

HEALTH SURVEILLANCE INDICATORS: CHILD AND YOUTH UNINTENTIONAL INJURY



Public Health Relevance

Unintentional injuries are the leading cause of death for children and youth aged 1 to 24 years. Injuries can also result in emergency department visits, hospitalizations and adverse health outcomes like impairments and disabilities such as blindness, spinal cord or brain injuries. The large majority of injuries are both predictable and preventable. Most injuries can be prevented by recognizing and addressing unsafe environments, conditions and behaviours.

The rates and types of injury for children and youth are notably different than those for adults and seniors, which are described in a separate report. For more information, see Adult and Senior Unintentional Injury.

Highlights

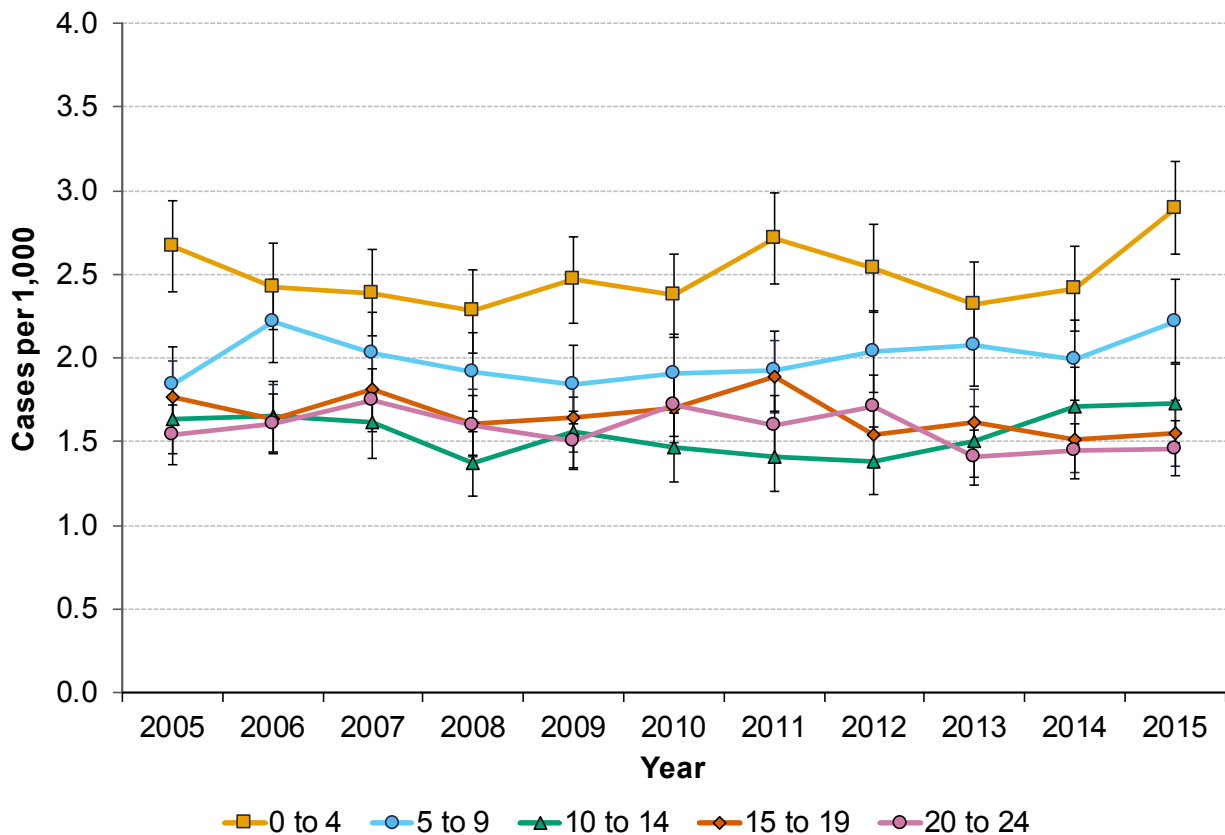
1. In Toronto, the rate of unintentional injuries among children and youth resulting in hospitalizations has remained constant over time, while the rate of emergency department visits has increased.
2. Compared to the rest of Ontario, children and youth in Toronto have lower rates of hospitalizations and emergency department visits for unintentional injuries.
3. Rates of emergency department visits for unintentional injuries among children and youth vary significantly across Toronto by service planning areas and neighbourhoods.
4. The leading causes of unintentional injury vary by age group. Falls, sports or recreation and motor vehicle collisions were common causes of unintentional injury in children and youth.

Trends Over Time

In Toronto, the rate of unintentional injuries among children and youth resulting in hospitalizations has remained constant over time, while the rate of emergency department visits has increased.

Figure 1 shows the rate of hospitalizations for children and youth ages 0 to 24 years in Toronto from 2005 to 2015 by age group. While the rate of hospitalizations has fluctuated over time, there has been no significant overall change during this time period for any age group. Children aged 0 to 4 years were more likely to be hospitalized for unintentional injuries than children and youth in any other age group.

Figure 1: Hospitalization Rate for Unintentional Injuries by Age Group, Children and Youth, Toronto, 2005 to 2015

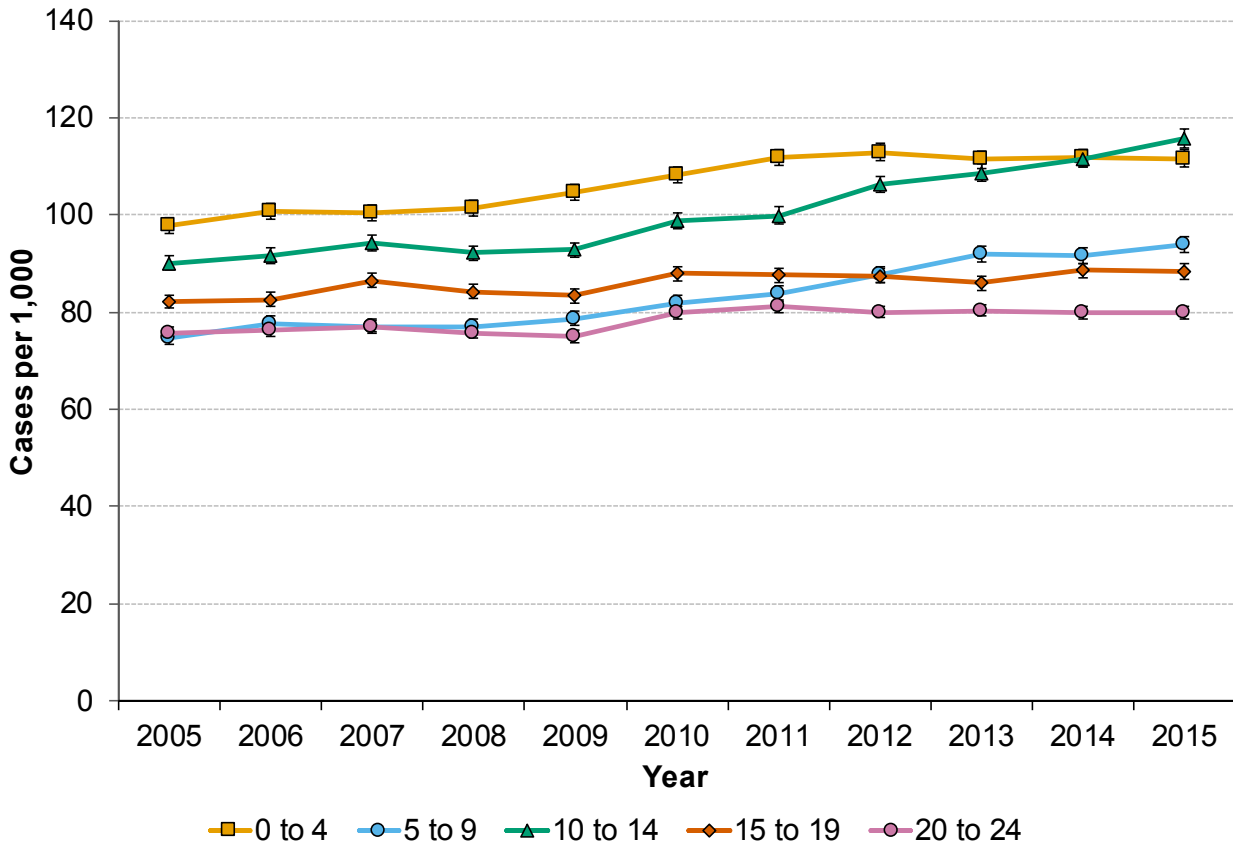


Error bars (I) represent the 95% confidence intervals.

Data Sources: Hospitalization and Population for Toronto, see Data Notes.

Figure 2 shows the rate of emergency department visits for children and youth ages 0 to 24 years in Toronto from 2005 to 2015 by age group. Over this time period, there has been a significant increase in the rate of emergency department visits for all age groups. From 2005 to 2014, children aged 0 to 4 had the highest rates of emergency department visits. However, in 2015, children aged 10 to 14 had the highest rate of emergency department visits.

Figure 2: Emergency Department Visit Rate for Unintentional Injuries, Children and Youth, Toronto, 2005 to 2015



Error bars (I) represent the 95% confidence intervals.

Data Sources: Emergency Department Visits and Population for Toronto, see Data Notes.

Regional Comparisons

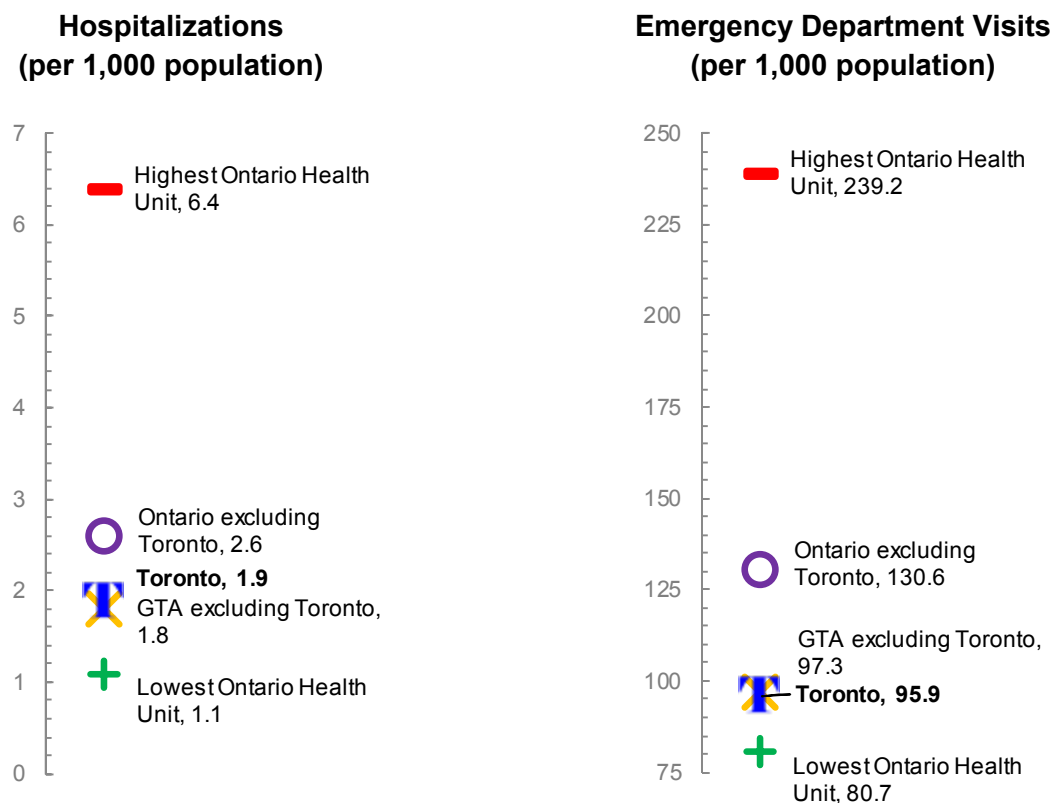
Compared to the rest of Ontario, children and youth in Toronto have lower rates of hospitalizations and emergency department visits for unintentional injuries.

Figures 3a and 3b below show the rate of hospitalization and emergency department visits in Toronto in 2015 compared to the rest of Ontario (Ontario excluding Toronto), the rest of the Greater Toronto Area (GTA excluding Toronto), and the health units in Ontario with the highest and lowest rates.

Toronto's hospitalization rate was not significantly different compared to the rest of the GTA. Compared to the rest of Ontario, Toronto's rate was significantly lower. Toronto ranked 5th of the 36 health units in Ontario, with the first ranked health unit having the lowest (most favourable) rate.

Toronto's emergency department rate was not significantly different compared to the rest of the GTA. Compared to the rest of Ontario, Toronto's rate was significantly lower. Toronto ranked 3rd of the 36 health units in Ontario, with the first ranked health unit having the lowest (most favourable) rate.

Figure 3: Hospitalization and Emergency Department Visit Rates for Unintentional Injury, Children and Youth Combined, Selected Regions in Ontario, 2015



Data Sources: Hospitalization, Emergency Department Visits and Population for Toronto and Larger Areas, see Data Notes.

Toronto Neighbourhood Comparisons

Rates of emergency department visits for unintentional injuries among children and youth vary significantly across Toronto by service planning areas and neighbourhoods.

Table 1 shows rate of hospitalization and emergency department visits by Toronto Public Health service planning areas for children and youth aged 0 to 24 years combined in 2015. Geographic location reflects where people are living at the time they are hospitalized or visit the emergency department.

The rate of hospitalizations was not significantly different by service planning area.

The rate of emergency department visits was significantly higher in Rexdale Etobicoke, York South Humber, Toronto Centre and Danforth East York, indicating a less favourable result for those areas. The rate of emergency department visits was significantly lower in Willowdale Don Mills, West Scarborough and East Scarborough, indicating a more favourable result in those areas.

Table 1: Hospitalization and Emergency Department Visit Rates for Unintentional Injury by Service Planning Area, Children and Youth Combined, Toronto, 2015

CDIP Service Planning Area	Hospitalization (per 1,000 population)	Emergency Department Visit (per 1,000 population)
Rexdale Etobicoke	2.1	102.6 H
York South Humber	2.2	116.7 H
Humber Downsview	2.1	94.8
Willowdale Don Mills	1.7	92.3 L
Toronto Centre	1.9	102.4 H
Danforth East York	1.8	105.6 H
West Scarborough	1.7	82.0 L
East Scarborough	1.9	87.7 L
Toronto	1.9	95.9

H Significantly higher than the Toronto total indicating a less favourable result for that area.

L Significantly lower than the Toronto total indicating a more favourable result for that area.

Data Sources: Hospitalization, Emergency Department Visits and Population for Service Planning Areas, see Data Notes.

Map 1 shows the rate of hospitalizations for 140 Toronto neighbourhoods.

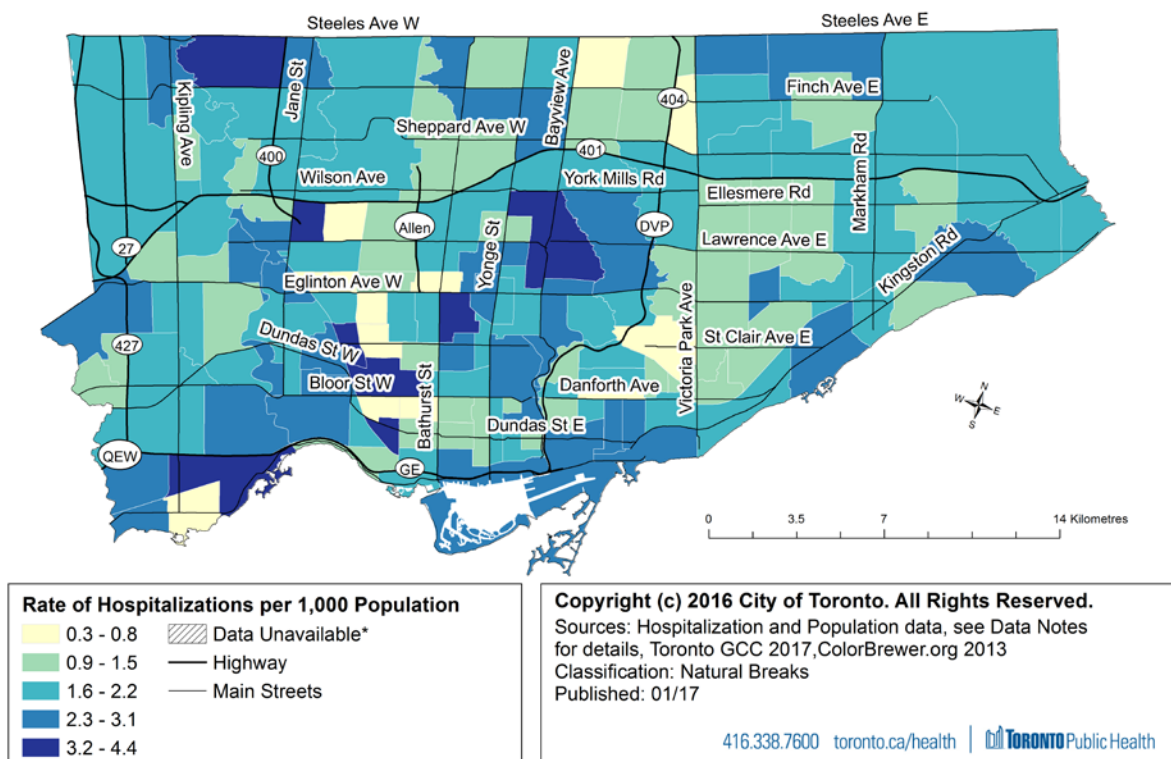
Hospitalization rates ranged from 0.3 to 4.4 per 1,000. Some of the specific neighbourhoods with significantly lower rates included:

- Agincourt North
- Bayview Woods-Steeles
- Beechborough-Greenbrook
- Caledonia-Fairbanks
- Corsa Italia-Davenport
- Danforth Village – Toronto
- Don Valley Village
- Dorset Park
- Dufferin Grove
- Forest Hill North
- Maple Leaf
- New Toronto
- O'Connor-Parkview
- Palmerston-Little Italy
- Pleasant View

Neighbourhoods with significantly higher hospitalization rates were scattered across the city and included:

- Dovercourt-Wallace Emerson-Junction
- Mimico
- Weston-Pellam Park

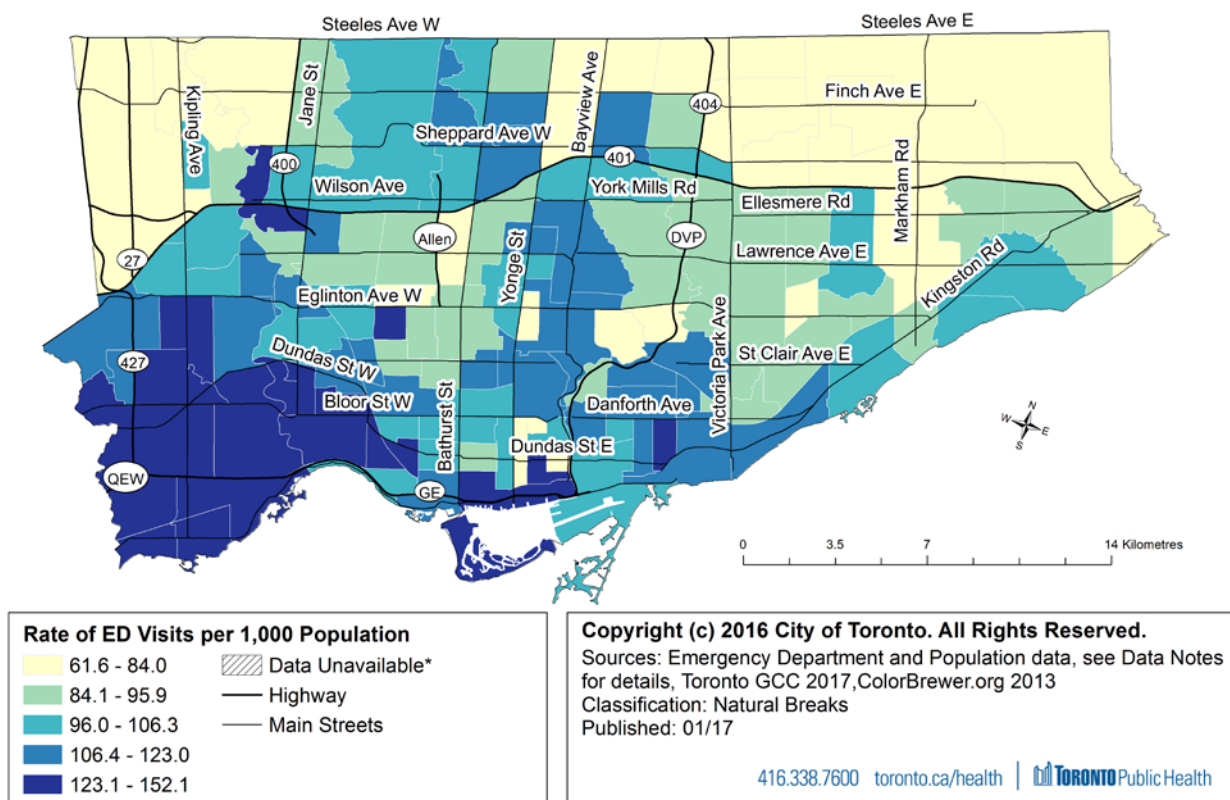
Map 1: Hospitalization Rates for Unintentional Injuries by Neighbourhood, Children and Youth Combined, Toronto, 2015



Map 2 shows the rates of emergency department visits for 140 Toronto neighbourhoods.

Emergency department rates ranged from 61.6 to 152.1 per 1,000 population. Parts of Scarborough, North Etobicoke and North York had groups of neighbourhoods with lower emergency department rates than Toronto as a whole. Neighbourhoods in South Etobicoke and parts of the downtown core had higher emergency department rates than Toronto as a whole. While neighbourhoods in South Etobicoke and parts of the downtown core had high rates of emergency department visits for all age groups, the trend pictured in Map 2 is driven primarily by high rates in the 5 to 9 and 10 to 14 years age group.

Map 2: Emergency Department Visit Rates for Unintentional Injuries by Neighbourhood, Children and Youth Combined, Toronto, 2015

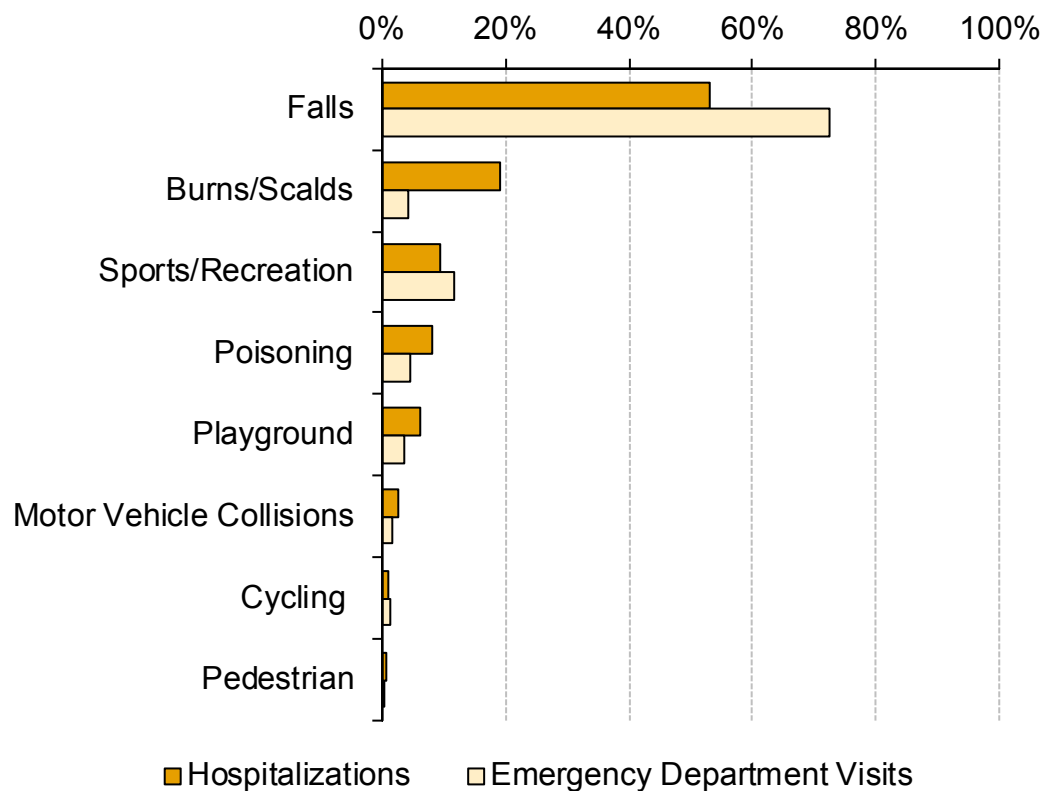


Type of Injury

The leading causes of unintentional injury vary by age group. Falls, sports or recreation and motor vehicle collisions were common causes of unintentional injury in children and youth.

Figure 4 shows the percent of hospitalizations and emergency department visits caused by specific types of unintentional injury for children aged 0 to 4. For children in this age group, the majority of hospitalizations and emergency department visits are caused by falls (53% and 72%, respectively). Burns/scalds, sports/recreation and poisoning are also important causes of unintentional injury in this age group.

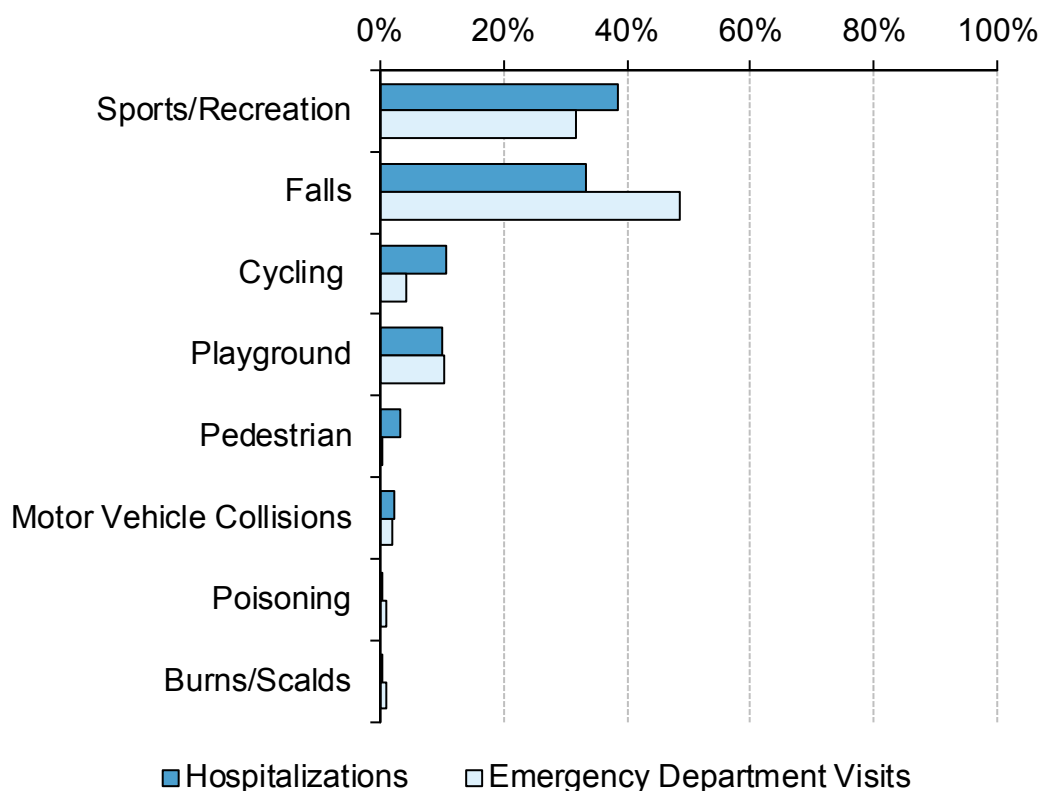
Figure 4: Percent of Hospitalizations and Emergency Department Visits by Type of Unintentional Injury, Children Ages 0 to 4, Toronto, 2015



Data Sources: Hospitalization and Emergency Department Visits, see Data Notes.

Figure 5 shows the percent of hospitalizations and emergency department visits caused by specific types of unintentional injury for children aged 5 to 9. For children in this age group, there are two main causes of injury: sports/recreation and falls. Cycling and playgrounds were also important causes of injury in this age group.

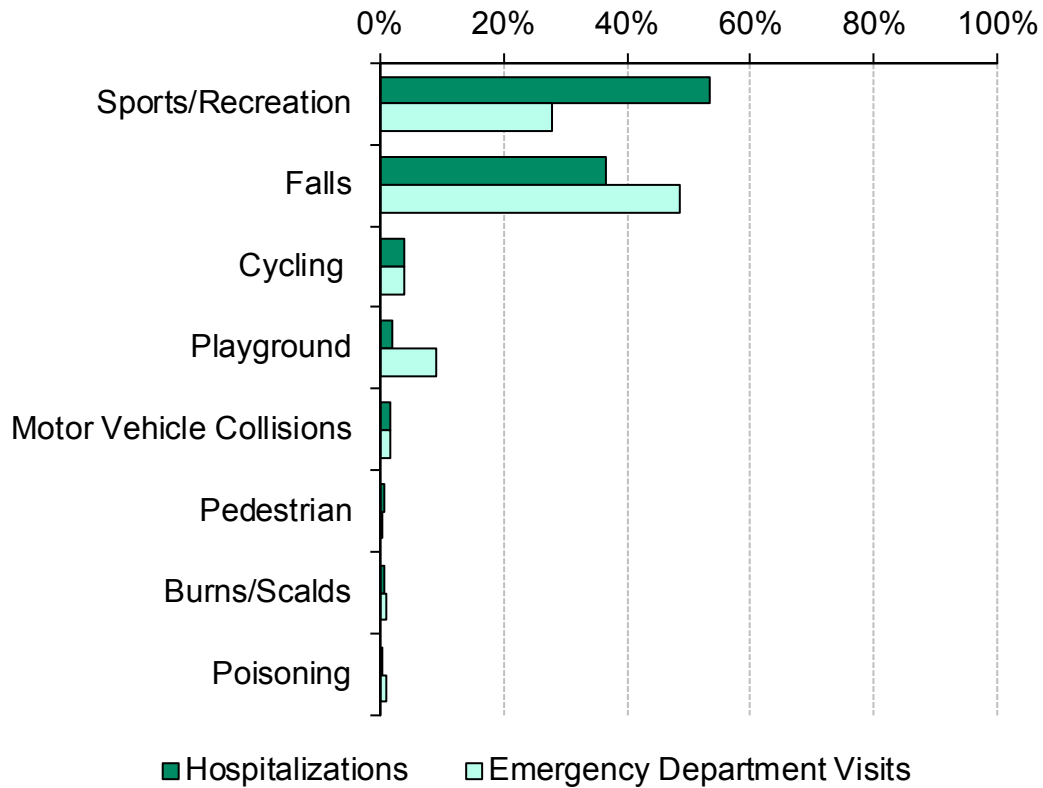
Figure 5: Percent of Hospitalizations and Emergency Department Visits by Type of Unintentional Injury, Children Ages 5 to 9, Toronto, 2015



Data Sources: Hospitalization and Emergency Department Visits, see Data Notes.

Figure 6 shows the percent of hospitalizations and emergency department visits caused by specific types of unintentional injury for children aged 10 to 14. For children in this age group, there are two main causes of injury: sports/recreation and falls. Playgrounds were also important causes of emergency department visits in this age group.

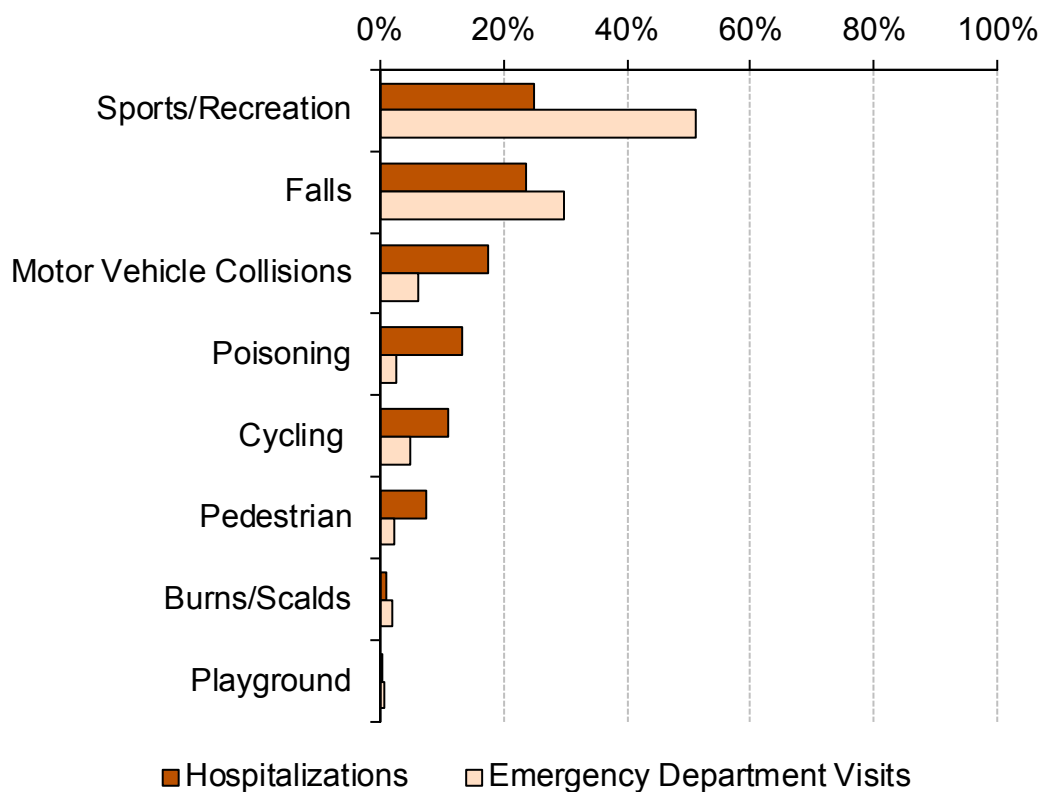
Figure 6: Percent of Hospitalizations and Emergency Department Visits by Type of Unintentional Injury, Children Ages 10 to 14, Toronto, 2015



Data Sources: Hospitalization and Emergency Department Visits, see Data Notes.

Figure 7 shows the percent of hospitalizations and emergency department visits caused by specific types of unintentional injury for youth aged 15 to 19. For youth in this age group sports/recreation and falls were the main causes of both types of injury. Specifically, sports/recreation were the cause of 51% of emergency department visits in this age group. Motor vehicle collisions were also an important cause of hospitalizations for youth in this age group.

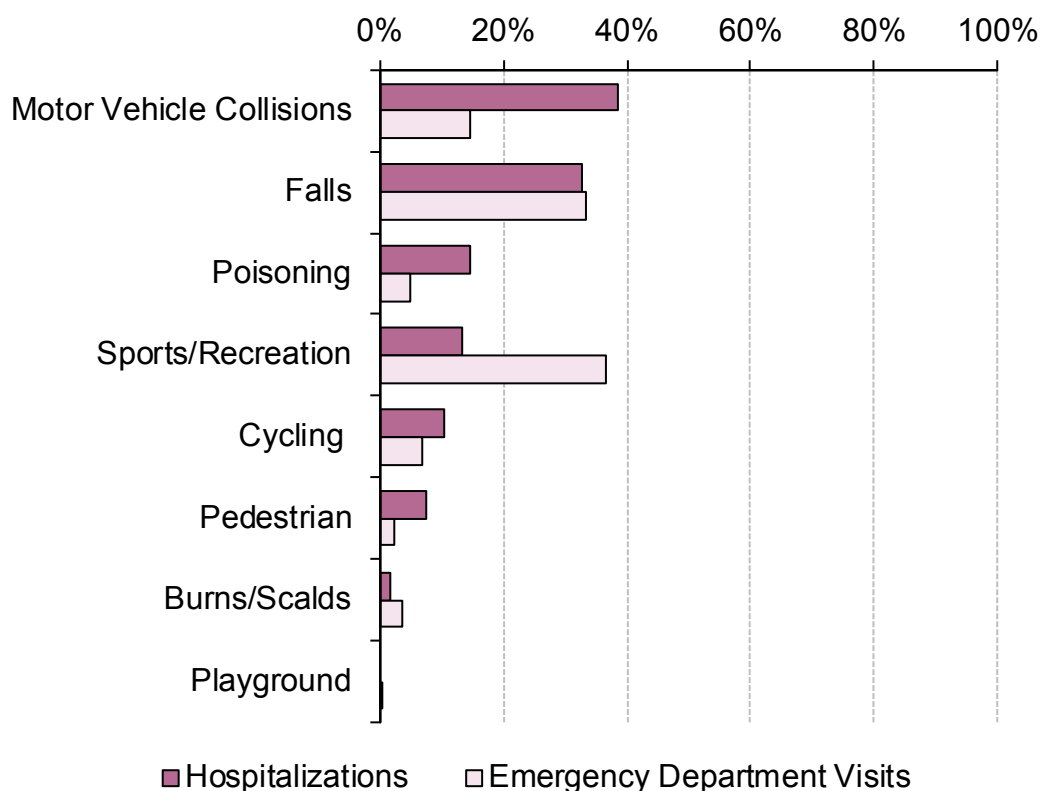
Figure 7: Percent of Hospitalizations and Emergency Department Visits by Type of Unintentional Injury, Youth Ages 15 to 19, Toronto, 2015



Data Sources: Hospitalization and Emergency Department Visits, see Data Notes.

Figure 8 shows the percent of hospitalizations and emergency department visits caused by specific types of unintentional injury for youth aged 20 to 24. For this age group, motor vehicle collisions and falls were the main cause for hospitalizations. Sports/recreation and falls were the main causes of emergency department visits for youth in this age group.

Figure 8: Percent of Hospitalizations and Emergency Department Visits by Type of Unintentional Injury, Youth Ages 20 to 24, Toronto, 2015



Data Sources: Hospitalization and Emergency Department Visits, see Data Notes.

Data Notes

Notes

- The World Health Organization defines injury as "the physical damage that results when a human body is suddenly subjected to energy in amounts that exceed the threshold of physiological tolerance, or from a lack of one or more vital elements". Unintentional injuries include all injuries that occur without intent of harm. Intentional injuries, such as those caused by assault, self-harm or other violence, are not included in this report.
- Significant differences were estimated using overlapping confidence intervals. Although this method is conservative ($\alpha \sim < 0.01$) and most appropriate when comparing mutually exclusive groups, it was chosen as an objective means of making conclusions on population-based data. Multiple comparisons performed in the analysis were not taken into consideration when choosing the level of significance to test.
- Toronto is compared to the rest of Ontario (Ontario with Toronto removed) as opposed to the Ontario total because Toronto comprises a large proportion of the Ontario population. Toronto is also compared to the rest of the Greater Toronto Area (GTA) for the same reason.
- Data used for the regional comparisons normally shows the rates for the Ontario health units with the highest and the lowest rates. The purpose of these comparisons is to show the rate for Toronto relative to other areas in Ontario. If data for the health unit with the lowest rate needs to be suppressed due to small numbers, the rate for the next lowest health unit with sufficient numbers is shown instead.
- For comparisons of smaller geographic areas, any person who could not be linked to a valid Toronto postal code was excluded from the total.
- Neighbourhoods identified as having significantly higher or lower rates than Toronto as a whole do not necessarily represent all such neighbourhoods. Cut-offs are arbitrary. For emergency department visits shown in Map 2, a large proportion of neighbourhoods had a significantly higher or lower rate and it was therefore, not possible to list them all.
- Unintentional injuries include those coded as ICD-10 V01 to X59 and Y85 to Y86. The types of injuries included in this report include: falls (W00 to W01, W03 to W08, W10 to W15, W17 to W19), poisoning (X40 to X49), burns and scalds (X00 to X19 and W92), sports and recreation (W02, W16, W21, W2200 to 2207, W51.00 to 51.07, W67 to 74 and X50), motor vehicle collisions (V20 to V79, V81 to V85, V87, V88, V89.0, V89.2), pedestrian (V01 to V09), cycling (V10 to V19) and playground (W09).

Definitions

Unintentional Injury is any injury that occurs without intent of harm.

95% Confidence Interval is the range within which the true value lies, 19 times out of 20.

Sources

Emergency Department Visits: Ambulatory Emergency External Cause, 2005 to 2015. Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Extracted November 2016. Used in:

- Figures 1, 2, 3, 4, 5, 6, 7 and 8
- Tables 1
- Map 1 and 2

Hospitalization: Inpatient Discharges 2005 to 2015, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: November 2016. Used in:

- Figures 1, 2, 3, 4, 5, 6, 7 and 8
- Tables 1
- Map 1 and 2

Denominator data:

Population for Toronto and Larger Areas: Population Estimates 2005 to 2015, Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO. Date extracted: November 2016. Used in:

- Figures 1, 2, 3, 4, 5, 6, 7 and 8

Population for Neighbourhood or Service Planning Areas: 2011 Canada Census, Statistics Canada. Used in:

- Table 1
- Maps 1 and 2

Health Surveillance Indicator: Child and Youth Unintentional Injury

Category: Injury

Prepared: June, 2017

This indicator report is part of a series that informs the ongoing assessment of Toronto's health status. For a full list of the indicators, please go to: www.toronto.ca/health.