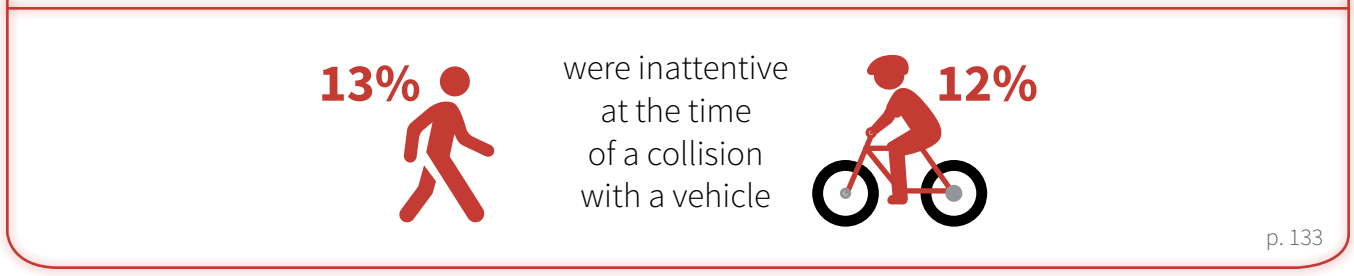
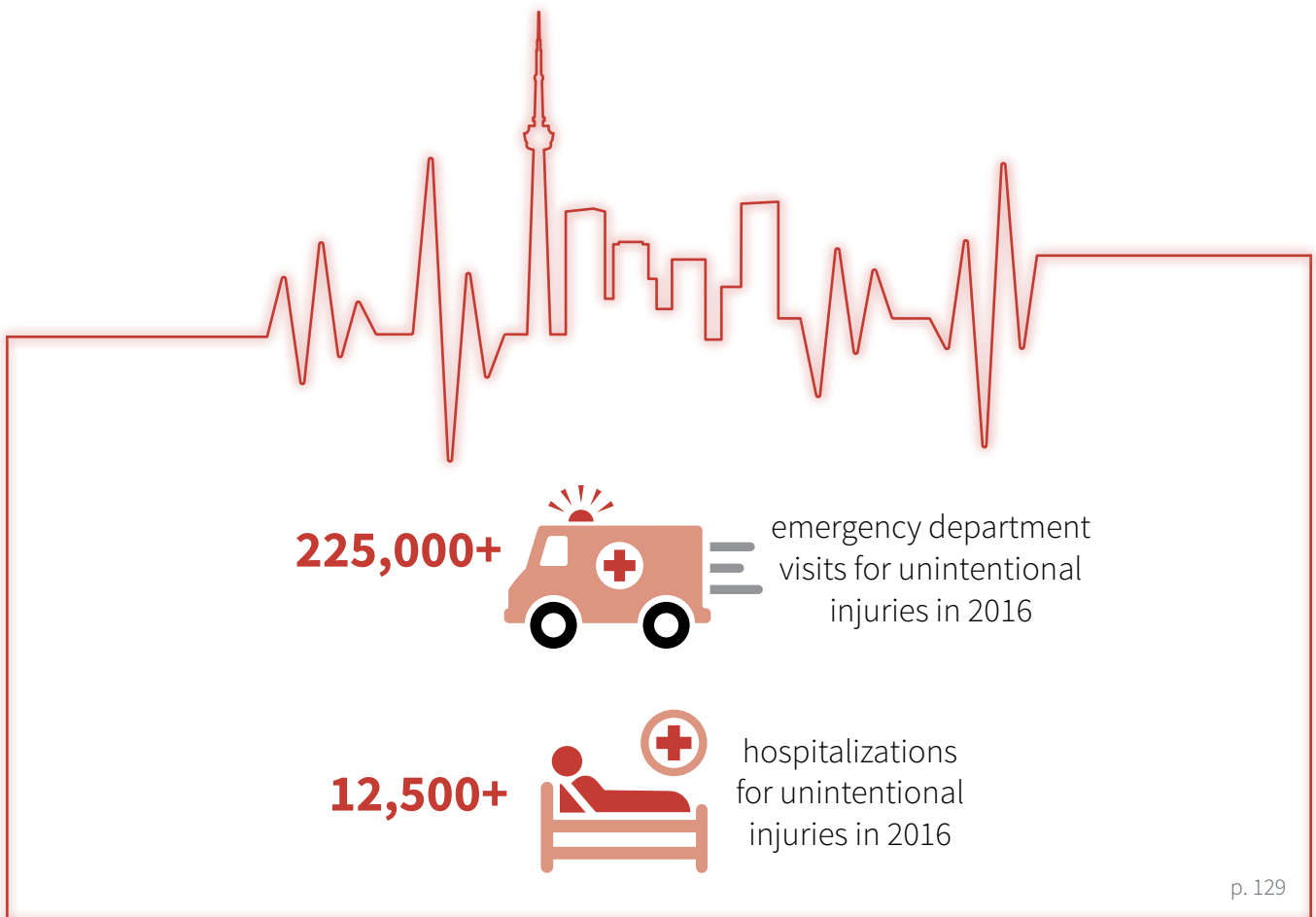


## Introduction

In Canada, the economic burden of injury is increasing, and costs more than heart disease and stroke combined [1]. In Ontario, the total cost associated with unintentional injuries in 2010 was \$7.4 billion of which \$4.7 billion were direct health care costs, and the remainder were indirect [1]. Daily, more than 10,000 Canadians are injured seriously enough to require medical attention [1]. However, the majority of injuries can be prevented [2].

Injuries can be defined by whether they are intentional or unintentional. Intentional injuries can include violence (homicide and assault) (Chapter 2), and self-harm and suicide (Chapter 6). Unintentional injuries represent the majority of injuries and include injuries that are not purposely inflicted, such as those resulting from motor vehicle collisions, drowning, falls, and sports and recreation. Most unintentional injuries are predictable and can be prevented by recognizing and addressing unsafe environments, conditions, and behaviours [2]. The rates and types of unintentional injuries are notably different among adults and seniors compared with children and youth [2] and are important to understand for the development of effective prevention strategies. Unintentional injuries can also vary in their degree of seriousness. They can lead to emergency department visits, hospitalization, being partially or totally disabled, and sometimes death.





## Unintentional Injury Morbidity and Mortality

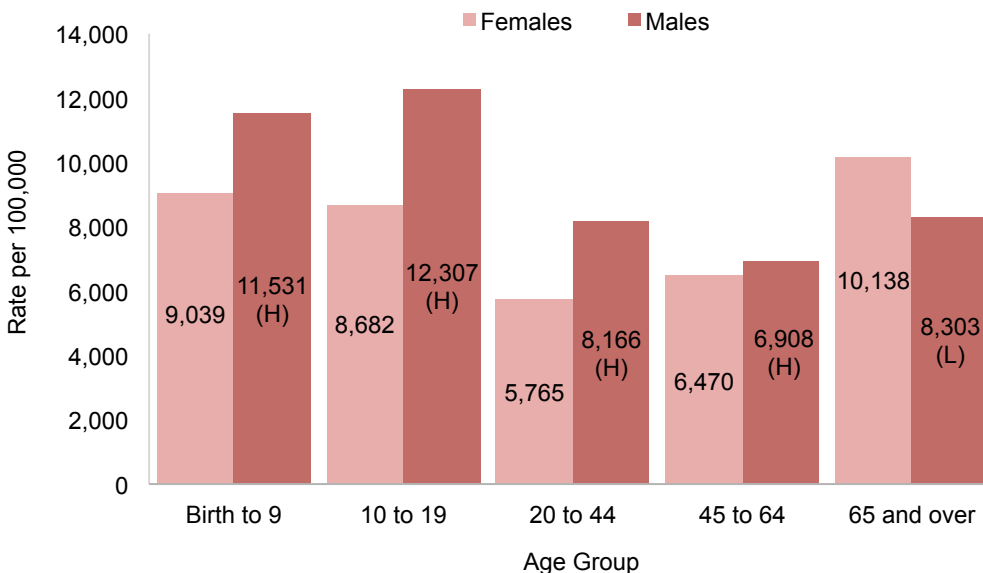
Preventable injury is the leading cause of death for Canadians from one to 44 years of age [1]. Causes of preventable injury in Canada vary by age due to many factors, including exposure to hazards and physical ability [3]. Given Toronto’s aging population (see Chapter 1), this is especially important as older seniors account for the highest rate of hospitalizations.

Among Toronto residents, in 2016:

- There were 227,879 emergency department (ED) visits and 12,589 hospitalizations due to unintentional injuries.
- Males 10 to 19 years of age had the highest rates of ED visits for unintentional injuries (Figure 10.1).

- Hospitalization rates for unintentional injuries among children and youth have remained unchanged since 2007 but rates for ED visits have increased among children 5 to 9 years of age (77 per 1,000 to 99 per 1,000) and children 10 to 14 years of age (94 per 1,000 to 122 per 1,000).
- Adults 65 years of age and over accounted for the largest number of hospitalizations for unintentional injuries. Females in this age group were more likely to be hospitalized for an unintentional injury than males (Figure 10.2).
- The rates of ED visits and hospitalizations for unintentional injuries among most adult age groups remained consistent since 2007. However, there has been an increase among adults aged 75 and over in both ED and hospitalization visits. This may be due to the aging population.

**Figure 10.1: Emergency Department Visit Rates Due to Unintentional Injuries by Age and Sex, Toronto, 2016**



H: Significantly higher than females.

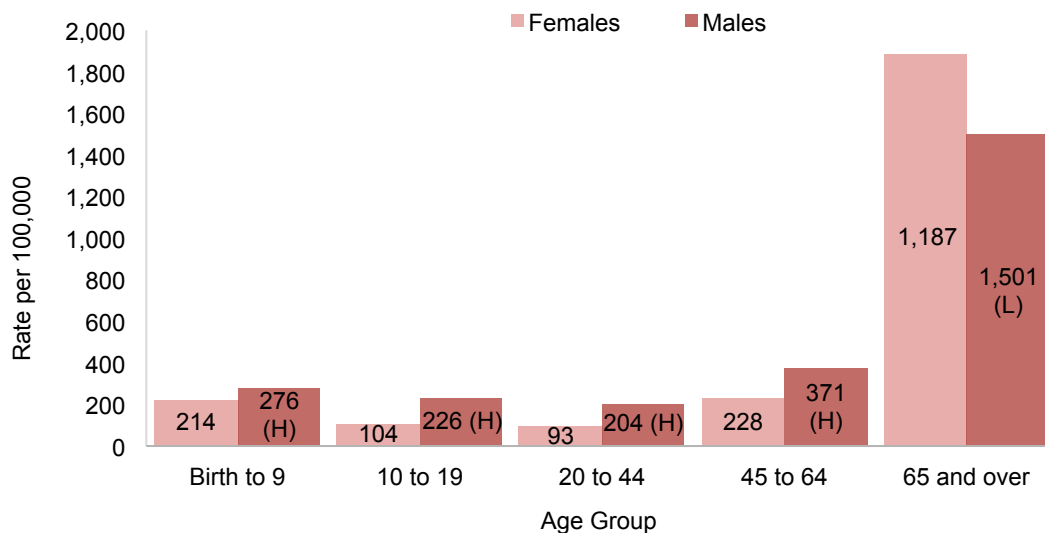
L: Significantly lower than females.

Data Sources:

ED Visits: Ambulatory Emergency External Cause, 2016. Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: May 2019.

Population: Population Estimates, 2016, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: May 2019.

Figure 10.2: Hospitalization Rates Due to Unintentional Injuries by Age and Sex, Toronto, 2016



H: Significantly higher than females.

L: Significantly lower than females.

Data Sources:

Hospitalizations: Inpatient Discharges, 2016, Ontario Ministry of Health and Long to Term Care, IntelliHEALTH ONTARIO. Date Extracted: May 2019.

Population: Population Estimates, 2016, Ontario Ministry of Health and Long to Term Care, IntelliHEALTH ONTARIO. Date Extracted: May 2019.

Among Toronto residents in 2015:

- There were 866 deaths from unintentional injuries. The age-standardized mortality rate was consistent from 2003 (27.0 per 100,000) to 2015 (27.6 per 100,000) [4].



**COMPARING TO** From 2003 to 2015 the age-standardized mortality rate for unintentional injury has been consistently lower in Toronto compared to the rest of Ontario [4].



**More information** on mortality and cause of death is included in Appendix 1.

### Concussions

A concussion is a brain injury that can be caused by a blow to the head, face or neck, or a blow to the body that causes the brain to move rapidly back and forth within the skull. While concussions are serious injuries that can affect thinking and memory, they cannot be seen on routine examination. Concussions are serious injuries and can affect an individual’s thinking and memory [5]. Repeated concussions can lead to chronic traumatic encephalopathy (CTE), which is a progressive degenerative disease. CTE can lead to memory and cognitive decline, depression, suicidal behavior, Parkinsonism, and dementia [6].

Among Toronto residents, in 2016:

- There were 5,621 emergency department (ED) visits due to concussions<sup>1</sup>. Almost half (48%) of these concussions were associated with falls.
- The majority (22%) of ED visits for concussions<sup>2</sup> that were associated with sports and recreation were in the 10 to 14 year age group.

<sup>1</sup> The ED visits were for concussions as the main diagnosis due to unintentional injury.

<sup>2</sup> The ED visits were for concussions as the main diagnosis due to unintentional injury.

## Leading Causes of Unintentional Injury

To help identify the best prevention strategies, the causes of unintentional injuries are described according to the event that led to the emergency department (ED) visit or hospitalization.

In Toronto, in 2016:

- Falls and being struck by or against<sup>3</sup> were the leading causes of both ED visits and hospitalizations for unintentional injuries (Table 10.1). Combined they accounted for 66% of all ED visits and 72% of all hospitalization for unintentional injuries.
- Falls were the leading cause of ED visits and hospitalizations for unintentional injuries for all age categories except 15 to 24 and 25 to 44 years of age. For these age groups, struck by or against was the leading cause.



**More information** on injuries related to violence is included in Chapter 2. Information on injuries related to intentional self-harm is included in Chapter 6.

## Falls

Falls can occur throughout the lifespan, but the risk and consequences of falling increase with age. Falls can result in chronic pain, reduced mobility, loss of independence, reduced quality of life, and death [7]. In 2010, Ontario spent a total of \$2.8 billion addressing fall-related injuries [1].

Among Toronto residents:

- In 2016, seniors aged 75 years and over accounted for most fall-related ED visits (23%) and hospitalizations (60%).
- In 2015, falls were the ninth leading cause of death, with an age-standardized mortality rate of 14 deaths per 100,000 people. The rate was higher among males (16 per 100,000) than females (12 per 100,000).
- Falls were one of the few leading causes of death that did not significantly decrease from 2010 to 2015.

### COMPARING TO

In 2015, age-standardized mortality rates from falls were lower in Toronto compared to the rest of Ontario (17 per 100,000) [4].

**Table 10.1. Leading Causes of Unintentional Injuries Resulting in Emergency Department Visits and Hospitalizations, Toronto, 2016**

Emergency Department Visits (Count)	Hospitalizations (Count)
1. Falls (78,204)	1. Falls (7,892)
2. Struck by or against (71,692)	2. Struck by or against (1,133)
3. Sports/recreation (24,062)	3. Motor vehicle collisions (654)
4. Motor vehicle collisions (12,074)	4. Suffocation (587)
5. Cycling (5,804)	5. Poisoning (396)

Data Sources:

ED Visits: Ambulatory Emergency External Cause, 2016. Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: March, April 2018.

Hospitalizations: Inpatient Discharges, 2016, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: March, April 2018.

<sup>3</sup> Struck by/struck against injuries are sustained by a person as a result of physical contact with another person(s) or object(s). A detailed definition can be found in Appendix 2.

## Road Traffic Injuries and Deaths

Road traffic injuries are a major cause of death and disability, but are highly preventable [8]. While walking and cycling are linked with many health benefits (described in Chapter 3), people who walk or cycle are at a higher risk of death or injury related to motor vehicle collisions compared to people who travel in cars or take public transit [9]. However, the overall health benefits of walking and cycling outweigh the safety risks [9].

Among Toronto residents in 2016:

- There were 20,059 emergency department (ED) visits and 1,337 hospitalizations due to road traffic injuries. This includes drivers, passengers, pedestrians, cyclists and anyone else involved in a motor vehicle collision.
- Motor vehicle collisions were the most common reason for a road traffic injury leading to an ED visit and hospitalization, followed by cycling and pedestrian injury (Table 10.2).

Among Toronto residents in 2015:

- The mortality rate due to motor vehicle collisions was 2.8 per 100,000. The rate was significantly higher in males (3.9) than in females (1.8) [5].

## Pedestrians

Active transportation can have positive impacts on outcomes such as all-cause mortality, cancer, hypertension, and Type 2 diabetes [10]. Despite these positive impacts, there can be some risk, both real and perceived, that act as barriers to active transportation for people of all ages [10]. Collisions involving pedestrians are particularly likely to lead to fatality or hospitalization [11].

In Toronto, in 2017:

- 151 serious or fatal collisions occurred where a pedestrian was involved [12]. 36 of these collisions resulted in pedestrian fatalities. There were on average, 30 pedestrian fatalities from 2007 to 2017 [12].
- 24% of those killed or seriously injured in traffic collision events in the city were pedestrians compared to 9% in 2011.
- Adults 50 years of age and over accounted for 53% of pedestrians killed or seriously injured (Figure 10.3).

**Table 10.2: Number and Percent of Road Traffic-Related Emergency Department Visits and Hospitalizations, Toronto, 2016**

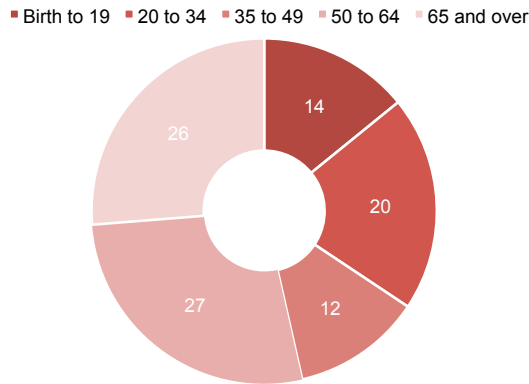
Road Traffic Injury	Emergency Department Visits (%)	Hospitalizations (%)
Motor Vehicle Collision	12,074 (60)	654 (49)
Cycling	5,804 (29)	335 (25)
Pedestrian	2,181 (11)	348 (26)
Total	20,059 (100)	1,337 (100)

Data Sources:

ED Visits: Ambulatory Emergency External Cause, 2016, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: March, April 2018.

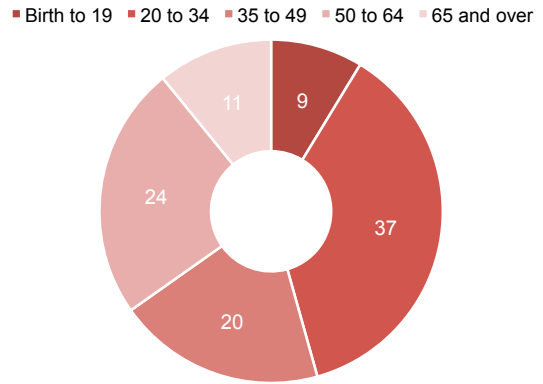
Hospital Visits: Inpatient Discharges, 2016, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: March, April 2018.

**Figure 10.3: Percent of Pedestrians Killed or Seriously Injured by Age Group, Toronto, 2017**



Data Source: Toronto Police Service Open Data  
 Denominator: total number of pedestrians killed or seriously injured  
 \*Numbers may not add up to 100 due to rounding

**Figure 10.4: Percent of Cyclists Killed or Seriously Injured by Age Group, Toronto, 2017**




Data Source: Toronto Police Service Open Data  
 Denominator: total number of cyclists killed or seriously injured  
 \*Numbers may not add up to 100 due to rounding

**Cyclists**

A 2010 count suggested that approximately 48,000 Torontonians cycle each weekday in the summer [11]. A recent report highlighted that Toronto had higher rates of walking and cycling collisions than other large Canadian cities, including Ottawa, Montreal and Vancouver [11].

In Toronto, in 2017:

- There were 49 cyclists killed or seriously injured. The ten year average, starting in 2007 was 52, with the highest number of serious or fatal collisions occurring in 2012 (75 collisions) [13].
- Adults between 20 and 34 years of age accounted for the highest percentage of cyclists killed or seriously injured (38%) (Figure 10.4).



**More information** on active transportation including walking and cycling is included in Chapter 3.

**Distractions Attention**

Inattentiveness among drivers, pedestrians and cyclists is dangerous and has been associated with injury and death. Inattentive, or distracted driving includes using a phone to talk or text, eating, reading, or typing a destination into a GPS while behind the wheel [14]. One of the main distractors for pedestrians and cyclists is the use of mobile devices [15]. In 2017, inattentive driving was the leading cause of traffic fatalities in Ontario, contributing to 83 deaths. This was higher than speeding, not wearing a seatbelt, and impaired driving [16].

- In 2017, 33% of Toronto adults 18 years of age and over with a valid driver’s license reported texting while driving in the past 12 months.

In addition to distracted drivers, distracted pedestrians and cyclists also contributed to traffic injuries and fatalities.

Between 2008 and 2012 in Toronto:

- Approximately 13% of pedestrians and 12% of cyclists were inattentive at the time of a collision with a vehicle [9].
- Inattentive pedestrians were about 40% more likely to be severely injured or killed in a collision with a vehicle compared to those who were attentive [9].



**More information** on substance use and driving is included in Chapter 7.



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