand. While the number of SWs required to help the older population is predicted to rise as NL's population ages over the forecast period, the number of children under the age of 18 is predicted to decline. Overall, NL's population is predicted to remain relatively stagnant over the coming decade.

From 2022 to 2032, demand for SWs is expected to rise by 2%. Table 132 shows the predicted annual change in population, and consequently the growth in demand, by zone, for the coming decade.

Table 105: Regional Annual Growth in Demand for Social Workers

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	0.6%	0.6%	0.7%	0.5%	0.6%	0.6%	0.7%	0.7%	0.6%	0.6%
Eastern Rural	-0.3%	-0.3%	-0.3%	-0.4%	-0.4%	-0.4%	-0.3%	-0.4%	-0.4%	-0.4%
Central	-0.4%	-0.4%	-0.4%	-0.5%	-0.4%	-0.5%	-0.4%	-0.4%	-0.4%	-0.5%
Western	-0.3%	-0.3%	-0.2%	-0.4%	-0.3%	-0.4%	-0.3%	-0.3%	-0.3%	-0.4%
Labrador-Grenfell	-0.2%	-0.1%	-0.1%	-0.2%	-0.1%	-0.1%	0.0%	0.0%	0.0%	0.0%
NL	0.2%	0.2%	0.3%	0.1%	0.2%	0.2%	0.3%	0.3%	0.2%	0.2%

The only zone predicted to see an increase in population, and hence an increase in the demand for SWs, is the Eastern Urban zone.

Table 106: Preliminary Gap Analysis for Social Workers

Health Occupation	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Social Workers	1,720	1,778	58	1,887	1,815	-72	-130 (oversupply) (oversupply)

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022. With the preliminary supply of SWs predicted to rise by 10% over the forecast period and preliminary demand only expected to increase by 2%, preliminary supply is predicted to exceed preliminary demand by 72 in 2032.

Base Case Projections

For SWs, the Health Accord NL CTAs and workforce initiatives listed below are reflective of stakeholder feedback. In addition, sufficient quantitative data existed for their impact to be incorporated in supply and demand projections. Overall, the policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

- **Demand Analysis:**
 - Establishment of frailty unit support teams comprised of SWs at each of the three regional hospitals in Eastern Urban Zone, Central Zone, and Western Zone (i.e., CTA 8.1 and 8.2).
 - The new acute care and cancer care Western facility in Corner Brook will require SWs (i.e., CTA 9.14)
- **Supply Analysis:** No supply-side workforce initiatives or CTAs could be quantified at the time of the completion of the report.

Table 134 highlights the assumptions used to help quantify the base case items for SWs.

Table 107: Base Case Assumptions for Social Workers

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL CTA 8.1 and 8.2: Provincial Seniors Care Program	Demand	<ul style="list-style-type: none"> Embedded within frailty unit support teams (one team at three Regional Hospitals) 	<ul style="list-style-type: none"> Eastern Urban <ul style="list-style-type: none"> 2024: +1 Central: <ul style="list-style-type: none"> 2026: +1 Western: <ul style="list-style-type: none"> 2025: +1 Labrador Grenfell <ul style="list-style-type: none"> 2026: +1
Health Accord NL CTA 9.14: New acute care and cancer care Western facility in Corner Brook	Demand	<ul style="list-style-type: none"> One-time addition when facility opens in June 2024 	<ul style="list-style-type: none"> Western: <ul style="list-style-type: none"> 2024: +2

While some items were not included in the base case at the time of the analysis as they did not meet the three above-mentioned inclusion criteria, the following have already had an impact on the demand analysis for SWs: the new mental health and addictions centre in St. John's, the new Cardiovascular and Stroke Institute, the use of SWs within FCTs, and the province's new Adult Protection Act.

Table 135 provides the annual quantitative impacts for each of the base case items included in the SW analysis.

Table 108: Annual Quantitative Impacts of Base Case Items for Social Workers

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Health Accord NL CTA 8.1 and 8.2: Provincial Seniors Care Program	0	1	2	4	4	4	4	4	4	4
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	0	2	2	2	2	2	2	2	2	2
Total Demand Impacts	0	3	4	6						

The implementation of the Provincial Seniors Care Program will have a slightly greater impact on the demand for SWs than the opening of the new acute care and cancer care Western facility in Corner Brook. While both these initiatives are predicted to increase the demand for SWs in the province, the oversupply of SWs is still predicted to prevail. Table 136 highlights the gap analysis over the course of the forecast.

Table 109: Final Annual Provincial Gap Analysis for Social Workers

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	1,720	1,741	1,762	1,782	1,802	1,820	1,837	1,852	1,866	1,877	1,887
Demand	1,778	1,781	1,787	1,793	1,797	1,801	1,804	1,809	1,814	1,818	1,821
Gap	58	40	25	11	-5	-19	-33	-43	-52	-59	-66
Gap as a Percent of Supply	3.4%	2.3%	1.4%	0.6%	-0.3%	-1.0%	-1.8%	-2.3%	-2.8%	-3.1%	-3.5%

The surplus of SWs is predicted to decline from 72 (the surplus in 2032 without incorporating the base case) to 66 as the base case items are incorporated.

Workforce Recommendations

Although NL will have a surplus of SWs by 2032, there are opportunities for SWs to grow in certain areas, especially in rural and remote areas, including Labrador. Likewise, identifying opportunities to leverage technology such as the new provincial Health Information System (HIS) and establishing dedicated education resources will support the continued advancement of this profession. Additionally, recommendations have been developed to extend the role of the SW to collaborate with clinical psychologists to support gaps in MHA-related services and are empowered to practice at the top of their scope.

Table 137 below highlights the workforce recommendations proposed to aid GNL in closing the short-term gap and addressing other SW issues.

Table 110: Social Worker Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Demand for Social Workers		
SW-1	Rethink	<p>Enable SWs to Practice at Top of Scope within Interdisciplinary Care Environments:</p> <ul style="list-style-type: none"> The ongoing access issues related to MHA services in the province has resulted in challenging labour conditions for both SWs and clinical psychologists employed by the

ID	Theme	Recommendation and Potential Impact
		<p>NLHS, as SW III, MSW-prepared roles have been backfilling psychology positions to maintain MHA service provision.</p> <ul style="list-style-type: none"> • This has resulted in a complex working situation involving advanced mental health practitioners, resulting in considerable distress to all providers involved as a result of the instability and inequities in classifications that directly impact recruitment and retention. • Acknowledging that SWs and clinical psychologists are both regulated profession designations with distinct classifications despite working in the same program areas with the same clients, Deloitte recommends leveraging the synergies existing between these professions to stabilize access to public MHA services within the province. This approach addresses the vacancy in clinical psychology (see CP-1 for more details), while supporting advanced practice SWs to practice at the top of scope. • This could be attained through enhanced education in clinical areas for all professionals involved, as the current recruitment environment of 'next best' hiring is not sustainable without upskilling these providers. • Establishing support systems to support SWs transition into these roles, including mentorship, peer support groups, or access to professional development resources will further enhance recruitment and retention efforts. • Likewise, the current JES system does not allow for addressing this situation due to the lack of recognition of SW competencies in these advanced roles. Advocating for policies that recognize the competencies of SWs and the development of classifications such as Advanced MHA practitioners would promote the utilization of other regulated professionals in this work. • It is recommended that further examination of the best use of the limited clinical psychologist resources within the province and providing stability to those SW who are currently practicing in advanced MHA practitioner roles to address recruitment and retention challenges. This will ultimately help GNL better serve MHA clients who require specific scope of services. • Estimating the potential impact of promoting collaboration between SWs and clinical psychologists is difficult due to the aggregate information received on patient caseload, number of cases seen over a period, and variance based on the type of services provided. If GNL promotes this collaborative approach, it can reasonably decrease clinical psychologist and SW caseload over time given the proactive approach remains anchored in prevention and de-escalation of MHA-related issues. • Therefore, an additional recommendation would be to conduct further analysis and policy setting regarding staffing models and caseloads for MHA-related occupations. This will support future workforce planning and ensure that staff can provide high-quality care to clients without experiencing burnout.
SW-2	Automate	<p>Integrate the Requirements of SWs for all Health Care Settings with the Implementation of the Provincial HIS:</p> <ul style="list-style-type: none"> • Implementing a new provincial HIS will improve efficiencies related to accessing information and previously completed assessments, thereby reducing the demand for SWs by: • Developing a centralized database within the HIS where all patient information and completed assessments are stored. This will allow SWs to easily access necessary information, reducing time spent on information gathering. • Standardizing the format of psychosocial assessments across all service providers. This will make it easier for SWs to understand and utilize assessments completed by other providers. • Note: It is important to ensure that the HIS has the capability to capture assessments from all disciplines. For example, it should allow for group documentation to meet the documentation standards set by all regulated professions. • Implementing features in the HIS that automate coordination tasks, such as submitting assessments to required agencies or setting up services. This will reduce the administrative burden on SWs. • Ensuring the HIS provides real-time updates on patient status and service requirements. This will help SWs stay informed and respond more efficiently to patient needs.

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> • Providing comprehensive training to SWs on using the HIS. This will ensure they can effectively utilize the system to improve their efficiency. • Establishing a feedback mechanism for SWs to report any issues or suggest improvements to the HIS. This will ensure the system continues to evolve based on user needs and experiences. • Further efficiencies could be gained for the SW workforce if CSSD is included as part of the digital transformation. This could involve integrating CSSD data and services into the digital platform, which would reduce duplicative documentation and improve information sharing. By having a centralized, up-to-date source of information, SWs can work more efficiently and effectively, reducing the time spent on administrative tasks and allowing for more focus on direct care. • Additionally, expanding the use of virtual visits has the potential to decrease the time between follow-ups. • Note: Stepped Care Model 2.0 integrates e-mental health interventions, recovery principles, and single session rapid access counselling with traditional (or established) in-person programming on a provincial scale. • Overall, the implementation of the provincial HIS has the potential to offset demand for SWs once fully implemented and stabilized. However, as GNL's business case for the provincial HIS implementation was developed concurrently to this report, the implications on provider productivity have not yet been measured and need to be explored further.
Supply of Social Workers		
SW-3	Retain	<p>Implement Strategies Enabling SWs to Manage their Caseloads Effectively:</p> <ul style="list-style-type: none"> • Insights gathered from stakeholders indicated that SWs working across the continuum of social and health services are facing increasing caseloads, leading to burnout and negatively impacting job satisfaction. • GNL should consider implementing a number of strategies to enable SWs to manage their caseloads more effectively by: <ul style="list-style-type: none"> ◦ Establishing and enforcing a maximum limit on the number of cases each SW can handle at a time according to practice area. Additional work is required to establish these benchmarks across practice areas, taking into consideration the complexity of cases and capacity of individual SWs. ◦ Building upon existing priority referral indicators to streamline the process for triaging cases based on urgency and complexity. This will ensure that SWs can focus their efforts where they are most needed. ◦ Employing additional Social Work Assistant (SWA) to assist with administrative tasks related to case management across all programs. This will allow SWs to focus more on direct patient care and remain focused on top of scope activities. ◦ Reviewing SWs' caseloads on a regular basis to ensure they are manageable and evenly distributed. If a SW is consistently overburdened, ensure there is a transparent and standardized process for redistributing a portion of their caseload and providing additional support. This could involve employing clerical support throughout program areas to ensure allowance for top of scope work for SWs. ◦ Leveraging the provincial HIS to streamline case management processes. This could include using a digital case management system that allows SWs to easily track their cases, schedule appointments, and access relevant information (please refer to SW-2 for more information). • When prioritizing retention strategies for SWs, it is important to consider the sources of turnover. Table 129 illustrates that other outflows (1,016) significantly outnumber retirements (123). Challenges related to outstanding classifications, unsuccessful Position Description Questionnaire (PDQ) submissions, and the perceived lack of equity and complexity in the JES have all been identified as directly affecting retention. In addition to those provided above, other strategies should be implemented to address factors contributing to turnover, such as job dissatisfaction, burnout, and career changes (e.g., social workers leaving the public sector for better work-life balance in the private sector).

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> • In summary, capping the caseload for SWs has the potential to enhance retention in the short-term and increase recruitment over time, increasing the supply of SWs who will remain in the public sector. • Note: This would assume an incremental reduction in caseloads for SWs. This initiative should be communicated to SWs as a measure to reduce caseloads in the immediate and short-term. The CSSD SWs should be consulted to determine the most appropriate approach to reducing caseloads in order to reduce the impact on clients in the immediate to short-term. • Note: Although this will increase client wait times in the immediate to short-term, in the short- to medium-term, clients will experience greater satisfaction (i.e., improved continuity of care), and SWs will experience an improved employee experience (i.e., lower caseload, reduced burnout).
SW-4	Recruit / Retain	<p>Attracting SW to Positions in Rural and Remote Areas, including Labrador:</p> <ul style="list-style-type: none"> • The retention of SWs in the rural and remote regions of NL, and particularly in Labrador, presents unique challenges, including navigating the SDH that disproportionately affect remote communities, such as poverty, limited access to comprehensive health care, and the profound impacts of social isolation. • Recognizing the critical role that SWs play in rural and remote areas, GNL should develop a comprehensive strategy targeted at attracting SWs to these regions. This strategy should include the following elements: <ul style="list-style-type: none"> ○ Implementing educational interventions such as preferential selection of rural students and distributed training in rural areas. These actions are associated with increased rural retention of health professionals. <ul style="list-style-type: none"> ▪ A systematic review²⁰⁰ concluded that educational strategies such as prioritizing rural students for selection and providing training in rural areas are linked with higher retention of health professionals in these areas. ▪ Access to consistent professional practice support for promotion, prevention and intervention aspects of the occupation. ▪ Interventions that are highly coercive tend to result in lower rural retention, with "coercive strategies" being defined as regulatory interventions that require health professionals to serve in rural areas for a certain period of time in exchange for benefits such as visa waivers, access to professional licenses, or loan repayments. ▪ These strategies are described as having comparatively lower effectiveness in retaining health professionals in rural areas, especially once the obligatory service period is completed. ▪ Therefore, policy makers aiming for medium to long-term retention in rural areas would be wise to enhance rural training programs and minimize the use of highly coercive interventions.²⁰⁰ ○ Recognizing and addressing the unique health care needs of Indigenous populations in rural and remote areas, including Labrador, by providing more culturally appropriate care. This can be achieved by collaborating with Indigenous communities, hiring Indigenous SWs, and providing training and education to SWs on the cultural practices of the Indigenous communities in which they serve. By doing so, SWs can provide better care to Indigenous populations, which can improve health outcomes and increase trust and engagement with the health care system. ○ GNL should take further steps to increase the number of Indigenous SWs practicing in NL by supporting Indigenous students in pursuing social work education, such as establishing bursaries and reserving seats for Indigenous students. These students should also be supported to undertake their

²⁰⁰ [Interventions for health workforce retention in rural and remote areas: a systematic review | Human Resources for Health | Full Text \(biomedcentral.com\)](#)

ID	Theme	Recommendation and Potential Impact
		<p>practicums in their home communities (see SW-5 for more details), along with guaranteed employment post-graduation.</p> <ul style="list-style-type: none"> ○ Addressing spousal/partner employment which can be a challenge for SWs considering a move to rural communities due to limited job opportunities. Employers can provide resources and assistance to help alleviate the stress and financial burden associated with relocating to a rural area, improve the quality of life for health care professionals and their families, and increase the likelihood of long-term retention. ○ Addressing the high cost of housing, which serves as a significant deterrent for students considering moving to Central or Labrador, is critical for maintaining supply within these regions. This could be addressed by providing social work students with housing subsidies to pursue practicums in rural and remote areas. ○ Expanding the use of programs like Health at Home, which uses remote patient monitoring (RPM) technology, to allow clients and their families to remain in their homes to check, record, and transmit their personal health indicators. This can reduce visits to health care facilities and the need for costly acute care services.²⁰¹ ○ Expanding telehealth services into new settings such as the homes of clients and LTC facilities means patients will be able to see SWs from the comfort of their own homes, when appropriate. ● These strategies can increase the supply of SWs in rural and remote areas by approximately eight over the 10-year forecast period. <ul style="list-style-type: none"> ○ In 2022, approximately 68% of total inflows were recent NL SW graduates.²⁰² Thus, if the 68% is kept constant throughout the forecast period, it can be assumed that of the 1,294 total inflows, 68%, or approximately 880, will be new graduates. It is assumed that 10% of SWs will conduct their internships in Labrador-Grenfell zone, and 10%²⁰³ of those will remain in the rural and remote regions, with adequate financial incentives (i.e., relocation incentives), once the internship comes to an end. This will lead to an additional inflow from education of eight SWs over 10 years (1,294*68%*10%*10%) in the Labrador-Grenfell zone. ○ Note: The inflow data was aggregated from 2018-2021 and did not specify the number of entrants from education from the Bachelor and/or Master of Social Work programs at MUN. Only data from 2022 provided a breakdown. Thus, only total inflows were captured in the supply forecast.
SW-5	Recruit	<p>Enhance SW Field Education Resources in NL:</p> <ul style="list-style-type: none"> ● Enhancing the quality of local social work education programs and improving the placement of students can significantly strengthen the supply of SWs. ● To optimize the field education experience for social work students and field instructors in NL, it is imperative to address the current barriers and enhance support mechanisms. ● Insights provided by stakeholders indicated that there is a current lack of resourcing for clinical education for the profession. Despite being the largest allied health profession group in the province, there is no dedicated field coordinator for SWs, nor is there consistent support provided by student services to manage the demand for practicums. ● As a result, onboarding and orientation are not consistent, which leads to poor student experiences early on in their social work careers, impacting future recruitment efforts, ● It is recommended that GNL seek to establish a dedicated SW field coordinator position, balanced with supports for onboarding, education, clinical supervision and coordination. This can be achieved through the following: <ul style="list-style-type: none"> ○ Develop a formal support system for field instructors within NLHS and CSSD, providing them with resources, training, and ongoing professional development opportunities to effectively mentor students.

²⁰¹ [Improve Health Outcomes for Those in Rural and Remote Areas - The Way Forward \(gov.nl.ca\)](https://www.gov.nl.ca/2022/07/05/improve-health-outcomes-for-those-in-rural-and-remote-areas-the-way-forward/)

²⁰² New Registrant Breakdown, 2022, provided by the NLCSW

²⁰³ [9789240024229-eng.pdf \(who.int\)](https://www.who.int/publications/m/item/9789240024229-eng.pdf)

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> ○ Create a dedicated support unit within educational institutions to assist social work students in navigating field placements, addressing concerns, and facilitating smooth transitions between academic and practical environments. ○ Collaborate with academic and field educators to develop a curriculum that seamlessly integrates classroom learning with field experiences, ensuring relevance and applicability. ○ Allocate funding and resources to address any deficiencies in the resources and infrastructure available for field placements, identifying gaps such as lack of physical space, technology, and other necessary tools. ○ This could involve deepening partnerships with health and social services institutions for practical training, enhancing curriculum to upskill across program areas in response to current workforce demands, and providing students with exposure to rural and remote health care settings (see SW-4 for more details) to enhance the quality and variety of field placement opportunities. ● A strong local education system can not only produce competent SWs but also ensure their retention in the local area. This approach encourages collaborative initiatives that address societal needs while providing valuable learning experiences for social work students.

Clinical Psychologists

Within Newfoundland and Labrador (NL), there are currently two job classifications of clinical psychologists within Newfoundland and Labrador Health Services (NLHS): Clinical Psychologist II and Clinical Psychologist III. Clinical psychologists offer a range of professional services, including psychological assessment, diagnosis, and psychotherapeutic interventions. Their work is characterized by a high degree of autonomy, where they exercise independent judgment in determining the most suitable assessment, diagnosis, and therapeutic interventions, as they are responsible for developing, implementing, and evaluating treatment plans.²⁰⁴ They also demonstrate other functional competencies including consultation, supervision, research, program development and evaluation, teaching, leadership, and advocacy.

Additionally, clinical psychologists provide clinical supervision of provisionally registered clinical psychologists, psychometrists, psychology residents, and students.

All clinical psychologists are identified as Registered Psychologists, regulated by NL Psychology Board (NLPB). The Psychologists Act, published in 2005, requires that registrants possess a doctoral or master's degree in a program of study in psychology from an educational institution satisfactory to the Board.²⁰⁵

Current State Analysis

As of December 2022, there were 51 clinical psychologists in NL who are distributed by Newfoundland and Labrador Health Services (NLHS) zone, as shown in Table 138. The supply of clinical psychologists shown below includes only public sector clinical psychologists. Clinical psychologists are trained across the country, and the province's only source of local supply is through Memorial University's (MUN) Doctor of Psychology (PsyD) program.²⁰⁶ NLHS does not currently engage in the international recruitment of clinical psychologists.

²⁰⁴ [Job Class Profile \(gov.nl.ca\)](https://gov.nl.ca)

²⁰⁵ [Information for Applicants - NL Psychology Board \(nlpsychboard.ca\)](https://nlpsychboard.ca)

²⁰⁶ [Doctor of Psychology \(Psy.D.\) | Psychology | Faculty Of Science | Memorial University of Newfoundland \(mun.ca\)](https://mun.ca)

Table 111: Clinical Psychologists by NLHS Zone²⁰⁷

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2022 Supply	36	3	6	5	1	51

Stepped Care Model

The Stepped Care Model (SCM) was implemented by NL in September 2017 through a partnership to transform the provincial Mental Health and Addictions (MHA) system.²⁰⁸ Based on the model developed and implemented in the United Kingdom (UK), SCM purports to offer an evidence-based, patient-centred stage system of care that prioritizes the most effective and least intensive treatment. The theory behind this model was to establish a holistic approach to health and provide wraparound services at any point in a patient's recovery journey, demonstrating the significance of collaboration among all service providers and systems to match individuals with the right care, at the right time.²⁰⁹

The model's categories of support demonstrate how the circle of care is supposed to show the continuum of supports available starting with the least intensive (i.e., informal and self-directed) to the most intensive (i.e., specialized, and resource-intensive programming). The SCM 2.0 includes nine steps as illustrated in Figure 3 below.²¹⁰

²⁰⁷ Includes only clinical psychologists employed by NLHS (i.e., public sector clinical psychologists).

²⁰⁸ [NL Stepped Care 2.0 Demonstration Project - Final Report - Mental Health Commission of Canada](#)

²⁰⁹ [Stepped Care - Bridge the gap](#)

²¹⁰ [What is Stepped Care 2.0](#)

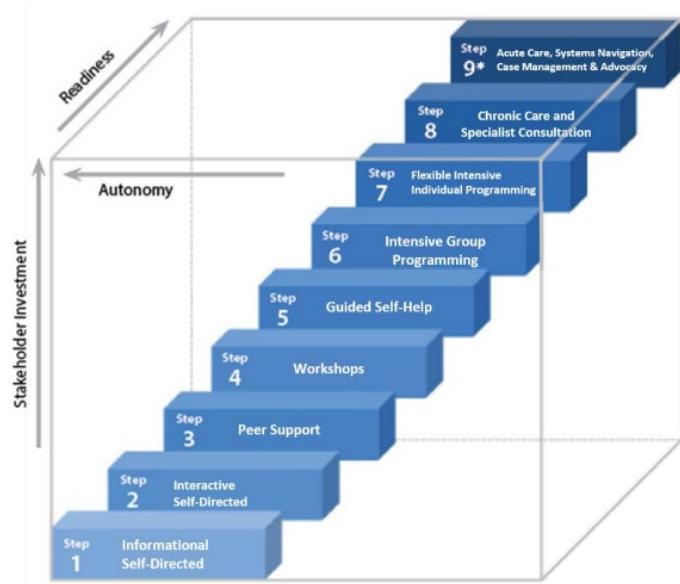


Figure 2: Stepped Care Model for MH&A Services 2.0

The SCM is intended to be used as a guide to the most appropriate supports and services, provided programming is available. Individuals can enter the model at any step depending on identified needs, preferences, readiness to engage in services, as well as clinical indication based on consultation and clinical assessment conducted by a health service provider including primary care providers, social workers (SW), clinical psychologists, and psychiatrists.

Clinical psychologists typically get involved in a patient's care at step five: Guided Self-Help, where the most appropriate trained Mental Health and Addictions (MHA) service provider will provide counselling and therapy services through a variety of modalities and methods. If a patient requires step six: Specialized Interventions, self-referrals can be accepted to engage in specialized services, but this often requires referral from another service provider to receive tertiary care for the treatment of severe diagnoses.

As NL is one of the first provinces in Canada to introduce the SCM, the Association of Psychology Newfoundland and Labrador (APNL) issued a report highlighting concerns about the model's implementation and its impact on clinical psychologists.²¹¹ With improved access to MHA services being identified as a key priority when implementing the SCM, APNL cautioned against equating reduced wait times for low-intensity mental health supports with more specialized mental health treatment. As increased access to mental health supports can benefit those who do not meet the clinical criteria for higher intensity services,

²¹¹ APNL Psychologist Feedback: Changes to Provision of Provincial Mental Health Services (June 18, 2021).

there was concern that this would exacerbate access issues for those with higher intensity needs²¹¹, i.e., using clinical psychologists for lower intensity services would reduce access to higher levels of service.

Many clinical psychologists believe the emphasis on lower intensity supports has impacted the quality of care received by patients and also limits their ability to work to their full scope of practice. When combined with the current level of vacancies in the system (described below), the limited resources and staffing available to support the model's implementation results in many clients not having their needs met. It also contributes to adverse effects on the mental health, morale, and a pervasive feeling of being devalued amongst the clinical psychologist workforce.²¹¹ A significant portion of the NL clinical psychologist workforce feels their skills are not being used effectively (50%) or are not valued in the public system (55%) under the SCM. This has contributed to a number of professionals leaving the public system in favour of private practice.²¹¹

Vacancy Rates and Move Towards Private Practice

In the last decade, there has been persistent turnover of clinical psychologists in NL's public system; it is concerning that turnover has been increasing in recent years despite growing demand for MHA services. With 51 clinical psychologists employed by NLHS²¹² and 31 vacancies as of October 2022, this vacancy rate severely impacts the Province's ability meet to meet current demand and provide quality and timely services to its population.

Stakeholders cite a number of interdependent contributing factors to the high vacancy rate, most notably:

- The inability of NL's public system to offer wages that are competitive with private practice in NL or other public sector employers across the country; and,
- A lack of flexibility and organizational support for the occupation.

The result is a significant number of resignations projected over the next decade (see Table 141) from the public system and into private practice. As a result of current vacancy rates, extensive waitlists have contributed to higher acuity and complex caseloads for clinicians remaining in the public sector, resulting in many clinical psychologists experiencing burnout. As a result, a survey conducted by the APNL in

²¹² This number does not account for temporary vacancies.

2023 found that 72% of public sector psychologists have considered leaving their positions.²¹³

When positions are fully staffed, clinical psychologists can spend their time determining which patients require interventions, resulting in more efficient processing of waitlists. With high vacancy rates only limited/emergency-oriented services can be provided, resulting in waitlists increasing significantly. Vacancies in inpatient areas contribute to longer hospital stays as patients must wait for psychological assessment, they may lack individualized treatment plans, receive inadequate counselling and therapy services, and delays in the provision of psychology services could impact other disciplines in their discharge planning. Similarly, vacancies cause delays in psychological assessments which in turn delays patients from receiving appropriate diagnoses and treatment while in the acute phase. As a result, patients present with more chronic conditions and have a lesser chance of full recovery.

Education

In recent years, the educational standards for clinical psychology in Canada are moving towards requiring either a Doctor of Philosophy (PhD) or a PsyD as the fundamental qualification for entry into practice. While MUN continues to offer a PsyD program, it discontinued its Masters in Clinical Psychology program in 1993, due to there being a limited stream of terminal masters programs in clinical psychology offered across the country, given the national shift to doctoral programs. However, clinical psychologists in NL who hold a master's designation in psychology are still able to practice in the province.

The MUN PsyD program takes six students each year. Since 2009, NLHS has offered clinical practicum training for students from the PsyD program. However, current public sector vacancy rates have impacted NLHS' ability to provide adequate preceptors for practicum training significantly. Additionally, limited experience and exposure in public health was cited by stakeholders as a disadvantage to MUN PsyD students in competing for residency placement at NLHS. These challenges negatively impact the ability of NLHS to place as many students as they had in the past, thus decreasing the chances of recruiting these individuals post-graduation.

Residency Program

NLHS offers a national residency training program for PsyD or PhD students from eligible Canadian or American universities. Established

²¹³ APNL Current State of Psychology (April 19, 2023).

in 2012, this is a one-year program for students who have completed their doctoral degree. The program is accredited by the Canadian Psychology Association. GNL funds a Provincial Coordinator of Clinical Training to support the ongoing recruitment into and retention from the Psychology Residency Program.

Similar to the challenges faced with PsyD clinical placements, the high vacancy rates have affected NLHS' ability to supervise residency candidates and provisional psychologists, thereby further limiting the supply of entrants to the workforce. NLHS typically provides clinical supervision to four to five Doctoral Psychology residents on an annual basis. However, in 2022/23, there was no residency cohort due to lack of available staff. The program was reinstated in the 2023/24 training year with just two residents, as a result of the program facing continued staffing challenges as well as lower attractiveness of the program itself (note the 2024/25 cohort will also be two residents). Clinical psychologists currently employed by NLHS have indicated limited willingness to be a supervisor for the residency training program due to the workload demands resulting from the high vacancy rate as well as issues with compensation as described earlier.

Doctoral prepared clinical psychologists provide supervision for new psychologists who are provisionally registered with NLPB. Similar to the issues noted above, this educational requirement is also experiencing challenges associated with vacancy rates and compensation.

Consequently, NLHS may be at risk of not meeting accreditation requirements to sustain the residency program, due to inadequate resources to provide supervision and rotation instability resulting from clinical psychologist resignations and vacancies. It is critical that the vacancy levels within the public sector be addressed, not only to meet the current provincial demand for MHA services, but also to guarantee the supply of the next generation of clinical psychologists.

As noted above, the attractiveness of the clinical psychology programs in NL has fallen in recent years. Historically, NLHS has recruited approximately 50% of the graduating class into clinical psychologist positions, thereby filling vacancies. However, there has been less interest in the past year which may be attributed in part to compensation which is not competitive in comparison to other Canadian jurisdictions and the private sector.

To address wage disparity, a non-pensionable market adjustment of \$15,000 was approved in November 2022. A market adjustment is a form of additional remuneration that is based on current market

conditions. Market adjustments may be approved to address recruitment and retention challenges for officially classified positions that meet the criteria for a market-based adjustment as established by Treasury Board and subjected to the approval process. Market adjustments consider the comparative value of positions that are the same between other jurisdictions within Canada. The new Association of Allied Health Professionals (AAHP) collective agreement makes the market adjustment part of the pensionable salary and the same terms will be extended to those in NAPE-HP. Effective April 1, 2024, an hourly, pensionable wage adjustment will be paid to employees being paid a labour market adjustment; the wage adjustment will replace the labour market adjustment.

Health Accord NL Calls to Action

Several Calls to Action (CTAs) from Health Accord NL carry implications for the supply and demand of clinical psychologists in NL:

- **CTA 8.2:** Implement and support an integrated continuum of care to improve the effectiveness and efficiency of care delivery, improve health and social outcomes for older adults and older adults with disabilities, and support older adults to age in place with dignity and autonomy.
- **CTA 9.1:** Connect every resident of NL to a FCT providing a central touchpoint of access and a continuum of care.
- **CTA 10.12:** Develop and deliver education and continuing education programs that use an integrated, inclusive, and collaborative care model where practitioners learn and practice together. This requires integration across curricula and across programs throughout the learning experience.

As the population of NL ages, the prevalence of neurological and cognitive diseases such as dementia, delirium, mental illness, and neurodegenerative disorders are expected to increase at high rates (upwards of 30-45%). As CTA 8.2 emphasizes the need for an integrated continuum of care for older adults, this may impact the demand for the diagnosis, treatment, and management of these aging-related illnesses by clinical psychologists.

CTA 9.1 aims to connect every resident of NL to a Family Care Team (FCT) providing a central touchpoint of access and a continuum of care. Mental health issues and conditions often present in primary care settings as psychiatric diagnoses in isolation (most commonly as anxiety or depression), or as complex comorbid psychiatric diagnoses (e.g., heart disease, hypertension, diabetes, and chronic pain).

Additional expertise within primary care is needed to effectively assess and diagnose patients' presenting mental health problems. Studies

have shown that integrating behavioural and mental health services within primary care settings has the potential to increase access to care, improve health outcomes, and reduce ED use.²¹⁴ Therefore, embedding clinical psychologists into these interdisciplinary care teams throughout the province would increase the demand for this profession, while enhancing the ability to apply psychiatric diagnoses and treatments within community-based care settings.

CTA 10.12 focuses on implementing education and continuing education programs that emphasize an integrated, inclusive, and collaborative care model. For clinical psychologists, this means increased opportunities for interdisciplinary learning and to practice alongside other health care professionals, which may lead to a more collaborative workforce that is better equipped to work within interdisciplinary care settings. This will enhance their skills and knowledge, promote collaboration, and ultimately improve patient care. Overall, promoting integrated education programs can help clinical psychologists to deliver patient-centered and evidence-based interventions and align their skills with the evolving needs of the health care system.

Workforce Initiatives

Acknowledging the current level of public sector vacancies within the province, HCS has already taken steps to strengthen the supply of clinical psychologists via the following initiatives and incentives:

- **Come Home Year Incentives:** \$50,000 offered to clinical psychologists in exchange for three-year return-in-service agreement.
- **New Market Adjustments:** Approved in November 2022, all clinical psychologists received non-pensionable market adjustments totaling \$15,000 to supplement their salaries in response to market conditions.
- **Introduction of Clinical Psychology Residency Program:** Residency program launched by the NLHS through partnership with MUN, which employs clinical psychology residents through a national matching process.
- **MUN PsyD Clinical Placements:** NLHS supports clinical placements offered to students in the PsyD program.
- **Signing Bonus Program:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions,

²¹⁴ College of Family Medicine Physicians of Canada, Canadian Psychiatric Association, and Canadian Psychological Association. Integrating Mental Health Services in Primary Care. Ontario: College of Family Medicine Physicians of Canada, Canadian Psychiatric Association, and Canadian Psychological Association; 2020

and tiered to address geographic considerations with an associated return-in-service of one or two years.

- **Enhanced Bursaries:** \$20,000 bursaries are awarded based on NLHS vacancies, available to clinical psychology students who sign a service agreement for a 7800-hour return-in-service agreement post-graduation.
- **Presentation to High School Students:** To encourage a career pathway in clinical psychology with NLHS.
- **Job Fairs:** NLHS participated in at least six online job fairs in the last two years, locally, nationally, and internationally to recruit clinical psychologists from other jurisdictions.

Stakeholder Engagement Insights

Six stakeholder groups were engaged via focus groups to understand the experiences and perspectives of the current and future clinical psychology workforce:

- Memorial University (MUN), PsyD Program, Director of Clinical Training
- NL Psychology Board (NLPB)
- NLHS Clinical Psychology Practice Lead and Managers
- NL Association of Public and Private Employees (NAPE)
- Association of Allied Health Professionals NL (AAHP-NL)
- Provincial Mental Health and Addictions Leadership (HCS)

In addition, 12 individuals responded to the focus group follow-up survey with additional insights. These stakeholder consultation activities yielded an array of qualitative insights pertinent to the development of clinical psychologist workforce recommendations – summarized in Table 139 below. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, and may not be grounded in absolute fact.

Table 112: What We Heard From Clinical Psychology Stakeholders

Theme	Insights
Demand for MHA Services	<ul style="list-style-type: none"> • Demand for MHA services in the province has been accelerated by the COVID-19 pandemic, paired with the decreased stigma around receiving help for mental health. • Post-COVID, there has been an increase in the numbers of requests for stress-related disorders such as anxiety and depression; while others that are more driven by genetic factors, such as schizophrenia, seem to have remained relatively constant.
Vacancies	<ul style="list-style-type: none"> • Given the high vacancy rates, clinical psychologist stakeholders shared that there has been a shift in how they deliver services as they recognize their inability to service all needs of the health system and patient population.

Theme	Insights
Residency Program and Clinical Placements	<ul style="list-style-type: none"> Patients are now presenting with higher acuity and more comorbidities and are more likely to end up hospitalized as a direct result of long waitlist times. Some departures seem to be related to the implementation of the Stepped Care Model, which mandates how psychologists provide care. Many clinical psychologists have chosen to leave for private practice, as they feel they are not practicing to full scope.
Recruitment	<ul style="list-style-type: none"> Due to the lack of availability of supervisors, the residency training program decreased in size and no longer has the capacity to take on the same numbers of residents as it had historically. Many clinical psychologists who have exited the system were heavily involved in the training program. Vacancies also impact the availability of staff to preceptor students during clinical placements required for the PsyD program. Stakeholders shared that a long-term, sustainable solution to the current vacancy rates would be to increase the capacity to train more students and residents, thereby placing more talent within the health system to train and provide services. Likewise, further investments in the MUN PsyD program would support the development of a robust recruitment pipeline. However, these initiatives will not be successful until the root cause is addressed, and clinical psychology vacancies rates are reduced in the short-term.
Retention	<ul style="list-style-type: none"> The lack of training opportunities due to the limited supply of available supervisors has prevented prospective doctoral students and residents from being able to train in NLHS. Furthermore, current working conditions and compensation deter students and residents who are currently being trained from wanting to accept permanent positions within the public sector post-graduation. Structural changes that occurred in 2015 shifted outpatient psychology towards a program management model, which challenges the professional practice of clinical psychology in this current interdisciplinary structure. Psychologists working for NLHS shared their desire to be managed by psychologists, as opposed to other health professions. To reduce the high degree of turnover experienced by this workforce, clinical psychologist stakeholders shared that retention in the public sector would be improved by: <ul style="list-style-type: none"> A greater understanding of the role, education, and scope of practice of clinical psychologists (in addition to other MHA clinicians); Enhanced ability to use the full breadth of their psychology skills; Increased respect; Increased autonomy; Offering salaries that are more competitive with other Canadian jurisdictions and private practice, and; More flexible working arrangements. One potential solution to address these concerns provided by stakeholders is to develop a Department of Psychology within NLHS (similar to the current Department of Pharmacy) to provide greater organizational-level support. This would support the management of clinical psychologists by other clinical psychologists, to provide greater autonomy and clarity around role expectations and scope of practice.

Theme	Insights
Workforce Trends	<ul style="list-style-type: none"> • Current workforce trends in clinical psychology include the increased use of virtual care for telepsychology and interdisciplinary clinics. • Clinical psychologist stakeholders identified the opportunity to be further leveraged in primary care settings such as FCTs, to consult other health providers seeking their input as service extenders to recommend treatment strategies. • COVID-19 provided an opportunity for a shift towards upstream healthcare and social determinants of health, in alignment with Health Accord NL. There is interest among clinical psychologists in being embedded in multidisciplinary teams and specialized areas such as cardiology, medicine, surgery, oncology, and chronic pain clinics. • There is also a generational trend cited by stakeholders, whereby older individuals favoured the public system due to its stability and pension, while the younger generation values flexibility and autonomy, which can be found more readily in the private sector.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary projections of the supply of and demand for clinical psychologists were developed based on historical practice patterns and trends. Data on the supply of clinical psychologists in NL was provided by NLHS. Consequently, the supply captures only the stock of public sector clinical psychologists. The following inflows and outflows were captured:

- Inflows: new hires, rehired retirees, and rehires
- Outflows: resignations, and retirements

However, some inflows and outflows were not directly captured in the data. In the historical data provided, a slight discrepancy existed between change in the supply year over year and the difference between inflows and outflows. Consequently, to ensure the change in the stock of clinical psychologists was equal to the difference between the inflows and the outflows year over year in the historical data, "other net migrations" were estimated.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative

and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 140 below outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for clinical psychologists, as well as any limitations or caveats of the data.

Table 113: Data Sources for Clinical Psychologist Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of clinical psychologists, by zone, five-year age cohort, and gender from 2018-2022.</p> <p>Inflows: Entries into profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.).</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation).</p>	<p>Supply: Yes</p> <p>Inflows: Yes</p> <p>Outflows: Yes</p> <p><u>Source:</u> NLHS</p>	<p>Supply Year X = Supply Year X-1 + four-year average inflows – four-year average outflows</p>	<ul style="list-style-type: none"> Some inflows and outflows were not directly captured in the data. Thus, “other net migrations” were estimated to ensure the change in the supply was equal to the difference between the inflows and the outflows historically. The supply captures only the stock of public sector clinical psychologists.
Demand	<ul style="list-style-type: none"> 10-year population projections, by five-year age cohort, gender, and zone. Prevalence of CIHI POP Grouper mental health conditions treated by clinical psychologists. 	<p>Population projections: Yes</p> <p><u>Source:</u> NL Department of Finance</p> <p>Health spending by category by age and gender: Yes</p> <p><u>Source:</u> CIHI POP Grouper Methodology</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = 2022 prevalence rate of mental health conditions treated by clinical psychologists * population by age, gender and zone (2023-2032) = predicted growth in the prevalence of mental health conditions treated by clinical psychologists</p> <p>Demand Year X = Demand Year X-1 * predicted growth in the prevalence of mental health conditions treated by clinical psychologists in Year X</p>	<ul style="list-style-type: none"> Encounters with clinical psychologists are not captured by the CIHI POP Grouper Methodology. However, the CIHI POP Grouper Methodology captures the number of individuals by age, gender and zone with different mental health conditions. Thus, the predicted growth in the prevalence of mental health conditions treated by clinical psychologists is used as a proxy for clinical psychologist demand growth.

Preliminary Projections

This section provides the preliminary forecast estimated for clinical psychologists. Table 141 below presents the anticipated future supply of clinical psychologists based on historical trends.

Table 114: Preliminary Supply Projections for Clinical Psychologists

Health Occupation	Starting supply (Dec. 2022)	New Hires (2023-2032)	Rehired Retirees (2023-2032)	Rehires (2023-2032)	Resignations (2023-2032)	Retirements (2023-2032)	Other Net Migrations (2023-2032)	Ending Supply (Dec. 2032)
Clinical Psychologists	51	50	5	0	60	24	19	41

Where: Starting supply (Dec. 2022) + New Hires (2023-2032) + Rehired Retirees (2023-2032) + Rehires (2023-2032) - Resignations (2023-2032) - Retirements (2023-2032) + Other Net Migrations (2023-2032) = Ending Supply (Dec. 2032)

If historical trends were to continue, the supply of public sector clinical psychologists is predicted to fall by 20%. Resignations and retirements are predicted to significantly outweigh inflows over the course of the forecast period. These results vary by zone as show in Table 142 below.

Table 115: Regional Preliminary Supply Projections for Clinical Psychologists

Zone	2018 Supply	2022 Supply	2032 Supply	Percent Change in Supply 2018 vs 2022	Percent Change in Supply 2022 vs 2032
Eastern Urban	48	36	24	-25%	-33%
Eastern Rural	4	3	3	-25%	+/-0%
Central	6	6	7	+/-0%	+18%
Western ²¹⁵	8	5	6	-38%	+21%
Labrador-Grenfell ²¹⁶	1	1	0	+/-0%	-100%
Total²¹⁷	67	51	40	-24%	-21%

²¹⁵ 2023 supply was provided for the Western and Labrador-Grenfell zones. Consequently, 2023 supply was accounted for in these two zones when forecasting supply. 2023 supply of clinical psychologists in Western = 6 and 2023 supply of clinical psychologists in Labrador-Grenfell = 0.

²¹⁶ Ibid

²¹⁷ Due to rounding, the sum of the supply by zone may not perfectly match the total listed.

The Eastern Urban zone is predicted to face the largest decline in preliminary supply if historical trends continue. While significant percent increases are predicted for the Central and Western zones the size of the increase in supply is small given that the current supply of clinical psychologists in these zones is small.

Table 116: Preliminary Demand Projections for Clinical Psychologists

Health Occupation	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Clinical Psychologists	51	31	82	87	+7%

Vacancies are added to 2022 supply to estimate the starting demand. Vacancy data was provided by NLHS.

For clinical psychologists, demand is estimated using the growth in the prevalence of mental health conditions treated by clinical psychologists. Based on discussion with clinical psychology stakeholders, it was determined that clinical psychologists treat the following CIHI POP Grouper Methodology health conditions:

- Adjustment reaction/stress
- Bipolar/manic mood disorder
- Delirium
- Delusional disorder (including schizophrenia)
- Dementia (including Alzheimer's disease)
- Depression
- Developmental disorder (including autism spectrum)
- Drug/alcohol abuse/dependence
- Eating disorder
- Emotional and behavioural disorder with onset generally in childhood
- Intellectual disorder/delay
- Mental disorder resulting from brain injury or other illness
- Mental health sign/symptom
- Neurological, sensory, cognitive sign/symptom
- Neurotic/anxiety/obsessive compulsive disorder
- Other/unspecified mental disorder/condition
- Parkinson's disease/parkinsonism
- Personality disorder

The CIHI POP Grouper Methodology estimates the number of individuals (the prevalence) with these conditions by age cohort, gender, and zone for 2022. Using the population estimates for 2022 provided by the Department of Finance, the prevalence rate for each

health condition (i.e., the percent of individuals with each condition), at each age/gender cohort and in each zone was calculated for 2022.

The prevalence forecast for the above-mentioned mental health conditions, at each age/gender cohort and in each zone, was then estimated using the population forecast for each zone provided by the Department of Finance. By summing across the age/gender cohorts, the total number of individuals with each mental health condition by zone from 2022 to 2023 was calculated.

Finally, the weighted average forecasted growth in mental health conditions was calculated and used as a proxy for the growth in demand for clinical psychologists.

Table 144 highlights the predicted weighted average growth in mental health conditions, and consequently the growth in demand for clinical psychologists, by zone from 2023 to 2032.

Table 117: Regional Growth in Demand for Clinical Psychologists

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	0.8%	0.8%	0.9%	0.8%	0.9%	0.9%	1.0%	1.0%	1.0%	0.9%
Eastern Rural	-0.1%	-0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.3%	0.2%
Central	0.0%	0.1%	0.2%	0.1%	0.1%	0.1%	0.2%	0.1%	0.2%	0.0%
Western	0.1%	0.1%	0.2%	0.0%	0.3%	0.2%	0.4%	0.2%	0.2%	0.2%
Labrador-Grenfell	0.3%	0.7%	0.5%	0.5%	0.7%	0.6%	0.6%	0.5%	0.6%	0.6%
NL	0.5%	0.6%	0.7%	0.6%	0.7%	0.7%	0.8%	0.7%	0.7%	0.7%

The demand for clinical psychologists is predicted to rise most in the Eastern Urban zone. The growth in disease prevalence is driven by population growth. Population is predicted to rise most in the Eastern Urban zone, which explains why that zone is expected to see the most significant growth in the prevalence of mental health conditions treated by clinical psychologists.

Table 118: Preliminary Gap Analysis for Clinical Psychologists

Health Occupation	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Clinical Psychologists	51	82	31	40	87	47	16

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022. While the supply of public sector clinical psychologists is predicted to decline over the coming decade, the demand for clinical psychologists is expected to increase slightly. Thus, the preliminary gap between supply and demand is predicted to rise by 16.

Base Case Projections

For clinical psychologists, the Health Accord NL CTAs and workforce initiatives listed below are reflective of stakeholder feedback. In addition, sufficient quantitative data existed for their impact to be incorporated in supply and demand projections. Overall, the policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

- **Demand Analysis:** No demand-side workforce initiatives or CTAs could be quantified at the time of the completion of the report.
- **Supply Analysis:**
 - Uptake of the new \$15,000 non-pensionable market adjustments by new hires.
 - Uptake of the Come Home Year Incentives

Table 146 highlights the assumptions used to help quantify base case items for clinical psychologists.

Table 119: Base Case Assumptions for Clinical Psychologists

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
New market adjustments	Supply	<ul style="list-style-type: none"> • 3.4% attrition rate following end of contract, based on Eastern Health's 	<ul style="list-style-type: none"> • Eastern Urban <ul style="list-style-type: none"> ◦ 2023: +3

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
(\$15,000) - All psychologists received the market adjustment as non-pensionable. Approved in November 2022. Impacts for new hires only		market differential new and current employee turnover rate for clinical psychologists	<ul style="list-style-type: none"> Central <ul style="list-style-type: none"> 2023: +1
Come Home Year - Supply \$50,000 for a three-year return-in-service agreement for clinical psychologists		<ul style="list-style-type: none"> One-time incentive Impact sustained for three years due to return-in-service agreement 33.3% turnover rate following end of contract, based on Eastern Health's overall hires turnover rate for clinical psychologists 	<ul style="list-style-type: none"> Eastern Urban <ul style="list-style-type: none"> 2023: +2 Eastern Rural <ul style="list-style-type: none"> 2023: +1

Table 147 below provides the annual quantitative impacts for each of the base case items included in the clinical psychologist analysis.

Table 120: Annual Quantitative Impacts of the Base Case Items for Clinical Psychologists

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Come Home Year - \$50,000 for a three-year return-in-service agreement for clinical psychologists	3	3	3	2	2	2	2	2	2	2
New market adjustments (\$15,000) - Impacts for new hires only	4	4	4	4	4	4	4	4	4	4
Total Supply Impacts	7	7	7	6						

The items in Table 147 above highlight the annual quantitative impacts of each base case item.

The base case item that is predicted to have the greatest impact on supply is the Come Home Year Incentive. While the base case initiatives are predicted to partly close the gap between supply and demand, an important gap remains.

After incorporating the base case items into the analysis, demand remains at 87 for the province as a whole and supply rises to 46. Table 148 highlights the gap analysis over the course of the forecast.

Table 121: Final Annual Provincial Gap Analysis for Clinical Psychologists

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	51	57	55	54	52	51	51	50	48	47	46
Demand	82	82	83	83	84	84	85	86	86	87	87
Gap	31	25	28	29	32	33	34	36	38	40	41
Gap as a Percent of Supply	61%	44%	51%	54%	62%	65%	67%	72%	79%	85%	89%

With the base case predicted to increase supply by six by 2032, the gap between supply and demand is predicted to drop from 47 to 41 with the incorporation of the base case items.

Workforce Recommendations

In response to the current vacancy rates and high outflows from resignations projected over the next 10 years (see Table 141 and Table 143), the workforce recommendations outlined in Table 149 below are provided to close the projected gap of 41 clinical psychologists in the public sector by 2032.

Table 122: Clinical Psychologist Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Demand for Clinical Psychologists		
CP-1	Rethink	<p>Update the Model of Practice for Public Sector Clinical Psychology:</p> <ul style="list-style-type: none"> The APNL issued a report in response to GNL's introduction of the SCM in 2017, highlighting concerns about implementation of the model and its impact on clinical psychologists.²¹⁸ Survey feedback revealed that the SCM's sudden implementation, its effect on service access and quality, and the shift towards mandating how clinical psychologists provide care contributed to the recent increase in resignations from the public system. Given this reaction from the workforce, updating the model of practice for public sector clinical psychology to address some of these providers' concerns could serve to address both supply (i.e., recruitment, retention) and demand-side factors (i.e., utilization of MHA services) of this workforce. One method to offset demand for clinical psychologists is through the continued integration of MHA services in collaborative, interdisciplinary team-based care settings. <ul style="list-style-type: none"> The province's expansion of FCTs provides an opportunity to increase the focus and integration of MHA services in primary care, thereby increasing access and enhancing the ability to apply psychiatric diagnoses and treatments within community-based care settings. Mental health issues and conditions often present in primary care settings as psychiatric diagnoses in isolation (most commonly as anxiety or depression), or

²¹⁸ APNL Psychologist Feedback: Changes to Provision of Provincial Mental Health Services (June 18, 2021).

ID	Theme	Recommendation and Potential Impact
		<p>as complex comorbid psychiatric diagnoses (e.g., heart disease, hypertension, diabetes, and chronic pain).</p> <ul style="list-style-type: none"> ○ Additional expertise within primary care is needed to effectively assess and diagnose patients' presenting mental health problems. Studies have shown that integrating behavioural and mental health services within primary care settings has the potential to increase access to care, improve health outcomes, and reduce ED use.²¹⁴ ● Likewise, positioning social workers (SW) in NL for collaborative care with clinical psychologists to address the access issues caused by current vacancy levels: <ul style="list-style-type: none"> ○ The ongoing access issues related to MHA services in the province has resulted in challenging labour conditions for both SWs and clinical psychologists employed by the NLHS, as SW III, MSW-prepared roles have been supporting psychology positions when appropriate to maintain MHA service provision. ○ This has resulted in a complex working situation involving advanced mental health practitioners, resulting in considerable distress to all providers involved as a result of the instability that directly impact recruitment and retention. ○ Acknowledging that clinical psychologists and SWs are both regulated profession designations with distinct classifications despite working in the same program areas with the same clients, Deloitte recommends leveraging the synergies existing between these professions to stabilize access to public MHA services within the province. ● Quantifying the potential impact of promoting collaboration between clinical psychologists and other providers is difficult due to the aggregate information received on patient caseload, the number of cases seen over a period, and variance based on the type of services provided. If GNL promotes this collaborative approach, it can reasonably decrease clinical psychologist caseload over time given the proactive approach anchored in prevention and de-escalation of MHA-related issues.
CP-2	Rethink	<p>Expand Telepsychology Registration in NL to Increase Access to Clinical Psychology Services:</p> <ul style="list-style-type: none"> ● To address the ongoing access issues related to MHA services in the province, introducing national telepsychology registration in NL would help facilitate provincial programming and allow the current supply of clinical psychology to better meet regional demands. ● The expanded use of telepsychology supports optimal resource utilization, increases service access, and provides more timely interventions, and has been found to be as effective as in-person sessions.²¹⁹ ● Through leveraging the use of out-of-province providers providing telepsychology services as a short-term solution, GNL can alleviate the immediate challenges related to access of MHA services. ● The regulation of clinical psychologists and the provision of virtual services across provincial borders can vary by province and territory and is dictated by their respective regulatory body. ● However, due to the COVID-19 pandemic, some regulatory bodies have temporarily relaxed their rules to allow for more flexibility in providing virtual services across provincial borders. For example, British Columbia, Ontario, Alberta, and Nova Scotia implemented temporary measures to permit out-of-province psychologists to provide telepsychology services to their residents without needing full registration in that province. ● Currently, registrants from other Atlantic provinces are able to provide service to NL residents. By expanding telepsychology registration across Canada and reducing barriers for out-of-province clinical psychologists to practice in NL, the province can tap into a broader pool of clinical psychologists to provide telepsychology services to NL residents remotely. ● To further alleviate demand for in-person visits, GNL should also explore the use of innovative technology platforms that enhance the delivery of remote patient care in the MHA space. For example:

²¹⁹ [Psychological Services Across Jurisdictions – CPO Public](#)

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> ○ Talkspace²²⁰: Talkspace is a popular online therapy platform that connects users with licensed therapists for text, audio, and video-based therapy sessions. It offers a user-friendly interface and the convenience of accessing therapy from anywhere. ○ BetterHelp²²¹: BetterHelp is another widely used online counseling service that provides access to licensed clinical psychologists through various communication modes, including messaging, phone, and video sessions. It offers a flexible and convenient way for clients to receive mental health support. ○ MDLive²²²: MDLive is a telehealth platform that offers a range of virtual health care services, including mental health support. Clients can schedule video sessions with licensed clinical psychologists for various mental health concerns. ○ Amwell²²³: Amwell is a comprehensive telehealth platform that provides video consultations with mental health professionals, among other health care services. It offers a secure and convenient way for clients to access remote talk therapy services. ○ SimplePractice²²⁴: SimplePractice is a practice management and telehealth platform for health professionals. It offers features like online booking, video sessions, and billing, making it easier for clinical psychologists to manage their case loads and provide virtual care. ○ Doxy.me²²⁵: Doxy.me is a telemedicine platform that is specifically designed to be simple and accessible. It offers a free version and is popular among mental health professionals for conducting secure video sessions without the need for clients to download any software. ● GNL can support the adoption of technologies through several methods: <ul style="list-style-type: none"> ○ Funding and grants: Offer grants to clinical psychologists for the adoption and integration of telepsychology platforms into their practices; ○ Policy and regulation: Modify existing regulation to facilitate the use of telepsychology services, including reimbursement; ○ Partnerships: Foster partnerships between public and private sectors such as technology providers to leverage resources, knowledge, and networks; and, ○ Education and awareness: Provide training for clinical psychologists on the integration and effective use of digital health tools in their practice. ● Implementing expanded telepsychology registration in NL would be a temporary measure to bridge gaps in MHA service provision. This approach not only aims to increase access to MHA services but also positions NL as a leader in adopting innovative solutions to meet the evolving health care challenges of its population. As such, it is a critical component of a broader effort to ensure that all residents have timely and effective access to the MHA support they need, wherever they are located within the province. ● Note: This recommendation is intended to reduce wait times for NL residents to access MHA-related services in the short-term and should not be considered as a standalone solution. Implementing CP-2 will complement the other recommendations provided for this workforce aimed at addressing the root cause of the recruitment and retention issues, the effects of which will be felt in the medium- to long-term.

Fund

CP-3	Recruit	Increase National and International Recruitment Efforts: <ul style="list-style-type: none"> ● The waitlist and access challenges associated with clinical psychology indicate an immediate recruitment need.
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²²⁰ [Talkspace - #1 Rated Online Therapy, 1 Million+ Users](#)

²²¹ [BetterHelp - Get Started & Sign-Up Today](#)

²²² [MDLIVE: Board-Certified Doctors on Call 24/7](#)

²²³ [Hybrid Care at Scale | Amwell](#)

²²⁴ [EHR Software for Health & Wellness Professionals | SimplePractice](#)

²²⁵ [The Simple, Free, and Secure Telemedicine Platform | Doxy.me](#)

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> Given that most of the gap projected in the clinical psychology workforce is due to current vacancy rates (see Table 143) and the workforce outflows are driven predominantly by resignations (see Table 141), a short-term solution to filling vacancies is to extensively recruit from other jurisdictions – both nationally and internationally. To support international recruitment efforts, it is recommended that changes be made to the current Psychologist Act, last updated in 2005, to allow for more streamlined pathways for registration of internationally trained psychologists for those from American Psychologist Association (APA) accredited doctoral and internship programs. One method would be through establishing a jurisprudence exam pathway, which would bring NL in line with other Canadian provinces. Benefits of establishing this pathway include: <ul style="list-style-type: none"> A jurisprudence exam would provide a structured way to assess the knowledge and skills of internationally trained clinical psychologists, ensuring they meet the professional and ethical standards required in NL. This could facilitate the recognition of existing qualifications and partially streamline entry to the local workforce. By offering a clear pathway to licensure, NL could become a more attractive destination for internationally trained clinical psychologists looking to practice in Canada. By establishing a standardized and transparent process, this could increase the pool of qualified professionals available to provide psychological services in the province by reducing barriers to entry. To support national recruitment efforts, NL must offer more competitive compensation and benefits to compete with other Canadian jurisdictions. By converting the new \$15,000 market adjustments offered to clinical psychologists in 2022 into pensionable income, NL would become more attractive for out-of-province recruitment (see CP-4 for further details). Through streamlined entry to practice for international applicants and by offering more attractive compensation via pensionable market adjustments, NLHS could fill an estimated 25% of their current vacancies, thereby contributing an additional seven clinical psychologists to the public system and helping address some of the existing waitlist and access challenges.
CP-4	Recruit	<p>Provide Organizational Support for Supervisors within the Public System:</p> <ul style="list-style-type: none"> There is an immediate need to increase the supply of clinical psychologists in the province to not only service the current level of demand for MHA services, but also to supervise the next generation of clinical psychology residents. The inflows of graduates from MUN's PsyD program provide a stable supply of locally trained clinical psychologists on the condition that NLHS can sustain adequate capacity of clinical training positions for students. Historically, NLHS would accept four to five residents each year from accredited PsyD or PhD Clinical Psychology Doctoral Programs across Canada and the United States. However, in 2022, no residency positions were available to students and in the most recent year, the program has only recovered two of those residency positions due to the lack of staff training capacity. As completing a residency is necessary for licensure and independent practice, the lack of residency supervisors severely impedes the province's ability to recruit local PsyD graduates. NL students may end up pursuing residency positions out of province if options for placement within NLHS do not exist. By providing organizational support for residency supervisors in the public system through the development of an organization-wide strategy that outlines the expectations for supervision and training that incentivizes supervisors, outlines the expectation that time spent on supervision and training is considered part of the clinical workday, and provides funding and capacity for continuing education, the public system will be able to regain its residency training capacity. This would promote both recruitment and retention, in addition to the expansion of clinical services, as trainees would work with patients individually in certain circumstances, thereby adding new providers to the organization.

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> Through the medium-term recruitment strategies outlined in CP-3, a proportion of the current vacancies will be filled, thereby freeing up additional capacity of the existing public workforce to take on students at each level of training (e.g., practicum, residency, and provisional). Likewise, there should be consideration for offering a stipend for supervisors to incentivize engagement, in addition to support for ongoing professional development around supervision and training such as protected continuing education days and funding. A Canadian-wide study found that 31% of private practitioners indicated they would be open to moving to the public system with increased supports for teaching, supervision, and research.²²⁶ With adequate supervisor availability, the residency program can be restored to its full capacity of four to five residents being trained by NLHS each year, strengthening the internal supply of doctoral trained clinical psychology graduates in the province. <ul style="list-style-type: none"> As the residency program has typically led to recruitment of 50% of the graduating class into psychologist positions, this could add three clinical psychologists to the workforce each year, totalling to 22 by 2032.
CP-5	Recruit/Retain	<p>Enhance the Working Environments of Public Sector Clinical Psychologists:</p> <ul style="list-style-type: none"> In the public system, clinical psychologists frequently prioritize higher acuity and complex cases due to existing waitlist challenges. This focus may result in less attention to serving a diverse range of health care needs and managing mixed caseloads of varying complexity, as more commonly seen in the private system. Despite this, those working in the public system shared that they would be more willing to take on higher acuity caseloads if they were able to take on mixed private and public practice (i.e., 50% public, 50% private) without being disadvantaged, were compensated accordingly, and provided greater organizational support in their role. As of 2022, 133 registered psychologists²²⁷ are employed in private practice in NL, compared to the 51 employed by the public sector and 31 vacancies (Table 143). In a recent survey conducted by the APNL, 72% of public sector psychologists have considered leaving their positions to join the private sector. There is a generational element to this trend, as historically the older generation valued stability and pension, whereas the younger generation seeks the greater flexibility and autonomy that is typically provided by the private sector. In the public sector, clinical psychologist stakeholders cited their frustrations of managing higher acuity caseloads, less flexible working environments and organizational structures, and non-competitive compensation (see Table 139). The public system offers limited flexibility for clinical psychologists who seek alternative work schedules, making it challenging to work part-time without forfeiting significant benefits. Clinical psychologists, given their advanced doctoral qualifications, often have an interest in pursuing academic research or engaging in private practice alongside their public sector employment. Creating opportunities for more flexible working arrangements to better suit individual preferences would contribute to better retention in public practice. The current interdisciplinary organizational structure, which is centered on program management, hinders the professional practice of clinical psychology by affecting the degree of understanding, respect, and clinical autonomy granted to clinical psychologists. Stakeholders shared that this is primarily due to the absence of a departmental structure (see Table 139). Shifting to a departmental structure for clinical psychology in which clinical psychologists directly reported to other clinical psychologists would promote greater integration into interdisciplinary teams and organization-level support. Although the Market Adjustment for clinical psychology has been helpful to address salary concerns within clinical, being non-pensionable deters recruitment efforts.

²²⁶ Psychology in Canada Hospitals (2005), Dr. Ian Nicholson

²²⁷ NL Psychology Board 2022 Registrant's areas of practice data, provided by D. Hurley on May 25, 2023.

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> • A Canadian-wide study found that 31% of private practitioners indicated that they would be open to moving to the public system with better pay and benefits.²²⁸ • By implementing these changes, NLHS may be able to recruit clinical psychologists who were previously involved in public practice, in addition to net new clinical psychologists, into the public system in both full and part-time positions. If the province were able to recruit an additional two clinical psychologists via this approach each year, it would result in 20 additional clinical psychologists in the public sector workforce by 2032. • Likewise, working with the strengths of the public system with stronger benefits compared to the private sector, resignations may be reduced by up to 30%, closing the gap by 18 clinical psychologists by 2032. • In summary, if changes were made to the working environment of public practice to make it more desirable than it is today, both recruitment and retention efforts could be enhanced, thereby increasing supply by 38 clinical psychologists by 2032.

²²⁸ Psychology in Canada Hospitals (2005), Dr. Ian Nicholson

Cardiac Perfusionists

Cardiac perfusionists, also known as cardiovascular perfusion technologists, are responsible for providing extracorporeal circulation to support a patient's cardiopulmonary functioning during an operative procedure or as part of intensive care.²²⁹ This occupation involves operating and maintaining highly specialized equipment such as cardiopulmonary bypass pumps (i.e., heart lung machines), autotransfusion devices, and other ventricular assistive devices. Cardiac perfusionists also administer intravenous drugs, medical gases, fluids, and blood products, and contribute to patient health records.

Currently, cardiac perfusionists in Newfoundland and Labrador are an unregulated profession; however, all cardiac perfusionists employed by the Newfoundland and Labrador Health Services (NLHS) must be certified and hold an active membership with the profession's national certifying body, Canadian Society of Clinical Perfusion (CSCP). As described below, cardiac perfusionists are typically Registered Nurses (RNs) or Respiratory Therapists (RRTs) with advanced training.

Current State Analysis

Due to the tertiary nature of the services they support, cardiac perfusionists in NL are employed by the NLHS exclusively in the Eastern Urban zone, as illustrated in Table 150 below.

Table 123: Cardiac Perfusionists by NLHS Zone²³⁰

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2022 Supply	5	0	0	0	0	5

According to the CSCP, the current Canadian cardiac perfusionist workforce has 374 members.²³¹ In addition, there are 9 active students currently registered with the certifying body.

Clinical practice as a cardiac perfusionist in NL requires:

- A two-year postgraduate Cardiovascular Perfusion Diploma following the completion of an undergraduate degree in Nursing or Respiratory Therapy and at least two-years of critical care experience; and,

²²⁹<https://www.gov.nl.ca/exec/tbs/files/jobeval-jes-c-cardiovascular-perfusion-technologist.pdf>

²³⁰ Includes only cardiac perfusionists employed by NLHS (i.e., public sector cardiac perfusionists).

²³¹ [Members in Good Standing \(cscp.ca\)](http://members.cscp.ca)

- A professional designation as a Certified Clinical Perfusionist, attained via a national certifying exam administered by the Canadian Society of Clinical Perfusion.

In Canada, there are three education programs that offer a Cardiovascular Perfusion Diploma:

- The Michener Institute of Education at the University Health Network in Toronto (the only Master's level accredited program in Canada);
- The University of Montreal; and,
- The British Columbia Institute of Technology.

The Michener Institute is the only school in Canada to offer a Master's degree in this complex and important health profession. The first cohort of Masters-credentialed students will begin in September 2022. Given this, NL competes directly with other Canadian jurisdictions with respect to the supply of cardiac perfusionists.

Cardiac perfusionists fulfil an essential role in the provision of cardiac surgery, whereby vacancies or periods of temporary unavailability (e.g., unplanned staff leave) adversely affect NLHS' ability to provide access to life-saving services. Staffing levels, not just in NL but nationally, are influenced by the CSCP assert that one cardiac perfusionist is required for each concurrent surgical case, in addition to one on-site float and one on-call. While cardiac perfusionist are trained to support intensive care patients (e.g., for extracorporeal membrane oxygenation therapy), they are rarely utilized in this capacity in the interests of supporting access to cardiac surgery.

Health Accord NL Calls to Action

NL has a high prevalence of cardiovascular disease and the second highest age-sex standardized cardiac mortality rate in Canada. The Health Accord NL attributes these adverse outcomes to social, economic, environmental, and behavioural factors.²³² As such, Call to Action (CTA) 9.14 recommends the development and implementation of a five-year plan for improvement in mortality rates for cardiac disease that is led by a provincial program. The provincial program would seek to:

- Create a Cardiac Centre of Excellence to provide an organized hub of tertiary services within a spoke network enabling equitable access to cardiac care;

²³²²³³ https://www.healthaccordnl.ca/wp-content/uploads/2022/02/HANL_Report_Document_Web_modFeb28-2022.pdf

- Organize infrastructure and processes for expanded access to ambulatory services (e.g., cardiac catheterization); and,
- Improve access to care across the province including regional interventions, more coordinated virtual care, and patient transportation.

In February 2023, the Government of Newfoundland and Labrador (GNL) affirmed its commitment to the provincial program with the announcement of a new Cardiovascular and Stroke Institute (CVSI) on the Health Sciences Centre (HSC) campus.²³³ The CVSI represents an evolution of the Cardiac Centre of Excellence vision created by the Health Accord NL, with the integration of tertiary cardiology, cardiac surgery, vascular surgery, and stroke neurology services that diagnose and treat diseases with a common underlying pathology of atherosclerosis.

Planning for the CVSI was conducted concurrently to the development of the Provincial HHR Plan. CVSI planning efforts defined the future physical infrastructure that would support NLHS' aspirations for cardiac surgery and, by extension, shape the future demand for cardiac perfusionists.

Workforce Initiatives

To address cardiac perfusionist recruitment and retention in NL, the Department of Health and Community Services (HCS) introduced a number of initiatives to strengthen the supply of cardiac perfusionists in the province:

- **Market Adjustments:** Cardiac perfusionists have been receiving a market adjustment in the form of a salary differential since 1988. The current market adjustment for new hires is \$28,431. New hires after December 2012 receive the market adjustment as a non-pensionable, lump sum, bi-annual payment.
- **Signing Bonuses:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions, and tiered to address geographic considerations with an associated return-in-service of one or two years.
- **Health Professional Bursaries:** \$5,000 to \$10,000 bursaries are awarded for difficult to fill positions, available to cardiac perfusionist students who sign a service agreement for one or two years of service commitment post-graduation.

²³³ <https://www.gov.nl.ca/releases/2023/exec/0223n04/>

Stakeholder Engagement Insights

Key insights pertaining to the cardiac perfusionist workforce that were gained through consultations with cardiac care program leadership are summarized in Table 151 below. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, and may not be grounded in absolute fact.

Table 124: What We Heard from Cardiac Perfusionist Stakeholders

Theme	Insights
Recruitment Success	24. Program leadership reported that the supply of cardiac perfusionists has improved over the last two years. The cardiac care program has six budgeted positions, with five recruited and filled, and one filled on a temporary basis.
	25. While program leadership did not cite specific workforce initiatives as contributing to recent recruitment success, there is optimism that the CCSI will help attract new talent, including cardiac perfusionists.
Market Adjustments	26. The pensionability of market adjustments was cited by program leadership as a persistent challenge to cardiac perfusionist recruitment. While a candidate for the one remaining budgeted role has been recruited, filling this role on a permanent basis is dependent on the market adjustment becoming pensionable. 27. Program leadership also raised concerns about the equity of market adjustments, as those hired after 2012 receive market adjustment as non-pensionable. Real or perceived inequities in compensation were cited as a source of staff friction.
Regulation	28. Concern was raised by program leaders with respect to lack of regulation of the profession, resulting in standards being established by CSCP, the profession's national certifying body. 29. There is a belief that some standards determined by CSCP (e.g., staffing ratios) are stringent and prescriptive, to the detriment of the workforce.
Dependency on External Supply	30. The dependency on external training programs was cited as a challenge by program leaders, particularly with respect to the three existing programs having small class cohorts, competitive enrolment, and catering to their respective home provinces (i.e., Ontario, Quebec, and British Columbia). 31. NLHS have traditionally sourced cardiac perfusionists from the Michener Institute and previously had a guaranteed seat that was believed to be sufficient for sustaining the supply of talent. 32. Recently, a Michener Institute student from NL elected to withdraw from the program once they became aware of the non-pensionable aspect of the market adjustment. This has negatively impacted relations between NLHS and Michener.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary projections of the supply of and demand for cardiac perfusionists were developed based on historical practice patterns and trends. Data on the supply of cardiac perfusionists was provided

by NLHS. Consequently, the supply captures only the stock of public sector cardiac perfusionists. The following inflows and outflows were captured:

- Inflows: new hires, rehired retirees, and rehires
- Outflows: resignations, and retirements

However, some inflows and outflows were not directly captured in the data. In the historical data provided, a slight discrepancy existed between change in the supply year over year and the difference between inflows and outflows. Consequently, to ensure the change in the stock of cardiac perfusionists was equal to the difference between the inflows and the outflows year over year in the historical data, "other net migrations" were estimated.

Currently, there aren't any Health Accord NL CTA or workforce initiatives which are incorporated into the baseline scenario for cardiac perfusionists as there are not any cases where sufficient quantitative data exists for their impact to be incorporated in supply and demand projections. Thus, the preliminary projections are also the final ones for cardiac perfusionists. However, if quantifiable workforce initiative were to be implemented for this profession in the future, modifications to the model can be made to incorporate these base case items.

Table 152 outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for cardiac perfusionists, as well as any limitations or caveats to the data.

Table 125: Data Sources for Cardiac Perfusionist Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of cardiac perfusionists, by zone, five-year age cohort, and gender from 2018-2022.</p> <p>Inflows: Entries into profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.)</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation).</p>	<p>Supply: Yes</p> <p>Inflows: Yes</p> <p>Outflows: Yes</p>	<p>Supply Year X = Supply Year X-1 + four-year average inflows – four-year average outflows</p>	<ul style="list-style-type: none"> Some inflows and outflows were not directly captured in the data. Thus, “other net migrations” were estimated to ensure the change in the supply was equal to the difference between the inflows and the outflows historically. The supply captures only the stock of public sector cardiac perfusionists.
Demand	<p>The demand for Cardiac Surgeons, which is estimated using the following:</p> <ul style="list-style-type: none"> 10-year population projections, by five-year age cohort, gender, and zone. Number of individuals, by zone, five-year age cohort, and gender, with each of the 226 CIHI POP Grouper diseases (disease prevalence). Number of cardiac surgeon encounters by zone, five-year age cohort, gender, and disease. 	<p>Population projections: Yes</p> <p>Source: NL Department of Finance</p> <p>Disease prevalence: Yes</p> <p>Source: CIHI POP Grouper</p> <p>Cardiac surgeon encounters: Yes</p> <p>Source: CIHI POP Grouper</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = growth in the demand for Cardiac Surgeons</p> <p>Growth in demand for Cardiac Surgeons (2023-2032) = 10-year population projections * disease prevalence rates * encounters by cardiac perfusionists = growth in encounters</p> <p>Demand Year X = Demand Year X-1 * predicted growth in the demand for Cardiac Surgeons</p>	<ul style="list-style-type: none"> Encounters with cardiac perfusionists are not captured by the CIHI POP Grouper Methodology. However, given the close relationship of cardiac perfusionists with Cardiac Surgeons, the demand for Cardiac Surgeons was used as a proxy to estimate the demand for cardiac perfusionists.

Final Projections

This section showcases the preliminary forecast estimates for cardiac perfusionists.

Table 126: Final Supply Projections for Cardiac Perfusionists

Health Occupation	Starting supply (Dec. 2022)	New Hires (2023-2032)	Rehired Retirees (2023-2032)	Rehires (2023-2032)	Resignations (2023-2032)	Retirements (2023-2032)	Other Net Migrations (2023-2032)	Ending Supply (Dec. 2032)
Cardiac Perfusionists	5	2.5	0	0	1	1	-1.5	4

Where: Starting supply (Dec. 2022) + New Hires (2023-2032) + Rehired Retirees (2023-2032) + Rehires (2023-2032) - Resignations (2023-2032) - Retirements (2023-2032) + Other Net Migrations (2023-2032) = Ending Supply (Dec. 2032)

The supply of cardiac perfusionists is predicted to decline by 20%, or one individual, by 2032 if historical inflow and outflow patterns continue. Table 154 summarizes the projections by zone.

Table 127: Regional Supply Projections for Cardiac Perfusionists

Zone	2018 Supply	2022 Supply	2032 Supply	Percent Change in Supply 2018 vs 2022	Percent Change in Supply 2022 vs 2032
Eastern Urban	6	5	-17%	4	-20%
Eastern Rural	0	0	0	0	0
Central	0	0	0	0	0
Western	0	0	0	0	0
Labrador-Grenfell	0	0	0	0	0
Total	6	5	-17%	4	-20%

Cardiac perfusionists are currently only located in the Eastern Urban zone. Thus, the impacts on supply in Eastern Urban reflect the impacts for the province as a whole.

Table 128: Final Demand Projections for Cardiac Perfusionists

Health Occupation	2022 Supply	Vacancies	2022 Demand	2032 Demand	Total Change in Demand ²³⁴
Cardiac Perfusionists	5	2	7	8	18%

Vacancies are added to 2022 supply to estimate the starting demand. For cardiac perfusionists, the growth in the demand for Cardiac Surgeons, which in turn reflects the growth in patient encounters with Cardiac Surgeons by age, gender, disease, and zone, was used to forecast demand, given the close relationship between the two professions.

Data on the number of encounters by physician specialty is provided by the CIHI POP Grouper Methodology. According to the Population Grouping Methodology Information Sheet, the POP Grouper “uses clinical and demographic data to build clinical profiles and predict population health care needs”.²³⁵ For the purpose of this analysis, the POP Grouper was used to provide estimates of the number of individuals with each of the 226 diseases captured within the methodology as well as encounter estimates by physician specialty, disease, age, gender, and zone. The following steps were taken to estimate the growth in demand for Cardiac Surgeons.

Step 1: Estimate the disease prevalence rates for 2022. The disease prevalence rate is estimated as the number of people with a specific disease divided by the population.

Step 2: Forecast the number of individuals with each of the 226 diseases by age, gender, and zone using the population forecast provided by the NL Department of Finance. To estimate the number of people with a disease in a given year, the 2022 disease prevalence rate is multiplied by the population of that year.

Step 3: Calculate the ratio of cardiac surgeon encounters per person with each disease in 2022. This is estimated by dividing the number of cardiac surgeon encounters by age, gender, health condition and zone in 2022 by the number of people with each disease by age, gender, and zone.

Cardiac Surgeons and Cardiac Perfusionists work together exclusively. To reflect the interdependency between the two professions, the growth in the demand for Cardiac Surgeons was used as a proxy to measure the demand for Cardiac Perfusionists.

²³⁴ The change in demand in percent does not reflect any rounding done when showcasing results in table format. Demand for cardiac perfusionists rises to 8.27, which is rounded down to eight in the table of results, which explains why the total change in demand is 18%.

²³⁵ [Population Grouping Methodology in Action \(cihi.ca\)](http://www.cihi.ca)

Step 4: Forecast the encounters for Cardiac Surgeons by zone, age, gender, and health condition. The forecasted growth in encounters is used as the growth in demand for Cardiac Surgeons and consequently the growth in demand for cardiac perfusionists.

Step 5: Calculate the starting demand by adding vacancies to 2022 supply.

Step 6: Apply the growth in encounters with Cardiac Surgeons, and hence the growth in the demand for Cardiac Surgeons, to the starting demand to forecast demand for cardiac perfusionists.

Between 2022 and 2032, the demand for cardiac perfusionists is predicted to rise 18%. Given that cardiac perfusionists are currently only located in the Eastern Urban zone, the preliminary demand for cardiac perfusionists is located only in the Eastern Urban zone as well.

The future demand for both Cardiac Surgeons and cardiac perfusionists is in alignment with planning for the CVSI and Health Accord NL CTA 9.14. Planning for the CVSI has focussed on defining the physical infrastructure (e.g., inpatient beds, operating suites, cardiac catheterization suites) that would be required for NLHS to meet current unmet population demands (i.e., provide access to cardiac surgery in line with wait-time targets) and meet the future needs of the aging population with a high burden of cardiovascular disease.

Table 156 highlights the predicted annual increase in demand by zone for the coming decade.

Table 129: Regional Growth in Demand for Cardiac Perfusionists

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	2.2%	2.1%	2.1%	1.7%	1.6%	1.3%	1.6%	1.5%	1.4%	1.3%
Eastern Rural	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Central	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Western	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Labrador-Grenfell	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
NL	2.2%	2.1%	2.1%	1.7%	1.6%	1.3%	1.6%	1.5%	1.4%	1.3%

With supply expected to decline over the forecast period and demand predicted to rise, the gap between supply and demand is forecasted to increase from 2022 to 2032. Table 157 and gap 2032 – gap 2022.

Table 158 show the results of that analysis.

Table 130: Final Gap Analysis for Cardiac Perfusionists

Health Occupation	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Cardiac Perfusionists	5	7	2	4	8	4	2

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022.

Table 131: Final Annual Provincial Gap Analysis for Cardiac Perfusionists

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	5	5	5	4	4	4	4	4	4	4	4
Demand	7	7	7	7	8	8	8	8	8	8	8
Gap	2	2	2	3	4	4	4	4	4	4	4
Gap as a Percent of Supply	40%	40%	40%	75%	100%	100%	100%	100%	100%	100%	100%

Due to changing population demographics, encounters with Cardiac Surgeons are predicted to rise driving an increase in demand for cardiac perfusionists by 2032. In addition, with a subset of the current cardiac perfusionists workforce expected to retire over the forecast period, the supply is forecasted to fall. Combined, this means NL will need to hire four cardiac perfusionists to meet demand in 2032.

Workforce Recommendations

Recommendations for addressing the projected deficit of cardiac perfusionists are focused on strengthening their supply as there is limited opportunity to reshape demand for the specialist skills required to support cardiac surgery. Table 159 summarizes the strategies GNL should pursue to address the projected deficit of cardiac perfusionists.

Table 132: Cardiac Perfusionist Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Supply of Cardiac Perfusionists		
CP-1	Recruit / Retain	<p>Provide an Equitable and Pensionable Market Adjustment:</p> <ul style="list-style-type: none"> • The inability for the cardiac care program to secure its full complement of budgeted cardiac perfusionists is in part a result of the current state of market adjustments for the occupation. • Notwithstanding wider policy considerations on the pensionability of market adjustments, which are outside the scope of the Provincial Health HR Plan, nationally competitive compensation is an essential part of recruiting cardiac perfusionists. • Implementing this recommendation can be reasonably expected to improve the current deficit of cardiac perfusionists.
CP-2	Recruit	<p>Reacquire a Guaranteed Education Seat:</p> <ul style="list-style-type: none"> • The cardiac care program at NLHS has already begun taking steps to rebuild relationships with the Michener Institute in order to regain the guaranteed seat in the only nationally accredited training program in Canada. These efforts should be broadened to also include the programs offered at the British Columbia Institute of Technology and the University of Montreal. • Students enrolled in these programs must be experienced RNs or RRTs who are required to take a leave of absence from their employer to pursue in-person education, often in another province. To incentivize students to enroll, dedicated financial support such as bursaries with return-in-service agreements should be included as part of this seat purchase agreement. • Doing so will provide a pipeline of talent to replace forecasted retirements over the next several years and help sustain the cardiac care program in light of organic workforce turnover. • Beyond forging strong reciprocal relationships (i.e., by providing clinical placement opportunities) and providing assurances that a guaranteed seat will be filled, GNL should also leverage the teaching mandate of the planned CVSI to differentiate itself from other Canadian provinces who are competing for the limited supply of cardiac perfusionists.

Advanced Care Paramedics

Advanced care paramedics (ACP) are one of the two classes of paramedicine professionals in the province. The role of an ACP entails the provision of medical care to patients in a variety of settings. This includes operating ambulances in responding to emergencies and routine calls, providing independent advanced medical care and interventions in both pre-hospital environments and health care facilities. Their responsibilities encompass conducting physical examinations, performing thorough assessments and tests, interpreting various diagnostic procedures, and initiating advanced interventions. Within the hospital setting, they function as part of an interdisciplinary team within health care facility units such as emergency departments (ED). Additionally, ACPS may serve as preceptors for both advanced and primary care paramedic (PCP) students in the field.

ACPs and PCPs are both emergency medical professionals, but there are some key differences between the two professions. ACPS have an expanded scope of practice compared to PCPs, including the ability to perform advanced procedures such as administering certain medications (i.e., narcotics and vasoactive drugs) and interpreting ECGs. ACPS require more extensive education and training, typically completing a two-year advanced diploma program after their PCP training. ACPS also often have more experience, working in high-acuity settings such as emergency departments or critical care transport teams. Finally, ACPS often work with more critically ill or injured patients than PCPs and are often deployed in specialized teams such as critical care transport or tactical paramedic teams.

The ACP profession has government oversight by Newfoundland and Labrador Paramedicine Regulation (NLPR) and are required to be registered with HCS through the Provincial Medical Oversight program. The NLPR requires applicants to have completed an Accredited ACP Program from Canadian Medical Association and are licensed on an annual basis. Likewise, applicants at the ACP-level must have successfully completed an entry to practice examination, administered by the Canadian Organization of Paramedic Regulator (COPR), unless they are transferring their license from another Canadian jurisdiction.

Current State Analysis

As of December 2022, there are 96 ACPS in NL who are distributed by NLHS zone, as shown in Table 160. Local education programs are limited to the College of the North Atlantic (CNA) within the province. GNL also accepts Labour Mobility applicants from other Canadian

jurisdictions who wish to transfer their Paramedicine certification to NL. Despite there being an entry pathway for international paramedicine professionals since 2019, GNL reports that there has been limited international recruitment for ACPs.

Table 133: Advanced Care Paramedics by NLHS Zone²³⁶

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2021 Supply	28	14	19	32	3	96

The current provincial road and air ambulance program offers both emergency and non-emergency medical transportation services to the local population, responding to approximately 100,000 service requests annually. GNL uses a blended public/private ambulance system, which comprises 60 ambulance services, operating a total of 179 ambulances, and includes various specialized air ambulance aircraft. Thirteen of these ambulance service operators are run by NLHS, and the remaining are provided by either community-based or private operators that receive block funding as determined by their respective service agreements with the provincial health authority.

To staff these services, the program relies on the expertise of over 800 ambulance staff, including both PCPs and ACPs, and non-paramedical emergency medical responders (EMR).

ACPs are employed to operate the road ambulance program, which is a critical enabler of the health care system and is often the first point of contact in an emergency. ACPs are trained to delivery emergency medical services during transport to the most appropriate hospital site for further treatment. While the primary duty of the ambulance program is to respond to patients in emergency situations, there are also routinely used for non-medical transport for patients who require ongoing medical attention during transport or face transportation barriers when getting to medical appointments, as a solution to patient care access.

ACPs, along with registered nurses (RNs), also can receive training to become Medical Flight Specialists with the air ambulance program, Medflight NL.

Elimination of the EMR Role

GNL has mandated minimum staffing requirements to help ensure that the number of staff per ambulance is sufficient to address the

²³⁶ Includes all ACPs.

immediate medical needs of patients requiring transport. They also contribute to response times by ensuring that staff are available to respond to calls in a timely manner. Currently, the crew configuration of ambulances operating in NL varies significantly depending on geographic region, the level of care required, as well as time of day. Most of the ACP workforce is concentrated in urban centres, whereas the staffing ratios of PCPs to EMRs differs depending on availability of resources in more rural and remote communities, with some call types being responded to by EMR-only staffed ambulances. In those cases, an EMR will initiate patient transport, and if a PCP or ACP intercept is deemed necessary, they will meet the intercepting crew on the way to the hospital.

Currently, there are approximately 350 EMRs employed throughout the province, which represents approximately 35% of the total paramedicine workforce. The EMR role requires two weeks of training before being eligible to complete the entry to practice exam, which grants successful exam takers with EMR licensure from the NLPR. The EMR role is anticipated to be phased out over the next decade as the integrated, provincial road ambulance system is implemented in accordance with Health Accord NL CTA 9.15.

The current assumption is that the future paramedicine staffing model will be 65% PCPs and 35% ACPs, thereby significantly increasing the demand for ACPs who currently comprise approximately 8% of the provincial paramedicine workforce. As this new model is anticipated to require 1,289 ambulance staff (as outlined in Table 168), it will require EMRs to be replaced by PCPs and ACPs over time. However, until the Province can reach appropriate staffing levels, EMRs will continue to be a critical staffing component of the ambulance program as ensuring staff availability remains the highest priority.

Provincial Training Capacity

In response to the anticipated surge in demand for ACPs, the current provincial educational capacity will not be sufficient to meet the province's paramedicine staffing needs. Currently, the only in-province training institution that offers ACP education is the College of the North Atlantic (ACP). The CNA introduced the ACP Program, previously only offered outside the province, at both its St. John's and Stephenville campuses in the 2020-2021 and 2021-2022 academic years, respectively. This post-diploma program offers additional training for current PCP practitioners, providing them with additional knowledge and skills for delivering advanced emergency health care, and preparing them to be leaders in emergency situations.

This four-semester program graduates 12 students from each campus per year, bringing the total provincial training capacity to 24 seats. This post-diploma program is designed with a blended delivery model and part-time schedule to promote advancement of skills from the PCP level of practice to the ACP level. As a prerequisite to program entry, students must have previously completed their PCP diploma and have at least one-year of experience working as a PCP. Furthermore, only applicants who are presently practicing in NL are admitted to the program.

Given that all ACPs must begin their careers as PCPs, the main supply pipeline for the ACP workforce is through the upskilling of local PCPs. Therefore, GNL will need to assess whether the current provincial educational capacity for paramedicine students is adequate to support the continued development of PCPs to ACPs given both the number of seats available in the province for ACPs and PCPs.

Health Accord NL Calls to Action

Call to Action (CTA) 9.15 describes GNL's ambitious plans to design one provincial, modern, integrated air and road ambulance system with central medical dispatch. This is paired with the complementary vision of providing faster access to emergency services, with care delivered from home to the emergency department supported by paramedics and a virtual emergency system. Given the current fragmented provincial ambulance system, this provides a significant opportunity to recalibrate ambulance catchment areas, service levels, and staffing models. Once implemented, the redistribution of ambulances and absorption of the private sector workforce will need to be accounted for in supply and demand projections for ACPs. Likewise, CTA 9.15 outlines strategies to mitigate underutilized ambulances, reduction of non-medical transport, and the near elimination of the EMR role, which pose significant workforce implications on the future demand for ACPs.

In addition to CTA 9.15, several other Health Accord NL recommendations have the potential to reshape the ambulance services if fully implemented. Most notably, these include:

- **CTA 8.1:** Develop and implement a formal Provincial Seniors Care Program to address the critical needs of our population.
- **CTA 8.2:** Implement and support an integrated continuum of care to improve the effectiveness and efficiency of care delivery, improve health and social outcomes for older adults and older adults with disabilities, and support older adults to age in place with dignity and autonomy.

- **CTA 9.1:** Connect every resident of NL to a Family Care Team, providing a central touchpoint of access and a continuum of care.
- **CTA 9.13:** Renew hospital services by improving coordination and flow of health and social system information between hospitals and the community and by maximizing the use of integrated digital technology and information systems.

Collectively, these CTAs have significant implications both on the access to primary and specialist care in the province, in addition to the aging population. Given that most ambulance calls are in response to patients aged 65+, the implementation of these programs designed to support elderly and frail populations within the community (CTAs 8.1 and 8.2) may reduce ambulance trips and ED visits. This is currently being piloted on a small-scale in the St. John's metro region, through responding to low and mid-level 911 calls in a select group of personal care homes (PCH). Likewise, programs that offer additional support, such as home modifications, assistance with mobility, and regular check-ins, can reduce the likelihood of accidents, thus decreasing the need for ambulance services in response to fall-related emergencies. Given the vision of the GNL, there is potential to embed community paramedicine to deliver on these services alongside other health occupations and will require providers that possess geriatric training to expand these programs provincially.

Likewise, the large strategic shift in health service delivery and models of care outlined in CTA 9.1, driven by the expansion of FCTs in the province, holds the potential to reduce demand for ambulance services given that patients will have greater attachment primary care providers to fulfil non-emergency patient requests such as prescription renewals and enhance overall access to prevention and early intervention treatment. Likewise, improved chronic disease and medication management achieved through greater primary care attachment can help prevent acute health crises, thereby reducing the number of ambulance trips.

Furthermore, the NLHS' plans to establish urgent care clinics in the St. John's metro region also carries significant potential to offset demand for ambulance services. These clinics, intended to treat unexpected, non-life-threatening health concerns, may provide the population with greater access to timely medical care without requiring ambulance trips or visits to the ED if current waitlist lengths can be reduced.

In accordance with CTA 9.13, community paramedicine has been integrated with the Electronic Medical Record (EMR) system for IV antibiotics, medical review, and geriatric assessments. GNL is also in

the process of transitioning to electronic patient records via the implementation of a new integrated HIS and equipping the provincial road ambulance system with a new Electronic Patient Care Record (ePCR) system. Once implemented, these systems have the potential to yield a number of service model optimization and quality improvement benefits for the paramedicine workforce. There are also potential demand side implications on the productivity of the paramedicine workforce if significant workforce improvements can be realized from the shift towards electronic versus manual ambulance reporting.

Workforce Initiatives

In response to these anticipated shifts in the demand for ambulance services and the ongoing workforce shortages, HCS has already taken steps to strengthen the supply of ACPs via the following initiatives:

- **Come Home Year Incentives:** \$50,000 offered to PCPs in exchange for three-year return-in-service agreement.
- **Financial Incentives for Private Ambulance Operators:** Employee incentives awarded to all full-time private and community ambulance staff over a two-year period that will provide the equivalent of a two per cent wage increase in year one, as well as a further two per cent in year two, and a commitment incentive of \$2,000 per funded employee in exchange for a return-in-service agreement.
- **Signing Bonuses:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions, and tiered to address geographic considerations with an associated return-in-service of one or two years.
- **Health Professional Bursaries:** \$5,000 to \$10,000 bursaries are awarded for difficult to fill positions, available to ACP students who sign a service agreement for one or two years of service commitment post-graduation.
- **Navigation Support:** Development of an accessible path for international paramedics to obtain a license, including meetings with regulatory colleges, and assisting internationally trained professionals with obtaining work in the province.
- **Training:** Offered to paramedics to support psychological safety in the workplace.

Stakeholder Engagement Insights

The following six stakeholder groups were engaged via focus groups to understand the experiences and perspectives of the current and future ACP workforce:

- NL Paramedicine Regulation (NLPR)
- Paramedic Association of NL (PANL)
- Department of Health and Community Services (HCS) Paramedicine Staff
- NL Association of Public and Private Employees (NAPE)
- Canadian Union of Public Employees (CUPE)
- College of the North Atlantic (CNA) Staff

In addition, six individuals responded to the focus group follow-up survey with additional insights. These stakeholder consultation activities yielded an array of qualitative insights pertinent to the development of ACP workforce recommendations – summarized in Table 161 below. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, which may not be grounded in absolute fact.

Table 134: What We Heard from Advanced Care Paramedic Stakeholders

Theme	Insights
Health Accord NL	<ul style="list-style-type: none"> • While work is underway to integrate the road system, stakeholders have voiced concerns over how the Health Accord NL will greatly influence demand for ACPs, as they have not yet seen a plan to achieve this goal. • It was shared that implementing a province-wide system will provide greater equality in paramedicine employment opportunities, which in turn will attract/retain providers knowing an improved and transparent system is in place. • Likewise, if this policy improves working conditions and pay for these professionals, it will help with recruitment and retention. • The demand for paramedics is led by calls for ambulance services. It is unclear whether this will increase or decrease when the provincial system is formed. However, supply will also be impacted by mental health supports and ability to get time off in this stressful occupation, which is expected to become more widely accessible under this new model under the new provincial system.
Retention	<ul style="list-style-type: none"> • When asked about priorities, stakeholders shared that a robust retention system needs to be put in place first before additional recruitment efforts can be considered. This includes resolving issues that exist that are causing people to leave the profession and/or province. • To accomplish this, pay equity and hours of work are critical as currently this differs across the province. There are some ACPs doing 12-hour shifts and others are doing 24-hour shifts, and up to 168 hours on call. Stakeholders believe this needs to be reviewed to find a system that works and creates a healthier, more attractive work environment. • The variability in working conditions highlights factors such as salary differentials, lack of resources and/or support, stressors from work overload in urban areas, and limited benefit capabilities. All these elements contribute to low retention.
Recruitment	<ul style="list-style-type: none"> • As a secondary priority, stakeholders suggest implementing recruitment initiatives that involve attracting students into this profession, in addition to people from other provinces and/or countries to come work in paramedicine in NL. • Stakeholders shared potential solutions, including providing greater funding for local students to go to school, as it is vital to identify and connect academia

Theme	Insights
	<p>directly to labour shortages within the health care system, and grow the local supply of ACPs.</p> <ul style="list-style-type: none"> • NL is a smaller province and does not receive reasonable numbers of paramedics through immigration. This issue is attributed to not only the recent pandemic, but also to nationwide paramedic shortages from all provinces currently affecting this sector. • Possible barriers are the National and Provincial examination bodies and their associated costs, which impose "red tape" on prospective candidates trying to enter this workforce.
Scope of Practice	<ul style="list-style-type: none"> • The ACP profession has already experienced changes to their scope of practice in recent years and is anticipating more changes in the years to come. This is perceived as a positive development for this workforce. • With the foundation of a province-wide system, there is an opportunity to implement proper quality assurance initiatives surrounding patient care to aid in the implementation of community paramedicine. This may increase the scope of practice of ACPs.
Workforce Trends	<ul style="list-style-type: none"> • Workforce trends in paramedicine shared by stakeholders include mental health concerns, pay equity, poor morale, and lack of proper supervision. • Stressors stemming from mental health, physical health, and family lifestyles associated with paramedicine workloads require a robust mental health support system and management structure throughout the province. • Variation in salaries across the province combined with higher costs of living and inflation have caused ACPs to seek higher pay in other industries. • Paramedics are looking for work-life balance, which will not be attainable until scheduling can be adjusted to support proper fatigue management. • Stakeholders voice the need for improved employment scheduling that acknowledges the diversity between urban and rural/remote areas for paramedicine. • There is inconsistency in ambulance equipment and availability, impacting ambulance reliability and maintenance issues without proper resource management.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Data on the historical supply of ACPs, as well as the historical inflows into and outflows from the profession, were not readily available.

Consequently, 2021 Census of Population data from Statistics Canada was used to estimate the starting supply of ACPs by age, gender, and zone. Statistics Canada captures employment for National Occupational Classification (NOC) code 32102: Paramedical occupations, which includes ACPs, primary care paramedics (PCPs) and other paramedical occupations. This NOC code excludes emergency medical responders (EMRs). Consequently, first the supply of paramedical occupations was forecasted using a stock a flow model, then the supply forecast was split between ACPs, PCPs and other paramedical occupations based on ratios between these

professions in the public sector to estimate the impact for the two in-scope professions: ACPs and PCPs.

The following four inflows and outflows were captured in the stock and flow model:

- Immigration: Immigration was estimated based on the average annual number of immigrants in Newfoundland and Labrador by (National Occupational Classification) NOC code over the 2016-2021 period available from Statistics Canada. Immigration includes only international immigration into the province.
- School leavers: Individuals joining the workforce from school. School leavers were estimated based on Employment and Social Development Canada's (ESDC) Canadian Occupational Projection System (COPS) school leaver projections for Canada. School leavers are defined as "people leaving their full-time education programs (either as dropouts or graduates) to participate in the labour force".²³⁷ When there is not post-secondary training program for a specific profession, school leavers refer to the number of individuals entering the workforce from any form of schooling (high school for example).
- Net Switchers: Net switchers are defined as the difference between other job seekers, and emigration and in-service mortality. Other Job seekers include occupational movers, net re-entrants, and working students. ESDC's COPS provides information for both other job seekers, and emigration and in-service mortality in Canada. If negative, net switchers represent an outflow.
 - Other job seekers include:
 - Occupational movers: those who change occupations without leaving the labour market.
 - Net re-entrants: those who had previously left the labour force and return to participate in the labour market.
 - Working students: individuals who look for work while going to school.²³⁸
- Retirements: Individuals leaving labour force because they retired. Retirements are calculated by forecasting the annual supply over the age of 55 and applying average retirement rates specific to each profession and to Newfoundland and

²³⁷ [Job Seekers \(2022-2031\) - Canadian Occupational Projection System \(COPS\) - Canada.ca \(esdc.gc.ca\)](https://www.esdc.gc.ca/line/2022-2031-cops-canada.ca)

²³⁸ [Job Seekers \(2022-2031\) - Canadian Occupational Projection System \(COPS\) - Canada.ca \(esdc.gc.ca\)](https://www.esdc.gc.ca/line/2022-2031-cops-canada.ca)

Labrador, which are estimated using Statistics Canada data, to the workforce over the age of 65.

Preliminary demand for ACPs was estimated by forecasting the growth in inflation-adjusted total health care spending using data from CIHI. More details on the methodology are provided in the following sections.

These preliminary projections were then augmented, wherever possible, based on the availability of supporting data and analysis, to reflect inflight or recently implemented policy initiatives to form a baseline scenario.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 162 below outlines the data requested and received, the data sources and equations used to calculate the supply and demand of ACPs, as well as any limitations with the data received.

Table 135: Data Sources for Advanced Care Paramedics Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of ACPs workers, by zone, five-year age cohort, and gender from 2018-2022.</p> <p>Inflows: Entries into profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.).</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation).</p>	<p>Supply: Only for paramedical occupations as a whole</p> <p>Inflows: Only for paramedical occupations as a whole</p> <p>Outflows: Only for paramedical occupations as a whole</p> <p><u>Sources:</u></p> <ul style="list-style-type: none"> Statistics Canada 2021 Census of Population Other publicly available Statistics Canada tables Employment and Social Development Canada's (ESDC) Canadian Occupational Projection System (COPS) school leaver, other job seekers, and emigration and in-service mortality projections 	$\text{Supply Year X} = \text{Supply Year X-1} + \text{Immigration Year X} + \text{School Leavers Year X} + \text{Net Switchers Year X} - \text{Retirements Year X}$	<ul style="list-style-type: none"> Adequate and accurate stakeholder data was not available for ACPs. Thus, a different methodology was utilized. Starting supply corresponds to employment numbers captured in the 2021 Census under NOC code 32102: Paramedical occupations. 2021 is the last year for which historical data available from Statistics Canada.
Demand	<ul style="list-style-type: none"> Ten-year population projections, by five-year age cohort, gender, and zone. Average per capita spending by age and gender for nine CIHI health care spending categories. Total health care spending is used to estimate growth in demand for ACPs. Average historical cost increases in health care spending. 	<p>Population projections: Yes <u>Source:</u> NL Department of Finance</p> <p>Health spending by category by age and gender: Yes <u>Source:</u> CIHI</p> <p>Historical cost increases in health care spending. Yes <u>Source:</u> CIHI</p>	$\text{Demand 2022} = \text{supply 2022} + \text{vacancies 2022}$ $\text{Growth in demand (2023-2032)} = \text{Ten-year population projections} * \text{the estimated change in average utilization} * \text{average real per person spending by age and gender}$ $\text{Demand Year X} = \text{Demand Year X-1} * \text{growth in the number of people in each age category} * \text{average change in real spending per person} * \text{the change in utilization}$	<ul style="list-style-type: none"> Encounters with ACPs are not captured by the CIHI POP Grouper Methodology. Thus, inflation-adjusted health care spending is used to forecast the distribution of patients by age and gender across province. Change in utilization estimated based on recent trends.

Preliminary Projections

This section showcases the preliminary forecast estimates for ACPs.

Table 136: Preliminary Projections for Paramedical Occupations, 2021 vs 2032

Health Occupation	Starting supply (December 2021)	School Leavers (2022-2032)	Immigration (2022-2032)	Net Switchers (2022-2032)	Retirements (2022-2032)	Ending Supply (December 2032)
Paramedical Occupations	605	353	0	4	65	897

Where: Starting supply (December 2021) + School Leavers (2022-2032) + Immigration (2022-2032) + Net Switchers (2022-2032) - Retirements (2022-2032) = Ending Supply (December 2032)

As mentioned above, Statistics Canada only provides employment information for NOC code 32102: Paramedical occupations, which includes ACPs, PCPs and other paramedical occupations. Thus, it was only possible to build the stock and flow model for paramedical occupations as a whole.

Between 2021 and 2032, the supply of paramedics is predicted to rise 48%, driven primarily by the expected increase in school leavers. The starting point for the paramedic supply forecast is 2021, as 2021 is the last year for which historical data is available from Statistics Canada.

Table 164 highlights the predicted change in supply for ACPs by zone.

Table 137: Regional Preliminary Supply Projections for Advanced Care Paramedics, 2021 vs 2032

Zone	2021 Supply	2032 Supply	Percent Change in Supply 2021 vs 2032
Eastern Urban	28	41	+48%
Eastern Rural	14	20	+48%
Central	19	28	+48%
Western	32	48	+49%
Labrador-Grenfell	3	5	+48%
Total	96	142	+48%

Once the projections for paramedical occupations complete, the supply forecast was split between ACPs, PCPs and other paramedical

occupations based on ratios between these professions in the public sector to estimate the impact for the two in-scope professions: ACPS and PCPs. Given that inflows and outflows are only captured at the provincial level, the change in supply remains constant by zone.

Table 138: Preliminary Demand Projections for Advanced Care Paramedics, 2022 vs 2032

Specialty	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Advanced Care Paramedics	100	36	136	157	+15%

Vacancies are added on to 2022 supply to estimate the starting demand. Vacancy data was provided by NLHS.

For ACPs, demand is estimated using data on spending from CIHI for nine health care categories and is aggregated to estimate total spending on health care by zone. To do this, a demographically driven health expenditure model was created. In this model, average spending was calculated across 40 age and gender cohorts. This model allows spending to be broken into several different components:

- The share of spending related to cost adjustments;
- The share of spending related to increased utilization in each age/gender cohort;
- The share of spending related to overall population growth; and
- The share of spending related to demographic aging.

To build this model, the following steps were undertaken:

Step 1: Allocate spending in each of the nine spending categories across the age/gender cohorts based on CIHI spending data. The sum of the spending in the nine categories equals to total health care spending.

Step 2: Calculate the average price adjustments based on CIHI health inflation (CPI) estimates. This is done to deflate average spending in each age/gender category to estimate volume increases (i.e., inflation adjusted spending).

Step 3: Estimate the age and gender adjusted real (inflation-adjusted) per person spending over the last decade to calculate how utilization has changed in health care overall.

Step 4: Project health care utilization based on past trends and discussions with subject matter experts for each of the nine spending categories. For health care overall, it is estimated that utilization will increase on average by 0.6%. This varies by age and gender cohort. The change in utilization was estimated based on trends in utilization since 1986.

Step 5: Project total volumes for total health care in each age/gender cohort by multiplying the number of expected people in each age/gender cohort each year by the average cost of an individual in that age/gender cohort. This number takes account of average utilization in the age/gender cohort.

Over the last 10 years, real total health care spending has risen by an average pace of 1.2% per year. Excluding the effects of population growth and aging, the overall number remains constant.

Over the next 10 years, total health care volumes are projected to grow by an average of 1.5% per year. Of this, 0.0% is due to population growth, +0.6% is due to changes in utilization and 0.9% is due to population aging. As mentioned in step 4, the change in utilization was estimated based on trends in utilization since 1986. This means that, if you strip out the effects of inflation, the aging population, and population growth, what is spent on an individual in 1997 is almost the same as what is spent on an individual in 2022.

Over the entire forecast period, demand for ACPs in NL is expected to increase by approximately 15%.

Table 166 showcases the predicted annual increase in inflation-adjusted total health care spending (i.e., volumes), which in this case is used as a proxy with which to estimate growth in demand by zone for the forecast period.

Table 139: Regional Annual Growth in Demand for Advanced Care Paramedics

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	1.7%	1.8%	1.8%	1.7%	1.8%	1.8%	1.8%	1.7%	1.8%	1.7%
Eastern Rural	1.4%	1.3%	1.4%	1.5%	1.4%	1.4%	1.3%	1.3%	1.4%	1.2%
Central	1.2%	1.2%	1.3%	1.3%	1.2%	1.1%	1.1%	1.1%	1.3%	1.0%
Western	1.3%	1.3%	1.4%	1.3%	1.4%	1.3%	1.4%	1.3%	1.2%	1.0%
Labrador-Grenfell	1.0%	1.3%	1.1%	1.2%	1.3%	1.2%	1.2%	1.2%	1.3%	1.2%
NL	1.4%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.4%	1.5%	1.3%

ACPs serve a variety of patients in a variety of health care settings. Thus, total health care spending is used as a proxy to quantify this service volume. Given that the Eastern Urban zone is predicted to see the largest population growth (and, therefore, growth in anticipated service volume demanded by patients), the increase in demand for ACPs is higher than it will be in all other zones. Overall, demand is predicted to increase between 1% and 2% over the forecast period for all zones.

Table 140: Preliminary Gap Analysis for Advanced Care Paramedics

Specialty	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Advanced Care Paramedics	100	136	36	142	157	15	-21

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022. Although the gap between supply and demand is predicted to decline from 2022 to 2032, if historical inflow and outflow trends remain constant, the province will need to hire 15 additional advanced care paramedics to meet demand.

Base Case Projections

For ACPs, the Health Accord NL CTA and workforce initiatives listed below are reflective of stakeholder feedback. In addition, sufficient quantitative data existed for their impact to be incorporated in supply and demand projections. Overall, the policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

- **Demand Analysis:**

- The establishment of a modern and integrated air and road ambulance system with centralized medical dispatch, which will require ACPs. (i.e., CTA 9.15).

- **Supply Analysis:** No supply-side workforce initiatives or CTA could be quantified at the time of the completion of the report.

Table 168 highlights the assumptions used to help quantify the base case items for advanced care paramedics.

Table 141: Base Case Assumptions for Advanced Care Paramedics

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL 9.15: Design one provincial, modern, and integrated air and road ambulance system with a central medical dispatch	Demand	<ul style="list-style-type: none"> • Aspire to have 1,289 ambulance staff (includes ACPs, PCPs, EMRs) <ul style="list-style-type: none"> ◦ Removing 350 EMRs → 1,289 (ACPs, PCPs, EMRs) – 350 EMRs = 939 ACPs and PCPs ◦ Split between ACPs and PCPs: 65% PCPs, 35% ACPs ◦ Split by zone: to split between Eastern Urban and Eastern Rural, we will use the current split of the workforce • Split by RHA <ul style="list-style-type: none"> ◦ Eastern 63% ◦ Central 16% ◦ Western 14% ◦ Labrador-Grenfell 7% • Split by five health zones <ul style="list-style-type: none"> ◦ Eastern Urban 67% → 63%*67% = 42.21% ◦ Eastern Rural 33% → 63%*33% = 20.79% ◦ Central 16% ◦ Western 14% ◦ Labrador-Grenfell 7% • Will increase demand starting in 2025 	<ul style="list-style-type: none"> • Eastern Urban <ul style="list-style-type: none"> ◦ 2025: +86 • Eastern Rural <ul style="list-style-type: none"> ◦ 2025: +53 • Central <ul style="list-style-type: none"> ◦ 2025: +26 • Western <ul style="list-style-type: none"> ◦ 2025: +11 • Labrador-Grenfell <ul style="list-style-type: none"> ◦ 2025: +10

Table 169 illustrates the annual quantitative impact for this base case item included in the ACP analysis.

Table 142: Annual Quantitative Impacts of the Base Case Items for Advanced Care Paramedics

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Health Accord NL 9.15: Design one provincial, modern, and integrated air and road ambulance system with a central medical dispatch	0	0	186	186	186	186	186	186	186	186
Total Demand Impacts	0	0	186							

After incorporating this base case item into the analysis, demand for ACPs in 2032 rises to 344 from 157. Table 170 highlights the gap analysis over the course of the forecast.

Table 143: Final Annual Provincial Gap Analysis for Advanced Care Paramedics

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	100	105	109	114	118	122	126	129	133	138	142
Demand	136	138	140	329	331	333	335	337	339	342	344
Gap	36	33	31	215	213	211	209	208	206	204	202
Gap as a percent of Supply	36%	31%	28%	189%	181%	173%	166%	161%	155%	148%	142%

Incorporating the base case causes the gap between supply and demand to rise significantly. Given that CTA 9.15 details GNL's plan to undergo a major overhaul of the ambulance system, ACPs are expected to experience a significant spike in 2025 as a result of the CTA's impact on demand. The gap will then narrow slightly annually as supply growth exceeds that of demand between 2026 and 2032. However, demand for ACPs is expected to consistently exceed supply for the entirety of the forecast period, as the present-day system is not particularly representative of what it will look like in the future.

Workforce Recommendations

The ACP profession is projected to experience a significant growth in demand over the next decade, with an expected gap of 202 ACPs by 2032 (see Table 183). This is attributed to GNL's plans to restructure the paramedicine workforce through implementing the integrated, provincial road ambulance system. Despite the program's intention to enhance resource sharing and redistribute demand across zones to

better meet future population needs, it requires the net new addition of 186 to the ACP workforce (see Table 169) to achieve this new staffing model.

Despite this significant increase in demand projected for ACPs, there is enough collective talent within the ambulance system to meet these demands. There are currently 454 PCPs practicing in NL (see Table 173), which represents a supply deficit of 22 PCPs based on current demands (see Table 183). By 2032, PCPs are expected to be oversupplied by 10 PCPs in response to this restructuring of the ambulance workforce. In addition, there are approximately 350 EMRs within the ambulance system who, with proper training and incentives, can contribute to the talent pipeline of ACPs. Therefore, the primary strategy for ensuring an adequate supply of ACPs by 2032 is to align the province's hiring, upskilling, and training programs with this vision.

Table 171 below provides workforce recommendations proposed to aid GNL in closing this gap.

Table 144: ACP Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Demand for Advanced Care Paramedics		
ACP-1	Automate	<p>Increase Productivity of ACPs via the ePCR:</p> <p>GNL is in the process of transitioning to electronic patient records via the implementation of a new integrated HIS and equipping the provincial road ambulance system with a new ePCR system. Once implemented, these systems have the potential to yield a number of service model optimization and quality improvement benefits for the paramedicine and ED workforce.</p> <ul style="list-style-type: none"> • In 2023, GNL has replaced paper-based reporting with modern tablet computers that support the real-time creation of clinical reports within a subset of ambulances in the province.²³⁹ It is anticipated that all provincial ambulances will be equipped with the new ePCR system before the end of 2024, with additional resources being hired to eventually transition all NLHS services to ePCR. • These clinical reports capture critical emergency data such as location of the service and response times, that was previously noted in paper charts by ACPs during transit. Using electronic documentation, ACPs can enhance the speed and accuracy of data entry using the ePCR system. • With integration to the new provincial HIS, these records can then be directly uploaded from the ePCR without the need for transcription on patient arrival to ED to support streamlined patient reporting and data sharing. • There are also potential demand side implications on the productivity of the paramedicine workforce if significant workforce improvements can be realized from the shift towards electronic versus manual ambulance reporting. • The ePCR has the potential to increase ACP productivity through efficiencies gained by having instantaneous access to patient prior call history to help prepare paramedics for the response. This includes efficient data retrieval, download and upload of patient information, and real-time updates to help make informed medical decisions and improve the quality of patient care delivered.

²³⁹ [New Electronic Patient Record To Improve Information Sharing and Collaboration Between Paramedics and Health Care Facilities - News Releases \(gov.nl.ca\)](https://www.gov.nl.ca/news-releases/new-electronic-patient-record-improve-information-sharing-and-collaboration-between-paramedics-and-health-care-facilities)

ID	Theme	Recommendation and Potential Impact
<ul style="list-style-type: none"> As the new, integrated provincial ambulance system will be built using the data that is currently available, further efficiencies will be realized once the ePCR system yields additional data points to support the ongoing improvement of the paramedicine workforce. However, whether it will result in quantifiable impacts to the productivity of the paramedicine workforce can not be established at this time without greater understanding of the clinical or operational improvements realized. 		
Supply of Advanced Care Paramedics		
ACP-2	Recruit	<p>Increase Local Training Capacity by Adding Seats to CNA ACP Program:</p> <p>If the program were to double its capacity in the 2024-2025 academic year, the first cohort of the additional 24 ACP students is expected to graduate in 2026, assuming a graduation rate of 80%. If attrition rates follow projections, then by 2032, these added seats would result in an additional 134 ACPs graduating in the province, resulting in a projected 10-year deficiency of 68 ACPs according to the projected gap outlined in Table 170.</p> <ul style="list-style-type: none"> The launch of the CNA ACP post-diploma program developed a sustainable local source of supply of ACPs for the province, especially since eligible applicants must be currently practicing as a PCP in NL. Recognizing this critical source of supply, HCS of Education has expressed plans to continue to expand this program, by adding another 24 seats across the two campuses, bringing the total number provincial training capacity to 48. Once this policy takes effect, school leavers are predicted to be the most important driver of growth for the supply of ACPs. The cumulative quantitative impacts of the 24 new seats added for ACPs is reflected in Table 172 below. Note: This recommendation poses business continuity considerations if these seats are being filled by PCPs that are currently practicing that would require additional planning efforts by GNL that is not within the scope of this HHR Plan.
ACP-3	Recruit	<p>Promote Career Pathways from PCP to ACP:</p> <p>Estimating the potential impact of promoting career pathways for PCPs to ACPs is difficult to estimate due to the aggregated nature of workforce inflow and will be dependent on the related PCP workforce inflow. If GNL continues to focus on PCP career progression strategies and specifically recruiting into the ACP program, then it can reasonably accept to increase its ACP applicant pool and continue to fill the program. This may result in considering the further addition of seats in the ACP program as outlined in recommendation in ACP-2.</p> <ul style="list-style-type: none"> Given that the PCP profession is expected to have a surplus of supply by 2032, combined with GNL's goal to phase out the role of the EMR and absorb them into the public paramedicine workforce, there must be a robust career progression pathway to support these individuals to become either PCPs or ACPs. To support PCPs who want to grow in their paramedicine careers and have contributed at minimum a year of experience working in the province's road ambulance program, create a clear pathway to become an ACP by offering financial incentives, educational bursaries, and support from career advisors to promote career progression and retain paramedics within their fields. Leverage experienced ACPs in recruitment initiatives, particularly in support of growing a pipeline from PCPs to ACPs. Use current ACPs to show other PCPs and EMR occupations the roles and opportunities available to them. Consider incentives to encourage ACPs to take on these roles as well as preceptorship. Considering the gap for ACPs is projected to be 202 by 2032, leveraging the oversupply of PCPs to meet this demand and incentivizing prospective ACP applicants to upskill in their field will be critical to ensure a sustainable supply of ACPs to meet the future needs of the paramedicine workforce.
ACP-4	Recruit	<p>Invest in Out-of-Province Recruitment Efforts: Streamlining Entry to Practice, Incentives and National Campaigns:</p>

ID	Theme	Recommendation and Potential Impact
		<p>Considering that GNL only recently established its own ACP training program, local supply will not be sufficient in the short- or medium-term to ensure there are enough ACP preceptors to train the next generation of both the PCP and ACP workforces. As a result, GNL should seek to encourage ACPs to relocate and establish careers in NL through streamlining entry to practice, offering incentives, and participating in national recruitment campaigns geared at attracting out-of-province talent (given this profession is in high demand nationally).</p> <ul style="list-style-type: none"> Given that that local educational institutions are currently challenged with finding enough preceptors to train their current PCP cohorts, GNL must invest in out-of-province recruitment efforts as an immediate solution to sourcing new preceptors in order to grow the provincial ACP workforce. The NLPR already has an established process to accept Labour Mobility applicants from other Canadian jurisdictions who wish to transfer their ACP certification to NL, which on average receives 1.5 applications per year.²⁴⁰ In the past six years, GNL received applications from nine ACPs, which resulted in six becoming fully licensed in NL (approximately 67%).²⁴⁰ Further streamlining the entry to practice for out-of-province applicants would help increase the conversion rates from application to licensure. Three ACPs that were living outside of NL accepted the Come Home Year incentive, offering \$50,000 in exchange for a three-year return-in-service agreement, and began employment in NL in 2022.²⁴¹ Continuing to offer recruitment incentives to ACPs would support NL with attracting out-of-province talent going forwards. Launching a national ACP recruitment campaign via targeted advertisement in provinces with a surplus of ACPs and via engagement with students attending out-of-province training institutions would help raise awareness of these initiatives being offered. Through implementing these measures, GNL could recruit up to five net new ACPs per year, which has the potential to increase overall supply of the ACP workforce by 50 paramedics by 2032.
ACP-5	Retain / Recruit	<p>Improve Working Conditions of Paramedicine Professionals</p> <p>By eliminating 24-hour shifts and reducing the on-call burden for ACPs, paired with wraparound mental health supports such as medical benefits, access to leave, counselling, and support services, HCS can create a healthier and more appealing working environment for the province's paramedicine professionals.</p> <ul style="list-style-type: none"> As frontline responders, ACPs are subjected to stressful work environments when responding to emergency calls, which over time can take a toll on their mental health and overall wellbeing. Likewise, paramedics are expected to work 12-hour, sometimes even 24-hour hour shifts, while being on call in between resulting in them being more likely to experience burnout and poor work-life balance. Taken together, these issues have a negative impact on both recruitment as retention if left unresolved, as ACPs will be more likely to leave the profession in search of better work-life balance and mental health supports while new recruits may be dissuaded from entering this workforce. Given that the restructuring of the road ambulance program is underway, it provides an opportunity for HCS to review the current staffing models – including shift lengths – and the staffing requirements needed to accommodate these changes.

²⁴⁰ NLPR Out of Province ACP Applicants (2018-2023) provided by K. Driscoll, on October 24, 2023.

²⁴¹ NLHS Come Home Year Incentives data provided by C. Smith, on August 3, 2023.

Table 145: Annual Impacts of Additional Provincial ACP Training Capacity

The following table outlines the projected annual impacts to the ACP workforce through the proposed changes to CNA's ACP training program outlined in recommendation ACP-2 above.

Recommendation	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Double provincial educational capacity for ACPs	0	0	0	19	38	58	77	96	115	134
Total Supply Impacts	0	0	0	19	38	58	77	96	115	134

Primary Care Paramedics

Primary care paramedics (PCPs) are one of the two classes of paramedicine professionals in the province. The PCP role centers on delivering pre-hospital emergency care, adhering to the guidelines set forth by the Office of the Provincial Medical Director (OPMD). Their primary responsibilities include safely transporting individuals who are seriously ill or injured to a hospital. Their duties encompass various aspects of pre-hospital scene intervention, such as conducting thorough patient assessments and providing appropriate treatments, all while upholding the paramedicine standards of practice.

Additionally, they are authorized to administer medications and initiate intravenous (IV) therapy within their scope of practice. They are also responsible for driving the ambulance to the scene of the emergency and performing the site assessment, in addition to non-emergency transfers between medical facilities and nursing/respite homes for medical follow-ups.

The PCP profession has government oversight by Newfoundland and Labrador Paramedicine Regulation (NLPR) and are required to be registered with HCS through the Provincial Medical Oversight program. The NLPR requires applicants to have completed an Accredited PCP Program from Canadian Medical Association and are licensed on an annual basis. Also, applicants at the PCP-level must have successfully completed an entry to practice examination, administered by the Canadian Organization of Paramedic Regulator (COPR), unless they are transferring their license from another Canadian jurisdiction.

Current State Analysis

As of December 2022, there are 454 PCPs in NL who are distributed across NLHS zones, as shown in Table 173. There are a number of local training programs in the province that provide PCP education, including CNA, Random Sound Paramedicine, and Keyin College, which serves as GNL's main source of supply of PCPs. The Province also accepts Labour Mobility applicants from other Canadian jurisdictions who wish to transfer their paramedicine certification to NL. Despite there being an entry pathway for international paramedicine professionals since 2019, GNL reports that there has been limited international recruitment for PCPs. The NLPR receives several queries per year from internationally trained PCPs, however, they rarely result in an application.

Some provinces, such as Ontario and Manitoba, have established programs to support the recruitment of internationally trained paramedics. The program provides support for credential recognition

and language training and offers a streamlined licensing process for eligible candidates. While in other provinces, such as Alberta, internationally trained paramedics to work in rural and remote areas of the province.

Table 146: Primary Care Paramedics by NLHS Zone²⁴²

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total ²⁴³
2021 Supply	76	180	102	46	49	454

The current provincial road and air ambulance program in NL offers both emergency and non-emergency medical transportation (NEMT) services to the local population, responding to approximately 100,000 service requests annually. The province uses a blended public/private ambulance system, which comprises 60 ambulance services, operating a total of 179 ambulances, and includes various specialized air ambulance aircraft. 13 of these ambulance service operators are run by NLHS, and the remaining are provided by either community-based or private operators that receive block funding as determined by their respective Service Agreements with the provincial health authority.

To staff these services, the program relies on the expertise of over 800 ambulance staff, including both PCPs, ACPs and non-paramedical EMRs. PCPs are employed to operate the road ambulance program, which is a critical enabler of the health care system and is often the first point of contact in an emergency. PCPs are trained to deliver EMS during transport to the most appropriate hospital site for further treatment. While the primary duty of the ambulance program is to respond to patients in emergency situations, there are also routinely used for non-medical transport for patients who require ongoing medical attention during transport or face transportation barriers when getting to medical appointments, as a solution to patient care access.

Elimination of the EMR Role

GNL has mandated minimum staffing requirements to help ensure that the number of staff per ambulance is sufficient to address the immediate medical needs of patients requiring transport. These staffing requirements also contribute to response times by ensuring that staff are available to respond to calls in a timely manner. Currently, the crew configuration of ambulances operating in NL varies

²⁴² Includes all PCPs.

²⁴³ Due to rounding, the sum of the supply by zone may not perfectly match the total listed.

significantly depending on geographic region, the level of care required, as well as time of day. Most of the ACP workforce is concentrated in urban centres, whereas the staffing ratios of PCPs to EMRs differ depending on availability of resources in more rural and remote communities, with some call types being responded to by EMR-only staffed ambulances. In those cases, an EMR will initiate patient transport, and if a PCP or an ACP intercept is deemed necessary, they will meet the intercepting crew on the way to the hospital.

Currently, there are approximately 350 EMRs currently employed throughout the province, which represents approximately 35% of the total paramedicine workforce. The EMR role requires two weeks of training before being eligible to complete the entry to practice exam, which grants successful exam takers with EMR licensure from the NLPR. The EMR role is anticipated to be phased out over the next decade as the integrated, provincial road ambulance system is implemented in accordance with Health Accord NL CTA 9.15 (see **Health Accord NL Calls to Action** section for further detail). The current assumption is that the future paramedicine staffing model will be 65% PCPs and 35% ACPs, thereby increasing the demand for PCPs who currently comprise approximately 58% of the provincial paramedicine workforce. As this new model is anticipated to require 1,289 ambulance staff (as outlined in Table 181 in the

Supply and Demand Analysis section), it will require EMRs to be replaced by PCPs and ACPs over time. However, until the province can reach appropriate staffing levels of ACPs and PCPs, EMRs will continue to be a critical component of the ambulance program as ensuring staff availability remains the highest priority.

Provincial Training Capacity

In response to the anticipated increase in demand for PCPs, the current provincial educational capacity may not be sufficient to meet paramedicine staffing needs. Currently, there are four campuses that offer PCP education: CNA's St. John's campus, CNA's Stephenville campus, Keyin College, and Random Sound Paramedicine. Historically, there had been 60 PCP seats across all sites available to students each year. In the 2023-2024 academic year, CNA added an additional 24 seats across their campuses to increase local supply, thereby bringing the total provincial training capacity to 84 seats. Given that the COPR exam pass rate is 75%, it is anticipated that 63 PCP graduates will successfully enter the workforce each year.

This diploma program is offered as a 68-week course which requires an extensive in-hospital and ambulance practicum training

component. However, prior to the recent increase in classroom capacity, practicum training capacity had already been exceeded. As a result, a working group was established to develop solutions to absorb the additional 24 seats. This suggests that increasing educational capacity may not be a viable standalone solution to increase the local supply of PCPs. Focusing on attrition and recruitment from other sources such as international jurisdictions, as well as recruitment from other Canadian provinces, should be considered to bolster provincial supply.

Health Accord NL Calls to Action

Call to Action (CTA) 9.15 describes GNL's plans to design one provincial, modern, integrated air and road ambulance system with central medical dispatch. Beyond the Health Accord NL, GNL has taken tangible steps toward designing and implementing a Provincial Paramedicine Program. This is paired with the complementary vision of providing faster access to emergency services, with care delivered from home to the emergency department supported by paramedics and a virtual emergency system. Given the current fragmented provincial ambulance system, this provides a significant opportunity to recalibrate ambulance catchment areas, service levels, and staffing models. Once implemented, the redistribution of ambulances and absorption of the private sector workforce will need to be accounted for in supply and demand projections for PCPs. Likewise, CTA 9.15 outlines strategies to mitigate underutilized ambulances, reduce non-medical transport, and the near elimination of the EMR role, which have significant implications on the future demand for PCPs.

In addition to CTA 9.15, several other Health Accord NL recommendations have the potential to reshape the ambulance services if fully implemented. Most notably, these include:

- **CTA 8.1:** Develop and implement a formal Provincial Seniors Care Program to address the critical needs of our population.
- **CTA 8.2:** Implement and support an integrated continuum of care to improve the effectiveness and efficiency of care delivery, improve health and social outcomes for older adults and older adults with disabilities, and support older adults to age in place with dignity and autonomy.
- **CTA 9.1:** Connect every resident of NL to a Family Care Team, providing a central touchpoint of access and a continuum of care.
- **CTA 9.13:** Renew hospital services by improving coordination and flow of health and social system information between

hospitals and the community and by maximizing the use of integrated digital technology and information systems.

Collectively, these CTAs have significant implications both on the access to primary and specialist care in the province, in addition to the aging population. Given that most ambulance calls are in response to patients aged 65+, the implementation of these programs designed to support elderly and frail populations within the community (CTAs 8.1 and 8.2) may reduce ambulance trips and ED visits. This is currently being piloted on a small-scale in the St. John's metro region, through responding to low and mid-level 911 calls in a select group of personal care homes (PCH). Likewise, programs that offer additional support, such as home modifications, assistance with mobility, and regular check-ins, can reduce the likelihood of accidents, thus decreasing the need for ambulance services in response to fall-related emergencies. Given the vision of the GNL, there is potential to embed community paramedicine to deliver on these services alongside other health occupations and will require providers that possess geriatric training to expand these programs provincially.

Likewise, the large strategic shift in health service delivery and models of care outlined in CTA 9.1, driven by the expansion of FCTs in the province, holds the potential to reduce demand for ambulance services given that patients will have greater attachment primary care providers to fulfil non-emergency patient requests such as prescription renewals and enhance overall access to prevention and early intervention treatment.

Collectively, these Calls to Action have significant implications both on the access to primary and specialist care in the province, in addition to the aging population. Given that most ambulance calls are in response to patients aged 65+, the implementation of these programs designed to support elderly and frail populations within the community (CTA 8.2) may reduce ambulance trips and emergency department (ED) visits. Likewise, programs that offer additional support, such as home modifications, assistance with mobility, and regular check-ins, can reduce the likelihood of accidents, thus decreasing the need for ambulance services in response to fall-related emergencies. Given the vision of the GNL, there is potential to embed community paramedicine to deliver on these services alongside other health occupations.

Likewise, the large strategic shift in health service delivery and models of care outlined in CTA 9.1, driven by the expansion of FCTs in the province, holds the potential to reduce demand for ambulance services given that patients will have greater attachment primary care

providers to fulfil non-emergency patient requests such as prescription renewals and enhance overall access to prevention and early intervention treatment. Likewise, improved chronic disease and medication management achieved through greater primary care attachment can help prevent acute health crises, thereby reducing the number of ambulance trips.

Furthermore, the NLHS' plans to establish urgent care clinics in the St. John's metro region also carries significant potential to offset demand for ambulance services. These clinics, intended to treat unexpected, non-life-threatening health concerns, may provide the population with greater access to timely medical care without requiring ambulance trips or visits to the ED if current waitlist lengths can be reduced.

In accordance with CTA 9.13, community paramedicine has been integrated with the Electronic Medical Record (EMR) system for IV antibiotics, medical review, and geriatric assessments. GNL is also in the process of transitioning to electronic patient records via the implementation of a new integrated HIS and equipping the provincial road ambulance system with a new ePCR system. Once implemented, these systems have the potential to yield a number of service model optimization and quality improvement benefits for the paramedicine workforce. There are also potential demand side implications on the productivity of the paramedicine workforce if significant workforce improvements can be realized from the shift towards electronic versus manual ambulance reporting.

Workforce Initiatives

In response to these anticipated shifts in the demand for ambulance services and the ongoing workforce shortages, HCS has already taken steps to strengthen the supply of PCPs via the following initiatives:

- **Come Home Year Incentives:** \$50,000 offered to PCPs in exchange for three-year return-in-service agreement;
- **Financial Incentives for Private Ambulance Operators:** Employee incentives awarded to all full-time private and community ambulance staff over a two-year period that will provide the equivalent of a two per cent wage increase in year one, as well as a further two per cent in year two, and a commitment incentive of \$2,000 per funded employee in exchange for a return-in-service agreement;
- **Signing Bonuses:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions, and tiered to address geographic considerations with an associated return-in-service of one or two years.

- **Health Professional Bursaries:** \$5,000 to \$10,000 bursaries are awarded for difficult to fill positions, available to PCP students who sign a service agreement for one or two years of service commitment post-graduation.
- **Navigation Support:** Development of an accessible path for international paramedics to obtain a license, including meetings with regulatory colleges, and assisting internationally trained professionals with obtaining work in the province; and,
- **Training:** Offered to paramedics to support psychological safety in the workplace.

Stakeholder Engagement Insights

The following eight stakeholder groups were engaged via focus groups to understand the experiences and perspectives of the current and future PCP workforce:

- NL Paramedicine Regulation (NLPR)
- Paramedic Association of NL (PANL)
- Provincial Integrated Ambulance System
- NL Association of Public and Private Employees (NAPE)
- Canadian Union of Public Employees (CUPE)
- College of the North Atlantic (CNA) Staff
- Keyin College Staff
- Random Sound Paramedicine Staff

In addition, eight individuals responded to the focus group follow-up survey with additional insights. These stakeholder consultation activities yielded an array of qualitative insights pertinent to the development of PCP workforce recommendations – summarized in Table 174 below. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, which may not be grounded in absolute fact.

Table 147: What We Heard from Primary Care Paramedic Stakeholders

Theme	Insights
Health Accord NL	<ul style="list-style-type: none"> • While work is underway to integrate the road system, stakeholders have voiced concerns over how the Health Accord NL will greatly influence demand for PCPs, as they have not yet seen a plan to achieve this goal. • The demand for PCPs is already strained to the max, even with 24-hour shifts in place. Thus, if GNL was to create a model with no 24-hour shifts and the EMR position phased out, stakeholders would perceive a need for more than double the number of PCPs currently in place. • It was shared that implementing a province-wide system will provide greater equality in paramedicine employment opportunities, which in turn will attract/retain providers knowing an improved and transparent system is in place.

Theme	Insights
Retention	<ul style="list-style-type: none"> Likewise, if this policy improves working conditions and pay for these professionals, it will help with recruitment and retention. The demand for paramedics is led by calls for ambulance services. It is unclear whether this will increase or decrease when the provincial system is formed. However, supply will also be impacted by mental health supports and ability to get time off in this stressful occupation, which is expected to become more widely accessible under this new model under the new provincial system.
Retention	<ul style="list-style-type: none"> When asked about priorities, stakeholders shared that a robust retention system needs to be put in place first before additional recruitment efforts can be considered. This includes resolving issues that exist that are causing people to leave the profession and/or province. To accomplish this, pay equity and hours of work are critical as currently this differs across the province. There are some PCPs doing 12-hour shifts and others are doing 24-hour shifts, and up to 168 hours on call. Stakeholders believe this needs to be reviewed to find a system that works and creates a healthier, more attractive work environment. The variability in working conditions highlights factors such as salary differentials, lack of resources and/or support, stressors from work overload in urban areas, limited benefit capabilities, and lack of career advancement opportunities. All these elements contribute to low retention. The opportunity to work in community paramedicine may help with retention as it offers a different type of paramedicine. It allows seasoned PCPs a chance for career advancement and it is a little less physically demanding than emergency paramedicine
Recruitment	<ul style="list-style-type: none"> As a secondary priority, stakeholders suggest implementing recruitment initiatives that involve attracting students into this profession, in addition to people from other provinces and/or countries to come work in paramedicine in NL. Stakeholders shared potential solutions, including providing greater funding for local students to go to school, as it is vital to identify and connect academia directly to labour shortages within the health care system, and grow the local supply of PCPs. NL is a smaller province and does not receive reasonable numbers of paramedics through immigration. This issue is attributed to not only the recent pandemic, but also to nationwide paramedic shortages from all provinces currently affecting this sector. Possible barriers are the National and Provincial examination bodies and their associated costs, which impose "red tape" on prospective candidates trying to enter this workforce.
International Recruitment	<ul style="list-style-type: none"> The international application process was put into place in 2019. Designation is determined by national PCP requirements, and successful applicants can move anywhere in Canada once designated. However, only three to four international applicants have come to work in the province through this process. English competency and driver's license requirements pose barriers for international students as they must live in the province for a year before being eligible for a driver's license.
Education	<ul style="list-style-type: none"> The hub and spoke model proposed by the Health Accord NL leans heavily on paramedics to function smoothly. However, there are not enough PCP graduates or students in the pipeline to deal with current need, let alone future need if this model is implemented in full.

Theme	Insights
	<ul style="list-style-type: none"> Private PCP training institutions are often unable to fill the number of seats available each academic year. The majority (80%) of applicants are existing EMRs. They need to be released from their current employer to pursue PCP education, which can deter prospective students from completing the program. Private PCP training institutions also cited tuition fees as a barrier to prospective students. Despite there being available seats, applicants may opt towards public system education due to lower costs and greater access to funding. PCP training program attrition rates are high and there is limited availability of preceptors to train students. Therefore, adding capacity through additional seats does not necessarily contribute to the number of graduates entering the workforce that the province needs.
Scope of Practice	<ul style="list-style-type: none"> The PCP profession has already experienced changes to their scope of practice in recent years and is anticipating more changes in the years to come. This is perceived as a positive development for this workforce. With the foundation of a province-wide system, there is an opportunity to implement proper quality assurance initiatives surrounding patient care to aid in the implementation of community paramedicine. This may increase the scope of practice of PCPs.
Workforce Trends	<ul style="list-style-type: none"> Workforce trends in paramedicine shared by stakeholders include mental health concerns, pay equity, poor morale, and lack of proper supervision. Stressors stemming from mental health, physical health, and family lifestyles associated with paramedicine workloads require a robust mental health support system and management structure throughout the province. Variation in salaries across the province combined with higher costs of living and inflation has caused PCPs to seek higher pay in other industries. Paramedics are looking for work-life balance, which will not be attainable until scheduling can be adjusted to support proper fatigue management. Stakeholders voice the need for improved employment scheduling that acknowledges the diversity between urban and rural/remote areas for paramedicine. There is inconsistency in ambulance equipment and availability, impacting ambulance reliability and maintenance issues without proper resource management.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Data on the historical supply of PCPs, as well as the historical inflows into and outflows from the profession, were not readily available.

Consequently, 2021 Census of Population data from Statistics Canada was used to estimate the starting supply of PCPs by age, gender, and zone. Statistics Canada captures employment for National Occupational Classification (NOC) code 32102: Paramedical occupations, which includes ACPs, PCPs and other paramedical occupations. This NOC code excludes EMRs. Consequently, first the supply of paramedical occupations was forecasted using a stock a flow

model, then the supply forecast was split between ACPS, PCPs and other paramedical occupations based on ratios between these professions in the public sector to estimate the impact for the two in-scope professions: ACPS and PCPs.

The following four inflows and outflows were captured in the stock and flow model:

1. Immigration: Immigration was estimated based on the average annual number of immigrants in Newfoundland and Labrador by (National Occupational Classification) NOC code over the 2016-2021 period available from Statistics Canada. Immigration includes only international immigration into the province.
2. School leavers: Individuals joining the workforce from school. School leavers were estimated based on Employment and Social Development Canada's (ESDC) Canadian Occupational Projection System (COPS) school leaver projections for Canada. School leavers are defined as "people leaving their full-time education programs (either as dropouts or graduates) to participate in the labour force".²⁴⁴ When there is not post-secondary training program for a specific profession, school leavers refer to the number of individuals entering the workforce from any form of schooling (high school for example).
3. Net Switchers: Net switchers are defined as the difference between other job seekers, and emigration and in-service mortality. Other Job seekers include occupational movers, net re-entrants, and working students. ESDC's COPS provides information for both other job seekers, and emigration and in-service mortality in Canada. If negative, net switchers represent an outflow.
 - a. Other job seekers include:
 - i. Occupational movers: those who change occupations without leaving the labour market.
 - ii. Net re-entrants: those who had previously left the labour force and return to participate in the labour market.
 - iii. Working students: individuals who look for work while going to school.²⁴⁵
4. Retirements: Individuals leaving labour force because they retired. Retirements are calculated by forecasting the annual

²⁴⁴ [Job Seekers \(2022-2031\) - Canadian Occupational Projection System \(COPS\) - Canada.ca \(esdc.gc.ca\)](https://www.esdc.gc.ca/0202-0301/cops/)

²⁴⁵ [Job Seekers \(2022-2031\) - Canadian Occupational Projection System \(COPS\) - Canada.ca \(esdc.gc.ca\)](https://www.esdc.gc.ca/0202-0301/cops/)

supply over the age of 55 and applying average retirement rates specific to each profession and to Newfoundland and Labrador, which are estimated using Statistics Canada data, to the workforce over the age of 65.

Preliminary demand for PCPs was estimated by forecasting the growth in inflation-adjusted total health care spending using data from CIHI. More details on the methodology are provided in the following sections.

These preliminary projections were then augmented, wherever possible, based on the availability of supporting data and analysis, to reflect inflight or recently implemented policy initiatives to form a baseline scenario.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 175 below outlines the data requested and received, the data sources and equations used to calculate the supply and demand of PCPs, as well as any limitations with the data received.

Table 148: Data Sources for Primary Care Paramedics Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of PCPs workers, by zone, five-year age cohort, and gender from 2018-2022.</p> <p>Inflows: Entries into profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.).</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation).</p>	<p>Supply: Only for paramedical occupations as a whole.</p> <p>Inflows: Only for paramedical occupations as a whole.</p> <p>Outflows: Only for paramedical occupations as a whole.</p> <p>Sources:</p> <ul style="list-style-type: none"> Statistics Canada 2021 Census of Population Other publicly available Statistics Canada tables Employment and Social Development Canada's (ESDC) Canadian Occupational Projection System (COPS) school leaver, other job seekers, and emigration and in-service mortality projections 	$\text{Supply Year X} = \text{Supply Year X-1} + \text{Immigration Year X} + \text{School Leavers Year X} + \text{Net Switchers Year X} - \text{Retirements Year X}$	<ul style="list-style-type: none"> Adequate and accurate stakeholder data was not available for PCPs. Thus, a different methodology was utilized. Starting supply corresponds to employment numbers captured in the 2021 Census under NOC code 32102: Paramedical occupations. 2021 is the last year for which historical data available from Statistics Canada.
Demand	<ul style="list-style-type: none"> Ten-year population projections, by five-year age cohort, gender, and zone Average per capita spending by age and gender for nine CIHI health care spending categories. Total health care spending is used to estimate growth in demand for PCPs. Average historical cost increases in health care spending. 	<p>Population projections: Yes</p> <p>Source: NL Department of Finance</p> <p>Health spending by category by age and gender: Yes</p> <p>Source: CIHI</p> <p>Historical cost increases in health care spending: Yes</p> <p>Source: CIHI</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = Ten-year population projections * the estimated change in average utilization * average real per person spending by age and gender</p> <p>Demand Year X = Demand Year X-1 * growth in the number of people in each age category * average change in real spending per person * the change in utilization</p>	<ul style="list-style-type: none"> Encounters with PCPs are not captured by the CIHI POP Grouper Methodology. Thus, inflation-adjusted health care spending is used to forecast the distribution of patients by age and gender across province. Change in utilization estimated based on recent trends.

Preliminary Projections

This section showcases the preliminary forecast estimates for PCPs.

Table 149: Preliminary Supply Projections for Paramedical Occupations, 2021 vs 2032

Health Occupation	Starting supply (December 2021)	School Leavers (2022-2032)	Immigration (2022-2032)	Net Switchers (2022-2032)	Retirements (2022-2032)	Ending Supply (December 2032)
Paramedical Occupations	605	353	0	4	65	897

Where: Starting supply (December 2021) + School Leavers (2022-2032) + Immigration (2022-2032) + Net Switchers (2022-2032) - Retirements (2022-2032) = Ending Supply (December 2032)

As mentioned above, Statistics Canada only provides employment information for NOC code 32102: Paramedical occupations, which includes ACPs, PCPs and other paramedical occupations. Thus, it was only possible to build the stock and flow model for paramedical occupations as a whole.

Between 2021 and 2032, the supply of paramedics is predicted to rise 48%, driven primarily by the expected increase in school leavers. The starting point for the paramedic supply forecast is 2021, as 2021 is the last year for which historical data is available from Statistics Canada.

Table 177 highlights the predicted change in supply for PCPs by zone.

Table 150: Regional Preliminary Supply Projections for Primary Care Paramedics, 2021 vs 2032

Zone	2021 Supply	2032 Supply	Percent Change in Supply 2021 vs 2032
Eastern Urban	76	113	+48%
Eastern Rural	180	266	+48%
Central	102	152	+48%
Western	46	69	+49%
Labrador-Grenfell	49	72	+48%
Total²⁴⁶	454	672	+48%

²⁴⁶ Due to rounding, the sum of the supply by zone may not perfectly match the total listed.

Once the projections for paramedical occupations complete, the supply forecast was split between ACPS, PCPs and other paramedical occupations based on ratios between these professions in the public sector to estimate the impact for the two in-scope professions: ACPS and PCPs. Given that inflows and outflows are only captured at the provincial level, the change in supply remains constant by zone.

Table 151: Preliminary Demand Projections for Primary Care Paramedics, 2022 vs 2032

Health Occupation	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Primary Care Paramedics	476	22	498	571	+15%

Vacancies are added on to 2022 supply to estimate the starting demand. Vacancy data was provided by NLHS.

For PCPs, demand is estimated using data on spending from CIHI for nine health care categories and is aggregated to estimate total spending on health care by zone. To do this, a demographically driven health expenditure model was created. In this model, average spending was calculated across 40 age and gender cohorts. This model allows spending to be broken into several different components:

- The share of spending related to cost adjustments;
- The share of spending related to increased utilization in each age/gender cohort;
- The share of spending related to overall population growth; and
- The share of spending related to demographic aging.

To build this model, the following steps were undertaken:

Step 1: Allocate spending in each of the nine spending categories across the age/gender cohorts based on CIHI spending data. The sum of the spending in the nine categories equals to total health care spending.

Step 2: Calculate the average price adjustments based on CIHI health inflation (CPI) estimates. This is done to deflate average spending in each age/gender category to estimate volume increases (i.e., inflation adjusted spending).

Step 3: Estimate the age and gender adjusted real (inflation-adjusted) per person spending over the last decade to calculate how utilization has changed in health care overall.

Step 4: Project health care utilization based on past trends and discussions with subject matter experts for each of the nine spending categories. For health care overall, it is estimated that utilization will increase on average by 0.6%. This varies by age and gender cohort. The change in utilization was estimated based on trends in utilization since 1986.

Step 5: Project total volumes for total health care in each age/gender cohort by multiplying the number of expected people in each age/gender cohort each year by the average cost of an individual in that age/gender cohort. This number takes account of average utilization in the age/gender cohort.

Over the last 10 years, real total health care spending has risen by an average pace of 1.2% per year. Excluding the effects of population growth and aging, the overall number remains constant.

Over the next 10 years, total health care volumes are projected to grow by an average of 1.5% per year. Of this, 0.0% is due to population growth, +0.6% is due to changes in utilization and 0.9% is due to population aging. As mentioned in step 4, the change in utilization was estimated based on trends in utilization since 1986. This means that, if you strip out the effects of inflation, the aging population, and population growth, what is spent on an individual in 1997 is almost the same as what is spent on an individual in 2022.

Over the entire forecast period, demand for PCPs in NL is expected to increase by approximately 15%.

Table 179 below showcases the predicted annual increase in inflation-adjusted total health care spending (i.e., volumes), which in this case is used as a proxy with which to estimate growth in demand by zone for the forecast period.

Table 152: Regional Annual Growth in Demand for Primary Care Paramedics

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	1.7%	1.8%	1.8%	1.7%	1.8%	1.8%	1.8%	1.7%	1.8%	1.7%
Eastern Rural	1.4%	1.3%	1.4%	1.5%	1.4%	1.4%	1.3%	1.3%	1.4%	1.2%
Central	1.2%	1.2%	1.3%	1.3%	1.2%	1.1%	1.1%	1.1%	1.3%	1.0%
Western	1.3%	1.3%	1.4%	1.3%	1.4%	1.3%	1.4%	1.3%	1.2%	1.0%
Labrador-Grenfell	1.0%	1.3%	1.1%	1.2%	1.3%	1.2%	1.2%	1.2%	1.3%	1.2%
NL	1.3%	1.4%	1.4%	1.4%	1.4%	1.4%	1.3%	1.3%	1.4%	1.2%

PCPs serve a variety of patients in a variety of health care settings. Thus, total health care spending is used as a proxy to quantify this service volume. Given that the Eastern Urban zone is predicted to see the largest population growth (and, therefore, growth in anticipated service volume demanded by patients), the increase in demand for PCPs is higher than it will be in all other zones. Overall, demand is predicted to increase between 1% and 2% over the forecast period for all zones.

Table 153: Preliminary Gap Analysis for Primary Care Paramedics

Specialty	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Primary Care Paramedics	476	498	22	672	571	-101	-123

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022. According to Table 180, the preliminary gap between PCPs supply and demand is expected to decrease between 2022 and 2032. If historical inflow and outflow trends remain constant, NL will not only narrow the gap, but is also expected to exceed demand by 101 PCPs.

Base Case Projections

For PCPs, the Health Accord NL CTA and workforce initiatives listed below are reflective of stakeholder feedback. In addition, sufficient quantitative data existed for their impact to be incorporated in supply and demand projections. Overall, the policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

- **Demand Analysis:**
 - The establishment of a modern and integrated air and road ambulance system with centralized medical dispatch, which will require PCPs. (i.e., CTA 9.15).
- **Supply Analysis:** No supply-side workforce initiatives or CTA could be quantified at the time of the completion of the report.

Table 181 highlights the assumptions used to help quantify the base case items for primary care paramedics.

Table 154: Base Case Assumptions for Primary Care Paramedics

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL 9.15: Design one provincial, modern, and integrated air and road ambulance system with a central medical dispatch	Demand	<ul style="list-style-type: none"> Aspire to have 1,289 ambulance staff (includes ACPs, PCPs, EMRs) <ul style="list-style-type: none"> Removing 350 EMRs à 1,289 (ACPs, PCPs, EMRs) – 350 EMRs = 939 ACPs and PCPs Split between ACPs and PCPs: 65% PCPs, 35% ACPs Split by zone: to split between Eastern Urban and Eastern Rural, we will use the current split of the workforce Split by RHA <ul style="list-style-type: none"> Eastern 63% Central 16% Western 14% Labrador-Grenfell 7% Split by five health zones <ul style="list-style-type: none"> Eastern Urban 67% à $63\% \times 67\% = 42.21\%$ Eastern Rural 33% à $63\% \times 33\% = 20.79\%$ Central 16% Western 14% Labrador-Grenfell 7% Will increase demand starting in 2025 	<ul style="list-style-type: none"> Eastern Urban <ul style="list-style-type: none"> 2025: +21 Eastern Rural <ul style="list-style-type: none"> 2025: +72 Central <ul style="list-style-type: none"> 2025: -17 Western <ul style="list-style-type: none"> 2025: +34 Labrador-Grenfell <ul style="list-style-type: none"> 2025: -19

Table 182 illustrates the annual quantitative impact for this base case item included in the PCP analysis.

Table 155: Annual Quantitative Impacts of the Base Case Items for Primary Care Paramedics

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Health Accord NL 9.15: Design one provincial, modern, and integrated air and road ambulance system with a central medical dispatch	0	0	91	91	91	91	91	91	91	91
Total Demand Impacts	0	0	91							

After incorporating this base case item into the analysis, demand for PCPs in 2032 rises to 662 from 571. The table below highlights the gap analysis over the course of the forecast.

Table 156: Final Annual Provincial Gap Analysis for Primary Care Paramedics

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	476	498	518	538	557	576	595	613	632	652	672
Demand	498	505	512	610	618	625	633	640	647	655	662
Gap	22	7	-6	72	61	49	38	27	15	3	-10
Gap as a Percent of Supply	4.6%	1.4%	-1.2%	13.4%	11.0%	8.5%	6.4%	4.4%	2.4%	0.5%	-1.5%

As shown in Table 183, the gap is expected to widen exponentially in 2025 due to the impact of the CTA on demand. The base case scenario assumes the Provincial Paramedicine Program is implemented at once in 2025, which is why there is a big increase in demand in 2025. Then, between 2026 and 2032, it is predicted to steadily decrease until the supply of PCAs exceeds the demand by 10.

Workforce Recommendations

Given the ambitious vision put forwards to restructure ambulance services in the province, many of the significant demand drivers on the PCP workforce have been reduced. By implementing the integrated, provincial road ambulance system, the supply of PCPs by 2032 is expected to surpass demand by 10 due to enhanced resource sharing and redistribution across zones to better meet population demands. This reflects a significantly different reality than the preliminary projections, that anticipate a gap of 123 PCPs by 2032 prior to the demand adjustments being made. Driven primarily by the reduction in the overall number and redistribution of ambulances within the province, paired with the changes to staffing model via the projected growth of the ACP role, the redistribution of PCP resources is projected to be sufficient to meet future population needs.

Table 184 below provides workforce recommendations proposed to aid GNL in closing this gap.

Table 157: PCP Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Demand for Primary Care Paramedics		
PCP-1	Rethink	<p>Eliminate the Use of Ambulances for Non-Emergency Medical Transport (NEMT)</p> <p>Eliminating or significantly reducing the use of the ambulance workforce for responding to NEMT calls would significantly decrease the demand for PCPs and ambulance services, especially in urban areas with the highest EMS call volumes. Through the expansion of patient transfer services in urban regions and the combined use of specialized taxi transport within rural regions across the province, the overall demand for ambulance services could be decreased by 11.6% if NEMT calls were responded to by alternate service providers, thereby reducing the projected demand for PCPs by 76.</p> <ul style="list-style-type: none"> • The use of ambulances for NEMT, such as interfacility transport between hospitals and return transport of patients who were discharged from hospital that may still require some level of medical care or ambulance equipment, ties up ambulance availability for emergency calls, and generates additional costs to GNL. • Currently, the province is responding to 25,000 NEMT calls per year. However, a proportion of NEMT calls do not require the services of a PCP during transport, yet an ambulance is used due to it being the only vehicle available equipped to handle a stretcher. • In 2022, approximately 54,000 transports were made by private and community ambulance services in the province, which represents a 21% increase since 2019.²⁴⁷ In 2021, 15 ambulances in the metro St. John's area responded to 27,000 calls, which indicates 10% of the provincial resources perform almost 50% of all emergency responses.²⁴⁸ • Within urban areas, the higher population density is conducive for the use of alternate service providers to provide NEMT such as the patient transfer programs operated by Caring Hands and Compass One with specially equipped vehicles, currently used in the Western and Eastern Urban Zone, respectively.^{249, 250} • In rural regions, the use of specialized taxi services accompanied by an HSW or PCA can support the redirection of NEMT calls originating from personal care homes for ambulances. • Assuming 25% of all NEMT calls could be responded to without the need for a PCP or ambulance, there is a potential to reduce the total number of ambulance trips in the province by 6,250 transports, which represents a 11.6% reduction. • As the projected demand for PCPs by 2032 is 662, an 11.6% reduction would decrease the demand for PCPs by 76 (see Table 183).
PCP-2	Rethink	<p>Expand PCP Scope of Practice to Reduce Emergency Department (ED) Visits</p> <p>Evidence shows that having PCPs provide palliative care and end-of-life care in the home improves the comfort and quality of life for people with debilitating illnesses, as well as their families. It also reduces the number of avoidable trips to the hospital and the use of health system resources, such as hospital beds and EDs, as well as total time on a call for paramedics. Assuming that 15% of all ambulance transports originating from the 65+ age cohort (23,220 trips)²⁵² could be managed without transport to hospital, this would reduce the number of transports performed annually by 3,483 trips, which represents an overall annual reduction in ambulance transports by 6.45%. Using the same assumption, if the PCP scope of practice was further expanded to manage urgent, low-acuity and illnesses within the community, there would be the potential to decrease ambulance transport and ED utilization by 3,483 visits per year.</p>

²⁴⁷ [Access to Information Request Reveals Calls for Ambulatory Services Up Over 20 Percent | VOCM](#)

²⁴⁸ [Message received: Union representing NL paramedics feels GNL is listening, acting | SaltWire](#)

²⁴⁹ [Transfer service frees up emergency ambulances, says operator | SaltWire](#)

²⁵⁰ [Patient transport – Eastern Health](#)

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> • In 2019, NLHS (formerly Eastern Health) was one of seven health authorities across Canada to participate in the new Paramedics Providing Palliative Care Program, now Community Medicine Program, launched by The Canadian Partnership Against Cancer and the Canadian Foundation for Health Care Improvement, which expanded the scope of practice of PCPs to provide urgent palliative and end-of-life care within the patient's homes.²⁵¹ • Considering there is an expected surplus of PCPs, there is an opportunity to leverage this workforce to offset demands for other health occupations, through the provision of other in-home or ED-based medical services due to the correlation of age and rurality with low-urgency use of EMS. • In NL, a significant proportion (approximately 43%)²⁵² of calls for ambulance services originate from those aged 65+, and in some regions, up to 50% of calls originate from personal care homes. • With approximately 54,000 transports made by private and community ambulance services in the province in 2022, and the age 65+ cohort comprises 23,220 (43%) of these trips.²⁵² • As a result, the use of PCPs in home care and early intervention could reduce the number of ED visits, especially in rural areas with less ED capacity and physicians to respond to lower acuity (e.g., CTA level 4-5) conditions. • Paired with leveraging more innovative technology to help assess and diagnose in the field, PCPs could manage a greater proportion of ambulance calls without the need to transport the patient to the hospital. • In hospital settings, PCPs working out of the ED could assist with workloads when not responding to calls on ambulance to further alleviate ED burden and support the delivery of interdisciplinary team-based care.

Supply of Primary Care Paramedics

PCP-3	Recruit	<p>Establish the EMR-PCP Career Transition Pathway:</p> <p>Developing a streamlined entry pathway in which EMRs are eligible for release and funding after completing three years of service with NLHS, in addition to being prioritized for admission, would support their career progression from EMR to PCPs while sustaining availability of EMRs within the system, as the latter role is phased out. If GNL continues to focus on EMR career progression strategies and specifically recruiting into the PCP program, then it can reasonably expect to increase its PCP applicant pool and continue to fill the program.</p> <ul style="list-style-type: none"> • Considering that the EMR role is planned on being phased out over the next decade, the ambulance system will need to reabsorb those workers as PCPs or ACPs. • Despite there being a projected surplus of PCPs by 2032, it is important to note that there is a projected deficit of 200 ACPs (see Table 170) to account for in the future provincial road ambulance model. As prospective applicants to the ACP program must first be licensed and working as PCPs for one-year before being eligible to apply, ensuring there is a stable supply of PCPs will be a key factor for closing this projected gap in the ACP workforce. • Therefore, HCS should seek to implement career progression strategies to upskill to PCPs targeted at redistributing the current EMR workforce across geographies. • There currently exists both an in-person and distance bridging program from EMR to PCP offered by CNA. This part-time nine semester diploma program offers training to EMRs who are presently practicing in NL. It is recommended that GNL supports EMRs pursue their PCP education by providing additional funding and bursaries. This support would help increase enrolment and graduation rates by alleviating the financial burden on students.
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²⁵¹ [Paramedics in six provinces to provide palliative care in the home - Hospital News](#)

²⁵² HCS currently does not track patients by age or CTA, therefore numbers were estimated based on Ontario's ambulance utilization patterns for the age 65+ cohort ([Ambulance use in Ontario has grown far faster than population, study finds | CBC News](#)).

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> Stakeholders shared that private training institutions that offer PCP training experience challenges with filling seats due to higher tuition costs than the publicly offered programs within the province (see Table 174). To encourage more EMRs to enrol in PCP education programs, GNL should consider subsidizing tuition costs to align them with those of public institutions. This approach leverages existing provincial training capacity and makes private programs more accessible to students. Approximately 80% of all applicants to the PCP program are EMRs. Yet stakeholders identified that one of the key barriers affecting enrolment into PCP programs is that EMRs cannot get released from NLHS (formerly RHAs) to pursue further education due to current staff shortages. Likewise, as EMRs are currently concentrated in rural communities, offering more rural and remote practicums would support the recruitment and retention of prospective PCP graduates of remaining within their home communities.
PCP-4	Retain / Recruit	<p>Eliminate 24-Hour PCP Shifts and On-Call Burden, and Increase Health Supports:</p> <p>By eliminating 24-hour shifts and reducing the on-call burden for PCPs, paired with wraparound mental health supports such as medical benefits, access to leave, counselling and support services, HCS can create a healthier and more appealing working environment for paramedicine professionals.</p> <ul style="list-style-type: none"> As frontline responders, PCPs are subjected to stressful work environments when responding to emergency calls, which over time can take a toll on their mental health and overall wellbeing. Likewise, paramedics are expected to work 12-hour, sometimes even 24-hour shifts, while being on-call in between resulting in them being more likely to experience burnout and poor work-life balance. Taken together, these issues have a negative impact on both recruitment as retention if left unresolved, as PCPs will be more likely to leave the profession in search of better work-life balance and mental health supports while new recruits may be dissuaded from entering this workforce. Given that the restructuring of the road ambulance program is underway, it provides an opportunity for HCS to review the current staffing models – including shift lengths – and the staffing requirements needed to accommodate these changes.
PCP-5	Recruit	<p>Implement an Accelerated Pathway for International PCPs and Paramedicine Students to Obtain their Driver's License:</p> <p>Being ineligible to obtain a full driver's license within the first year of arrival significantly disadvantages and delays international students interested in pursuing PCP studies in terms of program application success, and internationally trained PCPs seeking to immigrate to NL. GNL should establish an accelerated pathway that grants provisional NL driver's licenses to international PCPs and paramedicine that hold a valid international driver's license permit, so that they are not hindered in their paramedicine training or employment. By implementing this pathway, NL could recruit up to one additional PCP per year, resulting in 10 PCPs entering the workforce by 2032.</p> <ul style="list-style-type: none"> Currently, international PCP students or applicants from a country other than the United States, Germany, Austria, Switzerland, or the United Kingdom must apply as a new driver when exchanging their existing driver's licence to a NL driver's licence within three months after coming to NL. The PCP program requires applicants to have a Class 05 Learner (Level 1) Driver's license at minimum, with employer's mandating a Class 04 driver's license permitting them to operate an ambulance for their work terms. For those students that are unable to demonstrate equivalent driving experience, the inability to obtain the appropriate driver's license class hinders their ability to participate in their practicum as their partner would be solely responsible for operating the ambulance. Likewise, internationally trained paramedics would be unable to operate the ambulance even if they met the Canadian standards for PCP licensure, limiting their ability to find employment.

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> Despite offering an international PCP licensure pathway in the province since 2019, there is minimal uptake. Between 2018-2023, only one internationally trained PCP has applied and received licensure.²⁵³ Typically, the NLPR receives several queries per year, but the conversion to application is highly limited. This may be due in part to the barriers presented by obtaining a NL driver's license, as many opt for the EMR license stream instead. By establishing an accelerated pathway that grants provisional NL driver's licenses to internationally trained PCPs and students that hold a valid international driver's license permit, GNL could recruit up to one additional PCP per year, resulting in 10 PCPs entering the workforce by 2032. This pathway would be similar to the one currently offered to applicants coming from another province and would result in the issuance of a full driver's license once they have had their experience rated against the NL system.

²⁵³ NLPR International Applicants (2018-23) provided by K. Driscoll on October 20, 2023.

Medical Laboratory Technologists

Medical laboratory technologists (MLTs) represent a category of health care workers that helps to deliver clinical support services (e.g., laboratory testing, specimen collection) across multiple care settings, including hospitals and private practice clinics. Medical Laboratory Technologists' scope of practice is defined as the performance of laboratory investigations on the human body or on specimens taken from the human body and the interpretation and evaluation of quality control data to verify the accuracy and precision of investigation results for use by health care practitioners in the diagnosis, treatment and prevention of disease.

MLTs perform medical laboratory testing in either a specialized laboratory unit, or in various units of a core lab environment in both urban and rural geographies. Typical MLT duties include preparing specimens, evaluating test results, conducting quality control, performing troubleshooting, and preventative maintenance on equipment.

MLTs work within six disciplines: immunohematology, hematology, clinical chemistry, clinical microbiology, diagnostic cytotechnology, and clinical genetics technology.

MLTs in NL are required to have graduated from an accredited three-year Diploma program in Medical Laboratory Technology, such as the one offered by the College of the North Atlantic's (CNA) School of Health Sciences. Before being eligible to practice, new graduates must write the Canadian Society of Medical Laboratory Sciences (CSMLS) certification exam and register in the province.

All MLTs practicing in NL are required to register with the Newfoundland and Labrador Council of Health Professionals (NLCHP). As the regulator, the NLCHP regulates the practice of each health profession including monitoring compliance with qualifications for registration and continuing education.

Current State Analysis

As of December 2022, there were 479 public sector MLTs in NL (including subspecialties) who are distributed by NLHS zone as shown in Table 185 below.

Table 158: Public Sector Medical Laboratory Technologists by NLHS Zone²⁵⁴

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2022 Supply	245	60	77	62	35	479

In the current state, the majority of MLTs are based at NLHS hospital sites. Outside of the provincial health authority, small subsets of MLTs are also based at Avalon Laboratories (e.g., supporting COVID-19 testing services). An additional group of MLTs in NL work at private sector labs, or within the education sector. Stakeholders estimate that approximately 600 MLTs currently work for a variety of employers across the province, meaning that approximately 80% of the provincial workforce is employed by NLHS, with the balance working in private clinics, research and education. The remaining 20% of MLTs are not included in the analysis.

Education

GNL typically recruits MLTs as graduates of the CNA's Medical Laboratory Technology Diploma program, which is offered at their Prince Philip Drive Campus in St. John's. Other MLT programs in Atlantic Canada may also offer opportunities for recruitment, e.g. Nova Scotia Community College, New Brunswick Community College and Oulton College in New Brunswick. International recruitment for MLTs in NL is highly limited.

There are 24 educational institutions in Canada that offer MLT training.²⁵⁵ Although the province provides MLT training at CNA, those specializing in diagnostic cytotechnology or clinical genetics technology must pursue their education outside the province. There is currently only one school that offers diagnostic cytotechnology training, which is the Michener Institute of Education at UHN in Ontario. There are also limited schools that offer clinical genetics technology training. As a result, these MLT disciplines have low supply nationally and are challenging to recruit without a local educational presence.

Laboratory Demand Volume

Demand volume (i.e., the number of laboratory services ordered) for MLTs is driven primarily by the province's aging population and its underlying care needs and burden of disease. Research suggests that

²⁵⁴ Includes only MLTs employed by NLHS (i.e., public sector MLTs).

²⁵⁵ [Educational Programs - Accreditation Canada](https://www.accreditationcanada.org/programs/medical-laboratory-technology)

the total number of laboratory tests ordered for patients is highest amongst age cohorts from 65 to 84. As NL's population ages further, it can expect sustained demand increases for laboratory services delivered by MLTs.²⁵⁶ While demographics play a factor in the geographical distribution of this future demand, it is expected to closely follow new delivery models for laboratory services. More specifically, service volumes will be consolidated in hub laboratory locations based in more densely populated areas (i.e., St. John's, Corner Brook, and Gander), with smaller sites offering a narrower scope of laboratory testing services and increased point of care testing, as described below.

Health Accord NL Calls to Action

Two key Health Accord NL Calls to Action (CTAs) carry implications for the MLT workforce in NL. CTA 9.10 seeks to establish pathology and laboratory medicine as a provincial networked service based on hub-and-spoke modelling. Although this model is in the early stages of planning, it has the potential to reshape the MLT workforce across the province if fully implemented. The model will see three "hub" laboratory locations – one at each of the Health Sciences Centre in St. John's, the Corner Brook Acute Care Hospital, and the James Paton Memorial Regional Health Centre in Gander. These three hubs will support a series of "spoke" locations within their local geographic catchment areas. Laboratory testing volume will also be consolidated. Routine and non-urgent requisitions will flow to hub sites, while spoke sites will continue to offer specimen collection, and shift towards a "rapid response service". As part of this shift, spoke sites will primarily focus on supporting laboratory needs tied to emergency department visits, inpatient care, and perioperative services including hematology. As a result, NLHS can anticipate increased MLT demand in the Eastern Urban, Central, and Western Zones, and corresponding decreases in demand in the Eastern Rural and Labrador-Grenfell Zones.

Relatedly, it is of note that a new provincial public health lab will be developed in St. John's, in part because current facilities at the Dr. Leonard A. Miller Centre are not suitable to accommodate upgraded automation technologies and equipment that characterize laboratory service delivery models of the future. Current space constraints at the Health Sciences Centre campus suggest that the new hospital facility replacing St. Clare's Mercy Hospital will be the ultimate location selected for the public health laboratory.

Secondly, CTA 9.14 signals the need for a five-year improvement plan for cancer, cardiac disease, and stroke mortality rates over the next 10

²⁵⁶ <https://pubmed.ncbi.nlm.nih.gov/15747782/>

years – led by corresponding provincial programs. This is aimed at improving access to services delivered by these programs. For the purposes of this HHR Plan, improved access to cancer, cardiac disease, and stroke services is represented by the construction of a new acute care and cancer care facility in Corner Brook. More specifically, quantitative analysis incorporates this CTA in the form of a one-time addition of MLT headcount in the Western Zone (see Base Case Projections and Table 194 below for additional detail).

In addition, Health Accord NL's "Blueprint" features multiple implementation recommendations aimed at rebalancing GNL's health care system, in part by reducing inappropriate utilization of care interventions.²⁵⁷ If successfully implemented, these recommendations represent potential MLT demand mitigation by eliminating inappropriate laboratory services volume in the future state.

International research profiled within the Blueprint suggests that up to 20-30% of laboratory testing interventions in health care are of "low or no value", and NL leads Canada in the unnecessary use of several interventions. For example, NL is ranked towards the bottom amongst Canadian provinces in the proportion of requests for unnecessary tests made by patients. Implementation recommendations relevant for MLT workforce planning include developing a Learning Health and Social System (LHSS) within NL's health care system linked to Quality of Care NL and NLHS (formerly NLCHI) (and sustaining funding for the former beyond 2026), and supported by the proposed Council for Health Quality and Performance. As part of this initiative, the Province aims to build upon Choosing Wisely Canada recommendations and create a Provincial Choosing Wisely Program led by Quality of Care NL and participated in by NLHS. Collectively, these recommendations are expected to materially reduce inappropriate utilization of laboratory services and, in turn, future demand for MLTs in the province.

Another implementation recommendation is focused on creating a Clinical Translational Genomics (CTG) Program to help identify and treat high risk families with genetic diseases, particularly cardiac disease and cancer. Once established, this program would have implications on the provincial demand for Clinical Genetic Technologists to carry out the mandate of the CTG Program.

Workforce Initiatives

To address MLT retention in NL, HCS has introduced retention incentives in return for one year of service, offered in 2022/23. It is of

²⁵⁷ Health Accord NL. (2022). Our Province. Our Health. Our Future. A 10-Year Health Transformation: The Blueprint Implementation Recommendations from the Strategy Committees and Working Groups. <https://healthaccordnl.ca/final-reports/>

note that this initiative is not intended to increase MLT headcount; rather, it is aimed at slowing annual attrition rates and mitigating resignations over the short- to medium-term. GNL reported that, as of February 2023, 415 MLTs employed by the public sector have successfully applied to receive this retention incentive, with distribution varying across Health Zones.

In response to the anticipated shifts in the demand for laboratory services and the ongoing workforce shortages, HCS has already taken steps to strengthen the supply of MLTs within the public sector via the following initiatives:

- **Signing Bonuses:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions, and tiered to address geographic considerations with an associated return-in-service of one or two years.
- **Health Professional Bursaries:** \$5,000 to \$10,000 bursaries are awarded for difficult-to-fill positions, available to MLT students who sign a service agreement for one or two years of service post-graduation.

Stakeholder Engagement Insights

To better understand the experiences and perspectives of the MLT workforce in NL, five focus groups were held with the following four stakeholder groups:

- NLHS Laboratory Medicine Leadership
- College of the North Atlantic (CNA) Staff
- NL Association of Public and Private Employees (NAPE)
- NL Council of Health Professionals (NLCHP)

In addition, eight individuals responded to the focus group follow-up survey with additional insights. This consultation activity yielded a set of qualitative insights pertinent to the development of MLT workforce recommendations which are summarized in Table 186. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, which may not be grounded in absolute fact.

Table 159: What We Heard from Medical Laboratory Technologist Stakeholders

Theme	Insights
Hub Labs and Centralization of Testing	<ul style="list-style-type: none"> As described above, Health Accord NL CTA 9.10 will reshape delivery models for laboratory and pathology services – specifically into a hub-and-spoke model featuring a higher level of centralization wherein test service volume from across the province flows into the one of the three hub sites. Elevated service volume at hub sites may also be mitigated by increased levels of automation introduced over time. In contrast, smaller rural sites (i.e., the “spokes”) can expect higher volumes of point-of-care (POC) testing and urgent tests, but their overall volume and breadth will decline as other sites “pull” routine samples into hub locations depending on availability of transportation. Both geographical shifts in service volume carry corresponding implications for MLT workforce planning in NL. For example, MLTs looking to work to their full scope of practice may not consider rural geographies given that these lab locations will offer a narrower scope of services.
Future Service Volumes in Rural Areas	<ul style="list-style-type: none"> The new hub-and-spoke service delivery model will challenge MLT recruitment and retention in rural areas. For example, larger, more sophisticated laboratory equipment will be relocated to hub labs, potentially making it difficult to recruit MLTs who may be newer to the workforce and expecting to work with a fulsome suite of technology and equipment as part of their role. Demand for MLTs in rural areas will also be driven in part by retirements. The COVID-19 pandemic led to a marked increase in MLTs staffed at the NL Public Health Laboratory (PHL), and as such, St. John’s is considered to be “saturated” with MLTs. As a result of this shift, MLTs currently based in urban areas are increasingly considering relocation to rural areas to secure employment. This can be seen as a positive mitigating force against retirements and recruitment challenges in rural areas of NL.
CLXT Service	<ul style="list-style-type: none"> Stakeholders highlighted that the Combined Lab/X-Ray Technologist (CLXT) role is underutilized. This combined role enables full-scope MLTs to provide limited scope x-ray services in rural communities and could be considered as a measure through which to retain staff in geographies facing supply challenges to maintain access to x-ray services. Demand for this role could also further increase if NLHS elects to keep its current set of rural facilities operating over the long-term, and/or if laboratory services move to 24/7 operating hours.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary projections of the supply of and demand for MLTs were developed based on historical practice patterns and trends. Data on the supply of MLTs in NL was provided by NLHS representatives. Consequently, the supply captures only the stock of public sector MLTs. The following inflows and outflows were captured:

- Inflows: new hires, rehired retirees, and rehires
- Outflows: resignations, and retirements

However, some inflows and outflows were not directly captured in the data. In the historical data provided, a slight discrepancy existed between change in the supply year over year and the difference between inflows and outflows. Consequently, to ensure the change in the stock of MLTs was equal to the difference between the inflows and the outflows year over year in the historical data, “other net migrations” were estimated.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 187 below outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for MLTs, as well as any limitations or caveats to the data received.

Table 160: Data Sources for Medical Laboratory Technologist
Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of MLTs, by zone, five-year age cohort, and gender from 2018-2022</p> <p>Inflows: Entries into profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.)</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation)</p>	<p>Supply: Yes</p> <p>Inflows: Yes</p> <p>Outflows: Yes</p> <p><u>Source:</u> NLHS</p>	<p>Supply Year X = Supply Year X-1 + four-year average inflows – four-year average outflows</p>	<ul style="list-style-type: none"> Some inflows and outflows were not directly captured in the data. Thus, “other net migrations” were estimated to ensure the change in the supply was equal to the difference between the inflows and the outflows historically. The supply captures only the stock of public sector MLTs.
Demand	<ul style="list-style-type: none"> 10 -year population projections, by five-year age cohort, gender, and zone Average per capita spending by age and gender for nine CIHI health care spending categories. Total health care spending is used to estimate growth in demand for MLTs Average historical cost increases in health care spending. 	<p>Population projections: Yes</p> <p><u>Source:</u> NL Department of Finance</p> <p>Health spending by category by age and gender: Yes</p> <p><u>Source:</u> CIHI</p> <p>Historical cost increases in health care spending. <u>Source:</u> CIHI</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = 10-year population projections * the estimated change in average utilization * average real per person spending by age and gender</p> <p>Demand Year X = Demand Year X-1 * growth in the number of people in each age category * average change in real spending per person * the change in utilization</p>	<ul style="list-style-type: none"> Encounters with MLTs are not captured by the CIHI POP Grouper Methodology. Thus, inflation-adjusted health care spending is used to forecast the distribution of patients by age and gender across province. Change in utilization estimated based on recent trends.

Preliminary Projections

This section showcases the preliminary forecast estimates for MLTs.

Table 161: Preliminary Supply Projections for Medical Laboratory Technologists

Health Occupation	Starting supply (Dec. 2022)	New Hires (2023-2032)	Rehired Retirees (2023-2032)	Rehires (2023-2032)	Resignations (2023-2032)	Retirements (2023-2032)	Other Net Migrations (2023-2032)	Ending Supply (Dec. 2032)
Medical Laboratory Technologists	479	260	30	58	188	103	-31	505

Where: Starting supply (Dec. 2022) + New Hires (2023-2032) + Rehired Retirees (2023-2032) + Rehires (2023-2032) - Resignations (2023-2032) - Retirements (2023-2032) + Other Net Migrations (2023-2032) = Ending Supply (Dec. 2032)

In the preliminary projections, the supply of MLTs is predicted to rise by approximately 5% over the forecast period, with inflows generally outpacing outflows, and with results varying by zone as displayed in Table 189. Outflows are expected to be driven primarily by resignations over the 2023 to 2032 forecast period, while new hires are expected to represent the largest proportion of inflows.

Table 162: Regional Preliminary Supply Projections for Medical Laboratory Technologists

Zone	2018 Supply	2022 Supply	2032 Supply	Percent Change in Supply 2018 vs 2022	Percent Change in Supply 2022 vs 2032
Eastern Urban	230	245	257	+7%	+5%
Eastern Rural	60	60	60	+/-0%	+/-0%
Central	79	77	78	-3%	+2%
Western	59	62	68	+5%	+9%
Labrador-Grenfell	32	35	42	+9%	+21%
Total	460	479	505	+4%	+5%

Preliminary supply is predicted to rise in the Labrador-Grenfell, Western, and Eastern Urban zones. In contrast, supply is predicted to remain relatively stable in both the Central and Eastern Rural zones.

Table 163: Preliminary Demand Projections for Medical Laboratory Technologists

Specialty	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Medical Laboratory Technologists	479	23	502	583	+16%

Vacancies are added on to 2022 supply to estimate the starting demand. Vacancy data was provided by NLHS.

For MLTs, demand is estimated using data on spending from CIHI on nine health care categories, and aggregated to estimate total spending on health care by zone. To do this, a demographically driven health expenditure model was created. In this model, average spending was calculated across 40 age and gender cohorts. This model allows spending to be broken into several different components:

- The share of spending related to cost adjustments;
- The share of spending related to increased utilization in each age/gender cohort;
- The share of spending related to overall population growth; and
- The share of spending related to demographic aging.

To build this model, the following steps were undertaken:

Step 1: Allocate spending in each of the nine spending categories across the age/gender cohorts based on CIHI spending data. The sum of the spending in the nine categories equals total health care spending.

Step 2: Calculate the average price adjustments based on CIHI health inflation (CPI) estimates. This is done to deflate average spending in each age/gender category to estimate volume increases (i.e., inflation-adjusted spending).

Step 3: Estimate the age and gender adjusted real (inflation-adjusted) per person spending over the last decade to calculate how utilization has changed in health care overall.

Step 4: Project health care utilization based on past trends and discussions with subject matter experts for each of the nine spending categories. For health care overall, it is estimated that utilization will

increase on average by 0.6%. This varies by age and gender cohort. The change in utilization was estimated based on trends in utilization since 1986.

Step 5: Project total volumes for total health care in each age/gender cohort by multiplying the number of expected people in each age/gender cohort each year by the average cost of an individual in that age/gender cohort. This number takes account of average utilization in the age/gender cohort.

Over the last 10 years, real total health care spending has risen by an average of 1.2% per year. Excluding the effects of population growth and aging, the overall number remains constant.

Over the next 10 years, total health care volumes are projected to grow by an average of 1.5% per year. Of this, 0.0% is due to population growth, +0.6% is due to changes in utilization and 0.9% is due to population aging. As mentioned in step 4, the change in utilization was estimated based on trends in utilization since 1986.

This means that, if you strip out the effects of inflation, the aging population, and population growth, what is spent on an individual in 1997 is almost the same as what is spent on an individual in 2022.

Based on this modelling, over the entire forecast period, demand for MLTs in NL is expected to increase by approximately 16%.

Table 191 below summarizes the predicted annual increase in inflation-adjusted total health care spending (i.e., volumes), which in this case is used as a proxy with which to estimate growth in demand by zone for the forecast period.

Table 164: Regional Annual Growth in Demand for Medical Laboratory Technologists

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	1.7%	1.8%	1.8%	1.7%	1.8%	1.8%	1.8%	1.7%	1.8%	1.7%
Eastern Rural	1.4%	1.3%	1.4%	1.5%	1.4%	1.4%	1.3%	1.3%	1.4%	1.2%
Central	1.2%	1.2%	1.3%	1.3%	1.2%	1.1%	1.1%	1.1%	1.3%	1.0%
Western	1.3%	1.3%	1.4%	1.3%	1.4%	1.3%	1.4%	1.3%	1.2%	1.0%
Labrador-Grenfell	1.0%	1.3%	1.1%	1.2%	1.3%	1.2%	1.2%	1.2%	1.3%	1.2%
NL	1.5%	1.4%								

MLTs perform a variety of clinical support service duties, and, as such, overall health care service volume can be viewed as the primary driver

for growth in this volume. For the purposes of MLT analysis within this HHR Plan, total health care spending is used as a proxy to quantify this service volume. Given that the Eastern Urban zone is predicted to see the largest population growth (and, therefore, growth in anticipated service volume demanded by patients), the increase in demand for MLTs is higher than in all other zones. Overall, demand is predicted to increase between 1% and 2% over the forecast period for all zones.

Table 165: Preliminary Gap Analysis for Medical Laboratory Technologists

Specialty	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Medical Laboratory Technologists	479	502	23	505	583	78	+55

In the above, the 2022 gap = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022. As stated in Table 192, the gap between MLT supply and demand is expected to more than triple between 2022 and 2032. If historical inflow and outflow trends remain constant, NL will need to hire 78 additional MLTs to meet demand across all geographies.

Base Case Projections

For MLTs, the only applicable base case assumption applied to projections stems from Health Accord NL CTA 9.14 (mortality rate improvement plan for cancer, cardiac disease, and stroke led by provincial programs for these disease entities). Improved access to services delivered by these provincial programs is in part represented by the construction of a new acute care and cancer care facility in Corner Brook. For the purposes of MLT projections, this assumption is represented as a one-time addition of one employee when the facility opens in June 2024 (i.e., +1 headcount increase in the Western Zone). Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

Table 166: Base Case Assumptions for Medical Laboratory Technologists

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	Demand	<ul style="list-style-type: none"> One-time addition when facility opens in June 2024 	<ul style="list-style-type: none"> Western: <ul style="list-style-type: none"> 2024: +1

Table 194 illustrates the annual quantitative impact for this base case item included in the MLT analysis.

Table 167: Annual Quantitative Impacts of the Base Case Item for Medical Laboratory Technologists

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	0	1	1	1	1	1	1	1	1	1
Total Demand Impacts	0	1	1	1	1	1	1	1	1	1

After incorporating this base case item into the analysis, demand for MLTs in 2032 rises to 584 from 583. Table 195 highlights the gap analysis over the course of the forecast.

Table 168: Final Annual Provincial Gap Analysis for Medical Laboratory Technologists

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	479	472	471	474	477	481	485	490	495	500	505
Demand	502	509	518	526	534	542	551	559	567	576	584
Gap	23	37	47	52	57	61	66	69	72	76	79
Gap as a Percent of Supply	5%	8%	10%	11%	12%	13%	14%	14%	15%	15%	16%

This analysis suggests that the magnitude of the gap between demand and supply is expected to grow annually between 2023 and 2032.

Demand for MLTs is expected to consistently exceed supply for the entirety of the forecast period.

Table 169: Final Annual Gap Analysis for Medical Laboratory Technologists by NLHS Zone

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	Gap	5	11	16	20	24	27	30	33	36	38
	% Of Supply	2%	5%	7%	8%	10%	11%	12%	13%	14%	15%
Eastern Rural	Gap	5	7	8	9	10	11	12	13	14	15
	% Of Supply	8%	12%	14%	15%	17%	19%	20%	22%	24%	25%
Central	Gap	7	8	9	10	11	12	12	13	14	15
	% Of Supply	9%	10%	12%	13%	14%	16%	15%	17%	18%	19%
Western	Gap	4	9	12	12	12	11	10	10	10	9
	% Of Supply	6%	16%	21%	21%	20%	18%	16%	16%	16%	13%
Labrador-Grenfell	Gap	2	2	2	2	2	1	1	0	0	-1
	% Of Supply	6%	6%	6%	6%	5%	3%	3%	0%	0%	0%
Newfoundland and Labrador	Gap	23	37	47	52	57	61	66	69	72	76
	% Of Supply	5%	8%	10%	11%	12%	13%	14%	14%	15%	16%

Extending this gap analysis to individual NLHS health zones provides visibility into stakeholder perspectives on urban-rural inequities in terms of recruiting and retaining MLTs (i.e., supply will decline more sharply in rural areas versus urban areas). By 2032, the Eastern Rural and Central zones are projected to see the largest MLT supply-demand gap as a proportion of MLT supply – signaling a need for these zones to increase their respective MLT supplies by 25% and 21%, respectively, to close this gap. This is notably higher than the province-wide gap, which totals 16% of available supply in 2032 (see Table 195).

Workforce Recommendations

Table 197 below highlights workforce recommendations proposed to aid GNL in closing the supply-demand gap.

Table 170: MLT Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Demand for MLTs		
MLT-1	Rethink	<p>Reduce Reliance on MLTs In New Hub-and-Spoke Delivery Model for Laboratory Services: While still in the early stages of development, the proposed new service delivery model for laboratory services in NL may carry additional opportunities to mitigate future demand for MLTs. While quantification of this opportunity in the NL context is challenging given the novelty of these models, they typically use a 2:1 MLA-MLT ratio as a guide for high-level workforce planning. Given relatively lower wages for MLAs, GNL could potentially realize substantial cost savings by filling MLT supply gaps with additional MLAs and making concurrent investments in automation technology as detailed in MLT-3.</p> <ul style="list-style-type: none"> • New delivery models that shift from an MLT-focused workforce for laboratory services to an MLA-focused model, with MLTs providing expertise and oversight, are currently being explored in other jurisdictions, including New Brunswick.²⁵⁸ • These service models are supported by investments in modern laboratory technologies that can significantly increase throughput volume through several efficiencies, like an “assembly line” rather than individual steps with each requiring documentation from lab staff. For example, previous models would require a specimen to be moved to initial testing equipment, and subsequently storage locations, with each step requiring detailed documentation. In the new model, this occurs via “track”-style technology that automatically moves samples through a pre-defined process, reducing requirements for manual staff involvement, data entry, or documentation. • Collectively, recommendations MLT-1 and MLT-3 would create a leveraged staffing model for laboratory services, wherein a lower skilled workforce comprised of a larger proportion of MLAs (relative to MLTs) is supported by investments in modern automated lab technology and equipment. More specifically, MLAs are leveraged in the pre-analytical phase of the laboratory testing process, and early stages of the analytical phase (e.g., specimen management, result generation), allowing MLTs to focus fully upon the analytical phase (e.g., results reporting and interpretation).
MLT-2	Rethink	<p>Mitigate MLT Demand by Reducing Inappropriate Requisitions and Ordering: As discussed above, Health Accord NL carries several implementation recommendations related to rebalancing GNL’s health care system. One such recommendation relates to reducing inappropriate utilization of care interventions, including laboratory services requisitions. GNL can prioritize implementation of the following initiatives as outlined by the Health Accord NL in order to maximize demand mitigation for MLT-delivered laboratory services over the 2023-32 forecast period:</p> <ul style="list-style-type: none"> • Establishment of the NL Council for Health Quality and Performance: When implemented, this body will have a significant mandate to undertake measures that will rein in unnecessary utilization of health care services. It can also provide oversight and advocacy to further drive all initiatives underlying MLT-2. • Implementation of a new integrated HIS: Amongst a wide range of potential system features, HIS are equipped with automated digital analytics tools that can proactively identify and flag orders, service requisitions, or referrals that are inappropriate, unnecessary, or against typical indications (e.g., performing an MRI for spine-related conditions). This will enable GNL to better isolate root causes of unnecessary ordering (e.g., filtering data analysis based on service type, provider type, geography), and be more strategic and comprehensive in taking steps to mitigate this demand. • Creation of a provincial Choosing Wisely Program: While Choosing Wisely NL has existed since late 2016, a scaled-up, province-wide implementation of a Choosing Wisely Program (i.e., working to achieve a Choosing Wisely Canada designation for

²⁵⁸ <https://www.cbc.ca/news/canada/new-brunswick/new-brunswick-lab-tests-centralized-dumont-moncton-1.6879321>

ID	Theme	Recommendation and Potential Impact
		<p>the NL health system), led by Quality of Care NL and supported by NLHS, carries additional opportunities through which to mitigate inappropriate ordering.</p> <ul style="list-style-type: none"> • Adoption of Family Care Teams (FCT): Stakeholders suggest that inappropriate ordering and requisitions from primary care physicians are an area of focus. FCTs have the potential to mitigate this unnecessary demand for laboratory services (and, in turn, demand for MLTs). Improved primary care access and patient-provider continuity may reduce ordering (e.g., of multiple laboratory services for a single patient) that could be replaced by better information tracking and sharing between providers and technology systems. These teams will also work to improve coordination of care, so that laboratory studies are only ordered for patients when necessary (e.g., forgoing a referral for blood work when a series of dietitian appointments could better serve the patient, and use health system resources more efficiently). <p>While there is currently no basis upon which to quantify savings in terms of future MLT demand associated with MLT-2, it is of note that realization of expected demand mitigation benefits will be directly influenced by implementation timeframes for each of the above Health Accord NL recommendations. More specifically:</p> <ol style="list-style-type: none"> i. Establishment of the Council for Health Quality and Performance will be a key accelerator for the implementation of items iii and iv listed above. ii. The sooner that a new integrated HIS is implemented, the longer the time horizon over which MLT demand mitigation benefits will be realized. However, as NLHS's business case for the provincial HIS implementation was developed concurrently to this report, the implications on provider productivity have not yet been measured and need to be explored further.
MLT-3	Automate	<p>Invest in Advanced Laboratory Technology to Mitigate MLT Demand:</p> <p>The NLHS should continue to implement advanced laboratory automation solutions which could reduce MLT workforce demand, as experienced in other jurisdictions.</p> <ul style="list-style-type: none"> • Related to MLT-1, jurisdictions including New Brunswick are investing in automation technology in tandem with a service delivery model shift towards an MLA focus. This is a measure through which to increase overall workforce productivity and efficiency (rather than simply increasing headcount as much as possible) in response to ongoing HHR and workforce planning challenges. • Two illustrative options provide examples of laboratory technology equipment in which GNL could invest as part of implementing its new lab services delivery model, and MLT-1 as a recommendation of this HHR Plan: <ul style="list-style-type: none"> ○ Walk Away Specimen Processor (WASP): A 2020 study²⁵⁹ on laboratory automation at several facilities identified efficiency benefits from technology investment in a WASP system. Researchers identified that this equipment led to specimen volume increases ranging from 24%-64% across sites, productivity increases of 18%-93%, and a decline in labour cost per specimen ranging from 15%-47%. ○ Advanced laboratory automation solutions: Examples include the Becton Dickinson (BD) Kiestra™, and cobas® connection modules (CCM) from Roche. One evaluation of the former solution combined with Lean techniques deployed at a North American microbiology lab estimated a 15% increase in specimen volume while reducing the corresponding MLT workforce by six FTEs.²⁶⁰

²⁵⁹ <https://journals.asm.org/doi/10.1128/jcm.01969-20>

²⁶⁰ <https://www.darkintelligencegroup.com/the-dark-report/laboratory-automation/combining-lean-with-lab-automation-to-get-impressive-results/>

ID	Theme	Recommendation and Potential Impact
Supply of MLTs		
MLT-4	Recruit	<p>Acquire a Guaranteed Education Seat for Hard to Recruit MLT Disciplines:</p> <ul style="list-style-type: none"> As diagnostic cytotechnology and clinical genetics technology have limited training capacity within Canada, NL is challenged with recruiting these high demand MLT disciplines by not offering a local educational program. It is recommended that GNL secure guaranteed seats in the only nationally accredited diagnostic cytotechnology program in Canada, offered at the Michener Institute of Education at UHN in Ontario. Additionally, efforts should be expanded to include securing seats in the clinical genetics technology programs also offered at the Michener Institute of Education. To incentivize students to enrol, dedicated financial support such as bursaries with return-in-service agreements should be included as part of this seat purchase agreement. Doing so will provide a pipeline of talent to replace forecasted retirements over the next several years and help sustain the supply of difficult-to-recruit disciplines in light of organic workforce turnover.
MLT-5	Recruit	<p>Increase Capacity of Local MLT Training Program:</p> <ul style="list-style-type: none"> CNA's Medical Laboratory Technology Diploma program serves as a critical source of supply for most MLT disciplines, which the province heavily relies upon. If GNL, in partnership with CNA, were to increase the capacity of the MLT program by an additional 10 students starting in the 2024/25 academic year, the first cohort with the additional students would be expected to graduate in May 2027. Currently, the program is only offered at CNA's Prince Philip Drive Campus in St. John's. To align with the province's shift towards staffing hub-and-spoke laboratory sites, offering programming at CNA's campuses located in the Central or Western Zones would support this new service delivery model. CNA, in consultation with the NLHS, should determine where these new hub sites will be established and adjust local training capacity accordingly. Both hub and select spoke sites should serve as affiliated clinical sites for students to complete their practicum requirements to facilitate recruitment to these newly established sites. This initiative can be supported by offering bursaries tied to return-in-service agreements for specific zones to provide financial support to MLT students while incentivizing them to start their careers within regional hub-and-spoke sites. Given that the program's laboratory capacity and preceptor availability can support the addition of 10 new seats in the 2024/25 academic year, this would result in an additional 60 MLTs entering the workforce by 2032.
MLT-6	Retain	<p>Continue MLT Retention Incentives Until Workforce Gap Has Been Reasonably Closed:</p> <p>As of February 2023, retention incentives for MLTs have seen a very strong uptake rate – 87% across the provincial public workforce. However, the structure of these incentives as a one-time arrangement may lead to a future spike in outflows at a time when this funding may no longer be offered. GNL should continue to offer \$2500 retention incentives until the MLT workforce gap has been reasonably closed, and tied to return-of-service agreements renewed on an ongoing basis (e.g., pay an incentive for each year of service).</p> <ul style="list-style-type: none"> Beyond retention incentives, GNL should also consider additional categories of targeted financial incentives to recruit and/or retain MLTs and new graduates: Support for relocation and establishment, e.g., to compensate MLTs for relocation and/or to ensure financial stability in the early years of practice – particularly in rural and remote geographies. These supports may be funded partially by local businesses who make at-cost contributions to retain key health care personnel in their community. Loan forgiveness or loan repayment to further incentivize MLT students and recent graduates to partially eliminate heavy financial burdens experienced by many in the early stages of their careers.

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> It is recommended that these incentives offered to MLTs are equitable both within and across professions. Otherwise, there is a risk that employees may feel undervalued in comparison to their colleagues, potentially undermining efforts to retain staff. For example, a Nunavut hospital-based laboratory's experience with retention incentives and MLTs presents a cautionary tale and illustrates the potential magnitude of supply-side impacts when retention incentives are not offered consistently or equitably. In late 2021, the Government of Nunavut paid \$10,000 incentives to nurses in the territory. In response to feeling underappreciated and offended due to this incentive not being extended to health care professions beyond nursing, five of eight MLTs based at the Qikiqtani General Hospital's laboratory resigned.²⁶¹

²⁶¹ <https://www.cbc.ca/news/canada/north/igaluit-laboratory-technologists-resigned-over-bonuses-1.6314410>

Medical Laboratory Assistants

Medical Laboratory Assistants (MLAs) are a category of health care workers delivering critical clinical support services (i.e., laboratory testing, medical imaging, specimen collection) in a variety of care settings across the NL health care system, including hospitals, private practices, and as independent blood collectors. MLAs perform a combination of duties related to laboratory tests and analyses. This may include patient registration, provision of specimen collection instructions, collection and recording of specimens used by technologists for analysis, packaging specimens for transport to other testing locations, and performing routine automated and manual tests.

MLAs in NL are required to complete a Medical Laboratory Assistant Program (typically a one-year time commitment), such as the program offered by the College of the North Atlantic's (CNAs) School of Health Sciences. Before being eligible to practice, MLAs must be registered with the profession's national certifying body, the Canadian Society of Medical Laboratory Sciences (CSMLS). Currently MLAs are not a regulated profession.

Current State Analysis

As of December 2022, there were 226 public sector MLAs in NL, distributed by NLHS zone as shown in Table 198. GNL typically recruits MLAs as graduates of the CNA's Medical Laboratory Assistant certificate program, which offers programming in Grand Falls-Windsor and in some academic years, in St. John's. CNA offers 20 seats at the Grand Falls-Windsor campus each Fall as a 1-year program. In 2022 and 2023, 16 seats were offered at the Prince Philip Drive Campus in St. John's through the Department of Immigration, Population Growth, and Skills (IPGS) funding. It is uncertain at the time of report publication if additional funding will be provided for the Fall 2024 intake.

Other MLA programs in Atlantic Canada may also carry opportunities for recruitment: Nova Scotia Community College in Nova Scotia, and New Brunswick Community College, Oulton College, and Cape Breton Career College (CBCC) in New Brunswick. International recruitment for MLAs in NL is highly limited.

Table 171: Public Sector Medical Laboratory Assistants by NLHS Zone²⁶²

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2022 Supply	110	30	37	29	20	226

In the current state, MLAs in NL are based at NLHS hospital sites and health centres, with a subset operating outside of NLHS in the private sector as independent blood collectors. Demand volume (i.e., number of laboratory services ordered) for MLA is driven primarily by the province's aging population and its underlying care needs and burden of disease. Research suggests that the total number of laboratory tests ordered for patients is highest amongst age cohorts from 65 to 84. As NL's population ages further, it can expect sustained demand increases for laboratory services supported by MLAs.²⁶³ While demographics play a factor in the geographical distribution of this future demand, it is expected to closely follow new delivery models for laboratory services. More specifically, service volumes will be consolidated in hub laboratory locations based in more densely populated areas (i.e., St. John's, Corner Brook, and Gander), with smaller sites offering narrower scopes of laboratory testing services.

Health Accord NL Calls to Action

Two Health Accord NL CTAs carry implications for the MLA workforce in NL. CTA 9.10 seeks to establish pathology and laboratory medicine as a provincial networked service based on hub-and-spoke modelling. Although this model is in the early stages of planning, it has the potential to reshape the MLA workforce across the province if fully implemented. The model will see three "hub" laboratory locations – one of each at the Health Sciences Centre in St. John's, the Corner Brook Acute Care Hospital, and the James Paton Memorial Regional Health Centre in Gander. These three hubs will support a series of "spoke" locations within their local geographic catchments. Laboratory testing volume will also be consolidated. Routine and non-urgent requisitions will flow to hub sites, while spoke sites will continue to offer specimen collection, and shift towards a "rapid response service". As part of this shift, spoke sites will primarily focus upon supporting laboratory needs tied to emergency department visits, inpatient care, and perioperative services including hematology. As a result, the Department of Health and Community Services (HCS) can anticipate increased MLA demand in the Eastern Urban, Central, and Western

²⁶² Includes only MLAs employed by NLHS (i.e., public sector MLAs).

²⁶³ <https://pubmed.ncbi.nlm.nih.gov/15747782/>

zones, and corresponding decreases in demand in the Eastern Rural and Labrador-Grenfell zones.

Relatedly, it is of note that a new provincial public health lab will be developed in St. John's, in part because current facilities at the Dr. Leonard A. Miller Centre are unsuitable to accommodate upgraded automation technologies and equipment that characterize laboratory service delivery models of the future. Current space constraints at the Health Sciences Centre campus suggest that the new hospital facility replacing St. Clare's Mercy Hospital will be the ultimate location selected for the public health laboratory.

Secondly, CTA 9.14 signals the need for a five-year improvement plan for cancer, cardiac disease, and stroke mortality rates over the next 10 years – led by corresponding provincial programs. This is aimed to achieve improved access to services delivered by these programs. For the purposes of this HHR Plan, improved access to cancer, cardiac disease, and stroke services is represented by the construction of a new acute care and cancer care facility in Corner Brook. More specifically, quantitative analysis incorporates this CTA in the form of a one-time addition to MLA headcount in the Western Zone (see Base Case Projections and Table 206 below for additional detail).

In addition, Health Accord NL features multiple implementation recommendations aimed at rebalancing NL's health care system, in part by reducing inappropriate utilization of care interventions.²⁶⁴ If successfully implemented, these recommendations represent potential MLA demand mitigation by eliminating inappropriate laboratory services volume in the future state. International research profiled within the Blueprint suggests that up to 20-30% of laboratory testing interventions in health care are of "low or no value", while NL leads Canada in the unnecessary use of several interventions. For example, NL is ranked towards the bottom amongst Canadian provinces in the proportion of requests for unnecessary tests made by patients.²⁶⁴ Implementation recommendations relevant for MLA workforce planning include developing a Learning Health and Social System (LHSS) within NL's health care system linked to Quality of Care NL and NLHS (formerly NLCHI) (and sustaining funding for the former beyond 2026), and supported by the proposed Council for Health Quality and Performance. As part of this initiative, the Province aims to build upon Choosing Wisely Canada recommendations and create a Provincial Choosing Wisely Program led by Quality of Care NL and participated in by NLHS. Collectively, these recommendations are

²⁶⁴ Health Accord NL. (2022). Our Province. Our Health. Our Future. A 10-Year Health Transformation: The Blueprint Implementation Recommendations from the Strategy Committees and Working Groups. <https://healthaccordnl.ca/final-reports/>

expected to materially reduce inappropriate utilization of laboratory services and, in turn, future demand for MLAs in the province.

Workforce Initiatives

While this group has not historically been difficult to recruit, to address MLA retention in NL, HCS introduced a one-time retention incentive in return for one year of service, offered in 2022/2023 (expired January 31, 2023). GNL reported that, as of February 2023, 157 MLAs employed by the public sector had successfully applied to receive this retention incentive, with distribution varying across Health Zones.

Stakeholder Engagement Insights

To better understand the experiences and perspectives of the MLA workforce in NL, six focus groups were held with the following five stakeholder groups:

- NLHS Laboratory Medicine Leadership
- College of the North Atlantic (CNA) Staff
- NL Association of Public and Private Employees (NAPE)
- Canadian Union of Public Employees (CUPE)

In addition, nine individuals responded to the focus group follow-up survey with additional insights. This consultation activity yielded a set of qualitative insights pertinent to the development of MLA workforce recommendations and are summarized in Table 199. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, which may not be grounded in absolute fact.

Table 172: What We Heard from Medical Laboratory Assistant Stakeholders

Theme	Insights
Hub Labs and Rural Service Volume	<ul style="list-style-type: none"> As described above, the Health Accord NL CTA 9.10 will reshape delivery models for laboratory and pathology services – specifically into a hub-and-spoke model featuring a higher level of centralization wherein test service volume from across the province flows into the Eastern Urban Zone. The Health Sciences Centre (HSC) will absorb large volumes of routine testing, while continuing to service demand for esoteric testing (e.g., renal lab, genetics) that in many cases is not available elsewhere in NL. Stakeholders anticipate exponential increases in HSC laboratory service volume, and similarly sharp rises in demand at satellite lab locations in Corner Brook and Gander. In contrast, labs based in rural geographies will shift towards offering a narrower range of laboratory testing, as routine specimen collection will flow towards hub laboratories. Stakeholders expect that service delivery model changes will increase recruitment challenges in rural areas, given that MLA duties are likely to be less advanced compared to counterparts at hub labs or in the Eastern Urban Zone. More specifically, it is expected that MLAs will support a higher proportion of daytime shifts, with registered nurses or other care providers covering MLA duties after-hours.
MLA Job Duties	<ul style="list-style-type: none"> Stakeholders highlighted that the job duties for MLAs in NL are limited relative to other provinces, which generally have MLAs performing roles that more closely resemble MLTs (as described above). This can be viewed as a competitive disadvantage for NL relative to other Canadian jurisdictions. Stakeholders also suggest that there is an opportunity to move the MLA role in NL from a preanalytical focus toward a fuller set of duties that more closely resembles other provinces. This could also enable a change of staffing ratios at laboratory sites to reduce overall labour costs. The Health Accord NL CTA 9.14 also warrants consideration from an MLA job duties perspective – stakeholders highlight that MLAs based in rural areas will not have an opportunity to work towards an expansion of job duties. MLAs based in Stephenville were recently upskilled to have their duties better match their training – this was done solely in response to a lack of MLTs available in the region.
MLA Job Classification and Training Requirements	<ul style="list-style-type: none"> According to the GNL's Job Evaluation System (JES), the MLA role is limited to one classification. This poses significant recruitment and retention challenges as MLAs that possess more expanded laboratory training are compensated the same as those performing phlebotomy. To further compound these challenges, the MLA role was recently downgraded in the JES. This has resulted in a scenario where new hire compensation can be lower than what experienced MLAs already working in the province receive, further challenging the recruitment of new MLAs.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary projections of the supply of and demand for MLAs were developed based on historical practice patterns and trends. Data on the supply of MLAs in NL was provided by NLHS representatives. Consequently, the supply captures only the stock of public sector MLAs. The following inflows and outflows were captured:

- Inflows: new hires, rehired retirees, and rehires
- Outflows: resignations, and retirements

However, some inflows and outflows were not directly captured in the data. In the historical data provided, a slight discrepancy existed between change in the supply year over year and the difference between inflows and outflows. Consequently, to ensure the change in the stock of MLAs was equal to the difference between the inflows and the outflows year over year in the historical data, “other net migrations” were estimated.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 200 outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for MLAs, as well as any limitations or caveats to the data received.

Table 173: Data Sources for Medical Laboratory Assistant Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of MLAs, by zone, five-year age cohort, and gender from 2018-2022</p> <p>Inflows: Entries into profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.)</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation)</p>	<p>Supply: Yes</p> <p>Inflows: Yes</p> <p>Outflows: Yes</p> <p><u>Source:</u> NLHS</p>	<p>Supply Year X = Supply Year X-1 + four-year average inflows – four-year average outflows</p>	<ul style="list-style-type: none"> Some inflows and outflows were not directly captured in the data. Thus, “other net migrations” were estimated to ensure the change in the supply was equal to the difference between the inflows and the outflows historically. The supply captures only the stock of public sector MLAs.
Demand	<ul style="list-style-type: none"> 10 -year population projections, by five-year age cohort, gender, and zone Average per capita spending by age and gender for nine CIHI health care spending categories. Total health care spending is used to estimate growth in demand for MLAs Average historical cost increases in health care spending. 	<p>Population projections: Yes</p> <p><u>Source:</u> NL Department of Finance</p> <p>Health spending by category by age and gender: Yes</p> <p><u>Source:</u> CIHI</p> <p>Historical cost increases in health care spending. <u>Source:</u> CIHI</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = 10-year population projections * the estimated change in average utilization * average real per person spending by age and gender</p> <p>Demand Year X = Demand Year X-1 * growth in the number of people in each age category * average change in real spending per person * the change in utilization</p>	<ul style="list-style-type: none"> Encounters with MLAs are not captured by the CIHI POP Grouper Methodology. Thus, inflation-adjusted health care spending is used to forecast the distribution of patients by age and gender across province. Change in utilization estimated based on recent trends.

Preliminary Projections

This section showcases the preliminary forecast estimates for MLAs.

Table 174: Preliminary Supply Projections for Medical Laboratory Assistants

Health Occupation	Starting supply (Dec. 2022)	New Hires (2023-2032)	Rehired Retirees (2023-2032)	Rehires (2023-2032)	Resignations (2023-2032)	Retirements (2023-2032)	Other Net Migrations (2023-2032)	Ending Supply (Dec. 2032)
Medical Laboratory Assistants	226	165	18	24	132	33	-40	228

Where: Starting supply (Dec. 2022) + New Hires (2023-2032) + Rehired Retirees (2023-2032) + Rehires (2023-2032) - Resignations (2023-2032) - Retirements (2023-2032) + Other Net Migrations (2023-2032) = Ending Supply (Dec. 2032)

In the preliminary projections, the supply of MLAs is predicted to rise by approximately 1% over the forecast period, with inflows slightly outpacing outflows, and with results varying by zone as displayed in Table 202. Outflows are expected to be driven primarily by resignations between 2023 and 2032, while new hires will represent the largest proportion of inflows.

Table 175: Regional Preliminary Supply Projections for Medical Laboratory Assistants

Zone	2018 Supply	2022 Supply	2032 Supply	Percent Change in Supply 2018 vs 2022	Percent Change in Supply 2022 vs 2032
Eastern Urban	116	110	101	-5%	-8%
Eastern Rural	34	30	25	-12%	-15%
Central	38	37	40	-3%	+9%
Western	26	29	34	+12%	+17%
Labrador-Grenfell	18	20	27	+11%	+36%
Total²⁶⁵	232	226	228	-3%	+1%

Overall MLA supply in NL is expected to increase over the forecast horizon, driven largely by increases in the Western, Labrador-Grenfell, and Central zones. In contrast, supply is expected to decline in the Eastern Urban and Eastern Rural zones if historical inflow and outflow trends continue.

²⁶⁵ Due to rounding, the sum of the supply by zone may not perfectly match the total listed.

Table 176: Preliminary Demand Projections for Medical Laboratory Assistants

Specialty	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Medical Laboratory Assistants	226	22	248	288	+16%

For MLAs, demand is estimated using data on spending from CIHI for nine health care categories and is aggregated to estimate total spending on health care by zone. To do this, a demographically driven health expenditure model was created. In this model, average spending was calculated across 40 age and gender cohorts. This model allows spending to be broken into several different components:

- The share of spending related to cost adjustments;
- The share of spending related to increased utilization in each age/gender cohort;
- The share of spending related to overall population growth; and
- The share of spending related to demographic aging.

To build this model, the following steps are undertaken:

Step 1: Allocate spending in each of the nine spending categories across the age/gender cohorts based on CIHI spending data. The sum of the spending in the nine categories equals to total health care spending.

Step 2: Calculate the average price adjustments based on CIHI health inflation (CPI) estimates. This is done to deflate average spending in each age/gender category to estimate volume increases (i.e., inflation adjusted spending).

Step 3: Estimate the age and gender adjusted real (inflation-adjusted) per person spending over the last decade to calculate how utilization has changed in health care overall.

Step 4: Project health care utilization based on past trends and discussions with subject matter experts for each of the nine spending categories. For health care overall, it is estimated that utilization will increase on average by 0.6%. This varies by age and gender cohort. The change in utilization was estimated based on trends in utilization since 1986.

Step 5: Project total volumes for total health care in each age/gender cohort by multiplying the number of expected people in each age/gender cohort each year by the average cost of an individual in that age/gender cohort. This number takes account of average utilization in the age/gender cohort.

Over the last 10 years, real total health care spending has risen by an average pace of 1.2% per year. Excluding the effects of population growth and aging, the overall number remains constant.

Over the next 10 years, total health care volumes are projected to grow by an average of 1.5% per year. Of this, 0.0% is due to population growth, +0.6% is due to changes in utilization and 0.9% is due to population aging. As mentioned in step 4, the change in utilization was estimated based on trends in utilization since 1986. This means that, if you strip out the effects of inflation, the aging population, and population growth, what is spent on an individual in 1997 is almost the same as what is spent on an individual in 2022.

Over the entire forecast period, demand for MLAs in NL is expected to increase by approximately 16%.

Table 204 showcases the predicted annual increase in inflation-adjusted health care spending (i.e., volumes), which in this case is used as a proxy with which to estimate growth in demand by zone for the forecast period.

Table 177: Regional Annual Growth in Demand for Medical Laboratory Assistants

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	1.7%	1.8%	1.8%	1.7%	1.8%	1.8%	1.8%	1.7%	1.8%	1.7%
Eastern Rural	1.4%	1.3%	1.4%	1.5%	1.4%	1.4%	1.3%	1.3%	1.4%	1.2%
Central	1.2%	1.2%	1.3%	1.3%	1.2%	1.1%	1.1%	1.1%	1.3%	1.0%
Western	1.3%	1.3%	1.4%	1.3%	1.4%	1.3%	1.4%	1.3%	1.2%	1.0%
Labrador-Grenfell	1.0%	1.3%	1.1%	1.2%	1.3%	1.2%	1.2%	1.2%	1.3%	1.2%
NL	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.4%	1.5%	1.4%

MLAs perform a variety of clinical support service duties, and, as such, overall health care service volume can be viewed as the primary driver for growth in this volume. For the purposes of MLA analysis within this HHR Plan, total health care spending is used as a proxy to quantify this service volume. Given that the Eastern Urban zone is predicted to see the largest population growth (and, therefore, growth in

anticipated service volume demanded by patients), the increase in preliminary demand for MLAs is predicted to be highest in Eastern Urban.

Table 178: Preliminary Gap Analysis for Medical Laboratory Assistants

Specialty	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Medical Laboratory Assistants	226	248	22	228	288	60	+38

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022. As shown in Table 205, the gap between supply and demand for MLAs is expected to increase by 38 MLAs between 2022 and 2032. If historical inflow and outflow trends remain constant, NL will need to hire 60 additional MLAs to meet demand across all geographies.

Base Case Projections

For MLAs, the only applicable base case assumption applied to the preliminary projections stems from Health Accord NL CTA 9.14 (mortality rate improvement plan for cancer, cardiac disease, and stroke led by provincial programs for these disease entities). Improved access to services delivered by these provincial programs is in part represented by the construction of a new acute care and cancer care facility in Corner Brook. For the purposes of MLA projections, this assumption is represented as a one-time addition of six employees when the facility opens in June 2024 (i.e., +6 headcount increase in the Western Zone). Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

Table 179: Base Case Assumptions for Medical Laboratory Assistants

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	Demand	<ul style="list-style-type: none"> One-time addition when facility opens in June 2024 	<ul style="list-style-type: none"> Western: <ul style="list-style-type: none"> 2024: +6

Table 207 illustrates the annual quantitative impacts for the base case item included in the MLA analysis.

Table 180: Annual Quantitative Impacts of the Base Case Item for Medical Laboratory Assistants

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Health Accord NL										
CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	0	6	6	6	6	6	6	6	6	6
Total Demand Impacts	0	6								

After incorporating this base case item into the analysis, MLA demand over the 2023 to 2032 forecast period rises to 294, while supply is not impacted. Table 208 highlights the gap analysis over the course of the forecast.

Table 181: Final Annual Provincial Gap Analysis for Medical Laboratory Assistants

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	226	229	226	225	225	225	225	226	226	227	228
Demand	248	252	261	265	269	273	277	281	285	290	294
Gap	22	23	35	40	44	48	52	55	59	63	66
Gap as a Percent of Supply	10%	10%	15%	18%	20%	21%	23%	24%	26%	28%	29%

The analysis suggests that magnitude of the gap between demand and supply is expected to grow annually between 2023 and 2032. Demand for MLAs is expected to consistently exceed supply for the entirety of the forecast period.

Workforce Recommendations

Table 209 below provides workforce recommendations proposed to aid GNL in closing this gap.

Table 182: MLA Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Demand for MLAs		
MLA-1	Rethink	<p>Mitigate MLA Demand by Reducing Inappropriate Requisitions and Ordering:</p> <p>As discussed above, Health Accord NL carries several implementation recommendations related to rebalancing NL's health care system. One such recommendation relates to reducing inappropriate utilization of care interventions, including laboratory services requisitions. GNL can prioritize implementation of the following initiatives as outlined by the Health Accord NL in order to maximize demand mitigation for MLA-delivered laboratory services over the 2023-32 forecast period:</p> <ul style="list-style-type: none"> • Establishment of the NL Council for Health Quality and Performance: When implemented, this body will have a significant mandate to undertake measures that will rein in unnecessary utilization of health care services. It can also provide oversight and advocacy to further drive all initiatives underlying MLA-1. • Implementation of a new integrated HIS: Amongst a wide range of potential system features, HIS' are equipped with automated digital analytics tools that can proactively identify and flag orders, service requisitions, or referrals that are inappropriate, unnecessary, or against typical indications (e.g., performing an MRI for spine-related conditions). This will enable GNL to better isolate root causes of unnecessary ordering (e.g., filtering data analysis based on service type, provider type, geography), and be more strategic and comprehensive in taking steps to mitigate this demand. • Creation of a provincial Choosing Wisely Program: While Choosing Wisely NL has existed since late 2016, a scaled-up, provincewide implementation of a Choosing Wisely Program (i.e., working to achieve a Choosing Wisely Canada designation for the NL health system), led by Quality of Care NL and supported by NLHS, carries additional opportunities through which to mitigate inappropriate ordering. • Adoption of FCTs: Stakeholders suggest that inappropriate ordering and requisitions from primary care physicians are an area of focus. FCTs have the potential to mitigate this unnecessary demand for laboratory services (and, in turn, demand for MLAs). Improved primary care access and patient-provider continuity may reduce ordering (e.g., of multiple laboratory services for a single patient) that could be replaced by better information tracking and sharing between providers and technology systems. These teams will also work to improve coordination of care, so that laboratory studies are only ordered for patients when necessary (e.g., forgoing a referral for blood work when a series of dietitian appointments could better serve the patient, and use health system resources more efficiently). <p>While there is currently no basis through which to quantify savings in terms of future MLA demand associated with MLA-1, it is of note that realization of expected demand mitigation benefits will be directly influenced by implementation timeframes for each of the above Health Accord NL recommendations. More specifically:</p> <ol style="list-style-type: none"> i. Establishment of the Council for Health Quality and Performance will be a key accelerator for the implementation of items iii and iv listed above. ii. The sooner a new integrated HIS is implemented, the longer the time horizon over which MLA demand mitigation benefits will be realized. However, as GNL's business case for the provincial HIS implementation was developed concurrently to this report, the implications on provider productivity have not yet been measured and need to be explored further.
MLA-2	Automate	<p>Invest in Advanced Laboratory Technology to Mitigate MLA Demand:</p> <p>Implementing advanced laboratory automation solutions could reduce MLA workforce demand, as experienced in other jurisdictions.</p> <ul style="list-style-type: none"> • Jurisdictions including New Brunswick are investing in automation technology in tandem with a service delivery model shift towards an MLA focus. This is a measure through which to increase overall workforce productivity and efficiency (rather than simply increasing

ID	Theme	Recommendation and Potential Impact
Supply of MLAs		
MLA-3	Recruit	<p>Establish a Permanent Local MLA Training Site in St. John's</p> <ul style="list-style-type: none"> CNA's Medical Laboratory Assistant certificate program serves as the province's critical source of supply for MLAs. Currently, the program is only offered at the Grand Falls-Windsor campus, with funding for 20 seats annually. However, due to IPGS funding, 16 additional seats were offered at the Prince Philip Drive Campus in the 2022-2023 and 2023-2024 academic years, thereby increasing the total number of seats within the province to 36. It is recommended that GNL, in partnership with CNA, secure funding to permanently establish the program previously offered at the Prince Philip Drive Campus in St. John's in the 2024-2025 academic year. This program should offer eight seats, and the first cohort with the additional students would be expected to graduate in May 2025. Although 16 seats were initially offered, this would result in an oversupply of MLAs by 2032. In order to right-size the MLA workforce, eight additional MLAs graduating per year would more appropriately meet the province's HHR needs. Furthermore, offering training capacity in both the Central and Eastern Zones aligns with the province's new service delivery model for laboratory services leveraging hub-and-spoke sites. Given that historically there has been adequate demand for the program to support 16 seats in St. John's, and that classroom/laboratory capacity has already been established, the addition of 8 permanent MLA seats would result in an additional 64 MLTs entering the workforce by 2032.
MLA-4	Recruit / Retain	<p>Continue MLA Retention Incentives Until Workforce Gap Has Been Reasonably Closed:</p> <p>As of February 2023, retention incentives for MLAs have seen a very strong uptake rate – approximately 70% across the provincial workforce. However, the structure of these incentives as a one-time arrangement may lead to a future spike in outflows at a time when this funding may no longer be offered. To avoid a pronounced short-term outflow within the existing MLA workforce, GNL should continue to offer MLA retention incentives until workforce gap has been reasonably closed, and tied to return-of-service agreements renewed on an ongoing basis (e.g., pay an incentive for each year of service).</p> <ul style="list-style-type: none"> Beyond retention incentives, GNL should also consider additional categories of targeted financial incentives to recruit and/or retain MLAs: <ul style="list-style-type: none"> Support for relocation and establishment, e.g., to compensate MLAs for relocation and/or to ensure financial stability in the early years of practice – particularly in rural and remote geographies. These supports may be funded partially by local businesses who make at-cost contributions to retain key health care personnel in their community.

²⁶⁶ <https://journals.asm.org/doi/10.1128/jcm.01969-20>

²⁶⁷ <https://www.darkintelligencegroup.com/the-dark-report/laboratory-automation/combining-lean-with-lab-automation-to-get-impressive-results/>

ID	Theme	Recommendation and Potential Impact
MLA-5	Recruit / Retain	<p>Expand MLA Job Duties:</p> <p>Stakeholders consulted in developing this HHR Plan highlight that the range of responsibilities that MLAs typically perform in NL is limited relative to other provinces. This represents a competitive disadvantage for GNL in both MLA recruitment and retention. Enabling MLAs to perform duties that fully match their training would improve career advancement opportunities within this workforce and could also enable a change in staffing ratios at lab sites to reduce costs.</p> <ul style="list-style-type: none"> • In NL, MLAs are generally confined to preanalytical tasks, only providing expanded duties in instances where MLTs may be in short supply. In many other provinces, MLAs perform roles that more closely resemble MLTs. • Stakeholders pointed to a scenario in which MLAs in Stephenville were successfully enabled to perform duties that better match their training in response to a lack of MLTs in the local geography. GNL should look to implement this change in all geographies, in order to: <ul style="list-style-type: none"> ◦ Improve training and career advancement opportunities for MLAs (as they can develop an expanded skill set rather than being restricted in their current roles by a relatively narrow job duties); and ◦ Enable the new provincial hub-and-spoke model for laboratory services, which will more heavily leverage MLAs and require them to provide an expanded set of job duties (see recommendation MLA-1 above).

Medical Radiation Technologists

Medical radiation technologists (MRT) deliver critical clinical support services through delivering medical imaging and therapy, and radiation treatment. The majority of the current MRT workforce in NL are employed by the public health system- many of whom support acute care and critical care. MRTs work within four disciplines: radiological technology, nuclear medicine, magnetic resonance imaging (MRI), or radiation therapy.²⁶⁸

MRTs working in radiological technology are referred to as Diagnostic Imaging (DI) Technologists. The DI Technologist I conduct essential technical diagnostic imaging services, producing x-ray or Computed Tomography (CT) images interpreted by physicians for medical diagnosis. Responsibilities include operating technical equipment and PACS for image manipulation, assisting in complex procedures, equipment maintenance, quality control, and adhering to radiation safety protocols.²⁶⁹ The DI Technologist II performs routine as well as more specialized and intricate diagnostic imaging procedures like fluoroscopic procedures and mammography. These images are interpreted by physicians to aid in medical diagnosis.²⁷⁰ The DI Technologist III conducts advanced and complex diagnostic imaging tests and procedures such as intravenous pyelogram with computerized tomography, MRI, diagnostic ultrasound, echocardiogram, or angiogram.²⁷¹ The Diagnostic Imaging Technologist IV provides technical leadership and supervision, overseeing diagnostic imaging activities in a full-service department or across multiple sites. They ensure efficient staff and equipment utilization, supervise lower-level technologists, and perform complex or specialized tests and procedures to maintain quality standards.²⁷²

The Nuclear Medicine Technologist II and III both perform specialized technical work related to standardized and complex diagnostic and therapeutic Nuclear Medicine procedures. As part of their responsibilities, they conduct imaging and non-imaging procedures, administer radiopharmaceuticals to patients through various methods, operate technical equipment, maintain equipment, ensure quality control, and analyze data using computer systems.²⁷³ The Nuclear Medicine Technologist III additionally oversees the daily

²⁶⁸ [Canadian Association of Medical Radiation Technologists | Become a Medical Radiation Technologist \(camrt.ca\)](https://www.camrt.ca)

²⁶⁹ <https://www.gov.nl.ca/exec/tbs/files/jobeval-jes-d-diagnostic-imaging-technologist-i.pdf>

²⁷⁰ <https://www.gov.nl.ca/exec/tbs/files/jobeval-jes-d-diagnostic-imaging-technologist-ii-formerly-diagnostic-imaging-technologist-ii-non-supervisory.pdf>

²⁷¹ <https://www.gov.nl.ca/exec/tbs/files/jobeval-jes-d-diagnostic-imaging-technologist-iii-formerly-diagnostic-imaging-technologist-ii-supervisory.pdf>

²⁷² <https://www.gov.nl.ca/exec/tbs/files/jobeval-jes-d-diagnostic-imaging-technologist-iv.pdf>

²⁷³ <https://www.gov.nl.ca/exec/tbs/files/jobeval-jes-n-nuclear-medicine-technologist-ii.pdf>

operations of a Nuclear Medicine Division, supervises staff, conducts routine and specialized nuclear medicine testing, manages radioactive materials administration, handles administrative tasks such as staffing, and establishes and enforces quality control guidelines, policies, procedures, and radiation safety standards.²⁷⁴

For the purpose of this Health Human Resources (HRR) Plan, please note that MRTs working in radiation therapy will be addressed later in the report (see **Radiation Therapists** section for further details).

All DI Technologists are required at minimum to complete a three-year Specialized Diploma in Medical Radiography. This program is currently offered in province by the College of the North Atlantic (CNA). MRTs working in nuclear medicine are required to complete a three-year, full-time Advanced Specialized Diploma in Nuclear Medicine Technology, or a Bachelor of Science Degree in Nuclear Medicine. Those working in the MRI discipline required to complete a three-year Specialized Diploma in Magnetic Resonance Imaging as a first or second discipline program.

All practicing MRTs are required to successfully complete the Canadian Association of Medical Radiation Technologists (CAMRT) certification exam, to be formally designated in one of these modalities. Although MRTs are not currently a regulated profession in NL, efforts are underway to bring the profession under the regulatory purview of the NL Council of Health Professionals (NLCHP) in the future.

Current State Analysis

As of December 2022, there were 377 public sector MRTs in NL who are distributed by NLHS zone as shown in Table 210.²⁷⁵ The only source of local MRT supply is CNA's Medical Radiography program.

The provincial Medical Imaging program does not recruit internationally certified applicants unless they have completed an assessment from the CAMRT and passed the national certification exam. They must also possess English language proficiency.

²⁷⁴ <https://www.gov.nl.ca/exec/tbs/files/jobeval-jes-n-nuclear-medicine-technologist-iii.pdf>

²⁷⁵ Please note that radiation therapists are reviewed separately and excluded from the MRT analysis.

Table 183: Public Sector Medical Radiation Technologists by NLHS Zone²⁷⁶

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2022 Supply	179	48	67	50	33	377

In the current state, the majority of MRTs support acute care and critical care services – which explains the distribution across NLHS zones shown in Table 210, with approximately half of MRTs in the province being based in the Eastern Urban Zone. Demand volume (i.e., the number of imaging studies ordered) for MRTs is driven primarily by the province's aging population and its underlying care needs and burden of disease – particularly the increasing prevalence of musculoskeletal conditions, and growing demand for services that are supported by medical imaging. Research suggests that age cohorts 60 and older account for the largest proportion of increased demand for CT studies in emergency departments. These age cohorts average over 45 CT studies per 1,000 ED visits, while age cohorts from 45-59 and 30-44 average 25 and 20 studies per 1,000 visits, respectively. As NL's population ages further, it can expect sustained demand increases for medical imaging and therapy, and radiation therapy services supported by MRTs.²⁷⁷

Education

CNA's Medical Radiography is the sole source of local MRT Radiological Technologists supply in NL. The program is based in St. John's and offers 14 seats each year. CNA also offers X-Ray Skills for Medical Laboratory Technologists (MLTs) education for Combined Lab/X-Ray Technologists (CLXT). CLXTs are full scope, certified MLTs that complete additional training to provide limited scope x-ray services, typically within rural or remote sites without full-scope MRTs.

As educational programs for the three other disciplines are not offered in province, GNL also regularly recruits MRTs from elsewhere within Atlantic Canada (e.g., Dalhousie University Faculty of Health) or beyond (e.g., the Michener Institute of Education at UHN / University Toronto).²⁷⁸ Currently, nuclear medicine training is only available at Dalhousie University in the Atlantic, at Collège Ahuntsic, Mohawk McMaster, and the Michener Institute of Education at UHN / University Toronto in Ontario, and at Southern Alberta Institute of Technology (SAIT), and British Columbia Institute of Technology in Western

²⁷⁶ Includes only MRTs employed by NLHS (i.e., public sector MRTs).

²⁷⁷ <https://journals.sagepub.com/doi/10.1177/2058460119860404>

²⁷⁸ <https://www.camrt.ca/mrtcareer/>

Canada.²⁷⁹ MRI education is offered as a first discipline program at Dawson College and Collège Ahuntsic in Ontario, and as a second discipline program at Dalhousie University in Nova Scotia, Mohawk McMaster, the Michener Institute of Education at UHN / University Toronto, Cambrian College, and Red River College Polytechnic in Ontario. SAIT and British Columbia Institute of Technology in Western Canada offer MRI as both a first and second discipline program²⁷⁹. As a result, these subdisciplines are in high demand nationally, and NL is challenged with competing with other Atlantic provinces to recruit from Atlantic Canada's only source of Nuclear Medicine and MRI Technologists.

Health Accord NL Calls to Action

Health Accord Call to Action (CTA) 9.14 signals the need for a five-year improvement plan for cancer, cardiac disease, and stroke mortality rates over the next 10 years – led by corresponding provincial programs. This is aimed to achieve improved access to services delivered by these programs. For the purposes of this HHR Plan, improved access to cancer, cardiac disease, and stroke services is represented by the construction of a new acute care and cancer care facility in Corner Brook. More specifically, quantitative analysis incorporates this CTA in the form of a one-time addition to MRT headcount in the Western Zone (see Base Case Projections and Table 219 below for additional detail).

In addition, Health Accord NL's "Blueprint" features multiple implementation recommendations aimed at rebalancing NL's health care system, in part by reducing inappropriate utilization of care interventions.²⁸⁰ If successfully implemented, these recommendations represent potential MRT demand mitigation by eliminating inappropriate medical imaging services volume in the future state. International research profiled within the Blueprint suggests that up to 20-30% of medical imaging interventions in health care are of "low or no value", and NL leads Canada in the unnecessary use of several interventions. For example, in 2019/20, the Canadian national average for CT scans per one thousand patients was 143, while NL's average was 190 – approximately 32% higher. Implementation recommendations relevant for MRT workforce planning include developing a Learning Health and Social System (LHSS) within NL's health care system linked to Quality of Care NL and NLHS (and sustaining funding for the former beyond 2026), and supported by the

²⁷⁹ [Canadian Association of Medical Radiation Technologists | Become a Medical Radiation Technologist \(camrt.ca\)](https://camrt.ca)

²⁸⁰ Health Accord NL. (2022). Our Province. Our Health. Our Future. A 10-Year Health Transformation: The Blueprint Implementation Recommendations from the Strategy Committees and Working Groups. <https://healthaccordnl.ca/final-reports/>

proposed Council for Health Quality and Performance. As part of this initiative, the Province aims to build upon Choosing Wisely Canada recommendations and create a Provincial Choosing Wisely Program led by Quality of Care NL and participated in by NLHS. Collectively, these recommendations are expected to materially reduce inappropriate utilization of medical imaging studies and, in turn, future demand for MRTs in the province.

Workforce Initiatives

To address MRT retention in NL, HCS has introduced retention incentives in return for one year of service, offered in 2022/23. GNL reported that, as of February 2023, 315 MRTs employed by the public sector had successfully applied to receive this retention incentive, with distribution varying across Health Zones.

In response to the anticipated shifts in population demographics and the demand for medical imaging and radiation treatment services supported by MRTs, HCS has already taken steps to strengthen the supply of MRTs within the public sector via the following initiatives:

- **Signing Bonuses:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions, and tiered to address geographic considerations with an associated return-in-service of one or two years.
- **Health Professional Bursaries:** \$5,000 to \$10,000 bursaries are awarded for difficult-to-fill positions, available to MRT students who sign a service agreement for one or two years of service post-graduation.

Stakeholder Engagement Insights

To better understand the experiences and perspectives of the MRT workforce in NL, four focus groups were held with:

- NLHS Medical Imaging Leadership
- College of the North Atlantic (CNA)
- NL Association of Public and Private Employees (NAPE)
- NL Council of Health Professionals (NLCHP)

In addition, six individuals responded to the focus group follow-up survey with additional insights. This consultation activity yielded a set of qualitative insights pertinent to the development of MRT workforce recommendations and are summarized in Table 211. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, which may not be grounded in absolute fact.

Table 184: What We Heard from Medical Radiation Technologist Stakeholders

Theme	Insights
Educational Programming and Job Training	<ul style="list-style-type: none"> Stakeholders raised several discussion points related to MRT training and certification. Firstly, the CLXT program offered at CNA is not currently accredited, meaning that maintaining competencies, especially for the purpose of licensing, will be difficult to maintain in the future. The lack of bursary funding for MRTs over the past three years was also raised as a barrier to recruitment. Stakeholders suggest that this may be short-sighted in that a vacant MRT position was generally considered a prerequisite to additional funds being invested in training, rather than strategically thinking about succession planning and funding students interested in the MRT career path before recruitment and retention reaches a crisis state. Stakeholders suggested that the optimal recruitment and retention strategy for MRTs should prioritize local applicants. This is in part to mitigate an observed cyclical pattern of out-of-province graduates getting trained in NL and using provincial resources, only to return to their home province upon accumulating adequate work experience. Historically, CNA's Medical Radiography diploma program (based in St. John's) has faced declining pass rates for the corresponding certification exam. Given that a substantial proportion of applicants failed this exam in the past two years, stakeholders suggest there is an opportunity to reconsider program admission criteria and curriculum. This challenges CNA's student recruitment for the program and, in turn, GNL's MRT recruitment efforts as students may opt to pursue MRT education out-of-province. With a national shortage of MRTs, provinces and territories are increasingly competing amongst each other on recruitment as retention incentives and compensation increases accelerate.
Recruitment and Retention	<ul style="list-style-type: none"> Per stakeholder input, the collective agreement, and its implications for shifts from rural to urban geographies, represent a barrier to MRT recruitment and retention in the current state. In rural areas, only the DI Technology I role is available.²⁸¹ To advance to the DI Technologist II, III or IV roles, MRTs in rural areas must relocate to urban areas to utilize more advanced modalities to enable career advancement. As a result, stakeholders view this as a form of "poaching" within its existing MRT workforce. Relatedly, GNL would historically use Nuclear Medicine Technicians as backfill for the Nuclear Medicine Technologist II role. However, the Technician pool is currently insufficient to sustain this practice without cancelling patient procedures. As a result, there is limited options for relief available to Nuclear Medicine Technologists, thereby affecting retention.
CLXT Role	<ul style="list-style-type: none"> The x-ray portion of the CLXT position is seen as undesirable, due to the expectation for a full scope MLT to take on the added responsibility of delivering restricted x-ray services without receiving extra compensation (although there have been recent efforts in collective bargaining to have corresponding training costs reimbursed). In rural geographies, this is less of a consideration as x-ray volumes are generally low, such that a CLXT role would not represent a doubling of workload. A drawback is that rural CLXTs would not be using their combined skillsets as often, making it difficult for them to feel confident in practicing their expertise when serving in a combined role.

²⁸¹ <https://www.gov.nl.ca/exec/tbs/files/jobeval-jes-d-diagnostic-imaging-technologist-i.pdf>

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary projections of the supply of and demand for MRTs were developed based on historical practice patterns and trends. Data on the supply of MRTs in NL was provided by NLHS. Consequently, the supply captures only the stock of public sector MRTs. The following inflows and outflows were captured:

- Inflows: new hires, rehired retirees, and rehires
- Outflows: resignations, and retirements

However, some inflows and outflows were not directly captured in the data. In the historical data provided, a slight discrepancy existed between change in the supply year over year and the difference between inflows and outflows. Consequently, to ensure the change in the stock of MRTs was equal to the difference between the inflows and the outflows year over year in the historical data, “other net migrations” were estimated.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 212 outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for MRTs, as well as any limitations or caveats to the data received.

Table 185: Data Sources for Medical Radiation Technologist Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of MRTs, by zone, five-year age cohort, and gender from 2018-2022</p> <p>Inflows: Entries into profession, split by reason</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation)</p>	<p>Supply: Yes</p> <p>Inflows: Yes</p> <p>Outflows: Yes</p>	$\text{Supply Year } X = \text{Supply Year } X-1 + \text{four-year average inflows} - \text{four-year average outflows}$	<ul style="list-style-type: none"> Some inflows and outflows were not directly captured in the data. Thus, "other net migrations" were estimated to ensure the change in the supply was equal to the difference between the inflows and the outflows historically. The supply captures only the stock of public sector MRTs.
Demand	<ul style="list-style-type: none"> 10-year population projections, by five-year age cohort, gender, and zone Average per capita spending by age and gender for nine CIHI health care spending categories. Total health care spending is used to estimate growth in demand for MRTs Average historical cost increases in health care spending. 	<p>Population projections: Yes</p> <p>Source: NL Department of Finance</p> <p>Health spending by category by age and gender: Yes</p> <p>Source: CIHI</p> <p>Historical cost increases in health care spending. Yes</p> <p>Source: CIHI</p>	$\text{Demand 2022} = \text{supply 2022} + \text{vacancies 2022}$ $\text{Growth in demand (2023-2032)} = 10\text{-year population projections} * \text{the estimated change in average utilization} * \text{average real per person spending by age and gender}$ $\text{Demand Year } X = \text{Demand Year } X-1 * \text{growth in the number of people in each age category} * \text{average change in real spending per person} * \text{the change in utilization}$	<ul style="list-style-type: none"> Encounters with MRTs are not captured by the CIHI POP Grouper Methodology. Thus, inflation-adjusted health care spending is used to forecast the distribution of patients by age and gender across province. Change in utilization estimated based on recent trends.

Preliminary Projections

This section showcases the preliminary forecast estimates for MRTs.

Table 186: Preliminary Supply Projections for Medical Radiation Technologists

Health Occupation	Starting supply (Dec. 2022)	New Hires (2023-2032)	Rehired Retirees (2023-2032)	Rehires (2023-2032)	Resignations (2023-2032)	Retirements (2023-2032)	Other Net Migrations (2023-2032)	Ending Supply (Dec. 2032) ²⁸²
Medical Radiation Technologists	377	158	15	43	143	67	2	384

Where: Starting supply (Dec. 2022) + New Hires (2023-2032) + Rehired Retirees (2023-2032) + Rehires (2023-2032) - Resignations (2023-2032) - Retirements (2023-2032) + Other Net Migrations (2023-2032) = Ending Supply (Dec. 2032)

In the preliminary projections, the supply of MRTs is predicted to rise by approximately 2% over the forecast period, with inflows generally outpacing outflows, and with results varying by zone as displayed in Table 214. Outflows are expected to be driven primarily by resignations over the 2023 to 2032 forecast period, while new hires are expected to represent the largest proportion of inflows.

Table 187: Regional Preliminary Supply Projections for Medical Radiation Technologists

Zone	2018 Supply	2022 Supply	2032 Supply	Percent Change in Supply 2018 vs 2022	Percent Change in Supply 2022 vs 2032
Eastern Urban	178	179	175	+1%	-2%
Eastern Rural	48	48	50	0%	+4%
Central	63	67	67	+6%	0%
Western	50	50	48	0%	-4%
Labrador-Grenfell	26	33	44	+27%	+34%
Total	365	377	384	+3%	2%

If historical trends continue, preliminary supply projections are expected to be mostly driven by increases in the Labrador-Grenfell Zone, with supply remaining relatively stable in all other NLHS zones.

²⁸² Due to rounding, the ending supply may not perfectly match the total listed.

Table 188: Preliminary Demand Projections for Medical Radiation Technologists

Specialty	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Medical Radiation Technologists	377	33	410	476	+16%

For MRTs, demand is estimated using data on spending from CIHI for nine health care categories, and is aggregated to estimate total spending on health care by zone. To do this, a demographically driven health expenditure model was created. In this model, average spending was calculated across 40 age and gender cohorts. This model allows spending to be broken into several different components:

- The share of spending related to cost adjustments;
- The share of spending related to increased utilization in each age/gender cohort;
- The share of spending related to overall population growth; and
- The share of spending related to demographic aging.

To build this model, the following steps are undertaken:

Step 1: Allocate spending in each of the nine spending categories across the age/gender cohorts based on CIHI spending data. The sum of the spending in the nine categories equals to total health care spending.

Step 2: Calculate the average price adjustments based on CIHI health inflation (CPI) estimates. This is done to deflate average spending in each age/gender category to estimate volume increases (i.e., inflation adjusted spending).

Step 3: Estimate the age and gender adjusted real (inflation-adjusted) per person spending over the last decade to calculate how utilization has changed in health care overall.

Step 4: Project health care utilization based on past trends and discussions with subject matter experts for each of the nine spending categories. For health care overall, it is estimate that utilization will increase on average by 0.6%. This varies by age and gender cohort. The change in utilization was estimated based on trends in utilization since 1986.

Step 5: Project total volumes for total health care in each age/gender cohort by multiplying the number of expected people in each age/gender cohort each year by the average cost of an individual in that age/gender cohort. This number takes account of average utilization in the age/gender cohort.

Over the last 10 years, real total health care spending has risen by an average pace of 1.2% per year. Excluding the effects of population growth and aging, the overall number remains constant.

Over the next 10 years, total health care volumes are projected to grow by an average of 1.5% per year. Of this, 0.0% is due to population growth, +0.6% is due to changes in utilization and 0.9% is due to population aging. As mentioned in step 4, the change in utilization was estimated based on trends in utilization since 1986. This means that, if you strip out the effects of inflation, the aging population, and population growth, what is spent on an individual in 1997 is almost the same as what is spent on an individual in 2022.

Over the entire forecast period, demand for MRTs in NL is expected to increase by approximately 16%.

Table 216 below showcases the predicted annual increase in inflation-adjusted total health care spending (i.e., volumes), which in this case is used as a proxy with which to estimate growth in demand by zone for the forecast period.

Table 189: Regional Annual Growth in Demand for Medical Radiation Technologists

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	1.7%	1.8%	1.8%	1.7%	1.8%	1.8%	1.8%	1.7%	1.8%	1.7%
Eastern Rural	1.4%	1.3%	1.4%	1.5%	1.4%	1.4%	1.3%	1.3%	1.4%	1.2%
Central	1.2%	1.2%	1.3%	1.3%	1.2%	1.1%	1.1%	1.1%	1.3%	1.0%
Western	1.3%	1.3%	1.4%	1.3%	1.4%	1.3%	1.4%	1.3%	1.2%	1.0%
Labrador-Grenfell	1.0%	1.3%	1.1%	1.2%	1.3%	1.2%	1.2%	1.2%	1.3%	1.2%
NL	1.5%	1.4%								

MRTs perform a variety of clinical support service duties, and, as such, overall health care service volume can be viewed as the primary driver for growth in this volume. For the purposes of the MRT analysis within this HHR Plan, total health care spending is used as a proxy to quantify this service volume. Given that the Eastern Urban zone is predicted to see the largest population growth (and, therefore, growth

in anticipated service volume demanded by patients), the increase in demand for MRTs is highest in that zone. Overall, demand is predicted to increase between 1% and 2% over the forecast period for all zones.

Table 190: Preliminary Gap Analysis for Medical Radiation Technologists

Specialty	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Medical Radiation Technologists	377	410	33	384	476	92	+59

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022. The gap between supply and demand for MRTs is expected to increase by 59 between 2022 and 2032. If historical inflow and outflow trends remain constant, NL will need to hire 92 additional MRTs to meet demand across all geographies.

Base Case Projections

For MRTs, the only base case assumption applied to the projections stems from Health Accord NL CTA 9.14 (mortality rate improvement plan for cancer, cardiac disease, and stroke led by provincial programs for these disease entities). Improved access to services delivered by these provincial programs is in part represented by the construction of a new acute care and cancer care facility in Corner Brook. For the purposes of MRT projections, this assumption is represented as a one-time addition of five employees when the facility opens in June 2024 (i.e., +5 headcount increase in the Western zone). Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

Table 191: Base Case Assumptions for Medical Radiation Technologists

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	Demand	<ul style="list-style-type: none"> One-time addition when facility opens in June 2024 	<ul style="list-style-type: none"> Western: <ul style="list-style-type: none"> 2024: +5

Table 219 illustrates the annual quantitative impacts for the base case item included in the MRT analysis.

Table 192: Annual Quantitative Impacts of the Base Case Items for Medical Radiation Technologists

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	0	5	5	5	5	5	5	5	5	5
Total Demand Impacts	0	5								

After incorporating this base case item into the analysis, MRT is expected to rise to 481 (the demand for MRTs in 2032 after incorporating the base case) from 476 (demand in 2032 without incorporating the base case), while supply is not impacted. Table 220 highlights the gap analysis over the course of the forecast.

Table 193: Final Annual Provincial Gap Analysis for Medical Radiation Technologists

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	377	374	372	373	374	375	377	379	381	383	384
Demand	410	416	427	434	440	447	454	461	467	474	481
Gap	33	42	55	61	66	72	77	82	86	91	97
Gap as a Percent of Supply	9%	11%	15%	16%	18%	19%	20%	22%	23%	24%	25%

The analysis suggests that the magnitude of the gap between demand and supply is expected to grow annually between 2023 and 2032.

Demand for MRTs is expected to consistently exceed supply for the entirety of the forecast period.

Workforce Recommendations

Table 221 below provides workforce recommendations proposed to aid GNL in closing this gap.

Table 194: MRT Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Demand for MRTs		
MRT-1	Automate	<p>Invest in Advanced Imaging Technology to Mitigate MRT Demand:</p> <p>GNL can invest in a range of advanced medical imaging technologies in order to improve the overall efficiency of the provincial MRT workforce.</p> <ul style="list-style-type: none"> Many domestic and international jurisdictions are investing in advanced imaging technology to improve service efficiency and capacity. This is a measure through which to increase overall workforce productivity and efficiency (rather than simply increasing headcount as much as possible), partially as a response to ongoing HHR and workforce planning challenges. A number of technology applications in medical imaging provide examples of medical imaging equipment in which GNL could invest in order to improve the overall efficiency of the provincial MRT workforce, and, in turn, mitigate demand for services delivered by MRTs: <ul style="list-style-type: none"> University of Texas Health San Antonio (UTHSA) implemented Enlitic's Standardize technology – designed to automatically adapt to clinical content across disparate tech systems by standardizing DICOM (Digital Imaging and Communications in Medicine) descriptions before transmission to PACS (Picture Archiving and Communication Systems), increasing efficiency through consistent, complete, and correct labels. UTHSA achieved 16 seconds of time savings per study – for a total time savings of 128,000 hours based on an average of 480,000 medical imaging studies per year.²⁸³ Point-of-care ultrasound technology deployed in a pediatric setting achieved statistically significant time savings of 50 minutes per patient when compared to a traditional ultrasound workflow.²⁸⁴ Portable (or "bedside") MRI technology, such as the Hyperfine Swoop, can greatly accelerate clinical decision making in situations where speed is critical (e.g., assessing stroke patients). By leveraging Artificial Intelligence (AI), this technology enables clinicians to scan, diagnose, and treat patients, as it assesses brain tissue in real time and delivers images within 15 minutes.²⁸⁵ These advances in AI are driving the future of Medical Imaging enabling workflow management and image pathology detection.
MRT-2	Rethink	<p>Mitigate MRT Demand by Reducing Inappropriate Requisitions and Ordering:</p> <p>As discussed above, Health Accord NL carries several implementation recommendations related to rebalancing NL's health care system. One such recommendation relates to reducing inappropriate utilization of care interventions, including medical imaging studies. GNL can prioritize implementation of the following initiatives as outlined by the Health Accord</p>

²⁸³ <https://enlitic.com/wp-content/uploads/enlitic-UT-case-study.pdf>

²⁸⁴ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8525063/>

²⁸⁵ <https://wexnermedical.osu.edu/departments/innovations/neuronews/portablemri>

ID	Theme	Recommendation and Potential Impact
		<p>NL in order to maximize demand mitigation for MRT-delivered medical imaging services over the 2023-32 forecast period:</p> <ul style="list-style-type: none"> • Establishment of the NL Council for Health Quality and Performance: When implemented, this body will have a significant mandate to undertake measures that will rein in unnecessary utilization of health care services. It can also provide oversight and advocacy to further drive all initiatives underlying MRT-2. • Implementation of a new integrated HIS: Amongst a wide range of potential system features, HIS are equipped with automated digital analytics tools that can proactively identify and flag orders, service requisitions, or referrals that are inappropriate, unnecessary, or against typical indications (e.g., performing an MRI for spine-related conditions). This will enable GNL to better isolate root causes of unnecessary ordering (e.g., filtering data analysis based on service type, provider type, geography), and be more strategic and comprehensive in taking steps to mitigate this demand. • Creation of a provincial Choosing Wisely Program: While Choosing Wisely NL has existed since late 2016, a scaled-up, provincewide implementation of a Choosing Wisely Program (i.e., working to achieve a Choosing Wisely Canada designation for the NL health system), led by Quality of Care NL and supported by NLHS, carries additional opportunities through which to mitigate inappropriate ordering. • Adoption of Family Care Teams (FCT): Stakeholders suggest that inappropriate ordering and requisitions from primary care physicians are an area of focus. FCTs have the potential to mitigate this unnecessary demand for medical imaging services (and, in turn, demand for MRTs). Improved primary care access and patient-provider continuity may reduce ordering (e.g., of multiple medical imaging services for a single patient) that could be replaced by better information tracking and sharing between providers and technology systems. These teams will also work to improve coordination of care, so that medical imaging studies are only ordered for patients when necessary. <p>While there is currently no basis through which to quantify savings in terms of future MRT demand associated with MRT-2, it is of note that realization of expected demand mitigation benefits will be directly influenced by implementation timeframes for each of the above Health Accord NL recommendations. More specifically:</p> <ul style="list-style-type: none"> • Establishment of the Council for Health Quality and Performance will be a key accelerator for the implementation of items iii and iv listed above. • The sooner that a new integrated HIS is implemented, the longer the time horizon over which MRT demand mitigation benefits will be realized. However, as GNL's business case for the provincial HIS implementation was developed concurrently to this report, the implications on provider productivity have not yet been measured and need to be explored further.
MRT-3	Rethink	<p>Explore Opportunities to Expand the CLXT Role in NL:</p> <p>Stakeholders suggest that this is an underutilized role in NL, although it could carry opportunities to improve access to x-ray services in rural and remote regions. This role is targeted at full-scope MLTs that receive limited scope x-ray training. Typically, the CLXT role is used in areas without full scope MRTs. Increased utilization of the CLXT role would help mitigate demand full scope DI Technologists I and would also help address potential retention challenges of MLTs in rural areas that may arise from the shift to a hub-and-spoke service delivery model for laboratory services.</p> <ul style="list-style-type: none"> • Typically, the CLXT role is used in areas without full scope MRTs. Increasing the use of the CLXT role would allow rural MLTs with x-ray training to expand their skillsets and capabilities in the absence of more advanced laboratory technologies and a reduced breadth of testing and laboratory services. • According to the current JES, CLXTs are not compensated more than MLTs despite having additional training on x-ray imaging technologies. Stakeholders highlighted that this is a barrier to uptake of training in rural areas and, therefore, an obstacle to for the CLXT role. • GNL should incentivize MLTs to pursue additional training to become CLXTs by offering bursaries with return-in-service agreements for students. They should also consider

ID	Theme	Recommendation and Potential Impact
		<p>reimbursing training costs for those who have already completed their training after a fixed number of years of service.</p> <ul style="list-style-type: none"> Prioritizing fair and equitable compensation for CLXTs, given their additional responsibilities compared to MLTs, is a critical prerequisite for increasing the utilization of this role.
Supply of MRTs		
MRT-4	Recruit	<p>Increase Capacity of Local MRT Training Program:</p> <ul style="list-style-type: none"> CNA's Medical Radiography Diploma program serves as a critical source of supply for most MRT disciplines, which the province heavily relies upon. If GNL, in partnership with CNA, were to increase the capacity of the MRT program by an additional 10 students starting in the 2024/25 academic year, the first cohort with the additional students, a total of 24 students, would be expected to graduate in May 2027. Currently, the program is only offered at CNA's Prince Philip Drive Campus in St. John's. These new seats could either be added to the existing campus in Eastern Zone, or programming could be created at one of CNA's alternative sites in the Western or Central Zones. With the construction of the new acute care in facility in the Western Zone requiring an additional 5 MRTs in the Western Zone, a smaller class cohort offered at the Corner Brook campus could be a potential option. This initiative can be supported by offering bursaries tied to return-in-service agreements to provide financial support to MRT students while pursuing their education. Given that the program's laboratory capacity and preceptor availability can support the addition of 10 new seats in the 2024/25 academic year, this would result in an additional 60 MRTs entering the workforce by 2032.
MRT-5	Recruit / Retain	<p>Continue MRT Retention Incentives Until Workforce Gap Has Been Reasonably Closed:</p> <p>As of February 2023, retention incentives for MRTs have seen a very strong uptake rate – approximately 84% across the provincial workforce. However, the structure of these incentives as a one-time arrangement may lead to a future spike in outflows at a time when this funding may no longer be offered. To avoid a pronounced short-term outflow within the existing MRT workforce, GNL should continue to offer retention incentives until the MRT workforce gap has been reasonably closed, and tied to return-of-service agreements renewed on an ongoing basis (e.g., pay an incentive for each year of service).</p> <ul style="list-style-type: none"> Beyond retention incentives, GNL should also consider additional categories of targeted financial incentives to recruit and/or retain MRTs and new graduates: Support for relocation and establishment, e.g., to compensate MRTs for relocation and/or to ensure financial stability in the early years of practice – particularly in rural and remote geographies. These supports may be funded partially by local businesses who make at-cost contributions to retain key health care personnel in their community. Loan forgiveness or loan repayment to further incentivize MRT students and recent graduates to partially eliminate heavy financial burdens experienced by many in the early stages of their careers.

Pharmacists

A pharmacist is a licensed health care professional utilized in a front-line service delivery role either in a community or hospital setting to provide pharmaceutical care to patients. Pharmacists are employed by both the public and private sector, with those working in the public system either employed by Newfoundland and Labrador Health Services (NLHS) or the Department of Health and Community Services (HCS). Pharmacists that work in the private sector are often employed by community retail pharmacies.

According to the NL Job Evaluation System (JES),²⁸⁶ the responsibilities of hospital and community pharmacists include conducting a thorough assessment of a patient's medication needs and therapy, selecting appropriate medications, determining dosage, route, and method of administration, and offering individual or group counseling. Clinical duties involve monitoring medication therapy, conducting drug utilization reviews, collaborating in multi-disciplinary teams, overseeing students and pharmaceutical support staff, and organizing educational programs and information sessions. Within the NLHS, there are clinical pharmacists working in direct patient care within acute care settings across diverse specialty areas, including nephrology, psychiatry, and others.

As of Fall 2017, the educational requirements in Canada for pharmacists have changed. Graduating pharmacy students must now hold an entry-to-practice Doctor of Pharmacy (PharmD) degree from an accredited pharmacy program, such as the program offered by Memorial University (MUN). Before being able to practice, they still need to successfully pass the Pharmacy Examining Board of Canada (PEBC) Qualifying Exam, which includes the Evaluating Exam and the Qualifying Exam Parts I and II. The Bachelor of Science (Pharmacy) program (B.Sc.Pharm) is no longer available for admission, marking the transition to the PharmD program the minimum educational requirement for aspiring pharmacists in NL.²⁸⁷ However, practicing pharmacists that hold a B.Sc.Pharm designation are still able to practice in the province.

To work as a pharmacist in NL, it is mandatory to obtain registration with the Newfoundland and Labrador Pharmacy Board (NLPB), which establishes the standards of practice for the profession. Further, pharmacists must maintain membership in the Pharmacists' Association of NL and hold professional liability insurance. The total

²⁸⁶ [Job Class Profile \(gov.nl.ca\)](http://gov.nl.ca)

²⁸⁷ [Doctor of Pharmacy \(Pharm.D.\) | School of Pharmacy | Memorial University of Newfoundland \(mun.ca\)](http://mun.ca)

cost of mandatory professional fees is approximately \$1980 per pharmacist annually. Applicants for registration as a pharmacist must also complete a period of practical training under the supervision of an approved preceptor. This training is in addition to any experiential training completed as part of an accredited pharmacy education program. The minimum number of hours required varies depending on the pharmacist education program from which the applicant has graduated.

Current State Analysis

As of December 2022, there were 744 pharmacists in NL, distributed by NLHS zone as shown in Table 222. This includes both private and public sector pharmacists. According to the NLPB, in 2022 approximately 18% of pharmacists worked in hospitals, 78% in community, and 4% in administrative roles.²⁸⁸ However, due to data limitations on the historical supply of pharmacists by health zone, inflows and outflows data from CIHI was used to estimate the supply of pharmacists in NL.

GNL typically recruits pharmacists as graduates of MUN's School of Pharmacy. This five-year program accepts 40 students each academic year, of which 34 seats are offered to residents of NL, one seat is reserved for a NL Indigenous applicant and five seats for non-NL applicants, including international applicants. Other pharmacy programs in Atlantic Canada may also offer opportunities for recruitment. International recruitment for pharmacists in NL is highly limited.

Table 195: Pharmacists by NLHS Zone²⁸⁹

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total ²⁹⁰
2022 Supply	251	167	146	122	59	744

Expanded Scope of Practice for Pharmacists

In a bid to enhance health care accessibility GNL, in partnership with NLPB, has broadened pharmacists' scope of practice.²⁹¹ The most recent regulatory changes enable pharmacists to extend prescriptions

²⁸⁸ <https://nlpb.ca/media/Annual-Report-2022.pdf>

²⁸⁹ Captures all pharmacists working in NL.

²⁹⁰ Due to rounding, the sum of the supply by zone may not perfectly match the total listed.

²⁹¹ [Expanded Scope of Practice for Pharmacists Improves Access to Health Care - News Releases \(gov.nl.ca\)](https://gov.nl.ca/Expanded-Scope-of-Practice-for-Pharmacists-Improves-Access-to-Health-Care---News-Releases)

to 12 months, up from 90 days, ensuring quicker access to vital medications.

Pharmacists can now prescribe for four additional common conditions, including conjunctivitis, uncomplicated urinary tract infections, herpes zoster-shingles, and fungal nail infections, totalling 33 select ailments. Pharmacists can also now prescribe for hormonal contraceptives. These changes provide convenient health care options through local pharmacies, benefiting all residents. To ensure universal access, GNL invested \$16.6 million for the community pharmacy service fees associated with the changes in scope of practice.

The expansion of pharmacists' roles, while applicable to all pharmacists is expected to increase the workload primarily for community pharmacists, thereby increasing demand for this profession. Early feedback from community pharmacists suggests a rise in the demand for their time and resources due to the broader scope. The expansion entails significant documentation for assessment and prescribing, along with an added component for claims processing. It is reported that some pharmacies might not provide all the new services due to staffing constraints, whereas others are managing to offer these services by increasing pharmacist coverage when additional staff is available. It is recommended that further analysis be conducted to understand the anticipated impacts on the pharmacist workforce in NL.

Alberta has been at the forefront of expanding the scope of practice for pharmacists, notably being the first province to grant pharmacists the authority to independently prescribe medications for minor ailments.²⁹² This legislative change, which has been in place for over a decade, aimed to improve health care accessibility, alleviate the burden on the health care system, particularly emergency departments and family physicians, and utilize the pharmacists' expertise more effectively. The impacts on the pharmacist workforce in Alberta due to these expanded responsibilities have been multifaceted, including increased professional responsibility, enhanced training and education requirements, workload and time management challenges, and increased job satisfaction.

While there will be some aspects of work which will be streamlined due to the expanded scope, it has not been determined whether this shared scope of practice between physicians and pharmacists will have any impact on the demand for physician services. As a result, as

²⁹² Law MR, Ma T, Fisher J, Sketris IS. Independent pharmacist prescribing in Canada. *Can Pharm J* (Ott). 2012 Jan;145(1):17-23.e1. doi: 10.3821/1913-701X-145.1.17. PMID: 23509483; PMCID: PMC3567533.

part of this Health Human Resources (HHR) plan, there is no planned decrease in demand for the physician groups based on this change in scope.

Health Accord NL Calls to Action

The intended future vision of pharmacy services in the province is to establish a Provincial Pharmacy Program within the NLHS and Family Care Teams (FCTs) that are affiliated with pharmacies. This restructuring of the delivery of pharmacy services comes with the potential for improved coordination between zones, cost savings, and standardization, by reducing duplication of effort and ensuring pharmacy resources are used more efficiently and in a consistent manner. It also offers promising shifts towards increasing access to pharmacy services through the formation of these new affiliation agreements with FCTs. As GNL begins to implement these changes, it will be important to carefully consider these potential impacts to ensure there is an adequate supply of qualified pharmacists to support this transformation and meet the needs of the province's health care system.

Also within Health Accord NL, Call to Action (CTA) 8.4 recommends provincial legislation, regulation, and policy to provide appropriate, quality, and accessible care and protection for older persons in NL. An underlying objective of this CTA is to broaden pharmaceutical coverage for older adults. Despite the progress towards the creation of a National Pharmacare Program being slow to action, several other Canadian provinces are actively reviewing their seniors' pharmacare programs. Increased pharmaceutical coverage may drive increased demand for services delivered by both community pharmacists and pharmacy technicians in the long-term, as a larger cohort of older adults will gain expanded access to insured pharmaceutical services.

While CTA 8.4 may signal increased demand for pharmacists in NL, CTA 9.4 is focused upon mitigating future demand, in part by establishing a pharmacist-supported model to improve appropriateness of medication use. Relative to other provinces and territories, NL has high rates of potentially inappropriate medication use, and older adults in community and long-term care settings have high rates of polypharmacy (i.e., the use of multiple drugs for one or more conditions by an individual patient). The latter is associated with a series of poor health outcomes, including increased rates of falls, mortality, and medication-related hospitalizations, as well as impaired cognition.

Community pharmacies are present in virtually every community, offering an opportunity to utilize existing resources and infrastructure.

This can be achieved by prioritizing the integration of pharmacists into FCTs that address the underutilization and overutilization of medications. The specific levels of involvement will be determined based on roles and responsibilities, sustainability of the model, and the fiscal envelope of the province.

While the strategic intent of implementing CTA 9.4 is to reduce inappropriate or unnecessary pharmaceutical prescribing, it is important to acknowledge that a single proactive intervention may not have the desired impact on reducing the population's future medication use and the dispensing responsibilities of pharmacists. The deprescribing process involves clinical activities that can lead to an increased workload for pharmacists, especially those in community settings. Deprescribing requires careful planning, monitoring, and communication with the patient and their care team. Given that Health Canada approves over 100 new drugs, generics, and biosimilars annually, the issues of polypharmacy and inappropriate medication usage will continue to require ongoing evaluation and intervention. Therefore, it is recommended that further analysis be conducted to determine the impact of deprescribing on the pharmacy workforce.

As mentioned above, GNL has recently expanded the scope of practice for pharmacists. This is directly aligned to CTA 10.6, which calls for the creation of an environment enabling all providers to work to the highest scope of practice within their education and/or training. As a result, the pharmacist scope of practice has recently been expanded such that they are now able to assess and prescribe for a total of 33 ailments and conditions.²⁹³ The Health Accord NL Blueprint also outlines a plan to continue to increase pharmacist scope of practice consistent with other Canadian jurisdictions, including virtual pharmacy services and ordering lab tests, and prescribing for chronic disease management.²⁹⁴ These legislative changes improve the access and timeliness of health care for residents, whereas the magnitude of the increase in demand for pharmacists will be dependent on the change in skill mix in both hospital and community settings to support advanced prescribing and ordering capabilities.

By implementing CTA11.3 and establishing Regional Social and Health Networks in each region of NL, there is a strong potential to impact the demand for pharmacists in the province. Integrating pharmacists into these networks could result in a higher demand for pharmacy services, given their vital role in optimizing medication use, addressing

²⁹³ [Expanded Scope of Practice for Pharmacists Improves Access to Health Care - News Releases \(gov.nl.ca\)](https://gov.nl.ca/en/news-releases/expanded-scope-practice-pharmacists-improves-access-health-care)

²⁹⁴ gov.nl.ca/hcs/files/HANL_The-Blueprint-Section-A_web-Jun9-2022.pdf

health issues, and enhancing health outcomes within the community. Additionally, by participating in these integrated health networks, pharmacists may have the chance to collaborate more closely with other health care professionals, thereby strengthening their involvement in patient care and potentially increasing the demand for their specialized expertise.

Workforce Initiatives

To address pharmacist recruitment and retention in NL, in 2022 HCS introduced retention bonuses in return for one year of service, which ended on January 31, 2023. Eligible employees included those who held permanent or temporary employment (full-time or part-time) with NLHS as of August 31, 2022. GNL reported that, as of February 2023, 106 pharmacists had successfully applied to receive this retention bonus, with distribution varying across zones.

In addition to the retention bonus, HCS has also issued a market adjustment for public sector pharmacists to improve salary competitiveness with the private sector as well as other Canadian jurisdictions. A market adjustment is a form of additional remuneration that is based on current market conditions. Market adjustments may be approved to address recruitment and retention challenges for officially classified positions that meet the criteria for a market-based adjustment as established by Treasury Board and subjected to the approval process. Market adjustments consider the comparative value of positions that are the same between other jurisdictions within Canada.

Market adjustments in the form of a salary differential have been in place for public sector clinical pharmacists since 2007. Under the most recent market adjustment, which was first approved in 2017 and reaffirmed in 2019, pharmacists received non-pensionable market adjustments with amounts ranging between \$5,000 and \$21,591 based on classification to supplement their salaries. The tiered market adjustment for pharmacists was introduced in 2016 to offset the impacts the JES had on pharmacist salaries in the province.

To address pharmacist recruitment and retention in NL, HCS introduced a number of initiatives to strengthen the supply of pharmacists in the public system:

- **Signing Bonus Program:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions, and tiered to address geographic considerations with an associated return-in-service of one or two years.

- **Health Professional Bursaries:** \$5,000 to \$10,000 bursaries are awarded for difficult-to-fill positions, available to pharmacy students who sign a service agreement for one or two years of service post-graduation.

Stakeholder Engagement Insights

Five focus groups were conducted to better understand the experiences and perspectives of the pharmacist workforce in NL:

- Memorial University of Newfoundland (MUN) staff
- Newfoundland and Labrador Pharmacy Board (NLPB)
- NL Association of Public and Private Employees (NAPE)
- Pharmacist Scope of Practice discussion (GNL)
- Pharmacists' Association of NL (PANL)

In addition, 12 individuals responded to the focus group follow-up survey with additional insights. This consultation activity yielded a set of qualitative insights pertinent to the development of the pharmacist workforce recommendations and are summarized in Table 223. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, which may not be grounded in absolute fact.

Table 196: What We Heard from Pharmacist Stakeholders

Theme	Insights
Compensation and Market Adjustments	<ul style="list-style-type: none"> • Stakeholders shared that the market adjustments for pharmacists, which have remained unchanged since 2017, affect the ability of the public sector to recruit and retain pharmacy staff. • Even with the market adjustment, NL hospital pharmacist wages are believed to be lower than the rest of Atlantic Canada and less than community/retail pharmacists. • Market adjustments are not pensionable, nor are they permanent as they require regular review and approval which is detrimental to retention efforts with a current average vacancy rate over 34% in the public system across zones. • There is considerable inconsistency in the payment of market adjustments awarded to staff, as pharmacists hired before 2008 receive bi-weekly payments while those hired after receive lump sum payments every 6 months with a return in service agreement. • This discrepancy is exacerbated by inequity in the reimbursement of professional fees, including NLPB registration, PANL membership, and professional liability insurance, as pharmacists hired before December 2012 were reimbursed. These professional fees total approximately \$1,980 annually. • As the market adjustments cannot be included in job postings, they may create the perception of lower pay compared to the private sector, thereby further affecting recruitment. It is noted that GNL's hiring incentives have generated interest in advertised positions.

Theme	Insights
Recruitment and Retention	<ul style="list-style-type: none"> Stakeholders perceive that the recruitment and retention of hospital pharmacists needs to be prioritized to ensure there is an adequate number of pharmacy staff to continue to provide excellent patient care. This includes retirement planning and accommodating parental leave for a predominantly female workforce. Opportunities include providing consistent opportunities for pharmacists to participate in direct patient clinical care, as well as ensuring an adequate number of positions to cover vacations and illnesses without impacting clinical care. Expanding the scope of practice for pharmacists, increasing the number of FCTs with the input of PANL, and enhancing clinical roles for hospital pharmacists are all measures that were identified that can contribute to recruitment and retention of pharmacists in NL. However, these policies cannot be implemented without consideration for the number of pharmacy education seats within the province or streamlined entry to practice for foreign pharmacists to avoid workforce gaps.
Workforce Planning	<ul style="list-style-type: none"> It is crucial to maintain up-to-date data and forecasts on pharmacy workforce entrants (e.g., class size, successful licensure within the province) and losses (e.g., retirements, attrition, resignations). This is necessary to address the expected shortfall in the workforce, considering retirees and the expanded scope of practice. A comprehensive review of current clinical services provided by pharmacists in acute care is needed. This review should focus on addressing inconsistencies and gaps within and across sites, as well as in comparison to similar jurisdictions. Collaboration with educational institutions within the province is essential to assess application and graduation rates and obtain their forecasts for future needs in terms of pharmacists.
Workforce Trends	<ul style="list-style-type: none"> Several workforce trends identified by stakeholders include the role of pharmacists in addressing the health care needs of an aging and unhealthy population, which implies a greater use of medications and higher prescription volumes. This necessitates determining safe staffing ratios within pharmacies through collaboration between pharmacy regulators and GNL. Additional priorities should include assessing the needs of rural versus urban pharmacists and hospital versus community pharmacists. It is essential to review best practices for health care team models in a variety of care settings. When evaluating potential workforce demand, it is important to consider practice norms throughout Canada and North America, as expanded scope activities can drive demand for additional pharmacist and pharmacy technician staff.
Technology	<ul style="list-style-type: none"> As new pharmacy technologies are implemented, it is important to ensure the addition of appropriate clinical pharmacist resources alongside the technology for updates and ongoing maintenance. This will prevent overburdening existing staff, maintain efficiency, and prioritize frontline clinical work. Short-term challenges include the need for additional staff and potential staff frustration when existing resources don't align with the increased workload. Long-term benefits include the full utilization of education and skills, increased efficiency, and greater professional satisfaction.

Theme	Insights
Scope of Practice	<ul style="list-style-type: none"> Stakeholders shared that further scope expansion, such as ordering labs and prescribing, could increase job satisfaction and opportunities for pharmacists, support the recruitment of new graduates eager to practice to their full scope, and enhance interest in the profession. However, GNL must be aware that the increased workload and demand for pharmacist services without hiring additional staff could lead to pharmacist burnout. Enhancing the scope for pharmacy technicians was one method suggested that could help ease the additional workload. It was suggested that regulators should consider setting minimum staffing levels for new services to prevent burnout. The changes in scope of practice will necessitate additional human resources and training for pharmacists. Compensation should be commensurate with the expanded roles and responsibilities.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary projections of the supply of and demand for pharmacists were developed based on historical practice patterns and trends.

Complete data on the supply, inflows and outflows of pharmacists by age, gender and health zone was not readily available from pharmacy stakeholders at the time of engagement. Consequently, data from the Canadian Institute for Health Information (CIHI) was used to forecast the supply of pharmacists in the province.

However, data from CIHI is provided only at the provincial level and not at the regional level. Thus, the distribution of NL's population across the zones was used to split the supply, inflows and outflows by zone. NL's population was distributed as follows in 2021:²⁹⁵

Table 197: Distribution of NL Population by NLHS Zone

Health Zone	Share of Total NL Population in 2021
Eastern Urban	34%
Eastern Rural	22%
Central	20%
Western	16%
Labrador-Grenfell	8%

²⁹⁵ CIHI data was used for the pharmacist supply analysis. At the time the analysis was conducted, CIHI data was only available until 2021. Therefore, the base year is 2021 for this profession.

In addition, data on the inflows and outflows of pharmacists was not complete for the 2019-2022 period. Thus, it was not possible to include the 2019-2022 average inflows and outflows into the analysis as was done for most other professions. Due to data limitations, the three-year average from 2017-2019 was used to forecast supply.

Finally, only total inflows and outflows were available in the CIHI data. Consequently, the reason for entry to or exit from the profession could not be estimated.

Demand for pharmacists was estimated by forecasting the growth in inflation-adjusted spending on drugs using data from CIHI. More details on the methodology are provided in the following sections.

These preliminary projections were then augmented, wherever possible, based on the availability of supporting data and analysis, to reflect inflight or recently implemented policy initiatives to form a baseline scenario.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 225 below outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for pharmacists, as well as any limitations or caveats to the data.

Table 198: Data Sources for Pharmacist Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of pharmacists, by zone, 5-year age cohort, and gender from 2018-2022</p> <p>Inflows: Entries into the profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.)</p> <p>Outflows: Exits from the profession, split by reason for exit (retirement, emigration, other resignation)</p>	<p>Supply: No. Thus, CIHI data for NL as a whole was used for the analysis. Assumptions were required to split the supply by zone</p> <p>Inflows: No. Thus, CIHI data for NL as a whole was used for the analysis. Assumptions were required to split the inflows by zone. Only total inflows were available on CIHI.</p> <p>Outflows: No. Thus, CIHI data for NL as a whole was used for the analysis. Assumptions were required to split the outflows by zone. Only total outflows were available on CIHI.</p>	$\text{Supply Year } X = \text{Supply Year } X-1 + 3\text{-year average inflows (2017-2019)} - 3\text{-year average outflows (2017-2019)}$	<ul style="list-style-type: none"> Complete data on supply, inflows and outflows by age, gender and health zone was not readily available from pharmacy stakeholders. Thus, assumptions were required to split the CIHI supply, inflows and outflows by zone. Only total inflows and outflows are available on CIHI. Thus, could not determine reason for entry or exit.
Demand	<p><u>Source:</u> CIHI</p>			
	<ul style="list-style-type: none"> 10-year population projections, by 5-year age cohort, gender, and zone Average per capita spending by age and gender for nine CIHI health care spending categories. Spending on drugs is used to estimate growth in demand for pharmacists. Average historical cost increases in health care spending. 	<p>Population projections: Yes <u>Source:</u> NL Department of Finance</p> <p>Health spending by category by age and gender: Yes <u>Source:</u> CIHI</p> <p>Historical cost increases in health care spending. Yes <u>Source:</u> CIHI</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = 10-year population projections * the estimated change in average utilization * average real per person spending by age and gender</p> <p>Demand Year X = Demand Year X-1 * growth in the number of people in each age category * average change in real spending per person * the change in utilization</p>	<ul style="list-style-type: none"> Encounters with pharmacists not captured by CIHI POP Grouper Methodology. Thus, inflation-adjusted health care spending is used to forecast distribution of patients by age and gender across province. Change in utilization estimated based on recent trends.

Preliminary Projections

This section provides the preliminary forecast estimates for pharmacists. Table 226 below presents supply projections for pharmacists based on historical trends.

Table 199: Preliminary Supply Projections for Pharmacists

Health Occupation	Starting supply (Dec. 2021)	Inflows (2022-2032)	Retirements (2022-2032)	Other Outflows (2022-2032)	Ending Supply (Dec. 2032) ²⁹⁶
Pharmacists	755	546	73	451	778

Where: Starting supply (Dec. 2021) + Inflows (2022-2032) - Retirements (2022-2032) - Other Outflows (2022-2032) = Ending Supply (Dec. 2032)

CIHI data was used for the pharmacist supply analysis. At the time the analysis was conducted, CIHI data was only available until 2021. Therefore, as highlighted in Table 226, the base year is 2021 for this profession. In the preliminary projections, the supply of pharmacists is predicted to increase by approximately 3% over the forecast period, with inflows slightly outpacing outflows, as shown in Table 226.

Given that only overall inflows and outflows are captured in the CIHI data, the only supply component that can be isolated is a portion of the forecasted retirements. The retirements highlighted in Table 226 above result from the flowthrough of ages throughout the forecast (i.e., everyone who is 64 one year will become 65 the next, hit retirement and exit the workforce). However, other outflows likely include a significant portion of retirements as retirements in the historical data were likely captured in the other outflows and historical outflow trends are captured in the forecast. Inflow and outflow estimates are based on historical trends. According to the CIHI data, there were approximately 41 exits from the pharmacy workforce per year historically. Thus over 11 years (2021 to 2032), average outflows total 451 ($451 = 41 \times 11$).

²⁹⁶ Due to rounding, the ending supply may not perfectly match the total listed.

Table 200: Regional Preliminary Supply Projections for Pharmacists

Zone	2018 Supply	2021 Supply	2032 Supply	Percent Change in Supply 2018 vs 2021	Percent Change in Supply 2021 vs 2032
Eastern Urban	256	254	262	-1%	+3%
Eastern Rural	170	169	174	-1%	+3%
Central	148	148	153	0%	+3%
Western	123	124	127	0%	+3%
Labrador-Grenfell	59	60	61	+2%	+2%
Total²⁹⁷	756	755	778	0%	+3%

As shown in Table 227, preliminary supply is expected to increase in all zones, with supply rising at a slightly slower pace in Labrador-Grenfell.

Table 201: Preliminary Demand Projections for Pharmacists

Specialty	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Pharmacists	744	106	850	995	+17%

Vacancies are added to 2022 supply to estimate the starting demand. Note, the number of vacancies includes estimated and directly documented community vacancies, as well as directly documented hospital vacancies. The vacancy numbers were provided in a special report to Deloitte by the Pharmacists' Association of Newfoundland and Labrador (PANL) in June of 2023. Given that the split of vacancies across the five health zones was not available, vacancies were equally split across the five zones as the number of practitioners in each zone is generally not reflective of the vacancies.

For pharmacists, demand is estimated using data on drug spending from CIHI.²⁹⁸ To do this, a demographically driven health expenditure model was created. In this model, average spending was calculated

²⁹⁷ Due to rounding, the sum of the supply by zone may not perfectly match the total listed.

²⁹⁸ Ideally, average consultation time with patients, average consultation time with the prescriber/members of the care team, dispensing volumes, and average time for drug therapy preparation in addition to dispensing volumes by age cohort, condition, and gender would have been included in the analysis to more accurately estimate the growth in demand for pharmacists and pharmacy technicians. However, accurate data is not currently available. Thus, inflation adjusted spending on drugs was used as a proxy to estimate the growth in demand for pharmacists and pharmacy technicians.

across 40 age and gender cohorts. This model allows spending to be broken into several different components:

- The share of spending related to cost adjustments;
- The share of spending related to increased utilization in each age/gender cohort;
- The share of spending related to overall population growth; and
- The share of spending related to demographic aging.

To build this model, the following steps were undertaken:

Step 1: Allocate spending on drugs across the age/gender cohorts based on CIHI spending data.

Step 2: Calculate the average price adjustments based on CIHI health inflation estimates. This is done to deflate average spending in each age/gender category to estimate volume increases.

Step 3: Estimate the age and gender adjusted real per person spending over the last decade to calculate how utilization has changed in other institutions.

Step 4: Project health care utilization based on past trends. It is estimated that utilization in the drugs sector would increase by an average of 0.3% per year in each age category. The change in utilization was estimated based on trends in utilization since 1986.

Step 5: Project total volumes for drugs in each age/gender cohort by multiplying the number of expected people in each age/gender cohort each year by the average drug spending on an individual in that age/gender cohort. This number takes account of average utilization in the age/gender cohort. Overall, older individuals cost GNL more in drug support than younger individuals. As the population is predicted to continue aging, so too are the costs of drugs to NL.

Over the last 10 years, real spending on drugs has risen by an average of 0.3% per year. Excluding the effects of population growth and the impact of aging, spending on drugs would have remained constant.

Over the next 10 years, volumes of drugs are projected to grow by an average of 1.6% per year. Of this, 0.0% is due to population growth, 0.3% is due to changes in utilization and 1.3% is due to population aging. As mentioned in step 4, the change in utilization was estimated based on trends in utilization since 1986. This means that, if you strip out the effects of inflation, the aging population, and population

growth, what was spent on an individual in 1997 is almost the same as what was spent on an individual in 2022.

Overall, the demand for pharmacists is expected to rise 17% in NL between 2022 and 2032.

Pharmacists play a critical role in providing health care services to patients. They are responsible for dispensing medications, ensuring their safe and effective use, and educating patients on how to take them properly. Pharmacists also work closely with health care providers to monitor patients' medication regimens, identify, and prevent drug interactions and adverse effects, and adjust dosages as needed. This is why inflation-adjusted spending on drugs (i.e., volumes on drugs) was selected as a proxy to estimate the growth in demand for pharmacists given the lack of other available data.

Table 229 showcases the predicted annual increase in inflation-adjusted spending on drugs (i.e., volume of drugs), which in this case is used as a proxy with which to estimate growth in demand by zone for the forecast period.

Table 202: Regional Annual Growth in Demand for Pharmacists

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	2.1%	2.1%	2.1%	2.0%	2.0%	1.9%	2.0%	1.8%	1.8%	1.7%
Eastern Rural	1.9%	1.7%	1.8%	1.7%	1.6%	1.5%	1.3%	1.3%	1.2%	1.0%
Central	1.6%	1.5%	1.6%	1.5%	1.3%	1.3%	1.2%	1.1%	1.2%	0.8%
Western	1.8%	1.8%	1.7%	1.5%	1.5%	1.4%	1.4%	1.3%	1.1%	0.9%
Labrador-Grenfell	1.4%	1.6%	1.4%	1.3%	1.4%	1.4%	1.4%	1.3%	1.2%	1.2%
Newfoundland and Labrador	1.9%	1.8%	1.8%	1.7%	1.6%	1.6%	1.5%	1.4%	1.4%	1.2%

Given that the Eastern Urban zone is predicted to see the largest population growth (and, therefore, growth in anticipated service volume demanded by patients), the increase in demand for pharmacists is highest in that zone. Overall, demand is predicted to increase between 0.8% and 2.1% over the forecast period for all zones.

Table 203: Preliminary Gap Analysis for Pharmacists

Specialty	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Pharmacists	744	850	106	778	995	217	+111

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022. As shown in Table 230, the preliminary gap between pharmacist supply and demand is expected to rise by 111 between 2022 and 2032. If historical inflow and outflow trends remain constant, NL will need to hire 217 additional pharmacists to meet demand across all geographies.

Base Case Projections

For pharmacists, the only applicable base case assumption applied to projections stems from Health Accord NL CTA 9.14 (mortality rate improvement plan for cancer, cardiac disease, and stroke led by provincial programs for these disease entities). Improved access to services delivered by these provincial programs is in part represented by the construction of a new acute care and cancer care facility in Corner Brook. For the purposes of pharmacist projections, this assumption is represented as a one-time addition of three employees when the facility opens in June 2024 (i.e., +3 headcount increase in the Western zone). Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

Table 204: Base Case Assumptions for Pharmacists

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	Demand	<ul style="list-style-type: none"> One-time addition when facility opens in June 2024 	<ul style="list-style-type: none"> Western: <ul style="list-style-type: none"> 2024: +3

While some items were not included in the base case at the time of the analysis as they did not meet the three above-mentioned inclusion criteria, the following could have an impact on the demand analysis for pharmacists: the new Cardiovascular and Stroke Institute, the replacement of the St. Clare's Mercy Hospital, the new Ambulatory

Care Hub, the use of pharmacists within FCTs, the expansion of scope for pharmacists, etc.

Table 232 illustrates the annual quantitative impact for this base case item included in the pharmacist analysis.

Table 205: Annual Quantitative Impacts of the Base Case Item for Pharmacists

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Health Accord NL										
CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	0	3	3	3	3	3	3	3	3	3
Total Demand Impacts	0	3								

After incorporating this base case item into the analysis, demand for pharmacists in 2032 rises to 998 from the 995 estimated in the preliminary gap analysis. Table 233 highlights the final provincial gap analysis over the course of the forecast.

Table 206: Final Annual Provincial Gap Analysis for Pharmacists

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	744	738	737	739	743	747	753	758	765	771	778
Demand	850	866	884	900	915	930	945	959	973	986	998
Gap	106	128	147	161	172	183	192	201	208	215	220
Gap as a Percent of Supply	14%	17%	20%	22%	23%	24%	25%	27%	27%	28%	28%

As highlighted in Table 233, this analysis suggests that the gap between demand and supply is expected to grow each year between 2023 and 2032. Demand for pharmacists is expected to consistently exceed supply for the entirety of the forecast period. NL will now need to hire 220 additional pharmacists to meet demand in all zones in 2032.

The following section provides a series of workforce recommendations to help close the gap between supply and demand.

Workforce Recommendations

Table 234 below highlights workforce recommendations proposed to aid GNL in closing this gap in the NLHS pharmacist workforce.

Table 207: Pharmacist Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Demand for Pharmacists		
P-1	Rethink	<p>Mitigate Pharmacist Demand by Reducing Inappropriate Requisitions and Ordering:</p> <ul style="list-style-type: none"> As discussed above, Health Accord NL includes several implementation recommendations related to rebalancing NL's health care system, including the formation of a Provincial Pharmacy Program within the NLHS. One such recommendation relates to reducing inappropriate utilization of care interventions, including pharmaceutical prescriptions. The prescribing practices of the primary care providers is key to the appropriate use of medications and deprescribing. Recognizing the critical role of pharmacists to support appropriate ordering, GNL can prioritize implementation of the following initiatives to support the realization of the vision outlined by the Health Accord NL within the 2023-32 forecast period: <ul style="list-style-type: none"> Establishment of the NL Council for Health Quality and Performance: When implemented, this body will have a significant mandate to undertake measures that will rein in unnecessary utilization of health care services and pharmacotherapies. It can also provide oversight and advocacy to further drive all initiatives underlying P-1. Implementation of a new integrated Health Information System (HIS): Amongst a wide range of potential system features, HIS are equipped with automated digital analytics tools that can proactively identify and flag prescriptions that may be inappropriate, unnecessary, or against typical indications. This will enable NLHS to better isolate root causes of unnecessary ordering (e.g., filtering data analysis based on service type, provider type, geography), and be more strategic and comprehensive in taking steps to address this issue. However, when assessing the workforce requirements for implementing the new HIS, it is important to recognize and address the demand for pharmacists to assist in the development, implementation, and maintenance of the system. Creation of a Provincial Choosing Wisely Program: While Choosing Wisely NL has existed since late 2016, a scaled-up, province-wide implementation of a Choosing Wisely Program (i.e., working to achieve a Choosing Wisely Canada designation for the NL health system) aimed at physician education, led by Quality of Care NL and supported by NLHS, carries additional opportunities through which to mitigate inappropriate ordering. Adoption of FCTs: Stakeholders suggest that inappropriate prescribing by primary care physicians is an area of focus, which can be addressed through expanding the role of pharmacists within FCTs. Improving primary care access and fostering patient-provider continuity may reduce unnecessary ordering through better information sharing among providers and technology systems. Additionally, these teams will focus on enhancing care coordination to ensure that medications are only prescribed when truly needed. However, it is important to recognize that there will be a heightened demand for pharmacists to serve as integral members of FCTs. Reduction in Polypharmacy for Seniors: As GNL introduces the Provincial Seniors Care Program that is incorporated across the continuum of care, there is an opportunity to upskill a portion of the community pharmacy workforce to specialize in geriatric care. These professionals can provide expert advice on medication management for seniors, conduct medication reviews, and offer recommendations for deprescribing when appropriate. Affiliation agreements between FCTs and community pharmacists is the suggested mechanism for upskilling privately employed pharmacists.

ID	Theme	Recommendation and Potential Impact
<ul style="list-style-type: none"> The impact of these initiatives will be directly influenced by implementation timeframes for each of the above Health Accord NL recommendations. More specifically, the establishment of the Council for Health Quality and Performance will be a key accelerator for the implementation of each item listed above. The sooner that a new integrated HIS is implemented, the longer the time horizon over which benefits will be realized. However, as GNL's business case for the provincial HIS implementation was developed concurrently to this report, the implications on provider productivity have not yet been measured and need to be explored further. However, it is important to note that any mitigation of demand for pharmacy services would be minimal unless prescribing practices drastically change in the next 10 years. As GNL develops and expands more programs, it is reasonable to expect a significant increase in the demand for pharmacists to participate in these programs. 		
Supply of Pharmacists		
P-2	Recruit	<p>Support Internationally Trained Pharmacists in Obtaining their License in NL:</p> <ul style="list-style-type: none"> Establish a bridging program for internationally trained pharmacists, as offered in Nova Scotia by the Canadian Society of Hospital Pharmacists in partnership with the Immigrant Services Association of NS (ISANS):²⁹⁹ <ol style="list-style-type: none"> Provide an expedited process for applicants who are willing to relocate in rural and remote areas, and areas experiencing a higher proportion of vacancies, by providing financial assistance to cover the costs of the licensure process, such as exam fees, travel expenses, and tuition fees for the bridging program. Consult the NLPB and PANL to provide guidance and assistance in the development of the program. Create more opportunities for networking and mentoring between internationally trained pharmacists and local pharmacists (e.g., through professional associations, online platforms, and social events). Develop initiatives to address the specific needs and challenges of internationally trained pharmacists, such as language and communication skills, cultural adaptation, and career development.
P-3	Recruit / Retain	<p>Provide an Equitable and Pensionable Market Adjustment:</p> <ul style="list-style-type: none"> The market adjustments for pharmacists employed by the public sector were intended to be a temporary form of additional remuneration based on current market conditions to address recruitment and retention challenges. However, these pharmacists have been receiving a market adjustment in the form of a non-pensionable salary differential since 2007. Being non-pensionable, this market adjustment does not fully address the gap in compensation between pharmacists working in the public sector and those working in private retail settings. This could, in turn, lead to a short-term spike in pharmacist outflows from the NL public system as practitioners may turn to other jurisdictions, professions, or private sector employers in search of improved compensation and benefits. Furthermore, despite there being existing retention incentives for which public sector pharmacists are eligible, the amount is not competitive with the private sector. Introducing more significant retention incentives to bridge this gap would help mitigate the province's risk of losing highly qualified personnel employed by NLHS. Given the challenges related to timeliness and interdepartmental dependencies in submitting a proposal to the Treasury Board to reevaluate the JES scoring for pharmacists, our recommendation is to ensure that the market adjustments offered by HCS result in the intended outcomes of enhancing recruitment and retention by providing equitable and pensionable compensation. Notwithstanding wider policy considerations on the pensionability of market adjustments, which are outside the scope of this Health HR Plan, competitive compensation that is on par

²⁹⁹ [International Pharmacy Graduates Bridging Program \(IPG\) - Immigrant Services Association of Nova Scotia \(sans.ca\)](http://www.sans.ca)

ID	Theme	Recommendation and Potential Impact
		<p>with other Atlantic provinces, in addition to the private sector, is an essential part of recruiting pharmacists.</p> <ul style="list-style-type: none"> Additionally, as part of this review process, HCS may want to consider supplementing this NLHS compensation package with additional recruitment and retention incentives to further strengthen supply, including equitable reimbursement of professional fees, which amounts to approximately \$1,980 annually. Through implementing this recommendation, NLHS can be reasonably expected to slow outflows from the public sector and eliminate the current deficit of pharmacists.
P-4	Retain	<p>Support Pharmacists in Rural and Remote Areas to Provide Personalized Care:</p> <ul style="list-style-type: none"> To increase the retention of pharmacists in rural and remote areas of NL, a comprehensive strategy is needed that includes financial incentives (see recommendation P-3), professional development opportunities, a supportive work environment, access to technology (see P-1), and community engagement. One way to achieve this is by collaborating with FCTs and leveraging technology (i.e., the provincial HIS) to improve access to health care services in rural and remote areas. <ul style="list-style-type: none"> As all pharmacies within the province currently have access to the Pharmacy Network, community pharmacies have restricted access to the medication profile contained within HEALThe NL, while FCTs leverage Electronic Medical Records (EMR). Acknowledging the implementation of new systems, there are opportunities for enhanced interoperability and improved access among NLHS and FCTs, community pharmacists, and others pharmacy stakeholders. This can be done by providing community pharmacists with access to telehealth services and EMR, which can support the provision of high-quality care and greater connectivity to the broader health care system. It is important to recognize the unique health care needs of Indigenous populations in rural and remote areas and to provide culturally appropriate care. This can be achieved by collaborating with Indigenous communities, hiring Indigenous pharmacists as members of FCTs, and providing training and education to pharmacists on the cultural practices and traditional medicine of Indigenous communities. By doing so, pharmacists can provide better care to Indigenous populations, which can improve health outcomes and increase trust and engagement with the health care system. Finally, increasing community engagement by encouraging pharmacists to engage with the local community through outreach events and community health initiatives can help them feel more connected to the community they serve.
P-5	Recruit	<p>Consider Creating an Additional 10 Seats in MUN's PharmD Program:</p> <ul style="list-style-type: none"> The MUN PharmD program is a sustainable source of supply of pharmacists on which the province greatly depends. Historically, the MUN PharmD program experiences low rates of attrition (4% between 2018-2023),³⁰⁰ with zero to three students lost due to attrition upon graduation from the 40 students admitted to each cohort. If GNL in partnership with MUN, were to increase the capacity of the PharmD program by an additional 10 students, beginning in the 2024 academic year, the first expanded cohort would be expected to graduate in May 2029. It is recommended that these seats remain prioritized for NL applicants. Likewise, building off the program's existing reserved seat for Indigenous students, GNL should consider reserving these new seats for students interested in taking positions in rural and remote regions post-graduation. Enrollment to the pharmacy program can be encouraged by offering bursaries tied to return-in-service agreements linked to a particular region (such as Health Zone) or community. Similar scholarship programs have existed for students in the private sector; For example,

³⁰⁰ With the exception of 2021 that had two graduates, which is when the program transitioned from the Bachelor of Science in Pharmacy to the Entry to Practice Doctor of Pharmacy program.

ID	Theme	Recommendation and Potential Impact
		<p>Shoppers Drug Mart offered to pay the tuition of pharmacy students if they would agree to work anywhere in Canada for three-years post-graduation.</p> <ul style="list-style-type: none"> Furthermore, including pharmacist students in the Canada Student Loan forgiveness program would also help alleviate the financial burden associated with pursuing pharmacy education. Given there is adequate demand for the program to support the further addition of new seats, increasing the program by a further 10 seats to a total of 50 seats in the 2024/25 academic year would result in an additional 38 pharmacists entering the workforce by 2032. The cumulative quantitative impacts of the 10 new seats added for pharmacists would increase supply by 38 pharmacists by 2032 when accounting for 4% attrition. The creation of additional seats within the PharmD program is a straightforward approach to increasing pharmacist supply in the province. To support this expansion effectively, it is recommended that sufficient investments be made to ensure there are adequate educators and resources in place to accommodate the increased class sizes.
P-6	Rethink	<p>Further Broaden the Scope of Practice of Pharmacists in NL</p> <ul style="list-style-type: none"> Consider further expansion to the scope of practice of pharmacists in NL in alignment with other Canadian jurisdictions,³⁰¹ such as Alberta as referenced in the Health Accord NL Calls to Action section above, to enable further prescriptive authority expansion and streamlining of pharmacist workflows. This includes such activities as being able to initiate a prescription (without being limited to specific medical conditions or circumstances outlined in legislation or guidelines), prescribe in an emergency (i.e., asthma attack), and order and interpret lab tests. As the national standard outlines that pharmacists will only prescribe within a collaborative practice environment, the integration of pharmacists within FCTs provides enhanced opportunities to conduct these activities to enhance access to pharmaceutical care. Expanding the scope of practice for pharmacists, particularly those in community settings, will yield a number of benefits: <ul style="list-style-type: none"> Patients in rural and remote areas will have improved access to health care services. This is particularly important in areas where there is a shortage of physicians or other health care professionals. Allowing pharmacists to initiate prescriptions under delegation or a collective order can help to increase the efficiency of health care delivery in rural and remote areas. This will help to reduce the burden on other health care professionals and bottlenecks and ensure that patients receive timely and appropriate care. Broadening the scope of practice of pharmacists will provide opportunities for professional development and growth. This can help to attract and retain pharmacists in rural and remote areas, which can help to ensure that these areas have access to high-quality health care services. Allowing pharmacists to take on a greater role in patient care, there is potential for improved patient outcomes. Pharmacists can provide education and counselling to patients, monitor medication use, and identify potential drug interactions or adverse effects.

³⁰¹ [NAPRA-Pharmacists-Scope-of-Practice-in-Canada-Chart-2022-11-EN.pdf](https://www.napra.ca/-/media/assets/pharmacy-practice/pharmacy-practice-in-canada/napra-pharmacists-scope-of-practice-in-canada-chart-2022-11-en.pdf)

Pharmacy Technicians

The pharmacy technician (PTECH) is a health care worker who plays supporting roles in the delivery of pharmacy services across NL. The pharmacy technician delivers pharmaceutical services including compounding, preparing, distributing, ordering, storing, and overall control of pharmaceutical products. As a regulated health professional, pharmacy technicians can practice independent of a pharmacist and do not require supervision of one except for certain tasks related to narcotics and controlled substances.

In a pharmacy setting, the technician receives and interprets medication requests, transcribes prescriptions into the computer, repacks and labels medications, and assists in dispensing medications. They also manage medication inventory, operate dispensing machines, and prepare various solutions. Additionally, the technician checks and restocks emergency drug boxes, completes billing claims for medications, monitors and removes expired medications, and conducts audits on drug inventories.³⁰²

In October 2023, the pharmacy technicians' scope of practice was expanded to include administration of drug therapy by inhalation or injection. Other high value activities within scope of practice for pharmacy technicians include performing a technical check on a new prescription, refilling prescription, or controlled substance prescription, providing instructions on how to operate medical devices, compounding drugs according to a compounding protocol, collecting patients' best possible medication history to support medication reconciliation, and facilitating medication access through third party coverage.

The Newfoundland and Labrador Pharmacy Board (NLPB) adopted the profession of registered pharmacy technician as a regulated health profession following amendment to the Pharmacy Act and Pharmacy Regulations, which came into effect in 2015. This profession requires successful completion of a Canadian Council for Accreditation of Pharmacy Programs (CCAPP)-accredited pharmacy technician education program and Pharmacy Examining Board of Canada Qualifying Examination, followed by a minimum of 280 hours of practical training, completion of provincial jurisprudence examinations, registration with NLPB, and maintaining professional liability insurance. The total cost of professional fees is approximately \$980 per pharmacy technician annually.

³⁰² gov.nl.ca/exec/tbs/files/jobeval-jes-p-pharmacy-technician.pdf

At a minimum, pharmacy technicians practicing in NL must have completed a two-year pharmacy technician diploma program. Within the province, Keyin College offers a 74-week CCAPP-accredited pharmacy technician program delivered in both St. John's and Grand Falls-Windsor.

Current State Analysis

As of December 2022, there were 265 pharmacy technicians in NL, distributed by NLHS zone as shown in Table 235. This includes both private and public sector pharmacy technicians. According to the NLPB, in 2022 approximately 59% of pharmacy technicians worked in hospitals, 40% in community, and 1% in administrative roles.³⁰³ Historically, the proportion of hospital pharmacy technicians has been decreasing each year, while the proportion of community pharmacy technicians has been increasing.

GNL typically recruits pharmacy technicians as graduates of Keyin College's Pharmacy Technician Program. Other pharmacy technician programs in Atlantic Canada may also offer opportunities for recruitment: Nova Scotia Community College, New Brunswick Community College, Collège Communautaire du Nouveau-Brunswick, and Eastern College.

International recruitment for pharmacy technicians in NL is restricted by existing legislation, which acts as a significant obstacle to internationally trained pharmacy technicians seeking to practice in the province. There is currently no pathway for registration of internationally trained pharmacy technicians with NLPB and legislative change is required to establish a mechanism by which international graduates can register with NLPB to practice within the province.

Table 208: Pharmacy Technicians by NLHS Zone³⁰⁴

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total ³⁰⁵
2022 Supply	145	21	52	33	15	265

In the current state, pharmacy technicians are distributed across both public sector and private sector employers and care settings. The provincial workforce features pharmacy technicians practicing in public hospitals, long-term and community care settings, and in the private sector (e.g., large pharmacy retailers). Demand volume (i.e.,

³⁰³ <https://nlpb.ca/media/Annual-Report-2022.pdf>

³⁰⁴ Captures all pharmacy technicians working in NL.

³⁰⁵ Due to rounding, the sum of the supply by zone may not perfectly match the total listed.

number of pharmaceutical services delivered by pharmacy technicians) is driven primarily by the province's aging population and its underlying care needs and burden of disease. Historical data from Statistics Canada suggests that prescribed medication use increases consistently with age: 38% of the 18-39 age cohort, 56% of the 40-59 age cohort, and 81% of the 60-79 age cohort take at least one prescription medication, respectively.³⁰⁶ As NL's population ages further, it can expect sustained demand increases for pharmacy services supported by pharmacy technicians.

Education

Within NL, there is currently only one educational program for pharmacy technicians, offered by Keyin College. Keyin College's Pharmacy Technician Diploma program is two-years in length and offers hybrid and on-campus learning at their St. John's and Grand-Falls Windsor campuses.

College of the North Atlantic (CNA) has recently announced plans to launch a Pharmacy Technician Diploma program, with the start date in September 2024, dependent on funding from the Department of Health and Community Services (HCS). The program will offer 16 seats in its first cohort and will be offered at the St. John's campus. With a duration of two years, this program has the goal of preparing graduates with the skills necessary for the current scope of practice, including counseling on the use of medical devices and verification of medications before release to the patient to ensure accuracy and safety. Graduates of the program will have the opportunity to sit for the Pharmacy Examining Board of Canada for national certification.

An examination of the current state of pharmacy technician supply through the Keyin College program reveals significant challenges that require attention. The fall 2022 graduating class from the St. John's campus had a class size of 11 students, yet only five (45.5%) managed to pass the Pharmacy Examining Board of Canada Qualifying Examinations. The Grand Falls-Windsor campus had a graduation rate of approximately 39% with seven out of 18 students graduating. The spring 2023 session saw a total of 22 candidates from both campuses attempting the licensing examinations, including those making repeat attempts. From this cohort, Eastern and Central Zones extended job offers to 11 candidates contingent upon their licensure, with only three passing the licensing exams. Disconcertingly, two of the three successful candidates opted for employment in the private sector, rejecting offers from NLHS. Moreover, another graduating class from the Grand Falls-Windsor campus is not expected until spring 2025.

³⁰⁶ <https://www150.statcan.gc.ca/n1/daily-quotidien/210628/dq210628e-eng.htm>

This situation underscores a critical shortfall in the supply of pharmacy technicians, exacerbated by low graduation rates, insufficient passing rates on licensing examinations, and the preference of successful candidates for positions outside the public health system. These factors collectively indicate a pressing need for strategic interventions to strengthen the local workforce pipeline for pharmacy technicians in the province.

Health Accord NL Calls to Action

The intended future vision of pharmacy services in the province is to establish a Provincial Pharmacy Program within the NLHS and Family Care Teams (FCTs) that are affiliated with pharmacies. This restructuring of the delivery of pharmacy services has the potential for improved coordination between zones, cost savings, and standardization, by reducing duplication of effort and ensuring pharmacy resources are used more efficiently and in a consistent manner. It also holds promise for increased access to pharmacy services through the formation of these new affiliation agreements with FCTs. As GNL begins to implement these changes, it will be important to carefully consider these potential impacts to ensure there is an adequate supply of pharmacy technicians to support this transformation and meet the needs of the province's health care system.

Health Accord NL Call to Action (CTA) 8.4 recommends provincial legislation, regulation, and policy to provide appropriate, quality, and accessible care and protection for older persons in NL. An underlying objective of this CTA is to broaden pharmaceutical coverage for older adults. Despite the progress towards the creation of a National Pharmacare Program being slow to action, several other Canadian provinces are actively reviewing their seniors' pharmacare programs. Increased pharmaceutical coverage may drive increased demand for services delivered by both pharmacists and pharmacy technicians in the long-term, as a larger cohort of older adults will gain expanded access to insured pharmaceutical services.

While CTA 8.4 may signal increased demand for pharmacy technicians in NL, CTA 9.4 is focused on mitigating future demand, in part by establishing a pharmacist-supported model to improve appropriateness of medication use. Relative to other provinces and territories, NL has high rates of potentially inappropriate medication use, and older adults in community and long-term care settings have high rates of polypharmacy (i.e., the use of multiple drugs for one or more conditions by an individual patient). The latter is associated with a series of poor health outcomes, including increased rates of falls,

mortality, and medication-related hospitalizations, as well as impaired cognition.

While the strategic intent of implementing CTA 9.4 is to reduce inappropriate or unnecessary pharmaceutical prescribing, it is important to acknowledge that a single proactive intervention may not have the desired impact on reducing the population's future medication use and the workloads of pharmacy technicians. Given that Health Canada approves over 100 new drugs, generics, and biosimilars annually, the issues of polypharmacy and inappropriate medication usage will continue to require ongoing evaluation and intervention. Therefore, it is recommended that further analysis be conducted to determine the impact of deprescribing on the pharmacy technician's workforce.

Recently in fall of 2023, GNL approved changes to the Authorization to Administer Drug Therapy by Inhalation or Injection Regulations, which have enabled pharmacy technicians to become authorized to inject after the completion of specialized training. This expansion of the pharmacy technician scope of practice in turn allows pharmacies to increase their capacity to provide these services to the public.³⁰⁷ This is directly aligned to CTA 10.6 – which calls for the creation of an environment enabling all providers to work to the highest scope of practice within their education and/or training. This CTA also features an underlying objective to review the pharmacy technician scope of practice relative to other Canadian jurisdictions. This has the potential to increase pharmacy technician supply over the long-term, as prospective technicians will no longer be deterred from considering NL as a destination to launch their careers by a narrow scope of practice relative to other provinces and territories. However, as the scope of practice of pharmacy technicians continues to evolve, an increase in demand for pharmacy technicians may also occur as they take on additional responsibilities and workloads.

Workforce Initiatives

As a newly regulated profession within NL, GNL made significant investment in the pharmacy technician workforce when they became regulated, such as providing reimbursement for the required courses and exam fees. To further address pharmacy technician recruitment and retention in NL, in 2022 HCS introduced retention bonuses in return for one year of service, which ended on January 31, 2023. GNL reported that, as of February 2023, 143 pharmacy technicians

³⁰⁷ [Newfoundland and Labrador grants expanded scope of practice to pharmacists - Retail Council of Canada](#)

employed by NLHS had successfully applied to receive this retention bonus, with distribution varying across zones.

To address pharmacy technician recruitment and retention in NL, HCS introduced an initiative to strengthen the supply of pharmacy technicians in the public system:

- **Health Professional Bursaries:** \$5,000 to \$10,000 bursaries are awarded for difficult-to-fill positions, available to pharmacy technician students who sign a service agreement for one or two years of service post-graduation.

While this is the only workforce initiative targeted specifically at recruiting and/or retaining pharmacy technicians in NL, it was reported that there are several in-progress workforce initiatives that cannot be disclosed at this time.

Stakeholder Engagement Insights

Five focus groups were conducted to better understand the experiences and perspectives of the pharmacy technician workforce in NL:

- Keyin College staff
- Newfoundland and Labrador Pharmacy Board (NLPB)
- NL Association of Public and Private Employees (NAPE)
- Canadian Union of Public Employees (CUPE)
- Pharmacist Scope of Practice discussion (GNL)

In addition, 12 individuals responded to the focus group follow-up survey with additional insights. This consultation activity yielded a set of qualitative insights pertinent to the development of pharmacy technician workforce recommendations that are summarized in Table 236. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, and may not be grounded in absolute fact.

Table 209: What We Heard from Pharmacy Technician Stakeholders

Theme	Insights
Scope of Practice Changes	<ul style="list-style-type: none"> • Pharmacy stakeholders provided additional commentary on the implications of recent changes to pharmacist and pharmacy technician scopes of practice as outlined in the Workforce Initiatives section above. These stakeholders anticipate significant changes in the skill mix requirements for pharmacy staff in both hospital and community care settings, as well as a need for clinical standardization of pharmacy technician skill sets across the province. • Scope of practice changes are also expected to materially increase service volume for pharmacists and pharmacy technicians. While pharmacists have

Theme	Insights
	<p>had elements of prescribing medications and treatments within their scope of practice since 2010, uptake by pharmacy practitioners was historically low given that these services were not publicly funded. As funding is also associated with regulatory changes to pharmacist and pharmacy technician scopes of practice, stakeholders anticipate significant increases in service volume (i.e., with lack of funding as a previous barrier to uptake now removed).</p>
Private Sector Competition	<ul style="list-style-type: none"> Stakeholders highlighted recent challenges in competing with private employers for pharmacy technician talent, including uncompetitive compensation in the public sector, with annually increasing numbers of pharmacy technicians practicing in community pharmacies. These individuals also pointed to key differences in hospital-based pharmacy roles relative to other care settings, as the former carries quality assurance and collaborative clinical team responsibilities that may not be present in private care settings. A related example provided by stakeholders was competitive benefits offered to pharmacy technicians by large chain retailers, including the reimbursement of professional fees, more paid time off, and employee stock options. As a result, GNL faces challenges to compete with these employers on pharmacy technician recruitment, and stakeholders posit that this is in part driven by changing preferences amongst the workforce's younger cohorts (e.g., placing a lower priority on pensions as an element of compensation relative to base salary).
Regional Considerations	<ul style="list-style-type: none"> As with many other health care professions, pharmacy stakeholders suggest that the supply and demand picture for both pharmacists and pharmacy technicians varies considerably across urban and rural regions and geographies. It was anecdotally suggested that pharmacy technician job postings for St. John's are an indicator of growing province-wide supply challenges (i.e., as pharmacy technician jobs in St. John's are typically abundant). Stakeholders also highlight that rural and remote areas (i.e., NLHS zones excluding Central) face chronic short staffing for pharmacy technicians.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Data on the historical supply of pharmacy technicians was available in the NLPB Annual Reports as well as in the 2021 Statistics Canada Census of Population. After discussion with HCS, it was concluded that the number of employed pharmacy technicians by age, gender and zones as provided by the 2021 Statistics Canada Census of Population under the National Occupational Classification (NOC) code 32124: Pharmacy technicians may potentially be inflated. Thus, the supply of pharmacy technicians captured in the NLPB 2022 Annual Report was used as the starting supply for pharmacy technicians.

However, there are significant limitations with the data available in the NLPB Annual Reports.

- The supply is not split by zone, age, and gender. Consequently, the ratios by gender and zone as provided by Statistics Canada in the 2021 Census of Population were used to split the supply reported in the 2022 NLPB Annual Report by gender and zone.
- Inflows and outflows were not captured in the NLPB Annual Reports. Thus, inflows and outflows were captured using data from various Statistics Canada tables as well as data from Employment and Social Development Canada's (ESDC) Canadian Occupational Projection System (COPS) projections.

Preliminary supply projections were developed based on a stock and flow model. The following four inflows and outflows were captured in the model:

1. Immigration: Immigration was estimated based on the average annual number of immigrants in NL by (National Occupational Classification) NOC code over the 2016-2021 period available from Statistics Canada. Immigration includes only international immigration into the province.
2. School leavers: Individuals joining the workforce from school. School leavers were estimated based on Employment and Social Development Canada's (ESDC) Canadian Occupational Projection System (COPS) school leaver projections for Canada. School leavers are defined as "people leaving their full-time education programs (either as dropouts or graduates) to participate in the labour force".³⁰⁸ When there is not post-secondary training program for a specific profession, school leavers refer to the number of individuals entering the workforce from any form of schooling (high school for example).
3. Net Switchers: Net switchers are defined as the difference between other job seekers, and emigration and in-service mortality. Other Job seekers include occupational movers, net re-entrants, and working students. ESDC's COPS provides information for both other job seekers, and emigration and in-service mortality in Canada. If negative, net switchers represent an outflow.
 - a. Other job seekers include:
 - i. Occupational movers: those who change occupations without leaving the labour market.
 - ii. Net re-entrants: those who had previously left the labour force and return to participate in the labour market.

³⁰⁸ Job Seekers (2022-2031) - Canadian Occupational Projection System (COPS) - Canada.ca (esdc.gc.ca)

- iii. Working students: individuals who look for work while going to school.³⁰⁹
- 4. Retirements: Individuals leaving the labour force because they retired. Retirements are calculated by forecasting the annual supply over the age of 55 and applying average retirement rates specific to each profession and to NL, which are estimated using Statistics Canada data, to the workforce over the age of 65.

2022 demand for pharmacy technicians was estimated by adding 2022 public sector pharmacy technician vacancies, both budgeted FTE vacancies and temporary call-in vacancies, to the 2022 supply provided in the NLPB Annual Report. However, this includes only public sector vacancies as data to inform private sector vacancies is not available. Thus, the starting gap between supply and demand is likely underestimated. Demand for pharmacy technicians was estimated by forecasting the growth in inflation-adjusted spending on drugs using data from CIHI. More details on the methodology are provided in the following sections.

These preliminary projections were then augmented, wherever possible, based on the availability of supporting data and analysis, to reflect inflight or recently implemented policy initiatives to form a baseline scenario.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 237 below outlines the data requested and received, the data sources and equations used to calculate the supply and demand of pharmacy technicians, as well as any limitations with the data received.

³⁰⁹ [Job Seekers \(2022-2031\) - Canadian Occupational Projection System \(COPS\) - Canada.ca \(esdc.gc.ca\)](https://www.esdc.gc.ca/pt/2022-2031-cops)

Table 210: Data Sources for Pharmacy Technician Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of pharmacy technicians, by zone, 5-year age cohort, and gender from 2018-2022</p> <p>Inflows: Entries into profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.)</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation)</p>	<p>Supply: Yes, but only for NL as a whole (i.e., not split by gender and zone). Source: NLPB</p> <p>Inflows and Outflows: Yes Sources:</p> <ul style="list-style-type: none"> Statistics Canada 2021 Census of Population Other publicly available Statistics Canada tables Employment and Social Development Canada's (ESDC) Canadian Occupational Projection System (COPS) school leaver, other job seekers, and emigration and in-service mortality projections 	$\text{Supply Year } X = \text{Supply Year } X-1 + \text{Immigration Year } X + \text{School Leavers Year } X + \text{Net Switchers Year } X - \text{Retirements Year } X$	<ul style="list-style-type: none"> Only the total supply for NL was available from stakeholders. Assumptions were required to split the supply provided by the NLPB by gender and zone. Data on inflows and outflows was not available from stakeholders. Thus, they were captured using data from Statistics Canada and ESDC.
Demand	<ul style="list-style-type: none"> 10 -year population projections, by 5-year age cohort, gender, and zone Average per capita spending by age and gender for nine CIHI health care spending categories. Spending on drugs is used to estimate growth in demand for pharmacists Average historical cost increases in health care spending. 	<p>Population projections: Yes Source: NL Department of Finance</p> <p>Health spending by category by age and gender: Yes Source: CIHI</p> <p>Historical cost increases in health care spending: Yes Source: CIHI</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = 10-year population projections * the estimated change in average utilization * average real per person spending by age and gender</p> <p>Demand Year X = Demand Year X-1 * growth in the number of people in each age category * average change in real spending per person * the change in utilization</p>	<ul style="list-style-type: none"> Only private sector vacancies are captured in the demand analysis as data to inform private sector vacancies is not available. Thus, the starting gap between supply and demand is likely underestimated. Encounters with pharmacy technicians not captured by CIHI POP Grouper Methodology. Thus, inflation-adjusted health care spending is used to forecast distribution of patients by age and gender across province. Change in utilization estimated based on recent trends.

Preliminary Projections

Table 238 provides the preliminary forecast estimates for pharmacy technicians.

Table 211: Preliminary Supply Projections for Pharmacy Technicians

Health Occupation	Starting supply (December 2022)	School Leavers (2023-2032)	Immigration (2023-2032)	Net Switchers (2023-2032)	Retirements (2023-2032)	Ending Supply (December 2032)
Pharmacy Technicians	265	92	0	-26	20	311

Where: Starting supply (December 2022) + School Leavers (2023-2032) + Immigration (2023-2032) + Net Switchers (2023-2032) - Retirements (2022-2032) = Ending Supply (December 2032)

In the preliminary projections, the supply of pharmacy technicians is predicted to rise by approximately 17% over the forecast period, with inflows outpacing outflows, and with results varying by zone as shown in Table 239. Outflows are expected to be driven primarily by net switchers over the 2023 to 2032 forecast period, while school leavers are expected to represent the largest inflow.

Table 212: Regional Preliminary Supply Projections for Pharmacy Technicians

Zone	2022 Supply	2032 Supply	Percent Change in Supply 2022 vs 2032
Eastern Urban	145	170	18%
Eastern Rural	21	25	17%
Central Zone	52	60	17%
Western Zone	33	39	17%
Labrador-Grenfell Zone	15	17	17%
Total³¹⁰	265	311	17%

Given that the supply forecast for pharmacy technicians was conducted using data from Statistics Canada, the pharmacy technician supply forecast was conducted at the provincial level and was subsequently split by zone.

³¹⁰ Due to rounding, the sum of the supply by zone may not perfectly match the total listed.

Table 213: Preliminary Demand Projections for Pharmacy Technicians

Specialty	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Pharmacy Technicians	265	54	319	378	+18%

Public sector vacancies, both budgeted FTE vacancies and temporary call-in vacancies, are added to 2022 supply to estimate the starting demand. Vacancy data was provided by NLHS Pharmacy Services. However, this includes only public sector vacancies as data to inform private sector vacancies is not available. Thus, the starting gap between supply and demand is likely underestimated.

For pharmacy technicians, demand is estimated using data on drug spending from CIHI.³¹¹ To do this, a demographically driven health expenditure model was created. In this model, average spending was calculated across 40 age and gender cohorts. This model allows spending to be broken into several different components:

- The share of spending related to cost adjustments;
- The share of spending related to increased utilization in each age/gender cohort;
- The share of spending related to overall population growth; and
- The share of spending related to demographic aging.

To build this model, the following steps were undertaken:

Step 1: Allocate spending on drugs across the age/gender cohorts based on CIHI spending data.

Step 2: Calculate the average price adjustments based on CIHI health inflation estimates. This is done to deflate average spending in each age/gender category to estimate volume increases.

Step 3: Estimate the age and gender adjusted real per person spending over the last decade to calculate how utilization has changed in other institutions.

³¹¹ Ideally, average consultation time with patients, average consultation time with the prescriber/members of the care team, dispensing volumes, and average time for drug therapy preparation in addition to dispensing volumes by age cohort, condition, and gender would have been included in the analysis to more accurately estimate the growth in demand for pharmacists and pharmacy technicians. However, accurate data is not currently available. Thus, inflation adjusted spending on drugs was used as a proxy to estimate the growth in demand for pharmacists and pharmacy technicians.

Step 4: Project health care utilization based on past trends. It is estimated that utilization in the drugs sector would increase by an average of 0.3% per year in each age category. The change in utilization was estimated based on trends in utilization since 1986.

Step 5: Project total volumes for drugs in each age/gender cohort by multiplying the number of expected people in each age/gender cohort each year by the average drug spending on an individual in that age/gender cohort. This number takes account of average utilization in the age/gender cohort. Overall, older individuals cost GNL more in drug support than younger individuals. As the population is predicted to continue aging, so are the costs of drugs to NL.

Over the last 10 years, real spending on drugs has risen by an average pace of 0.3% per year. Excluding the effects of population growth and the impact of aging, spending on drugs would have remained constant.

Over the next 10 years, volumes on drugs are projected to grow by an average of 1.6% per year. Of this, 0.0% is due to population growth, 0.3% is due to changes in utilization and 1.3% is due to population aging. As mentioned in step 4, the change in utilization was estimated based on trends in utilization since 1986. This means that, if you strip out the effects of inflation, the aging population, and population growth, what was spent on an individual in 1997 is almost the same as what was spent on an individual in 2022.

Over the entire forecast period, demand for pharmacy technicians in NL is expected to increase by approximately 18%.

Table 241 shows the predicted annual increase in inflation-adjusted spending on drugs (i.e., volumes on drugs), which in this case is used as a proxy with which to estimate growth in demand by zone for the forecast period.

Table 214: Regional Annual Growth in Demand for Pharmacy Technicians

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	2.1%	2.1%	2.1%	2.0%	2.0%	1.9%	2.0%	1.8%	1.8%	1.7%
Eastern Rural	1.9%	1.7%	1.8%	1.7%	1.6%	1.5%	1.3%	1.3%	1.2%	1.0%
Central	1.6%	1.5%	1.6%	1.5%	1.3%	1.3%	1.2%	1.1%	1.2%	0.8%
Western	1.8%	1.8%	1.7%	1.5%	1.5%	1.4%	1.4%	1.3%	1.1%	0.9%
Labrador-Grenfell	1.4%	1.6%	1.4%	1.3%	1.4%	1.4%	1.4%	1.3%	1.2%	1.2%
Newfoundland and Labrador	1.9%	1.9%	1.9%	1.8%	1.8%	1.7%	1.7%	1.6%	1.5%	1.4%

Given that the Eastern Urban zone is predicted to see the largest population growth (and, therefore, growth in anticipated service volume demanded by patients), the increase in demand for pharmacy technicians is highest in that zone. Overall, demand is predicted to increase between 0.8% and 2.1% over the forecast period for all zones.

Table 215: Preliminary Gap Analysis for Pharmacy Technicians

Specialty	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Pharmacy Technicians	265	319	54	311	378	67	+13

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022.

As shown in Table 242, the gap between pharmacy technician supply and demand is expected to increase modestly between 2022 and 2032. If historical inflow and outflow trends remain constant, NL will need to hire 67 additional pharmacy technicians to meet demand across all geographies.

Base Case Projections

For pharmacy technicians, the only applicable base case assumption applied to projections stems from Health Accord NL CTA 9.14 (mortality rate improvement plan for cancer, cardiac disease, and stroke led by provincial programs for these disease entities). Improved access to services delivered by these provincial programs is in part

represented by the construction of a new acute care and cancer care facility in Corner Brook. For the purposes of pharmacy technician projections, this assumption is represented as a one-time addition of four employees when the facility opens in June 2024 (i.e., +4 headcount increase in the Western Zone). Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

Table 216: Base Case Assumptions for Pharmacy Technicians

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	Demand	<ul style="list-style-type: none"> One-time addition when facility opens in June 2024 	<ul style="list-style-type: none"> Western: <ul style="list-style-type: none"> 2024: +4

While some items were not included in the base case at the time of the analysis as they did not meet the three above-mentioned inclusion criteria, the following could have an impact on the demand analysis for pharmacy technicians: the new Cardiovascular and Stroke Institute, the replacement of the St. Clare's Mercy Hospital, the new Ambulatory Care Hub, etc.

Table 244 illustrates the annual quantitative impact for this base case item included in the pharmacy technician analysis.

Table 217: Annual Quantitative Impacts of the Base Case Item for Pharmacy Technicians

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	0	4	4	4	4	4	4	4	4	4
Total Demand Impacts	0	4	4	4	4	4	4	4	4	4

After incorporating this base case item into the analysis, demand for pharmacy technicians in 2032 rises to 382 from 378. Table 245 highlights the final gap analysis over the course of the forecast.

Table 218: Final Annual Provincial Gap Analysis for Pharmacy Technicians

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	265	271	276	281	286	290	294	299	303	307	311
Demand	319	325	335	342	348	354	360	365	371	377	382
Gap	54	54	59	61	62	64	66	66	68	70	71
Gap as a Percent of Supply	20%	20%	21%	22%	22%	22%	22%	22%	22%	23%	23%

Table 245 suggests that the magnitude of the gap between demand and supply is expected to remain relatively stable (i.e., within a range of three percentage points) between 2023 and 2032. Demand for pharmacy technicians is expected to exceed supply for the entirety of the forecast period.

Workforce Recommendations

Table 246 below highlights workforce recommendations proposed to aid GNL in closing this gap.

Table 219: Pharmacy Technician Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Demand for Pharmacy Technicians		
PTECH-1	Rethink	<p>Mitigate Pharmacy Technician Demand by Reducing Inappropriate Requisitions and Ordering:</p> <ul style="list-style-type: none"> As discussed above, Health Accord NL includes several implementation recommendations related to rebalancing NL's health care system, including the formation of a Provincial Pharmacy Program within NLHS. One such recommendation relates to reducing inappropriate utilization of care interventions, including pharmaceutical prescriptions. The prescribing practices of the primary care providers is key to the appropriate use of medications and deprescribing. GNL can prioritize implementation of the following initiatives to support the realization of the vision outlined by the Health Accord NL within the 2023-32 forecast period: <ul style="list-style-type: none"> Establishment of the NL Council for Health Quality and Performance: When implemented, this body will have a significant mandate to undertake measures that will rein in unnecessary utilization of health care services and pharmacotherapies. It can also provide oversight and advocacy to further drive all initiatives underlying PTECH-1. Implementation of a new integrated Health Information System (HIS): Amongst a wide range of potential system features, HIS are equipped with automated digital analytics tools that can proactively identify and flag prescriptions that may be inappropriate, unnecessary, or against typical indications. This will enable GNL to better isolate root causes of unnecessary ordering (e.g., filtering data analysis based on service type, provider type, geography), and be more strategic and comprehensive in taking steps to address this issue. However, when assessing the workforce requirements for implementing the new HIS, it is important to recognize and address the demand for pharmacy technicians to assist in the development, implementation, and maintenance of the system.

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> ○ Creation of a Provincial Choosing Wisely Program: While Choosing Wisely NL has existed since late 2016, a scaled-up, province-wide implementation of a Choosing Wisely Program (i.e., working to achieve a Choosing Wisely Canada designation for the NL health system), led by Quality of Care NL and supported by NLHS, provides additional opportunities through which to mitigate inappropriate ordering. ○ Adoption of FCTs: Stakeholders suggest that inappropriate prescribing from primary care physicians is an area of focus, which can be addressed through expanding the role of pharmacy technicians within FCTs. Improving primary care access and fostering patient-provider continuity may reduce unnecessary ordering through better information sharing among providers and technology systems. Additionally, these teams will focus on enhancing care coordination to ensure that medications are only prescribed when truly needed. However, it is important to recognize that there may be a heightened demand for pharmacy technicians to serve as integral members of FCTs. ● The impact of these initiatives will be directly influenced by implementation timeframes for each of the above Health Accord NL recommendations. More specifically, the establishment of the Council for Health Quality and Performance will be a key accelerator for the implementation of each item listed above. ● The sooner that a new integrated HIS is implemented, the longer the time horizon over which benefits will be realized. However, as GNL's business case for the provincial HIS implementation was developed concurrently to this report, the implications on provider productivity have not yet been measured and need to be explored further. ● However, it is important to note that any mitigation of demand for pharmacy services would be minimal unless prescribing practices drastically change in the next 10 years. As GNL develops and expands more programs, it is reasonable to expect a significant increase in the demand for pharmacy technicians to participate in these programs.
PTECH-2	Automate	<p>Leverage the Health Information System (HIS) to Optimize Pharmacy Operations:</p> <ul style="list-style-type: none"> ● Given GNL's plans to implement a new provincial HIS, this technology provides an opportunity for greater automation within pharmacy settings. ● Leverage the HIS to improve the efficiency of pharmacy operations, reduce the future demand for additional pharmacy technician positions, and to help address the current vacancy issues existing within this workforce. ● Implementing pharmacy management software and computerized provider order entry (CPOE) and closed loop medication administration (CLMA) can streamline prescription processing, inventory management, and patient record-keeping. The potential efficiencies realized post-implementation may not only reduce the workload on pharmacy technicians but also increase efficiency, allowing less FTEs to process similar prescriptions volumes. ● To quantify the impact, time savings are reflected by measuring prescription processing time before and after technology implementation, noting any reduction in staff requirements. <p>Using the CPOE and CLMA functionalities alone has the potential to offset demand for pharmacy technicians by reducing and streamlining administrative processes. As GNL's business case for the provincial HIS implementation was developed concurrently to this report, the implications on provider productivity have not yet been measured and need to be explored further.</p>
Supply of Pharmacy Technicians		
PTECH-3	Recruit / Retain	<p>Continue Pharmacy Technician Retention Incentives Until Workforce Gap Has Been Reasonably Closed and Review Compensation Competitiveness:</p> <ul style="list-style-type: none"> ● The retention bonuses offered in 2022/23 in return for one year of service saw an uptake of 143 pharmacy technicians employed by NLHS. However, the structure of these incentives as a one-time arrangement may lead to a future spike in outflows at a time when this funding may no longer be offered. ● To avoid a pronounced short-term outflow within the existing pharmacy technician workforce, GNL should continue to offer retention incentives until the workforce gap has

ID	Theme	Recommendation and Potential Impact
		<p>been reasonably closed and tied to return-of-service agreements renewed on an ongoing basis (e.g., pay an incentive for each year of service).</p> <ul style="list-style-type: none"> • Beyond retention incentives, GNL should also conduct detailed comparative analysis between current compensation and benefits offered to pharmacy technicians in the public sector versus those working for private sector retail pharmacies. • For example, GNL should consider ways to compete with these retailers' practice of reimbursing professional fees or offering stock options to employees by increasing other aspects of total employee rewards for public sector pharmacy technicians (e.g., offer more paid time off than these retailers, provide flexible work schedules, increase funding for individual training and education, increase health and dental benefits). • Stakeholders suggest that GNL is at times disadvantaged in competing on recruitment and retention against the private sector, and as such, GNL should respond directly with targeted increases to compensation and benefits packages for pharmacy technicians. • Despite the broader policy considerations for continuing these retention incentives — typically determined by collective bargaining units in a unionized environment and beyond the scope of this HHR Plan—providing competitive compensation that aligns with the private sector is an essential part of recruiting pharmacy technicians within the public system.
PTECH-4	Retain	<p>Support Pharmacy Technicians in Rural and Remote Areas to Provide Personalized Care:</p> <ul style="list-style-type: none"> • To increase the retention of pharmacy technicians in rural and remote areas of NL, a comprehensive strategy is needed that includes financial incentives (see recommendation PTECH-3), professional development opportunities, a supportive work environment, access to technology (see PTECH-1), and community engagement. • One way to achieve this is by collaborating with FCTs and leveraging technology (i.e., the provincial HIS) to improve access to health care services in rural and remote areas. <ul style="list-style-type: none"> ◦ As all pharmacies within the province currently have access to the Pharmacy Network, community pharmacies have restricted access to the medication profile contained within HEALTHe NL, while FCTs leverage Electronic Medical Records (EMR). ◦ Acknowledging the implementation of new systems, there are opportunities for enhanced interoperability and improved access among NLHS and FCTs, community pharmacy technicians, and others pharmacy stakeholders. • Consider broadening the scope of practice of pharmacy technicians in NL in alignment with other jurisdictions such as Alberta, Ontario, New Brunswick and Nova Scotia to include activities such as conducting tests.³¹² <ul style="list-style-type: none"> ◦ This may include piercing a patient's dermis to demonstrate the proper use of lancet-type devices for the patient's self-care and education or for the patient's self-monitoring of his or her chronic disease or conducting tests needed to properly manage drug therapy if delegated by a pharmacist who is authorized to order, receive, conduct and interpret tests to manage drug therapy.³¹³ ◦ It is important to note that conducting tests within scope of practice of pharmacy technicians is dependent upon expansion of pharmacists' scope of practice to order and interpret tests as recommended in P-6. ◦ This also requires updates to education curriculum and professional regulations to support this expanded scope as a regulated profession. • It is important to recognize the unique health care needs of Indigenous populations in rural and remote areas and to provide culturally appropriate care. This can be achieved by collaborating with Indigenous communities, hiring Indigenous pharmacy technicians, and providing training and education to pharmacy technicians on the cultural practices and traditional medicine of Indigenous communities. By doing so, pharmacy technicians can provide better care to Indigenous populations, which can improve health outcomes and increase trust and engagement with the health care system.

³¹² [NAPRA-Pharmacy-Technicians-Scope-of-Practice-in-Canada-Chart-2022-11-EN.pdf](https://www.napra.ca/wp-content/uploads/2022/11/NAPRA-Pharmacy-Technicians-Scope-of-Practice-in-Canada-Chart-2022-11-EN.pdf)

³¹³ <https://www.napra.ca/wp-content/uploads/2022/09/NAPRA-PT-Scope-of-Practice-in-Canada-Chart-2021-12-EN.pdf>

ID	Theme	Recommendation and Potential Impact
PTECH-5	Recruit	<p>Support Internationally Trained Pharmacy Technicians in Obtaining their License in NL:</p> <ul style="list-style-type: none"> Finally, increasing community engagement by encouraging pharmacy technicians to engage with the local community through outreach events and community health initiatives can help them feel more connected to the community they serve. <p>Support Internationally Trained Pharmacy Technicians in Obtaining their License in NL:</p> <ul style="list-style-type: none"> There is currently no pathway for registration of internationally trained pharmacy technicians with NLPB, which currently poses a significant gap and barrier to international recruitment efforts. Legislative change is required to establish a mechanism by which international graduates can register with NLPB to practice within the province. In addition, consider providing an expedited pathway for applicants who are willing to relocate in rural and remote areas, and areas experiencing a higher proportion of vacancies, by providing financial assistance to cover the costs of the licensure process, such as credential assessment fees, exam fees, or language proficiency test fees. Furthermore, consider reimbursing professional registration fees for internationally trained pharmacy technicians that sign contracts with NLHS. To support their integration into the workforce and community, GNL should develop initiatives to address the specific needs and challenges of internationally trained pharmacy technicians, such as language and communication skills, cultural adaptation, and career development.

Physiotherapists

Given Newfoundland and Labrador's (NL) aging population and corresponding clinical service demands (i.e., rehabilitation after a fall, chronic disease management, acute management of musculoskeletal injuries, health promotion and prevention, and assistance with aging in place in community), physiotherapists (PTs) are an in-demand category of allied health care professionals. PTs deliver a wide range of services across a variety of care settings, including support to specialties such as Orthopedics, Neurology, Cardiorespiratory, Long-Term Care (LTC), Pediatrics, Women's Health, Mental Health, Chronic Pain, Rehabilitation (Adult & Child Health), Clinical Efficiency (orthopedic central intake and total joint assessment), Cardiac Rehabilitation, Pulmonary Rehabilitation and private practice.

PTs provide professional clinical physiotherapy focused on preventative, diagnostic, and therapeutic services intended to maximize a patient's functional abilities.³¹⁴ This may include preventing or alleviating disabilities, maintaining function, and/or preventing undue deterioration. These providers work in close collaboration with patients and their caregivers, as well as other care team members to identify, achieve, and maintain optimal health outcomes, and to develop treatment plans based on assessments of patients' unique needs.

Clinical PT I and PT II roles are critical members of interdisciplinary care teams, leadership, and the health care environment as a whole. Clinical PT II's also provide clinical supervision and coordination for overall delivery of physiotherapy services, implementation and evaluation of quality initiatives, program planning and development.³¹⁵ Clinical PT III's provide advanced professional administrative and clinical supervisory work either regionally or across sites and are responsible for PTs, Physiotherapy Assistants (PTA), and clerical staff. They are involved in the planning, development, implementation, and evaluation of services offered.³¹⁶

Graduating physiotherapy students must now hold an entry-to-practice Master's degree from an accredited physiotherapy program. Before being able to practice, PTs are also required to successfully complete the National Physiotherapy Competency Exam. However, practicing PTs who hold a Bachelor's of Physiotherapy designation are still able to practice in the province. The Canadian Alliance of Physiotherapy Regulators (CAPR) assesses if internationally educated

³¹⁴ <https://www.gov.nl.ca/exec/tbs/files/jobeval-jes-c-clinical-physiotherapist-i.pdf>

³¹⁵ <https://www.gov.nl.ca/exec/tbs/files/jobeval-jes-c-clinical-physiotherapist-ii.pdf>

³¹⁶ <https://www.gov.nl.ca/exec/tbs/files/jobeval-jes-c-clinical-physiotherapist-iii.pdf>

PTs meet the criteria to complete the national exam, and additional mentorship is required. All PTs in the province must be licensed as a Registered Physiotherapist with the NL College of Physiotherapy.

Current State Analysis

As of December 2022, there were a total of 345 PTs in NL (public and private), distributed by NLHS zone as shown in Table 247 below.

Roughly 60% of PTs in NL work in the public sector.³¹⁷ GNL typically recruits PTs as graduates of Dalhousie University's School of Physiotherapy, as GNL has a seat purchase agreement in place for 10 NL students per academic year. GNL also recruits graduates from the 14 other physiotherapy university programs in Canada, as well as international universities (such as those in the United Kingdom).

Table 220: Physiotherapists by NLHS Zone³¹⁸

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2022 Supply	245	16	31	39	14	345

Demand volume (i.e., number of physiotherapy appointments) for PTs is driven primarily by the province's aging population and its underlying care needs and burden of musculoskeletal disease. Several statistics point to higher utilization of physiotherapy by older age cohorts, with new and expanding areas of care, such as primary health care, cardiac rehabilitation, and central intake being key drivers of this demand for services. In Canada, the number of senior citizens in need of PT services is growing by seven percent annually, much faster than the general adult population.³¹⁹ In the United States, estimates suggest that patients over 65 years of age represent 55% of all physiotherapy service demand volume.³²⁰ As NL's population continues to age, it can expect sustained demand increases for services delivered by PTs.

Education

Currently, there are 15 accredited graduate programs in physiotherapy offered in Canada: Dalhousie University in Nova Scotia; University of Ottawa, Queen's University, McMaster University, University of Toronto, Western University in Ontario; McGill University, Université de Montréal, Université de Sherbrooke, and Université

³¹⁷ Data provided by NL College of Physiotherapists in January 2024.

³¹⁸ Includes all physiotherapists in the province (NLHS and private sector).

³¹⁹ <https://www.bayshore.ca/resources/demand-for-physiotherapy-will-rise-as-the-population-ages/>

³²⁰ <https://www.crossrivertherapy.com/research/physical-therapy-statistics>

Laval in Quebec; the University of Alberta, and the University of Calgary in Alberta; University of Manitoba in Manitoba; University of Saskatchewan in Saskatchewan; and, the University of British Columbia in British Columbia.

The only source of Atlantic graduates is Dalhousie University's Master of Science in Physiotherapy (MScPT), with each class cohort having approximately 62 students. GNL has had a seat purchase agreement with Dalhousie University for 10 NL students per academic year since 1981. However, in some academic years there is often more (as many as 14 students). In the past there was a bursary program, whereby students would have their tuition paid in exchange for one year return-in-service with NL for each year that the bursary was granted. However, this program was discontinued in 1996.

The number of seats available in each program varies annually and can range from approximately 30 to over 100 seats per program. The total number of physiotherapy graduates in Canada also fluctuates each year, but it is estimated to be around 1,200 to 1,500 annually, depending on the program and the year.

Rural and Remote

The recruitment and retention of PTs in rural areas of NL, including Labrador, Central, and Eastern Rural Zones, pose significant challenges to the health care system. Stakeholders report high vacancy levels and turnover rates for physiotherapy positions, especially PT I, in these regions, which has led to a shortage of available services. This shortage is particularly concerning given the vital role that physiotherapy plays in the treatment and management of various health conditions. The lack of adequate staff has notably impacted access to physiotherapy services, especially in the areas of pediatrics and the management of acute and chronic musculoskeletal issues. As a result, residents in rural and remote areas face difficulties in obtaining timely and appropriate physiotherapy care, which can lead to prolonged recovery times and exacerbation of health conditions. This situation underscores the need for targeted strategies to attract and retain PTs in rural NL to ensure equitable access to health care services across the province.

Fragmented Union Representation

In the Eastern Urban Zone, the PT workforce faces challenges due to the fragmented union representation within the allied health sector. Currently, three different unions – the Allied Health Professionals Association (AAHP), the Canadian Union of Public Employees (CUPE), and the Newfoundland and Labrador Association of Public and Private

Employees Health Professionals (NAPE) – represent allied health professionals, including PTs, in the same geographic zone. This multiplicity of unions leads to a lack of uniformity in working conditions, benefits, and advocacy efforts, which in turn affects the continuity of care and the efficiency of workflow in health care settings. The division among unions hampers collective bargaining power and creates inconsistencies in professional standards and practices. To address these issues, there is a pressing need for the consolidation of union representation to ensure the long-term sustainability and efficiency of the PT workforce in the region. A unified union for all allied health professionals in the NLHS would streamline negotiations, enhance workforce cohesion, and ultimately improve the delivery of physiotherapy services to the population.

Health Accord NL Calls to Action

Many Calls to Action (CTAs) from Health Accord NL have implications for the supply and demand of PTs in NL:

- **CTA 7.1:** Strengthen efforts to create a continuum of education, learning and socializing, and care for children and youth (from prenatal to adulthood).
- **CTA 7.2:** Develop one model of community health services for children and youth with complex health needs and a more integrated approach to respond to health needs of children and youth in care.
- **CTA 8.1:** Develop and implement a formal Provincial Seniors Care Program to address the critical need of our population.
- **CTA 8.2:** Implement and support an integrated continuum of care to improve the effectiveness and efficiency of care delivery, improve health and social outcomes for older adults and older adults with disabilities, and support older adults to age in place with dignity and autonomy.
- **CTA 8.4:** Develop and implement provincial legislation, regulation, and policy required to provide appropriate, quality, and accessible care and protection for older persons in NL.
- **CTA 9.1:** Connect every resident of NL to a Family Care Team (FCT) providing a central touchpoint of access and a continuum of care.
- **CTA 9.2:** Improve coordination of care across the health and social systems by enhancing communication and system navigation.
- **CTA 9.3:** Place greater emphasis on health promotion and well-being, the social determinants of health, and chronic disease management.

- **CTA 9.7:** Establish better integrated, team-based care by arranging hospital service delivery into a network consisting of community, regional, and tertiary hospitals that offer timely access to a full array of services.
- **CTA 9.9:** Optimize the utilization of the Janeway Hospital, by improving access to pediatric services, by creating linkages with community teams for vulnerable children and youth province-wide, and by incorporating Women's Health.
- **CTA 9.11:** Enhance care across the continuum to ensure that access to appropriate and high-quality care and service is available to patients/clients/ residents in the most appropriate setting and to minimize the need to travel to obtain appropriate services, or receive timely or affordable care.
- **CTA 9.14:** Develop and implement a five-year plan for improvement in mortality rates for cancer, cardiac disease, and stroke over the next 10 years, led by the provincial programs for these disease entities.
- **CTA 9.16:** Begin action immediately on initiatives needed to rebalance the community, long-term care, and hospital system.
- **CTA 10.6:** Create a health and social system environment that enables all providers to work to the highest scope of practice within their education and/or training.
- **CTA 10.9:** Create an environment that values leadership and management and inspires those with potential to lead. This includes creating value in management positions and succession planning for those with leadership and management potential to receive training and mentorship.

CTA 7.1 outlines the province's plan for strengthening efforts to create a continuum of education, learning, socializing, and care for children and youth, which may increase the demand for PTs in NL over the next 10 years. As emphasis is placed on comprehensive care from prenatal to adulthood, the need for specialized pediatric physiotherapy services is likely to rise, with plans to embed PTs within the Janeway Lifestyles Program. CTA 9.9 outlines optimizing the utilization of the Janeway Hospital and improving access to pediatric services. This may further increase the demand for pediatric PTs through the four PT Pediatric Outreach positions established in Gander, Grand Falls-Windsor, and Corner Brook, with the aim to improve access to physiotherapy services closer to patients' homes. Likewise, the development of a unified model of community health services for children and youth with complex health needs as outlined in CTA 7.2 will lead to increased demand for PTs. This integrated approach will necessitate PTs to follow clients with complex care needs and disabilities.

The implementation of a Provincial Seniors Care Program through CTA 8.1, and an integrated continuum of care for older adults through CTA 8.2, has the potential to yield multiple benefits for the NL health system including emergency departments certified as "Senior Friendly" (without which, misdiagnoses and inappropriate care may be more frequent), and reduced demands for ALC beds and resources (as many older ALC patients can return home or to a lower level of care with appropriate, geriatric-focused discharge planning). Implications of these CTAs for the NL PT workforce include an expected increase in demand stemming from support teams that are to be embedded at frailty units at the three regional hospitals, as well as in Labrador. Implementing legislation, regulation, and policy for the care and protection of older persons, as outlined in CTA 8.4, may further result in an increased demand for PTs specializing in geriatric care to help meet the unmet needs of seniors, with PTs expected to play a key role in Home First and Family Care Teams (FCTs). For the purposes of this Health Human Resources (HHR) Plan, the implementation of CTA 8.1 and CTA 8.2 is quantified as demand for an additional PT position across each NLHS health zone (see Table 260).

Similarly, CTA 9.1 is likely to result in increased demand for PTs to meet GNL's goal of providing every resident with equitable access to primary care through a FCT. The fact that up to 20% of NL residents lack access to a family medicine physician, and many more are unable to access one in a timely manner, points to an urgent need for more primary health care providers adopting an integrated approach that includes social supports and services. In shifting away from the physician-centric delivery models of the past, implementation of CTA 9.1 is likely to further increase demand for PTs who are embedded within FCTs.

Improving coordination of care across health and social systems, as outlined in CTA 9.2, will likely impact the role of PTs, who will need to be adept at navigating these systems and communicating effectively within interprofessional teams. PTs may be expected to take on team navigation roles, become more digitally connected, and involved in change management and communications between acute and community care settings. Likewise, placing greater emphasis on health promotion, well-being, social determinants of health (SDH), and chronic disease management as described in CTA 9.3 will likely expand the role of the PT beyond traditional clinical settings to include those such as the GLA:D Program for the management of knee and hip osteoporosis.³²¹

³²¹ [GLA:D Canada – Managing Hip and Knee Osteoarthritis \(gladcanada.ca\)](http://gladcanada.ca)

CTA 9.7 envisions how establishing integrated, team-based care with a network of hospitals will necessitate a well-distributed supply of PTs across different levels of care. This approach may lead to more opportunities for PTs in community, regional and tertiary settings, influencing the distribution of the workforce. CTA 9.11 seeks to enhance care across the continuum to ensure access to high-quality care in the most appropriate setting. This could lead to a more diverse range of employment opportunities for PTs, including roles in emergency departments (ED). Furthermore, CTA 9.16 calls for initiatives to rebalance the community, long-term care, and hospital system may result in a shift in the demand for PTs across different settings. As care moves towards community and home-based services, the demand for PTs in these areas is expected to rise, along with scope and role.

CTA 9.14 signals the need for a five-year improvement plan for cancer, cardiac disease, and stroke mortality rates over the next 10 years – led by corresponding provincial programs. This is aimed at improving access to services delivered by these programs. PTs will play vital roles in these newly established Centers of Excellence (CoE), with new PT positions being established in cardiac rehabilitation and PT rehabilitation for cancer patients. For the purposes of this HHR Plan, improved access to cardiac disease and stroke services is represented by the construction of a new acute care facility in Corner Brook. More specifically, quantitative analysis incorporates this CTA in the form of a one-time addition of four PTs in the Western Zone (see Table 260 below).

CTA 10.6 speaks to creating an environment that enables all providers to work to the highest scope of practice. As PTs become increasingly embedded in collaborative practice, this could include increased autonomy and a broader range of responsibilities. This shift could impact both the supply of and demand for PTs with advanced skills and training.

In addition, CTA 10.9 focuses on fostering an environment that values leadership and management in the health and social system, aiming to encourage more health professionals such as PTs to pursue leadership roles. Succession planning and mentorship programs for clinical leaders and speciality areas of practice may lead to a more robust pipeline of PTs for the province. This outcome would be further supported by a provincial education strategy that clarifies roles and scopes of practice for PTs.

Workforce Initiatives

To address PT recruitment and retention in NL, HCS has introduced retention bonuses in return for one year of service, which ended on January 31, 2023. It is of note that this initiative is not intended to increase PT headcount; rather, it is aimed at slowing annual attrition rates and mitigating resignations over the short- to medium-term. GNL reported that, as of February 2023, 129 PTs working in the public system have successfully applied to receive this retention bonus, with distribution varying across health zones.

Beyond retention incentives, HCS has already taken steps to strengthen the supply of PTs within the public sector via the following initiatives:

- **Seat Purchase Agreement with Dalhousie University:** GNL funds 10 seats at Dalhousie University's Physiotherapy program reserved for NL students each academic year.
- **Signing Bonuses:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions, and tiered to address geographic considerations with an associated return-in-service of one or two years.
- **Health Professional Bursaries:** \$3,000 bursaries are awarded for difficult-to-fill positions, available to PT students who sign a service agreement for one year of service post-graduation.

HCS also funds the Physiotherapy Provincial Coordinator for Clinical Education position, which plays a unique, provincial role in facilitating and overseeing the clinical education programs for PT students completing placements within the province. This position involves collaboration with academic institutions, health care facilities and other partners to ensure the successful planning, implementation and evaluation of fieldwork experiences contributing to the supply of competent and skilled PT professionals. They also serve as a resource to students in planning for education and careers in the PT professions.

Stakeholder Engagement Insights

Five focus groups were conducted to better understand the experiences and perspectives of the PT workforce in NL:

- Newfoundland and Labrador College of Physiotherapists
- NLHS PT Professional Practice Consultants
- Canadian Union of Public Employees (CUPE)
- Association of Public and Private Employees (NAPE)
- Association of Allied Health Professionals NL (AAHP-NL)

In addition, 11 individuals responded to the focus group follow-up survey with additional insights. This consultation activity yielded a set of qualitative insights pertinent to the development of PT workforce recommendations and are summarized in Table 248. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, and may not be grounded in absolute fact.

Table 221: What We Heard from Physiotherapist Stakeholders

Theme	Insights
Education and Work Placements	<ul style="list-style-type: none"> Stakeholders pointed to continuing education as a critically important retention factor, particularly for PTs based in rural areas. There is a workforce perception that roles in these geographies have fewer opportunities versus those in the St. John's metropolitan area. Education and work placement-related challenges in physiotherapy recruitment and retention include relatively higher costs (e.g., travel, accommodation) for Dalhousie students to complete work placements in NL, and a limited number of these placements in a typical year. Another challenge is related to the supply of preceptors to support and oversee these placements, as much of the workforce is experiencing burnout and exhaustion, in part driven by the COVID-19 pandemic. A related barrier to PT recruitment is the fact that Dalhousie's program is unable to increase the number of spots in each physiotherapy student cohort due to an insufficient critical mass of faculty and clinical placements. Stakeholders also highlight that provincial funding for PTs training in public care settings has declined in recent years, to the point where private employers are now able to offer higher education allowances, and publicly employed PTs must increasingly pay out of pocket for education and training. This situation represents a competitive advantage for private employers over the public sector, which is further enhanced by offering work-life balance and schedule flexibility. As a result, stakeholders suggest that prospective PTs have declining levels of interest in public health or acute care roles, instead opting for private practice.
Drivers of Demand	<ul style="list-style-type: none"> Physiotherapy stakeholders pointed to a series of key drivers of future demand: an aging population, and corresponding care needs including a very high volume of orthopaedic procedures (particularly joint replacements) are two factors expected to drive sustained increased demand for PTs. In addition, the increased prevalence of comorbidities as NL's population continues to age will accelerate demand for PT services. A shortage of family medicine physicians and overall challenges with primary care access in NL are also seen as drivers of future demand, as PTs are at times restricted from working to their full scope of practice. In private care settings, public awareness of the scope of physiotherapy services and private insurance coverage are demand drivers. Stakeholders suggest that members of the public often present to a physician with condition(s) that could be appropriately addressed by a PT. Improved public education and understanding with respect to a NL PT's scope of practice could drive increased demand in private care settings in the future. Relatedly, an increase in the number of Newfoundlanders and Labradorians with private health care insurance (i.e., that would cover physiotherapy services) would also be expected to increase future demand.

Theme	Insights
Scope of Practice	<ul style="list-style-type: none"> Stakeholders highlighted opportunities and challenges associated with the PT scope of practice in NL. For example, physiotherapy is one of the allied health professions currently attached to FCTs, which will both help improve access to physiotherapy services while also providing additional opportunities for PTs to practice to the top of their scope. Another area of opportunity identified by stakeholders is to increase PT scope of practice to enable PTs to refer patients for x-ray imaging (which is currently not permitted). Related efforts and initiatives to enhance PTs' roles (and overall availability of, and access to, allied health professionals) are, in part, intended to offload a portion of demand for primary care. While GNL has adjusted physiotherapy regulations to allow licensure without successful completion of a clinical examination, this has increased demands on PTs to act as mentors for a longer duration than what would be typical.
Compensation	<ul style="list-style-type: none"> For PTs working in the public sector, stakeholders shared that job requirements have shifted since the last Job Evaluation System (JES) evaluation of the position. Requirements for registration have changed since the pandemic, as the clinical component of the national exam was unable to continue. Currently in NL, conditional registrants require the passing of a national written exam, a Jurisprudence exam, and six months mentorship. As a result, it is perceived that current compensation does not accurately reflect the true activities and responsibilities associated with the PT role, thus creating inequalities with the private sector.
Rural and Remote Areas	<ul style="list-style-type: none"> Stakeholders report high PT vacancy levels and turnover rates in rural and remote areas of the province, including Labrador-Grenfell, Central, and Eastern Rural Zones. Without adequate staff, access to physiotherapy services within these regions have been impacted, especially for pediatrics, and acute and chronic musculoskeletal issues. It was suggested that PTs should have been included in the Come Home Year incentives that was offered to other allied health and health professions in 2022 to improve these rural recruitment issues.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary supply and demand projections for PTs were developed based on historical practice patterns and trends. Data on the supply of PTs in NL was provided by the Newfoundland and Labrador College of Physiotherapists (NLCP). The NLCP only provided information on the stock of PTs each year from 2017 to 2023. Thus, inflows and outflows were estimated manually comparing registration IDs from year to year. If one individual was captured in year X, but not in year X+1 they were counted as an outflow, and if an individual was not captured in year X, but was present in year X+1, they were counted as an inflow. Consequently, only total inflows and outflows were captured for PTs. Since inflows and outflows were manually estimated, the

reason for entry or exit from the workforce could not be determined from the historical data provided. Thus, it is highly probable that retirements are also being captured within other outflows in the forecast.

Moreover, only the city of employment was listed in the data provided by the NLCP. Thus, a preliminary exercise of mapping the city of employment to one of the five health zones was undertaken before organizing the supply, inflow and outflow data by age, gender and zone.

Finally, only the date of birth of each individual was provided. Using the date of birth and the date at which the data was pulled for each data dump, the age of each individual was determined. Then each individual was placed within one of the five-year age cohorts.

These preliminary projections were then augmented, wherever possible, based on the availability of supporting data and analysis, to reflect inflight or recently implemented policy initiatives to form a baseline scenario. The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 249 outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for PTs, as well as any limitations or caveats to the data received.

Table 222: Data Sources for Physiotherapist Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of PTs, by zone, 5-year age cohort, and gender from 2018-2022</p> <p>Inflows: Entries into profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.)</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation)</p>	<p>Supply: Yes</p> <p>Inflows: No. Estimated manually comparing registration IDs year over year. Thus, only total entries, not split by reason for entry to workforce, were estimated.</p> <p>Outflows: No. Estimated manually comparing registration IDs year over year. Thus, only total exits, not split by reason for exit from workforce, were estimated.</p>	$\text{Supply Year } X = \text{Supply Year } X-1 + 4\text{-year average inflows} - 4\text{-year average outflows}$	<ul style="list-style-type: none"> Given that only total supply from 2017-2022 was provided, an important manual exercise was undertaken to capture inflows and outflows. Could not determine reason for entry or exit in the historical data. Thus, it's highly probable that retirements are also being captured within other outflows.
Demand	<ul style="list-style-type: none"> 10-year population projections, by 5-year age cohort, gender, and zone Average per capita spending by age and gender for nine CIHI health care spending categories. Spending in other institutions, hospital and total health care spending are used to estimate growth in demand for PTs Average historical cost increases in health care spending. 	<p>Population projections: Yes</p> <p>Health spending by category by age and gender: Yes</p> <p>Historical cost increases in health care spending: Yes</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = 10-year population projections * the estimated change in average utilization * average real per person spending by age and gender</p> <p>Demand Year X = Demand Year X-1 * growth in the number of people in each age category * average change in real spending per person * the change in utilization</p>	<ul style="list-style-type: none"> Encounters with PTs are not captured by the CIHI POP Grouper Methodology. Thus, the weighted average inflation-adjusted health care spending (i.e., volumes) is used to forecast distribution of patients by age and gender across NL. Change in utilization estimated based on recent trends.

Preliminary Projections

This section provides the preliminary forecast estimates for PTs.

Table 223: Preliminary Supply Projections for Physiotherapists

Health Occupation	Starting supply (Dec. 2022)	Inflows (2023-2032)	Retirements (2023-2032)	Other Outflows (2023-2032)	Ending Supply (Dec. 2032)
Physiotherapists	345	126	15	76	380

Where: Starting supply (Dec. 2021) + Inflows (2022-2032) - Retirements (2022-2032) - Other Outflows (2022-2032) = Ending Supply (Dec. 2032)

In the preliminary projections, the supply of PTs is predicted to rise by approximately 10% over the forecast period, with inflows generally outpacing outflows, and with results varying by zone as shown in Table 251.

Table 224: Regional Preliminary Supply Projections for Physiotherapists

Zone	2018 Supply	2022 Supply	2032 Supply	Percent Change in Supply 2018 vs 2022	Percent Change in Supply 2022 vs 2032
Eastern Urban	226	245	275	+8%	+12%
Eastern Rural	12	16	18	+33%	+15%
Central	32	31	32	-3%	+4%
Western	41	39	40	-5%	+2%
Labrador-Grenfell	12	14	15	+17%	+7%
Total	323	345	380	+7%	+10%

While all NLHS Health Zones are expected to see PT supply increases of at least two percent over the 2023-32 forecast period, the projected 10% growth in (preliminary) supply during this time will be driven primarily by the Eastern Urban and Eastern Rural zones.

Table 225: Preliminary Demand Projections for Physiotherapists

Specialty	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Physiotherapists	345	18	363	426	+17%

Vacancies are added to 2022 supply to estimate the starting demand. For PTs, demand is estimated using data on health care spending

from CIHI. To estimate the growth in health care spending in NL, a demographically driven health expenditure model was created. In this model, average spending was calculated across 40 age and gender cohorts. This model allows spending to be broken into several different components:

- The share of spending related to cost adjustments;
- The share of spending related to increased utilization in each age/gender cohort;
- The share of spending related to overall population growth; and
- The share of spending related to demographic aging.

To build this model, the following steps were undertaken:

Step 1: Allocate health care spending by category across the age/gender cohorts based on CIHI spending data.

Step 2: Calculate the average price adjustments based on CIHI health inflation estimates. This is done to deflate average spending in each age/gender category to estimate volume increases.

Step 3: Estimate the age and gender adjusted real per person spending over the last decade to calculate how utilization has changed.

Step 4: Project health care utilization for the relevant spending categories based on past trends and discussions with subject matter experts.

CIHI identifies four places of work for PTs: hospitals, community, long-term care (LTC)/nursing homes, and other. These four places of work were mapped to three health care spending categories:³²²

- Hospitals to spending on hospitals
- LTC/nursing homes to spending on other institutions
- Community and other to total health care spending

Utilization in hospitals is estimated to decline by 0.08% per year of the forecast in each age category to reflect expected productivity improvements. It is estimated that utilization in other institutions would decline by an average of 0.4% per year in each age category, reflecting an increased likelihood of aging at home. For health care spending in the province overall, utilization is predicted to increase by

³²² The spending categories do not map one for one to the places of work. A best estimate of a mapping was thus conducted. Thus, four places of work had to be mapped to three health care spending categories (both community and other was mapped to “total health care spending”).

approximately 0.6% on average. Spending on overall health care is the sum of spending in all nine categories, which means the utilization impact varies slightly by age cohort and gender. Utilization projections were based on utilization trends since 1986.

Step 5: Project total volumes (i.e., inflation-adjusted spending) for hospitals, other institutions, and health care overall in each age/gender cohort. This is done by multiplying the number of expected people in each age/gender cohort each year by the average cost of an individual in that age/gender cohort. Volumes account for past utilization trends, the impact of aging, and population growth. Thus, the change in volumes reflects the true change in demand.

The following tables and accompanying descriptive text highlight the change in real per capita health care spending (i.e., volumes) over the past decade and over the coming decade. The total change in volumes is followed by a breakdown of the impacts of population aging, population growth and changes in utilization on changes in volumes. These tables are not cumulative they simply highlight the breakdown of the impacts feeding into the growth in volumes.

Impacts over the past ten years

The table below highlights the change in volumes (i.e., inflation-adjusted, or real, spending) over the past 10 years.

Table 226: Average Compound Annual Growth Rate (CAGR) in Volumes, 2012 to 2022

Spending Category	CAGR in Real Spending (i.e., Volumes) 2012-2022
Hospitals	0.8%
Other Institutions	2.1%
Total Health Care	1.2%

Excluding the effects of population growth, the overall numbers remained nearly identical for all three spending categories as population growth (in CAGR) was close to zero between 2012 and 2022. Table 254 below highlights the change in volumes over the last decade if the effects of population growth were not accounted for.

Table 227: Average CAGR in Volumes, Excluding Population Growth, 2012 to 2022

Spending Category	CAGR in Real Spending (i.e., Volumes) 2012-2022, Excluding Population Growth
Hospitals	0.8%
Other Institutions	2.2%
Total Health Care	1.2%

In all three categories, the majority, if not all, of the growth in volumes over the past decade was due to an aging population.

Impacts over the next ten years

Over the next 10 years volumes in the three relevant categories are predicted to grow in accordance with the numbers highlighted in Table 255 below.

Table 228: Average CAGR in Volumes, 2022 to 2032

Spending Category	CAGR in Real Spending (i.e., Volumes) 2022-2032
Hospitals	1.5%
Other Institutions	3.0%
Total Health Care	1.5%

For all three categories, 0.0% of the change in volumes is due to population growth. As mentioned in Step 4, utilization in hospitals is estimated to decline by 0.08% per year, utilization in other institutions is predicted to decline by an average of 0.4% per year, and for health care spending overall, utilization is predicted to increase by approximately 0.6%. These utilization estimates were based on trends in utilization observed since 1986.

Like with the past 10 years, population growth is not predicted to have any impact on volumes as population growth is predicted to remain close to zero from now until 2032.

The aging of the population is expected to have the following average impacts over the coming decade.

Table 229: Average Impact of Population Aging on the Growth in Volumes, 2022-2032

Spending Category	Impact of Population Aging, 2022-2032
Hospitals	1.6%
Other Institutions	3.4%
Total Health Care	0.9%

Step 6: Estimate the weighted average growth in volumes. As mentioned in Step 4, CIHI identifies four places of work for PTs. Table 257 summarizes the percent of PTs working in each setting in 2022 according to CIHI. These were the weights used to calculate the weighted average growth in volumes, which, in turn, was the growth rate applied to the demand for PTs.

Table 230: CIHI's Split of Physiotherapists by Place of Work in 2022

	Hospital	Community Health	Nursing Home/LTC	Other
Physiotherapists	44%	52%	3%	1%

The formula used to estimate the weighted average (WA) growth in volumes in health care for PTs (i.e., the weighted average growth in inflation adjusted spending for PTs) is as follows:

Weighted Average

$$= \frac{(Hospital\ Weight \times Hospital\ Volumes) + (Community\ Weight \times Total\ Health\ Care\ Volumes) + ((LTC\ Weight \times Other\ Institution\ Volumes) + (Other\ Weight \times Total\ Health\ Care\ Volumes))}{Hospital\ Weight + Community\ Weight + LTC\ Weight + Other\ Weight}$$

Over the entire forecast period, demand for PTs in NL is expected to increase by approximately 17%. Table 258 shows the predicted annual increase in health care spending, which in this case is used as a proxy with which to estimate growth in demand by zone for the forecast period.

Table 231: Regional Annual Growth in Demand for Physiotherapists

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.7%	1.8%	1.7%
Eastern Rural	1.4%	1.4%	1.5%	1.6%	1.5%	1.5%	1.3%	1.3%	1.4%	1.2%
Central	1.2%	1.2%	1.3%	1.4%	1.2%	1.1%	1.1%	1.1%	1.3%	1.0%
Western	1.4%	1.3%	1.4%	1.3%	1.4%	1.3%	1.4%	1.3%	1.2%	1.0%
Labrador-Grenfell	1.0%	1.3%	1.1%	1.2%	1.3%	1.2%	1.2%	1.2%	1.2%	1.1%
Newfoundland and Labrador	1.6%	1.6%	1.7%	1.6%	1.6%	1.6%	1.7%	1.6%	1.6%	1.5%

Table 258 suggests that the growth in demand is expected to lie between 1% and 2% for all zones, with a slightly greater increase in demand predicted for Eastern Urban as the population is predicted to rise most in that zone.

Table 232: Preliminary Gap Analysis for Physiotherapists

Specialty	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Physiotherapist	345	363	18	380	426	46	+28

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022. As shown in Table 259, the gap between PT supply and demand is expected to more than double between 2022 and 2032. If historical inflow and outflow trends remain constant, NL will need to hire 46 additional PTs to meet demand across all geographies.

Base Case Projections

For PTs, the Health Accord NL CTAs and workforce initiatives listed below are reflective of stakeholder feedback. In addition, sufficient quantitative data existed for their impact to be incorporated in supply and demand projections. Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

- **Supply Analysis:** No supply-side workforce initiatives or CTAs could be quantified at the time of the completion of the report
- **Demand Analysis:**

- Construction of a new acute care and cancer care facility in Corner Brook (i.e., CTA 9.14); and
- Establishment of frailty unit support teams, including PTs, at each of the three regional hospitals in Eastern-Urban Zone, Central Zone, and Western Zone (i.e., CTA 8.1 and 8.2).

Table 260 highlights the assumptions used to help quantify the base case items for PTs.

Table 233: Base Case Assumptions for Physiotherapists

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	Demand	<ul style="list-style-type: none"> • One-time addition when facility opens in June 2024 	<ul style="list-style-type: none"> • Western: <ul style="list-style-type: none"> ◦ 2024: +4
Health Accord NL CTA 8.1 and 8.2: Provincial Seniors Care Program	Demand	<ul style="list-style-type: none"> • Embedded within the frailty unit support teams (one team at each of the three Regional Hospitals) in addition to Labrador 	<ul style="list-style-type: none"> • Eastern Urban: <ul style="list-style-type: none"> ◦ 2024: +1 • Western: <ul style="list-style-type: none"> ◦ 2025: +1 • Central: <ul style="list-style-type: none"> ◦ 2026: +1 • Labrador-Grenfell: <ul style="list-style-type: none"> ◦ 2026: +1

While some items were not included in the base case at the time of the analysis as they did not meet the three above-mentioned inclusion criteria, the following could have an impact on the demand analysis for PTs: the new Cardiovascular and Stroke Institute, the new MHA centre in St. John's, the use of PTs within FCTs, etc.

Table 261 summarizes the annual quantitative impacts for the base case items included in the PT analysis.

Table 234: Annual Quantitative Impacts of the Base Case Items for Physiotherapists

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	0	4	4	4	4	4	4	4	4	4
Health Accord NL CTA 8.1 and 8.2: Provincial Seniors Care Program	0	1	2	4	4	4	4	4	4	4
Total Demand Impacts	0	5	6	8						

After incorporating these two base case items into the analysis, demand for PTs in 2032 rises to 434 from 426. Table 262 highlights the gap analysis over the course of the forecast period.

Table 235: Final Annual Provincial Gap Analysis for Physiotherapists

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	345	349	354	358	362	365	369	372	375	378	380
Demand	363	369	380	387	395	402	408	415	421	428	434
Gap	18	20	26	29	33	37	39	43	46	50	54
Gap as a Percent of Supply	5%	6%	7%	8%	9%	10%	11%	12%	12%	13%	14%

Table 262 suggests that the magnitude of the gap between demand and supply is expected to grow annually between 2023 and 2032. Demand for PTs is expected to consistently exceed supply for the entirety of the forecast period.

Workforce Recommendations

Table 263 below provides workforce recommendations proposed to aid GNL in closing this gap.

Table 236: Physiotherapist Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Demand for Physiotherapists		
PT-1	Automate	<p>Leverage the Provincial Health Information System (HIS) to Mitigate Future Demand for PTs:³²³</p> <ul style="list-style-type: none"> Delivery of physiotherapy services is currently inhibited by poor information technology. Care continuity and clinical efficiency are negatively impacted by disparate clinical information and case management systems (e.g., technology systems in hospital-based care settings, versus those in community care settings), which themselves have suboptimal interoperability. GNL is in the process of implementing a new integrated HIS, presenting an opportunity to use technology as an enabler to aid GNL to mitigate future demand for PTs. By integrating a single HIS platform, GNL can improve information sharing across care settings, particularly between PTs based in hospital settings, and those based in community settings. In the current state, this information is often siloed, leading to challenges related to care continuity and provider-to-provider collaboration. An integrated HIS has the potential to offset demand for PTs by reducing and streamlining unnecessary administrative burden associated with disparate platforms that are not interoperable (e.g., duplicate data entry, correspondence outside existing digital platforms), and simplify documentation requirements to free up more PT time for direct provision of patient care. As GNL's business case for the provincial HIS implementation was developed concurrently to this report, the implications on provider productivity have not yet been measured and need to be explored further.
PT-2	Rethink	<p>Consider Utilizing Private Care Settings for a Subset of Clinical and Administrative Tasks:</p> <ul style="list-style-type: none"> To alleviate future demand for PT services in NL, GNL should consider transferring a subset of service volume to private care settings, where clinically and logically appropriate. This approach would enhance the accessibility and clinical efficiency of PTs working in the public sector by reducing their future service volume and reallocating workloads to better match the full scope of practice for PTs. More specifically, GNL should consider either partial or full transition of service volume in several areas to the private sector. Each must be supported by well-established care pathways and provider quality monitoring processes that should be developed well in advance of any level of private sector adoption. Examples of potential collaborative partnerships between public and private entities include: <ul style="list-style-type: none"> Equipment managed service: GNL can work with private equipment providers to develop standards and protocols that reduce PT involvement in non-clinical activities involving equipment to free up additional capacity to focus on direct patient care. Despite the progress that has since been made by the Special Assistance Program (SAP)³²⁴ for medical equipment and supplies, further efficiencies could be gained through establishing a network of equipment depots across the province, supporting equipment repairs and troubleshooting, helping with equipment delivery and installation. Private joint replacement rehabilitation: GNL has an opportunity to create a robust process to refer low complexity and high volume post-surgical rehabilitation interventions to private sector providers. This strategy will free up public sector PT capacity and enable existing resources to be reallocated closer to the point of primary care in community settings. Post-surgical rehabilitative care for select standardized services such as total hip and total knee

³²³ This recommendation was previously provided by Deloitte in the [OT-PT Services Review Report](#) (21 November, 2018) for HCS. As PT-1 has not yet been implemented, it remains an important initiative to pursue for this workforce.

³²⁴ [Programs Funded through the Department of Health and Community Services - Health and Community Services \(gov.nl.ca\)](#)

ID	Theme	Recommendation and Potential Impact
		<p>replacements must be coupled with effective quality monitoring of private sector providers engaged to deliver these services.</p> <ul style="list-style-type: none"> Similarity, in response to the challenges presented by a proportion of the population having limited or no insurance coverage for private physiotherapy services, GNL could adopt a multifaceted approach to expand accessibility to offset public sector demand: <ul style="list-style-type: none"> Establishing a public-funded insurance program would help ensure that essential physiotherapy services are accessible even to those without private insurance coverage. This program could operate as a last-resort payer, stepping in where private insurance is absent or insufficient. Alternatively, GNL could offer subsidized physiotherapy services delivered privately, thus reducing the cost barrier for patients and encouraging additional uptake of those services. These initiatives could collectively work towards a more inclusive physiotherapy ecosystem, where the collaboration between the public and private sectors ensures comprehensive coverage and high-quality physiotherapy care for all.
Supply of Physiotherapists		
PT-3	Recruit / Retain	<p>Reevaluate the JES Scoring to Provide Equitable and Competitive Compensation:</p> <ul style="list-style-type: none"> The Job Class Profile for Clinical PTs I, II, and III determines the pay level received based on the point band to which they are assigned. Stakeholders shared how the profession's responsibilities have shifted since the last JES evaluation which are not yet reflected in its scoring, and therefore, pay level assigned. This could, in turn, lead to a short-term spike in PT outflows from the NL public system as practitioners may turn to other jurisdictions, professions, or private sector employers in search of improved compensation. Competitive compensation that is on par with other Atlantic provinces, in addition to the private sector, is an essential part of recruiting PTs. To avoid the risk of the demand-supply gap for PTs significantly exceeding its forecast between now and 2027 (i.e., beyond the 5-10% range across this time period, as shown in Table 262), GNL should apply deliberate focus and resources to ensure PTs receive equitable and competitive compensation. Therefore, a proposal to the Treasury Board regarding the revaluation the JES scoring for PTs is recommended.
PT-4	Rethink	<p>Expand the Use of Generalized Rehabilitation Assistants (RA) to Support PTs:</p> <ul style="list-style-type: none"> RAs function as integral members of health care teams, working under the supervision and in collaboration with occupational therapists (OT) and PTs. Their roles are diverse, contingent on the practice setting, and are primarily responsible for ensuring the safe and effective implementation of activities outlined in a client's treatment plan. In the current state, RAs in NL undergo training to become qualified to support OTs and PTs through College of the North Atlantic's (CNA) Rehabilitation Assistant Certificate program. Upon graduation, these RAs are certified in both disciplines. However, the current job titles for these roles within the NLHS typically limit RAs to practicing within one discipline, either as Physiotherapy Assistants (PTA) or Occupational Therapy Assistants (OTA). As a result, many RAs employed within the public sector are consistently not being utilized to their full potential. By expanding the use of generalist RAs that are dual-trained PTAs and OTAs, GNL can enable these RAs to provide transferable skillsets, capabilities, and care delivery in either Occupational Therapy or Physiotherapy disciplines, based on health care system needs at a given point in time. In British Columbia, the use of dual-trained RAs has allowed for a more integrated and flexible approach to patient care, with the following benefits observed: <ul style="list-style-type: none"> Increased access to services (especially in underserved areas where they may be a shortage of specialized therapists); Cost effectiveness compared to hiring separate OTA and PTA positions; Enhanced continuity of care for patients who may require multiple services across different stages of their rehabilitation journey; and,

ID	Theme	Recommendation and Potential Impact
PT-5	Recruit	<ul style="list-style-type: none"> ○ Flexibility in service delivery where patient needs fluctuate, such as acute care hospitals or LTC facilities. ● Implementing this recommendation would improve existing workforce productivity and resource allocation efficiency, as the existing RA workforce can be better utilized to support PTs in practicing at the top of their scope.
PT-6	Recruit / Retain	<p>Consider Expanding the Seat Purchase Agreement with Dalhousie University MScPT Program by Two Additional Seats:</p> <ul style="list-style-type: none"> ● The seat purchase agreement that GNL has with Dalhousie University's MScPT program is a sustainable source of supply of PTs on which the province greatly depends. ● Of the 62 seats available per academic year, 10 seats are currently reserved for NL students. ● If GNL were to expand the seat purchase agreement to include an additional two seats beginning in the 2024/25 academic year to a total of 12 seats reserved for NL students, the first cohort would be expected to graduate in May 2026. ● Encouraging enrollment in the MScPT program can be achieved through offering bursaries linked to return-in-service agreements with the NLHS increasing the likelihood of PT students returning to NL to practice after graduation. ● Additionally, establishing a student physiotherapy clinic in NL, as outlined in PT-6, can further support these recruitment efforts by creating additional training capacity in NL to accommodate the addition of new seats in the program. ● Given there is adequate demand, program capacity, and preceptor availability to support the addition of two new seats to a total of 12 reserved seats in the 2024/25 academic year would result in an additional 14 PTs entering the NL workforce by 2032. <p>Establish and Sustain a Student Physiotherapy Clinic:³²⁵</p> <ul style="list-style-type: none"> ● Stakeholders consulted in developing this HHR Plan highlighted recruitment challenges posed by a limited number of annual seats at Dalhousie University's School of Physiotherapy, and limited options for student work placements in NL. ● To support future supply of PTs in NL, GNL should partner with MUN and other universities with existing Physiotherapy programs such as Dalhousie University to discuss a partnership agreement to establish a student clinic. This model would carry several benefits to PT recruitment and retention. ● Firstly, it would provide PTs with access to a stable supply of students who can provide additional support in delivering care, particularly in community-based care settings and programs. ● Secondly, a student clinic would create multiple opportunities for students to complete work placements locally, without the need for GNL to create a new, dedicated physiotherapy school in NL. ● Lastly, through expanding clinical training opportunities in NL, this recommendation may also be associated with retention of students and new graduates who have completed a placement at the student clinic, and who, in turn, may decide to remain in the province to practice upon graduation. This approach could be especially beneficial in rural and remote areas where recruiting and retaining PT I roles is difficult. ● Student clinics provide opportunities for PT students to understand the career advancement opportunities available to them. A study on recruitment and retention strategies for rehabilitation professionals in Ontario identified intrinsic factors such as professional growth and work environment alignment with personal values as significant predictors of career satisfaction and retention.³²⁶ The study also highlighted the importance of rural training opportunities and their association with rural work after graduation.³²⁶

³²⁵ This recommendation was previously provided by Deloitte in the [OT-PT Services Review Report](#) (21 November, 2018) for HCS. As PT-6 has not yet been implemented, it remains an important initiative to pursue for this workforce.

³²⁶ <https://bmchealthservices.biomedcentral.com/articles/10.1186/1472-6963-8-249>

Occupational Therapists

Newfoundland and Labrador's (NL) aging population carries corresponding implications for occupational therapist (OT) demand (e.g., supporting patients to perform activities of daily living), and as such, OTs represent a particularly in-demand category of allied health care professionals, along with physiotherapists (PTs). OTs also work with a growing population of persons with disabilities, persons with complex mental health conditions, patients recovering from injuries or surgeries, in addition to children and youth with complex needs.

OTs deliver a wide range of services across a variety of care settings, including hospital, outpatient, community, long-term care (LTC), and virtual, as well as services delivered by travelling to rural and remote communities. OTs work in a range of clinical areas, providing holistic care that addresses the physical, psychological, and social needs of their clients. In hospitals, OTs work in acute care, rehabilitation, pediatrics, and mental health units, focusing on improving patients' functional abilities for daily living and work. In community settings, they assist clients with chronic conditions, disabilities, or aging-related challenges to live independently. Their clinical duties include assessing clients' needs, developing individualized treatment plans, providing therapy to improve motor skills, cognitive functions, and emotional well-being, and advising on adaptive equipment and home modifications. OTs collaborate with other health care professionals and family members to ensure a comprehensive approach to care.

OTs provide professional occupational therapy focused on assessment, treatment planning, and implementation and evaluation of OT services. This may include providing preventative or therapeutic services, along with education. The latter typically focuses upon maximizing the occupational performance of patients to prevent or alleviate disability, improve self-care, improve community living, and acquire life and vocational skills. OTs II and III also provide clinical leadership, supervision, and mentoring to other occupational therapy staff. They may also act as a clinical expert for a particular practice area. In addition, OTs perform various roles related to quality initiatives, program planning, and often serve as preceptors to OT students.

Clinical OTs in NL are required to have completed a graduate degree specializing in Occupational Therapy, and to be licensed with the Newfoundland and Labrador Occupational Therapy Board (NLOTB), which includes a professional designation of Registered Occupational Therapist. They must also obtain certification with the Canadian Association of Occupational Therapy (CAOT).

OTs are required to participate in professional development throughout their careers. Depending upon the program area that OTs support, they may require additional training for specific client populations (e.g., developmental disorders like autism, complex mental health conditions, etc.) and/or specific areas of practice (e.g., primary care, trauma, etc.).

Current State Analysis

As of December 2022, there were 222 OTs practicing in NL who are distributed by NLHS zone as shown in Table 264 below.³²⁷

Approximately 90% of the OT workforce is employed by the public sector. GNL typically recruits OTs as graduates of Dalhousie University's School of Occupational Therapy, as GNL has a seat purchase agreement in place for eight NL students per academic year. OT recruitment beyond Canada is generally limited to specific international training programs, such as Glasgow Caledonian University in Scotland.

Table 237: Occupational Therapists by NLHS Zone³²⁸

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2022 Supply	75	50	43	36	18	222

OT demand volume (i.e., number of occupational therapy appointments) is driven in part by the province's aging population and its underlying care needs and burden of disease. Although OTs support clients of all ages, many OT clients are in older age cohorts (excluding OTs practicing in pediatric care settings). Since the population segments aged 65+ are the fastest growing cohorts in both NL and across Canada, as NL's population ages further, it can expect sustained demand increases for OT services.

Education

Currently, there are 13 accredited graduate programs in occupational therapy offered in Canada: Dalhousie University in Nova Scotia; University of Ottawa, Queen's University, McMaster University, University of Toronto, Western University in Ontario; McGill University, Université de Montréal, and Université Laval in Quebec; the University

³²⁷ Complete data on the supply, inflows and outflows of OTs by age, gender and health zone was not readily available from OT stakeholders at the time of engagement. Consequently, data from the Canadian Institute for Health Information (CIHI) was used to forecast the supply of OTs in the province. At the time the analysis was conducted, CIHI data was only available until 2021. Therefore, the base year is 2021 for this profession.

³²⁸ Includes all OTs in the province (NLHS and private sector).

of Alberta in Alberta; University of Manitoba in Manitoba; University of Saskatchewan in Saskatchewan; and, the University of British Columbia in British Columbia.

The only source of Atlantic graduates is from Dalhousie University's Master of Science in Occupational Therapy (MScOT) program, with each class cohort having approximately 66 students. GNL has had a seat purchase agreement with Dalhousie University for eight NL students per academic year since 1981 which provides a stable source of OT recruitment. NL also prioritizes clinical placements for residents of NL from OT programs across Canada.

The number of seats available in each program varies annually and can range from approximately 40 to 80 seats. The total number of occupational therapy graduates in Canada also fluctuates each year but is typically 900 to 1,000 annually.

Health Accord NL Calls to Action

Many Calls to Action (CTAs) from Health Accord NL carry implications for the supply and demand of OTs in NL:

- **CTA 7.1:** Strengthen efforts to create a continuum of education, learning and socializing, and care for children and youth (from prenatal to adulthood).
- **CTA 7.2:** Develop one model of community health services for children and youth with complex health needs and a more integrated approach to respond to health needs of children and youth in care.
- **CTA 8.1:** Develop and implement a formal Provincial Seniors Care Program to address the critical need of our population.
- **CTA 8.2:** Implement and support an integrated continuum of care to improve the effectiveness and efficiency of care delivery, improve health and social outcomes for older adults and older adults with disabilities, and support older adults to age in place with dignity and autonomy.
- **CTA 8.4:** Develop and implement provincial legislation, regulation, and policy required to provide appropriate, quality, and accessible care and protection for older persons in NL.
- **CTA 9.1:** Connect every resident of NL to a Family Care Team (FCT) providing a central touchpoint of access and a continuum of care.
- **CTA 9.2:** Improve coordination of care across the health and social systems by enhancing communication and system navigation.

- **CTA 9.3:** Place greater emphasis on health promotion and well-being, the social determinants of health, and chronic disease management.
- **CTA 9.7:** Establish better integrated, team-based care by arranging hospital service delivery into a network consisting of community, regional, and tertiary hospitals that offer timely access to a full array of services.
- **CTA 9.11:** Enhance care across the continuum to ensure that access to appropriate and high-quality care and service is available to patients/clients/ residents in the most appropriate setting and to minimize the need to travel to obtain appropriate services, or receive timely or affordable care.
- **CTA 9.14:** Develop and implement a five-year plan for improvement in mortality rates for cancer, cardiac disease, and stroke over the next 10 years, led by the provincial programs for these disease entities.
- **CTA 9.16:** Begin action immediately on initiatives needed to rebalance the community, long-term care, and hospital system.
- **CTA 10.6:** Create a health and social system environment that enables all providers to work to the highest scope of practice within their education and/or training.
- **CTA 10.9:** Create an environment that values leadership and management and inspires those with potential to lead. This includes creating value in management positions and succession planning for those with leadership and management potential to receive training and mentorship.

CTA 7.1 outlines the province's plan for strengthening efforts to create a continuum of education, learning, socializing, and care for children and youth, which may increase the demand for OTs in NL over the next 10 years. Currently, NL is the only province in Canada without OTs embedded within the education system; as such, the need for specialized occupational therapy services may rise if OTs expand into this sector. Likewise, the development of a unified model of community health services for children and youth with complex health needs as outlined in CTA 7.2 will also lead to increased demand for OTs. This integrated approach will necessitate OTs to follow clients with complex care needs and disabilities.

The implementation of a Provincial Seniors Care Program through CTA 8.1, and an integrated continuum of care for older adults through CTA 8.2, has the potential to yield multiple benefits for the NL health system including emergency departments certified as "Senior Friendly" (without which, misdiagnoses and inappropriate care may be more frequent), and reduced demands for ALC beds and resources (as many older ALC patients can return home or to a lower level of care

with appropriate, geriatric-focused discharge planning). Implications of these CTAs for the NL OT workforce include an expected increase in demand stemming from support teams that are to be embedded at frailty units at the three regional hospitals, as well as in Labrador. Implementing legislation, regulation, and policy for the care and protection of older persons, as outlined in CTA 8.4, may further result in an increased demand for OTs specializing in geriatric care to help meet the unmet needs of seniors. Legislation under the Adult Protection Act has already mandated the creation of OT positions for OT Capacity and Functional Assessments in the Eastern Urban and Rural, Central, and Western Zones. For the purposes of this Health Human Resources (HHR) Plan, implementation of CTA 8.1 and CTA 8.2 is quantified as demand for an additional OT position across each NLHS health zone (see Table 278).

Similarly, CTA 9.1 is likely to result in increased demand for OTs to meet GNL's goal of providing every resident with equitable access to primary care through a Family Care Team (FCT). The fact that up to 20% of NL residents lack access to a family medicine physician, and many more are unable to access one in a timely manner, points to an urgent need for more primary health care providers. In shifting away from the physician-centric delivery models of the past, implementation of CTA 9.1 is likely to further increase demand for OTs who are embedded within FCTs.

Improving coordination of care across health and social systems, as outlined in CTA 9.2, will likely impact the role of OTs, who will need to be adept at navigating these systems and communicating effectively within interprofessional teams. OTs may be expected to take on additional roles, including the evaluation and assessment of children with learning disabilities. Likewise, placing greater emphasis on health promotion, well-being, social determinants of health (SDH), and chronic disease management as described in CTA 9.3 will likely expand the role of the OT beyond traditional clinical settings to include those such as the chronic disease management.

CTA 9.7 envisions how establishing integrated, team-based care with a network of hospitals will necessitate a well-distributed supply of OTs across different levels of care. This approach may lead to more opportunities for OTs in community, regional and tertiary settings, influencing the distribution of the workforce. CTA 9.11 seeks to enhance care across the continuum to ensure access to high-quality care in the most appropriate setting. This could lead to a more diverse range of employment opportunities for OTs, including roles in emergency departments (ED) and care planning for older adults in acute care. With the announcement of the province's plan for

improving Senior Care through Centres of Excellence (CoE) in Aging¹⁰⁷, it is expected that OTs will be included in the staffing projections within the new acute care facility opening in the Eastern Urban Zone. Furthermore, CTA 9.16 calls for initiatives to rebalance the community, long-term care, and hospital system which may result in a shift in the demand for OTs across different settings. As care moves towards community and home-based services, the demand for OTs in these areas is expected to rise, along with scope and role.

CTA 9.14 signals the need for a five-year improvement plan for cancer, cardiac disease, and stroke mortality rates over the next 10 years – led by corresponding provincial programs. This is aimed at improving access to services delivered by these programs. For the purposes of this HHR Plan, improved access to cancer, cardiac disease, and stroke services is represented by the construction of a new acute care and cancer care facility in Corner Brook. More specifically, quantitative analysis incorporates this CTA in the form of a one-time addition of four OTs in the Western Zone (see Table 278 below).

CTA 10.6 speaks to creating an environment that enables all providers to work to the highest scope of practice. As OTs become increasingly embedded in collaborative practice, this could include increased autonomy and a broader range of responsibilities. This shift could impact both the supply of and demand for OTs with advanced skills and training.

In addition, CTA 10.9 focuses on fostering an environment that values leadership and management in the health and social system, aiming to encourage more health professionals such as OTs to pursue leadership roles. Succession planning and mentorship programs for clinical leaders and speciality areas of practice may lead to a more robust pipeline of OTs for the province. This outcome would be further supported by a provincial education strategy that clarifies roles and scopes of practice for OTs.

Workforce Initiatives

To address OT recruitment and retention in NL, the Department of Health and Community Services (HCS) has introduced retention bonuses in return for one year of service, which ended on January 31, 2023. It is of note that this initiative is not intended to increase OT headcount; rather, it is aimed at slowing annual attrition rates and mitigating resignations over the short- to medium-term. GNL reported that, as of February 2023, 139 OTs employed by the public sector have successfully applied to receive this retention bonus, with distribution varying across Health Zones.

Beyond retention incentives, HCS has already taken steps to strengthen the supply of OTs within the public sector via the following initiatives:

- **Seat Purchase Agreement with Dalhousie University:** GNL funds eight seats at Dalhousie University's Occupational Therapy program reserved for NL students each academic year.
- **Signing Bonuses:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions, and tiered to address geographic considerations with an associated return-in-service of one or two years.
- **Health Professional Bursaries:** \$3,000 to \$5,000 bursaries are awarded for difficult-to-fill positions, available to OT students who sign a service agreement for one year of service post-graduation.

HCS also funds the Occupational Therapy Fieldwork Coordinator, which plays a unique, provincial role in facilitating and overseeing the clinical education programs for OT students completing placements within the province. This position involves collaboration with academic institutions, health care facilities and other partners to ensure the successful planning, implementation and evaluation of fieldwork experiences contributing to the supply of competent and skilled OT professionals. They also serve as a resource to students in planning for education and careers in the OT profession.

Stakeholder Engagement Insights

Five focus groups were conducted to better understand the experiences and perspectives of the OT workforce in NL:

- Newfoundland and Labrador Occupational Therapy Board (NLOTB)
- OT Fieldwork Coordinator
- NLHS OT Professional Practice Consultant
- Association of Public and Private Employees (NAPE)
- Association of Allied Health Professionals NL (AAHP-NL)

In addition, 11 individuals responded to the focus group follow-up survey with additional insights. This consultation activity yielded a set of qualitative insights pertinent to the development of OT workforce recommendations as summarized in Table 265. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, and may not be grounded in absolute fact.

Table 238: What We Heard from Occupational Therapist Stakeholders

Theme	Insights
Family Care Teams	<ul style="list-style-type: none"> OT stakeholders highlight the opportunity for a new area of practice resulting from a desire to have more OTs supporting upstream (e.g., preventative services, “pre-habilitation”) care delivery, potentially as part of a FCT. For example, cardiac patients could visit their physician in a clinic setting, while OTs can provide equipment and corresponding support to enable these patients to live in their own homes for longer periods. Stakeholders cautioned that the uptake of a FCT model for OTs is difficult to predict in the current state; however, there are already several OT positions being offered in FCTs across the province. Relatedly, stakeholders pointed to the success of the Home First Initiative in supporting seniors aging in the comfort of their own homes, and to an opportunity to increase OT support in home care settings.
Education Programs and Work Experience Requirements	<ul style="list-style-type: none"> Stakeholders highlight GNL’s seat purchase agreement with Dalhousie University’s School of Occupational Therapy as a primary source of local supply, with most graduates who choose to locate in NL establishing themselves in the Eastern Urban Zone. In general, there is a relatively high level of competition for each of these program seats, which are rarely challenging to fill on an annual basis. NL experiences challenges in placement recruitment, similar to other provinces, but with the support of the provincial OT Fieldwork Coordinator there is usually greater local preceptor availability than the minimum requirement. As OTs are required to complete a minimum number of field work hours under supervision to practice, Dalhousie upholds NL’s model as an example to strive toward.
Increasing Expectations and Patient Complexity	<ul style="list-style-type: none"> Stakeholders suggest that increasing patient complexity is an emerging challenge to OT recruitment and retention – OT patients in NL frequently have multiple comorbidities and complex health conditions, which are challenging for an OT to address in isolation. Mental health practice is a key component of OT training; OTs are increasingly addressing both the physical and mental health needs of patients. As OTs treat clients that often present with complex, multiple comorbidities, the OT workforce is required to be dual-trained to treat both mental and physical conditions experienced by their patients.
Regional Discrepancies	<ul style="list-style-type: none"> OT stakeholders in NL also point to significant variation in the nature of the profession across NLHS Health Zones, including very high expectations of the role combined with the absence of professional practice support in certain regions. Stakeholders highlight an opportunity to improve OT support at the administrative and managerial levels of the health care system. For example, occupational therapy is typically represented within GNL in conjunction with other allied health professions, rather than by an OT-focused or dedicated representative who has a more in-depth understanding of the profession.
Compensation	<ul style="list-style-type: none"> For OTs working in the public sector, stakeholders shared that job requirements have shifted since the last Job Evaluation System (JES) evaluation of the position. As a result, it is perceived that current compensation does not accurately reflect the true activities and

Theme	Insights
Restrictive Unionized Environment	<p>responsibilities associated with the OT role, thus creating inequalities with the private sector.</p> <ul style="list-style-type: none"> • The OT workforce in NL has a complex and restrictive unionized environment, as OT practicing in the Eastern Urban zone belong to AAHP while the remaining zones fall under NAPE. • Transitioning to a single provincial union would allow for greater ability to relocate across zones, with the inclusion of benefits, allowing for mobility opportunities within urban centers.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary projections of the supply of and demand for OTs were developed based on historical practice patterns and trends. Complete data on the supply, inflows and outflows of OTs by age, gender and health zone was not readily available from OT stakeholders at the time of engagement. Consequently, data from the Canadian Institute for Health Information (CIHI) was used to forecast the supply of OTs in the province.

However, data from CIHI is provided only at the provincial level and not at the regional level. Thus, the distribution of NL's population across the zones was used to allocate the supply, inflows and outflows by zone. The table below highlights the allocation of NL's population by zone.

Table 239: Split of Newfoundland's Population by Zone

Zone	2017	2018	2019	2020	2021
Eastern Urban	34%	34%	34%	34%	34%
Eastern Rural	23%	23%	23%	23%	23%
Central	20%	20%	20%	20%	20%
Western	16%	16%	16%	16%	16%
Labrador-Grenfell	8%	8%	8%	8%	8%

In addition, data on OT inflows and outflows was not complete for the 2019-2022 period. Thus, it was not possible to include the 2019-2022 average inflows and outflows into the analysis as was done for most other professions. Due to data limitations, the two-year average from 2019-2020 was used to forecast supply.

Finally, only total inflows and outflows were available in the CIHI data. Consequently, the reason for entry to or exit from the profession could not be estimated. Thus, it is highly probable that retirements are also being captured within other outflows in the forecast.

These preliminary projections were then augmented, wherever possible, based on the availability of supporting data and analysis, to reflect inflight or recently implemented policy initiatives to form a baseline scenario.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 267 below outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for OTs, as well as any limitations or caveats to the data.

Table 240: Data Sources for Occupational Therapist Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of OTs, by zone, 5-year age cohort, and gender from 2018-2022</p> <p>Inflows: Entries into the profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.)</p> <p>Outflows: Exits from the profession, split by reason for exit (retirement, emigration, other resignation)</p>	<p>Supply: No. Thus, CIHI data for NL as a whole was used for the analysis. Assumptions were required to split the supply by zone</p> <p>Inflows: No. Thus, CIHI data for NL as a whole was used for the analysis. Assumptions were required to split the inflows by zone. Only total inflows were available on CIHI.</p> <p>Outflows: No. Thus, CIHI data for NL as a whole was used for the analysis. Assumptions were required to split the outflows by zone. Only total outflows were available on CIHI.</p> <p><u>Source:</u> CIHI</p>	<p>Supply Year X = Supply Year X-1 + 2-year average inflows (2019-2020) – 2-year average outflows (2019-2020)</p>	<ul style="list-style-type: none"> Complete data on supply, inflows and outflows by age, gender and health zone was not readily available from OT stakeholders. Thus, data from CIHI was used to forecast supply of OTs. However, data from CIHI is provided only at the provincial level and not at the regional level. Thus, the distribution of NL's population across zones was used to split supply, inflows and outflows by zone. Only total inflows and outflows are available on CIHI. Thus, could not determine reason for entry or exit. Consequently, it's probable retirements are also being captured within other outflows in forecast.
Demand	<ul style="list-style-type: none"> 10-year population projections, by 5-year age cohort, gender, and zone Average per capita spending by age and gender for nine CIHI health care spending categories. Spending in other institutions, hospital and total health care spending are used to estimate growth in demand for OTs <ul style="list-style-type: none"> Average historical cost increases in health care spending. 	<p>Population projections: Yes <u>Source:</u> NL Department of Finance</p> <p>Health spending by category by age and gender: Yes <u>Source:</u> CIHI</p> <p>Historical cost increases in health care spending: Yes <u>Source:</u> CIHI</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = 10-year population projections * the estimated change in average utilization * average real per person spending by age and gender</p> <p>Demand Year X = Demand Year X-1 * growth in the number of people in each age category * average change in real spending per person * the change in utilization</p>	<ul style="list-style-type: none"> Encounters with OTs are not captured by the CIHI POP Grouper Methodology. Thus, the weighted average inflation-adjusted health care spending (i.e., volumes) is used to forecast distribution of patients by age and gender across NL. Change in utilization estimated based on recent trends.

Preliminary Projections

This section showcases the preliminary forecast estimates for OTs.

Table 241: Preliminary Supply Projections for Occupational Therapists

Health Occupation	Starting supply (Dec. 2021)	Inflows (2022-2032)	Retirements (2022-2032) ³²⁹	Other Outflows (2022-2032)	Ending Supply (Dec. 2032) ³³⁰
Occupational Therapists	222	121	7	116	221

Where: Starting supply (Dec. 2021) + Inflows (2022-2032) - Retirements (2022-2032) - Other Outflows (2022-2032) = Ending Supply (Dec. 2032)

CIHI data was used for the OT supply analysis. At the time the analysis was conducted, CIHI data was only available until 2021. Therefore, as highlighted in Table 268, the base year is 2021 for this profession. In the preliminary projections, the supply of OTs is predicted to decrease by approximately 1% over the forecast period, with outflows slightly outpacing inflows. Given that only overall inflows and outflows are captured in the CIHI data, the only supply component that can be isolated is a portion of the forecasted retirements. The retirements highlighted in Table 268 above result from the flow through of ages throughout the forecast (i.e., everyone who is 64 one year will become 65 the next, hit retirement and exit the workforce). However, other outflows likely include a significant portion of retirements as retirements in the historical data were likely captured in the other outflows and historical outflow trends are captured in the forecast. Given that assumptions were required to allocate the supply of OTs by zone, the ratio of OTs by zone was held constant throughout history, and thus the change in supply is estimated to be equal across all zones.

³²⁹ For some health occupations, including OTs, the reason for exit from the profession could not be identified. Thus, retirements were estimated as a result of the flow through of ages (i.e., everyone who is 64 one year are assumed to be 65 the next and are predicted to eventually exit the workforce during the forecast period). Only total inflows and outflows were available in the CIHI data. Other outflows likely include exits due to retirements but, given that it isn't possible to identify the reason for exit in the historical outflow data, it is impossible to isolate those other exits due to retirement in the forecast. Thus, historical and forecasted resignations likely capture a significant portion of retirements. The retirements captured include only the retirements estimated from the flow through of ages.

³³⁰ Due to rounding, the ending supply may not perfectly match the total listed.

Table 242: Regional Preliminary Supply Projections for Occupational Therapists

Zone	2018 Supply	2021 Supply	2032 Supply	Percent Change in Supply 2018 vs 2021	Percent Change in Supply 2021 vs 2032
Eastern Urban	72	75	74	+3%	-1%
Eastern Rural	48	50	49	+3%	-1%
Central	42	44	43	+4%	-1%
Western	35	36	36	+4%	-1%
Labrador-Grenfell	17	18	17	+6%	-1%
Total³³¹	214	222	221	+4%	-1%

Despite short-term supply increases of 3-6% across all health zones between 2018-21, preliminary supply is expected to decline across all zones by the end of the 2023-32 forecast period. Each zone is projected to experience a similar one percent decrease in OT supply over this period.

Table 243: Preliminary Demand Projections for Occupational Therapists

Specialty	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Occupational Therapists	223	19	242	279	+16%

Vacancies are added to 2022 supply to estimate the starting demand. For OTs, demand is estimated using data on health care spending from CIHI. To estimate the growth in health care spending in NL, a demographically driven health expenditure model was created. In this model, average spending was calculated across 40 age and gender cohorts. This model allows spending to be broken into several different components:

- The share of spending related to cost adjustments;
- The share of spending related to increased utilization in each age/gender cohort;
- The share of spending related to overall population growth; and
- The share of spending related to demographic aging.

³³¹ Due to rounding, the sum of the supply by zone may not perfectly match the total listed.

To build this model, the following steps were undertaken:

Step 1: Allocate health care spending by category across the age/gender cohorts based on CIHI spending data.

Step 2: Calculate the average price adjustments based on CIHI health inflation estimates. This is done to deflate average spending in each age/gender category to estimate volume increases.

Step 3: Estimate the age and gender adjusted real per person spending over the last decade to calculate how utilization has changed.

Step 4: Project health care utilization for the relevant spending categories based on past trends and discussions with subject matter experts.

CIHI identifies four places of work for OTs: hospitals, community, long term care (LTC)/nursing homes, and other. These four places of work were mapped to three health care spending categories:³³²

- Hospitals to spending on hospitals
- LTC/nursing homes to spending on other institutions
- Community and other to total health care spending

Utilization in hospitals is estimated to decline by 0.08% per year of the forecast in each age category to reflect expected productivity improvements. It is estimated that utilization in other institutions would decline by an average of 0.4% per year in each age category, reflecting an increased likelihood of aging at home. For health care spending in the province overall, utilization is predicted to increase by approximately 0.6% on average. Spending on overall health care overall is the sum of spending in all nine categories, which means the utilization impact varies slightly by age cohort and gender. Utilization projections were based on utilization trends since 1986.

Step 5: Project total volumes (i.e., inflation-adjusted spending) for hospitals, other institutions, and health care overall in each age/gender cohort. This is done by multiplying the number of expected people in each age/gender cohort each year by the average cost of an individual in that age/gender cohort. Volumes account for past utilization trends, the impact of aging, and population growth. Thus, the change in volumes reflects the true change in demand.

³³² The spending categories do not map one for one to the places of work. A best estimate of a mapping was thus conducted. Thus, four places of work had to be mapped to three health care spending categories (both community and other was mapped to “total health care spending”).

The following tables and accompanying descriptive text highlight the change in real per capita health care spending (i.e., volumes) over the past decade and over the coming decade. The total change in volumes is followed by a breakdown of the impacts of population aging, population growth and changes in utilization on changes in volumes. These tables are not cumulative. They simply highlight the breakdown of the impacts feeding into the growth in volumes.

Impacts over the past ten years

Table 271 below highlights the change in volumes (i.e., inflation-adjusted, or real, spending) over the past 10 years.

Table 244: Average Compound Annual Growth Rate (CAGR) in Volumes, 2012 to 2022

Spending Category	CAGR in Real Spending (i.e., Volumes) 2012-2022
Hospitals	0.8%
Other Institutions	2.1%
Total Health Care	1.2%

Excluding the effects of population growth, the overall numbers remained nearly identical for all three spending categories as population growth (in CAGR) was close to zero between 2012 and 2022. Table 272 below highlights the change in volumes over the last decade if the effects of population growth were not accounted for.

Table 245: Average CAGR in Volumes, Excluding Population Growth, 2012 to 2022

Spending Category	CAGR in Real Spending (i.e., Volumes) 2012-2022, Excluding Population Growth
Hospitals	0.8%
Other Institutions	2.2%
Total Health Care	1.2%

In all three categories, the majority, if not all, of the growth in volumes over the past decade was due to an aging population.

Impacts over the next ten years

Over the next 10 years volumes in the three relevant categories are predicted to grow in accordance with the numbers highlighted in Table 273 below.

Table 246: Average CAGR in Volumes, 2022 to 2032

Spending Category	CAGR in Real Spending (i.e., Volumes) 2022-2032
Hospitals	1.5%
Other Institutions	3.0%
Total Health Care	1.5%

For all three categories, 0.0% of the change in volumes is due to population growth. As mentioned in Step 4, utilization in hospitals is estimated to decline by 0.08% per year, utilization in other institutions is predicted to decline by an average of 0.4% per year, and for health care spending overall, utilization is predicted to increase by approximately 0.6%. These utilization estimates were based on trends in utilization observed since 1986.

Like with the past 10 years, population growth is not predicted to have any impact on volumes as population growth is predicted to remain close to zero from now until 2032.

The aging of the population is expected to have the following average impacts over the coming decade.

Table 247: Average Impact of Population Aging on the Growth in Volumes, 2022-2032

Spending Category	Impact of Population Aging, 2022-2032
Hospitals	1.6%
Other Institutions	3.4%
Total Health Care	0.9%

Step 6: Estimate the weighted average growth in volumes. As mentioned in Step 4, CIHI identifies four places of work for OTs. Table 275 below summarizes the percent of OTs working in each setting in 2022 according to CIHI. These were the weights used to calculate the weighted average growth in volumes, which, in turn, was the growth rate applied to the demand for OTs.

Table 248: CIHI's Split of Occupational Therapists by Place of Work in 2022³³³

	Hospital	Community Health	Nursing Home/LTC	Other
Occupational Therapists	56%	27%	4%	12%

The formula used to estimate the weighted average (WA) growth in volumes in health care for OTs (i.e., the weighted average growth in inflation adjusted spending for OTs) is as follows:

Weighted Average

$$= \frac{(\text{Hospital Weight} \times \text{Hospital Volumes}) + (\text{Community Weight} \times \text{Total Health Care Volumes}) + ((\text{LTC Weight} \times \text{Other Institution Volumes}) + (\text{Other Weight} \times \text{Total Health Care Volumes}))}{\text{Hospital Weight} + \text{Community Weight} + \text{LTC Weight} + \text{Other Weight}}$$

Over the entire forecast period, demand for OTs in NL is expected to increase by approximately 16%. Table 276 showcases the predicted annual increase in health care spending, which in this case is used as a proxy with which to estimate growth in demand by zone for the forecast period.

Table 249: Regional Annual Growth in Demand for Occupational Therapists

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.7%	1.7%	1.6%
Eastern Rural	1.5%	1.4%	1.5%	1.6%	1.5%	1.5%	1.3%	1.3%	1.4%	1.2%
Central	1.2%	1.3%	1.3%	1.4%	1.2%	1.2%	1.1%	1.1%	1.3%	1.0%
Western	1.4%	1.4%	1.4%	1.3%	1.4%	1.3%	1.4%	1.3%	1.2%	1.0%
Labrador-Grenfell	1.1%	1.3%	1.2%	1.2%	1.3%	1.2%	1.2%	1.2%	1.2%	1.1%
Newfoundland and Labrador	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.4%	1.4%	1.4%	1.3%

³³³ CIHI provides the following definitions for the place of work for OTs:

- Hospital: Includes general hospital; rehabilitation hospital/facility; and mental health hospital/facility.
- Community: Includes community health centre; visiting agency/business; group professional practice/clinic; solo professional practice/business; and school or school board.
- Long-term care: Includes residential care facility and assisted-living residence.
- Other: Includes post-secondary educational institution; association/government/para-governmental; health-related industry, manufacturing and commercial; and other employer types not otherwise specified.

Given that the Eastern Urban zone is predicted to see the largest population growth (and, therefore, growth in anticipated service volume demanded by patients), the increase in demand for OTs is expected to be highest in that zone. Overall, demand is predicted to increase between 1% and 2% over the forecast period for all zones.

Table 250: Preliminary Gap Analysis for Occupational Therapists

Specialty	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Occupational Therapists	223	242	19	221	279	58	+39

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022. While the supply of OTs is predicted to decline over the coming decade, the demand for OTs is expected to increase. Thus, the preliminary gap between supply and demand is predicted to rise by 39 over the next 10 years.

Base Case Projections

For OTs, the Health Accord NL CTAs and workforce initiatives listed below are reflective of stakeholder feedback. In addition, sufficient quantitative data existed for their impact to be incorporated in supply and demand projections. Overall, the policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

- **Demand Analysis:**
 - The new acute care and Cancer Care Western facility in Corner Brook will require OTs (i.e., CTA 9.14).

- Establishment of frailty unit support teams comprised of family medicine physicians at each of the three regional hospitals in Eastern-Urban Zone, Central Zone, and Western Zone (i.e., CTA 8.1 and 8.2).
- **Supply Analysis:** No supply-side workforce initiatives or CTAs could be quantified at the time of the completion of the report.

Table 278 highlights the assumptions used to help quantify the base case items for occupational therapists.

Table 251: Base Case Assumptions for Occupational Therapists

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	Demand	<ul style="list-style-type: none"> ● One-time addition when facility opens in June 2024. 	<ul style="list-style-type: none"> ● Western: <ul style="list-style-type: none"> ○ 2024: +4
Health Accord NL CTA 8.1 and 8.2: Provincial Seniors Care Program	Demand	<ul style="list-style-type: none"> ● Embedded within the frailty unit support teams (one team at each of the three Regional Hospitals) in addition to Labrador. 	<ul style="list-style-type: none"> ● Eastern Urban <ul style="list-style-type: none"> ○ 2024: +1 ● Central: <ul style="list-style-type: none"> ○ 2026: +1 ● Western: <ul style="list-style-type: none"> ○ 2025: +1 ● Labrador-Grenfell: <ul style="list-style-type: none"> ○ 2026: +1

While some items were not included in the base case at the time of the analysis as they did not meet the three above-mentioned inclusion criteria, the following could have an impact on the demand analysis for OTs: the replacement of the St. Clare's Mercy Hospital, and the use of OTs within FCTs.

Table 279 illustrates the annual quantitative impact for the base case items included in the OT analysis.

Table 252: Annual Quantitative Impacts of the Base Case Item for Occupational Therapists

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Health Accord NL CTA 8.1 and 8.2: Provincial Seniors Care Program	0	1	2	4	4	4	4	4	4	4
Health Accord NL CTA 9.14: New acute care and Cancer Care Western facility in Corner Brook	0	4	4	4	4	4	4	4	4	4
Total Demand Impacts	0	5	6	8						

After incorporating the above base case items into the analysis, demand for OTs in 2032 rises from 279 to 287. In the near term, CTA 9.14 is expected to have a greater impact on demand than CTA 8.1 and CTA 8.2, although the two initiatives will have the same impact on demand by the end of the forecast. Table 280 highlights the gap analysis over the course of the forecast.

Table 253: Final Annual Provincial Gap Analysis for Occupational Therapists

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	223	223	223	223	224	224	223	223	222	222	221
Demand	242	245	254	258	264	268	272	276	280	283	287
Gap	19	22	31	35	41	45	49	53	57	62	66
Gap as a Percent of Supply	9%	10%	14%	16%	18%	20%	22%	24%	26%	28%	30%

As highlighted in Table 280, this analysis suggests that the magnitude of the gap between demand and supply is expected to grow annually between 2023 and 2032. Demand for OTs is expected to consistently exceed supply for the entirety of the forecast period. When the base case items are included, the gap between supply and demand rises to 66.

Workforce Recommendations

Table 281 below provides workforce recommendations proposed to aid GNL in closing this gap.

Table 254: Occupational Therapist Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Demand for Occupational Therapists		
OT-1	Automate	<p>Increase Use of Technology to Mitigate Future Demand for OTs:³³⁴</p> <ul style="list-style-type: none"> Delivery of OT services is currently inhibited by poor information technology. Care continuity and clinical efficiency are negatively impacted by disparate clinical information and case management systems (e.g., technology systems in hospital-based care settings, versus those in community care settings), which themselves have suboptimal interoperability. OT-1 captures a series of technology enablers that will aid GNL in further mitigating future demand for OTs: <ul style="list-style-type: none"> Point of Care (POC) devices: Enabling POC device usage through investments in technology infrastructure and practitioner training will reduce unnecessary administrative burden by lessening time spent documenting clinical information, as POC devices enable bedside data collection and entry (e.g., rather than being done by practitioners at a separate time and location). This technology will also accelerate patient journeys through the continuum of OT care, as information is documented during, or immediately after, an intervention is provided to a patient. Remote assessment and monitoring: Expanding opportunities for remote intervention will reduce unnecessary travel time for OTs and increase their efficiency in providing assessment and monitoring services. Although the use of telehealth within OT has increased since this recommendation was first published in the Deloitte OT-PT Services Review Report in 2018³³⁴, there remains additional applications for this technology that have not yet been widely adopted such as: <ul style="list-style-type: none"> Virtual health applications can be utilized to monitor the correct installation of equipment and assist parents of pediatric patients in performing therapeutic interventions; Portals can serve as a centralized repository for treatment plans, making them easily accessible to patients. They also facilitate the delegation of tasks to other providers, such as home support workers as described in OT-2; and, Remote patient monitoring apps enable mental health patients to provide ongoing "pulse" data without requiring direct check-ins, allowing OTs to intervene when needed. Integrated Health Information System (HIS): By integrating a single HIS platform, GNL can improve information sharing across care settings, particularly between OTs based in hospital settings, and those based in community settings. In the current state, this information is often siloed, leading to challenges related to care continuity and provider-to-provider collaboration. <ul style="list-style-type: none"> An integrated HIS has the potential to offset demand for OTs by reducing and streamlining unnecessary administrative burden associated with disparate platforms that are not interoperable (e.g., duplicate data entry, correspondence outside existing digital

³³⁴ This recommendation was previously provided by Deloitte in the [OT-PT Services Review Report](#) (21 November, 2018) for HCS. As OT-1 has not yet been implemented, it remains an important initiative to pursue for this workforce.

ID	Theme	Recommendation and Potential Impact
		<p>platforms), and simplify documentation requirements to free up more OT time for direct provision of patient care.</p> <ul style="list-style-type: none"> As GNL's business case for the provincial HIS implementation was developed concurrently to this report, the implications on provider productivity have not yet been measured and need to be explored further. Previous research and analysis published in the Deloitte OT-PT Services Review Report in 2018³³⁴ suggests that, by leveraging technology to increase OT workforce productivity, service recipient workloads can be increased by up to eight percent. Applying this to the projected supply of OTs in 2032 suggests that GNL could potentially reduce the gap displayed in Table 280 by five OTs.³³⁵
OT-2	Rethink	<p>Consider Utilizing Private Care Settings for a Subset of Clinical and Administrative Tasks</p> <ul style="list-style-type: none"> To alleviate future demand for OT services in NL, GNL should consider transferring a subset of service volume to private care settings, where clinically and logically appropriate. This recommendation will help improve the accessibility and clinical efficiency of OTs currently working in the public sector by mitigating the future service volume that each will be expected to service, and by reallocating workloads to better align with the full OT scope of practice. More specifically, GNL should consider either partial or full transition of service volume in the following areas to the private sector. Each must be supported by well-established care pathways and provider quality monitoring processes that should be developed well in advance of any level of private sector adoption: <ul style="list-style-type: none"> Equipment managed service: GNL can work with private equipment providers to develop standards and protocols and, in turn, reduce OT involvement in non-clinical activities that may inhibit their daily productivity (e.g., following up with equipment providers directly, supporting equipment repairs and troubleshooting, helping with equipment delivery and installation). In the current context, OTs often end up being a point of contact between clients and equipment vendors, and spend an estimated one hour of unnecessary non-value added time per equipment prescription. This equates to the NL OT workforce spending approximately 4,000 hours annually on unnecessary activities related to the Special Assistance Program.³³⁶ As such, implementing this recommendation could represent a demand-side mitigation of the equivalent of approximately two OT FTEs. Private home support worker (HSW) or caregiver assignment: GNL can expand the range of tasks that private sector HSWs or family caregivers can perform by establishing clear guidelines for task assignments, similar to those developed for Occupational Therapy Assistants by NLOTB. These trained agency staff or caregivers who regularly visit patients at home are often well-suited to monitor changes in a patient's health status. This approach would allow OTs to delegate certain activities to other positions already providing care in the patient's home, thereby reducing the demand for the already limited community OT workforce. By doing so, OTs can remain focused on top of scope work. Delegated tasks may include training care providers in performing bed transfers and conducting routine assessments, such as recording Observations of Daily Living (ODLs) and completing associated paperwork. Similarly, in response to the challenges presented by a proportion of the population having limited or no insurance coverage for private occupational therapy services, GNL could adopt a multifaceted approach to expand accessibility to offset public sector demand: <ul style="list-style-type: none"> As NL currently lacks significant private occupational therapy infrastructure, GNL should consider streamlining licensing and regulatory processes for private occupational therapy providers to encourage the establishment and growth of private practices. In addition, investments into public-private partnerships with

³³⁵ <https://www.gov.nl.ca/hcs/files/long-term-care-pdf-otpt-services-review.pdf>

³³⁶ <https://www.gov.nl.ca/hcs/files/long-term-care-pdf-otpt-services-review.pdf>

ID	Theme	Recommendation and Potential Impact
		<p>private occupational therapy providers to offer integrated services could help expand service delivery and improve patient outcomes.</p> <ul style="list-style-type: none"> ○ Establishing a public-funded insurance program would help ensure that essential occupational therapy services are accessible even to those without private insurance coverage. This program could operate as a last-resort payer, stepping in where private insurance is absent or insufficient to expand the population's payer options. ○ In Quebec, private sector occupational therapy services encompass a wide range of areas, including pediatrics and back-to-work rehabilitation. Additionally, government-funded occupational therapy services, covered by the Société de l'assurance automobile du Québec (SAAQ), provide post-hospitalization care for injuries resulting from events such as car accidents. ● These initiatives could collectively work towards a more inclusive occupational therapy ecosystem, where the collaboration between the public and private sectors ensures comprehensive coverage and high-quality occupational therapy care for all.

Supply of Occupational Therapists

OT-3	Recruit / Retain	<p>Reevaluate the JES Scoring to Provide Equitable and Competitive Compensation:</p> <ul style="list-style-type: none"> ● The Job Class Profile for OTs I, II, and III determines the pay level received based on the point band to which they're assigned. Stakeholders shared how the profession's responsibilities have shifted since the last JES evaluation which are not yet reflected in its scoring, and therefore, pay level assigned. ● This could, in turn, lead to a short-term spike in OT outflows from the NL public system as practitioners may turn to other jurisdictions, professions, or private sector employers in search of improved compensation. ● The recent breakdown in negotiations between GNL and the NL Association of Allied Health Professionals (which represents 29 professions, including occupational therapy) resulted in a statement made by the Association's President that a competitive (i.e., relative to other provinces and territories) collective agreement for allied health professionals would represent one of the most effective recruitment and retention tools that GNL can leverage to mitigate gaps between OT demand and supply.³³⁷ ● Notwithstanding wider policy considerations of the renegotiation of the collective agreement, which are outside the scope of this HHR Plan, competitive compensation that is on par with other Atlantic provinces, in addition to the private sector, is an essential part of recruiting OTs. ● To avoid the risk of the demand-supply gap for OTs significantly exceeding its forecast between now and 2027 (i.e., beyond the 10-20% range across this time period, as shown in Table 280), it is recommended that GNL should apply deliberate focus and resources to ensure OTs receive equitable and competitive compensation. Therefore, a proposal to the Treasury Board regarding the re-evaluation of the JES scoring for OTs is recommended.
OT-4	Rethink	<p>Expand the Use of Generalized Rehabilitation Assistants (RA) to Support OTs:</p> <ul style="list-style-type: none"> ● RAs function as integral members of healthcare teams, working under the supervision and in collaboration with OTs and PTs. ● Their roles are diverse, contingent on the practice setting, and are primarily responsible for ensuring the safe and effective implementation of activities outlined in a client's treatment plan. ● In the current state, RAs in NL undergo training to become qualified to support OTs and PTs through College of the North Atlantic's (CNA) Rehabilitation Assistant Certificate program. Upon graduation, these RAs are certified in both disciplines. ● However, the current job titles for these roles within the NLHS typically limit RAs to practicing within one discipline, either as Physiotherapy Assistants (PTA) or Occupational Therapy Assistants (OTA). As a result, many RAs employed within the public sector are consistently not being utilized to their full potential.

³³⁷ <https://www.cbc.ca/news/canada/newfoundland-labrador/aahp-collective-agreement-impasse-1.6992651>

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> • By expanding the use of generalist RAs that are dual-trained PTAs and OTAs, GNL can enable these RAs to provide transferable skillsets, capabilities, and care delivery in either Occupational Therapy or Physiotherapy disciplines, based on health care system needs at a given point in time. • In British Columbia, the use of dual-trained RAs has allowed for a more integrated and flexible approach to patient care, with the following benefits observed: <ul style="list-style-type: none"> ◦ Increased access to services (especially in underserved areas where they may be a shortage of specialized therapists); ◦ Cost effectiveness compared to hiring separate OTA and PTA positions; ◦ Enhanced continuity of care for patients who may require multiple services across different stages of their rehabilitation journey; and, ◦ Flexibility in service delivery where patient needs fluctuate, such as acute care hospitals or LTC facilities. • Implementing this recommendation would improve existing workforce productivity and resource allocation efficiency, as the existing RA workforce can be better utilized to support OTs in practicing at the top of their scope.
OT-5	Recruit	<p>Consider Expanding the Seat Purchase Agreement with Dalhousie University's MScOT Program by Four Additional Seats:</p> <ul style="list-style-type: none"> • The seat purchase agreement that GNL has with Dalhousie University's MScOT program is a sustainable source of supply of OTs on which the province greatly depends. • Of the 66 seats available per academic year, eight seats are currently reserved for NL students. • If GNL were to expand the seat purchase agreement to include an additional four seats beginning in the 2024/25 academic year, the first cohort of 12 students would be expected to graduate in May 2026. • Encouraging enrollment in the MScOT program can be achieved by offering bursaries linked to return-in-service agreements with the NLHS, increasing the likelihood of OT students returning to NL to practice after graduation. • Additionally, establishing a student occupational therapy clinic in NL, as outlined in OT-6, can further support these recruitment efforts by creating additional training capacity in NL to accommodate the addition of new seats in the program. • Likewise, promoting creation of longer term TFT positions for new graduates based on projected gaps and workforce attrition would support these additional students in obtaining employment post-graduation. • Given there is adequate demand, program capacity, and preceptor availability to support the addition of four new seats, moving to a total of 12 reserved seats in the 2024/25 academic year would result in an additional 28 OTs entering the NL workforce by 2032.
OT-6	Recruit / Retain	<p>Establish and Sustain a Student Occupational Therapy Clinic:³³⁸</p> <ul style="list-style-type: none"> • Stakeholders consulted in developing this HHR Plan highlighted recruitment challenges posed by the limited number of annual seats at Dalhousie University's School of Occupational Therapy, and limited options for student work placements in NL. • To support future supply of OTs in NL, GNL should partner with MUN and other universities with existing Occupational Therapy programs such as Dalhousie University to discuss a partnership agreement to establish a student clinic. This model would carry several benefits to OT recruitment and retention: <ul style="list-style-type: none"> ◦ It would provide OTs with access to a stable supply of students who can provide additional support in delivering care, particularly in community-based care settings and programs; ◦ A student clinic would create multiple opportunities for students to complete work placements locally, without the need for GNL to create a new, dedicated occupational therapy school in NL; and

³³⁸ This recommendation was previously provided by Deloitte in the [OT-PT Services Review Report](#) (21 November, 2018) for HCS. As OT-5 has not yet been implemented, it remains an important initiative to pursue for this workforce.

ID	Theme	Recommendation and Potential Impact
		<ul style="list-style-type: none"> ○ By expanding clinical training opportunities in NL, this recommendation may also be associated with retention of students and new graduates who have completed a placement at the student clinic, and who, in turn, may decide to remain in the province to practice upon graduation. This approach could be especially beneficial in rural and remote areas where recruiting and retaining OTs is particularly difficult. ● Student clinics provide opportunities for OT students to understand the career advancement opportunities available to them. A study on recruitment and retention strategies for rehabilitation professionals in Ontario identified intrinsic factors such as professional growth and work environment alignment with personal values as significant predictors of career satisfaction and retention.³³⁹ The study also highlighted the importance of rural training opportunities and their association with rural work after graduation.³²⁶

³³⁹ <https://bmchealthservices.biomedcentral.com/articles/10.1186/1472-6963-8-249>

Radiation Therapists

Radiation therapists (RT) provide services to patients of the provincial Cancer Care Program (CCP) operated by the Newfoundland and Labrador Health Services (NLHS). They work closely with radiation oncologists and other health care professionals to plan and deliver a course of radiation treatment.³⁴⁰

RTs have extensive knowledge of anatomy, physics, and safety to perform their jobs daily. They work with advanced machines and computer software to design treatment plans and deliver radiation for treatment. Precise positioning is critical for the effectiveness of radiation therapy. From the planning stages to the treatment phase of the radiation therapy journey, the radiation therapist works with the patient to find a position that is comfortable and one they can remain in for every treatment.

For treatment, the RTs carefully plans the precise dose and target of radiation to maximize the radiation to cancer cells and minimize the harm to surrounding healthy tissue. A central role of a RT is to support the well-being of the patient, as well as their family and/or caregiver throughout, providing education and resources as needed.

The RT will assess the patient's physical and emotional needs before, during and after treatment, providing comfort and emotional support while in their care. They will educate the patient on what is going to happen and counsel them about any potential side effects or dietary restrictions. During the radiation therapy journey, RTs are the primary contact to answer any questions the patient may have about their radiation treatments or aftercare. They describe what to expect during treatment and answer any questions the patient may have.

All RTs must hold an undergraduate degree or an Advanced Diploma in Radiation Therapy. They must also pass the national certification examinations conducted by the Canadian Association of Medical Radiation Technologists (CAMRT), the national certifying body of the Radiation Therapy profession, in Medical Radiation Technology and hold a certification as a Registered Radiation Therapist (RTT). RTs are one of the classifications of Medical Radiation Technologists (MRT) (see **Medical Radiation Technologists** for further details), and like other MRTs, RT in NL are currently an unregulated profession.

³⁴⁰ [Canada's Medical Radiation Technologists – Empowering care through technology.](http://canadasmrt.ca)
[\(imageofcare.ca\)](http://imageofcare.ca)

Current State Analysis

Due to the tertiary nature of the services they support, RTs in NL are employed by the NLHS exclusively in the Eastern Urban zone. As of December 2022, there were 25 RTs in NL who are distributed by NLHS zone as displayed in Table 282. There is presently no local supply of RTs in NL, as all RTs are trained out-of-province at one of the limited training programs offered in Radiation Therapy in Canada. GNL typically recruits from the Michener Institute of Education at UHN/University of Toronto in Ontario, while occasionally recruiting from other programs such as those offered by the British Columbia Institute of Technology, University of Alberta, and CancerCare Manitoba/University of Winnipeg.

International recruitment is limited for internationally educated medical radiation technologists (IEMRTs), as they are required to undergo the CAMRT examination process to become certified in Canada with additional assessment requirements for these candidates (e.g., general competencies, clinical skills, English language proficiency).

Table 255: Radiation Therapists by NLHS Zone³⁴¹

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2022 Supply	25	0	0	0	0	25

The provincial CCP, based out the Eastern Urban Zone, is responsible for providing comprehensive services to cancer patients across NL. The program offers a range of services to help patients access screening services, manage their diagnosis, treatment, follow-up care, survivorship, palliative care, and pain and symptom management.

The program's services include radiation therapy, chemotherapy, cancer screening programs (breast, colon, cervical), tele-oncology, clinical trials, consultative services, and supportive care services. RTs play a vital role in the delivery of radiation therapy services in the province, currently only offered at the Dr. H. Bliss Murphy Cancer Center (BMCC), NL's tertiary cancer facility, in St. John's. GNL has committed to the construction of a new acute care and cancer facility in Corner Brook, Cancer Care Western (CCW), in June 2024 (see Health Accord NL Calls to Action for further details).

Despite their pivotal function within the provincial CCP, the RT profession in NL has encountered persistent recruitment and

³⁴¹ The supply captures only the stock of RTs working for NLHS (i.e., public sector RTs).

retention challenges over recent years. These issues can be attributed to various factors, including market adjustments affecting several CCP professions, a highly competitive training environment and national job market, and the ongoing staffing shortages that have led to interruptions in the delivery of radiation therapy services within the province.

Market Adjustments

CCP professions in NL currently receive market adjustments as part of their overall compensation. A market adjustment is a form of additional remuneration that is based on current market conditions.³⁴² Market adjustments may be approved to address recruitment and retention challenges for officially classified positions that meet the criteria for a market-based adjustment as established by Treasury Board and subjected to the approval process.³⁴³ Market adjustments consider the comparative value of positions that are the same between other jurisdictions within Canada.

RTs have been receiving a market adjustment in the form of a salary differential since 2003. Prior to 2012, these market adjustments were paid hourly, pensionable and subject to general increases. In 2012, GNL introduced the Market Adjustment Policy, and they became non-pensionable, not subject to general increases and paid twice yearly with a six-month return-in-service. Existing staff were subject to the original system first approved in 2003, however, this policy applies to all new staff hired since 2012.

Approved in November 2022, RTs received new market adjustments with amounts ranging between \$15,000 and \$28,000 based on classification to supplement their salaries in response to market conditions. For staff hired after 2012, earnings associated with market adjustments, which constitute approximately 40% of total compensation, are non-pensionable. These additional earnings are not considered in overtime pay, life insurance premiums, disability insurance, worker compensation, among others. The continuation of the market adjustment is determined on an annual basis by HCS of Finance, and RT staff must sign return-in-service agreements every six months to continue to receive market adjustment pay.

NLHS and the Department of Health and Community Services (HCS) have continued to work to address the compensation issues among the Cancer Care Professionals. In August 2023, a Memorandum of Understanding was signed with NAPE-LX to allow the market

³⁴² [Microsoft Word - Market Adjustment Guidelines FINAL Apr 6 2010.doc \(gov.nl.ca\)](https://www.gov.nl.ca/2010/04/microsoft-word-market-adjustment-guidelines-final-apr-6-2010.doc)

³⁴³ [Market Adjustment Policy - Treasury Board Secretariat \(gov.nl.ca\)](https://www.tbs-sct.gc.ca/eng/bs/ma/ma-p/ma-p-001.html)

adjustment amount to be added to the base salary and considered pensionable earnings. This agreement will remain in place for 12 months or until the implementation of recommendations related to the review of the Market Adjustment Policy.

GNL's market adjustment policies have had significant negative impacts on both recruitment and retention for RTs. NLHS has experienced challenges with recruitment as the hourly rate offered in job postings, as negotiated through the union, is notably lower than comparable postings in other regions across the country as the market adjustment is not advertised.

From a retention perspective, RTs in NL frequently receive job offers from other jurisdictions, both nationally and internationally, that provide more competitive wages. Stakeholders have reported a consistent pattern of RT departures whenever another Atlantic province installs a new linear accelerator (LINAC) or posts a job ad for radiation therapy. These departures, coupled with the staffing shortage currently faced by this profession, have caused RTs to experience high levels of burnout, and are less inclined to remain in their roles without appropriate compensation. As a result, resignations are projected to be the most significant outflow from this profession over the coming decade (see Table 285).

Competitive Training Program and Job Market

Other key factors contributing to the challenges observed in the recruitment and retention of RTs in NL is the highly competitive training program environment and national job market. Currently, NL does not offer a local training program for prospective RT students. Consequently, these students must pursue a 3-year training program outside NL and subsequently return to the province upon program completion. This return is accompanied by the expectation of earning lower salaries compared to their Canadian counterparts and routinely working in understaffed conditions.

Currently, there are five diploma training programs offered in Canada recognized by CAMRT: Michener Institute of Education at UHN/University of Toronto in Ontario, British Columbia Institute of Technology in British Columbia, University of Alberta Radiation Therapy Degree Program in Alberta, CancerCare Manitoba/University of Winnipeg in Manitoba, and Mohawk-McMaster Institute for Applied Health Sciences in Alberta.³⁴⁴ There are also two diploma programs offered in Quebec (Collège Ahuntsic and Dawson College).

³⁴⁴ [Canadian Association of Medical Radiation Technologists | Radiation Therapy \(camrt.ca\)](http://camrt.ca)

Each of these programs have limited seats and is in high demand among students from across the country. As of 2022, there were approximately 370 seats available annually in radiation therapy programs across Canada. The number of graduates annually can vary but is typically around 200 to 250, depending on the program and the year.

In the past, NLHS had a seat purchase agreement for one to three students with the Michener Institute, beginning in the early 90's, which successfully increased the size of the provincial RT workforce and helped fill vacancies for over a decade. In 2013, the job market became saturated, and the seat purchase agreement was terminated. With an ample supply of RTs nationwide, NL often trained students from outside the province due to a shortage of positions in the rest of Canada.

In addition to the seat purchase agreement, NL students were also able to apply to a bursary in exchange for a three- or five-year return in service, dependent on year issued, following graduation from the program. The cost of tuition and books were covered by a bursary program for the duration of the program.

In the past several years, the provincial demands for RTs have increased due to staffing shortages and projected retirements. Presently, the current landscape features a high national demand for RTs, which has posed significant recruitment challenges for NL. The BMCC in St. John's serves as a clinical site affiliated with the Michener Institute's Radiation Therapy program and offers two spaces for clinical training. However, there is currently no agreement in place that guarantees NL students' acceptance into the program.

To sustain current service levels, GNL needs to recruit one to two RT graduates each year or will be at risk of not meeting future demands for radiation therapy. Currently, GNL offers additional funding support totalling \$30,000 over two-years to support a cohort of three RT students per year to help maintain an adequate supply of RTs within the province.

Staffing Shortages and Impacts on Service Delivery Levels

Given the challenges with recruitment and retention, the provincial CCP program is experiencing significant staffing shortages to the extent that service delivery levels of radiation therapy have been impacted in the province. NLHS is often functioning with a 30% deficit in RT staff and current departmental budgets are not equipped with adequate relief to sustain appropriate service delivery levels.

Stakeholder shared that the current staffing models fall consistently under the recommended staffing model outlined in the NL RT Service Plan to 2026.³⁴⁵ This staffing model recommends 38-40 FTEs RTs in addition to relief. Currently, the provincial CCP program is operating with 34 FTE RTs and relief budget that covers 9-weeks of RT salary. Other departments, such as nursing, typically include one relief position for every five Permanent Full-Time (PFT) positions. This would amount to approximately five relief positions for RTs.

In the absence of an allocated relief budget has resulted in a continuous shortage of staff throughout the year. This ongoing understaffing has contributed to staff burnout and a significant outflow of personnel to other regions in Canada as soon as employment opportunities arise.

Insufficient staffing within the CCP program has led to adverse consequences affecting service delivery levels and the quality of patient care. Concerns were raised by stakeholders over the closure of one of the province's four cancer treatment units in September 2022, which persists over a year later. To mitigate the repercussions of this closure, operating hours at the remaining three units have been extended. However, despite these efforts, as many as 50% of cancer patients are not receiving their prescribed radiation therapies within the national benchmark of 28 days.³⁴⁶

In response to the escalating demand for services, the provincial CCP has, between November 1, 2022, and September 27, 2023, submitted 222 referrals for patients to seek treatment out-of-province.³⁴⁶ This often necessitates patients traveling beyond provincial borders to receive radiation therapy treatment, typically at facilities like Princess Margaret Hospital, imposing both financial and emotional burdens for these patients.

It is anticipated that CCW will further contribute to the staffing shortages that currently exist, as it will likely pull current staff out of their roles creating additional backfill issues in the province (see Health Accord NL Calls to Action for further details).

Health Accord NL Calls to Action

In accordance with the Health Accord NL Calls to Action (CTAs), the reduction in the prevalence of cancer and the population's high burden of chronic disease is a key priority over the next decade. CTA 9.14 outlines GNL's aspiration to develop and implement a five-year

³⁴⁵ NL Radiation Therapy Service Plan to 2026, shared by M. Corsten on April 25, 2023.

³⁴⁶ [Almost 200 N.L. cancer patients sent to Ontario for care because of radiation therapist shortage | CBC News](#)

plan for improvement in mortality rates for cancer over the next 10 years, led by the provincial CCP program. As part of this vision to improve access to cancer services, GNL has committed to the construction of a new acute care and cancer facility in Corner Brook. The opening of the new CCW facility, anticipated in June 2024, will result in a one-time demand addition of seven RTs in the Western Zone (see Table 291).

It is anticipated that this new facility will also increase demand for radiation therapy services among residents in western NL, as geography plays a significant role in patients' decision-making processes related to their treatment patterns. It is estimated that estimated that 48.3% of all cancers would benefit with radiotherapy treatment.³⁴⁷ All radiation therapy is currently provided at the BMCC in St. John's. On average, radiation therapy patients receive 16 treatment visits or "fractions" during one course of treatment. Presently, patients in these regions may opt for alternative treatment options to reduce the frequency of their trips to the BMCC for radiation therapy.

One of these alternatives, aside from surgical intervention, is hypofractionation, a method involving the administration of more radiation doses per visit. This approach allows patients to complete their course of radiation therapy quicker and in less visits than conventional methods. As CCW's primary objective is to improve regional access to radiation therapy services, it aims to offer patients an array of treatment options that align with their preferences for receiving care closer to their homes, thereby increasing the demand for radiation therapy as the preferred intervention.

Likewise, the expansion of cancer screening programs in the province, such as the existing breast, colorectal, cervical cancer screening programs in addition to the anticipated launch of the provincial lung cancer screening program, will serve as a mitigating demand factor due to the detection and diagnoses of common cancers at an earlier staging that is more conducive to surgical interventions, thereby requiring less radiation therapy.

Workforce Initiatives

Recognizing the competitive recruitment landscape for CCP professionals, and in anticipation of the increased demand for RTs to

³⁴⁷ [Estimating the demand for radiotherapy from the evidence: a review of changes from 2003 to 2012 - PubMed \(nih.gov\)](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3374723/)

support the new CCW facility, HCS has already taken steps to strengthen the supply of RTs via the following initiatives:

- **Market Adjustments:** There has been a GNL approved market adjustment in place since 2012. The most recent market adjustment, approved in November 2022, RTs received non-pensionable market adjustments, with amounts ranging between \$15,000 and \$28,000 based on classification to supplement their salaries in response to market conditions. In August 2023, a Memorandum of Understanding was signed with NAPE-LX to allow the market adjustment amount to be added to the base salary and considered pensionable earnings. This agreement will remain in place for 12 months.
- **Funding for RT Students:** Additional funding support totalling \$30,000 over three-years to support a cohort of three RT students per year;
- **Signing Bonus Program:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions, and tiered to address geographic considerations with an associated return-in-service of one or two years;
- **Health Professional Bursaries:** \$5,000 to \$10,000 bursaries are awarded for difficult to fill positions, available to RT students who sign a service agreement for one or two years of service commitment post-graduation;
- **Come Home Year Incentives:** \$50,000 offered to RT in exchange for three-year return-in-service agreement; and,
- **Retention Incentives:** A one-time incentive offered to RTs in exchange for a one-year return-in-service agreement, which ended on January 31, 2023.

Stakeholder Engagement Insights

Two stakeholder groups were engaged via focus groups to understand the experiences and perspectives of the current and future RT workforce:

- NLHS Cancer Care Program
- NL Association of Public and Private Employees (NAPE)

In addition, seven individuals responded to the focus group follow-up survey with additional insights. These stakeholder consultation activities yielded an array of qualitative insights pertinent to the development of RT workforce recommendations – summarized in Table 283 below. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, which may not be grounded in absolute fact.

Table 256: What We Heard from Radiation Therapist Stakeholders

Theme	Insights
Compensation	<ul style="list-style-type: none"> It was shared that the market adjustments for CCP professions have had significant negative impacts on both recruitment and retention. Market adjustment issues are rooted in the current Job Evaluation System (JES), as it places a significant weighting on supervision, which does not accurately reflect CCP occupations according to stakeholders. Stakeholders believe that RTs are under classified as a profession, as they are earning up to 40% less in NL than the rest of Canada, including other Atlantic provinces. In other provinces, RTs typically are paid \$20,000 more than other classifications of MRTs (such as x-ray, ultrasound, CT, etc.). However, in NL, some of these other classifications are paid more according to the current JES. The market adjustments also effect management pay, as supervisory positions are only paid 5% more than the base salary of the highest paid subordinate employee, which poses challenges when recruiting into leadership positions. Staff hired before 2012 have their market adjustments included their base salary, while those hired afterwards do not; this has created a division amongst RT staff.
Recruitment	<ul style="list-style-type: none"> There have been ongoing recruitment challenges for over a decade due to compensation, as RT salaries are paid through the union with non-pensionable market adjustments that contribute up to 40% of total compensation. Stakeholders reported that from August 2021 to February 2023, NLHS (formerly Eastern Health) was unable to recruit any RTs despite multiple Permanent Full-Time (PFT) openings. Recruiting external applicants is difficult, and usually temporary, due to the market adjustments, as the job descriptions must list the hourly wage which deters prospective candidates from applying as it is significantly less than other jurisdictions. RTs who had accepted positions in NL in the past had applied due to word-of-mouth about the market adjustment and the inability to find work anywhere else in Canada. As a result, it lowers the morale of new recruits once they understand the impact of the market adjustments (e.g., not factored into overtime pay or benefit policies, etc.)
International Recruitment	<ul style="list-style-type: none"> There is currently limited international recruitment for RTs as interested applicants must be certified through the national accreditation body, CAMRT. The CAMRT requires internationally trained RTs to pass the MRT competency based national certification examination, as they no longer accept equivalencies. The lack of supports to prepare international applicants for the exam serves as a barrier to entry into the profession.
Education and Training	<ul style="list-style-type: none"> NLHS used to have a seat purchase agreement with the Michener Institute in which successful students completed a 5-year return-in-service agreements in NL post-graduation, which was successful for a decade at increasing the size of the provincial RT workforce and filling vacancies. Prior to 2022, the RT market was highly saturated, and NL would routinely hire three to four graduates each year. These graduates would remain in-province for six months to a year before finding work elsewhere, which resulted in a constant turnover of staff and lack of experienced RTs.

Theme	Insights
Staffing Shortages	<ul style="list-style-type: none"> Now, RTs are in high demand nationally, and NL now faces significant challenges with recruiting from this pool of graduates. Due to the extent of staff shortages – both within NL and nationally – NLHS is often functioning with a 30% deficit in RT staff and current departmental budgets aren't equipped with adequate relief. As a result of this understaffing, the CCP program experiencing detrimental effects on both the quality of care provided to patients and on the mental health and wellbeing of RT staff. Stakeholders shared their concerns on how staffing shortages have already caused one of the four cancer treatment units in the province to close in September 2022, and patients are often sent out-of-province to receive radiation therapy. Instances of sick calls within the staff have substantial disruptive effects on departmental operations. The concern of overburdening colleagues and the unit often compels staff members to work even when they are unwell, leaving employees with limited options for managing their workload effectively.
Retention	<ul style="list-style-type: none"> These staffing shortages have contributed to staff burnout and have caused RTs to leave NL to pursue opportunities in other provinces. As a result, it was shared that the CCP program experiences RT departures every time Halifax posts a job opening. The current staffing ratios are unsustainable as RTs frequently find themselves working in 3-4 different areas within a single workday to accommodate the demands of patient care, a practice less commonly observed in other health care centers across Canada. Of the current RT staff that remain, approximately half are not originally from NL, which further contributes to retention issues that could rapidly deteriorate the service delivery levels of the CCP program.
Scope of Practice	<ul style="list-style-type: none"> Stakeholders shared how RT scope of practice has grown over the past few decades and will likely continue to do so in future as knowledge requirements are becoming more complex, and highly specialized. Traditionally, RTs utilized x-ray imaging for radiation planning and treatment. The expansion of the scope now includes in depth knowledge of CT imaging and is moving toward PET-CT imaging and MRI, requiring training and experience in several diagnostic imaging fields to work in either of these diagnostic imaging fields.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary projections of the supply of and demand for RTs were developed based on historical practice patterns and trends. Data on the supply of RTs in NL was provided by NLHS. Consequently, the supply captures only the stock of public sector RTs. The following inflows and outflows were captured:

- Inflows: new hires, rehired retirees, and rehires
- Outflows: resignations, and retirements

However, some inflows and outflows were not directly captured in the data. In the historical data provided, a slight discrepancy existed between change in the supply year over year and the difference between inflows and outflows. Consequently, to ensure the change in the stock of RTs was equal to the difference between the inflows and the outflows year over year in the historical data, “other net migrations” were estimated.

These preliminary projections were then augmented, wherever possible, based on the availability of supporting data and analysis, to reflect inflight or recently implemented policy initiatives to form a baseline scenario.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 284 outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for RTs, as well as any limitations or caveats to the data.

Table 257: Data Sources for Radiation Therapist Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of RTs, by zone, 5-year age cohort, and gender from 2018-2022</p> <p>Inflows: Entries into profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.)</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation)</p>	<p>Supply: Yes</p> <p>Inflows: Yes</p> <p>Outflows: Yes</p> <p>Source: NLHS</p>	<p>Supply Year X = Supply Year X-1 + 4-year average inflows - 4-year average outflows</p>	<ul style="list-style-type: none"> Some inflows and outflows were not directly captured in the data. Thus, "other net migrations" were estimated to ensure the change in the supply was equal to the difference between the inflows and the outflows historically. The supply captures only the stock of public sector RTs.
Demand	<p>The demand for radiation oncologists, which is estimated using the following:</p> <ul style="list-style-type: none"> 10 -year population projections, by 5-year age cohort, gender, and zone Number of individuals, by zone, 5-year age cohort, and gender, with each of the 226 CIHI POP Grouper diseases (disease prevalence) Number of radiation oncologist encounters by zone, 5-year age cohort, gender, and disease 	<p>Population projections: Yes Source: NL Department of Finance</p> <p>Disease prevalence: Yes Source: CIHI POP Grouper</p> <p>Radiation oncologist encounters: Yes Source: CIHI POP Grouper</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = growth in the demand for radiation oncologists</p> <p>Growth in demand for radiation oncologists (2023-2032) = 10-year population projections * disease prevalence rates * encounters by radiation oncologists = growth in encounters</p> <p>Demand Year X = Demand Year X-1 * predicted growth in the demand for radiation oncologists</p>	<ul style="list-style-type: none"> Encounters with RTs are not captured by the CIHI POP Grouper Methodology. However, given the close relationship of RTs with radiation oncologists, the demand for radiation oncologists was used as a proxy to estimate the demand for RTs.

Preliminary Projections

This section showcases the preliminary forecast estimates for RTs.

Table 258: Preliminary Supply Projections for Radiation Therapists

Health Occupation	Starting supply (Dec. 2022)	New Hires (2023-2032)	Rehired Retirees (2023-2032)	Rehires (2023-2032)	Resignations (2023-2032)	Retirements (2023-2032)	Other Net Migrations (2023-2032)	Ending Supply (Dec. 2032)
Radiation Therapists	25	38	0	0	27	1	-11	23

Where: Starting supply (Dec. 2022) + New Hires (2023-2032) + Rehired Retirees (2023-2032) + Rehires (2023-2032) - Resignations (2023-2032) - Retirements (2023-2032) + Other Net Migrations (2023-2032) = Ending Supply (Dec. 2032)

The preliminary projections predict the supply of RTs to decrease 8% between 2022 and 2032 if historical inflow and outflow trends continue into the future. New hires are the only inflow predicted over the forecast period. Overall, outflows are expected to slightly outweigh inflows over the coming decade. Table 286 summarizes the projections by zone.

Table 259: Regional Preliminary Supply Projections for Radiation Therapists

Zone	2018 Supply	2022 Supply	2032 Supply	Percent Change in Supply 2018 vs 2022	Percent Change in Supply 2022 vs 2032
Eastern Urban	31	25	23	-19%	-8%
Eastern Rural	0	0	0	0	0
Central	0	0	0	0	0
Western	0	0	0	0	0
Labrador-Grenfell	0	0	0	0	0
Total	31	25	23	-19%	-8%

RTs are currently only located in the Eastern Urban zone. Thus, the impacts on supply in Eastern Urban reflect the impacts for the province as a whole.

Table 260: Preliminary Demand Projections for Radiation Therapists

Health Occupation	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Radiation Therapists	25	7	32	40	+25%

Vacancies are added on to 2022 supply to estimate the starting demand. For RTs, the growth in the demand for radiation oncologists, which in turn reflects the growth in patient encounters with radiation oncologists by age, gender, disease, and zone, was used to forecast demand, given the close relationship between the two professions.

Data on the number of encounters by physician specialty is provided by the CIHI POP Grouper Methodology. According to the Population Grouping Methodology Information Sheet, The POP Grouper “uses clinical and demographic data to build clinical profiles and predict population health care needs”.³⁴⁸ For the purpose of this project, the POP Grouper was used to provide estimates of the number of individuals with each of the 226 diseases captured within the methodology as well as encounter estimates by physician specialty, disease, age, gender, and zone. The following steps were taken to estimate the growth in demand for radiation oncologists.

Step 1: Estimate the disease prevalence rates for 2022. The disease prevalence rate is estimated as the number of people with a specific disease divided by the population.

Step 2: Forecast the number of individuals with each of the 226 diseases by age, gender, and zone using the population forecast provided by the NL Department of Finance. To estimate the number of people with a disease in a given year, the 2022 disease prevalence rate is multiplied by the population of that year.

Step 3: Calculate the ratio of radiation oncologist encounters per person with each disease in 2022. This is estimated by dividing the number of radiation oncologist encounters by age, gender, health condition and zone in 2022 by the number of people with each disease by age, gender, and zone.

Step 4: Forecast the encounters for radiation oncologists by zone, age, gender, and health condition. The forecasted growth in encounters is used as the growth in demand for radiation oncologists and consequently the growth in demand for RTs.

Step 5: Calculate the starting demand by adding vacancies to 2022 supply.

Radiation oncologists and RTs work together exclusively. To reflect the interdependency between the two professions, the growth in the demand for radiation oncologists was used as a proxy to measure the demand for RTs.

³⁴⁸ [Population Grouping Methodology in Action \(cihi.ca\)](http://www.cihi.ca)

Step 6: Apply the growth in encounters with radiation oncologists, and hence the growth in the demand for radiation oncologists, to the starting demand to forecast demand for RTs.

Between 2022 and 2032, the preliminary demand for RTs is predicted to rise 25%. Given that RTs are currently only located in the Eastern Urban zone, the preliminary demand for RTs is located only in the Eastern Urban zone as well.

Table 288 highlights the predicted annual increase in demand by zone for the coming decade.

Table 261: Regional Growth in Demand for Radiation Therapists

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	2.5%	2.6%	2.4%	2.5%	2.3%	2.3%	1.9%	1.9%	2.2%	1.9%
Eastern Rural	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Central	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Western	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Labrador-Grenfell	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Newfoundland and Labrador	2.5%	2.6%	2.4%	2.5%	2.3%	2.3%	1.9%	1.9%	2.2%	1.9%

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022. With preliminary supply expected to decline over the forecast period and preliminary demand predicted to rise, the gap between supply and demand is forecasted to increase to 17 by 2032. Table 289 highlights the results of the preliminary gap analysis for RTs.

Table 262: Preliminary Gap Analysis for Radiation Therapists

Health Occupation	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
Radiation Therapists	25	32	7	23	40	17	+10

Base Case Projections

For RTs, the Health Accord NL CTA and workforce initiatives listed below are reflective of stakeholder feedback. In addition, sufficient quantitative data existed for their impact to be incorporated in supply

and demand projections. Overall, the policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

- **Demand Analysis:**
 - The new acute care and CCW facility in Corner Brook will require seven RTs (i.e., CTA 9.14)
- **Supply Analysis:**
 - Additional funding to RT student support of \$30k for two years for an extra cohort of three students per year
 - New hire uptake of new market adjustments (ranging between \$15,000 and \$29,659)
 - Uptake of Come Home Year Incentives

Table 290 highlights the assumptions used to help quantify base case items for RTs.

Table 263: Base Case Assumptions for Radiation Therapists

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL CTA 9.14: New acute care and CCW facility in Corner Brook	Demand	<ul style="list-style-type: none"> One-time addition when facility opens in June 2024 	<ul style="list-style-type: none"> Western <ul style="list-style-type: none"> 2024: +7
Added funding to RT Supply student support \$30k for two years for an extra cohort of three students per year	Supply	<ul style="list-style-type: none"> Added funding for five students that will graduate in 2024 or 2025 Allocate graduates by Eastern Urban and Western zones 	<ul style="list-style-type: none"> Eastern Urban <ul style="list-style-type: none"> 2024: +1 2025: +1 Western <ul style="list-style-type: none"> 2024: +2 2025: +1
New market adjustments (\$15,000 – \$29,659) - Market Adjustments recently made pensionable for cancer treatment group. One-year pilot. Impact on new hires only.	Supply	<ul style="list-style-type: none"> 16.7% attrition rate following end of contract, based on Eastern Health's market differential new and current employee turnover rate for RTs 	<ul style="list-style-type: none"> Eastern Urban <ul style="list-style-type: none"> 2023: +5
Come Home Year - \$50,000 for a three- year return-in- service agreement for radiation therapists	Supply	<ul style="list-style-type: none"> One-time incentive Impact sustained for 3-years due to return-in-service agreement 16.7% turnover rate following end of contract, based on Eastern Health's market differential new and current employee turnover rate for RTs 	<ul style="list-style-type: none"> Eastern Urban <ul style="list-style-type: none"> 2023: +6

Table 291 illustrates the annual quantitative impacts for each of the base case items included in the RT analysis.

Table 264: Annual Quantitative Impacts of the Base Case Items for Radiation Therapists

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Added funding to RT student support	0	3	5	5	5	5	5	5	5	5
New market adjustments. Impact on new hires only	5	4	4	4	4	4	4	4	4	4
Come Home Year - \$50,000 for a three-year return-in-service agreement for radiation therapists	6	6	6	5	5	5	5	5	5	5
Total Supply Impacts	11	13	15	14	14	14	14	14	14	14
Health Accord NL CTA 9.14: New acute care and CCW facility	0	7	7	7	7	7	7	7	7	7
Total Demand Impacts	0	7	7	7	7	7	7	7	7	7

Overall, the supply base case items will have a greater impact than the demand base case item. Consequently, the gap between supply and demand is predicted to fall for the province as a whole. Table 292 shows the final gap analysis over the course of the forecast period.

Table 265: Final Annual Provincial Gap Analysis for Radiation Therapists

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	25	36	38	40	38	38	38	38	38	37	37
Demand	32	33	41	41	42	43	44	45	45	46	47
Gap	7	-3	3	1	4	5	6	7	7	9	10
Gap as a Percent of Supply	28%	-8%	8%	3%	11%	13%	16%	18%	18%	24%	27%

Although the gap is expected to fall for the province as a whole, the addition of the CCW facility in Corner Brook will increase demand in

Western, and the predicted increase in supply in that zone resulting from the added funding to RT student support is not expected to be sufficient to meet demand. The below table highlights the inequities in the gap between the Eastern Urban and Western zones.

Table 266: Final Annual Regional Gap Analysis for Radiation Therapists

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	Supply	25	36	36	37	35	35	35	35	34	34
	Demand	32	33	34	34	35	36	37	38	39	40
	Gap	7	-3	-2	-3	0	1	2	3	5	6
	Gap as a Percent of Supply	28%	-8%	-6%	-8%	0%	3%	6%	9%	9%	15% 18%
Western	Supply	0	0	2	3	3	3	3	3	3	3
	Demand	0	0	7	7	7	7	7	7	7	7
	Gap	0	0	5	4	4	4	4	4	4	4
	Gap as a Percent of Supply	0%	0%	250%	133%	133%	133%	133%	133%	133%	133%
Newfoundland and Labrador	Supply	25	36	38	40	38	38	38	38	37	37
	Demand	32	33	41	41	42	43	44	45	46	47
	Gap	7	-3	3	1	4	5	6	7	9	10
	Gap as a Percent of Supply	28%	-8%	8%	3%	11%	13%	16%	18%	18%	24% 27%

The following section highlights the workforce recommendations proposed to further help GNL in closing the gap for public sector RTs.

Workforce Recommendations

As resignations are projected to be the most significant outflow from this profession over the coming decade (see Table 285), GNL must take immediate action to avoid another closure of a radiation treatment unit. Table 294 below highlights the workforce recommendations proposed to aid GNL in closing this gap.

For the four CCP professions in-scope (RT, MPs, dosimetrists, and radiation oncologists), it will be important to acknowledge the synergies between these professions for which demand strategies will be commonly shared, as they each play a role on an interdisciplinary

care team involved in treating the same disease condition, with the same therapeutic intervention.

Despite these similarities, supply recommendations will slightly differ based on the individual educational pathways required for each profession. However, they all face similar challenges derived from the uniformity of the pain points, such as non-pensionable market adjustments and the dependency on highly competitive schools for recruitment within the context of a national supply shortage.

Table 267: Radiation Therapist Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Demand for Radiation Therapists		
RT-1	Recruit / Retain	<p>Adopt Proposed RT Staffing Model and Increase Relief Budgets for RT Staff:</p> <p>To address the challenges with staffing shortages, burnout, and retention among RTs, it is recommended that NLHS adopt the proposed RT staffing model of 38-40 PFT RTs with additional relief staff at the BMCC outlined in the NL Radiation Therapy (RT) Service Plan to 2026 report. This would ensure that GNL can meet future demands for RT services and avoid potential radiation treatment unit closures.</p> <ul style="list-style-type: none"> • In 2015, GNL commissioned the development of the NL RT Service Plan to 2026 report, which outlined a proposed RT staffing model of approximately 38-40 PFT RTs at the BMCC with additional relief staff based on the province's proposed incidence of cancer.³⁴⁹ The staffing ratios used for projection of RT staffing requirements estimated one RT per approximately 55 treatment courses per year. • Currently, GNL is operating RT services with 34 RT FTEs and a relief budget that covers nine weeks of RT salary. As a result, this has led to staffing shortages within the CCP, contributing to RT staff burnout and retention challenges. • These staffing shortages have since caused service delivery issues, with the closure of one of the province's four cancer treatment units in September 2022, as the provincial CCP is unable to meet the escalating demands for RT. • It is recommended that NLHS adopt the proposed RT staffing model outlined in the NL RT Service Plan to 2026 report. This staffing model should include adequate relief budget that is comparable to other specialized health professions, to ensure that GNL can meet future demands for RT services and avoid potential radiation treatment unit closures. • Other departments, such as nursing, typically include one relief position for every five PFT positions. This would amount to approximately five relief positions for RTs under this new staffing model. • Implementing this staffing model would also have a secondary effect of improving RT retention in GNL by ensuring there is adequate relief to support a better work-life balance.
Supply of Radiation Therapists		
RT-2	Recruit / Retain	<p>Provide an Equitable and Pensionable Market Adjustment:</p> <ul style="list-style-type: none"> • The Job Class Profile for RTs I, II, and III determines the pay level received based on the point band they're assigned to. As the current JES point system places a significant weighting on supervision, the scoring doesn't accurately reflect the role of CCP professions according to stakeholders which tend to be individual in nature and require a high degree of technical competency. • The market adjustments for CCP professionals were intended to be a temporary form of additional remuneration based on current market conditions to address recruitment and

³⁴⁹ NL Radiation Therapy Service Plan to 2026, shared by M. Corsten on April 25, 2023.

ID	Theme	Recommendation and Potential Impact
		<p>retention challenges. However, RTs have been receiving a market adjustment in the form of a non-pensionable salary differential since 2012.</p> <ul style="list-style-type: none"> • The inability for the CCP to secure its full complement of budgeted RTs is a direct result of the current state of market adjustments for the occupation. • Considering the challenges associated with the timeliness and interdepartmental dependencies associated with submitting a proposal to the Treasury Board to reevaluate the JES scoring for CCP professions, our recommendation is to ensure those market adjustments provided result in the CCP's intended outcomes of enhancing recruitment and retention through offering equitable and pensionable compensation. • The recent Memorandum of Understanding that was signed with NAPE-LX to allow the market adjustment amount to be added to the base salary and considered pensionable earnings is a positive development for Cancer Care Professions, although it remains a temporary solution. • Notwithstanding wider policy considerations on the pensionability of market adjustments, which are outside the scope of the Provincial Health HR Plan, nationally competitive compensation is an essential part of recruiting RTs. • This would also eliminate the pay equity between staff hired before and after 2012, thereby further enhancing retention. • The average Canadian voluntary turnover rate in Canada is 15.5%.³⁵⁰ With 27 RT resignations projected over the next decade, this profession far exceeds the national turnover average at 42.8% (see Table 285). If these measures were implemented to increase compensation for RTs, the CCP could expect resignation trends to follow more closely to the national benchmark, thereby slowing outflows through resignation to 10 RTs over the next 10-years. • From a recruitment perspective, the CCP reported seven RT vacancies in 2022 (see Table 287). Through implementing this recommendation, the CCP can be reasonably expected to eliminate the current deficit of RTs.
RT-3	Recruit	<p>Guarantee Seats for NL Students with Michener Institute:</p> <ul style="list-style-type: none"> • As NL will require one to two graduates per year to maintain adequate workforce supply, it is recommended that GNL establishes a seat purchase agreement with the Michener Institute/University of Toronto for at least one RT student from NL be admitted into the program each year, provided they meet the application requirements. • Successful students will be required to complete a five-year return-in-service agreement following the completion of the three-year program. • GNL currently has similar seat purchase agreements in place in other specialized health care fields, such as those with Dalhousie University's physiotherapy and occupational therapy programs. • The BMCC in St. John's is currently a clinical site associated with Michener Institute/University of Toronto RT program with two clinical seats. However, there is no guarantee or agreement in place that students from NL will be accepted into the program. • With this seat purchase agreement, GNL could expect to recruit six additional RT graduates by 2032, assuming the agreement began in September 2024 and the first cohort of graduates entered the workforce in 2027.

³⁵⁰ 2023 Canadian Turnover Trends | Mercer (imercer.com)

Dosimetrists

Dosimetrists provide services to patients of the provincial Cancer Care Program (CCP) operated by the Newfoundland and Labrador Health Services (NLHS). They are responsible for performing highly specialized and clinical work as a member of the radiation oncology team in the development and implementation of treatment plans for oncology patients undergoing radiation therapy treatment.³⁵¹

Dosimetrists use advanced computer software to create patient-specific treatment plans, collaborating with physicians to precisely define tumor locations and organs at risk. They provide detailed instructions to Radiation Therapists (RTs) for accurate plan execution and maintain comprehensive treatment documentation.

Dosimetrists are responsible for dose calculations, both planned and unplanned, contributing to treatment accuracy. Additionally, they collaborate closely with MPs and radiation oncologists within NLHS to ensure that all elements of a patient's treatment plan are in place before treatment begins. This involves verifying approvals, conducting quality assurance checks, and provide support and training to students and new hires.

All dosimetrists must hold an undergraduate degree or diploma in Radiation Therapy. In addition, they are required to have two years of experience and become certified as a RT, with completion of a six-month course in Medical Dosimetry and successful completion of the exam for Canadian Association of Medical Radiation Technologists (CAMRT) Canadian Dosimetry Certificate (CDC). The Certification in Medical Dosimetry (CMD), which is the American exam, is also accepted.

Current State Analysis

Due to the tertiary nature of the services they support, dosimetrists in NL are employed by the NLHS exclusively in the Eastern Urban zone (as shown in Table 282). As of December 2022, there were six dosimetrists in NL. As a sub-classification of RTs, there is presently no local supply of dosimetrists in NL. All RTs are trained out-of-province at one of the limited training programs offered in radiation therapy in Canada such as the Michener Institute of Education at UHN/University of Toronto in Ontario. Those interested in pursuing their Medical Dosimetry credentialing then must enrol in a Dosimetry Certificate

³⁵¹ [Job Class Profile \(gov.nl.ca\)](http://gov.nl.ca)

program, comprising of a didactic, clinical, and research proposal component before being eligible to write their CDC examinations.³⁵²

International recruitment is limited for IEMRTs, as they are required to undergo the CAMRT examination process in addition to CDC certification to become certified in Canada.

Table 268: Dosimetrists by NLHS Zone³⁵³

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2022 Supply	6	0	0	0	0	6

The provincial CCP is responsible for providing comprehensive services to cancer patients across NL. The program offers a range of services to help patients access screening services, manage their diagnosis, treatment, follow-up care, survivorship, palliative care, and pain and symptom management.

The program's services include radiation therapy, chemotherapy, cancer screening programs (breast, colon, cervical), tele-oncology, clinical trials, consultative services, and supportive care services. Dosimetrists play a vital role in the delivery of radiation therapy services in the province, currently only offered at the BMCC in St. John's. GNL has committed to the construction of a new acute care and cancer facility in Corner Brook, Cancer Care Western (CCW), in June 2024 (see Health Accord NL Calls to Action section for further details).

Despite their pivotal function within the provincial CCP, the dosimetrist profession in NL has experienced challenges with recruitment and retention in recent years. These issues can be attributed to various factors, including market adjustments affecting several CCP professions and the competitive national job market.

Market Adjustments

CCP professions in NL currently receive market adjustments as part of their overall compensation. A market adjustment is a form of additional remuneration that is based on current market conditions. Market adjustments may be approved to address recruitment and retention challenges for officially classified positions that meet the criteria for a market-based adjustment as established by Treasury

³⁵² [Canadian Association of Medical Radiation Technologists | Dosimetry Certificate \(CDC\) \(camrt.ca\)](https://camrt.ca)

³⁵³ The supply captures only the stock of dosimetrists working for NLHS (i.e., public sector dosimetrists).

Board and subjected to the approval process.³⁵⁴ Market adjustments consider the comparative value of positions that are the same between other jurisdictions within Canada.

Dosimetrists have been receiving a market adjustment in the form of a salary differential since 2003. Prior to 2012, these market adjustments were paid hourly, pensionable and subject to general increases. In 2012, GNL introduced the Market Adjustment Policy, and they became non-pensionable, not subject to general increases and paid twice yearly with a six-month return-in-service. Existing staff were subject to the original system first approved in 2003, however, this policy applies to all new staff hired since 2012.

The most recent market adjustment amounts, approved in November 2022, dosimetrists received new market adjustments of \$19,000 based on classification to supplement their salaries in response to market conditions. For staff hired after 2012, earnings associated with market adjustments are non-pensionable. These additional earnings are not considered in overtime pay, life insurance premiums, disability insurance, worker compensation, among others. The continuation of the market adjustment is determined on an annual basis by HCS of Finance, and dosimetrist staff must sign return-in-service agreements every six months to continue to receive market adjustment pay.

NLHS and the Department of Health and Community Services (HCS) have continued to work to address the compensation issues among the Cancer Care Professionals. In August 2023, a Memorandum of Understanding was signed with NAPE-LX to allow the market adjustment amount to be added to the base salary and considered pensionable earnings. This agreement will remain in place for 12 months or until the implementation of recommendations related to the review of the Market Adjustment Policy.

GNL's market adjustment policies have had significant negative impacts on both recruitment and retention for dosimetrists. NLHS has experienced challenges with recruitment as the hourly rate offered in job postings, as negotiated through the union, is notably lower than comparable postings in other regions across the country as the market adjustment is not advertised.

From a retention perspective, lack of appropriate relief, coupled with the staffing shortage currently faced by this profession, have caused dosimetrists to experience high levels of burnout, and are less inclined to remain in their roles without appropriate compensation.

³⁵⁴ [Market Adjustment Policy - Treasury Board Secretariat \(gov.nl.ca\)](https://www.tbs-sct.gc.ca/eng/plan/plan-market-adjustment-policy)

Health Accord NL Calls to Action

In accordance with the Health Accord NL Calls to Action (CTAs), the reduction in the prevalence of cancer and the population's high burden of chronic disease is a key priority over the next decade. CTA 9.14 outlines GNL's aspiration to develop and implement a five-year plan for improvement in mortality rates for cancer over the next 10 years, led by the provincial CCP. As part of this vision to improve access to cancer services, GNL has committed to the construction of a new acute care and cancer facility in Corner Brook. The opening of the new CCW facility, anticipated in June 2024, will result in a one-time demand addition of three dosimetrists in the Western Zone.

It is anticipated that this new facility will also increase demand for RT services among residents in western NL, as geography plays a significant role in patients' decision-making processes related to their treatment patterns. It is estimated that estimated that 48.3% of all cancers would benefit with radiotherapy treatment.³⁵⁵ All RT is currently provided at the BMCC in St. John's. On average, RT patients receive 16 treatment visits or "fractions" during one course of treatment. Presently, patients in these regions may opt for alternative treatment options to reduce the frequency of their trips to the BMCC for RT.

One of these alternatives, aside from surgical interventions, is hypofractionation, a method involving the administration of more radiation doses per treatment session. This approach allows patients to complete their course of radiation therapy quicker and in less visits than conventional methods. As CCW's primary objective is to improve regional access to radiation therapy services, it aims to offer patients an array of treatment options that align with their preferences for receiving care closer to their homes, thereby increasing the demand for radiation therapy as the preferred intervention.

Likewise, the expansion of cancer screening programs in the province, such as the existing breast, colorectal, cervical cancer screening programs in addition to the anticipated launch of the provincial lung cancer screening program, will serve as a mitigating demand factor due to the detection and diagnoses of common cancers at an earlier staging that is more conducive to surgical interventions, thereby requiring less radiation therapy.

³⁵⁵ [Estimating the demand for radiotherapy from the evidence: a review of changes from 2003 to 2012 - PubMed \(nih.gov\)](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3345432/)

Workforce Initiatives

Recognizing the competitive recruitment landscape for CCP professionals, and in anticipation of the increased demand for dosimetrists to support the new CCW facility, HCS has already taken steps to strengthen the supply of dosimetrists via the following initiatives:

- **Market Adjustments:** There has been a GNL approved market adjustment in place since 2012. With the most recent market adjustment, approved in November 2022, dosimetrists received a non-pensionable market adjustment of \$19,000 to supplement their salaries in response to market conditions. In August 2023, a Memorandum of Understanding was signed with NAPE-LX to allow the market adjustment amount to be added to the base salary and considered pensionable earnings. This agreement will remain in place for 12 months.
- **Signing Bonus Program:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions, and tiered to address geographic considerations with an associated return-in-service of one or two years.
- **Health Professional Bursaries:** \$5,000 to \$10,000 bursaries are awarded for difficult to fill positions, available to dosimetry students who sign a service agreement for one or two years of service commitment post-graduation.
- **Come Home Year Incentives:** \$50,000 offered to dosimetrists in exchange for three-year return-in-service agreement; and,
- **Retention Incentives:** A one-time incentive offered in exchange for one year return-in-service agreement, which ended on January 31, 2023.

Stakeholder Engagement Insights

Two stakeholder groups were engaged via focus groups to understand the experiences and perspectives of the current and future RT workforce:

- NLHS Cancer Care Program
- NL Association of Public and Private Employees (NAPE)

In addition, seven individuals responded to the focus group follow-up survey with additional insights. These stakeholder consultation activities yielded an array of qualitative insights pertinent to the development of the dosimetrist workforce recommendations – summarized in Table 296 below. It should be noted that the stakeholder insights presented here reflect the perceptions and

beliefs reported by stakeholders, which may not be grounded in absolute fact.

Table 269: What We Heard from Dosimetrist Stakeholders

Theme	Insights
Compensation	<ul style="list-style-type: none"> It was shared that the market adjustments for CCP professions have had significant negative impacts on both recruitment and retention. Market adjustment issues are rooted in the current JES as it places a significant weighting on supervision, which doesn't accurately reflect CCP occupations according to stakeholders. Stakeholders believe that dosimetrists are under classified as a profession, as they are earning less in NL than the rest of Canada, including other Atlantic provinces. The market adjustments also affect management pay, as supervisory positions are only paid 5% more than the highest paid subordinate employee, which poses challenges when recruiting into leadership positions. Staff hired before 2012 have their market adjustments included their base salary, while those hired afterwards do not; this has created a division amongst dosimetrist staff.
Recruitment / Retention	<ul style="list-style-type: none"> There have been ongoing recruitment and retention challenges for over a decade due to compensation, as dosimetrist salaries are paid through the union with a non-pensionable market adjustment that is subject to a six month return of service for each bi-annual payment. Recruiting external applicants is difficult, and usually temporary, due to the market adjustments, as the job descriptions must list the hourly wage which deters prospective candidates from applying as it is significantly less than other jurisdictions. As a highly sought-after profession nationally, the market adjustments, in addition to the CCP's staffing shortages and lack of adequate relief budgets, have contributed to staff burnout and turnover.
Scope of Practice	<ul style="list-style-type: none"> Stakeholders shared how dosimetrist scope of practice Scope of Practice has expanded, as the complexities associated with treatment planning are continually increasing.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary projections of the supply of and demand for dosimetrists were developed based on historical practice patterns and trends. Data on the supply of dosimetrists in NL was provided by NLHS. Consequently, the supply captures only the stock of public sector dosimetrists. The following inflows and outflows were captured:

- Inflows: new hires, rehired retirees, and rehires
- Outflows: resignations, and retirements

However, some inflows and outflows were not directly captured in the data. In the historical data provided, a slight discrepancy existed

between change in the supply year over year and the difference between inflows and outflows. Consequently, to ensure the change in the stock of dosimetrists was equal to the difference between the inflows and the outflows year over year in the historical data, “other net migrations” were estimated.

These preliminary projections were then augmented, wherever possible, based on the availability of supporting data and analysis, to reflect inflight or recently implemented policy initiatives to form a baseline scenario.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 297 outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for dosimetrists, as well as any limitations or caveats to the data.

Table 270: Data Sources for Dosimetrist Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of dosimetrists, by zone, 5-year age cohort, and gender from 2018-2022</p> <p>Inflows: Entries into profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.)</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation)</p>	<p>Supply: Yes</p> <p>Inflows: Yes</p> <p>Outflows: Yes</p> <p><u>Source:</u> NLHS</p>	<p>Supply Year X = Supply Year X-1 + 4-year average inflows - 4-year average outflows</p>	<ul style="list-style-type: none"> Some inflows and outflows were not directly captured in the data. Thus, "other net migrations" were estimated to ensure the change in the supply was equal to the difference between the inflows and the outflows historically. The supply captures only the stock of public sector dosimetrists.
Demand	<p>The demand for radiation oncologists, which is estimated using the following:</p> <ul style="list-style-type: none"> 10-year population projections, by 5-year age cohort, gender, and zone Number of individuals, by zone, 5-year age cohort, and gender, with each of the 226 CIHI POP Grouper diseases (disease prevalence) Number of radiation oncologist encounters by zone, 5-year age cohort, gender, and disease 	<p>Population projections: Yes <u>Source:</u> NL Department of Finance</p> <p>Disease prevalence: Yes <u>Source:</u> CIHI POP Grouper</p> <p>Radiation oncologist encounters: Yes <u>Source:</u> CIHI POP Grouper</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = growth in the demand for radiation oncologists</p> <p>Growth in demand for radiation oncologists (2023-2032) = 10-year population projections * disease prevalence rates * encounters by radiation oncologists = growth in encounters</p> <p>Demand Year X = Demand Year X-1 * predicted growth in the demand for radiation oncologists</p>	<ul style="list-style-type: none"> Encounters with dosimetrists are not captured by the CIHI POP Grouper Methodology. However, given the close relationship of dosimetrists with radiation oncologists, the demand for radiation oncologists was used as a proxy to estimate the demand for dosimetrists.

Preliminary Projections

This section showcases the preliminary forecast estimates for dosimetrists.

Table 271: Preliminary Supply Projections for Dosimetrists

Health Occupation	Starting supply (Dec. 2022)	New Hires (2023-2032)	Rehired Retirees (2023-2032)	Rehires (2023-2032)	Resignations (2023-2032)	Retirements (2023-2032)	Other Net Migrations (2023-2032)	Ending Supply (Dec. 2032) ³⁵⁶
Dosimetrists	6.0	0.0	0.0	0.0	0.0	1.4	0.7	5.4

Where: Starting supply (Dec. 2022) + New Hires (2023-2032) + Rehired Retirees (2023-2032) + Rehires (2023-2032) - Resignations (2023-2032) - Retirements (2023-2032) + Other Net Migrations (2023-2032) = Ending Supply (Dec. 2032)

The preliminary projections predict the supply of dosimetrists to decrease 10% between 2022 and 2032. At least one dosimetrist is expected to retire over the course of the forecast period, and minimal historical inflows and outflows were captured in the historical data provided. However, despite not being captured within the inflow and outflow data provided by NLHS, the historical supply data suggests there was an increase in the supply of dosimetrists in 2021. To correct for the discrepancy between the change in supply and the sum of the inflows and outflows in the data provided, other net migrations were estimated. Thus, only other net migrations are expected to contribute to increasing supply from now until 2032, while retirements are expected to exceed other net migrations, explaining the predicted decline in preliminary supply. Table 299 summarizes the projections by zone.

Table 272: Regional Preliminary Supply Projections for Dosimetrists

Zone	2018 Supply	2022 Supply	2032 Supply	Percent Change in Supply 2018 vs 2022	Percent Change in Supply 2022 vs 2032
Eastern Urban	5	6	5.4	20%	-10%
Eastern Rural	0	0	0	0	0
Central	0	0	0	0	0
Western	0	0	0	0	0
Labrador-Grenfell	0	0	0	0	0
Total	5	6	5.4	20%	-10%

³⁵⁶ Due to rounding, the sum of the components does not perfectly match the ending supply in 2032.

Dosimetrists are currently only located in the Eastern Urban zone. Thus, the impacts on supply in Eastern Urban reflect the impacts for the province as a whole.

Table 273: Preliminary Demand Projections for Dosimetrists

Health Occupation	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
Dosimetrists	6	0	6	7.5	25%

Vacancies are added on to 2022 supply to estimate the starting demand. For dosimetrists, the growth in the demand for radiation oncologists, which in turn reflects the growth in patient encounters with radiation oncologists by age, gender, disease, and zone, was used to forecast demand, given the close relationship between the two professions.

Data on the number of encounters by physician specialty is provided by the CIHI POP Grouper Methodology. According to the Population Grouping Methodology Information Sheet, The POP Grouper "uses clinical and demographic data to build clinical profiles and predict population health care needs".³⁵⁷ For the purpose of this project, the POP Grouper was used to provide estimates of the number of individuals with each of the 226 diseases captured within the methodology as well as encounter estimates by physician specialty, disease, age, gender, and zone. The following steps were taken to estimate the growth in demand for radiation oncologists.

Step 1: Estimate the disease prevalence rates for 2022. The disease prevalence rate is estimated as the number of people with a specific disease divided by the population.

Step 2: Forecast the number of individuals with each of the 226 diseases by age, gender, and zone using the population forecast provided by the NL Department of Finance. To estimate the number of people with a disease in a given year, the 2022 disease prevalence rate is multiplied by the population of that year.

Step 3: Calculate the ratio of radiation oncologist encounters per person with each disease in 2022. This is estimated by dividing the number of radiation oncologist encounters by age, gender, health condition and zone in 2022 by the number of people with each disease by age, gender, and zone.

Radiation oncologists and dosimetrists work together exclusively. To reflect the interdependency between the two professions, the growth in the demand for radiation oncologists was used as a proxy to measure the demand for dosimetrists.

³⁵⁷ [Population Grouping Methodology in Action \(cihi.ca\)](http://www.cihi.ca)

Step 4: Forecast the encounters for radiation oncologists by zone, age, gender, and health condition. The forecasted growth in encounters is used as the growth in demand for radiation oncologists and consequently the growth in demand for dosimetrists.

Step 5: Calculate the starting demand by adding vacancies to 2022 supply.

Step 6: Apply the growth in encounters with radiation oncologists, and hence the growth in the demand for radiation oncologists, to the starting demand to forecast demand for dosimetrists.

Between 2022 and 2032, the preliminary demand for dosimetrists is predicted to rise 25%. Given that dosimetrists are currently only located in the Eastern Urban zone, the preliminary demand for dosimetrists is located only in the Eastern Urban zone as well.

Table 301 highlights the predicted annual increase in demand by zone for the coming decade.

Table 274: Regional Growth in Demand for Dosimetrists

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	2.5%	2.6%	2.4%	2.5%	2.3%	2.3%	1.9%	1.9%	2.2%	1.9%
Eastern Rural	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Central	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Western	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Labrador-Grenfell	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Newfoundland and Labrador	2.5%	2.6%	2.4%	2.5%	2.3%	2.3%	1.9%	1.9%	2.2%	1.9%

With preliminary supply expected to decline over the forecast period and preliminary demand predicted to rise, the gap between supply and demand is forecasted to increase to approximately two by 2032.

Table 302 highlights the results of the preliminary gap analysis for dosimetrists.

Table 275: Preliminary Gap Analysis for Dosimetrists

Health Occupation	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
MPs	6	6	0	5.4	7.5	2.1	+2.1

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022.

Base Case Projections

For dosimetrists, the only base case assumption applied to the projections stems from Health Accord NL CTA 9.14 (mortality rate improvement plan for cancer, cardiac disease, and stroke led by provincial programs for these disease entities). Improved access to services delivered by these provincial programs is in part represented by the construction of a new acute care and cancer care facility in Corner Brook. For the purposes of dosimetrist projections, this assumption is represented as a one-time addition of three employees when the facility opens in June 2024 (i.e., +3 headcount increase in the Western zone). Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

Table 276: Base Case Assumptions for Dosimetrists

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL CTA 9.14: New acute care and CCW facility in Corner Brook	Demand	<ul style="list-style-type: none"> One-time addition when facility opens in June 2024 	<ul style="list-style-type: none"> Western: <ul style="list-style-type: none"> 2024: +3

Table 304 illustrates the annual quantitative impacts for each of the base case items included in the dosimetrists.

Table 277: Annual Quantitative Impacts of the Base Case Items for Dosimetrists

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Health Accord NL CTA 9.14: New acute care and CCW facility	0	3	3	3	3	3	3	3	3	3
Total Demand Impacts	0	3								

For the case of dosimetrists, only one demand-side base case item is incorporated into the analysis. With demand increasing with the

incorporation of the base case items, but supply remaining constant, the gap is predicted to increase over the course of the forecast period. Table 305 shows the final gap analysis for NL as a whole.

Table 278: Final Annual Provincial Gap Analysis for Dosimetrists

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	6	6	6	6	6	6	6	6	6	5	5
Demand	6	6	9	10	10	10	10	10	10	10	11
Gap ³⁵⁸	0	0	4	4	4	4	4	5	5	5	5
Gap as a Percent of Supply	0%	5%	60%	67%	68%	75%	77%	80%	85%	93%	94%

Although the gap is expected to fall for the province as a whole, the addition of the CCW facility in Corner Brook will increase demand for dosimetrists in Western, with no supply impacts expected in Western. Table 306 highlights the inequities in the gap between the Eastern Urban and Western zones.

Table 279: Final Annual Regional Gap Analysis for Dosimetrists

		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	Supply	6.0	5.9	5.8	5.7	5.7	5.6	5.6	5.6	5.5	5.4	5.4
	Demand	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	7.5
	Gap	0.0	0.3	0.5	0.8	1.0	1.1	1.3	1.5	1.7	1.9	2.1
	Gap as a Percent of Supply	0%	5%	10%	13%	17%	20%	24%	27%	31%	35%	40%
Western	Supply	0	0	0	0	0	0	0	0	0	0	0
	Demand	0	0	3	3	3	3	3	3	3	3	3
	Gap	0	0	3	3	3	3	3	3	3	3	3
	Gap as a Percent of Supply	0	0	300%	300%	300%	300%	300%	300%	300%	300%	300%

Workforce Recommendations for Dosimetrists

Table 307 below provides workforce recommendations proposed to aid GNL in closing this gap.

For the four CCP professions in-scope (radiation therapists, medical physicists, dosimetrists, and radiation oncologists), it will be important

³⁵⁸ Due to rounding, and because the profession is small, the gap does not always perfectly equal the difference between supply and demand.

to acknowledge the synergies between these professions for which demand strategies will be commonly shared, as they each play a role on an interdisciplinary care team involved in treating the same disease condition, with the same therapeutic intervention.

Despite these similarities, supply recommendations will slightly differ based on the individual educational pathways required for each profession. However, they all face similar challenges derived from the uniformity of the pain points, such as non-pensionable market adjustments and the dependency on highly competitive schools for recruitment within the context of a national supply shortage.

Table 280: Dosimetrist Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Supply of Dosimetrists		
D-1	Recruit / Retain	<p>Provide an Equitable and Pensionable Market Adjustment:</p> <ul style="list-style-type: none"> The Job Class Profile for dosimetrists determines the pay level received based on the point band they are assigned to. As the current JES point system places a significant weighting on supervision, the scoring doesn't accurately reflect the role of CCP professions according to stakeholders which tend to be individual in nature and require a high degree of technical competency. The market adjustments for CCP professionals were intended to be a temporary form of additional remuneration based on current market conditions to address recruitment and retention challenges. However, Dosimetrists have been receiving a market adjustment in the form of a non-pensionable salary differential since 2012. The inability for the CCP to secure its full complement of budgeted dosimetrists is a direct result of the current state of market adjustments for the occupation. Considering the challenges associated with the timeliness and interdepartmental dependencies associated with submitting a proposal to the Treasury Board to reevaluate the JES scoring for CCP professions, our recommendation is to ensure those market adjustments provided result in the CCP's intended outcomes of enhancing recruitment and retention through offering equitable and pensionable compensation. The recent Memorandum of Understanding that was signed with NAPE-LX to allow the market adjustment amount to be added to the base salary and considered pensionable earnings is a positive development for Cancer Care Professions, although it remains a temporary solution. Notwithstanding wider policy considerations on the pensionability of market adjustments, which are outside the scope of the Provincial Health HR Plan, nationally competitive compensation is an essential part of recruiting dosimetrists. This would also eliminate the pay equity between staff hired before and after 2012, thereby further enhancing retention. Additionally, as part of this review process, HCS may want to consider supplementing this compensation package with additional recruitment and retention incentives to further strengthen supply, such as including a signing bonus or the continuation of the existing retention incentive. With the opening of the new CCW facility in 2024, NLHS will need to recruit three dosimetrists (see Table 303).³⁵⁹ Through implementing this recommendation, the CCP can be reasonably expected to eliminate the current deficit of Dosimetrists.

³⁵⁹ Note that the CCW workforce plan outlines the need for 2.5 FTE dosimetrists. Due to rounding, this has been represented as a headcount addition of three dosimetrists.

ID	Theme	Recommendation and Potential Impact
D-2	Recruit	<p>Support RRTs to Become Certified Dosimetrists:</p> <ul style="list-style-type: none"> Considering the scarcity of the national supply of dosimetrists and that obtaining certification requires verification of a candidate's status as a practicing RT, GNL should offer additional support to encourage RTs to become dosimetrists. Recognizing the RT recruitment plans outlined in RT-3 to stabilize the RT workforce, there would be an opportunity to upskill a subset of the province's existing supply of RTs to become dosimetrists if provided adequate supervision, training, and assessment. In order to be eligible to write the CDC exam, applicants must demonstrate the completion of 1,000 clinical curriculum hours in medical dosimetry. GNL should seek to establish recognized opportunities for ongoing continuing education and supervision to satisfy this criterion. These efforts can be supported by creating rotational dosimetrist-in-training positions to the complement of CCP roles to facilitate upskilling the current RT staff to be fully qualified to be able to move into dosimetrist positions. Additionally, HCS may want to consider offering bursaries with return-in-service agreements to increase the likelihood of retention post-certificate completion. Implementing this recommendation can be reasonably expected to increase supply of Dosimetrists over the medium to long-term to close the projected gap.

Medical Physicists

Medical physicists (MPs) provide services to patients of the provincial Cancer Care Program (CCP) operated by the Newfoundland and Labrador Health Services (NLHS). MPs have specialized training in the application of ionizing radiation to the treatment of human disease such as cancer. Their primary role is to assure that prescribed radiation therapy treatments are delivered accurately.³⁶⁰

MPs play essential roles in ensuring the safe and effective delivery of radiation therapy. They review and approve radiation treatment plans, verifying that dose calculations and treatment durations align with the radiation oncologist's prescriptions. They are also responsible for developing and endorsing policies and procedures related to dose calculations and specialized treatment techniques. They may also be responsible for the development and administration of the radiation safety program.

MPs collaborate closely with radiation oncologists, offering consultation support in complex cases. They review and conduct measurements for specialized techniques to ensure accurate delivery of radiation treatments. They also have a vital responsibility in understanding and monitoring the computer algorithms used to simulate radiation interactions with patients, aiming to prevent potential inaccuracies.

All MPs must hold an accredited master's and doctoral degree in Medical Physics with a completion of a residency program, supplemented with certification by the Canadian College of Physicists in Medicine (CCPM).

Current State Analysis

Due to the tertiary nature of services they support, MPs in NL are employed by the NLHS exclusively in the Eastern Urban zone (as shown in Table 308). As of December 2022, there were seven MPs in NL. Presently, NL does not offer either master's or doctoral level training in medical physics, nor are there any residency seats available in-province. Therefore, all MPs are currently trained out-of-province at any of the several programs offered in medical physics in Canada such as those offered at the University of Toronto, McGill University, and the University of Western Ontario.

International recruitment is limited for MPs, as they are required to undergo the Canadian College of Physicists in Medicine examination process before being certified in Canada, and there is currently no

³⁶⁰ [Job Class Profile \(gov.nl.ca\)](http://gov.nl.ca)

bridging program in place without the province first having an established residency program.

Table 281: Medical Physicists by NLHS Zone³⁶¹

	Eastern Urban	Eastern Rural	Central	Western	Labrador-Grenfell	Total
2022 Supply	7	0	0	0	0	7

The provincial CCP is responsible for providing comprehensive services to cancer patients across NL. The program offers a range of services to help patients access screening services, manage their diagnosis, treatment, follow-up care, survivorship, palliative care, and pain and symptom management.

The program's services include radiation therapy, chemotherapy, cancer screening programs (breast, colon, cervical), tele-oncology, clinical trials, consultative services, and supportive care services. MPs play a vital role in the delivery of radiation therapy services in the province, currently only offered at the BMCC in St. John's. GNL has committed to the construction of a new acute care and cancer facility in Corner Brook, Cancer Care Western (CCW), in June 2024.

Despite their pivotal function within the provincial CCP, the MP profession in NL has experienced challenges with recruitment and retention in recent years. These issues can be attributed to various factors, including market adjustments affecting several CCP professions and the lack of in-province residency programs.

Market Adjustments

CCP professions in NL currently receive market adjustments as part of their overall compensation. A market adjustment is a form of additional remuneration that is based on current market conditions. Market adjustments may be approved to address recruitment and retention challenges for officially classified positions that meet the criteria for a market-based adjustment as established by Treasury Board and subjected to the approval process.³⁶² Market adjustments consider the comparative value of positions that are the same between other jurisdictions within Canada.

MPs have been receiving a market adjustment in the form of a salary differential since 2003. Prior to 2012, these market adjustments were paid hourly, pensionable and subject to general increases. In 2012,

³⁶¹ The supply captures only the stock of MPs working for NLHS (i.e., public sector MPs).

³⁶² [Market Adjustment Policy - Treasury Board Secretariat \(gov.nl.ca\)](https://www.tbs-sct.gc.ca/eng/adjustment-policy)

GNL introduced the Market Adjustment Policy, and they became non-pensionable, not subject to general increases and paid twice yearly with a six-month return-in-service. Existing staff were subject to the original system first approved in 2003, however, this policy applies to all new staff hired since 2012.

Most recently, MPs received a market adjustment of \$71,000 to supplement their salaries in response to market conditions, approved in November 2022. For staff hired after 2012, earnings associated with market adjustments, which constitute approximately 30% of total compensation, are non-pensionable. These additional earnings are not considered in overtime pay, life insurance premiums, disability insurance, worker compensation, among others. The continuation of the market adjustment is determined on an annual basis by HCS of Finance, and MP staff must sign return-in-service agreements every six months to continue to receive market adjustment pay.

NLHS and the Department of Health and Community Services (HCS) have continued to work to address the compensation issues among the Cancer Care Professionals. In August 2023, a Memorandum of Understanding was signed with NAPE-LX to allow the market adjustment amount to be added to the base salary and considered pensionable earnings. This agreement will remain in place for 12 months or until the implementation of recommendations related to the review of the Market Adjustment Policy.

GNL's market adjustment policies have had significant negative impacts on both recruitment and retention for MPs. NLHS has experienced challenges with recruitment as the hourly rate offered in job postings, as negotiated through the union, is notably lower than comparable postings in other regions across the country as the market adjustment is not advertised.

From a retention perspective, lack of appropriate relief, coupled with the staffing shortage currently faced by this profession, have caused MPs to experience high levels of burnout, and are less inclined to remain in their roles without appropriate compensation. As a result, resignations are projected to be the most significant outflow from this profession over the coming decade (see Table 311).

Lack of a NL Residency Program

The current compensation policies which have significantly compromised CCP's capability to attract and retain senior MP staff, is further compounded due to the profession's short supply both nationally and worldwide. This is paired with a competitive training environment, with certification and education processes that require

potential candidates to have 11-13 years of post-secondary education to be qualified as MPs.

In Canada, all MPs must hold a graduate degree in medical physicists from a recognized university and complete a residency program in medical physics that is accredited by the Commission on Accreditation of Medical Physics Education Programs (CAMPEP) or the CCPM. While a PhD is not always required to become a medical physicist, it is highly recommended and often preferred by employers. MPs must also pass the certification exams administer by the CCPM and become licensed in the province in which intend to practice.

Currently, there are fifteen graduate programs in Medical Physics offered in Canada, each with their own CAMPEP-accredited residency program: Dalhousie University in Nova Scotia; Carleton University, Queen's University, Toronto Metropolitan University, University of Toronto, Western University in Ontario; Laurentian University, McGill University Université de Montréal, and Université Laval in Quebec; the University of Alberta, and the University of Calgary in Alberta; University of Manitoba in Manitoba; University of Saskatchewan in Saskatchewan; and, the University of British Columbia, and University of Victoria in British Columbia.^{363,364} The only source of Atlantic graduates is from Dalhousie University.

Each of these programs have limited seats and is in high demand among students from across the country. As of 2022, there were approximately 50 to 60 seats available annually in Medical Physics programs across Canada. The number of graduates annually can vary but is typically around 30 to 40, depending on the program and the year.

NL currently does not offer graduate or doctoral programs in medical physics, in addition to any in-province residencies. With residency positions in the country already being in high demand, NL is challenged with being able to recruit as they must compete with other provinces to attract qualified candidates. Likewise, without a residency program, NL students would have to leave the province to gain the necessary educational and clinical experience, which further challenges recruitment efforts despite offering a return-in-service agreement bursary for MP residents.

³⁶³ [Graduate Programs \(comp-ocpm.ca\)](https://www.comp-ocpm.ca)

³⁶⁴ [CAMPEP Accredited Graduate Programs in Medical Physics](https://www.campep.org)

Without a local residency program, it also creates a complex immigration pathway for internationally trained MPs as NL cannot provide a bridging program without first offering a residency program.

In order to develop a viable MP staffing plan, GNL should seek opportunities to develop interim and long-term local training options for MP students, supported by funding, to facilitate the recruitment of this highly sought-after workforce.

Health Accord NL Calls to Action

Over the next decade, a key priority is to reduce the prevalence of cancer and the high burden of chronic disease in the population, in accordance with the Health Accord NL Calls to Action (CTAs). CTA 9.14 outlines GNL's aspiration to develop and implement a five-year plan for improvement in mortality rates for cancer over the next 10 years, led by the provincial CCP. As part of this vision to improve access to cancer services, GNL has committed to the construction of a new acute care and cancer facility in Corner Brook. The opening of the new CCW facility, anticipated in June 2024, will result in a one-time demand addition of two MPs in the Western Zone (see Table 316).

It is anticipated that this new facility will also increase demand for Radiation Therapy (RT) services among residents in western NL, as geography plays a significant role in patients' decision-making processes related to their treatment patterns. It is estimated that estimated that 48.3% of all cancers would benefit with radiotherapy treatment.³⁶⁵ All RT is currently provided at the BMCC in St. John's. On average, RT patients receive 16 treatment visits or "fractions" during one course of treatment. Presently, patients in these regions may opt for alternative treatment options to reduce the frequency of their trips to the BMCC for RT.

One of these alternatives, aside from surgical intervention, is hypofractionation, a method involving the administration of more radiation doses per treatment session. This approach allows patients to complete their course of radiation therapy quicker and in less visits than conventional methods. As CCW's primary objective is to improve regional access to radiation therapy services, it aims to offer patients an array of treatment options that align with their preferences for receiving care closer to their homes, thereby increasing the demand for radiation therapy as the preferred intervention.

³⁶⁵ [Estimating the demand for radiotherapy from the evidence: a review of changes from 2003 to 2012 - PubMed \(nih.gov\)](#)

Likewise, the expansion of cancer screening programs in the province, such as the existing breast, colorectal, cervical cancer screening programs in addition to the anticipated launch of the provincial lung cancer screening program, will serve as a mitigating demand factor due to the detection and diagnoses of common cancers at an earlier staging that is more conducive to surgical interventions, thereby requiring less radiation therapy.

Workforce Initiatives

Recognizing the competitive recruitment landscape for CCP professionals, and in anticipation of the increased demand for MPs to support the new CCW facility, HCS has already taken steps to strengthen the supply of MPs via the following initiatives:

- **Market Adjustments:** There has been a GNL approved market adjustment in place since 2012. With the most recent market adjustment, approved in November 2022, MPs received non-pensionable market adjustments of \$71,000 to supplement their salaries in response to market conditions. In August 2023, a Memorandum of Understanding was signed with NAPE-LX to allow the market adjustment amount to be added to the base salary and considered pensionable earnings. This agreement will remain in place for 12 months.
- **Signing Bonus Program:** Signing bonuses are available for selected health occupations, targeting difficult-to-fill positions, and tiered to address geographic considerations with an associated return-in-service of one or two years.
- **Health Professional Bursaries:** \$5,000 to \$10,000 bursaries are awarded for difficult to fill positions, available to MP students who sign a service agreement for one or two years of service commitment post-graduation;
- **Come Home Year Incentives:** \$50,000 offered to MPs in exchange for three-year return-in-service agreement; and,
- **Retention Incentives:** A one-time incentive offered to RTs in exchange for a one-year return-in-service agreement, which ended on January 31, 2023.

Stakeholder Engagement Insights

Two stakeholder groups were engaged via focus groups to understand the experiences and perspectives of the current and future MP workforce:

- NLHS Cancer Care Program
- NL Association of Public and Private Employees (NAPE)

In addition, seven individuals responded to the focus group follow-up survey with additional insights. These stakeholder consultation activities yielded an array of qualitative insights pertinent to the development of MP workforce recommendations – summarized in Table 309 below. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, which may not be grounded in absolute fact.

Table 282: What We Heard from Medical Physicist Stakeholders

Theme	Insights
Compensation	<ul style="list-style-type: none"> It was shared that the market adjustments for CCP professions have had significant negative impacts on both recruitment and retention. Market adjustment issues are rooted in the current Job Evaluation System (JES), as it places a significant weighting on supervision, which doesn't accurately reflect CCP occupations according to stakeholders. Stakeholders believe that MPs are under classified as a profession, as they are earning up to 30% less in NL than the rest of Canada, including other Atlantic provinces. The market adjustments also affect management pay, as supervisory positions are only paid 5% more than the highest paid subordinate employee, which poses challenges when recruiting into leadership positions. Staff hired before 2012 have their market adjustments included their base salary, while those hired afterwards do not; this has created a division amongst staff.
Recruitment	<ul style="list-style-type: none"> Historically, the MP staff group has experienced instability for the past decade due to compensation, as MP salaries are paid through the union with non-pensionable market adjustments that contribute up to 40% of total compensation, making them the lowest paid in Canada. Recruiting external applicants is difficult, and usually temporary, due to the market adjustments, as the job descriptions must list the hourly wage which deters prospective candidates from applying as it is significantly less than other jurisdictions. This is further compounded by due to this profession being in high demand and short supply nationally, with extensive education and certification requirements effective as of 2016 (on average 11-13 years of post-secondary training required before being able to practice as an MP).
Education and Training	<ul style="list-style-type: none"> MPs are required to have a masters and doctoral degree in physics with additional residency training. Stakeholders shared that the province currently doesn't offer either program, or residencies, which makes NL particularly vulnerable to MP staffing shortages. Despite there being a return-in-service bursary available for MP residents, there has only been one applicant who has accepted it since its inception. Stakeholders shared that there have been discussions to secure a residency position in Halifax through Dalhousie University for NL students in the past.
International Recruitment	<ul style="list-style-type: none"> There is currently limited international recruitment as the NL currently cannot offer a bridging program for internationally trained MPs without first establishing its own residency program.
Retention / Staffing Shortages	<ul style="list-style-type: none"> Due to the issues cited above on market adjustments and international shortage, NL experiences challenges with retaining senior MP staff.

Theme	Insights
	<ul style="list-style-type: none"> These staffing shortages have posed challenges in the past, as RT cannot be safely provided without qualified MP on site, neither can the CCW facility be opened without adequate MP staffing.

Supply and Demand Analysis

Overview of Methodology and Data Sources

Preliminary projections of the supply of and demand for MPs were developed based on historical practice patterns and trends. Data on the supply of MPs in NL was provided by NLHS. Consequently, the supply captures only the stock of MPs working for NLHS. The following inflows and outflows were captured:

- Inflows: new hires, rehired retirees, and rehires
- Outflows: resignations, and retirements

However, some inflows and outflows were not directly captured in the data. In the historical data provided, a slight discrepancy existed between change in the supply year over year and the difference between inflows and outflows. Consequently, to ensure the change in the stock of MPs was equal to the difference between the inflows and the outflows year over year in the historical data, “other net migrations” were estimated.

These preliminary projections were then augmented, wherever possible, based on the availability of supporting data and analysis, to reflect inflight or recently implemented policy initiatives to form a baseline scenario.

The policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Table 310 outlines the data requested and received, the data sources and equations used to calculate the supply of and demand for MPs, as well as any limitations or caveats to the data.

Table 283: Data Sources for Medical Physicist Workforce Projections

Model	Data Requested	Data Received?	Equation	Limitations
Supply	<p>Supply: Number of MPs, by zone, 5-year age cohort, and gender from 2018-2022</p> <p>Inflows: Entries into profession, split by reason for entry (education, immigration, recruitment, return to practice, etc.)</p> <p>Outflows: Exits from profession, split by reason for exit (retirement, emigration, other resignation)</p>	<p>Supply: Yes</p> <p>Inflows: Yes</p> <p>Outflows: Yes</p> <p>Source: NLHS</p>	<p>Supply Year X = Supply Year X-1 + 4-year average inflows - 4-year average outflows</p>	<ul style="list-style-type: none"> Some inflows and outflows were not directly captured in the data. Thus, "other net migrations" were estimated to ensure the change in the supply was equal to the difference between the inflows and the outflows historically. The supply captures only the stock of public sector MPs.
Demand	<p>The demand for radiation oncologists, which is estimated using the following:</p> <ul style="list-style-type: none"> 10 -year population projections, by 5-year age cohort, gender, and zone Number of individuals, by zone, 5-year age cohort, and gender, with each of the 226 CIHI POP Grouper diseases (disease prevalence) Number of radiation oncologist encounters by zone, 5-year age cohort, gender, and disease 	<p>Population projections: Yes Source: NL Department of Finance</p> <p>Disease prevalence: Yes Source: CIHI POP Grouper</p> <p>Radiation oncologist encounters: Yes Source: CIHI POP Grouper</p>	<p>Demand 2022 = supply 2022 + vacancies 2022</p> <p>Growth in demand (2023-2032) = growth in the demand for radiation oncologists</p> <p>Growth in demand for radiation oncologists (2023-2032) = 10-year population projections * disease prevalence rates * encounters by radiation oncologists = growth in encounters</p> <p>Demand Year X = Demand Year X-1 * predicted growth in the demand for radiation oncologists</p>	<ul style="list-style-type: none"> Encounters with MPs are not captured by the CIHI POP Grouper Methodology. However, given the close relationship of MPs with radiation oncologists, the demand for radiation oncologists was used as a proxy to estimate the demand for MPs.

Preliminary Projections

This section showcases the preliminary forecast estimates for MPs.

Table 284: Preliminary Supply Projections for Medical Physicists

Health Occupation	Starting supply (Dec. 2022)	New Hires (2023-2032)	Rehired Retirees (2023-2032)	Rehires (2023-2032)	Resignations (2023-2032)	Retirements (2023-2032)	Other Net Migrations (2023-2032)	Ending Supply (Dec. 2032)
MPs	7	3	0	0	5	1	2	6

Where: Starting supply (Dec. 2022) + New Hires (2023-2032) + Rehired Retirees (2023-2032) + Rehires (2023-2032) - Resignations (2023-2032) - Retirements (2023-2032) + Other Net Migrations (2023-2032) = Ending Supply (Dec. 2032)

The preliminary projections predict the supply of MPs to decrease 13% between 2022 and 2032 if historical inflow and outflow trends continue into the future. Overall, outflows are expected to slightly outweigh inflows over the coming decade as one MP is predicted to retire over the forecast period. Table 312 summarizes the projections by zone.

Table 285: Regional Preliminary Supply Projections for MPs

Zone	2018 Supply	2022 Supply	2032 Supply	Percent Change in Supply 2018 vs 2022	Percent Change in Supply 2022 vs 2032
Eastern Urban	8	7	6	-13%	-13%
Eastern Rural	0	0	0	0	0
Central	0	0	0	0	0
Western	0	0	0	0	0
Labrador-Grenfell	0	0	0	0	0
Total	8	7	6	-13%	-13%

MPs are currently only located in the Eastern Urban zone. Thus, the impacts on supply in Eastern Urban reflect the impacts for the province as a whole.

Table 286: Preliminary Demand Projections for Medical Physicists

Health Occupation	2022 Supply	2022 Vacancies	2022 Demand	2032 Demand	Total Change in Demand
MPs	7	1	8	10	+25%

Vacancies are added to 2022 supply to estimate the starting demand. For MPs, the growth in the demand for radiation oncologists, which in turn reflects the growth in patient encounters with radiation oncologists by age, gender, disease, and zone, was used to forecast demand, given the close relationship between the two professions.

Data on the number of encounters by physician specialty is provided by the CIHI POP Grouper Methodology. According to the Population Grouping Methodology Information Sheet, The POP Grouper “uses clinical and demographic data to build clinical profiles and predict population health care needs”.³⁶⁶ For the purpose of this project, the POP Grouper was used to provide estimates of the number of individuals with each of the 226 diseases captured within the methodology as well as encounter estimates by physician specialty, disease, age, gender, and zone. The following steps were taken to estimate the growth in demand for radiation oncologists.

Step 1: Estimate the disease prevalence rates for 2022. The disease prevalence rate is estimated as the number of people with a specific disease divided by the population.

Step 2: Forecast the number of individuals with each of the 226 diseases by age, gender, and zone using the population forecast provided by the NL Department of Finance. To estimate the number of people with a disease in a given year, the 2022 disease prevalence rate is multiplied by the population of that year.

Step 3: Calculate the ratio of radiation oncologist encounters per person with each disease in 2022. This is estimated by dividing the number of radiation oncologist encounters by age, gender, health condition and zone in 2022 by the number of people with each disease by age, gender, and zone.

Step 4: Forecast the encounters for radiation oncologists by zone, age, gender, and health condition. The forecasted growth in encounters is used as the growth in demand for radiation oncologists and consequently the growth in demand for MPs.

Step 5: Calculate the starting demand by adding vacancies to 2022 supply.

Step 6: Apply the growth in encounters with radiation oncologists, and hence the growth in the demand for radiation oncologists, to the starting demand to forecast demand for MPs.

Radiation oncologists and MPs work together exclusively. To reflect the interdependency between the two professions, the growth in the demand for radiation oncologists was used as a proxy to measure the demand for MPs.

³⁶⁶ [Population Grouping Methodology in Action \(cihi.ca\)](http://www.cihi.ca)

Between 2022 and 2032, the preliminary demand for MPs is predicted to rise 25%. Given that MPs are currently only located in the Eastern Urban zone, the preliminary demand for MPs is located only in the Eastern Urban zone as well.

Table 314 highlights the predicted annual increase in demand by zone for the coming decade.

Table 287: Regional Growth in Demand for Medical Physicists

Zone	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	2.5%	2.6%	2.4%	2.5%	2.3%	2.3%	1.9%	1.9%	2.2%	1.9%
Eastern Rural	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Central	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Western	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Labrador-Grenfell	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Newfoundland and Labrador	2.5%	2.6%	2.4%	2.5%	2.3%	2.3%	1.9%	1.9%	2.2%	1.9%

In the above, the gap in 2022 = 2022 vacancies and the gap in 2032 = demand 2032 – supply 2032. The change in the gap is estimated as gap 2032 – gap 2022. With preliminary supply expected to decline over the forecast period and preliminary demand predicted to rise, the gap between supply and demand is forecasted to increase to four by 2032. Table 315 highlights the results of the preliminary gap analysis for MPs.

Table 288: Preliminary Gap Analysis for Medical Physicists

Health Occupation	2022 Supply	2022 Demand	2022 Gap	2032 Supply	2032 Demand	2032 Gap	Change in Gap
MPs	7	8	1	6	10	4	+3

Base Case Projections

For MPs, the Health Accord NL CTA and workforce initiatives listed below are reflective of stakeholder feedback. In addition, sufficient quantitative data existed for their impact to be incorporated in supply and demand projections. Overall, the policy initiatives selected to be included as part of the baseline scenario had to meet the following criteria:

- Must impact supply or demand projections after December 31, 2022;
- Must have a material, quantifiable impact on supply and demand projections of the professions in-scope; and,
- Must be supported by evidence-based outcomes (e.g., outcome was measured demonstrating viability of the initiative and/or case studies which demonstrated evidence that the initiative was successful at delivering the intended outcome).

Only the uptake numbers provided at the time of the conception of the report were included in the base case analysis. If additional data becomes available, modifications can be made to the base case analysis if required.

- **Demand Analysis:**
 - The new acute care and CCW facility in Corner Brook will require two MPs (i.e., CTA 9.14)
- **Supply Analysis:**
 - New hire uptake of new market adjustments (ranging between \$71,000 and \$75,207)
 - Uptake of Come Home Year Incentives

Table 316 highlights the assumptions used to help quantify base case items for MPs.

Table 289: Base Case Assumptions for Medical Physicists

Base Case Item	Workforce Impact	Assumptions	Impact on Headcount
Health Accord NL CTA 9.14: New acute care and CCW facility in Corner Brook	Demand	<ul style="list-style-type: none"> • One-time addition when facility opens in June 2024 	<ul style="list-style-type: none"> • Western <ul style="list-style-type: none"> ◦ 2024: +2
New market adjustments (\$71,000 – \$75,207)	Supply	<ul style="list-style-type: none"> • 10% turnover rate following end of contract, based on Eastern Health's market differential new and current employee turnover rate for MPs 	<ul style="list-style-type: none"> • Eastern Urban <ul style="list-style-type: none"> ◦ 2023: +3
Come Home Year - \$50,000 for a three-year return-in-service agreement for MPs	Supply	<ul style="list-style-type: none"> • One-time incentive • Impact sustained for 3-years due to return-in-service agreement • 10% turnover rate following end of contract, based on Eastern Health's market differential new and current employee turnover rate for MPs 	<ul style="list-style-type: none"> • Eastern Urban <ul style="list-style-type: none"> ◦ 2023: +1

Table 317 illustrates the annual quantitative impacts for each of the base case items included in the MP analysis.

Table 290: Annual Quantitative Impacts of the Base Case Items for Medical Physicists

Base Case Item	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
New market adjustments. Impact on new hires only	3	3	3	3	3	3	3	3	3	3
Come Home Year - \$50,000 for a three-year return-in-service agreement for MPs	1	1	1	1	1	1	1	1	1	1
Total Supply Impacts	4									
Health Accord NL CTA 9.14: New acute care and CCW facility	0	2	2	2	2	2	2	2	2	2
Total Demand Impacts	0	2								

Overall, the supply base case items will have a greater impact than the demand base case item. Consequently, the gap between supply and demand is predicted to fall for the province as a whole. Table 318 shows the final gap analysis over the course of the forecast period.

Table 291: Final Annual Provincial Gap Analysis for Medical Physicists

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Supply	7	11	10	10	10	10	10	10	10	10	10
Demand	8	8	10	11	11	11	11	11	12	12	12
Gap	1	-3	0	1	1	1	1	1	2	2	2
Gap as a Percent of Supply	14%	-27%	0%	10%	10%	10%	10%	10%	20%	20%	20%

Although the gap is expected to fall for the province as a whole, the addition of the CCW facility in Corner Brook will increase demand for MPs in Western, with no supply impacts expected in Western. Table

319 highlights the inequities in the gap between the Eastern Urban and Western zones.

Table 292: Final Annual Regional Gap Analysis for Medical Physicists

		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Eastern Urban	Supply	7	11	10	10	10	10	10	10	10	10	10
	Demand	8	8	8	9	9	9	9	9	10	10	10
	Gap	1.0	-2.7	-2.1	-1.8	-1.4	-1.1	-0.8	-0.6	-0.3	0.0	0.3
	Gap as a Percent of Supply	14%	-25%	-20%	-17%	-14%	-11%	-8%	-6%	-3%	0%	3%
Western	Supply	0	0	0	0	0	0	0	0	0	0	0
	Demand	0	0	2	2	2	2	2	2	2	2	2
	Gap	0	0	2	2	2	2	2	2	2	2	2
	Gap as a Percent of Supply	0	0	200%	200%	200%	200%	200%	200%	200%	200%	200%

Workforce Recommendations

Table 320 below provides workforce recommendations proposed to aid GNL in closing this gap.

For the four CCP professions in-scope (radiation therapists (RT), MPs, dosimetrists, and radiation oncologists), it will be important to acknowledge the synergies between these professions for which demand strategies will be commonly shared, as they each play a role on an interdisciplinary care team involved in treating the same disease condition, with the same therapeutic intervention.

Despite these similarities, supply recommendations will slightly differ based on the individual educational pathways required for each profession. However, they all face similar challenges derived from the uniformity of the pain points, such as non-pensionable market adjustments and the dependency on highly competitive schools for recruitment within the context of a national supply shortage.

Table 293: Medical Physicist Workforce Recommendations

ID	Theme	Recommendation and Potential Impact
Supply of Medical Physicists		
MP-1	Recruit / Retain	<p>Provide an Equitable and Pensionable Market Adjustment:</p> <ul style="list-style-type: none"> The Job Class Profile for MPs determines the pay level received based on the point band they're assigned to. As the current JES point system places a significant weighting on supervision, the scoring doesn't accurately reflect the role of CCP professions according to

ID	Theme	Recommendation and Potential Impact
		<p>stakeholders which tend to be individual in nature and require a high degree of technical competency.</p> <ul style="list-style-type: none"> The market adjustments for CCP professionals were intended to be a temporary form of additional remuneration based on current market conditions to address recruitment and retention challenges. However, MPs have been receiving a market adjustment in the form of a non-pensionable salary differential since 2012. The inability for the CCP to secure its full complement of budgeted MPs is a direct result of the current state of market adjustments for the occupation. Considering the challenges associated with the timeliness and interdepartmental dependencies associated with submitting a proposal to the Treasury Board to reevaluate the JES scoring for CCP professions, our recommendation is to ensure those market adjustments provided result in the CCP's intended outcomes of enhancing recruitment and retention through offering equitable and pensionable compensation. The recent Memorandum of Understanding that was signed with NAPE-LX to allow the market adjustment amount to be added to the base salary and considered pensionable earnings is a positive development for Cancer Care Professions, although it remains a temporary solution. Notwithstanding wider policy considerations on the pensionability of market adjustments, which are outside the scope of the Provincial Health HR Plan, nationally competitive compensation is an essential part of recruiting MPs. This would also eliminate the pay equity between staff hired before and after 2012, thereby further enhancing retention. Additionally, as part of this review process, HCS may want to consider supplementing this compensation package with additional recruitment and retention incentives to further strengthen supply, such as including a signing bonus or the continuation of the existing retention incentive. The average Canadian voluntary turnover rate in Canada is 15.5%.³⁶⁷ With five MP resignations projected over the next decade, this profession far exceeds the national turnover average at 50% (see Table 311). If these measures were implemented to increase compensation for MPs, NLHS could expect resignation trends to follow more closely to the national benchmark, and slow outflows through resignation to two MPs over the next 10-years. From a recruitment perspective, NLHS reported one MP vacancy in 2022 (see Table 313). Through implementing this recommendation, the CCP can be reasonably expected to eliminate the current deficit of MPs.
MP-2	Recruit	<p>Establish a Medical Physics Residency Program in NL:</p> <ul style="list-style-type: none"> It is recommended that GNL establishes an accredited in-province medical physics residency program for one MP student each year to help GNL have greater success at recruiting from the competitive national supply of MP graduates. In addition to establishing the residency program, GNL should continue to offer the MP bursary with a return-in-service agreement following the completion of the two-year program to enhance the likelihood of retaining MP residents post-graduation. This residency program should be established either at the BMCC in St. John's, which is already a clinical site for RT students, or at the new CCW site in Corner Brook to establish a medical physics residency program and develop a new centre of excellence in Cancer Care to differentiate itself from other Canadian provinces who are competing for the limited supply of MPs. Implementing this recommendation can be reasonably expected to eliminate the current deficit of MPs; although, additional MPs would be required to establish and maintain this program.

³⁶⁷ 2023 Canadian Turnover Trends | Mercer (imercer.com)

ID	Theme	Recommendation and Potential Impact
MP-3	Recruit	<p>Provide Additional Support to MP Students</p> <ul style="list-style-type: none"> With a limited number of MP graduates each year, NL is challenged with recruiting these high demand MP disciplines by not offering a local medical physics residency program. In lieu of NL having its own residency program, additional support should be provided to MP students from NL who are studying out-of-province. MPs are highly specialized health care professionals who undergo 11-13 years of school before entering the workforce. Reducing the financial burden on MP students by offering dedicated financial support such as bursaries is a crucial strategy for encouraging prospective students to pursue careers in this field. This can also serve as a strategy to entice MP students to practice in NL upon graduation if paired with return-in-service agreements. Another strategy would be to establish loan forgiveness or loan repayment to further incentivize MP students and residents by partially eliminating heavy financial burdens experienced by many in the early stages of their careers. Doing so will provide a pipeline of talent to replace forecasted resignations over the next several years and help sustain the supply of difficult-to-recruit MPs.

Appendix B: Stakeholder Consultations

This section outlines the key stakeholder groups consulted, and includes a summary of focus groups, the number of participants engaged, questions asked, and aggregated survey responses.

Stakeholder Groups Consulted

Overall, 263 individuals were engaged via focus group over the course of more than 60 sessions, with representation from 55 stakeholder groups during the

20-week stakeholder engagement phase.³⁶⁸ The aggregated focus group insights have been captured in the Stakeholder Engagement Insights section for each health occupation outlined in **Appendix A: Detailed Analysis and Recommendations by Health Occupation**.

Each focus group participant was also sent an optional survey following their focus group session to gather additional insights. An additional survey was developed to gather input from Newfoundland and Labrador Medical Association (NLMA) members. In addition, select stakeholder groups were only engaged by survey due to scheduling conflicts or at the discretion of the Deloitte project team. In total, 350 individuals provided input via a survey.³⁶⁸

Table 294: Stakeholder Engagement List

ID	Stakeholder Group	Number of Participants	Session(s) ³⁶⁹
1	Medical Services Working Group	15	<i>Recurring Meetings</i>
2	Data Working Group	14	<i>Recurring Meetings</i>
3	Department of Immigration	7	<i>Focus Group & Survey: March 30, 2023</i>
4	Department of Finance	9	<i>Focus Group & Survey: March 31, 2023</i>
5	Department of Education	3	<i>Focus Group & Survey: March 31, 2023</i>

³⁶⁸ Note that this total represents the count of individuals and stakeholder groups who contributed their input through focus groups or surveys. It does not encompass the full scope of other stakeholders and stakeholder groups who were invited to participate but unable to do so given the project's time constraints.

³⁶⁹ List does not exhaustively capture the full extent of live discussions with stakeholders throughout the duration of project (e.g., Project Steering Committee sessions, weekly touchpoints, and informal dialogue sessions are omitted).

ID	Stakeholder Group	Number of Participants	Session(s) ³⁶⁹
6	NL Psychology Board	1	Focus Group & Survey: April 4, 2023
7	Memorial University	9	Focus Group & Survey: April 4, 2023
8	College of the North Atlantic (CNA)	11	Focus Group & Survey: April 4, 2023
9	Registered Nurses Union NL (RNUNL)	3	Focus Group & Survey: April 4, 2023 Focus Group: December 14, 2023
10	Newfoundland and Labrador Medical Association (NLMA)	22 (Focus Groups) 119 Family Medicine Physicians (Survey) 145 Specialists (Survey)	Focus Group: April 4, 2023 Family Medicine Focus Group: April 18, 2023 & October 3, 2023 Specialist Physician Focus Group: April 20, 2023 & November 1, 2023 Survey: May 19, 2023
11	NLHS Executive	15	Focus Group: April 5, 2023
12	NL Paramedicine Regulation (NLPR)	1	Focus Group & Survey: April 5, 2023
13	Professional Association of Residents NL (PARNL)	5	Focus Group & Survey: April 5, 2023
14	Department of Children, Seniors, and Social Development (CSSD)	4	Focus Group & Survey: April 11, 2023
15	NL College of Social Workers (NLCSW)	2	Focus Group & Survey: April 12, 2023
16	Student Placement Services	5	Focus Group & Survey: April 12, 2023
17	College of Registered Nurses NL (CRNNL)	4	Focus Groups & Survey: April 13, 2023 & September 12, 2023
18	College of Physicians and Surgeons NL	1	Focus Group & Survey: April 13, 2023
19	Keyin College	1	Focus Group & Survey: April 14, 2023
20	Eastern Academy	2	Focus Group & Survey: April 14, 2023
21	Academy Canada	2	Focus Group & Survey: April 14, 2023
22	NL Council of Health Professionals (NLCHP)	4	Focus Groups & Survey: April 18 & May 10, 2023
23	NL Pharmacy Board (NLBP)	2	Focus Group & Survey: April 18
24	Random Sound Paramedicine	3	Focus Group & Survey: April 19, 2023
25	NL Occupational Therapy Board	3	Focus Group & Survey: April 19, 2023
26	College of Licensed Practical Nurses NL (CLPNNL)	5	Focus Group & Survey: April 20, 2023
27	NL College of Physiotherapists	7	Focus Group & Survey: April 25, 2023
28	NLHS Cancer Care Program	7	Focus Group & Survey: April 26, 2023
29	Department of Health and Community Services	7	Focus Group & Survey: April 27, 2023

ID	Stakeholder Group	Number of Participants	Session(s) ³⁶⁹
30	NLHS Cardiac Care Program Leadership	1	Focus Group & Survey: April 27, 2023
31	Association of Allied Health Professionals NL (AAHP-NL)	3	Focus Group & Survey: May 2, 2023
32	NLHS Allied Health Professional Practice Consultants	20	Focus Group & Survey: May 2, 2023
33	NL Association of Public and Private Employees (NAPE)	2	Focus Group & Survey: May 3, 2023
34	NLHS Medical Radiation Therapy Leadership	8	Focus Group & Survey: May 4, 2023
35	NLHS Clinical Psychology Leadership	3	Focus Groups & Survey: May 11 & July 27, 2023
36	Patient Advisory Committee and Leadership	12	Focus Groups & Survey: May 15 & May 31, 2023
37	Canadian Union of Public Employees (CUPE)	5	Focus Group & Survey: May 16, 2023
38	NLHS Laboratory Medicine Leadership	3	Focus Groups & Survey: April 5 & May 17, 2023
39	NLHS Diversity, Equity, and Inclusion	4	Focus Group & Survey: May 17, 2023
40	NLHS Leadership Development	7	Focus Group & Survey: May 18, 2023
41	Office of the Seniors' Advocate	1	Survey: May 19, 2023
42	Paramedic Association of Newfoundland and Labrador	1	Survey: May 19, 2023
43	Pharmacists' Association of Newfoundland and Labrador	4	Survey: May 19, 2023 Focus Group: December 12, 2023
44	NLHS Nursing Professional Practice Consultants	7	Focus Group & Survey: May 30, 2023
45	Qalipu First Nation	1	Focus Group & Survey: May 30, 2023
46	Nunatsiavut GNL	3	Focus Group & Survey: June 1, 2023
47	Mushuau Innu First Nation	2	Focus Group & Survey: June 9, 2023
48	Provincial Laboratory Network	4	Focus Group: July 18, 2023
49	Pharmacist Scope of Practice	1	Focus Group: July 25, 2023
50	Comprehensive Respiratory Care Provincial Program	2	Focus Group: August 1, 2023
51	Family Care Teams	4	Focus Groups: June 12, 2023 & August 3, 2023
52	Provincial HIS Benefits Realization	2	Focus Group: June 29, 2023 ³⁷⁰
53	Provincial Integrated Ambulance System	3	Focus Groups: July 12 & August 3, 2023

³⁷⁰ Subsequent meetings planned once benefits realization measurement activity has been conducted.

ID	Stakeholder Group	Number of Participants	Session(s) ³⁶⁹
54	Integrated Model of Care for Children and Youth at Risk	3	Focus Group: August 9, 2023

Analysis of Survey Responses

Focus Group Follow-up Survey

Following each focus group session, a survey was shared with stakeholders to collect additional insights on key workforce challenges, trends, and potential solutions for each health occupation. The survey was also used as a method to collect any relevant documentation from stakeholders that Deloitte should consider as part of this work. Except for Question #2 (check-box list format), all questions were presented in open text response format.

Overall, the survey received 86 responses from individuals. The aggregated survey insights have been captured in the Stakeholder Engagement Insights section for each health occupation outlined in **Appendix A: Detailed Analysis and Recommendations by Health Occupation**. It should be noted that the stakeholder insights presented here reflect the perceptions and beliefs reported by stakeholders, which may not be grounded in absolute fact.

Table 295: Focus Group Follow-up Survey

ID	Question Category	Survey Question
1	Organization	Organization
2	Health Occupation ³⁷¹	Please indicate which of the following in-scope health occupations(s) you represent.
3		How would you rate career mobility opportunities for nurse practitioners within the province? How does this change for rural vs. urban-based professionals?
4	Nurse Practitioners	What conditions need to be in place to set nurse practitioners up for success in regard to the Health Accord NL's Call to Action centered around Family Care Teams and Nurse Practitioner-led clinics?
5		Recent legislation proposes changes to the scope of practice for nurses within the province – what are the longitudinal implications on the profession?
6	Registered Nurses	How have agency nurses and casualization impacted recruitment and retention of RNs in the province?
7	Licensed Practice Nurses	How have agency nurses and casualization impacted recruitment and retention of LPNs in the province?

³⁷¹ Depending on the responses provided to this question, dynamic questions were displayed to ask additional questions specific to the health occupations selected in Question 2.

ID	Question Category	Survey Question
8		What opportunities do you see for LPNs to grow and evolve in the coming years?
9	Personal Care Attendants	What opportunities do you see for PCAs to grow and evolve in the coming years?
10	Home Support Workers	How does the absence of training curriculum for home support workers in the province affect recruitment?
11	Paramedicine	How will the Health Accord NL's call to action to create a province-wide ambulance system will impact the demand for advanced care and primary care paramedics?
12		How will the Health Accord NL's call to action to turn Pathology and Laboratory Medicine will be a provincial program impact the demand for MLTs and MLAs?
13	Laboratory Medicine	What are some potential quality-of-care initiatives that could minimize non-value add test ordering?
14		How would you compare career mobility opportunities for MLTs/MLAs within the province? How does this change for rural vs. urban-based professionals?
15		How will the upcoming registration requirements impact the MRT profession?
16	Medical Radiation Therapy	How would you rate the current succession planning processes in place for MRTs?
17		How would you compare career mobility opportunities for MRTs within the province? How does this change for rural vs. urban-based professionals?
18		How is clinical psychology currently dealing with waitlist management and what potential solutions would you recommend to address the backlog such as central intake?
19	Clinical Psychology	In what ways do social workers work alongside other health care providers to deliver services? How will this evolve over the next decade?
20	Social Work	What are the areas of need for additional support in the province for social work? (i.e., social worker assistants)
21		What are some potential solutions to alleviate the administrative burden from social workers?
22	Occupational Therapy	How would you rate the current succession planning processes in place for occupational therapy?
23		Recent legislation proposes changes to the scope of practice for pharmacists and pharmacy technicians within the province – what are the longitudinal implications on the professions?
24	Pharmacy	What are some potential quality-of-care initiatives that could minimize overprescribing?
25		How has market adjustments impacted the recruitment and retention of pharmacists and/or pharmacy technicians?
26		How does the cost of pharmacist technician licensing fees affect recruitment and retention?
27		What is currently driving demand for physiotherapists? Do you expect that to change over the coming decade?
28	Physiotherapy	How does the availability of a relief budget affect retention for physiotherapists?
29		How is physiotherapy currently dealing with waitlist management and what potential solutions would you recommend to address the backlog such as central intake?
30	Respiratory Therapy	What is currently driving demand for respiratory therapists? Do you expect that to change over the coming decade?

ID	Question Category	Survey Question
31		What are the various care settings that respiratory therapists work in and how has these care settings or staffing ratios changed since the pandemic?
32		How is the anticipated Cancer Centre Western build expected to impact the demand for the selected professions and service delivery in the province?
33	Cancer Care	How has market adjustments impacted the recruitment and retention of the selected professions?
34		How does the availability of a relief budget affect retention for the selected professions?
35	Cardiac Perfusionists	How will the new Cardiovascular and Stroke Institute impact the demand for cardiac perfusionists in the province?
36	Cardiac Perfusionists	How has market adjustments impacted the recruitment and retention of cardiac perfusionists?
37	Cardiac Perfusionists	How does the availability of a relief budget affect retention for cardiac perfusionists?
38	Priorities	From your perspective, what are the most important priorities that are relevant to the development of the workforce plan?
39	Health Accord NL	Considering the Health Accord NL, how do you expect the scope of practice and care models to evolve over the next 10-years for the selected health occupations?
40	Recruitment and Retention	What are the main drivers for any challenges experienced with recruitment and retention for the selected health occupations?
41	Workforce Trends	What are they key workforce trends affecting the selected health occupations?
42	Solutions	What are the top three solutions you would suggest to address the workforce challenges in the province?

NLMA Membership Survey

To be included in revised final report.

Deloitte.

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