CCSO Critical Care Services Ontario

Burnout and The Assessment of Team Cohesiveness (ACE-15) in Critical Care

Provincial Report – 2023 Survey

Editions of This Report

Burnout in Critical Care	
Version 1.0	2019 Inaugural Report
Version 2.0	2020 Report; Survey updated to reflect the impact of COVID-19 pandemic
Version 3.0	2022 Report: Survey includes the impact of ongoing COVID-19 pandemic
Version 4.0	2023 Report: Survey includes the impact of pandemic recovery and the baseline data for the ACE-15 Survey.
For more information contact	Critical Care Services Ontario (CCSO) Email: info@ccso.ca

Public Information / Information for Hospital and System Stakeholders

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.

info@ccso.ca

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Executive Summary

Critical Care Services Ontario (CCSO) has been profiling workforce trends in critical care since 2007, focusing on the trends for critical care nurse turnover, years of experience and vacancies. In an effort to gain insights on the well-being among critical care staff, CCSO initiated the first voluntary Burnout Survey utilizing a 1-Measure Burnout Survey in 2019 and has continued to survey critical care teams on a periodic basis.

This report summarizes the provincial level results of the 2023 Burnout Survey across Ontario's critical care teams. As described in Section 2, this year survey participation was higher compared to prior years, and a significant drop (23% in 2022 to 13.8% in 20223) was noted in the rating "feel completely burnout". Section 3, provides additional details on the burnout score profile over the years (2019 to 2023), and by regional distribution, unit type, as well as respondents role type, years of experience, and age group. The findings related to the factors contributing to, as well as those factors alleviating burnout, is highlighted in Section 4 of this report. Similar to last report (2022), the need for "time off" was identified as the top most factor for alleviating respondents' level of burnout in the 2023 survey.

In addition to the Burnout Survey, CCSO also distributed the ACE-15 Survey which is a validated survey to assess staff perception of "teamness" (Tilden, 2016). The baseline results from the ACE-15 survey (new this year), is profiled in Section 5 of this report. While the individual sub-regional baseline ACE-15 results may shed useful insights when reviewed in conjunction with the burnout ratings, the simple comparison of these scores between sub-regions may not be as meaningful. There is an inverse correlation between ACE-15 mean scores and burnout scores (i.e. a higher ACE-15 score is associated with a lower burnout score). This correlation is not consistently noted and may be due to varying response rates. The data from Burnout and ACE-15 survey at the corporation and system level will also support the evaluation of critical care Health Human Resource (HHR) pilot initiatives.

Section 6, presents insights on survey respondents' perspectives on recruitment and retention. Of note within that section are the findings related to respondent's intention to remain in critical care (intention to remain:54%; intention to not remain: 11%; no response: 35%). This indicator, could be valuable for focused strategies at the local level through unit-based conversations to inform retention risks and strategies. These local level results will be available to hospitals in supplementary reporting.

CCSO would like to extend a sincere thank you to all staff in critical care units across the province who participated in this survey process, their openness to share their experiences, and the willingness of hospitals to better understand this important issue of staff burnout and team cohesion. The knowledge gained from this survey will provide a foundation for improvement efforts for critical care health human resources and opportunities for system efforts to enhance staff wellbeing.

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1. What is Burnout

1.1. What is the Relevance of Burnout to Critical Care

While there is no one standard definition of burnout, there are common themes described in the literature including high emotional exhaustion, high levels of depersonalization including cynicism or detachment, and low feelings of personal accomplishment (Costa, 2018). Critical care staff are reported to be at a particularly high risk of burnout due to the unique job demands including frequently changing patient acuity and demands, complex care requirements, and frequent moral and ethical challenges. This constant stress increases the risk of Burnout Syndrome (Kerlin, McPeake, & Mikkelsen, 2020; Moss, Good, Gozal et al., 2016).

If not addressed, the consequences of burnout can have a negative and lasting impact on individuals, teams, and organizational outcomes. (Browning, 2019). These negative effects can include physical and emotional symptoms including difficulty sleeping, emotional instability, cynicism, and apathy and can lead to developing unhealthy coping techniques that may have significant longer-term health impacts, and post-traumatic stress disorder (Browning, 2019; Moss, Good, Gozal et. al, 2016). The unit level and organizational-level impact can include decreased reported patient satisfaction scores, increased errors, increase health care costs and increased staff turnover (Browning, 2019).

In an effort to increase the understanding of burnout within the critical care system in Ontario, CCSO has asked hospital critical care team members to complete the 1-Measure Burnout Survey again in 2023 to capture the ongoing impact of the pandemic recovery experience on critical care staff burnout and resilience. This survey is an important element of CCSO's Health Human Resource Strategy, as the trends and results support the evaluation of implemented initiatives and inform system level policy investment and planning to contribute in improving the well-being of critical care staff. This report will detail the findings of the 2023 Burnout Survey findings.

2. Participation in the Critical Care Burnout Survey

The 2023 CCSO Burnout Survey of front-line critical care staff included participation from 66 corporations across the province (out of a total 74 corporations with critical care units). The corporate participation included 162 critical care units or 66% of the units from participating corporations.

The 2023 Burnout Survey yielded the highest response rate (2,899 total responses) from individual participants. The largest participation in the 2023 Burnout Survey was from adult units with 80.2% of the total surveys submitted. This is consistent with their proportion the critical care system where the adult critical care units make up over 80% of Ontario's critical care system. The number of responses from neonatal and paediatric units was also consistent with their provincial proportions of the critical care system at 13.8% and 6.1% respectively.

There was varied participation among the various disciplines. The majority of responses were from bedside nurses 75.3%, followed by 12.0% who were respiratory therapists, 2.9% categorized as unit clerical and/or administration, 1.8% staff physicians, and 1.1% were physiotherapists.

3. Critical Care Burnout Survey, Provincial Results

Burnout is defined as an occupational condition characterized by emotional exhaustion, depersonalization, and a low sense of personal accomplishment. Job burnout doesn't happen overnight. It is a gradual process that begins with chronic stress and evolves over time.

(Fenner, 2019)

3.1. About the 1- Measure Survey Question

The validated question (Dolan, 2015) posed to front-line critical care staff in the CCSO 1-Measure Burnout Survey uses a 5-point Likert scale, referencing the definition cited above, and reads as follows:

Overall, based on the definition of burnout (Fenner, 2019) how would you rate your level of burnout?

1. I enjoy my work. I have no symptoms of burnout.
2. Occasionally I am under stress, and I don't always have as much energy as I once did, but I don't feel burned out.
3. I am definitely burning out and have one or more symptoms of burnout, such as physical and emotional exhaustion.
4. The symptoms of burnout that I'm experiencing won't go away. I think about frustration at work a lot.
5. I feel completely burned out and often wonder if I can go on. I am at the point where I may need some changes or may need to seek some sort of help.

3.2. Provincial Burnout Score

In both 2019 and 2020, staff from participating critical care units across Ontario reported relatively similar symptoms of persistent and complete burnout (items 4 and 5 on the Likert scale). However, there was a significant increase in staff reporting that they were experiencing 'persistent' or 'complete' burnout in 2022.

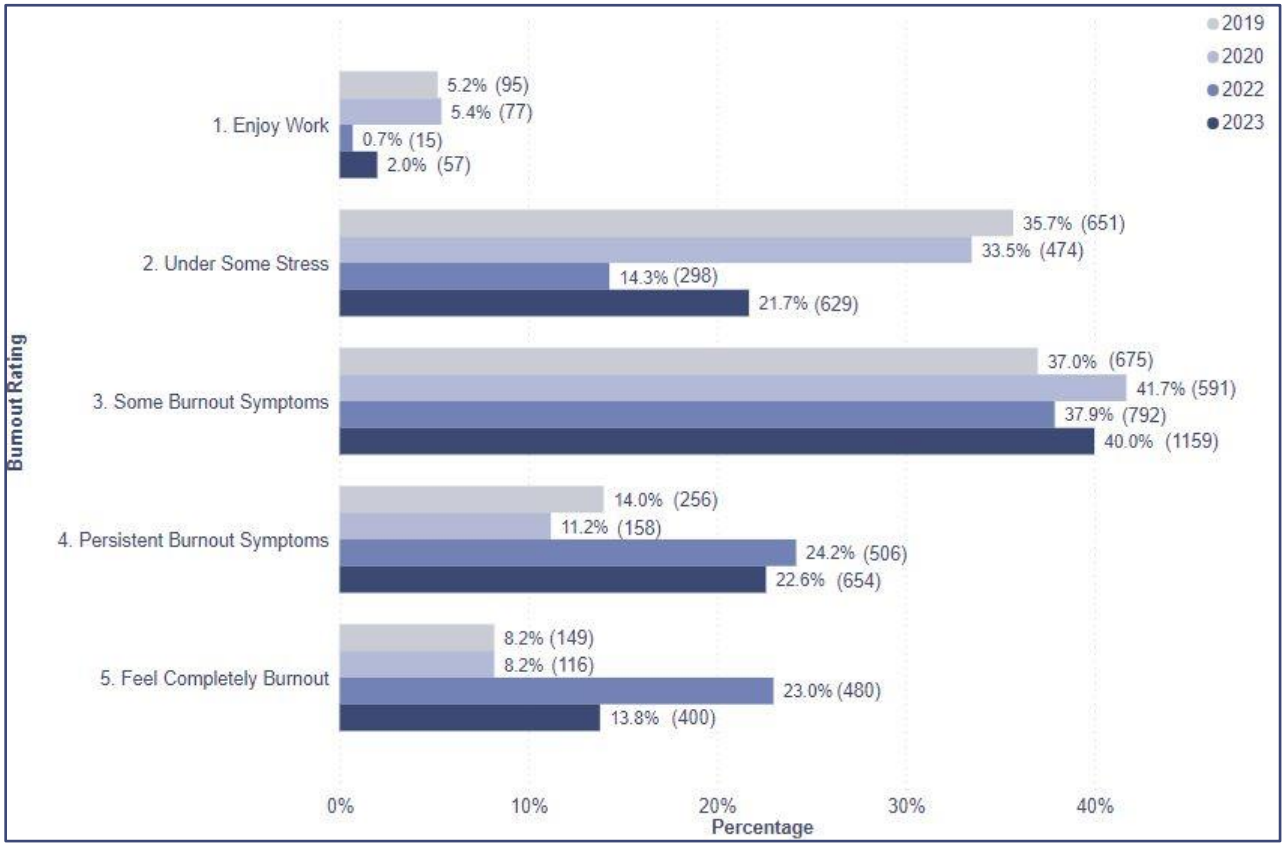
In 2023 staff reported, a decrease in 'persistent' burnout symptoms from previous years by a percentage change of 6.6% as shown in **Figure 1,** when compared to 2022 results. Symptoms of 'Complete' burnout by critical care staff decreased from 23.0% to 13.8% over the same time period. The 2023 scores for both 'persistent' and 'complete' burnout symptoms may suggest a recovery period from the impact of the COVID-19 pandemic but it will be important to track and report burnout scores over the next several years to determine if the decrease in reported feelings of 'persistent' and 'complete' burnout is sustained or continues to decline to pre-pandemic levels.

One consideration when evaluating the burnout scores across Ontario is to compare them to reported vacancy rates within critical care units as increased workload and staffing shortages are known contributing factors to feelings of burnout (Shah, 2021). The literature has identified Burnout Syndrome has many contributing factors including working long hours and increased workload, which may be more prevalent in units with staffing shortages.

Although the RN vacancy rate was not collected as part of the 2023 Burnout Survey, it was collected during the application process for the Critical Care Nurse Training fund (CCNTF) in November of 2022 for the

period of April 1 2022 to March 31 2023. The vacancy rates for each Ontario Health sub-region are shown in **Appendix 2**.

Figure 1: Provincial Burnout Score Distribution



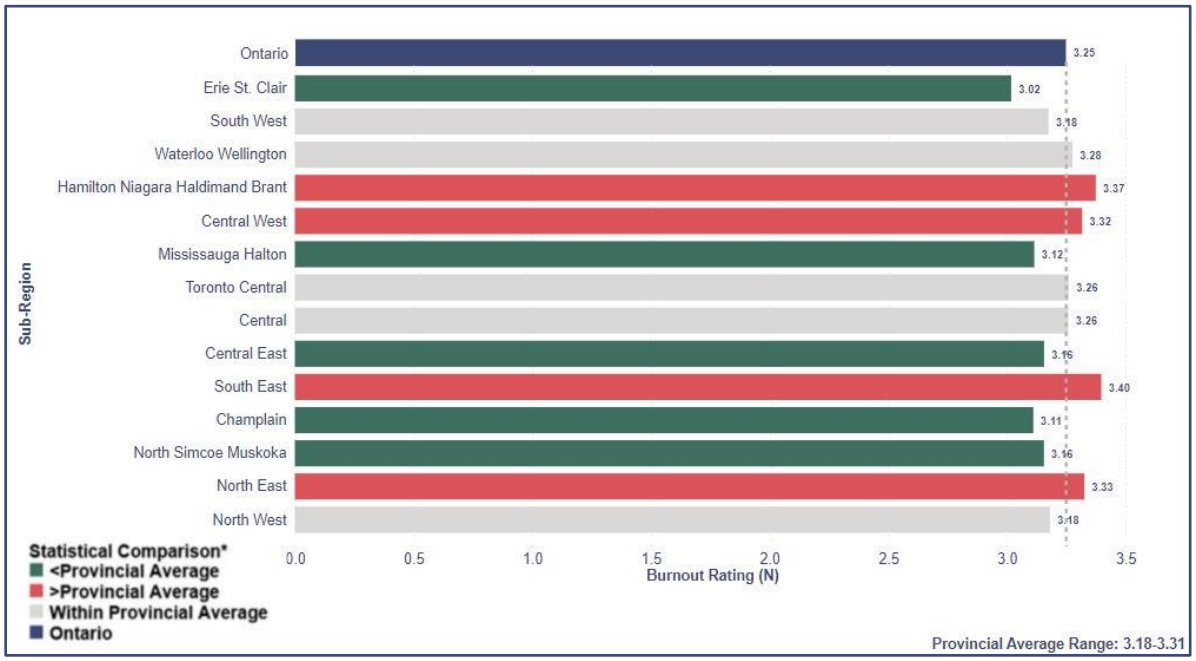
When comparing the burnout scores for the years 2019-2023 nurses with less than 3 years' experience consistently show burnout scores that are statistically lower compared to the results from more experienced staff. See **Appendix 1** for the comparison between years of experience and burnout scores.

3.3. Burnout Score by Sub-Region

Feelings of burnout varied somewhat across the Ontario Health sub-regions as shown in **Figure 2**. It should be noted that some organizations have been realigned within the Ontario Health regions so comparisons with previous years may not be applicable. Humber River Regional Hospital (HRH), North York General Hospital (NYGH) and the Scarborough Health Network (SHN) are now in the Toronto region, where in previous years they were in the Central sub-region (HRH & NYGH) and the Central East sub-region (SHN).

The South East sub-region reported the highest burnout rating at 3.40, followed by the Hamilton Niagara Haldimand Brant sub-region at 3.37. There were 2 other sub-regions where the burnout rating was higher by a statistically significant amount than the provincial average including North East and Central West sub-region. The lowest levels of burnout were reported in the Champlain and Erie St. Clair sub-regions.

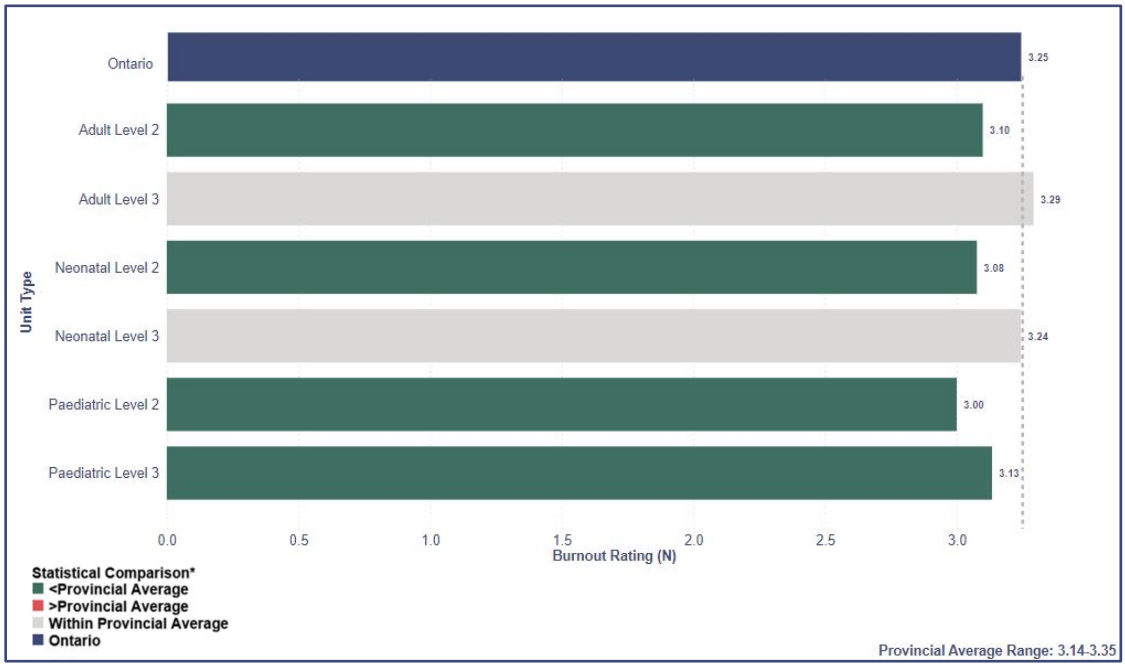
Figure 2: Statistical Significance for Burnout Rating, Sub-Region



3.4. Burnout Rating by Unit Type

By unit type, respondents from level 2 critical care units (all patient populations) reported levels of burnout at a rate lower than the provincial average and those in level 3 critical care units, as shown in **Figure 3**.

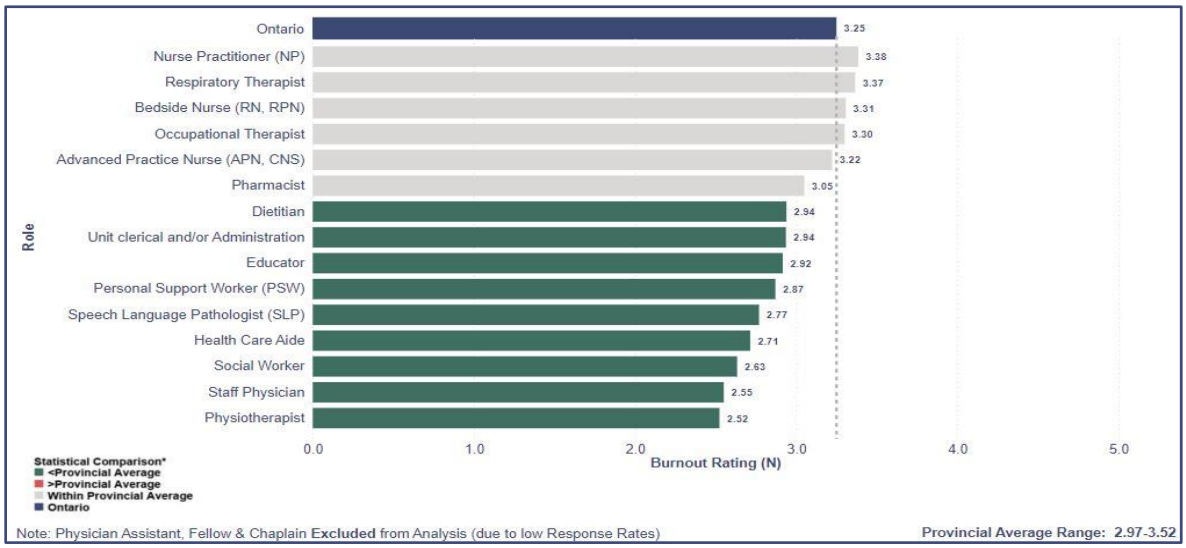
Figure 3: Statistical Significance of Average Burnout Rating, Unit Type



3.5. Burnout Score by Role Type

A number of roles responded to the Burnout Survey. **Figure 4**, reports on the burnout score by role type summarizing which roles fall within or above the provincial average.

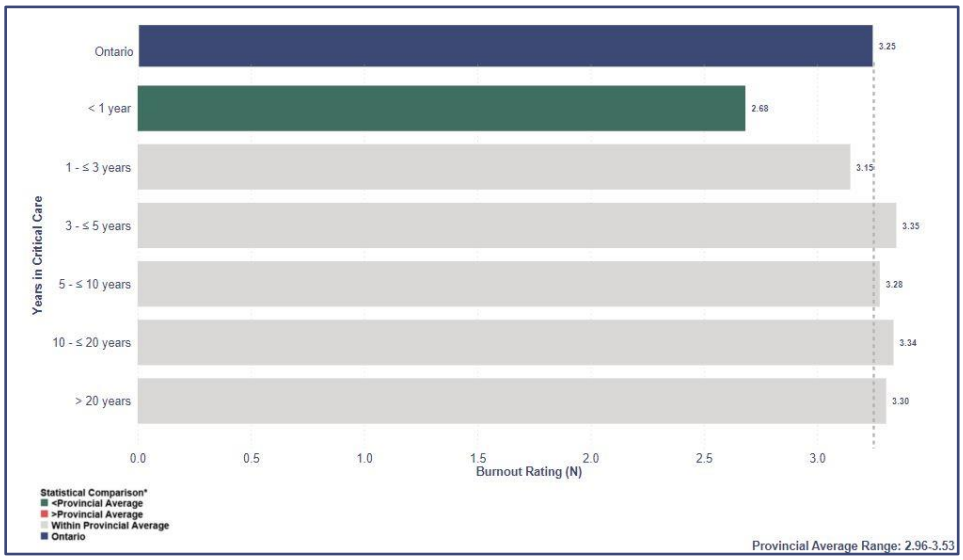
Figure 4: Statistical Significance for Burnout, Role Type



3.6. Burnout Score by Years of Experience and Age Groups

When examining the relationship between years of experience in critical care and the reported feelings of burnout, the analysis found that staff early in their critical care career (< 1 year of experience) reported lower levels of burnout (average score 2.68), compared to the provincial average as shown in **Figure 5**. Critical care nurses with 3 to ≤ 5 and 10 to ≤ 20 years of experience reported the highest level of burnout.

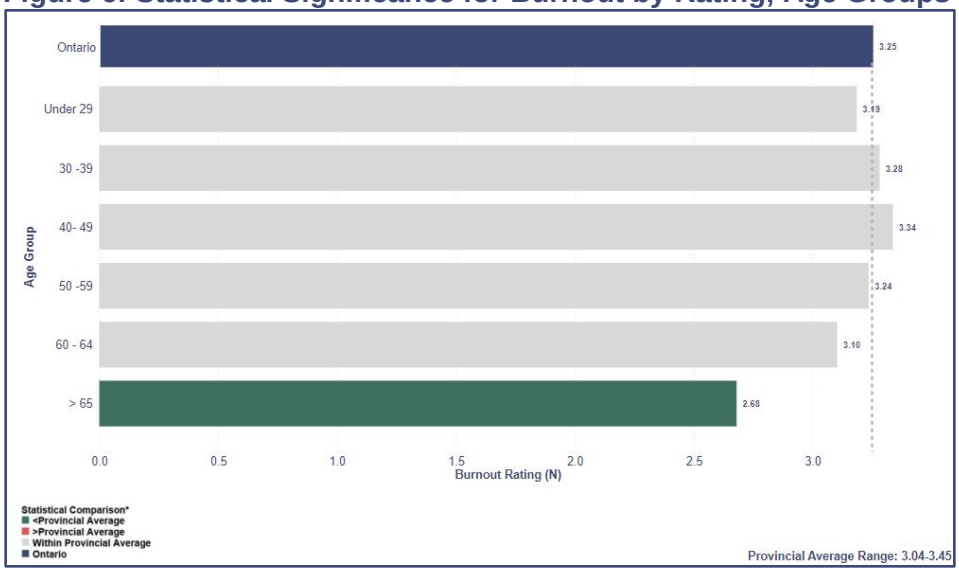
Figure 5: Statistical Significance for Burnout by Rating by Years of Experience in Critical Care



The demographics and age group of survey respondents were included in the analysis. **Figure 6**, highlights that respondents who are 40-49 years of age reported slightly higher burnout scores (average score 3.34)

compared to the provincial average. Those over 65 years of age reported the lowest burnout scores (2.68), which was also statistically significant compared to the provincial average. These results by age group are fairly consistent with previous years' surveys.

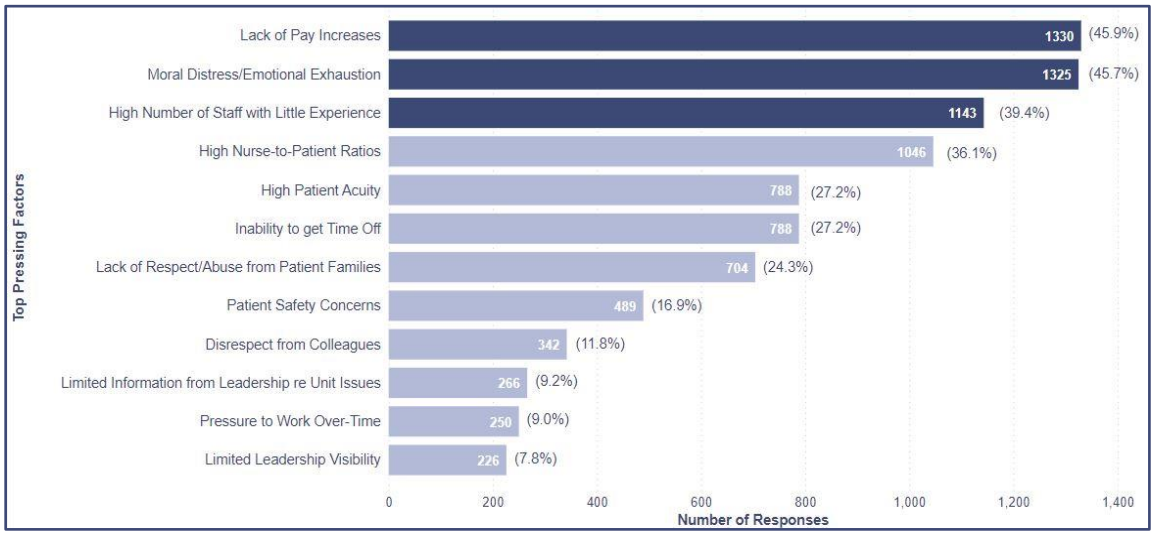
Figure 6: Statistical Significance for Burnout by Rating, Age Groups



4. Factors Impacting Burnout in Critical Care

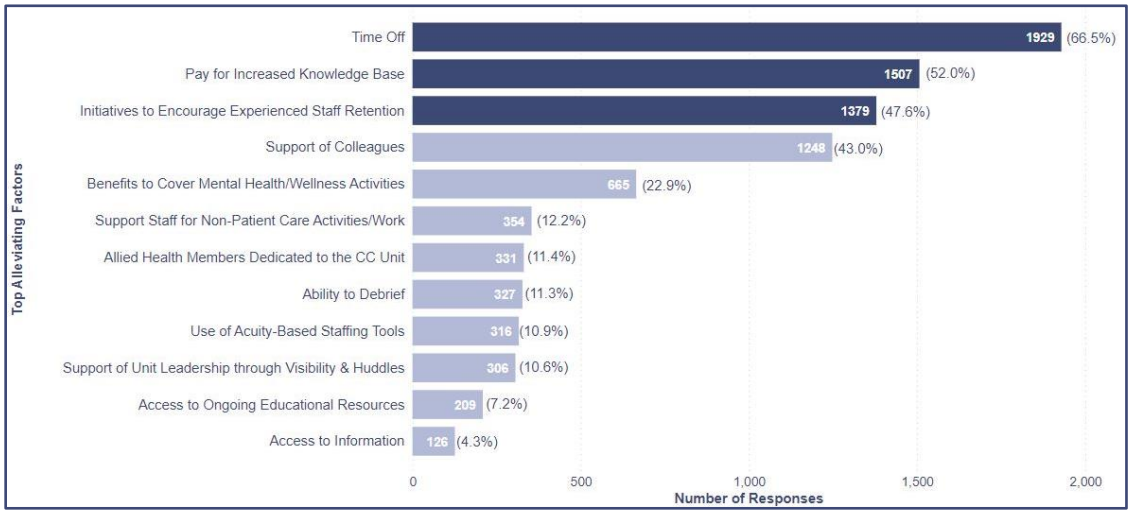
The COVID-19 pandemic has resulted in a considerable amount of physical and emotional pressure on all healthcare workers (Caillet, 2020; Crowe S. H.-W., 2021; Dykes, 2022). In previous surveys staff were asked to comment on the leading factors of burnout as a result of COVID-19. As the health system is now shifting into the recovery phase of the pandemic, this year survey respondents were asked to highlight the top pressing factors for burnout (**Figure 7**). Respondents reported the top three factors contributing to burnout as 'lack of pay increases', 'moral distress/emotional exhaustion', and 'high number of staff with little experience'. In 2020 & 2022 'Moral distress/emotional exhaustion' was also reported as the primary factor from COVID-19 leading to burnout. In 2022, staff also identified patient safety and the inability to get time off as major contributing factors to burnout. The options that were presented in the survey for contributing to and alleviating burnout have been revised from previous surveys to reflect current literature and also include stakeholder input.

Figure 7: Top 3 Pressing Factors Contributing to Burnout



Respondents were also asked to identify the top 3 factors that assisted with alleviating burnout shown in **Figure 8**. 'Time off' continues to be reported as the leading factor to alleviate feelings of burnout with 66.5% of survey respondents indicating this factor, followed by 52.0% of respondents identifying 'pay for increased knowledge base' as the secondary factor. 'Initiatives to encourage experienced staff retention' was also identified as a top alleviating factor at just under 50%. In 2022, respondents identified 'support of colleagues' and 'support of unit leadership' as top factors alleviating burnout.

Figure 8: Top 3 Factors Alleviating Burnout



5. Assessment for Collaborative Environments (ACE-15) Survey

5.1. ACE-15 Survey

As part of the 2023 Burnout Survey process, a new survey tool was added to measure the staff perceptions of “teamness”. This survey tool was added to support the evaluation of new health human resource initiatives for interprofessional team training and internship support for new nurses that were launched in 2022-2023.

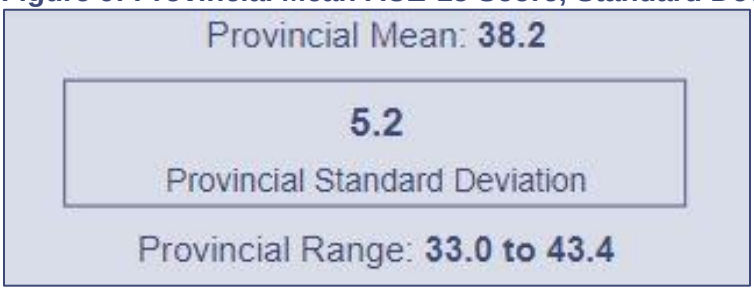
The ACE-15 Survey is a validated tool that uses 15 questions to assess the domains of collaborative environments using a 4-point Likert scale (strongly disagree to strongly agree) to assess the perception a clinical team’s level of teamwork or “teamness” (Tilden, 2016). This tool is effective in obtaining feedback from clinical teams in a short survey that incorporates the qualities of an effective team without being labour intensive for respondents. There is also support for the positive impact that the degree of team cohesiveness and feelings of being supported in a team impact the feelings of burnout. In the literature, the ACE-15 tool shows an inverse correlation between ACE-15 mean scores and burnout scores (i.e. a higher ACE-15 score is associated with a lower burnout score) (Al Sabei, 2022).

This section provides the baseline results from the ACE-15 survey that was completed at the same time as the 2023 Burnout Survey. It should be noted that the results are baseline findings only and no conclusions or interpretations are to be made at this time. Ongoing evaluation will be required to determine changes over time.

5.2. Scoring Methodology and Provincial Results

The total number of complete survey responses was 2,490 from all critical care units. The provincial mean score was 38.2 with a provincial standard deviation of 5.2. The range of the provincial scores was 33.0-43.4 for all critical care units. The baseline results are shown in **Figure 9.** The ACE-15 scores have been reported in multiple studies with a mean range of 47.7 and a standard deviation of 6.4 (Ekstrom et al., 2020; Rohlwing & Brieger, 2022), 43.6 – 58 and a standard deviation of 1.73-7.47 (Tilden, 2016; Stilp & Wiser, 2019) to 42.62 and a standard deviation of 5.54 (Sabei et al., 2022). According to the current results, the Ontario critical care ACE-15 scores are above the midpoint (37.5) but fall below the lower end of the range reported in the literature.

Figure 9: Provincial Mean ACE-15 Score, Standard Deviation and Provincial Range



5.3. ACE-15 Score by Sub-Region

The ACE-15 data analysis was also examined for each Ontario sub-region. **Table 1**, shows the mean ACE-15 scores and standard deviation for those scores along with the number of responses by OH sub-region.

Table 1: Ontario Sub-Regions Mean ACE-15 Scores, Standard Deviation, and # of Responses

Ontario Sub-Region	Mean ACE-15 Scores	Standard Deviation	# of Responses
Erie St. Clair	39.8	5.6	99
South West	38.4	5.0	180
Waterloo-Wellington	38.0	4.6	98
Hamilton Niagara Haldimand Brantford	38.0	5.3	430
Mississauga Halton	38.1	5.5	135
Central West	36.4	6.7	33
Central	38.8	5.2	96
North Simcoe Muskoka	38.5	4.7	109
Toronto	38.2	5.0	704
Central East	39.3	5.3	67
South East	38.1	5.6	163
Champlain	38.0	5.1	255
North East	37.5	5.2	83
North West	37.9	4.1	38
Province	**38.2**	**5.2**	**2490**

These results show that the region with the fourth highest burnout rating (Central West as shown in **Figure 2**) had the lowest ACE-15 score (36.4) and the highest standard deviation (6.7). Conversely, one of the regions with the lowest burnout scores (Erie St. Clair as shown in **Figure 2**) had the highest ACE-15 score (39.8) and a slightly above-average standard deviation (5.6).

These findings are important for critical care because implementing educational and clinical simulation activities may help to alleviate burnout by developing and utilizing team-building tools to improve the collaboration, partnership, unity, collegiality and synergy of interprofessional teams. Evidence suggests that effective teamwork is linked to less stress among healthcare workers, higher job satisfaction, and service delivery improvements (Mijakoski et al., 2015). Recent research found that teamwork was significantly negatively associated with emotional exhaustion and depersonalization domains of burnout measures and significantly positively associated with the personal accomplishment domain (Galleta-Williams et al., 2020).

5.4. ACE-15 Rating by Unit Type

The ACE-15 scores were also analysed by Level of Care and population type and the results are shown in **Table 2**.

Table 2: Mean ACE-15 Scores, Standard Deviation and # Responses, by Population and Level of Care

Unit Type	Mean ACE-15 Scores	Standard Deviation	# of Response
Adult L2	37.9	5.7	250
Adult L3	38.2	5.2	1744
NICU L2	39.3	4.0	132
NICU L3	38.4	4.5	216
PICU L2	37.9	6.0	27
PICU L3	38.1	6.5	121
Province	**38.2**	**5.2**	**2490**

These results demonstrate that the units with the 2nd lowest burnout score Neonatal Level 2 units (as shown in **Figure 3** of this report) have the highest reported ACE-15 score with the lowest standard deviation compared to the provincial ACE-15 score and standard deviation.

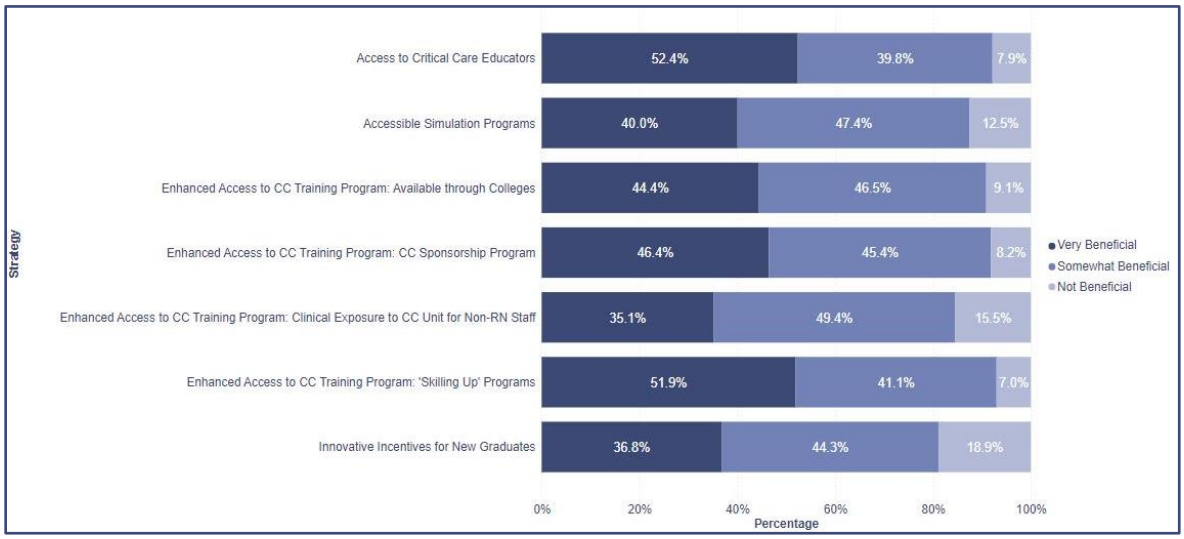
6. Recruitment/Retention Indicators & Strategies

6.1. Recruitment

Respondents were asked to identify the system supports they felt would be beneficial and which supports would be effective to the recruitment of bedside staff in the critical care unit. Questions pertaining to system strategies to support recruitment were new additions in 2023 survey based on input from stakeholders.

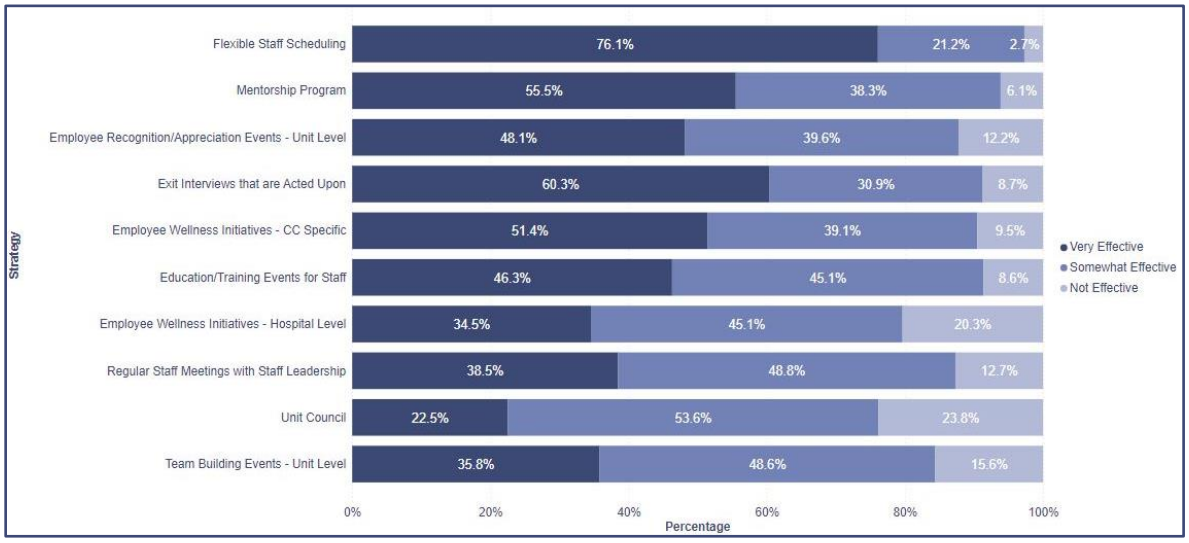
In **Figure 10**, the top 3 system strategies identified as being beneficial to support recruitment of bedside staff included enhanced access to critical care training programs/clinical exposure to critical care unit for non-RN staff, access to Critical Care Educators and enhanced access to critical care training programs such as "Skilling Up" programs.

Figure 10: System Supports Felt to be Beneficial to the Recruitment of Bedside Staff



As shown in **Figure 11**, respondents identified that the most effective strategies to support recruitment included flexible staff scheduling, exit interviews that are acted upon and mentorship.

Figure 11: Organizational Recruitment Strategies Felt to be Most Effective to Hire Bedside Staff



6.2. Retention

To provide insight into retention and assist with workforce planning, the 2023 Burnout Survey included new questions about staff intent to remain in critical care. The literature cites varying rates of staff intending to leave their jobs with the pre-pandemic rate as 8% and with the rate estimated to be 10% post-pandemic where some estimated 13% or higher (Crowe, 2023, Raso, Fitzpatrick & Masick, 2021; Sheppard, et al, 2021). In a Canada-wide survey conducted by the Registered Nurses Association of Ontario, respondents reported that 28.9% intended to leave their position within the next 12 months (Registered Nurses Association of Ontario, 2022), while the rate from a Health Canada study showed that 43.% of nurses with less than 5 years of experience intended to leave or change their jobs within the next 3 years (Statistics Canada, 2022).

In **Figure 12,** survey respondents reported that 10.9% did not intend to remain in critical care, while 34.9% reported 'unknown', and 54.2% reported that they intended to remain in critical care. Survey respondents were also asked that if they intended to remain in critical care, and how long did they intend to remain in critical care (**Figure 13**). The majority of respondents (77.5%) reported intending to remain in critical care for more than 3 years. Another 21.1% reported intending to remain between 1 to 3 years. Less than 1.5% of respondents intend to remain for less than one year.

Figure 12: Intend to Remain in Critical Care

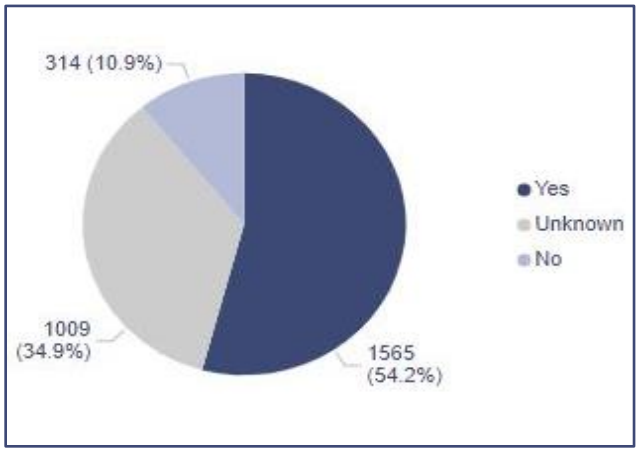


Figure 13: Intend to Remain in Critical Care, Number of Years

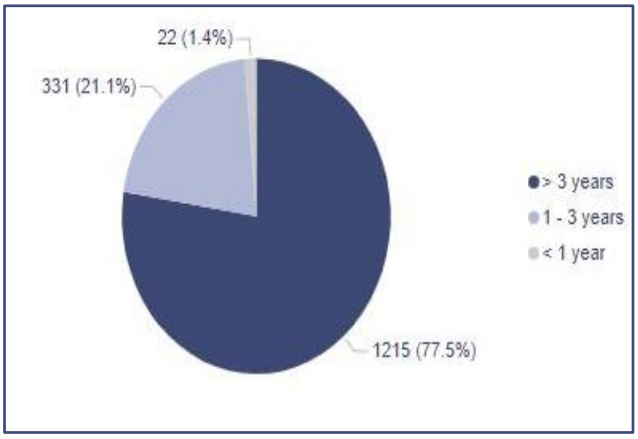
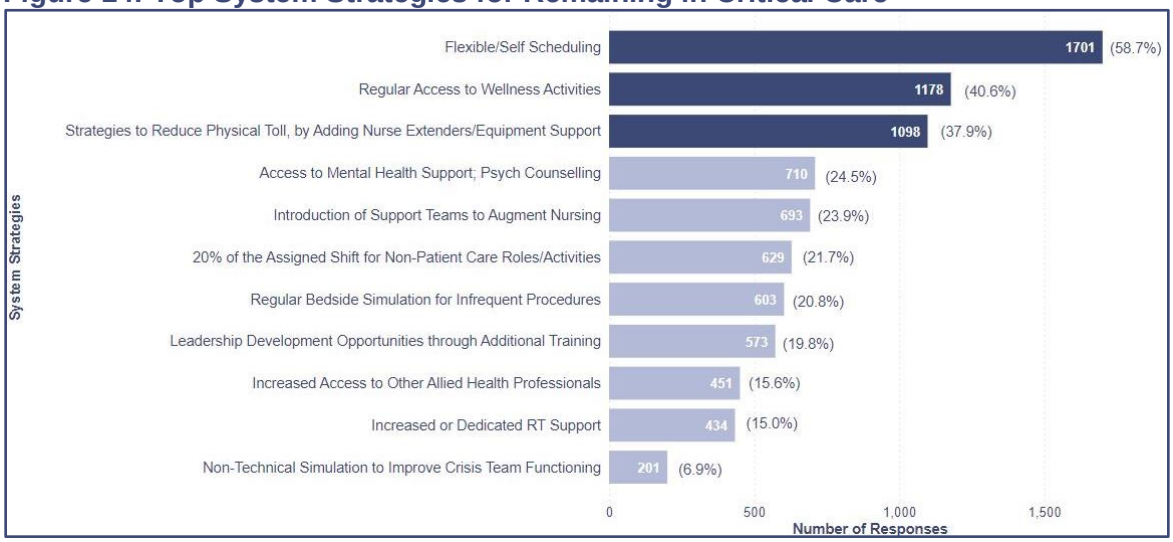


Figure 14: Top System Strategies for Remaining in Critical Care



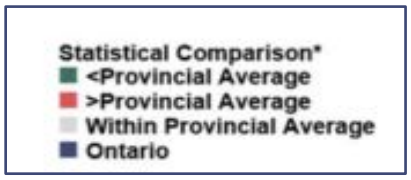
Respondents were asked to identify the top 3 system strategies that would help them remain in critical care. Flexible/self-scheduling and regular access to wellness activities were reported among the top 2 strategies identified as shown in **Figure 14.** Strategies to reduce physical toll by adding nurse extenders/equipment support were identified by 37.9% of respondents. With the exception of flexible/self-scheduling these strategies align with what was reported in previous years. These strategies were among those identified in the literature as important supports to maintain staff within critical care (Ezzat, 2021; Kerlin, McPeake & Mikkelsen, 2020; Lopez, 2022; Van den Bulcke et al, 2020).

7. Conclusion

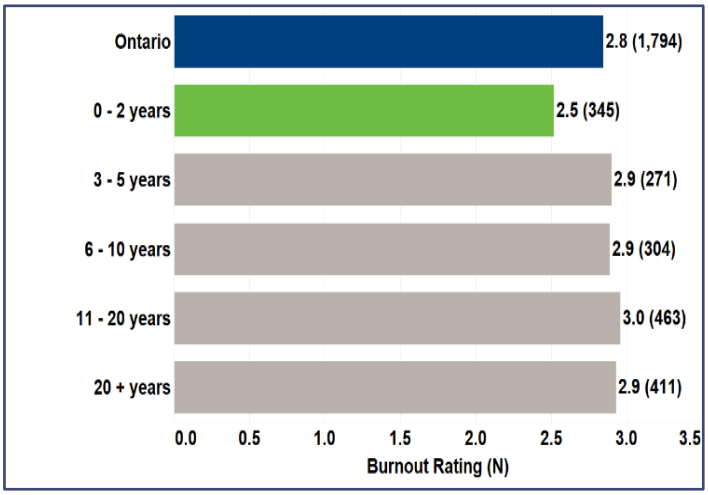
The 2023 Burnout Report demonstrates that burnout continues to be an ongoing challenge for Ontario's critical staff. While there has been a reported decrease in the level of staff "feeling completely burned out", there remains consistent feelings of moderate burnout. The ACE-15 Survey will help to evaluate current HHR strategies and can be assessed in conjunction with staff reported burnout scores. While this provincial report provides a provincial synopsis to inform future system interventions to enhance retention and improve staff wellness, the corporation report may be more illuminating for hospital level retention and wellness interventions. The year over year indicators, particularly the "intention to remain in critical care", and broader burnout scores, as well as top strategies for burnout and retention strategies suggested by critical care staff may merit hospital level deeper dive and subsequent interventions that could move the burnout, retention, and wellness needle in a meaningful fashion.

Appendix 1

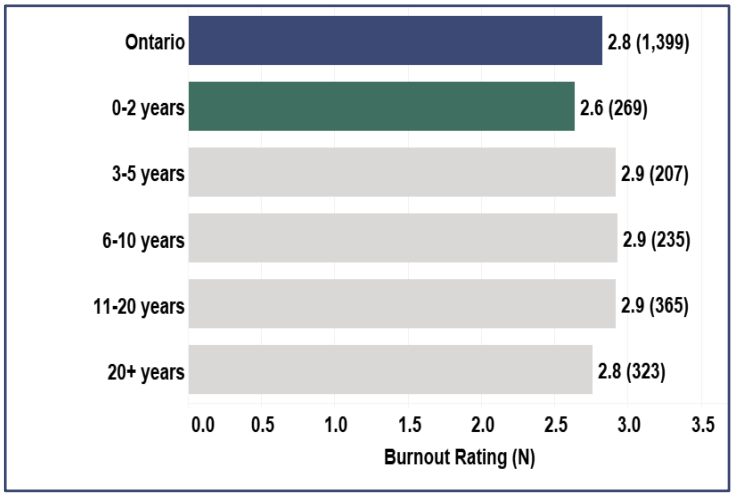
Provincial Burnout Score and Years of Experience



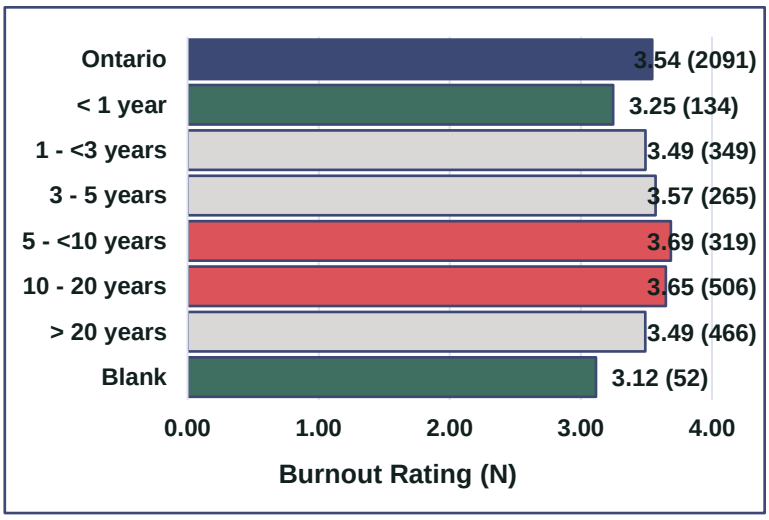
2019



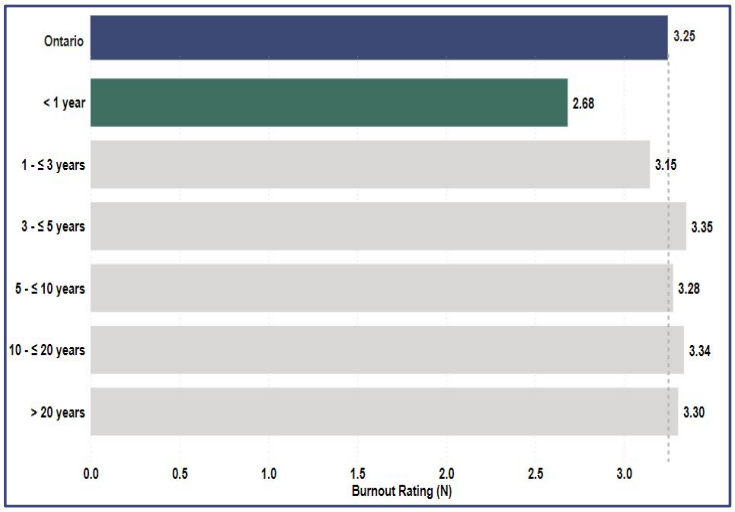
2020



2022



2023



Appendix 2

Vacancy Rate by Ontario Health Sub Region

Adult Critical Care Units

Sub-Region- Adult Population	Vacancy Rate
Central West	29.8%
North East	28.8%
North Simcoe Muskoka	27.2%
South East	24.6%
Central	24.2%
Champlain	24.0%
Erie St. Clair	21.8%
Central	21.5%
Toronto Central	20.5%
Mississauga Halton	17.1%
South West	17.1%
Central East	16.8%
Waterloo Wellington	14.4%
North West	13.3%
Hamilton Niagara Haldimand Brant	12.6%
Ontario	**20.7%**

Paediatric Critical Care Units

Sub-Region- Paediatric Population	Vacancy Rate
Champlain	33.7%
South West	25.8%
Toronto Central	19.7%
South East	7.3%
Hamilton Niagara Haldimand Brant	1.2%
Ontario	**17.6%**

Neonatal Intensive Care Units

Sub-Region- Neonatal Population	Vacancy Rate
Champlain	17.5%
South East	16.3%
Toronto Central	15.6%
Central East	12.7%
Waterloo Wellington	12.0%
Central	11.4%
Mississauga Halton	11.0%
Erie St. Clair	8.3%
North East	8.1%
South West	7.1%
Hamilton Niagara Haldimand Brant	6.7%
Central West	6.0%
North West	5.7%
North Simcoe Muskoka	5.3%
Ontario	**10.9%**

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