CCSO Critical Care Services Ontario

Critical Care Workforce Profile Survey

2022 Provincial Report

Public Information

About Critical Care Services Ontario

Established in 2005, Critical Care Services Ontario (CCSO) led the implementation of Ontario's first Critical Care Strategy and now centrally coordinates and develops integrated system solutions for critical care (Adult, Paediatric, and Neonatal) and specialty programs aligned with critical care (Neurosurgery, Trauma and Burns, and the Life or Limb Policy). CCSO's work is the result of an ongoing collaboration between critical care providers, hospital administrators, partners from the Ministry of Health, Ontario Health, and other health system leaders.

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Foreword

Critical Care Services Ontario (CCSO) is proud to release the 2022 Critical Care Workforce Profile (CCWP) Provincial Survey Report. The Report captures data from April 1, 2021, to March 31, 2022.

The 2022 Critical Care Workforce Profile survey collected information from all critical care units (Adult, Paediatric, and Neonatal) to better understand the ongoing challenges in the workforce and Health Human Resource (HHR) planning as the health care system begins the recovery phase from the COVID-19 pandemic. Understanding the critical care workforce through comprehensive data informs staffing planning activities, informs effective staffing practices, and can enhance retention and recruitment strategies to promote a resilient critical care workforce for the province to meet current and future system needs.

On behalf of CCSO, we extend sincere thanks and gratitude to all those who continue to participate year after year, without which such robust intelligence could not be produced in return. We hope our system collaborators will continue to find value in the analysis and presentation of information to help inform an adaptive and resilient critical care system.

Sincerely,

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Executive Summary

This report was undertaken in an effort to understand staffing practices in adult, paediatric, and neonatal critical care units across the province and what effect if any the COVID-19 pandemic has had on the workforce. This report highlights areas of change since the last iteration of the Critical Care Workforce Profile in 2017/18 as the surveys completed in the following years have been focused on recruitment and retention during the COVID-19 pandemic;

- Vacancy rates have steadily increased since 2013/14. The shift has been most pronounced between 2017/18 and 2021/22. In 2017/18, the provincial vacancy rate was 5.4%. In 2021/22, the vacancy rate was reported at 11.9%, which is an overall increase of 120%.

- Ontario's critical care sick rates have remained relatively stable from 2017/18 to 2021/22.

- From 2017/18 to 2021/22 the proportion of novice nurses (< 3 years of experience) has gone from 19.4% to 31.4% of the critical care workforce. This highlights the ongoing need for training, education, and consideration of clinical demands impact.

- The provincial turnover rate is 18.9%, which is a 133.3% increase from the previously reported rate of 8.1% in 2020.

- The system support identified as being the most beneficial for nursing recruitment in Ontario's Critical Care Units is the 'New Grad Initiative'.

- Having interprofessional health care support in critical care units is reported as 'very' or somewhat' impacting nursing recruitment and retention by over 60% of survey respondents.

The intention of highlighting the results of the Critical Care Workforce Profile (CCWP) survey is to allow stakeholder groups and individual hospitals/units to better understand where variations exist and to possibly address areas that may be of concern. At a provincial level, these insights can be used to more effectively inform recruitment and retention strategies, potential investments in education, and enhance further career development opportunities. Such efforts, at the unit, regional and provincial levels, will foster a more robust workforce.

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1.0 Introduction

In 2022, CCSO focused the Critical Care Workforce Profile (CCWP) on the long-term impact of COVID-19 on the recruitment, retention, staffing practices, and supports to critical care nursing and allied health professionals in Ontario. The survey was distributed across Ontario's 244 adult, paediatric, and neonatal critical care units. Survey collection occurred between July 5, 2022, to September 30, 2022, and gathered data for the period of April 1, 2021 to March 31, 2022, which included the period of the ongoing COVID-19 pandemic.

The 2022 CCWP Provincial Report aims to provide critical care service providers, Ontario Health, the Ministry of Health (MOH), and other critical care stakeholders insights into the availability, utilization, and adequacy of critical care health human resources. Data is reported at a provincial level as well as by unit type (adult, paediatric and neonatal units), and some regional views. This report provides workforce profiling of critical care staff (i.e. nurses, and interprofessional staff) including some trending analysis on nursing length of experience, turnover rate, and vacancy rate. The report also summarizes managerial feedback on the use and perceived effectiveness of various recruitment and retention strategies. The report is intended to enable effective human resource planning and capture shifts in the composition of the workforce, which may present sustainability risks for the system.

2.0 Survey Response Rate

CCSO has been tracking and profiling critical care workforce data since 2007, collecting data from the majority of Ontario's critical care units. Prior to 2020, this survey reported a participation rate of over 80% from critical care units across the province. Subsequent surveys, have yielded a lower response rate possibly related to the increased focus toward the COVID-19 pandemic. **Figure 1 and 2** below provide information on the response rate trend provincially and by unit type.

Figure 1: Overall CCWP Survey Response Rate, Provincial Trend

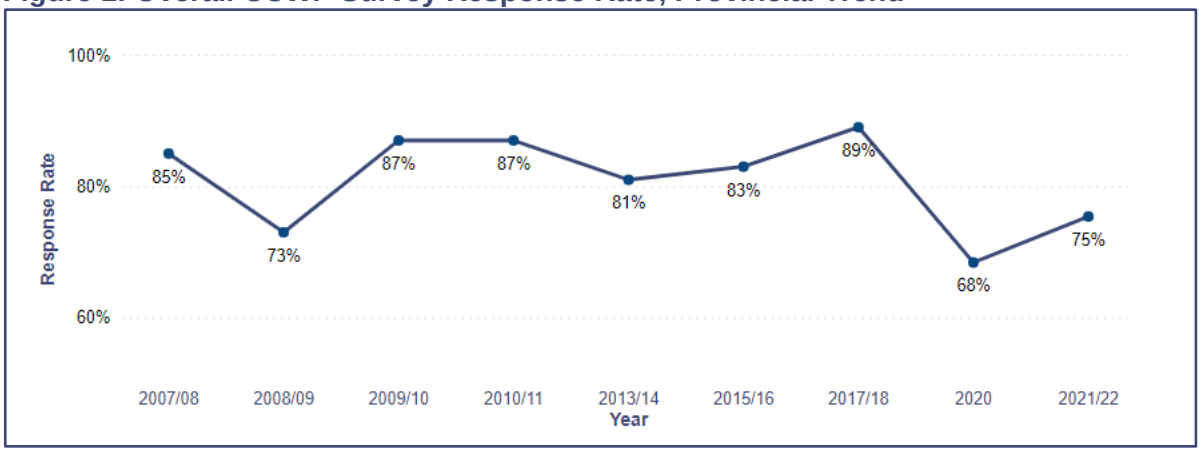
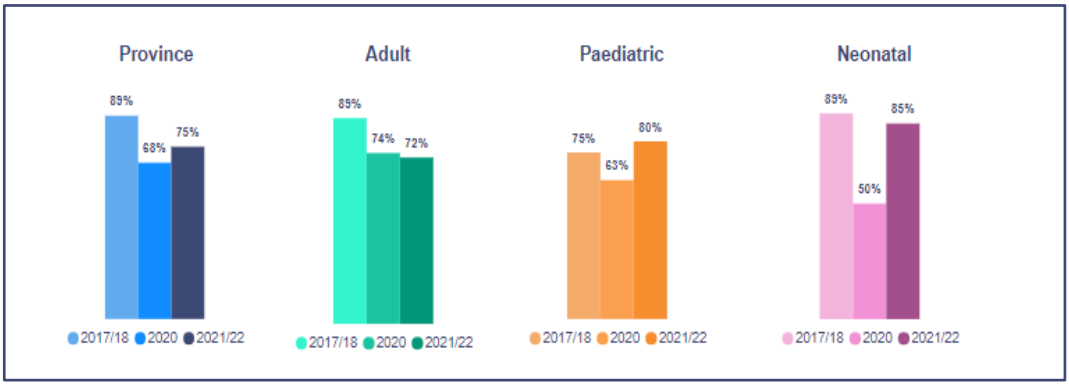


Figure 2: Overall CCWP Survey Response Rate by Unit Type



3.0 Critical Care System Beds and Nursing Capacity

Since 2017/18, a number of critical care bed investments have been made to build system capacity. **Table 1**, illustrates the total number of critical care beds by population as reported in the Critical Care Information System (CCIS) in 2017/18 and 2021/22. Since 2017/18, there has been a 13% increase in critical care bed capacity in the province with a total increase of 386 beds across all patient populations.

Table 1: Ontario Total Critical Care Bed Capacity

	2017/18	2021/22	Bed Increase	% Change
Adult	1,968	2,319	351	17.8%
Paediatric	88	93	5	5.7%
Neonatal	838	868	30	3.6%
Total Critical Care Beds	**2,894**	**3,280**	**386**	**13.3%**

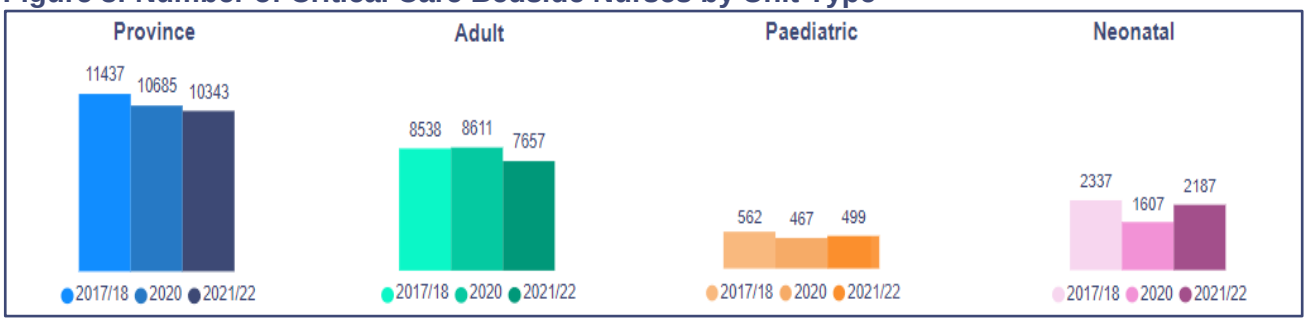
To understand the impact of increased bed capacity and ongoing stakeholder-reported Health Human Resource (HHR) staffing challenges, a comparison was completed of current system capacity and the reported number of critical care nurses in the province. One limitation of this comparison is that while all critical care beds in the CCIS were counted only nurses from participating critical care units (89% of units in 2017/18 and 75.4% of units in 2021/22) were captured. Another limitation could be proportion of Level-2 and Level–3 critical care beds in reporting samples. The data reported in **Table 2** illustrates a proxy measure by population type for the number of available nurses to staff critical care beds. **Figure 3**, breaks down the total number of critical care nurses (headcount) by population type used in the comparison.

Table 2: Nurses (Headcount) per Critical Care Beds

Patient Population	2017/18 Nurses per Critical Care Bed	2021/22 Nurses per Critical Care Bed	% Change
Adult	4.3	3.3	-23.3%
Paediatric	6.4	5.4	-15.6%
Neonatal	2.8	2.5	-10.7%

The CCWP survey responses submitted by unit managers in 75.4% of critical care units in Ontario represent 10,343 registered nurses working in critical care. There were a total of 125,663 Registered Nurses (RNs) in Ontario in 2021 which indicates the 2022 CCWP survey represents about 8.2.% of all Registered Nurses employed in Ontario in 2021 (College of Nurses of Ontario, Annual Report 2021).

Figure 3: Number of Critical Care Bedside Nurses by Unit Type

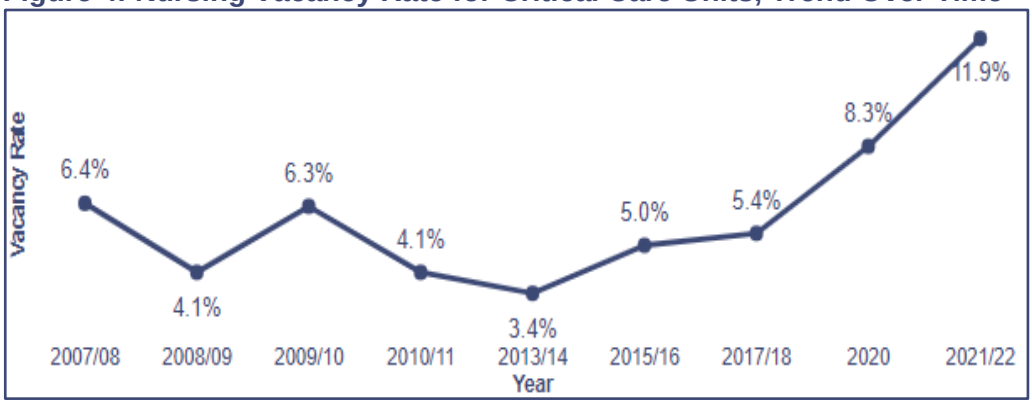


4.0 Staffing Indicators

4.1 Vacancy Rate

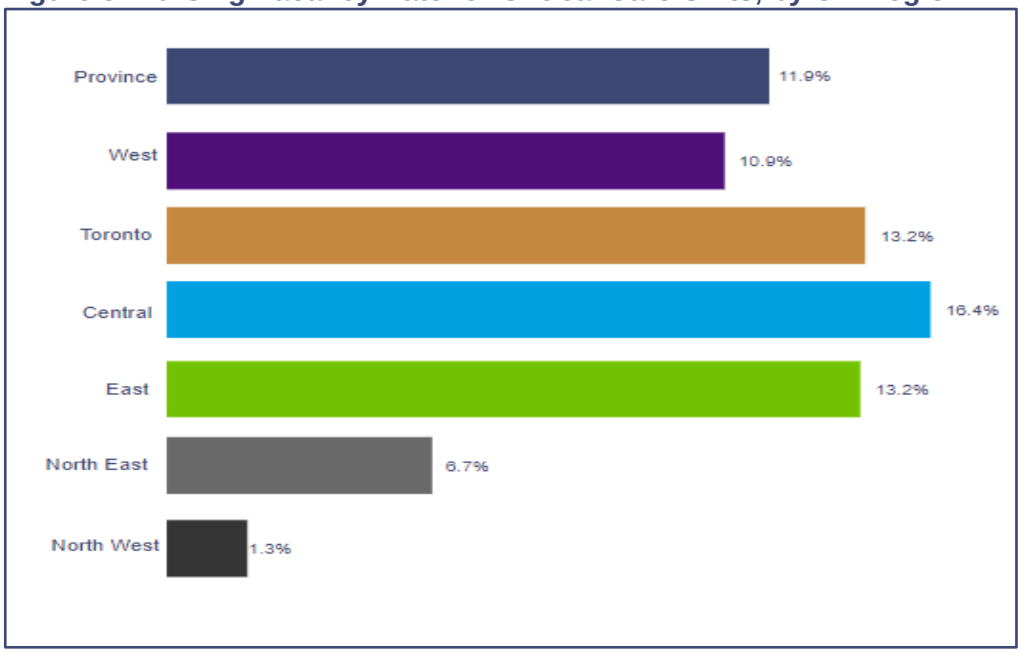
As shown in **Figure 4**, on March 31, 2022, the provincial vacancy rate for nurses in critical care units was 11.9%. This is the highest vacancy rate in recent years, with rates trending upwards since 2013/14. These results speak to the HHR pressures, gaps, and vacancy challenges as a result of the COVID-19 pandemic. All rates included in the figure are for full-time, part-time and casual vacant positions combined.

Figure 4: Nursing Vacancy Rate for Critical Care Units, Trend Over Time



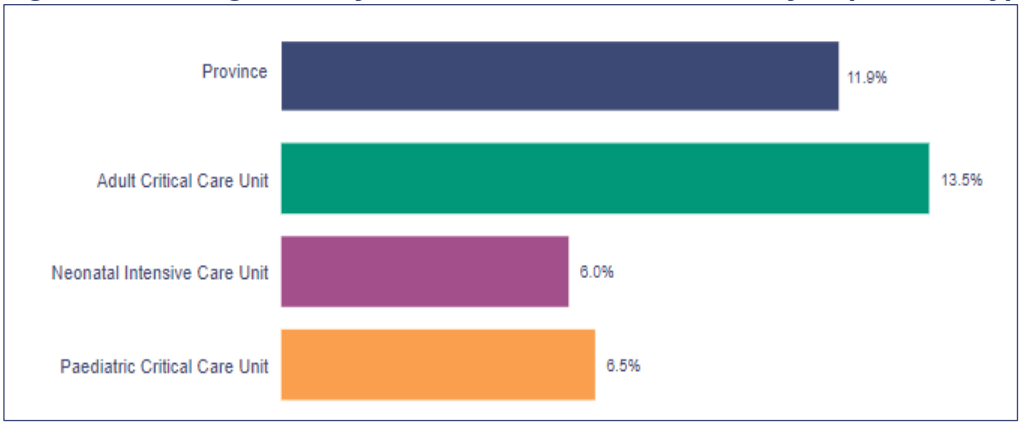
Across the province, the vacancy rate differs. As shown in **Figure 5**, the Central (16.4%), Toronto (13.2%), and East (13.2%) Ontario Health (OH) Regions have the highest vacancy rate for critical care nurses.

Figure 5: Nursing Vacancy Rate for Critical Care Units, by OH Region



As seen in **Figure 6**, the critical care unit nurse vacancy rate varies across unit types. Adult critical care units reported the highest vacancy rates at 13.5%. This rate is 13.5% higher compared to the provincial vacancy rate.

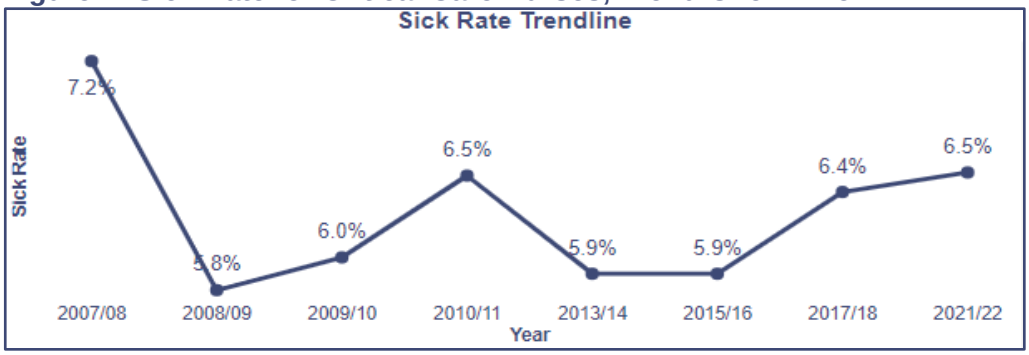
Figure 6: Nursing Vacancy Rate for Critical Care Units, by Population Type



4.2 Sick Time

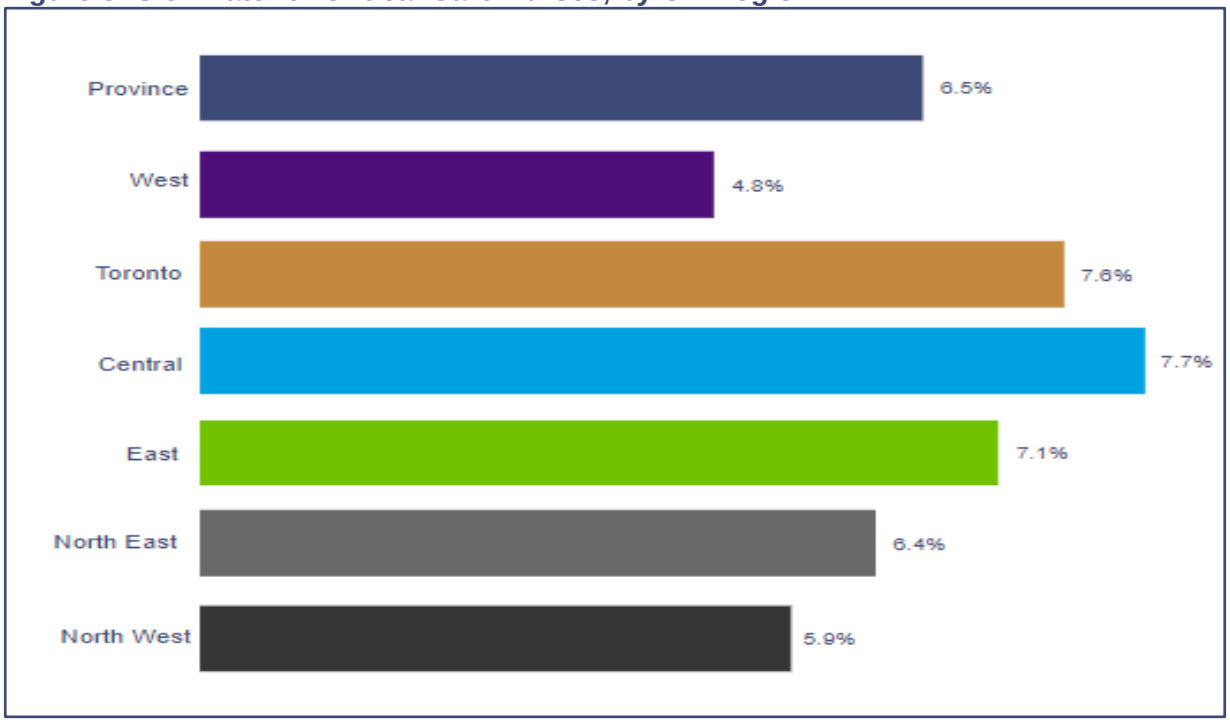
In 2017, the Canadian Federation of Nurses Unions reported that full-time Canadian nurses had an absentee rate of 8.7% (J.Consulting., 2017) across all provinces. The rates for sick time in critical care in Ontario are below this rate, as seen in **Figure 7.** The CCWP reported sick rate for critical care nurses has been fluctuating, with a slight increase in recent years. While the sick rate has increased by 1.6% since 2017/18, in contrast, the vacancy rate has significantly increased by 54.6%

Figure 7: Sick Rate for Critical Care Nurses, Trend Over Time



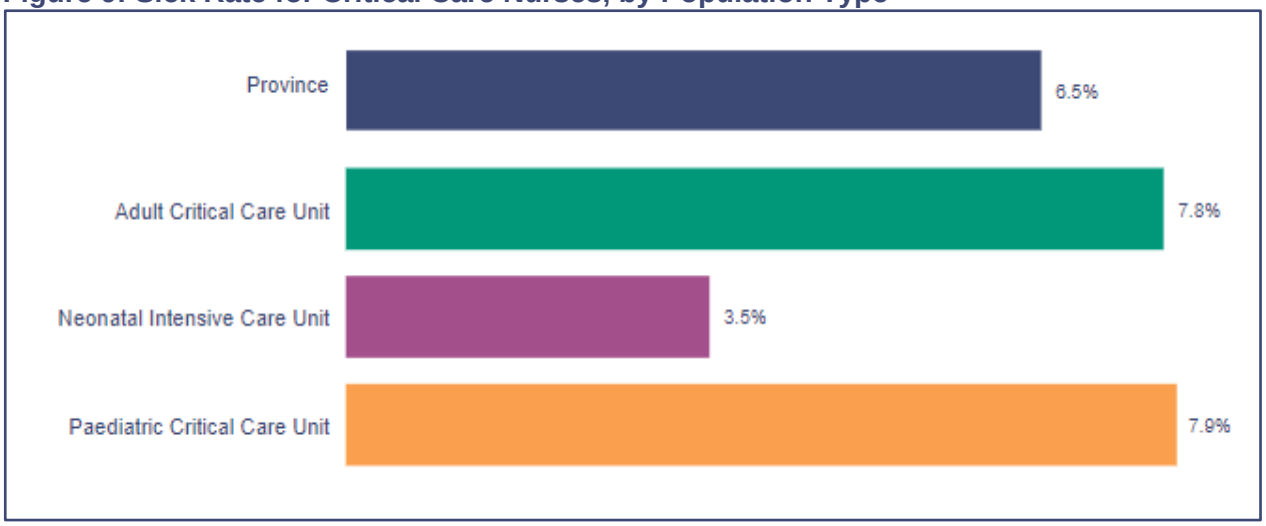
As shown in **Figure 8**, the Toronto, Central, and East OH Regions reported sick rates of over 7%, which is higher than the provincial average of 6.5%. The OH West Region reported the lowest sick rate (4.8%).

Figure 8: Sick Rate for Critical Care Nurses, by OH Region



As shown in **Figure 9**, unit types have varying sick rates. Adult and paediatric critical care units have similar sick rates that are slightly higher than the provincial average at 7.8% and 7.9%, while neonatal intensive care units reported the lowest sick rates at 3.5%.

Figure 9: Sick Rate for Critical Care Nurses, by Population Type



4.3 Nursing Experience

Coupled with the issue of higher vacancy rates, there are also challenges with the experience level of critical care nurses. As shown in **Figure 10**, there has been a significant increase in the proportion of nurses in critical care units with less than 3 years of experience. Since 2017/18, sites have reported a 61.9% increase in the number of critical care nurses with less than 3 years of experience

By comparison, the proportion of nurses with more than 20 years of experience in critical care has decreased by 28.4% since 2017/18. This represents a significant shift in the level of expertise in critical care for Ontario. **Figure 11**, illustrates the percentage of nurses and their level of critical care experience across different unit types.

Figure 10: Length of Nurse Experience in Critical Care, Trend Over Time

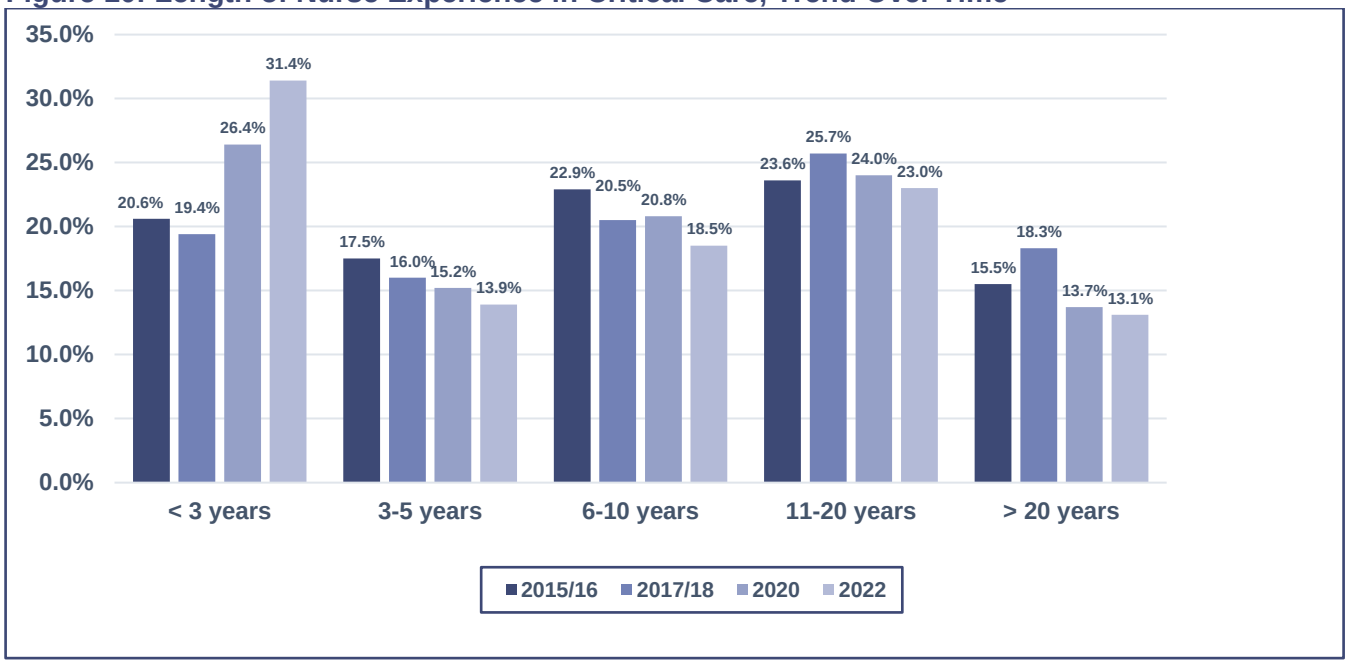
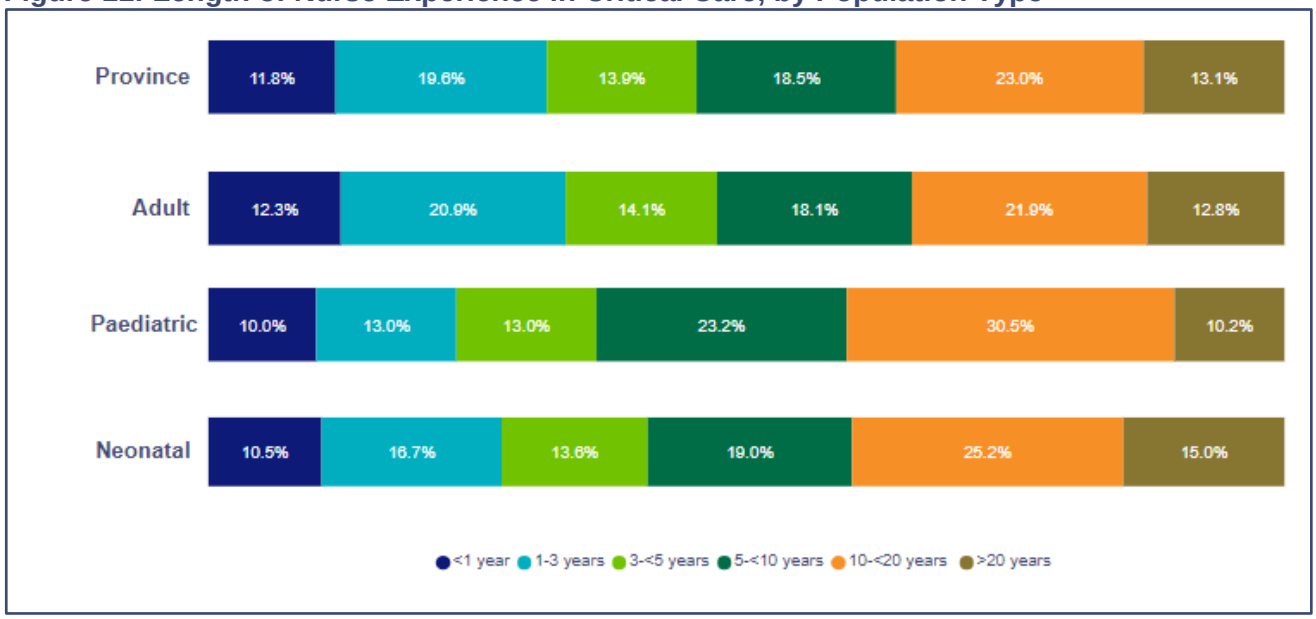


Figure 11: Length of Nurse Experience in Critical Care, by Population Type

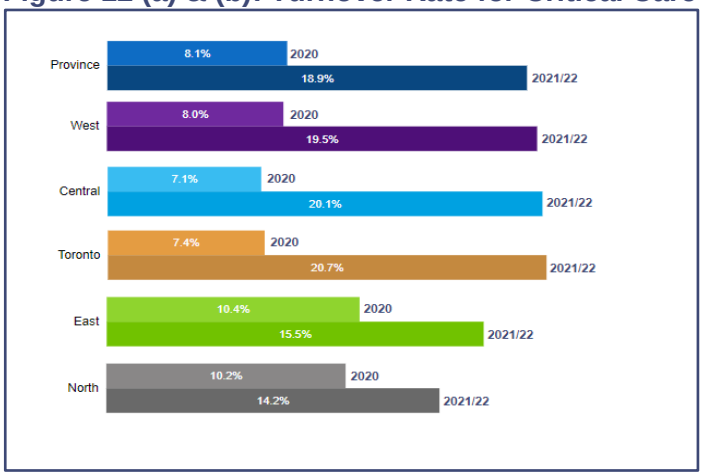


5.0 Critical Care Nursing Retention and Recruitment

5.1 Nursing Turnover

As shown in **Figure 12 (a)**, the overall turnover rate for nurses leaving critical care units provincially was 18.9% in 2021/22, which is a 133.3% increase in the turnover rate from the previously reported rate of 8.1% in 2020. Note; Figure 12 (a) captures the North as one single OH region as in 2020 the data was reported for a single region. The West, Toronto, and Central OH Regions reported higher turnover rates compared to the provincial rate, whereas the OH East reported a lower turnover rate compared to the provincial average. Figure 12 (b) highlights the 2021/22 data for the two OH Northern regions.

Figure 12 (a) & (b): Turnover Rate for Critical Care Nurses, by OH Region



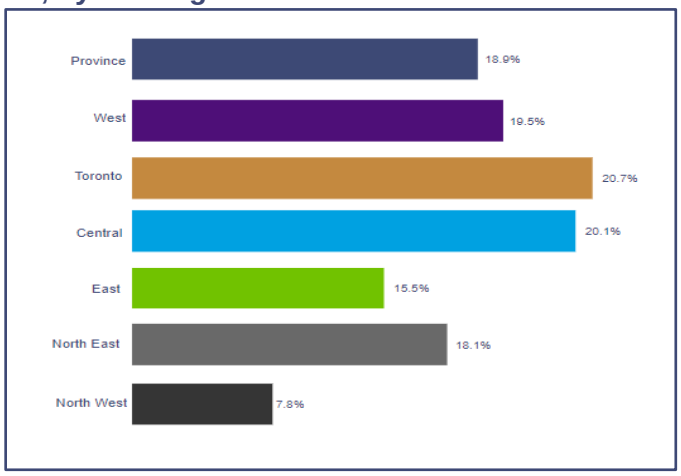
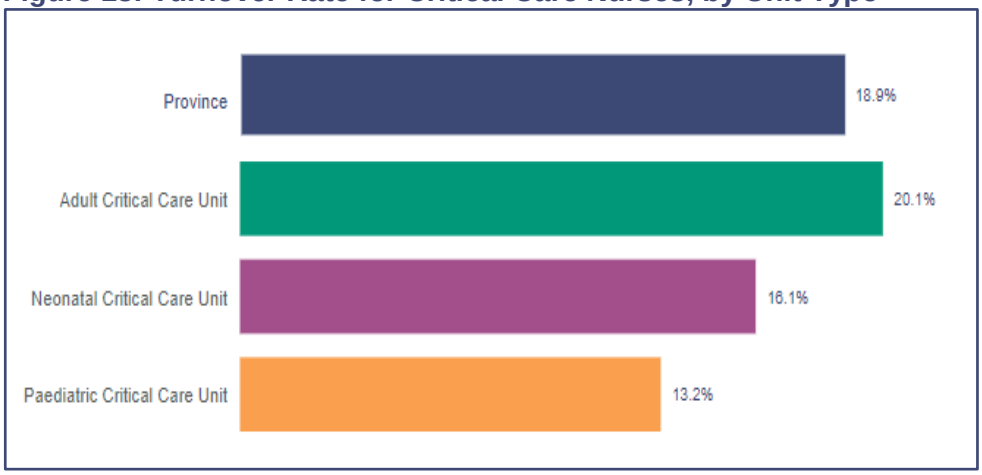


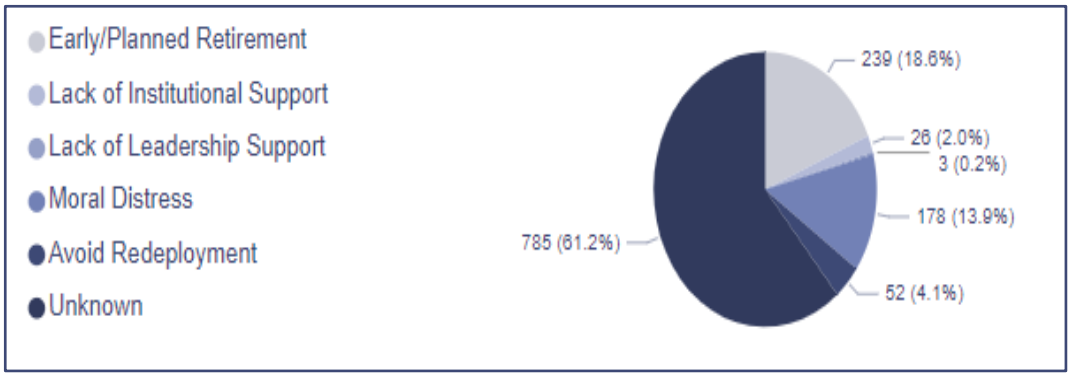
Figure 13, provides a summary of the turnover rate by population type. Adult critical care units reported a turnover rate of 20.1%, slightly higher than the provincial average (18.9%).

Figure 13: Turnover Rate for Critical Care Nurses, by Unit Type



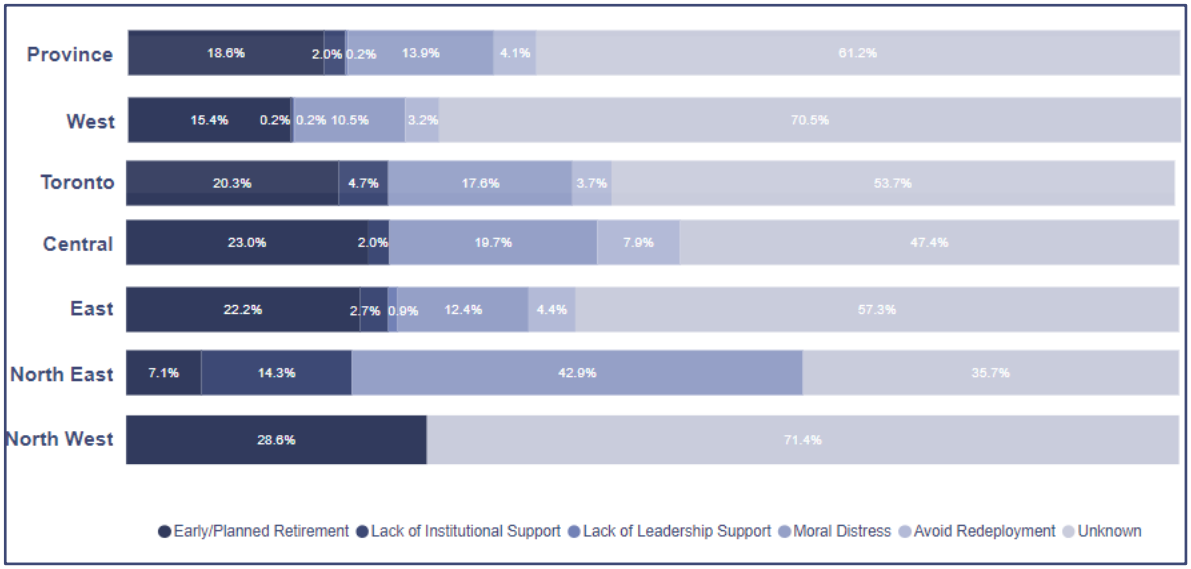
Information on reasons contributing to nursing exits was captured in the survey data collection. While the majority of reasons for exit were unknown, as shown in **Figure 14**, 18.6% were due to retirements and 13.9% were due to moral distress.

Figure 14: Reasons Contributing to Nursing Exists from Critical Care, Ontario



As illustrated in **Figure 15**, the North West and the Central OH Regions reported significantly higher nursing exits due to early/planned retirement as compared to the rest of the province. North East reported moral distress (42.9%) as the main reason for nurses leaving critical care.

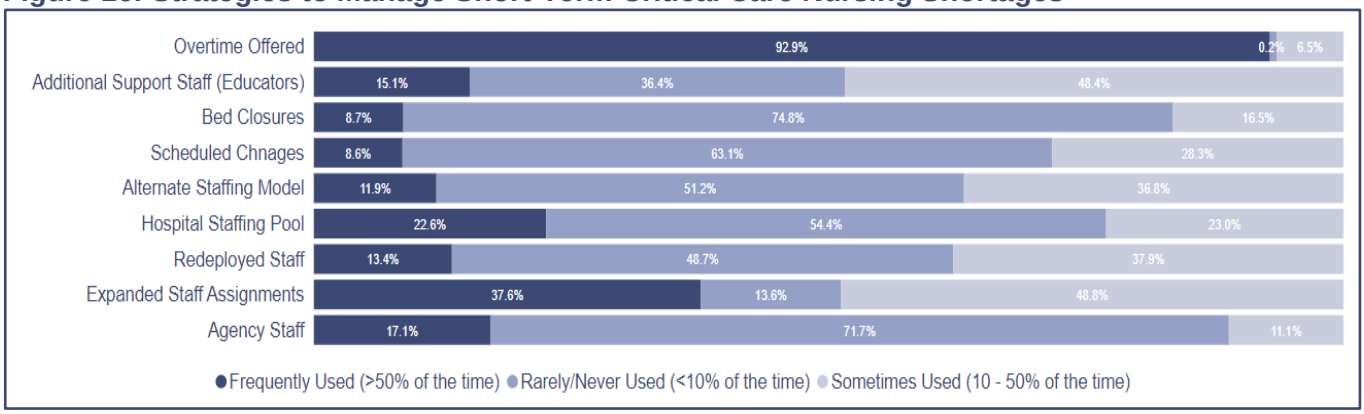
Figure 15: Reasons Contributing to Nursing Exits from Critical Care, by OH Region



5.2 Managing Short-Term Nursing Shortages

Survey respondents were asked to identify the frequency with which they used a number of different strategies to manage regular nursing shortages. **Figure 16,** highlights the various strategies used to manage nursing shortages. Overtime is reported as the top strategy being utilized 92.9% of the time to manage nursing shortages.

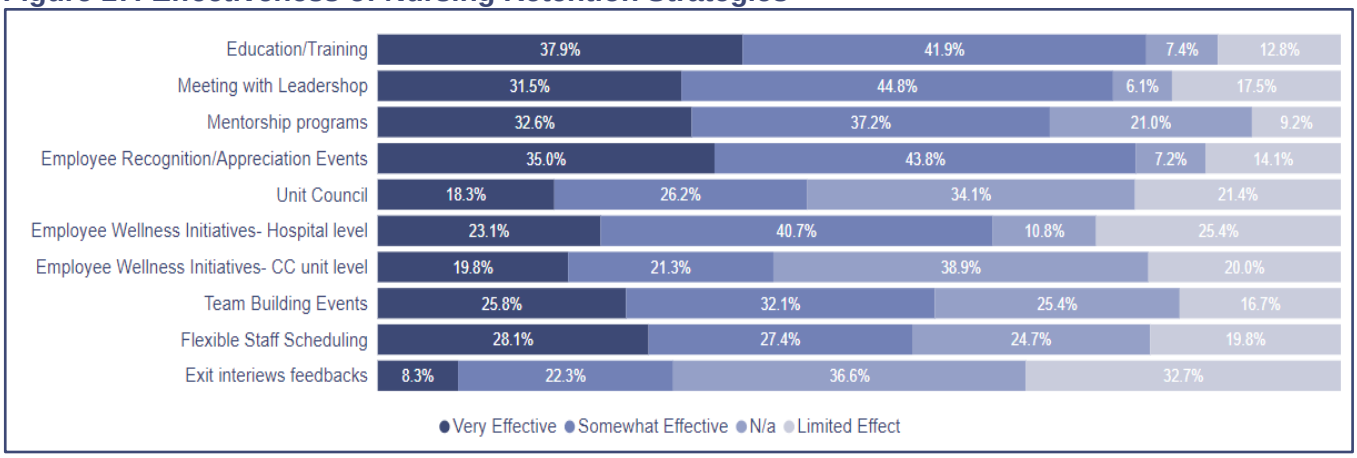
Figure 16: Strategies to Manage Short-Term Critical Care Nursing Shortages



5.3 Nursing Retention Strategies

Survey respondents were asked to identify the perceived effectiveness of a number of different retention strategies. As seen in **Figure 17**, critical care unit managers reported 'education/training' (37.9%) as the top effective method, followed by "employee recognition" (35.0%) and mentorship programs (32.6%).

Figure 17: Effectiveness of Nursing Retention Strategies



5.4 Nursing Recruitment Strategies

Survey respondents were asked to identify the frequency with which they used a number of different recruitment strategies, as well as the perceived effectiveness of each strategy. **Figure 18**, reports that the most commonly used recruitment strategy is 'recruiting internally' (59.8%) from other units within the hospital, which was also reported as the most effective (**Figure 19**). 'Social media' was reported to be used 45.5% of the time however, was only reported to be 19.3% effective. 'Financial incentives' are rarely used at 79.7% and reported as non-effective (79.3%). It should be noted that these responses were obtained from unit managers and/or directors. The perceived effectiveness of these strategies were not obtained from direct care provider which may have varied the responses for perceived effectiveness.

Figure 18: Nursing Recruitment Strategies Used in Critical Care

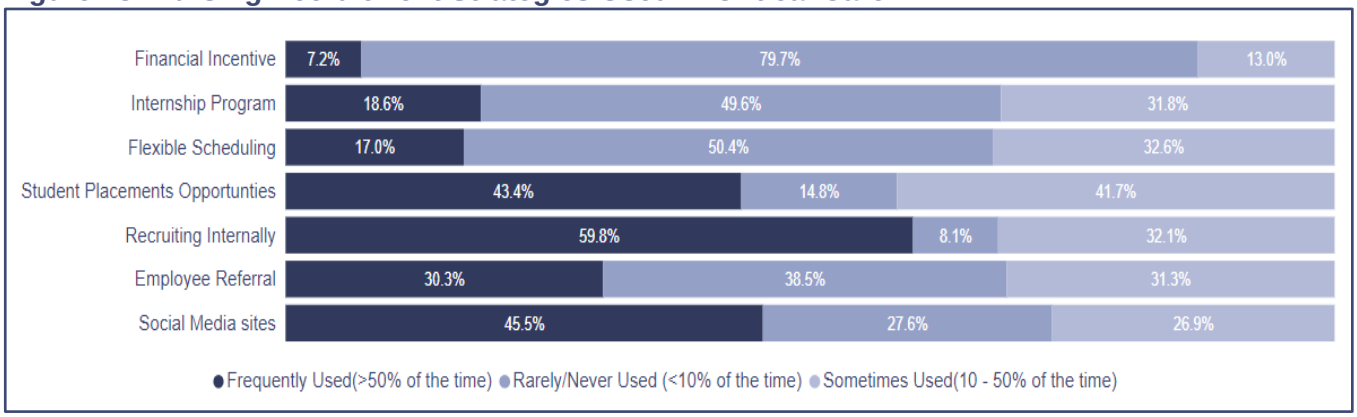
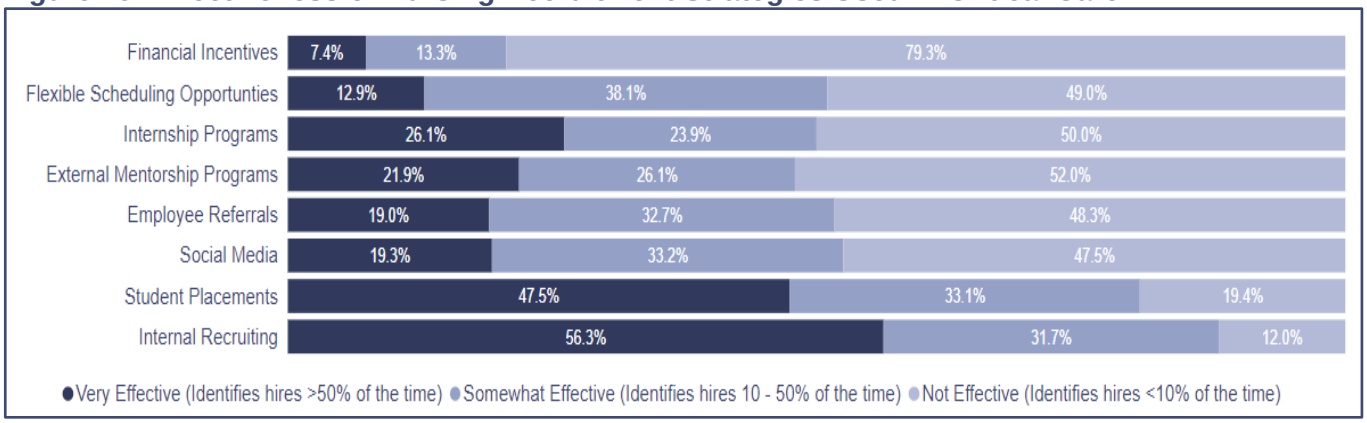
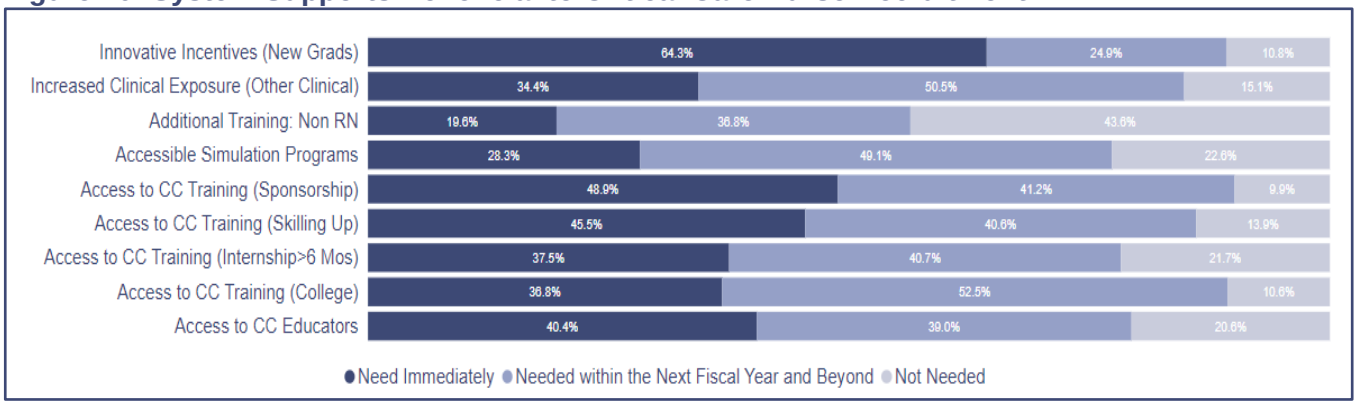


Figure 19: Effectiveness of Nursing Recruitment Strategies Used in Critical Care



The survey collected data on system supports that were seen as beneficial to nursing recruitment. Respondents were asked to identify the urgency to which these supports were needed as well as which supports help most with nursing recruitment among critical care units. As shown in **Figure 20**, 64.3% of units reported the immediate need for 'New Grad Incentives'. The next most sought after need was for 'critical care sponsorship' (48.9%), and 'critical care up-skilling.

Figure 20: System Supports Beneficial to Critical Care Nurse Recruitment



6.0 Interprofessional Health Care Roles in Critical Care

The Interprofessional health care team is considered one of the pillars of health care, optimizing patient outcomes across the continuum of care, with a focus on improving patient-centered outcomes such as reducing disability, increasing societal participation, and facilitating return to usual activities (Ridley, Freeman-Sanderson, & Haines, 2020).

As key members of the multidisciplinary critical care team, workforce planning and resource considerations for a range of health professionals is crucial in any workforce planning to ensure comprehensive patient care (Ridley, Freeman-Sanderson, & Haines, 2020).

6.1 Use of Interprofessional Health Care Roles in Critical Care

For a look into the various Health Care Professionals in Ontario's critical care units, both the weekday and weekend coverage information was included in survey data collection.

Table 3, reports the number of days of support in critical care units delivered by interprofessional staff. Within the roles included, Pharmacists had the highest level of coverage during weekdays (4.67 days) vs. weekends (1.22 days). Respiratory Therapist were reported as having better coverage on weekends with an average of 1.74 days.

Table 3: Health Care Professionals (Weekday/Weekend Coverage) in Critical Care Units

Professional	Average days/week
Pharmacist	4.67
Respiratory Therapist	4.41
Dietician	4.25
Physiotherapist	3.83
Chaplain	3.52
Occupational Therapist	3.23
Lactation Consultant	1.23

Professional	Average days/weekend
Respiratory Therapist	1.74
Pharmacist	1.22
Physiotherapist	0.90
Chaplain	0.89
Dietician	0.36
Occupational Therapist	0.34
Lactation Consultant	0.33

The level of involvement of interdisciplinary roles differs by patient population as seen in **Table 4**. Physiotherapists and occupational therapists are less involved in neonatal units. Paediatric units have the most involvement of interprofessional teams.

Table 4: Health Care Professionals Coverage in Critical Care Units by Population Type

Professionals	Adult
Pharmacist	4.66
Physiotherapist	4.63
Respiratory Therapist	4.36
Dietician	4.36
Occupational Therapist	3.38
Chaplain	3.28
Lactation Consultant	0.11

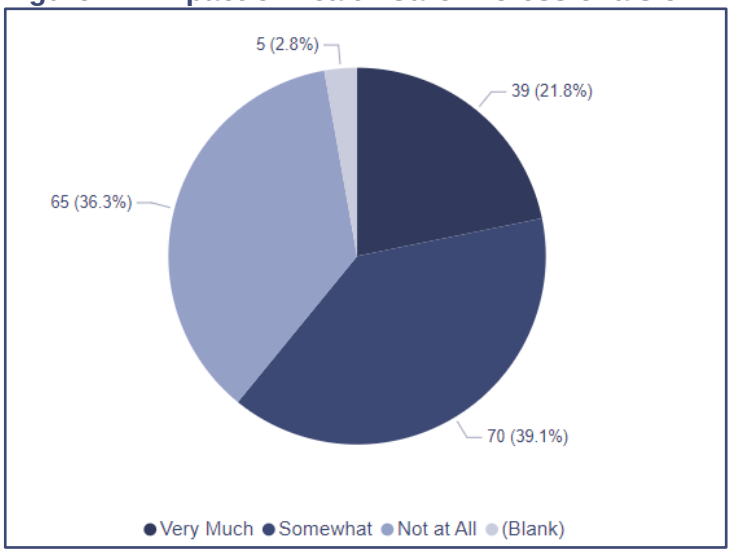
Professionals	Neonatal
Pharmacist	4.64
Respiratory Therapist	4.45
Chaplain	3.82
Dietician	3.80
Lactation Consultant	3.38
Occupational Therapist	2.47
Physiotherapist	1.19

Professionals	Paediatric
Chaplain	5.00
Pharmacist	5.00
Respiratory Therapist	5.00
Dietician	4.88
Physiotherapist	4.57
Occupational Therapist	4.44
Lactation Consultant	3.33

6.2 Impact of Health Care Professionals in Critical Care

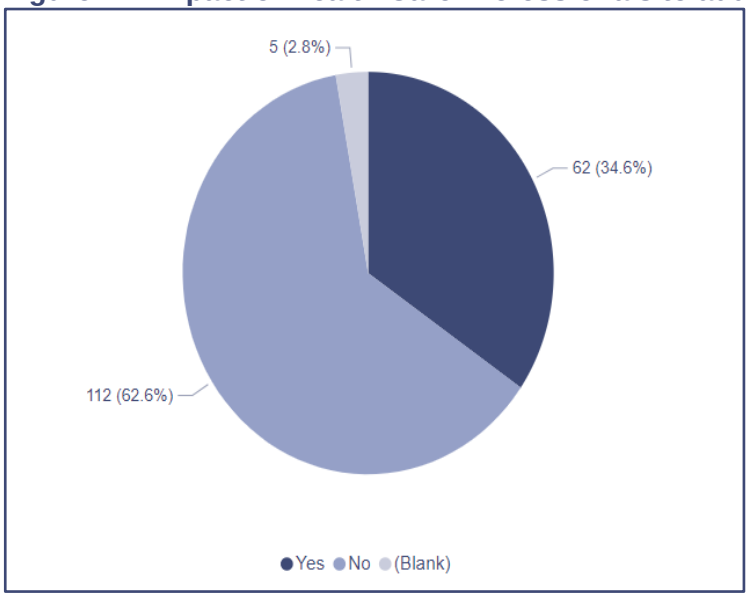
Unit managers were asked to identify the perceived impact of interprofessional health care roles support on nurse retention and recruitment within the critical care unit. **Figure 21**, reports the overall impact of having other health professional support on critical care units, and its potential impact on nurse recruitment and retention. Unit managers reported that having other members of health care professional support contributes in a meaningful way to critical care units with over 60% believing it ‘very much’ or ‘somewhat’ impacts the recruitment and retention of critical care nurses.

Figure 21: Impact of Health Care Professionals on Nurse Recruitment and Retention



As shown in **Figure 22**, 62.6% of survey respondents also reported that having other Health Care Professional resources does not help address the staffing gaps of critical care nurses.

Figure 22: Impact of Health Care Professionals to address Nurse Staffing Gap



7.0 Next Steps

Understanding the critical care workforce through ongoing data collection provides the ability to make relevant decisions to inform future planning and to ensure effective HHR initiatives are measured to address retention and recruitment challenges.

The CCWP data highlighted in this report plays a key role in providing system-level insights on the HHR current state of the critical care workforce in Ontario. The data insights on the vacancy rate, critical care experience tenure of critical care nurses, and turnover rates, coupled with bed capacity expansions, are actively considered in adjusting the magnitude of annual system investment requests by way of the Critical Care Nurse Training Fund (CCNTF), as well as newer initiatives such as Interprofessional Team Training Fund (IPTTF) Internship and Career Pathway Program (ICPP), and Retention Demonstration Project (RDP) initiatives.

CCSO, along with our system partners and Advisory Committees, is continually working to identify additional ways the data collected through the CCWP as well as burnout survey data can inform strategies to improve vacancy, retention, and related outcomes and strengthen Ontario's critical care workforce. CCSO looks forward to the redistribution of CCWP survey in 2024/25.

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