



Injuries

An analysis of falls, transportation-related injuries and neurotrauma in the Southwestern Public Health region

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Summary

This report provides an overview of unintentional injury patterns in the Southwestern Public Health (SWPH) region between 2018 and 2023, with comparisons to Ontario. It focuses on three key areas, including falls, transportation-related injuries and neurotrauma, which contribute substantially to emergency department visits, hospitalizations and deaths. Understanding who is most affected locally and how injury patterns differ from the province helps inform prevention efforts and supports actions to reduce injury-related harm across the lifespan.

Falls

- Between 2018 and 2023, emergency department (ED) visits, hospitalizations and deaths due to falls were significantly higher in the SWPH region compared to Ontario, even when accounting for a larger proportion of older adults locally.
- While the highest rates of ED visits for falls were seen among both the youngest (0-19) and the oldest (65+), those aged 75 and older had a much higher likelihood of being admitted to the hospital for their injury.
- Locally, most deaths from falls were among those 65 years of age and older (91.9%).

Transportation-Related Injuries

- Rates of ED visits, hospitalizations and deaths from transportation-related injuries were higher in the SWPH region compared to Ontario between 2018 and 2023, however, there was a general decline in ED visit rates over time.
- Youth and younger adults (aged 10-44) had the highest rates of ED visits and hospitalizations, particularly males, while the highest rates of death occurred among older adults aged 65+.
- The top causes of ED visits included car occupants injured in collisions, cyclists injured in falls and occupants of ATVs or snowmobiles injured in accidents.

Neurotrauma

- Most physician and nurse practitioner visits and ED visits for neurotrauma were for concussions, while most hospitalizations were for more severe injuries, particularly bleeding around the brain (traumatic subdural or subarachnoid hemorrhage).
- Youth aged 15-19, followed by youth aged 10-14, had the highest rates of physician and nurse practitioner visits and ED visits for neurotrauma, while older adults aged 75+ had the highest hospitalization rates, indicating greater injury severity in older age groups.
- Rates of ED visits were higher locally compared to the province, with similar rates seen between males and females locally. In comparison, females had higher rates of physician and nurse practitioner visits, while males had higher rates of hospitalizations.

Injuries

Introduction

Injuries affect individuals, families and communities across the lifespan. They include a wide range of events that result in physical harm, from minor incidents to those causing long-term disability or death. While injuries are often described as “accidents”, most are predictable and largely preventable. They arise from a combination of individual behaviours, environmental conditions, and broader social and policy factors.

The burden of injury is substantial. Injuries are a leading cause of emergency department visits, hospitalizations and premature mortality. In 2019 alone, injuries were estimated to cost Ontario 12.2 billion dollars, including direct and indirect costs.¹ Short-term and long-term disabilities were a major component of the cost, which may impact an individual’s quality of life.¹

The SWPH region includes many rural communities, which may influence local injury patterns and prevention needs. Rural populations can experience unique injury-related challenges associated with transportation, recreation, workplace activities and access to services. Some of the injury patterns observed in the SWPH region may reflect challenges commonly experienced in rural communities, highlighting the importance of prevention strategies that consider local community context.

Preventing injuries requires coordinated efforts across multiple sectors, extending beyond the health system. Effective injury prevention depends on collaboration among transportation, police, education, housing, workplaces and community organizations, supported by policies that promote safety. By working together, these sectors can address the root causes of injury and create safer conditions for people of all ages.

Detailed information is presented for three types of injuries in this report, including falls, transportation-related injuries and neurotraumas. These were selected because they were among the leading causes of hospital care and/or deaths related to injuries (Figure 1) and are

not covered in other SWPH Health Status Reports. More information on intentional self-harm can be found in the [Mental Health Report \(2024\)](#). Information regarding unintentional drug poisoning, a substantial subset of unintentional poisonings, was detailed in the [Adult Substance Use & Harms \(Opioids\) in the Southwestern Public Health Region \(2024\)](#) report and, as such, is not included in this report.

Figure 1. Leading causes of injury related hospital care and mortality in the SWPH region

Injury-related emergency department visits

1. Falls
2. Struck by or against an object
3. Cut or pierced by an object
4. Overexertion
5. Transportation-related injuries

Injury-related hospitalizations

1. Falls
2. Intentional self-harm
3. Transportation-related injuries
4. Neurotraumas
5. Unintentional poisoning

Injury-related deaths

1. Falls
2. Unintentional poisoning
3. Intentional self-harm
4. Transportation-related injuries

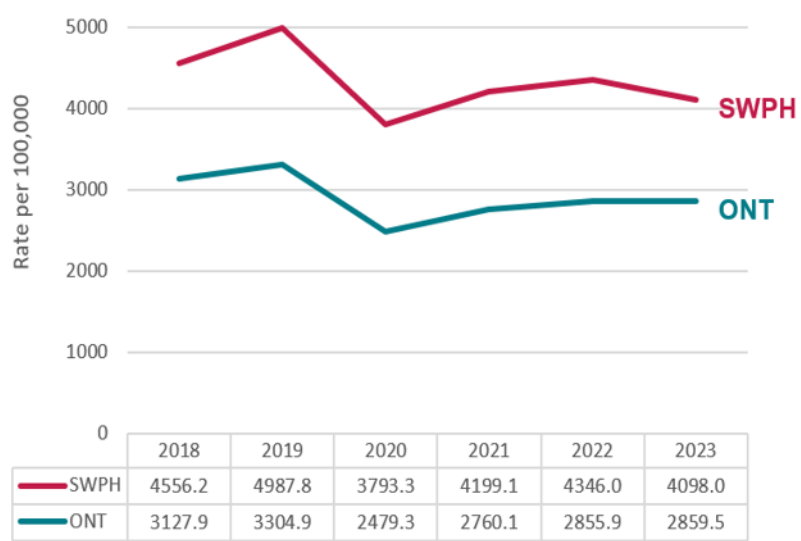
Falls

Falls are a leading cause of injury-related hospital care and death, particularly among older adults. They are at greater risk of serious complications from falls, such as fractures, head injuries and loss of independence.² In the SWPH region, where the population includes a relatively high proportion of older adults, understanding fall-related injuries is especially important for prevention planning.

Emergency Department Visits

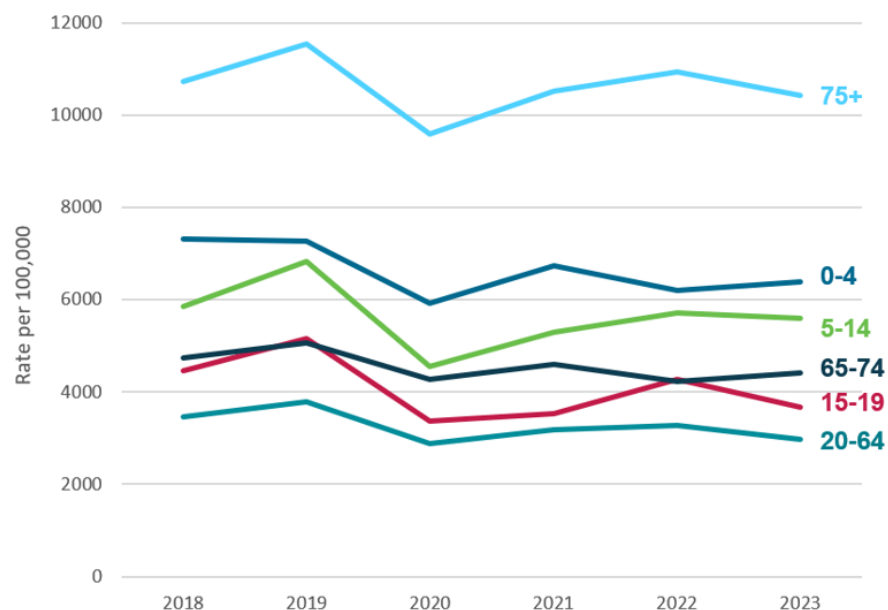
Emergency department (ED) visits for falls were significantly higher in the SWPH region compared to the province from 2018 to 2023 (Figure 2). This difference remains even after adjusting for age. Rates are presented per 100,00 population and were age-standardized. This means the rates were adjusted to account for differences in the population's age distribution, since older adults are more likely to experience falls. By doing this, we can make a fair comparison between SWPH and Ontario and better understand whether falls are more common overall, rather than simply reflecting that SWPH has more older adults proportionately.

Figure 2. Age-standardized rates of emergency department visits for falls, all ages, SWPH region and Ontario, 2018-2023



The rate of ED visits for falls varied by age group. The highest rates were among individuals 75 years of age and older. This was followed by those 4 years of age and younger. Overall, rates were higher among those aged 0-19 years and 65+, compared to adults aged 20-64 (Figure 3).

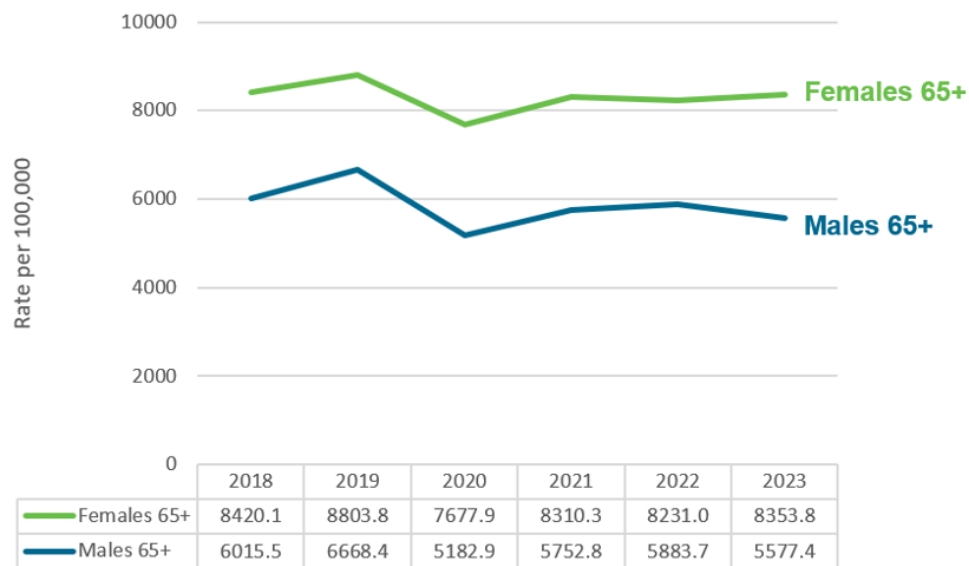
Figure 3. Age-specific rates of emergency department visits for falls, SWPH region, 2018-2023



Examining ED visits for falls among people aged 0-19 years in more detail, the most common causes of falls include falls from slipping, tripping or stumbling (24.7%), falls from bumping against an object (11.9%), falls involving playground equipment (11.3%) and falls involving ice-skates, skis, sport boards or in-line skates (10.6%). While the location of the fall was not specified in over half of records (not recorded at the time of treatment), among those with location information, the most common settings were home, school or a sports/athletics area. Rates of ED visits for falls were similar between males and females in this age group.

Among those aged 65 and over, most ED visits for falls were a result of slipping, tripping or stumbling (33.0%), bumping against an object (19.0%) or a fall on stairs or steps (9.2%). Just under half of falls in this age group had an unspecified place of occurrence; among those with recorded location information, home or a residential institution were most common. Females had a higher rate of ED visits due to falls in this age group compared to males (Figure 4). The higher rates among females were also seen among Canadians overall, so this trend is not unique to the SWPH region.²

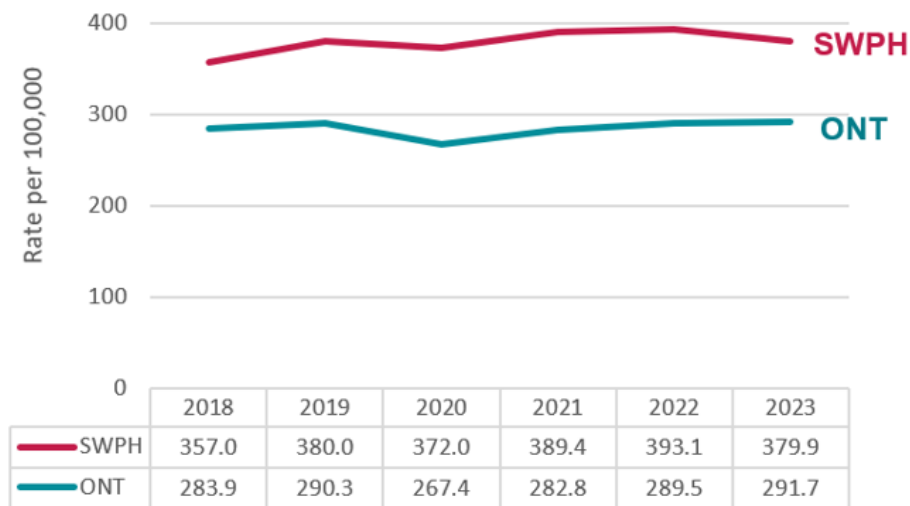
Figure 4. Rates of emergency department visits for falls among males and females aged 65+, SWPH region, 2018-2023



Hospitalizations

Age-standardized hospitalization rates for falls were significantly higher in the SWPH region compared to Ontario, remaining relatively steady between 2018 and 2023 (Figure 5).

Figure 5. Age-standardized rates of hospitalizations for falls, SWPH region and Ontario, 2018-2023



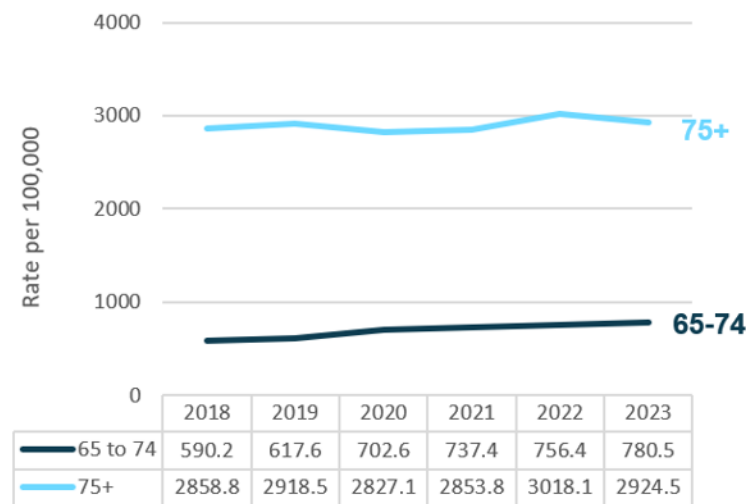
Locally, those under the age of 65 were far less likely to be hospitalized due to a fall compared to those aged 65 and older. The ratio of ED visits for falls compared to hospital admissions for falls was 23.8 to 1 for people aged 0-64, 6.5 to 1 for people aged 65-74 and 3.7 to 1 for people aged 75 and older (Figure 6). This pattern suggests that falls among older adults are more likely to result in serious injury requiring hospitalization, whereas falls among younger individuals are more often treated and discharged from the ED.

Figure 6. Ratio of ED visits for falls compared to hospitalizations for falls by age group, SWPH region, 2018-2023 combined



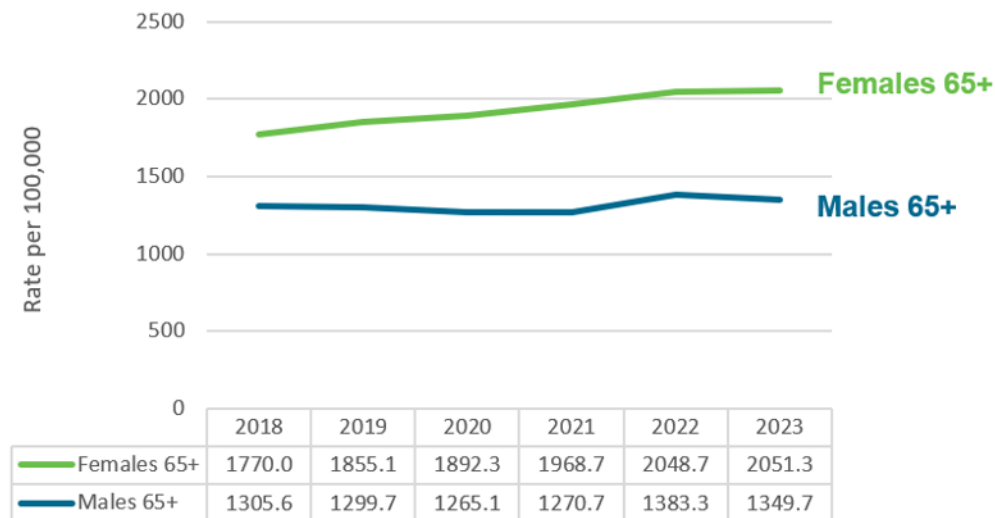
The rate of hospitalizations due to a fall among those aged 75 years and older was around 4x higher than that of those aged 65-74 (Figure 7). This pattern is consistent with provincial data, where hospitalization rates also increase substantially with age. While SWPH does not show a larger age gap than Ontario, hospitalization rates are higher locally for both age groups, suggesting a higher overall burden of falls.

Figure 7. Rates of hospitalizations for falls among residents aged 65+, SWPH region, 2018-2023



Among those aged 65 and over, females had higher rates of hospitalizations for falls compared to males (Figure 8). The rate among females increased between 2018 and 2023, while the rate among males remained similar.

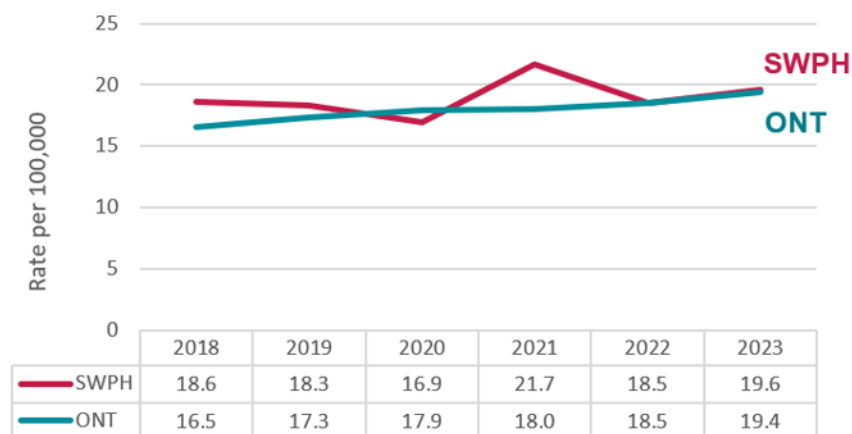
Figure 8. Rates of hospitalizations for falls among males and females aged 65+, SWPH region, 2018-2023



Deaths

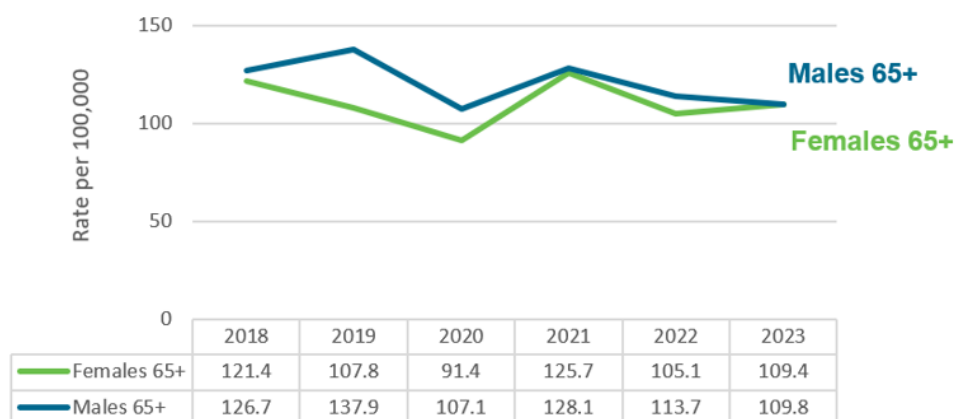
Between 2018 and 2023, the SWPH region had similar rates of deaths from injuries due to falls compared to the province (Figure 9).

Figure 9. Age-standardized rates of deaths from injuries due to falls, SWPH region and Ontario, 2018-2023



Locally, most deaths due to falls between 2018 and 2023 were among those 65 years of age and older (91.9%). In recent years, the rates of deaths due to falls among males and females were similar in this age group (Figure 10).

Figure 10, Rates of deaths from falls among males and females aged 65+, SWPH region, 2018-2023



Transportation-Related Injuries

Transportation-related injuries include a wide range of incidents involving land-based travel, such as motor vehicle collisions, pedestrian and cyclist injuries and incidents involving off-road or animal-drawn vehicles. Given the breadth of circumstances included within this category, the results presented provide a high-level overview of hospital care and mortality data. This summary is intended to support general surveillance and planning. More detailed analyses of specific injury types, such as cycling injuries or pedestrian safety, can be explored further through targeted data requests.

Emergency Department Visits

The SWPH region had higher rates of emergency department visits for transportation-related injuries compared to Ontario between 2018 and 2023 (Figure 11). While the rate decreased locally over this period, it remained higher than the provincial rate in 2023. Males had a higher rate compared to females (Figure 12).

Figure 11. Rates of emergency department visits for transportation-related injuries, SWPH region and Ontario, 2018-2023

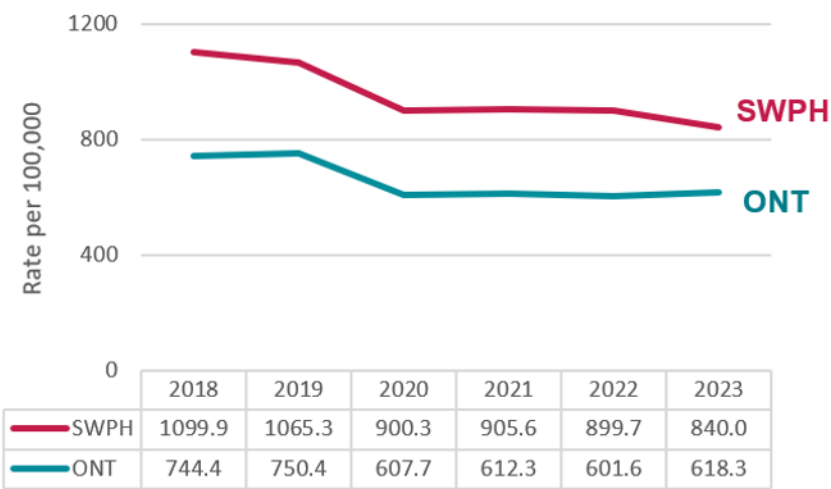
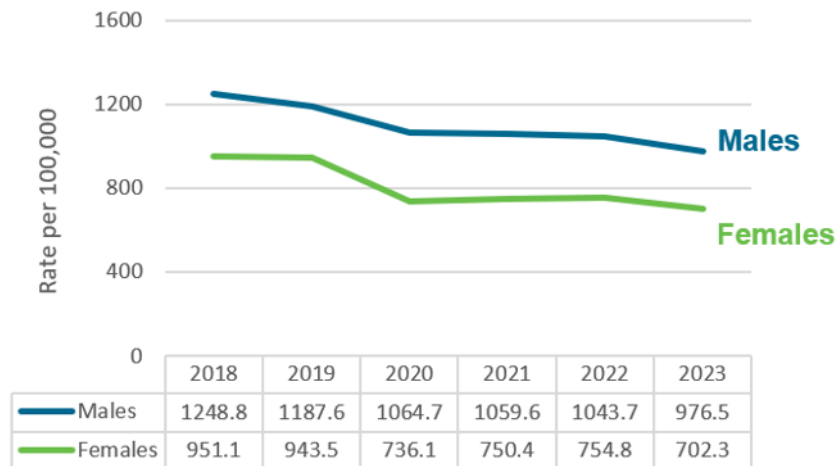
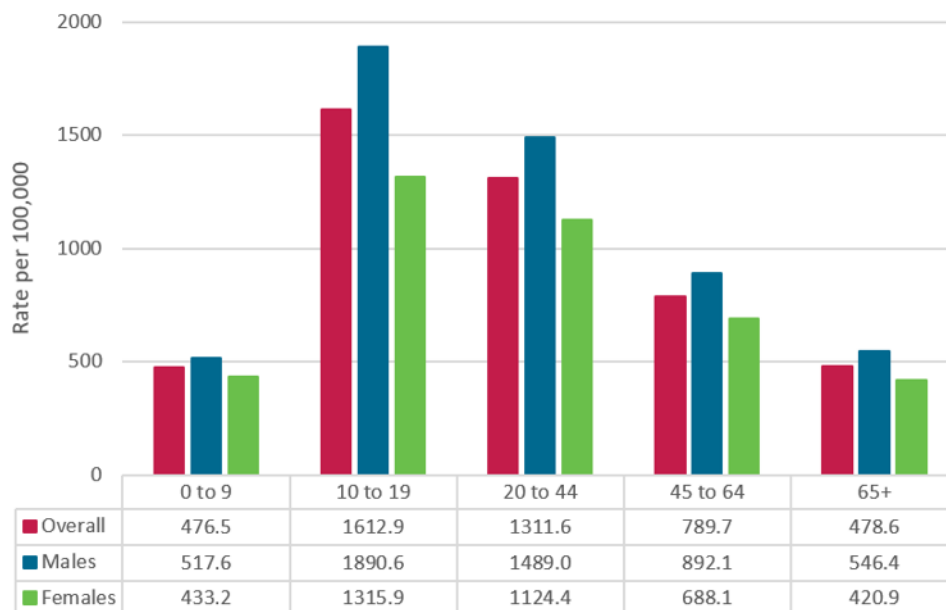


Figure 12. Rates of emergency department visits for transportation-related injuries among males and females, SWPH region, 2018-2023



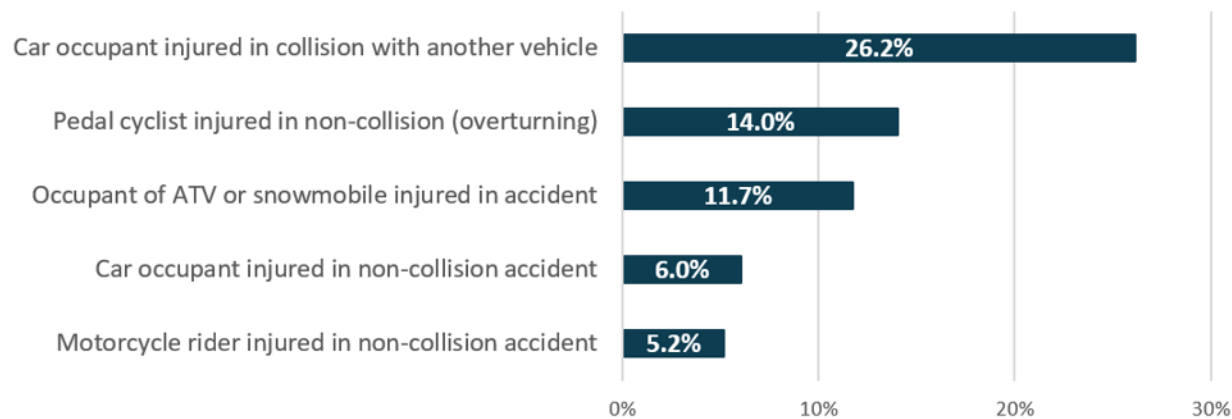
Combining data over a six-year period, ED visit rates for transportation-related injuries were highest among adolescents and younger adults aged 10-44 (Figure 13). Rates rose sharply starting in the 10-19 age group, which had the highest overall rate and then steadily decreased with increasing age. Differences between males and females were most notable in the 10-19 age group, with higher rates among males. In contrast, rates for males and females were similar in younger children and older adults, with the gap between sexes narrowing as age increased.

Figure 13. Six-year average rate of emergency department visits for transportation-related injuries by age group and sex, SWPH region, 2018-2023 combined



Between 2018 and 2023, one in four ED visits for injuries related to land transport accidents were the result of a car occupant being injured in a collision with another vehicle (26.2%) (Figure 14). This was followed by cyclists being injured in a fall, without colliding with another vehicle or object (14.0%) and occupants of ATVs or snowmobiles being injured in an accident (11.7%).

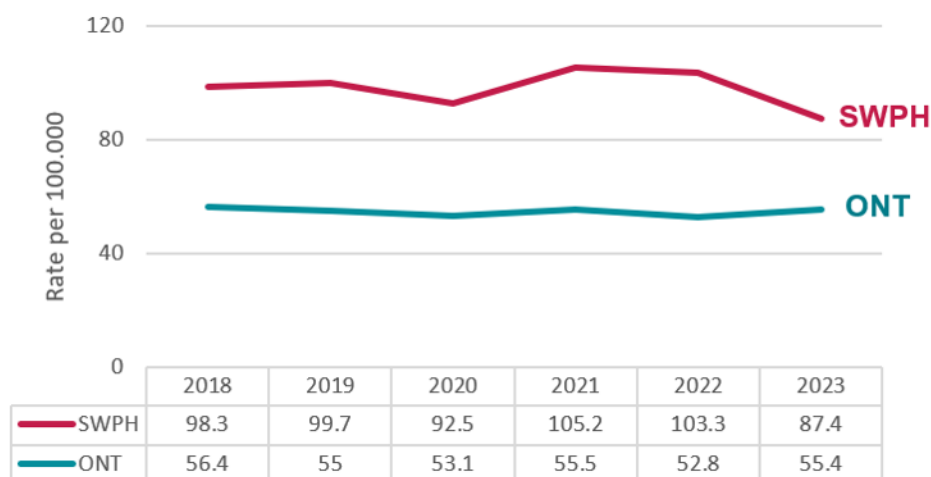
Figure 14. Top 5 causes of emergency department visits for transportation-related injuries, SWPH region, 2018-2023



Hospitalizations

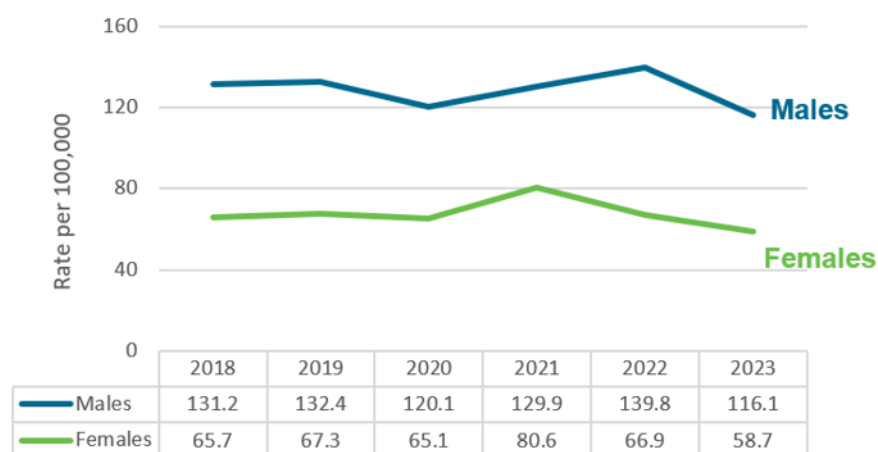
Rates of hospitalizations for transportation-related injuries were higher in the SWPH region compared to Ontario between 2018 and 2023 (Figure 15).

Figure 15. Rates of hospitalizations for transportation-related injuries, SWPH region and Ontario, 2018-2023



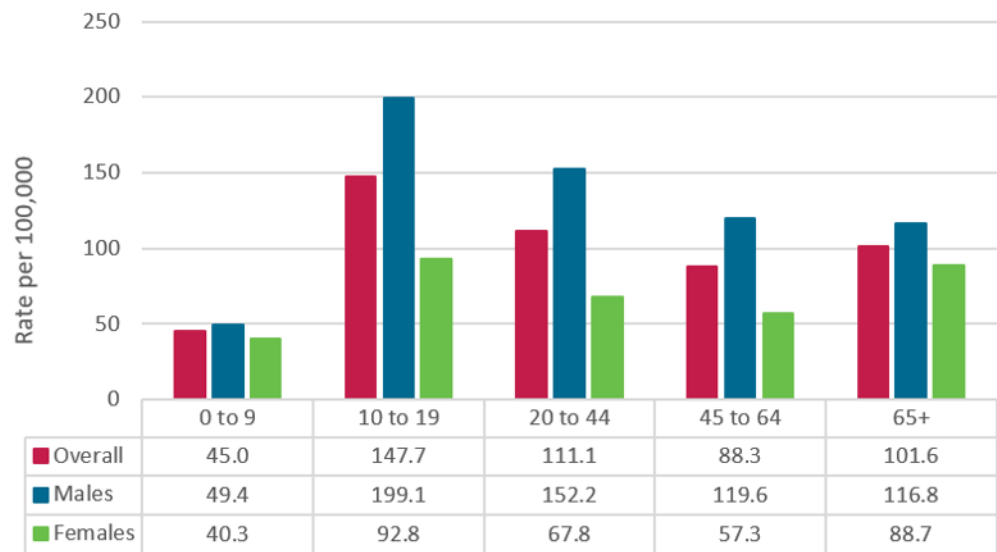
Similar to ED visit rates, rates of hospitalizations for transportation-related injuries were higher among males in the SWPH region compared to females between 2018 and 2023 (Figure 16).

Figure 16. Rates of hospitalizations for transportation-related injuries among males and females, SWPH region, 2018-2023



Similar to ED visit rates, hospitalization rates were highest among 10–19-year-olds, with the largest rate difference between males and females also occurring in this group (Figure 17). The rate of hospitalization was relatively high among those aged 65+ compared to their ED rate. This suggests that injuries in older adults are more likely to be severe or that older adults are more likely to be admitted for the same injury.

Figure 17. Six-year average rate of hospitalizations for transportation-related injuries by age group and sex, SWPH region, 2018-2023 combined



Deaths

The rates of deaths due to transportation-related injuries were higher in the SWPH region compared to Ontario between 2018 and 2023 (Figure 18). Although the local rate increased in 2023, this estimate is based on small counts and is subject to greater year-to-year variability.

Figure 18. Rates of deaths due to transportation-related injuries, SWPH region and Ontario, 2018-2023

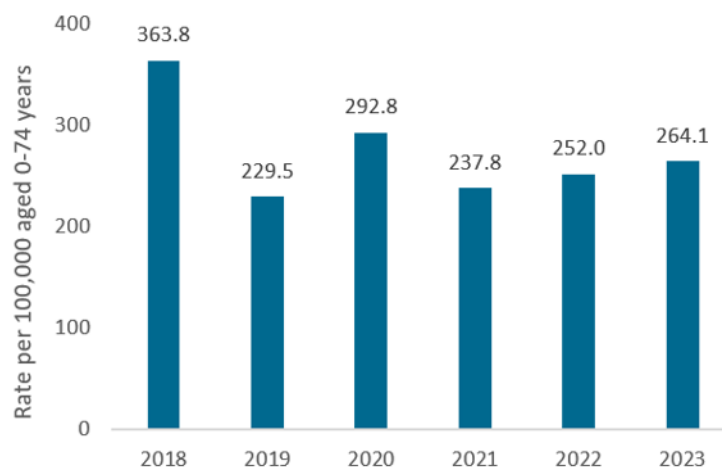


Between 2018 and 2023, males had a higher rate of death due to transportation-related injuries compared to females locally (11.1 vs. 6.4 deaths per 100,000 population). While those aged 10-19 had the highest rates of ED visits and hospitalizations, the highest rate of death due to transportation-related injuries was among those aged 65 and over.

Potential years of life lost (PYLL) is a measurement that helps quantify premature deaths. This measurement considers deaths that occur under the age of 75 to be premature. Using this measurement, if someone died at the age of 40, for example, there would be 35 potential years of life lost.

In 2023, there were 264.1 PYLL due to transportation-related injuries per 100,000 population under the age of 75. This was lower than the peak seen in 2018 at 363.8 (Figure 19).

Figure 19. Rate of potential years of life lost (PYLL) to deaths from transportation-related injuries, SWPH region, 2018-2023



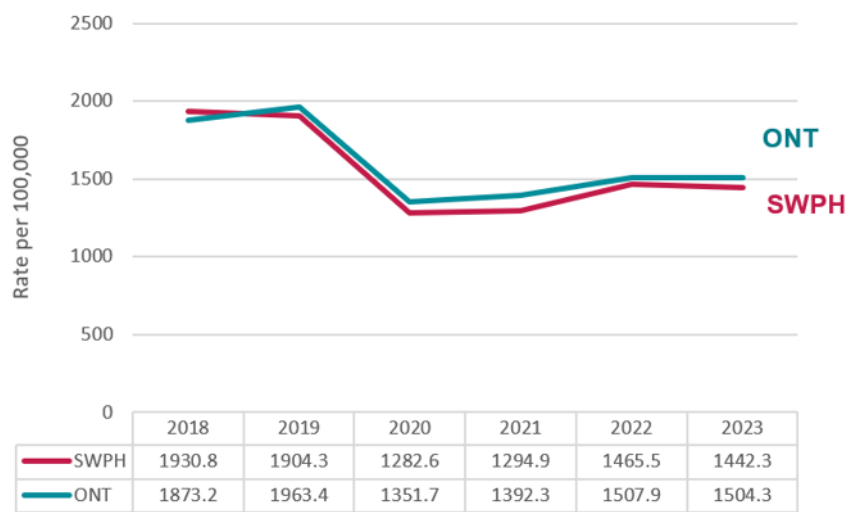
Neurotrauma

Neurotrauma refers to injuries involving the brain or spinal cord. This category includes conditions such as concussions, as well as other traumatic brain or spinal cord injuries.

Physician and Nurse Practitioner Visits

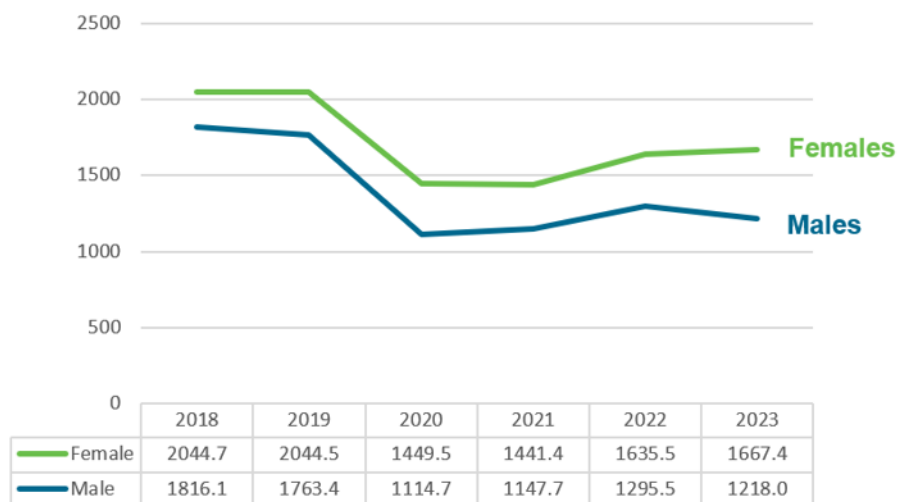
Locally, visits to physicians and nurse practitioners for neurotrauma decreased in 2020, compared to the previous two years (Figure 20). While rates increased between 2020 and 2022, they have not returned to pre-pandemic levels. Most visits between 2018 and 2023 were for concussions (49.9%) or other head injuries (41.6%). Local rates were similar to the province during this time.

Figure 20. Rates of physician and nurse practitioner visits for neurotrauma, SWPH region, 2018-2023



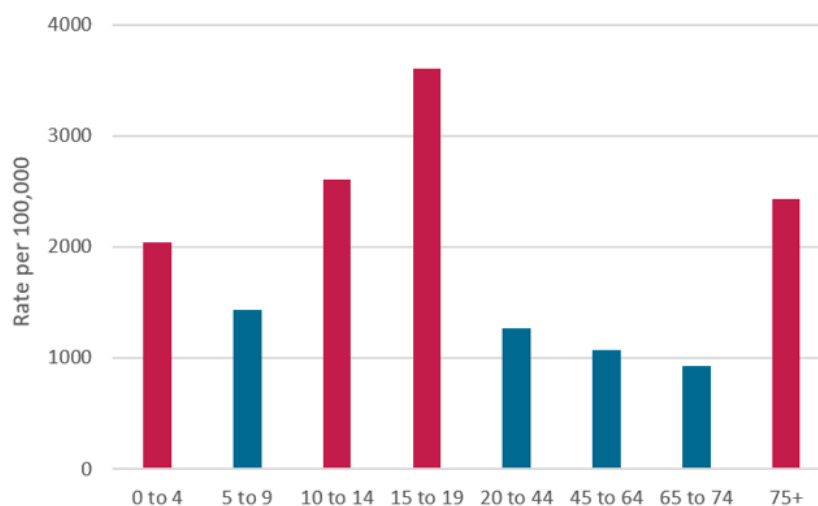
Rates of physician and nurse practitioner visits for neurotrauma were higher among females compared to males in the SWPH region (Figure 21).

Figure 21. Rates of physician and nurse practitioner visits for neurotrauma among males and females, SWPH region, 2018-2023



Examining physician and nurse practitioner visits for neurotrauma by age group, the highest rates are seen among those aged 15-19, followed by those aged 10-14, 75+ and 0-4 (Figure 22).

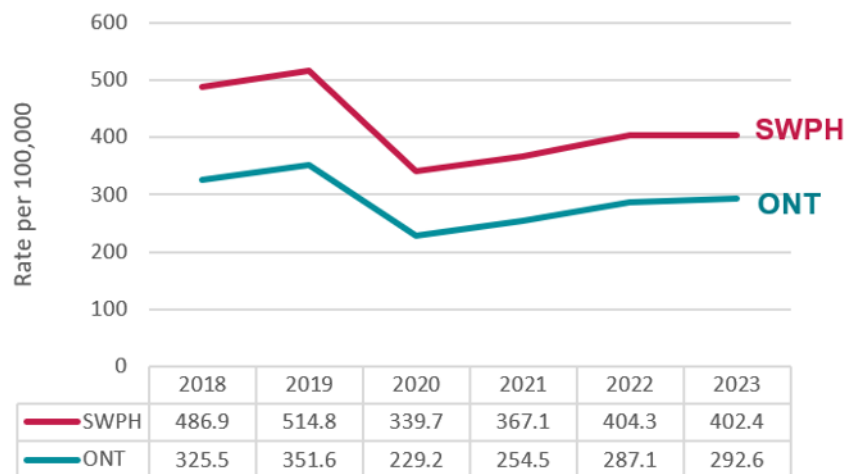
Figure 22. Six-year average rate of physician and nurse practitioner visits for neurotrauma by age group, SWPH region, 2018-2023 combined



Emergency Department Visits

Between 2018 and 2023, rates of emergency department visits for neurotrauma were consistently higher in the Southwestern Public Health region compared to Ontario (Figure 23).

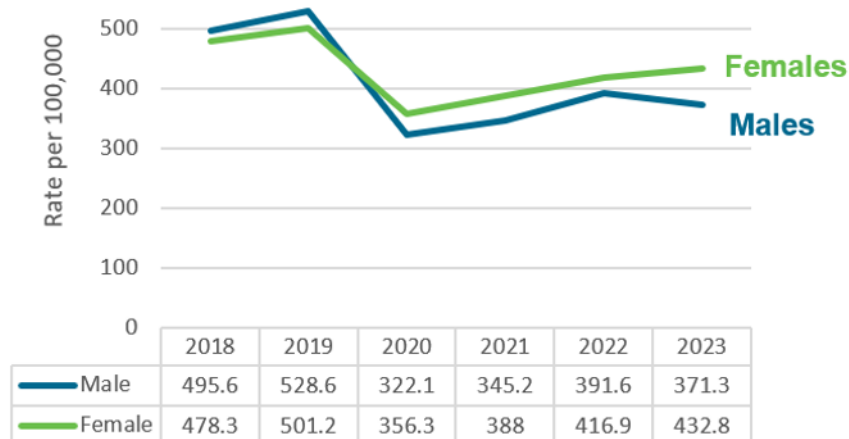
Figure 23. Rates of emergency department visits for neurotrauma, SWPH region and Ontario, 2018-2023



Neurotraumas include both traumatic brain injuries and spinal cord injuries. One type of traumatic brain injury is a concussion. Between 2018 and 2023 in the SWPH region, about 4 in 5 ER visits for neurotrauma were for concussions specifically (79.3%).

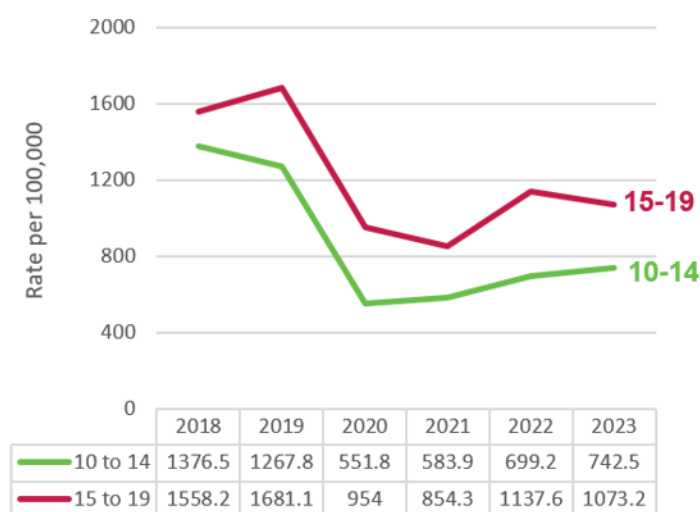
Males and females in the SWPH region had similar rates of ED visits for neurotraumas between 2018 and 2023 (Figure 24).

Figure 24. Rates of emergency department visits for neurotrauma among males and females, 2018-2023, SWPH region



SWPH residents aged 15-19, followed by those aged 10-14, had the highest rates of ED visits for neurotrauma compared to other age groups. While rates have increased since 2020, they remain lower compared to 2018 and 2019 (Figure 25).

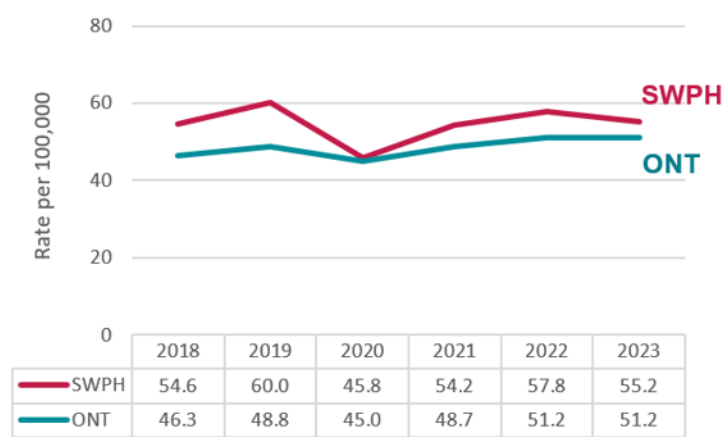
Figure 25. Rates of emergency department visits for neurotrauma by age group, 2018-2023, SWPH region



Hospitalizations

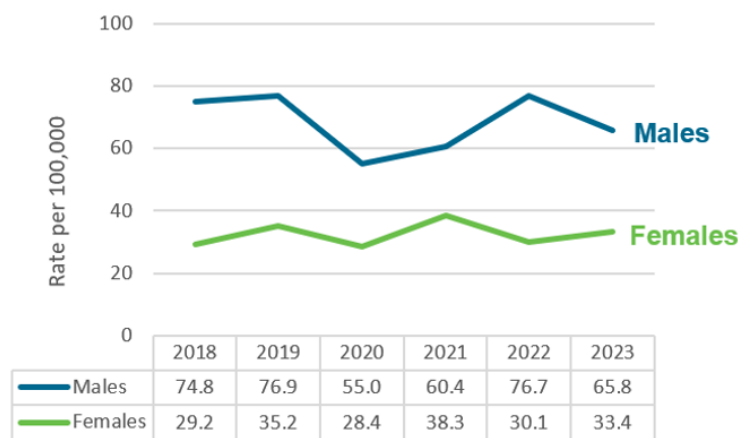
Hospitalization rates for neurotrauma were similar in the SWPH region compared to the province (Figure 26). While the majority of ED visits for neurotrauma were for concussions, most hospitalizations for neurotrauma were for other types of traumatic brain injuries. Between 2018 and 2023, most hospitalizations for neurotrauma (57.9%) were due to bleeding around the brain caused by a head injury (traumatic subdural or subarachnoid hemorrhage).

Figure 26. Rates of hospitalizations for neurotrauma, SWPH region and Ontario, 2018-2023



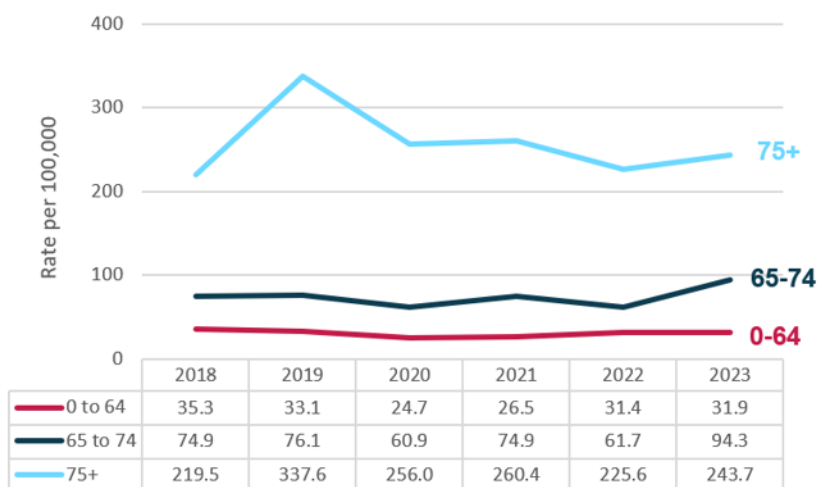
Between 2018 and 2023, males had higher rates of hospitalization for neurotrauma compared to females (Figure 27).

Figure 27. Rates of hospitalization for neurotrauma among males and females, 2018-2023, SWPH region



Residents aged 75 and older had the highest rates of hospitalization for neurotrauma, peaking in 2019 (Figure 28).

Figure 28. Rates of hospitalization for neurotrauma by age group, 2018-2023, SWPH region



Conclusion

This report highlights the significant and preventable burden of unintentional injuries in the SWPH region. Preventing injuries requires coordinated efforts across multiple sectors, extending beyond the health system. These findings may be of interest to transportation and road safety partners seeking to inform planning and prevention efforts for transportation-related injuries. SWPH is currently working with partners and municipalities through age-friendly community initiatives to support older adults and help reduce fall related injuries. Given the SWPH region includes many rural communities, local injury prevention efforts may also benefit from approaches that consider rural transportation patterns, recreation, occupational exposures and access to services. This data provides an important foundation for cross-sector collaboration, prioritizing prevention efforts, and guiding future work to reduce injury and improve safety across the lifespan.

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Appendix

ICD-10 codes and OHIP diagnostic codes used to categorize physician and nurse practitioner visits, ED visits, hospitalizations, and deaths due to injuries.

Falls, Unintentional (ED visits, hospitalizations and deaths): ICD-10 Codes W00-W19

Neurotrauma (Physician and nurse practitioner visits): OHIP Diagnostic Codes 802, 803, 805, 806, 850, 854

Neurotrauma (ED visits and hospitalizations): ICD-10 Codes: F07.2, S02.0, S02.1, S02.3, S02.7, S02.8, S02.9, S06 (all codes), S07.1, T90.2, T90.5, S14.0, S14.1, S24.0, S24.1, S34.0, S34.1, S34.3, T06.0, T06.1

Transportation-Related Injuries (ED visits, hospitalizations and deaths): ICD-10 Codes: V01-V89



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