The Eastern Ontario

Injury Report

May 19, 2009

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Key Terms

Injury: -Damage or harm caused to the structure or function of the body by an outside agent or force, which may be physical or chemical.

Type of Injury:

1) **Intentional:** -an injury resulting from purposeful human action, directed at one's self or others.
    a. **Intentional Self-Harm:** -includes purposely self-inflicted poisoning or injury, suicide or attempted suicide

    b. **Assault:** -includes homicide or injuries inflicted by another person with the intent to injury or kill

2) **Unintentional:** -an injury caused without the intent of causing harm; can include falls, MVA, accidental poisoning, drowning etc.
    a. **Motor Vehicle Accidents (MVA):** -includes pedestrians, cyclists, animal riders, motorcycles, cars, trucks, vans, buses trains, occupants of industrial, farm, construction vehicles or four-wheelers. For vehicle accidents the injury can occur to the passenger, driver or someone outside of or sitting on the vehicle.

    b. **Animate Mechanical Force Injury:** -includes being hit, struck, kicked, bitten, twisted or scratched by another person. Also includes being bitten by an animal that is non-venomous or injured by a plant

    c. **Inanimate Mechanical Force Injury:** -includes being struck by a projectile, or striking an object, being crushed or pinched, contact with sharp glass, a knife, tool or lawnmower, a firearm discharge or an explosion.

    d. **Overexertion/Travel/Privation:** -includes injuries while lifting heavy objects, running a marathon, dehydration or starvation and injuries during travel or motion that are not transport accidents

Outcome of Injury:
Ambulatory Emergency Room Visit: -medical care is given on an outpatient basis and patients are not admitted to the hospital

Hospitalization: -persons who are admitted to the hospital for medical treatment

List of Abbreviations

CCHS	Canadian Community Health Survey
CIHI	Canadian Institute for Health Information
EO	Eastern Ontario
EOHU	Eastern Ontario Health Unit
ER	Emergency Room
ICD	International Classification of Disease
LoS	Length of Stay in Hospital
MVA	Motor Vehicle Accident
PHPDB	Provincial Health Planning Database
PYLL	Potential Years of Life Lost
RDD	Random digit dialling
RRFSS	Rapid Risk Factor Surveillance System

1 Executive summary

- Injuries account for about 25% of all ambulatory ER visits and about 5% of all hospitalizations and deaths in Eastern Ontario.

- Males in the EOHU region have higher rates of ambulatory ER visits, hospitalizations, and mortality due to assault than females. However, these rates overall are lower in Eastern Ontario than in the rest of the province.

- Ambulatory ER visits and hospitalizations for self-inflicted injuries are more frequent in females than males. Rates of self-inflicted injuries are higher in the EOHU area than in Ontario.

- Mortality from self-inflicted injuries (suicide) is higher in males than females, in people over the age of 15. Overall, suicide rates are higher in the EOHU area than in Ontario.

- Falls are responsible for a greater proportion of injuries in Eastern Ontario than in the province as a whole. Falls account for almost half of all hospitalizations due to injury in males and three quarters of hospitalizations due to injury in females, both in Ontario and the EOHU territory.

- The rate of falls resulting in injury varies by age group. In the younger population (under 24 years) the rate of falling is high but the rate of resulting injury is minimal. On the other hand, the rate of falling among seniors (65 years and older) is lower than for other age groups but the rate of resulting injury is high.

- The rate of ambulatory ER visits due to unintentional injuries is higher in the EOHU region than the rest of the province, among all age groups and in both sexes.

- Youth aged 15 to 19 years have a rate of injury due to MVA that is twice as high as adults aged 20 to 44 years and almost four times as high as that of drivers over the age of 45. Males are injured in MVA more frequently than females. Male youth (15 to 19 years old) in Eastern Ontario have about 30% more ambulatory ER visits due to MVA than young males in Ontario and mortality rates that are nearly double the provincial average.

- Motor vehicle accidents cause a loss of 4.87 potential years of life (per 1000 population) in males in the EOHU area, which is almost as many as are lost to suicide.

2 Introduction

According to the Canadian Institute of Health Information (CIHI), "injuries have a major impact on the health and well-being of Canadians, representing a significant burden in terms of mortality, morbidity and economic cost. Injury is the leading cause of death in Canada among those under the age of 45 and is a serious cause of disability."

This report is the first of its kind for the Eastern Ontario Health Unit since 1993 and will hopefully serve as a benchmark for future evaluation of programs aimed at injury prevention. This report presents the most up to date data on injury prevalence, hospitalizations due to injury, ambulatory visits to a hospital emergency room, and injury-related mortality. For every outcome, the data for the EOHU territory is compared to results from the entire province of Ontario; whenever relevant, data is also stratified by sex and/or age group.

The data was retrieved from the most relevant sources available, including national and provincial surveys as well as population-based estimates.

Injury surveillance and prevention are an integral part of the new Ontario Public Health Standards (2008). One of the standards of public health is "to reduce the frequency, severity, and impact of preventable injury and of substance misuse". To address this standard, the board of health must use epidemiological evidence to influence the development of healthy public policy in addition to programs and services for the prevention of injury and substance misuse.

It is part of this Health Unit's mandate to conduct epidemiological analyses of surveillance data, including monitoring trends over time, emerging trends, and trends in priority populations, in accordance with the Population Health Assessment and Surveillance Protocol, 2008. Important areas for surveillance include alcohol use and other controlled substances, falls across the lifespan, road and off-road safety, as well as other areas of public health interest related to the prevention of injuries.[1]

An injury is generally defined as damage or harm caused to the structure or function of the body by an outside agent or force. Overall injury rates include both intentional injuries (e.g. assault, suicide) and unintentional injuries (e.g. falls, motor vehicle accidents). As public health focuses mainly on unintentional injury prevention, this report will present overall injury data, briefly explore intentional injuries and will provide an in-depth analysis of unintentional injuries.

[1] Ontario Public Health Standards 2008
http://www.health.gov.on.ca/english/providers/program/pubhealth/oph_standards/ophs/progstds/pdfs/ophs_2008.pdf

3 Methodology

3.1 Definition of Injury

Injury is defined in this report as "damage or harm caused to the structure or function of the body by an outside agent or force, which may be physical or chemical". It includes unintentional injuries, intentional self-harm, and assault. It does not include complications due to medical and surgical care, events of undetermined intent, sequelae of external causes of morbidity and mortality, legal intervention and operations of war, or supplementary factors related to causes of morbidity and mortality which are classified elsewhere.

3.2 Sources of Data

3.2.1 Provincial Health Planning Database (PHPDB)

The Provincial Health Planning Database (PHPDB) is an information resource provided by the Ontario Ministry of Health and Long-Term Care. This database is designed to make the vast amount of standardized health information readily accessible to planners, researchers and decision-makers. The database draws its content from diverse sources that include: [2]

- Ambulatory Care
- Inpatient Hospital Care
- Day Procedures
- Inpatient Mental Health Care
- Complex Continuing Care Hospitals
- Rehabilitation Services
- Service Claims by Physicians & Other Licensed Health Professionals
- Live/Still Births and Death Records

The data reported in this document is derived primarily from the ambulatory ER visit, hospitalization, and mortality tables and is classified using either the ICD9 or ICD10 depending on the year the data was released.
Ambulatory ER visits: 2003 to 2006 (classified by ICD10).
Hospitalization: 1997 to 2006 (1997 to 2002 classified by ICD9; 2003 to 2006 classified by ICD10)
Mortality: 1995 to 2004 (1995 to 1999 classified by ICD9; 2000 to 2004 classified by ICD10)
Population Estimates: 1996 to 2006

[2] Provincial Health Planning Database (PHPDB) (restricted website)

3.2.2 Canadian Community Health Survey (CCHS) 3.1

The Canadian Community Health Survey (CCHS) is a cross-sectional national survey that collects information related to population health status, health care utilization, and health determinants for the Canadian population. The CCHS data is collected biannually over a 12-month period, and released every two years. It includes a large sample of respondents aged 12 years and older, who are living in private dwellings. The survey was designed with the intention of providing reliable estimates of health outcomes at the Health Region level, which makes it possible to provide an estimate of injury prevalence at the local level and compare estimates to the entire province[3].

3.2.3 Rapid Risk Factor Surveillance System (RRFSS)

The Rapid Risk Factor Surveillance System (RRFSS) is an ongoing telephone survey that includes 22 of the 36 health units in Ontario. Each month approximately one hundred adults aged 18 years and older are randomly selected from each health unit region. Participants are interviewed regarding their risk behaviours, knowledge, attitudes and awareness regarding health related topics of public health interest. This survey captures data on injuries, including their severity and causes. As an ongoing surveillance activity, RRFSS has been running in the EOHU region since 2003. From its initiation in 2003 and until 2007, a local private contractor administered the survey. In 2008, the EOHU decided to join the province-wide survey administered by the Institute for Social Research associated with York University. This change is significant, as the survey results may have been affected by various factors including slight differences in questions and possible sampling differences.

3.3 Classification of Disease

The mortality and morbidity data from PHPDB are categorized based on the International Classification of Diseases using either the ICD9 or ICD10 depending on the year in which the data were released. Unintentional injury is coded as E80.0 to E86.9 and E88.0 to E92.9 in the Ninth Revision of the ICD or as V01 to X59 and Y85 to Y86 in the Tenth Revision of the ICD depending on the year the data was released. For intentional injury, self-harm is coded as E950 to E95.9 in the ICD9 and as X60 to X84 and Y87.0 in the ICD10. Assault is coded as E96.0 to E96.9 in the ICD9 and as X60 to Y09 and Y87.0 to Y87.1 in the ICD10.

3.4 Calculation of Indicators

The injury indicators from CCHS 3.1 and RRFSS are calculated by dividing the number of positive responses by the number of people included in the sample. These results are usually presented as percentages.

The mortality rate of injury is calculated by dividing the number of deaths due to unintentional injury (in a specified age group, time period, and location of residence) by the estimated population in the relevant group. This rate is normally presented as the number of

[3] Statistics Canada website

deaths per 100,000 population. The infant mortality rate, for children less than one year of age is usually calculated differently and represents the number of deaths per 1,000 live births rather than the rate for the total population.

The rates of ambulatory ER visits are calculated as the number of hospital discharges or hospital separations due to injury, per 1,000, in the population of interest. The hospitalization rate is also calculated as the total number of hospital discharges or separations due to injury in the total population (usually expressed per 100,000). An age-specific hospitalization rate uses the population in a given age group as the denominator (usually expressed per 100,000). The age-standardized hospitalization rate (SRATE) is the number of discharges from hospital per 100,000 population that would occur if the population had the same age distribution as the entire Canadian population in 1991

3.5 Limitations

The ICD10 is a much more detailed and comprehensive system than the ICD9. Since the two coding systems are different, aligning the causes of mortality in the ICD9 to those in the ICD10 proved to be a complex issue and presented many challenges. The potential for problems occurs if a single disease or injury is coded differently under the two systems. In a few figures in this report, there are injury rates that show an unnatural change in rates between two years and this difference is most likely a result of the coding change. A comparison of International Classification of Diseases Version 9 to Version 10 is presented in Appendix 1.

The data for causes of unintentional injury are categorized using Statistics Canada's list of selected grouped causes of mortality[4]. However, there may be injuries that could require hospitalization but never lead to death that would have been overlooked by this method of data selection. Results would be more accurate for hospitalization and ambulatory ER visits if a standardized list of causes was created specifically for this data.

4 Intentional and Unintentional Injuries Combined

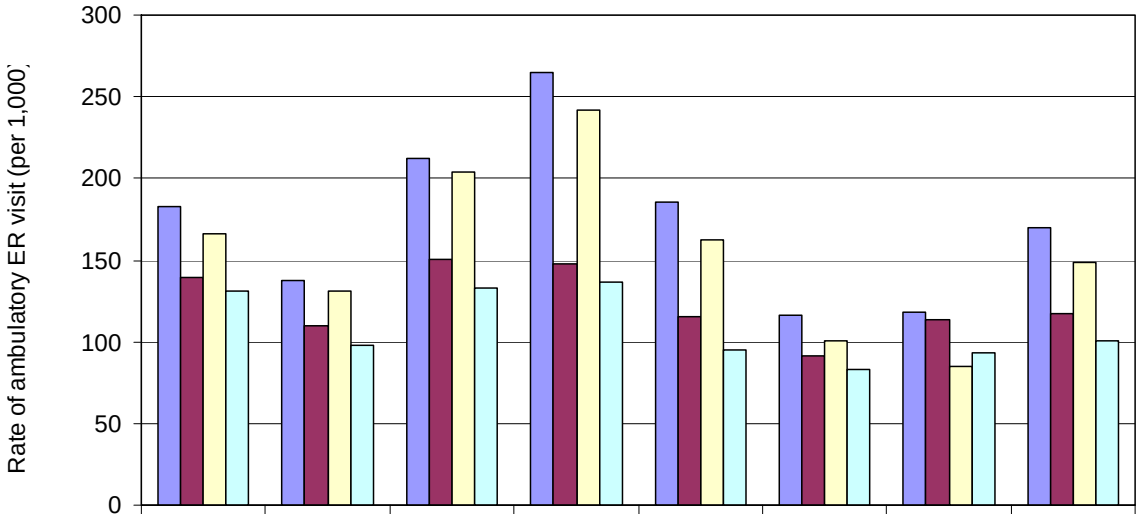
4.1 Ambulatory Emergency Room Visits for All Injuries

An injury, whether intentional (self-harm or assault) or unintentional (e.g. falls) is a possible cause of an ambulatory visit to the emergency room. In the four-year period from 2003 to 2006, there were 109,848 ambulatory emergency room visits due to injuries (intentional and unintentional) in the EOHU catchment area (all ages and both sexes combined). Table 1 shows that injuries represent about one quarter of all ambulatory emergency room visits in Eastern Ontario and about one third of all emergency room visits in Ontario. Overall, unintentional injuries account for the vast majority of ambulatory ER visits; over 95% when all ages are considered together.

Table 1. Percentage (%) of Injuries in All Ambulatory ER Visits

	EOHU			Ontario		
	Male	**Female**	**Both**	**Male**	**Female**	**Both**
Age 0-4	23.9	21.0	22.5	37.4	32.3	35.0
Age 5-9	42.9	32.0	37.7	52.5	40.9	47.4
Age 10-14	42.8	18.7	29.8	49.9	28.4	39.5
Age 15-19	29.7	15.3	22.1	35.3	19.1	27.1
Age 20-44	20.5	15.6	18.1	23.2	18.9	21.1
Age 45-64	11.6	13.8	12.8	12.1	15.7	14.1
Age 65+	24.4	16.3	20.2	30.0	20.7	25.3
All Ages	23.9	21.0	22.5	37.4	32.3	35.0

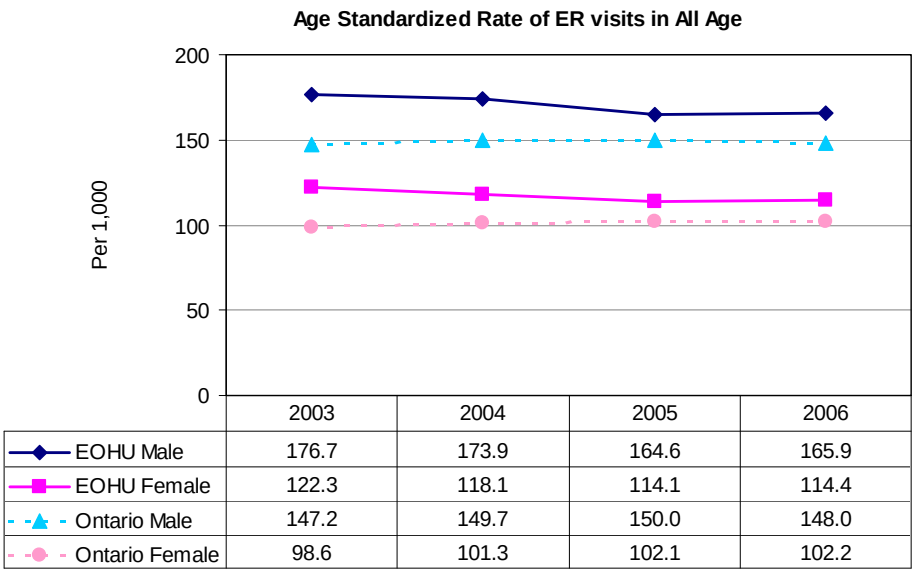
Figure 1 illustrates the impact of all injuries on overall ambulatory ER visits. There are more ambulatory ER visits due to injury in Eastern Ontario than in the province as a whole. Emergency visits for injuries occur more frequently in males compared to females, regardless of age. Lastly, rates of ambulatory emergency room visits due to injury are high in young children aged 0 to 4 years, lower in children aged 5 to 9 years and then increases again to the highest rate in teens aged 15 to 19 years old.



	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Male	183.1	137.6	212.1	265.2	185.4	116.3	118.4	170.2
EOHU Female	139.2	109.8	150.2	147.7	115.5	91.3	113.1	117.2
Ontario Male	166.0	131.0	204.0	241.4	162.3	100.8	85.0	148.7
Ontario Female	131.0	97.9	133.3	136.4	95.0	83.4	93.5	101.0

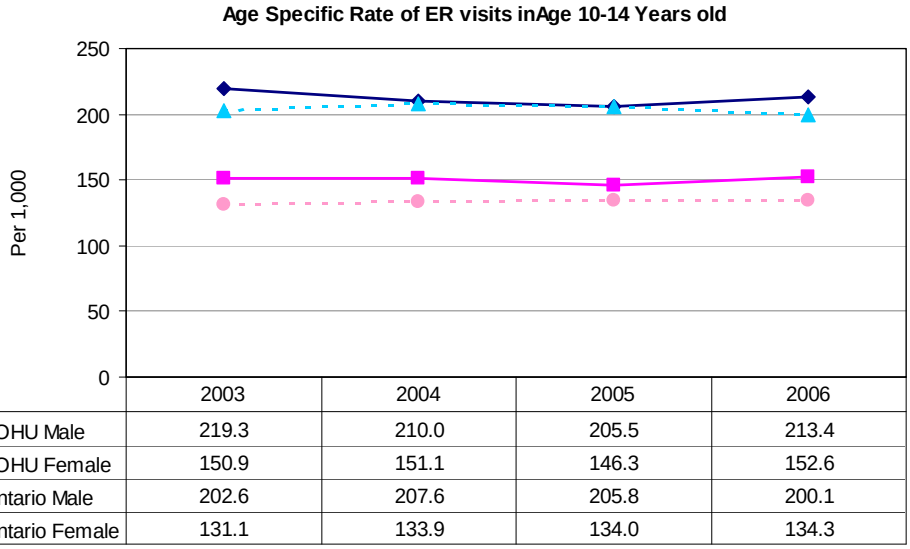
Figure 1. Age-Specific Rates of Ambulatory ER Visits for Injury (All Types Combined) by Age Group and Sex (Age-Standardized for 65+)

The following series of figures (Figures 2 through 7) illustrates the changes in the age-specific and age-standardized rates for all injuries in recent years among seniors aged 65 years and older as well as for all ages combined. Although the proportion of ambulatory ER visits for injuries is lower in the EOHU region than in Ontario (about one quarter versus one third), the rates per 1,000 are higher for all age groups and both sexes. The higher rates in Eastern Ontario show that injuries are an important population health concern in our community.



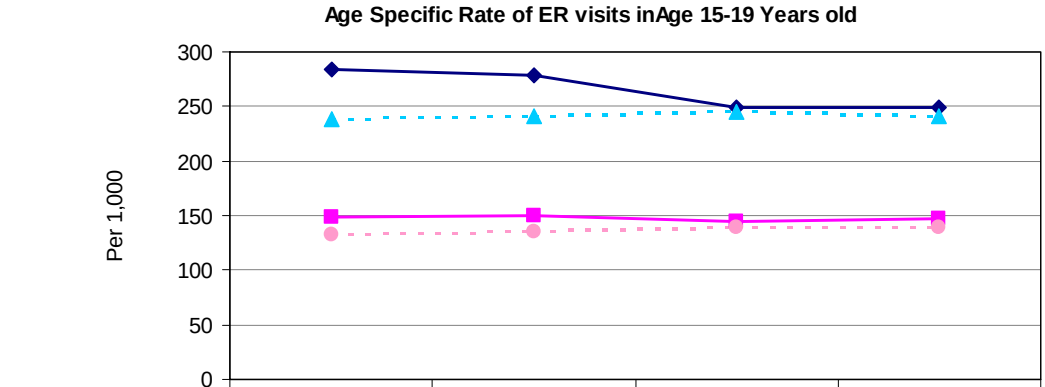
	2003	2004	2005	2006
EOHU Male	176.7	173.9	164.6	165.9
EOHU Female	122.3	118.1	114.1	114.4
Ontario Male	147.2	149.7	150.0	148.0
Ontario Female	98.6	101.3	102.1	102.2

Figure 2. Age-Standardized Rate (per 1,000 population) of Ambulatory ER Visits Resulting from Injury (Intentional and Unintentional), All Ages, 2003 to 2006



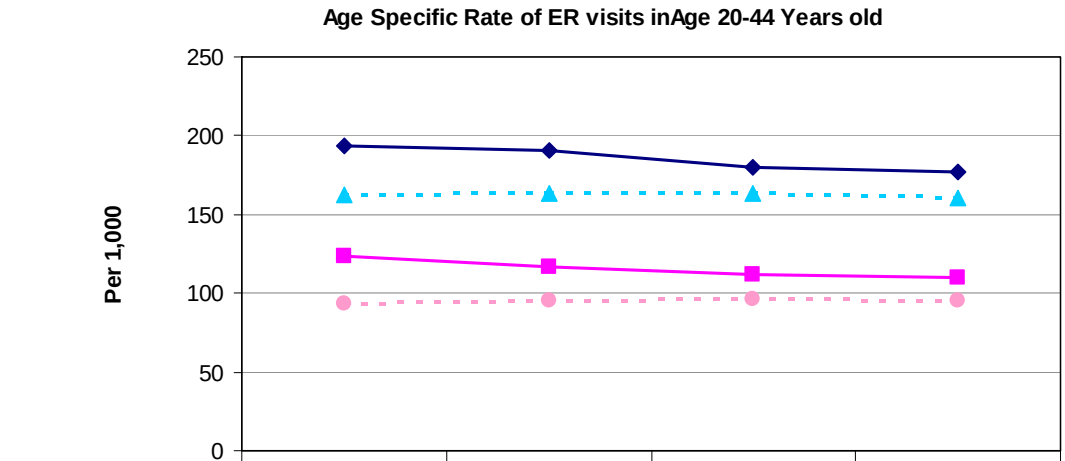
	2003	2004	2005	2006
EOHU Male	219.3	210.0	205.5	213.4
EOHU Female	150.9	151.1	146.3	152.6
Ontario Male	202.6	207.6	205.8	200.1
Ontario Female	131.1	133.9	134.0	134.3

Figure 3. Age-specific Rate (per 1,000 population) of Ambulatory ER Visits Resulting From Injury (Intentional and Unintentional) for Ages 10-14 years, 2003 to 2006



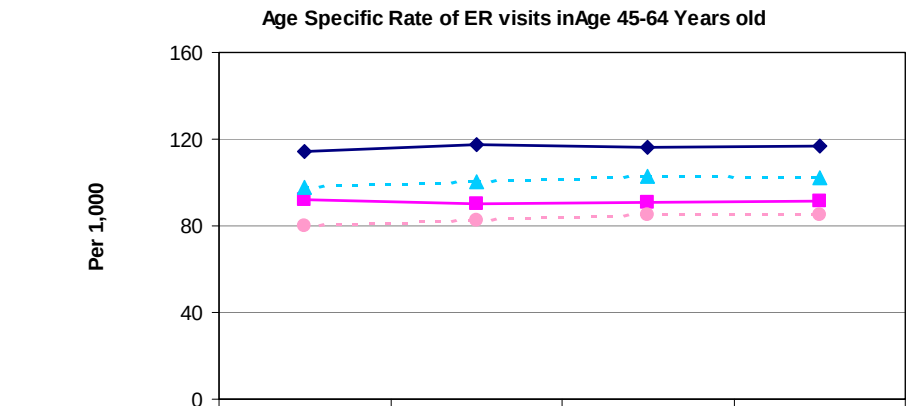
	2003	2004	2005	2006
EOHU Male	284.6	279.2	248.8	248.7
EOHU Female	148.5	150.6	144.2	147.6
Ontario Male	238.9	240.5	245.4	240.8
Ontario Female	132.5	134.9	139.4	138.7

Figure 4. Age-Specific Rate (per 1,000 population) of Ambulatory ER Visits Resulting From Injury (Intentional and Unintentional) for Ages 15-19 years, 2003 to 2006



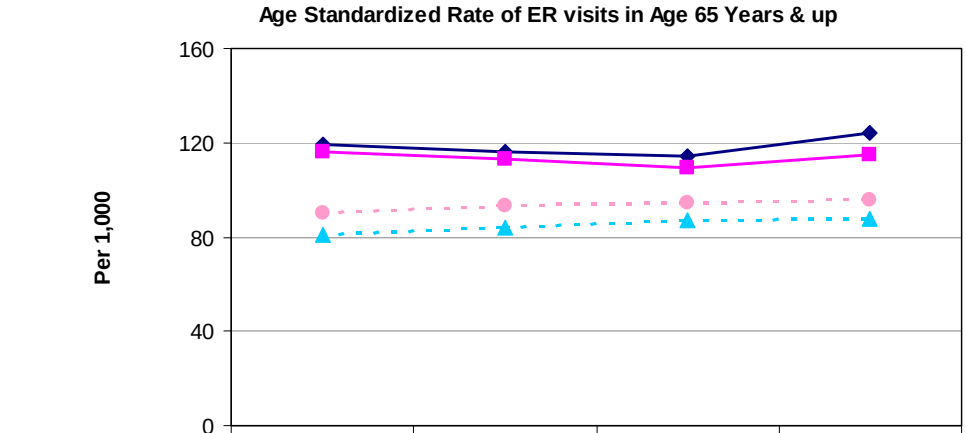
	2003	2004	2005	2006
EOHU Male	193.3	190.9	179.7	177.4
EOHU Female	123.4	116.7	111.6	110.0
Ontario Male	162.1	163.5	163.3	160.1
Ontario Female	93.7	95.2	96.0	95.2

Figure 5. Age-Specific Rate (per 1,000 population) of Ambulatory ER Visits Resulting from Injury (Intentional and Unintentional) for Ages 20-44 years, From 2003 to 2006



	2003	2004	2005	2006
EOHU Male	114.5	117.4	116.0	117.1
EOHU Female	92.0	90.4	91.1	91.7
Ontario Male	97.8	100.4	102.9	102.1
Ontario Female	79.9	82.8	85.3	85.2

Figure 6. Age-Specific Rate (per 1,000 population) of Ambulatory ER Visit Resulting from Injury (Intentional and Unintentional) for Ages 45-64 years, 2003 to 2006



	2003	2004	2005	2006
EOHU Male	119.2	116.4	114.1	124.0
EOHU Female	115.8	112.9	109.1	114.9
Ontario Male	81.1	84.1	87.0	87.6
Ontario Female	90.2	93.2	94.4	96.1

Figure 7. Age-Standardized Rate (per 1,000 population) of Ambulatory ER Visits Resulting From Injury (Intentional and Unintentional) for Ages 65+, 2003 to 2006

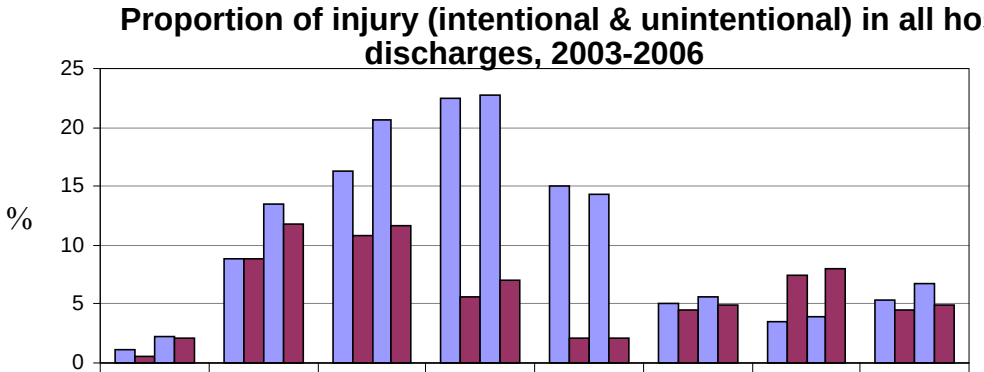
Key Findings:

- There were 109,848 ambulatory emergency room visits in the EOHU region between 2003-2006
- 95% of all injury-related ambulatory ER visits are for unintentional injuries
- EOHU has a higher rate of ambulatory ER visits for injury than Ontario
- The rate of ambulatory ER visits for injury is highest in youth aged 15-19 years
- Males have higher injury-related ambulatory ER visit rates than females

4.2 Hospitalizations for All Injuries

In the four-year period from 2003 to 2006, there were 5,933 injury-related (intentional and unintentional) hospitalizations in the EOHU catchment area (all ages and both sexes combined), which represents 4.9% of the total number of hospitalizations for any cause.

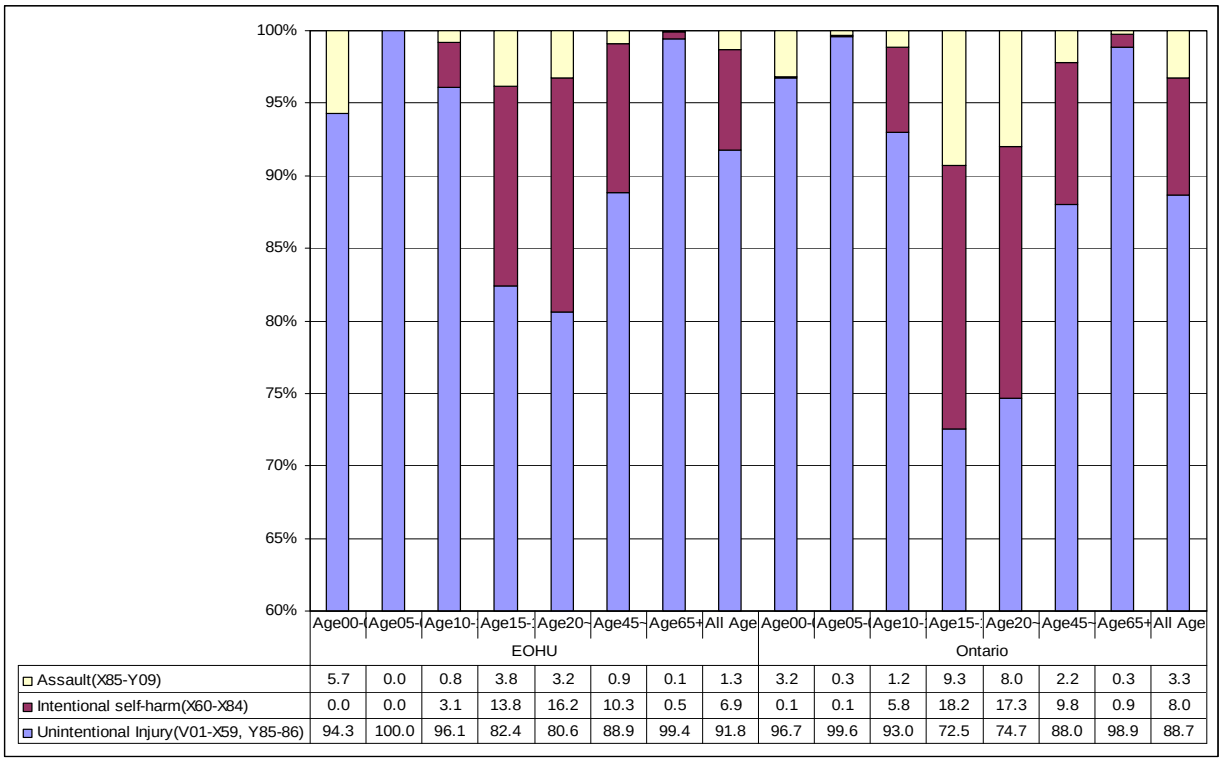
Figure 8 shows the percentage of hospitalizations due to injury (all types) for males and females in EOHU and Ontario. The proportions of hospitalizations for injuries (among all hospitalizations) are lowest in the youngest age group of children (0 to 4 years old) and highest in males 15 to19 years old. Injuries also account for a higher percentage of hospitalizations in males overall. The exception is among females aged 65 years and older who are hospitalized for injuries more frequently than males.



	Age00-04	Age05-09	Age10-14	Age15-19	Age20-44	Age45-64	Age65+	All Age
EOHU Male	1.1	8.9	16.3	22.4	15.0	5.0	3.5	5.4
EOHU Female	0.6	8.9	10.8	5.6	2.2	4.5	7.5	4.5
Ontario Male	2.2	13.5	20.7	22.7	14.4	5.6	3.9	6.7
Ontario Female	2.1	11.8	11.7	7.0	2.1	4.9	8.0	4.9

Figure 8. Proportion of Hospitalizations Due to Injury (All Types) for Males and Females in EOHU and Ontario

Figure 9 illustrates the proportion of unintentional injuries, intentional self-harm, and assault as cause for hospitalization by age group. Hospitalizations due to assault are highest in the 15 to19 year olds. This group represents a larger proportion of injuries in Ontario than in the EOHU territory. Similarly there is also a higher percentage of hospitalizations due to intentional self-harm in Ontario for 15 to19 and 20 to 24 year olds than in the EOHU region. When considering all age groups and all intentional injuries (self-harm and assaults) the EOHU region accounts for a lesser proportion of hospitalizations than Ontario.



	EOHU							
	Age00-	Age05-	Age10-	Age15-	Age20-	Age45-	Age65+	All Age
Assault(X85-Y09)	5.7	0.0	0.8	3.8	3.2	0.9	0.1	1.3
Intentional self-harm(X60-X84)	0.0	0.0	3.1	13.8	16.2	10.3	0.5	6.9
Unintentional Injury(V01-X59, Y85-86)	94.3	100.0	96.1	82.4	80.6	88.9	99.4	91.8

	Ontario							
	Age00-	Age05-	Age10-	Age15-	Age20-	Age45-	Age65+	All Age
Assault(X85-Y09)	3.2	0.3	1.2	9.3	8.0	2.2	0.3	3.3
Intentional self-harm(X60-X84)	0.1	0.1	5.8	18.2	17.3	9.8	0.9	8.0
Unintentional Injury(V01-X59, Y85-86)	96.7	99.6	93.0	72.5	74.7	88.0	98.9	88.7

Figure 9. Leading Causes of Hospitalizations for Injury: Due to Unintentional Injuries, Intentional Self-Harm, and Assault by Age Group (2003-2006)

Table 2. Hospitalization Rates Due to Injury (per 1,000 population)

	EOHU							
	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
All injuries	2.96	1.96	2.82	4.45	4.53	7.02	22.11	6.57
Unintentional Injury (V01-X59, Y85-86)	2.20	1.69	2.13	2.97	2.58	3.36	13.21	3.83
Intentional self-harm (X60-X84)	0.00	0.00	‡	0.50	0.52	0.39	0.08	0.33
Assault (X85-Y09)	‡	0.00	‡	0.14	0.10	0.03	‡	0.07
	Ontario							
	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
All injuries	4.17	3.37	4.01	6.34	5.38	7.57	20.67	7.30
Unintentional Injury (V01-X59, Y85-86)	3.19	2.65	3.07	3.82	2.99	4.08	13.23	4.42
Intentional self-harm (X60-X84)	‡	‡	0.19	0.96	0.69	0.46	0.13	0.47
Assault (X85-Y09)	0.11	0.01	0.04	0.49	0.32	0.10	0.04	0.20

‡ Number too small to report

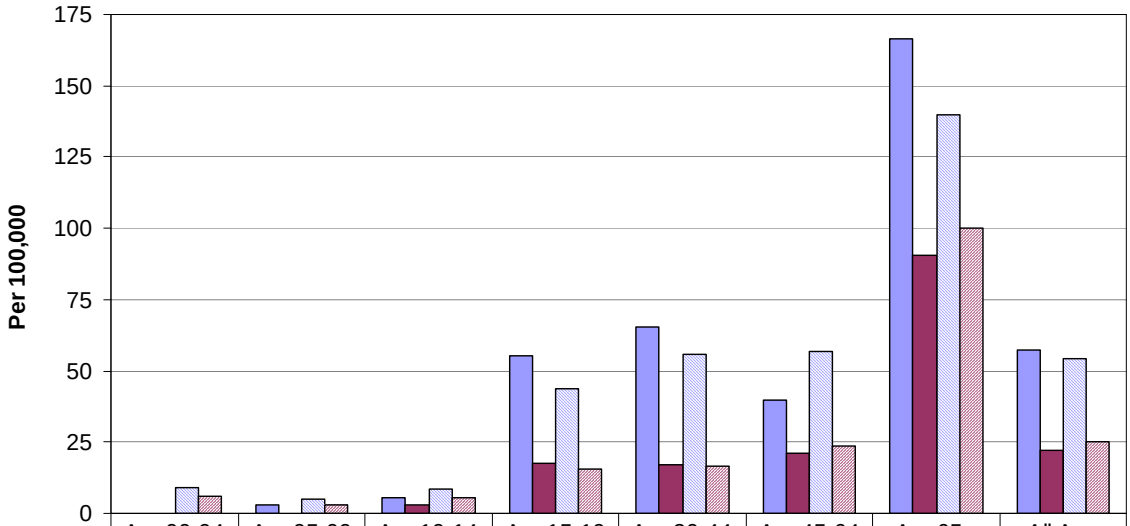
Key Findings:

- There were 5,933 hospitalizations due to injury in the EOHU region between 2003 and 2006
- The highest rate of hospitalization for injury is among 15 to 19 year olds
- Males are hospitalized more often due to injury than females, with the exception of women over the age of 65 who are hospitalized for injury more often than men

4.3 Mortality for All Injuries

In the four-year period from 2000 to 2004, there were 419 deaths due to injury (intentional and unintentional) in the EOHU catchment area (all ages and both sexes combined). Mortality due to motor vehicle accidents and intentional self-harm are of particular interest in the EOHU region as there tends to be a clear difference from the rest of the province. While specific rates and leading causes of mortality will be explored in the following sections, a more comprehensive table can be found in Appendix 2.

Considering all types of injuries, the Eastern Ontario Health Unit area has a higher overall age-standardized mortality rate for males than Ontario (57.6 vs. 54.5 deaths per 100,000) and a somewhat lower overall mortality rate for females (22.1 vs. 24.9 per 100,000) (Figure 10).



	Age00-04	Age05-09	Age10-14	Age15-19	Age20-44	Age45-64	Age65+	All Age
EOHU Male	0.0	3.0	5.3	55.4	65.6	39.6	166.2	57.6
EOHU Female	0.0	0.0	2.8	17.7	16.9	21.2	90.4	22.1
Ontario Male	9.0	5.2	8.3	43.8	55.6	56.9	139.7	54.5
Ontario Female	5.8	3.1	5.4	15.6	16.8	23.6	99.9	24.9

Figure 10. Age-Specific Injury-Related Mortality Rates (Intentional and Unintentional)(Age-Standardized for 65+ and All Ages Combined)

Key Findings:

- There were 419 deaths in the EOHU region between 2000 and 2004
- Males in the EOHU region have a higher rate of mortality due to injury than males in Ontario
- Females in the EOHU region have a lower rate of mortality due to injury than females in Ontario

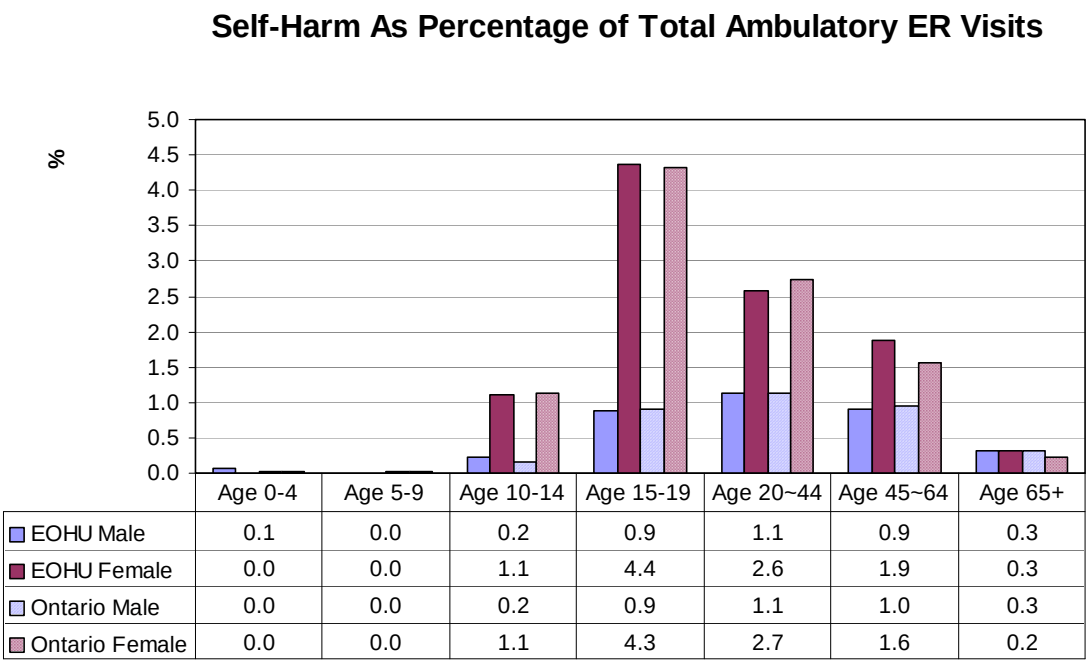
5 Intentional Injuries

The term "intentional injury" refers to an injury resulting from purposeful human action, whether directed at oneself or others. This can include self-inflicted injuries such as suicide or suicide attempts and violence directed toward others such as assault or other violent acts. Psychosocial research has identified that behaviours leading to intentional injuries can be triggered or intensified by psychological factors such as mental illness, as well as social factors including alcohol and drug use and abuse, poverty and stress.

The following section will examine the impact of intentional injuries on the total injury burden. Intentional self-harm and assault will be studied independently; their percentage of the total and rate per 1,000 population will be detailed with regards to ambulatory ER visits, hospitalizations, and mortality (per 100,000 population).

5.1 Ambulatory Emergency Room Visits due to Intentional Injuries

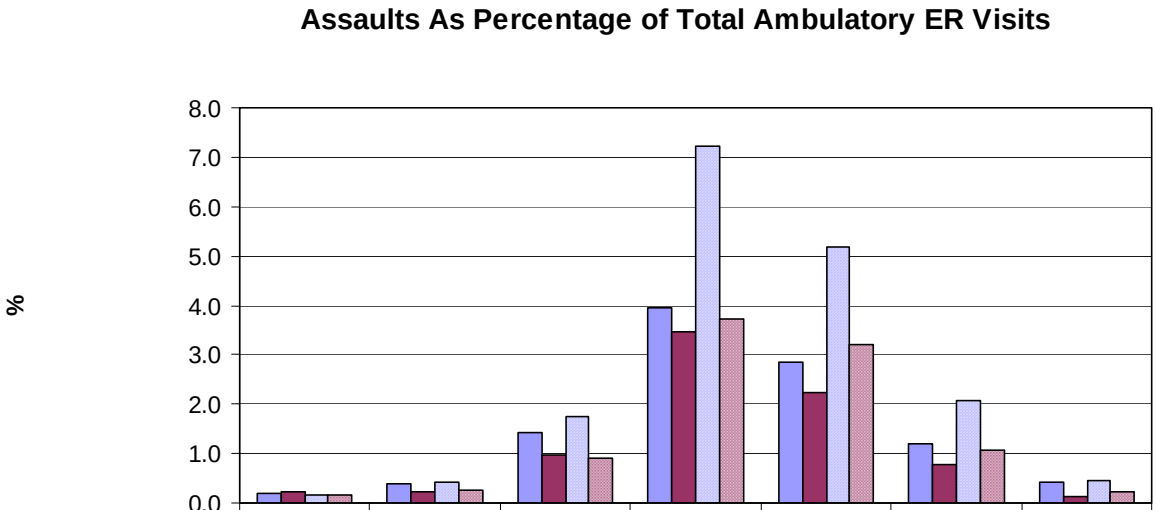
Figure 11 shows the percentage of ambulatory ER visits due to intentional self-harm. Ambulatory ER visits due to self-harm injuries are highest in the 15 to19 year old age group and are much more frequent in females than males. The EOHU territory follows a pattern similar to Ontario, with the exception of females aged 45 to 64 years, who represent a larger proportion of ambulatory ER visits for self-harm than the rest of the province.



	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20~44	Age 45~64	Age 65+
EOHU Male	0.1	0.0	0.2	0.9	1.1	0.9	0.3
EOHU Female	0.0	0.0	1.1	4.4	2.6	1.9	0.3
Ontario Male	0.0	0.0	0.2	0.9	1.1	1.0	0.3
Ontario Female	0.0	0.0	1.1	4.3	2.7	1.6	0.2

Figure 11. Percentage of Intentional Self-Harm Injuries as Cause of Ambulatory ER Visits

Ambulatory ER visits due to assault (Figure 12) have an age distribution similar to ER visits due to self-harm with the most injuries among 15 to 19 years olds. There are important differences however as males are injured by assault more frequently than females. Ambulatory ER visits due to assault are also much less frequent in the EOHU territory than in Ontario.

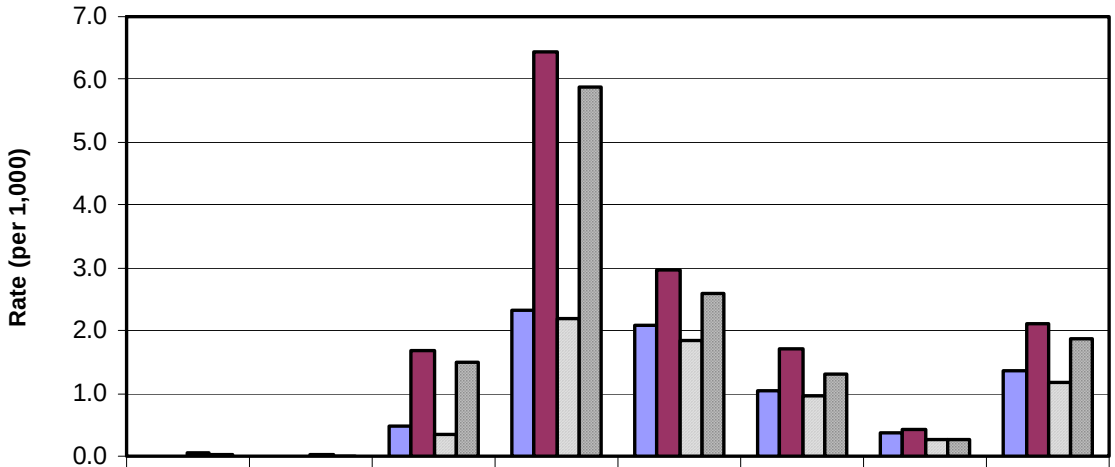


	Age 00-04	Age 05-09	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+
EOHU Male	0.2	0.4	1.4	4.0	2.8	1.2	0.4
EOHU Female	0.2	0.2	1.0	3.5	2.2	0.8	0.1
Ontario Male	0.1	0.4	1.8	7.2	5.2	2.1	0.4
Ontario Female	0.2	0.3	0.9	3.7	3.2	1.1	0.2

Figure 12. Percentage of Assaults as Cause for Ambulatory ER Visits

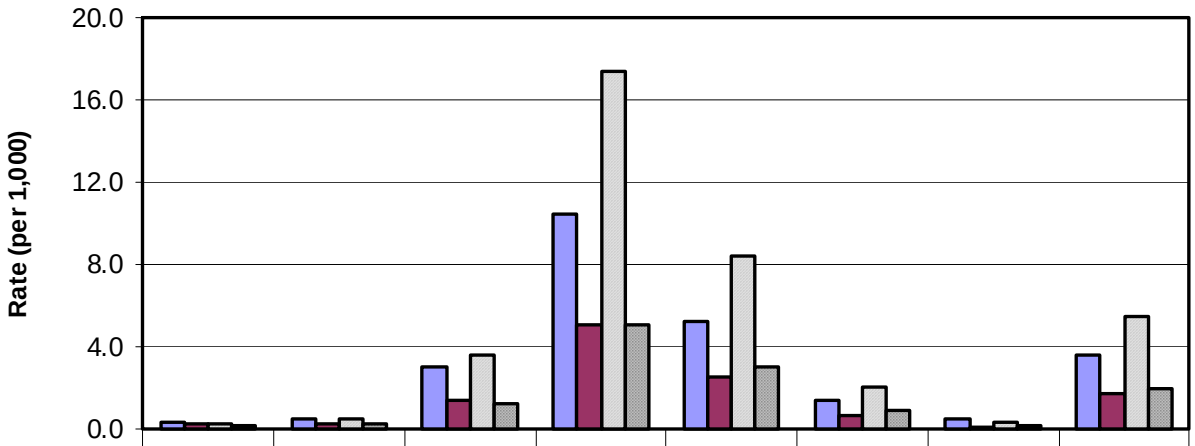
While the previous figures provide information on the frequency of specific injuries, it is the rate of injury that provides information on the impact of a specific injury on the population. The following figures (Figure 13 and 14) present the rates of ambulatory ER visits due to intentional self-harm and assault. The rates of injury show a pattern similar to that seen in the proportion of intentional injuries. For ambulatory ER visits due to self-harm (Figure13), the rates are highest for young adults (aged 15 to 19 and 20 to 44). Rates are also higher for females (4-5 fold) compared to males and are slightly higher for Eastern Ontario when compared to the rest of the province.

For ambulatory ER visits due to assault, rates are slightly higher in males compared to females as well as higher in young adults (aged 15 to 19 and 20 to 44) than other age groups. Rates for the EOHU region are lower than the rest of the province.



	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Male		0.0	0.5	2.3	2.1	1.0	0.4	1.4
EOHU Female	0.0	0.0	1.7	6.4	3.0	1.7	0.4	2.1
Ontario Male	0.0	0.0	0.3	2.2	1.8	1.0	0.3	1.2
Ontario Female	0.0	0.0	1.5	5.9	2.6	1.3	0.3	1.9

Figure 13. Rate (per 1,000 population) of Ambulatory ER Visits for Injuries Due to Intentional Self-Harm



	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Male	0.4	0.5	3.0	10.5	5.3	1.4	0.5	3.7
EOHU Female	0.3	0.3	1.5	5.1	2.6	0.7	0.2	1.8
Ontario Male	0.2	0.6	3.6	17.4	8.4	2.1	0.4	5.5
Ontario Female	0.2	0.2	1.2	5.1	3.0	0.9	0.2	2.0

Figure 14. Rate (per 1,000 population) of Ambulatory ER Visits for Injuries Due to Assault

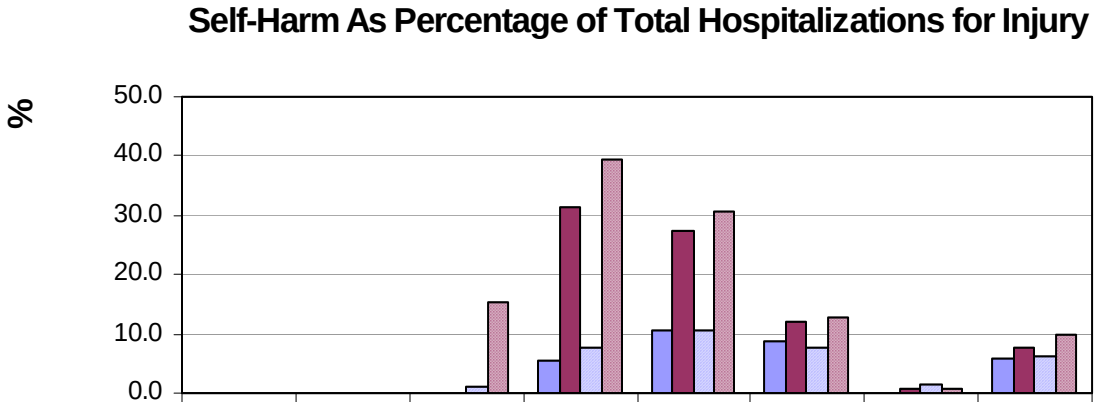
Key Findings:

- Ambulatory ER visits due to intentional self-harm are more common among females than males in the EOHU region
- 15 to 19 year olds have the highest rates of ambulatory ER visits for both intentional self-harm and assault
- Males have higher rates ambulatory ER visits due to of assault than females
- The EOHU region has a lower rate of ambulatory ER visits due to assault than the province

5.2 Hospitalizations for Intentional Injuries

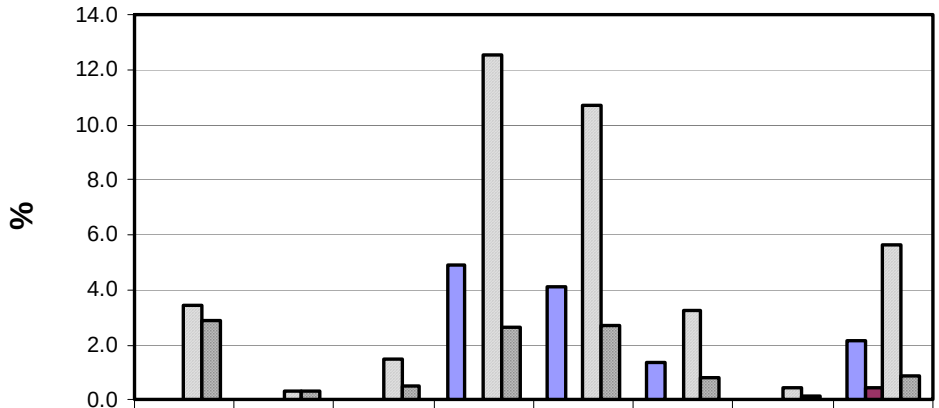
The most important points of this section are clearly illustrated in the following figures (Figure 15 and Figure 16). Among females aged 15 to 19 years in Eastern Ontario about one third of all injury-related hospitalizations are due to self- inflicted injuries and among females aged 20 to 44 years self-inflicted injuries represent about one quarter of all injury-related hospitalizations.

Please note: cells containing between 1 and 5 cases are not reported. When there were no case, a rate of 0.0 is reported.



	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Male				5.6	10.6	8.8		5.9
EOHU Female				31.3	27.5	12.0	0.7	7.8
Ontario Male		0.1	1.3	7.7	10.6	7.6	1.3	6.3
Ontario Female	0.1	0.0	15.2	39.5	30.8	12.7	0.7	9.8

Figure 15. Percentage of Intentional Self-Harm as Cause of Hospitalization

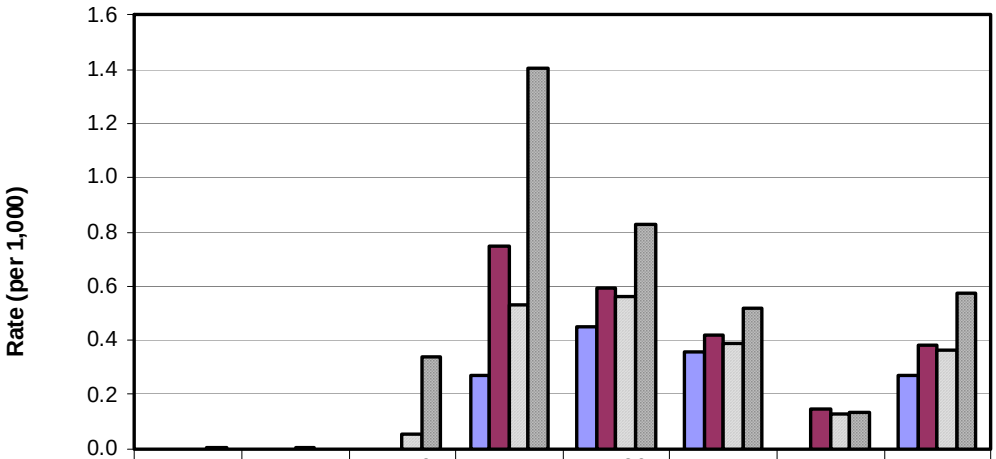


	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Male				4.9	4.1	1.4		2.2
EOHU Female								0.5
Ontario Male	3.4	0.3	1.5	12.5	10.7	3.2	0.5	5.7
Ontario Female	2.9	0.3	0.5	2.6	2.7	0.8	0.2	0.9

Figure 16. Percentage of Assaults as Cause of Hospitalization

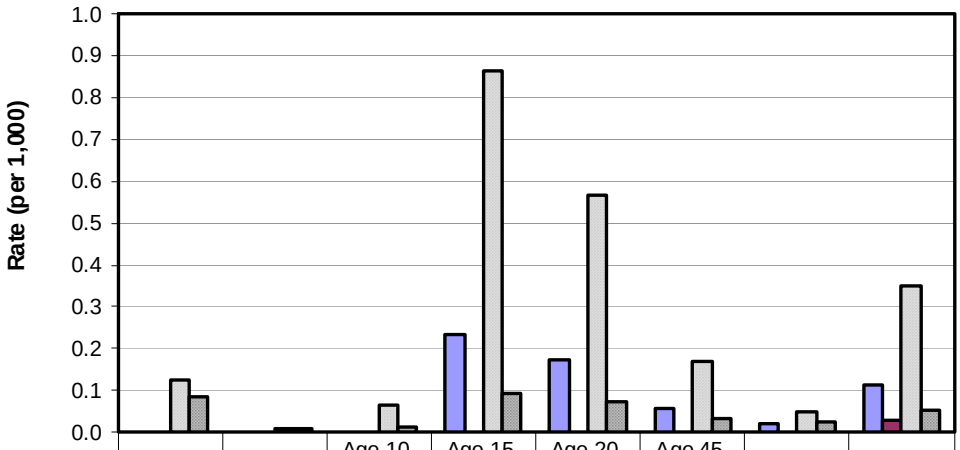
Figure 16 shows that hospitalizations resulting from assault are more frequent in males than in females. Assaults account for a lesser percentage of injury-related hospitalizations in the Eastern Ontario region than in the rest of Ontario.

Although the percentage of total hospitalizations due to injury appear relatively high, it can be seen in Figure 17 and Figure 18, that the rates of hospitalization for intentional injuries in Eastern Ontario (per 1,000) are fairly low, especially with regards to assault.



	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Male				0.27	0.45	0.36	0.00	0.27
EOHU Female				0.74	0.59	0.42	0.15	0.38
Ontario Male		0.00	0.06	0.53	0.56	0.39	0.13	0.36
Ontario Female	0.00	0.00	0.34	1.40	0.83	0.52	0.13	0.58

Figure 17. Rate (per 1,000 population) of Hospitalization Due to Injuries Caused by Intentional Self-Harm



	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Male				0.23	0.17	0.05	0.02	0.11
EOHU Female								0.03
Ontario Male	0.13	0.01	0.06	0.86	0.57	0.17	0.05	0.35
Ontario Female	0.08	0.01	0.01	0.09	0.07	0.03	0.03	0.05

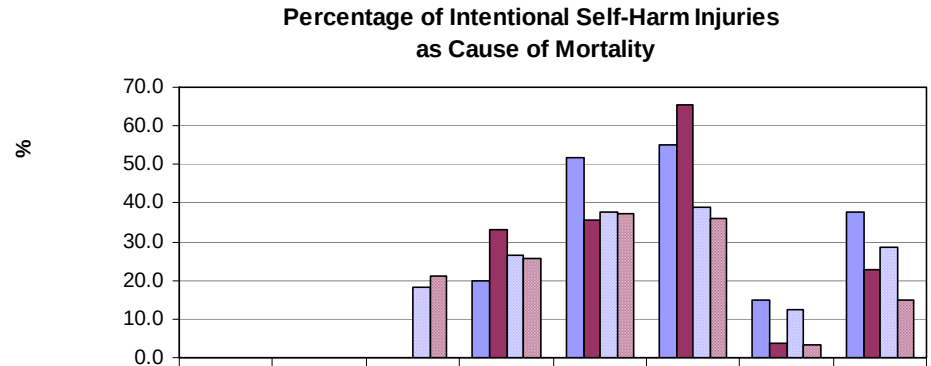
Figure 18. Rate (per 1,000 population) of Hospitalization for Injuries Caused by Assault

Key Findings:

- Females are hospitalized more often for self-harm injuries than males
- Hospitalization due to self-harm is most common among 15-19 year olds
- Males have higher rates of hospitalization due to assault than females
- The EOHU region has a lower rate of hospitalization due to assault than Ontario

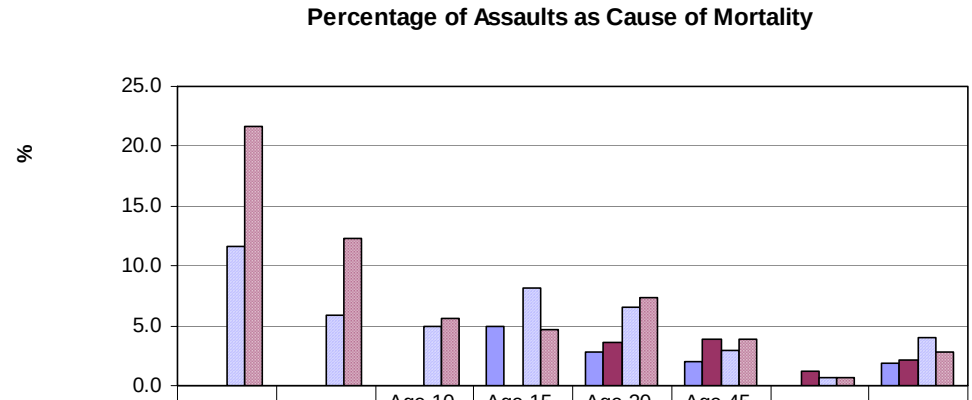
5.3 Mortality from Intentional Injuries

As in the previous sections, mortality from self-inflicted injuries (suicide) and assault will be examined, both as a percentage of injury-related mortality and as a rate per 100,000 population.



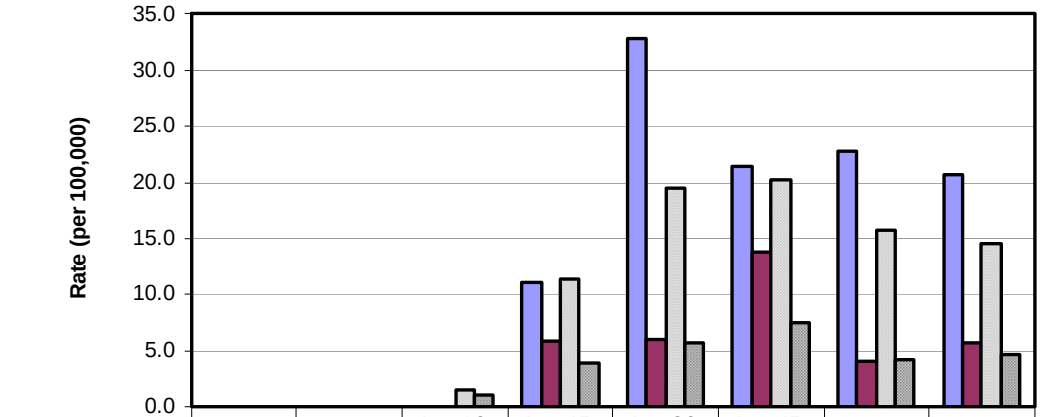
	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Male	0.0	0.0	0.0	20.0	51.9	55.1	15.1	37.5
EOHU Female	0.0	0.0	0.0	33.3	35.7	65.4	3.8	22.7
Ontario Male	0.0	0.0	18.3	26.7	37.6	38.8	12.4	28.5
Ontario Female	0.0	0.0	21.1	25.7	37.3	36.2	3.3	15.0

Figure 19. Percentage of Intentional Self-Harm Injures as Cause of Mortality



	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Male	0.0	0.0	0.0	5.0	2.8	2.0	0.0	1.9
EOHU Female	0.0	0.0	0.0	0.0	3.6	3.8	1.3	2.1
Ontario Male	11.7	5.9	4.9	8.1	6.5	3.0	0.7	4.0
Ontario Female	21.6	12.2	5.6	4.7	7.4	3.9	0.7	2.8

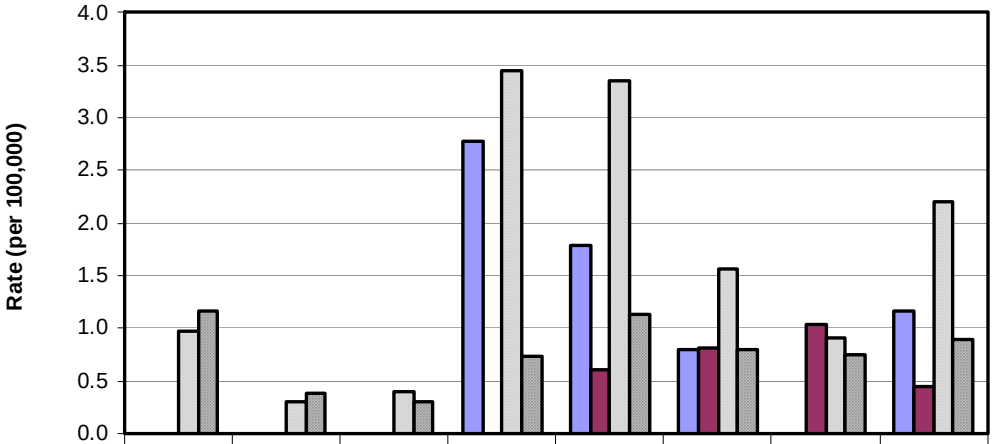
Figure 20. Percentage of Assaults as Cause of Mortality



	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Male	0.00	0.00	0.00	11.09	32.79	21.41	22.80	20.63
EOHU Female	0.00	0.00	0.00	5.89	6.03	13.84	4.03	5.67
Ontario Male	0.00	0.00	1.49	11.33	19.46	20.18	15.72	14.58
Ontario Female	0.00	0.00	1.14	3.93	5.69	7.50	4.22	4.61

Figure 21. Age-Specific Mortality Rate (per 100,000 population) Due to Intentional Self-Harm (Suicide) (Age-Standardized 65+ and All Ages Combined)

As seen in Figure 22, suicide rates (per 100,000) are higher in Eastern Ontario than in the province as a whole, especially for males between the ages of 20 and 44 and over the age of 65. Assault rates are lower for the EOHU region than the provincial rates.



	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Male	0.00	0.00	0.00	2.77	1.79	0.79	0.00	1.17
EOHU Female	0.00	0.00	0.00	0.00	0.60	0.81	1.04	0.44
Ontario Male	0.98	0.30	0.40	3.45	3.36	1.56	0.91	2.20
Ontario Female	1.16	0.37	0.30	0.73	1.13	0.80	0.74	0.88

Figure 22. Mortality Age-Specific Mortality Rate (per 100,000 population) Due to Assault (Age-Standardized for 65+ and All Ages Combined)

Key Findings:

- Suicide rates are highest among males aged 20-44 years old (contrasting rates of ambulatory ER visits and hospitalizations which are more common among women)
- Rates of suicide are higher in the EOHU region than in Ontario
- The EOHU region has a lower rate of mortality due to assault than Ontario

5.3.1 Potential Years of Life Lost (PYLL) from Intentional Injuries

According to Statistics Canada, "potential years of life lost (PYLL) for total mortality is the number of years of life "lost" when a person dies "prematurely" from any cause before the age of 75. Someone who dies at age 25 for example has lost 50 years of life.

PYLL is calculated by taking the median age in each age group, subtracting it from 75, and multiplying it by the number of deaths in that age group specific to sex and cause of death.[5] These data are presented as a count (total PYLL) and as a rate per 100,000 population.

Table 3 details the potential years of life lost (PYLL) due to intentional injuries (assault and suicide) in the EOHU region and in Ontario. Due to the high suicide rate in males aged 22 to 44, in Eastern Ontario suicide accounts for more PYLL than any other injury-related cause, including MVA (see table 9 for PYLL of unintentional injuries).

Table 3. PYLL Due to Intentional Injuries (per 1,000 population)

	EOHU			Ontario		
	Male	**Female**	**Both**	**Male**	**Female**	**Both**
Intentional Self-Harm (X60-X84) (suicide)	5.47	1.59	3.55	3.96	1.29	2.64
Assault (X85-Y09)	0.37	0.10	0.24	0.74	0.28	0.51

Key Findings:

- Suicide accounts for the most potential years of life lost
- More potential years of life are lost in the EOHU region than in Ontario

[5] Statistics Canada, Vital Statistics, Death Database, and Demography Division (population estimates)

5.3.2 Suicide Ideation and Attempts

Participants in the CCHS cycle 3.1 survey were asked whether they had ever seriously considered committing suicide in their lifetime or in the past year. Responses show that women are more likely than men to have considered suicide (Figure 23 and Figure 24), which contrasts with the suicide rates seen in section 5.3 where men have higher rates of mortality due to self-harm than women. Geographically, the rates of suicide ideation over the lifetime and in the past year are much higher in the EOHU region than in Ontario, consistent with the trend seen in rates of mortality due to intentional self-harm. In the EOHU region, 108 people per 1,000 seriously considered suicide compared to 79 per 1,000 in Ontario. Similarly, for suicide ideation in the past year, in the EOHU region has a rate of 25 per 1,000 compared to Ontario's 17 per 1,000. The EOHU territory also has a higher rate of suicide attempts in the past year than the rest of the province (6.78 vs. 2.96 per 1,000).

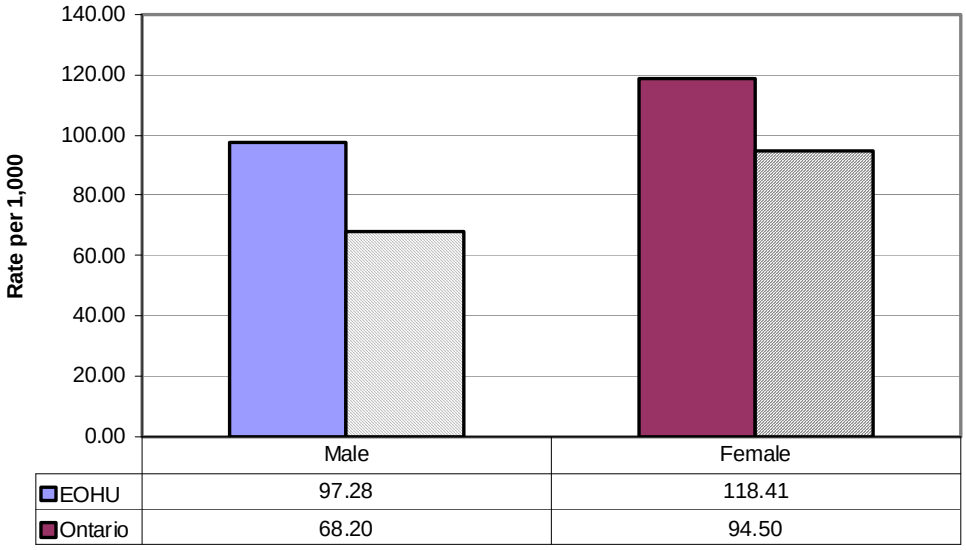


Figure 23. Rate of Lifetime Suicide Ideation (per 1,000 population), All Ages, CCHS 3.1

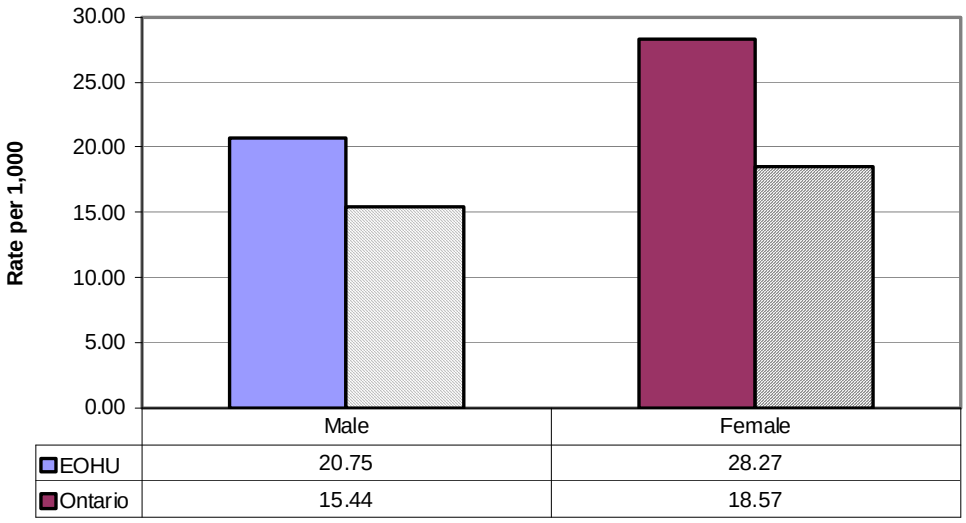


Figure 24. Rate of Suicide Ideation in the Past Year (per 1,000 population), All Ages, CCHS 3.1

Key Findings:

- Women have higher rates of suicide ideation than men
- The EOHU region has more suicide ideation and more suicide attempts than Ontario

6 Unintentional Injuries

6.1 Prevalence of Unintentional Injuries

In CCHS 3.1 (2005), participants were asked whether or not they were injured in past 12 months. 10.3% of participants in the EOHU region and 13.8% of respondents in Ontario reported a history of unintentional injury during the reference period. The rate of injury is higher among the 18-24 year olds than in other age group, and is higher among males than females (Figure 25).

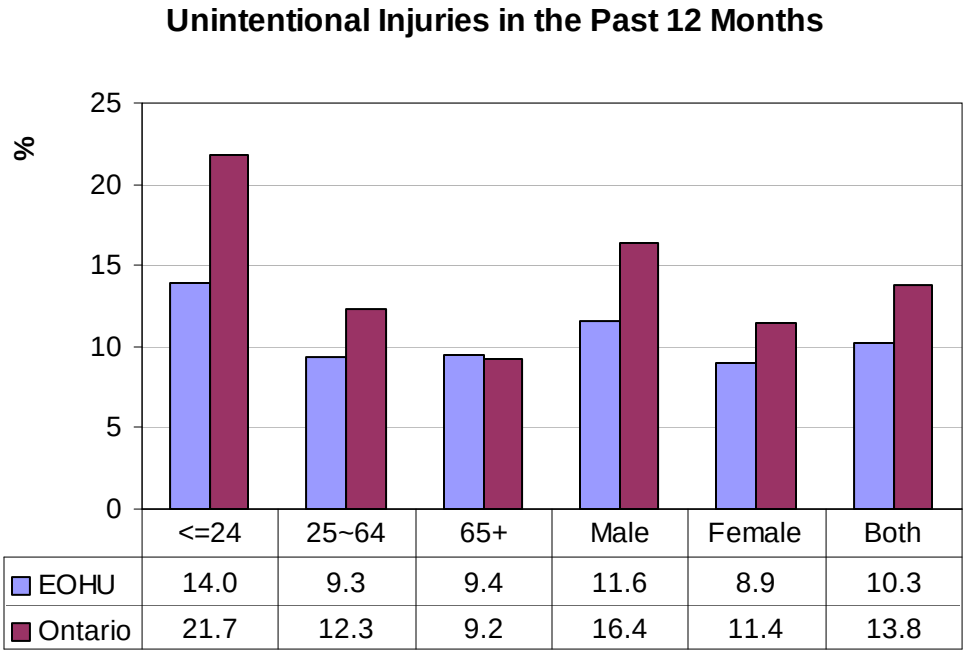


Figure 25. Percentage of Unintentional Injuries, Past Year by Age Group and Sex CCHS 3.1, 2005

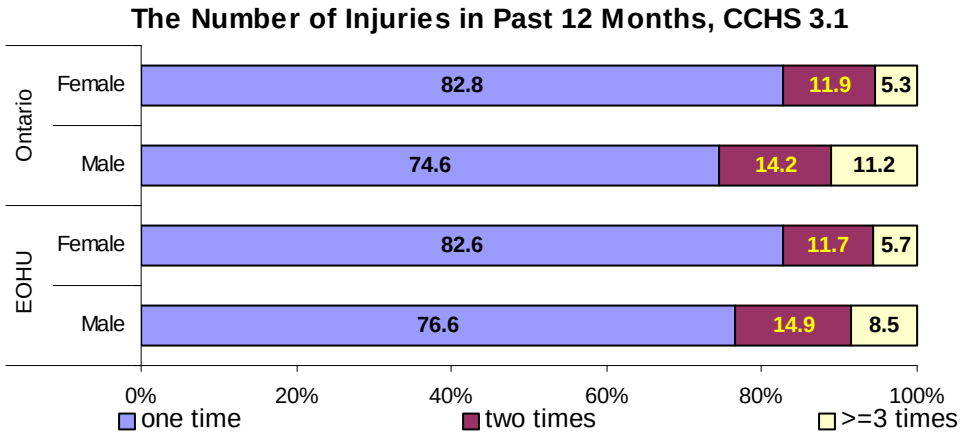


Figure 26. Number of Unintentional Injuries in the Past 12 Months Comparing Males and Females, CCHS 3.1, 2005

As seen in Figure 26, among respondents who reported an unintentional injury, about 75% of males and 83% of females were injured at least once, 14% of males and 12% of females were injured twice, and 11% of males and 5% of females were injured 3 or more times. These proportions are similar for Ontario and the EOHU territory.

Key Findings:

- Males have higher rates of unintentional injury than females
- The rate of unintentional injury is highest in 18-24 year olds

6.1.1 Causes of Unintentional Injury

While many factors can result in an injury, falls are the leading cause of unintentional injury and are responsible for almost half of all injuries. According to data from CCHS 3.1 shown in Figure 27, more than 40% of injuries are the result of a fall, and this is true in both Ontario and the EOHU territory. Other causes of injury include overexertion, being crushed, having contact with a sharp object, being bumped or having an injury related to transportation.

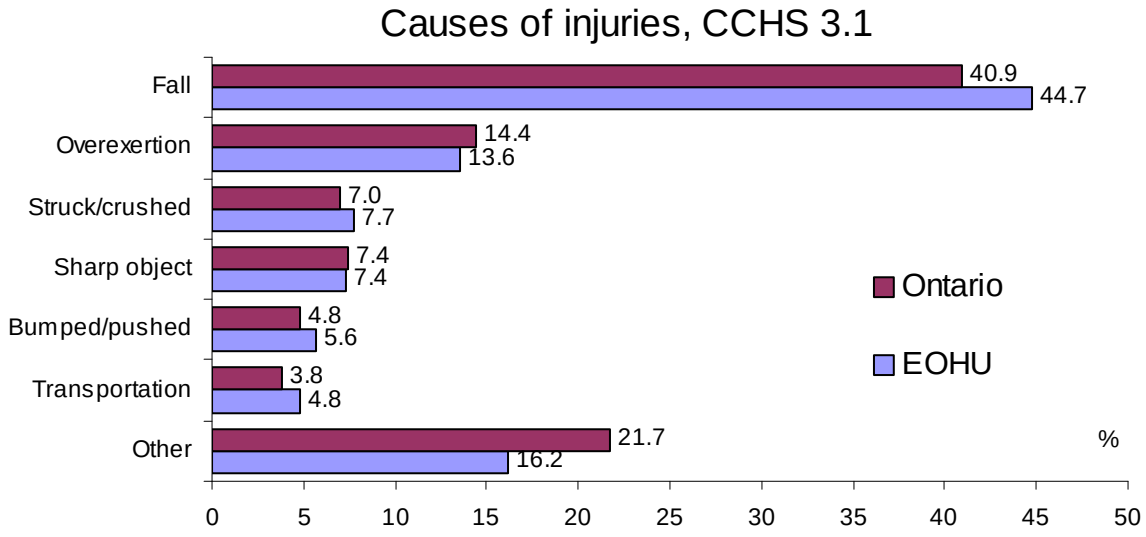


Figure 27. Leading Causes of Injury, CCHS 3.1, 2005

Key Findings:

- Falling is the number one cause of unintentional injury and accounts for about half of all unintentional injuries

6.1.2 Location at which the Unintentional Injuries Occurred

The home and surrounding area is the most frequently reported location for the occurrence of an unintentional injury. 46.5% of unintentional injuries in the EOHU region happened at home which is compared to 37% of unintentional injuries in Ontario (Figure 28). Unintentional injuries also frequently occur in the street or on the highway, at school and in commercial areas. 29% of unintentional injuries in Ontario and 20% of injuries in the EOHU territory occurred in these three locations. Other injuries occur in industrial areas, in the countryside and on farms.

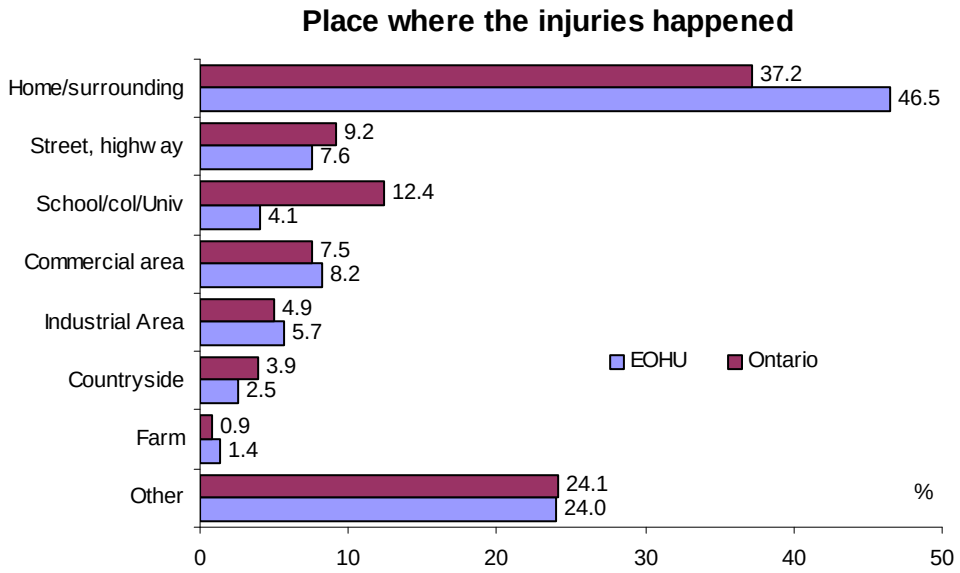


Figure 28. Locations Where Unintentional Injuries Occurred, CCHS 3.1, 2005

In Ontario, 32% of unintentional injuries occur while participating in physical activity, compared to 25% in the EOHU region. Other settings for unintentional injuries include during paid work, while performing household chores and during leisure time (Figure 29).

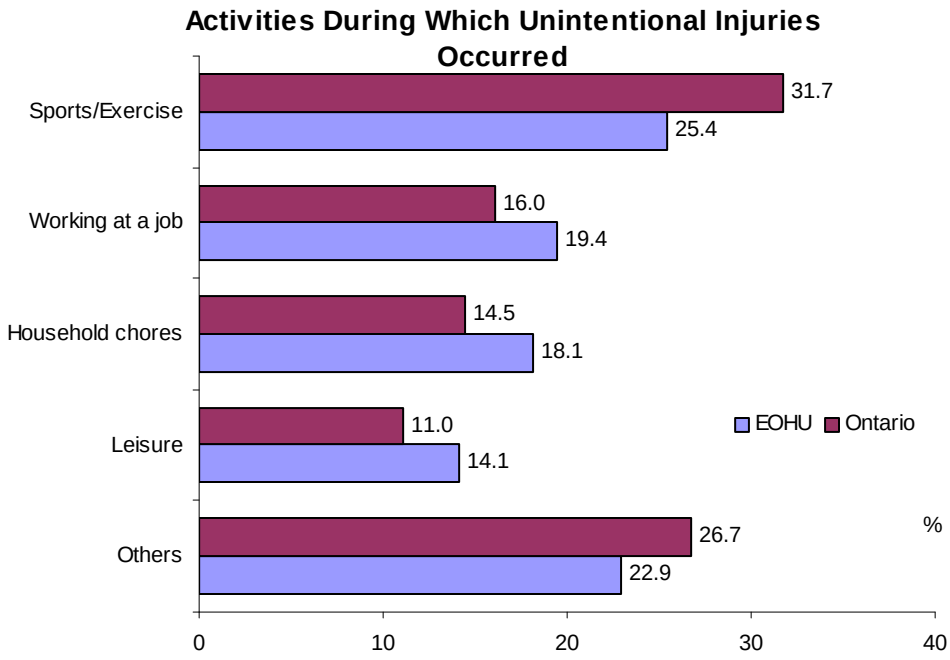


Figure 29. Activities When Unintentional Injuries Occurred, CCHS 3.1, 2005

Key Findings:

- Unintentional injuries occur most often at home
- Unintentional injuries occur most often while engaging in sports or exercise

6.1.3 Type, Location and Status of Unintentional Injury

Strain is the most common type of unintentional injury and accounts for almost 40% of all injuries in both the EOHU region and in all of Ontario. Other than strain, major types of unintentional injury include broken bones, cuts, bruises, dislocations, and burns (Figure 30).

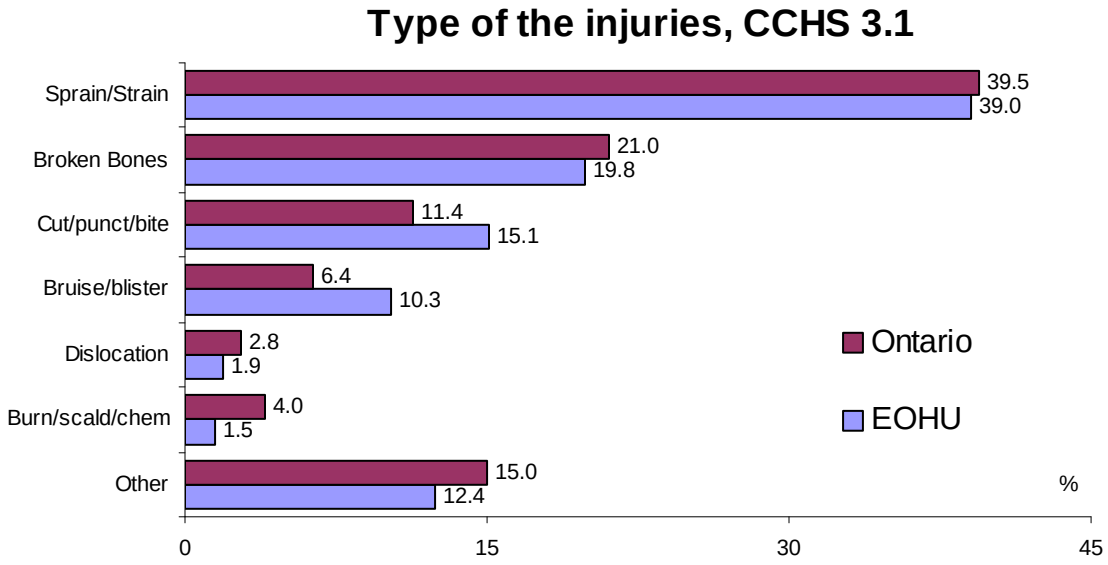


Figure 30. Types of Unintentional Injuries, CCHS 3.1, 2005

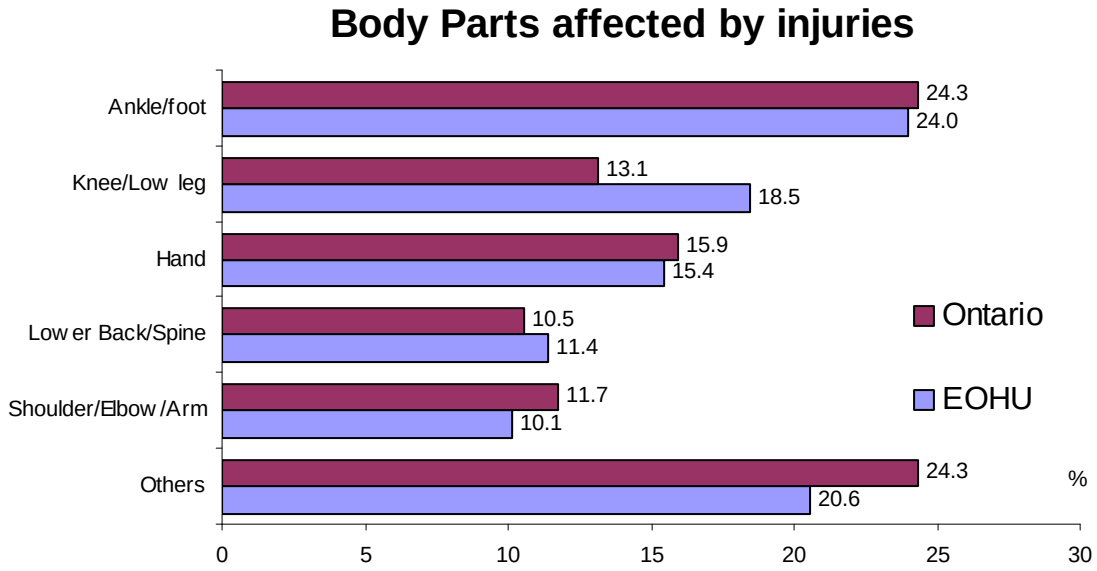


Figure 31. Body Parts Affected by Injury, CCHS 3.1, 2005

About 25% of unintentional injuries affect the ankle and foot or knee and lower leg. The hand, lower back and spine or shoulder, elbow and arm are also common sites of injury (Figure 31).

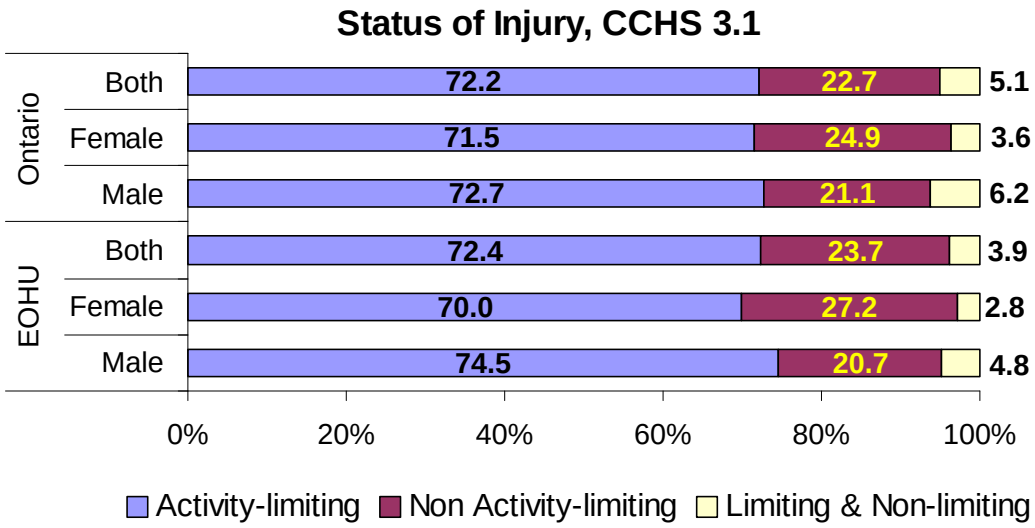


Figure 32. Status of injury, CCHS 3.1, 2005

Respondents were asked if they had experienced a serious injury and, if so, did that injury limit their activities. More than 70% of unintentional injuries were reported to be activity-limiting. The proportion of activity-limiting injuries in the EOHU region is similar to the proportion in Ontario (Figure 32). A small proportion of respondents reported having suffered from more than one serious injury, some limiting their activities and others that did not.

Key Findings:

- Sprains and strains are the most common type of unintentional injury
- The ankle and foot are the most likely location of an injury

6.1.4 Access to Treatment

Around 60% of respondents with unintentional injuries received medical treatment within 48 hours of the occurrence of their injury in both the EOHU territory and in Ontario; 10% of these treated injuries resulted in a hospital admission in the EOHU region versus 6.5% in Ontario. Unintentional injuries in seniors treated within 48 hours led to more hospital admissions than for any other age group. The percentage of treated injuries that resulted in a hospital admission due to unintentional injury is higher within the EOHU territory than in Ontario, particularly for seniors (26.3% versus 20.5%) (Table 4). The proportion of treated unintentional injuries resulting in a hospital admission is also higher for males in the EOHU region than for males in Ontario.

Table 4. The Treatment of Unintentional Injuries, CCHS 3.1 (2005)

	% Injuries that Received Treatment Within 48 hours		% of Treated Injuries that Resulted in Hospital Admission	
	EOHU	**Ontario**	**EOHU**	**Ontario**
Age:				
<24 yrs	68.4	55.8	5.9	4.8
25-64 yrs	59.5	61.8	8.5	5.2
65+ yrs	67.0	62.9	26.3	20.5
Gender:				
Males	65.0	58.4	13.4	6.3
Females	60.3	62.0	6.1	6.9
Both	62.9	59.9	10.3	6.5

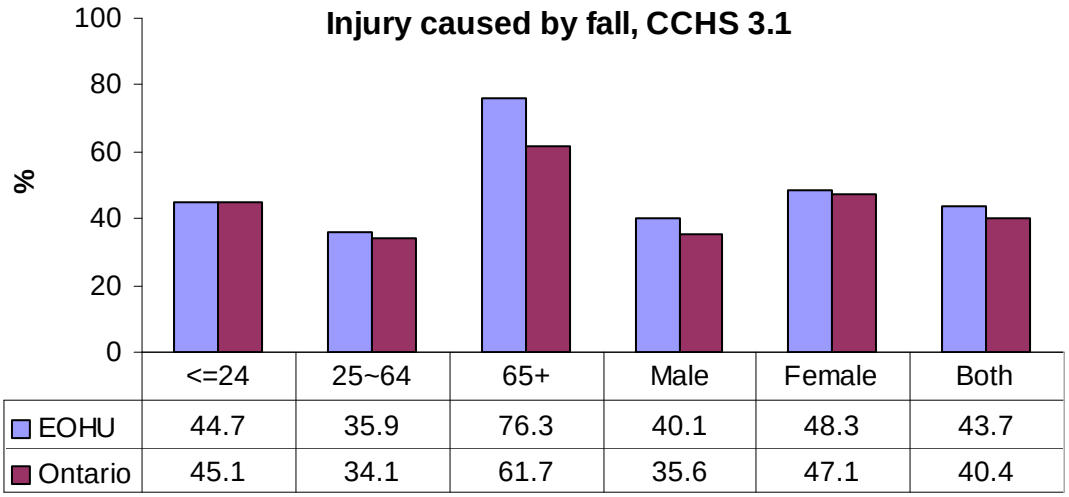
Key Findings:

- Approximately sixty percent of people with unintentional injuries received medical care with 48 hours
- An unintentional injury in the EOHU region is more likely to lead to hospitalization than in Ontario
- Seniors have the highest rate of hospitalization due to unintentional injury
- Males are hospitalized more frequently than females due to an unintentional injury

6.1.5 Unintentional Injuries Caused by Falls

Falling is the most frequent cause of unintentional injury and accounts for almost half of all injuries overall. Falls account for a larger proportion of unintentional injury in seniors than in any other age group. There are also more falls in females compared to males in both regions. According to data collected from CCHS 3.1, falls account for 43.7 % of unintentional injuries in the EOHU region and 40.4% in Ontario.

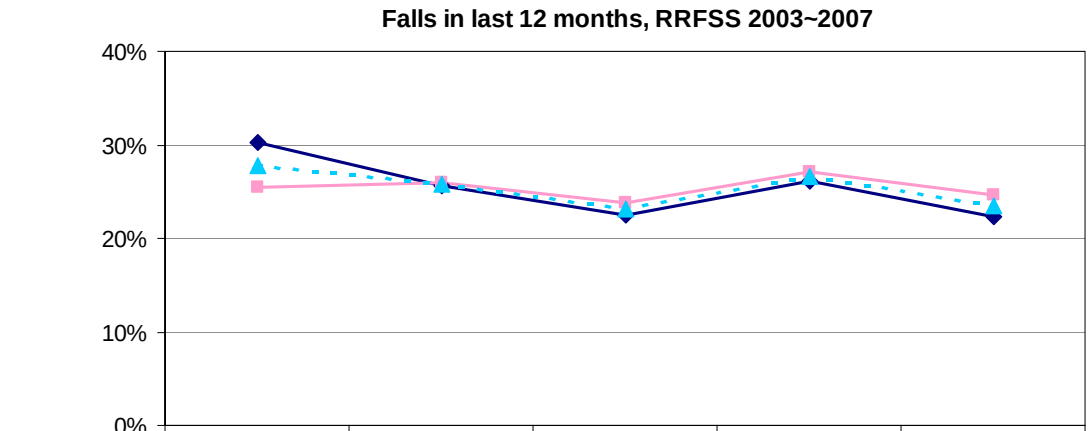
As seen in Figure 33, falls in seniors (aged 65 and older) cause 76.3% of unintentional injuries in the EOHU region and 61.7% of unintentional injuries in Ontario. Falls in women also cause 48% of injuries in females the EOHU region and 47% of injuries in females in Ontario.



	<=24	25~64	65+	Male	Female	Both
EOHU	44.7	35.9	76.3	40.1	48.3	43.7
Ontario	45.1	34.1	61.7	35.6	47.1	40.4

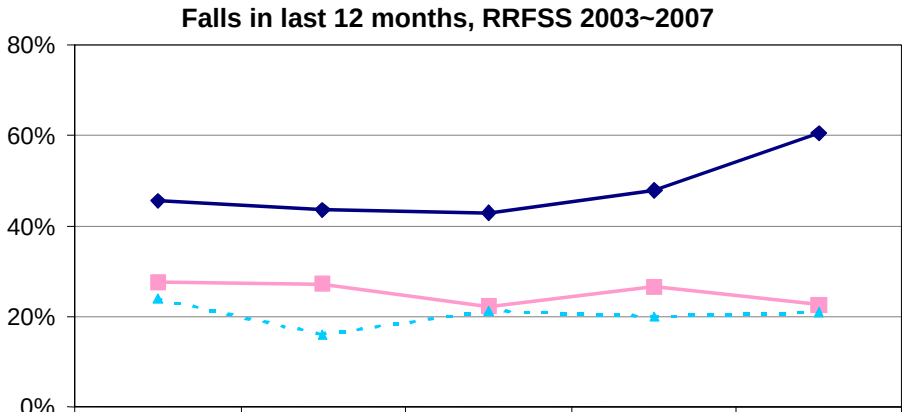
Figure 33. Unintentional Injury as the Result of a Fall, CCHS 3.1

As described earlier, the RRFSS continuously collects a large amount of information related to many topics of public health interest. With regards to falling, participants were asked if they had fallen in the previous 12 months. As seen in Figure 34, about 25% of RRFSS respondents in the EOHU region reported a fall in the previous 12 months. The proportion of survey respondents who had fallen remained relatively stable between 2003 and 2008 and was similar for both sexes.



	2003	2004	2005	2006	2007
Male	30.2%	25.6%	22.4%	26.1%	22.3%
Female	25.4%	26.0%	23.8%	27.0%	24.6%
Both	27.8%	25.8%	23.1%	26.6%	23.5%

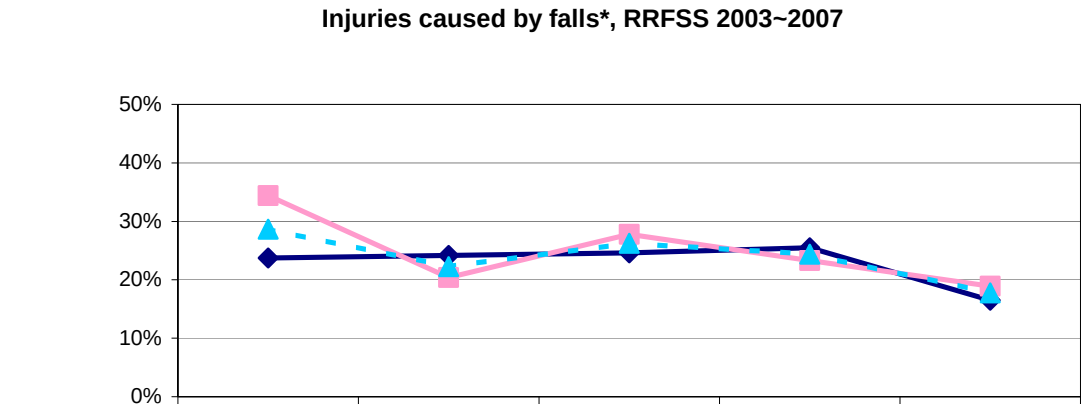
Figure 34. Falls in the Last 12 Months by Sex, RRFSS 2003-2007



	2003	2004	2005	2006	2007
18~24 Years	45.3%	43.4%	42.9%	47.9%	60.5%
25 ~64 Years	27.5%	27.1%	22.4%	26.6%	22.4%
65 Years+	23.8%	16.0%	21.1%	20.0%	21.0%

Figure 35. Falls in the Last 12 Months by Age Group, RRFSS 2003-2007

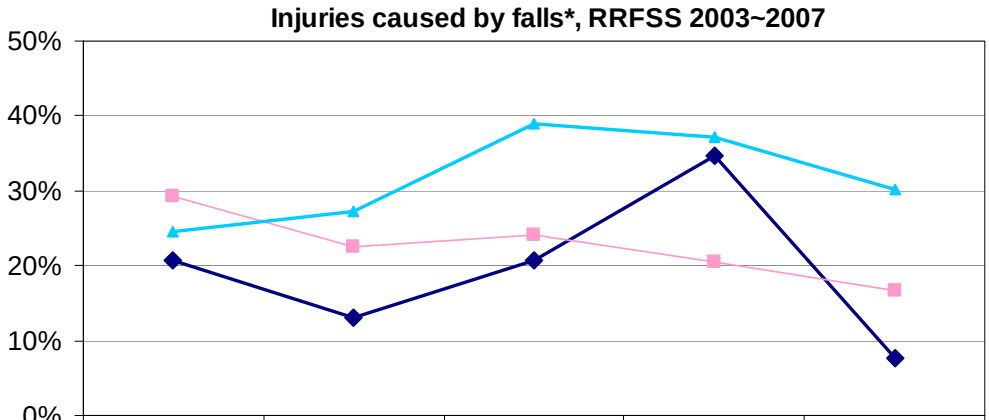
The proportion of falls among young people (aged 18 to 24) is higher than in other age groups (Figure 35). Although the survey does not specify the precise cause of the fall, a likely possible cause is the increased involvement of 18 to 24 year olds in physical activities, sports or other higher risk behaviours.



	2003	2004	2005	2006	2007
Male	23.8%	24.2%	24.6%	25.5%	16.5%
Female	34.4%	20.4%	27.8%	23.3%	18.9%
All	28.7%	22.3%	26.3%	24.4%	17.8%

* % of all falls

Figure 36. Falling as Cause of Unintentional Injury by Sex, RRFSS 2003-2007



	2003	2004	2005	2006	2007
18~24 Years	20.7%	13.0%	20.8%	34.8%	7.7%
25 ~64 Years	29.4%	22.6%	24.2%	20.4%	16.7%
65 Years+	24.5%	27.3%	39.0%	37.1%	30.2%

*** % of all falls**

Figure 37. Falling as Cause of Unintentional Injury by Age Group, RRFSS 2003-2007

The proportion of falls and unintentional injury vary by age group. In the younger population (less than 24 years old), the percentage of falls is higher (40% to 60%) (Figure 35) while the percentage resulting injuries is relatively low when compared to those in the older age groups. The frequency of falls in seniors (65 years and older) is lower than other age groups but the frequency resulting injury is higher (Figure 34 and Figure 36).

Among respondents who had a fall, about one quarter of the falls were serious enough to require medical attention. The proportion of injuries caused by falls between 2003 and 2007 remained relatively stable (Figure 36), this pattern is similar for both males and females.

As mentioned in the methodology section, the EOHU had taken an individual approach to the RRFSS, collecting its own data from 2003 to 2007. However, the EOHU joined the Ontario survey in 2008. This means that data from the 2008 cycle is not comparable to previous years due to a variation in questions and methodology. Additionally, the 2008 RRFSS results are, as of now, based on only six hundred respondents (instead of a full-year sample of about 1,200). The 2008 RRFSS results should thus be interpreted with caution.

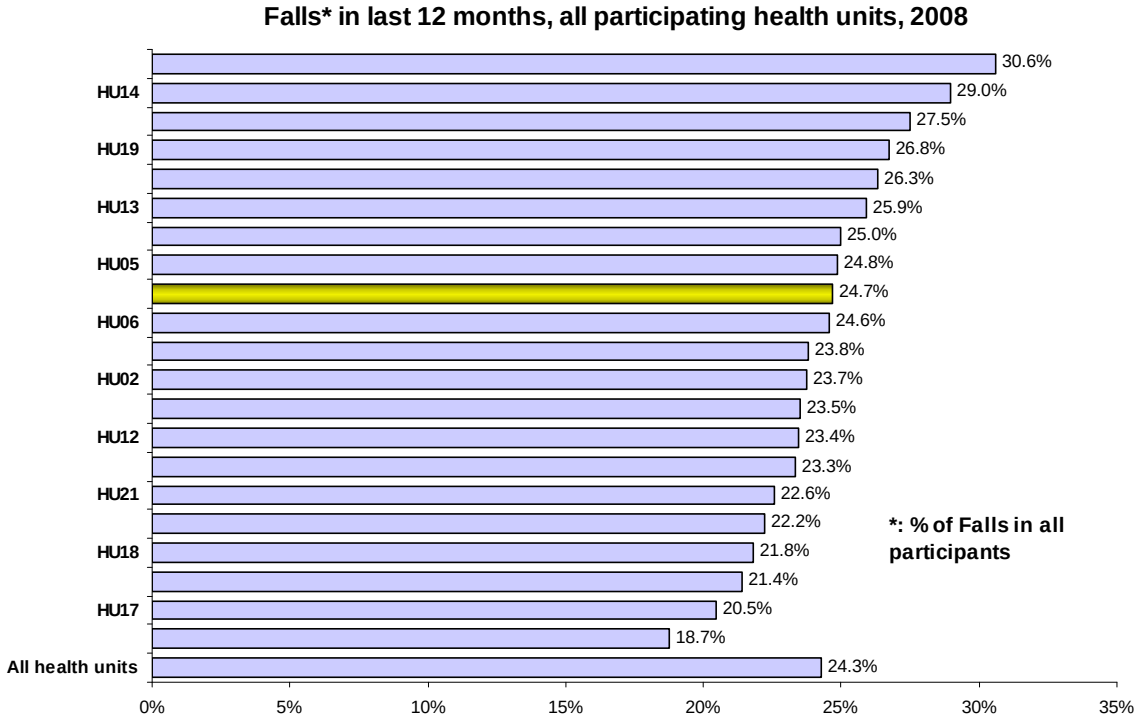


Figure 38. Percentage of Falls in the Last 12 Months, RRFSS 2008

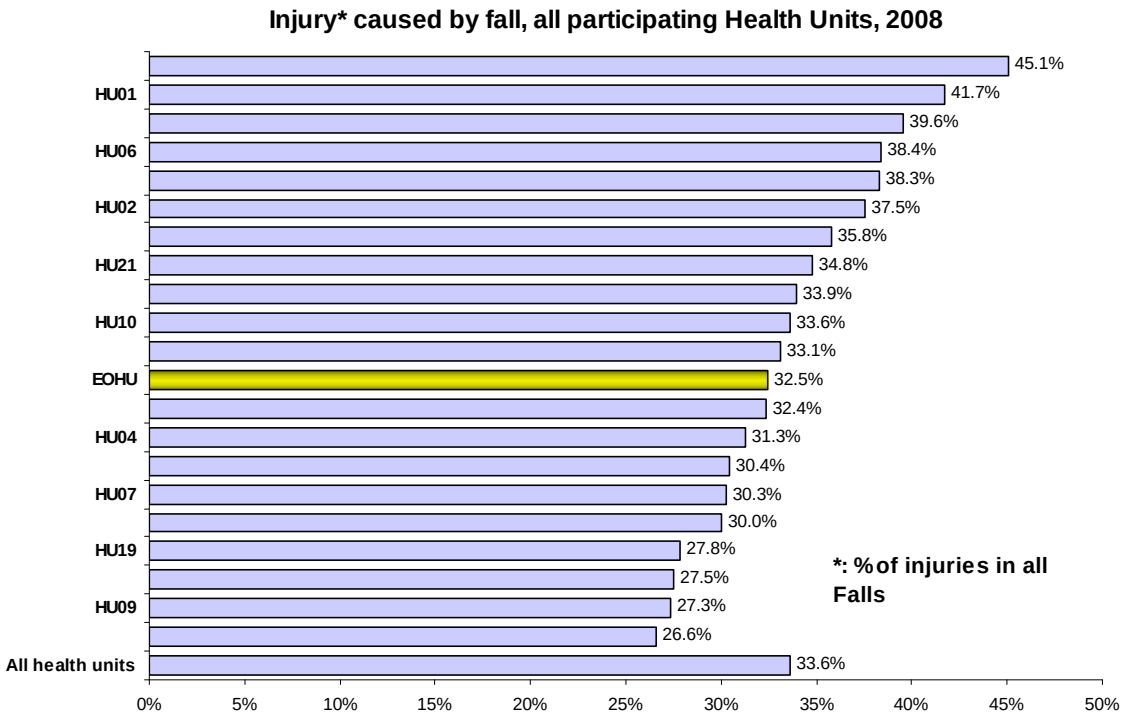


Figure 39. Percentage of Injury Caused by Falling, RRFSS 2008

While 24.7% of participants in the EOHU territory reported a fall in the past 12 months, 32.5% of those who fell reported being injured (Figure 38 and Figure 39). The EOHU (shown in yellow) has the 9th highest percentage of falls and the 13th highest percentage of injuries due to falling when all participating health units are compared. The EOHU results for percentage of falls and injuries due to falling is similar to the percentages reported when all health units are combined.

Key Findings:

- Falling is the leading cause of unintentional injury
- While seniors are the least likely to fall, they are the most likely to be injured by a fall
- Young people aged 18-24 are the most likely to fall and the least likely to be injured by a fall

6.1.6 Repetitive Strain Injury

A repetitive strain injury is a type of injury caused by the overuse of a muscle or by the frequent repetition of the same movement; some common examples are carpal tunnel syndrome, tennis elbow and tendonitis. Data from the CCHS 3.1 provides information about the prevalence and causes of repetitive strain injuries.

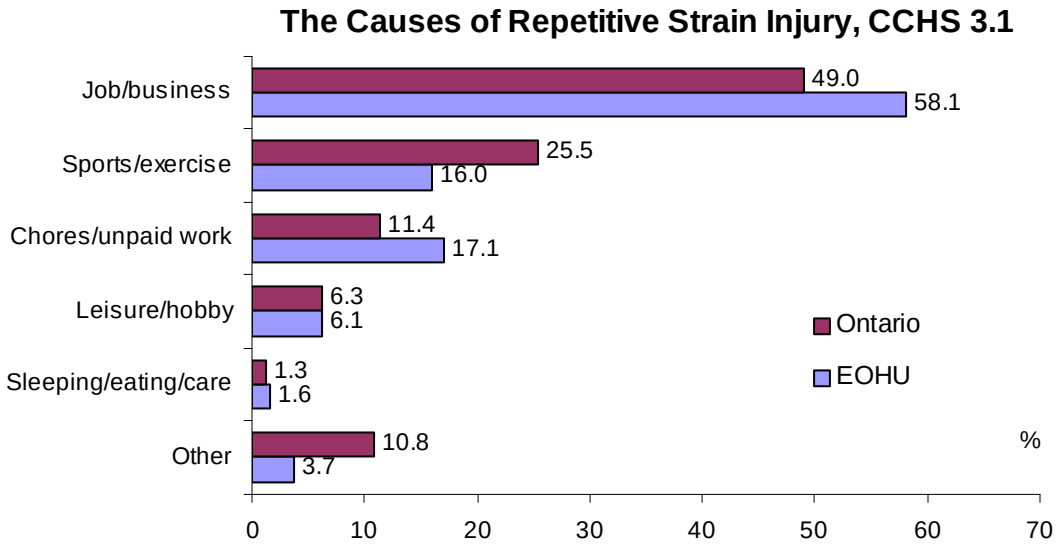


Figure 40. Causes of Repetitive Strain Injury

Repetitive strain injuries accounted for 10.4% of unintentional injuries in both the EOHU territory and Ontario. About half of all repetitive strain injuries happened because of a job or business. Other causes include sports and exercise, chores, leisure and hobbies, as well as injuries caused during sleeping, eating or daily care.

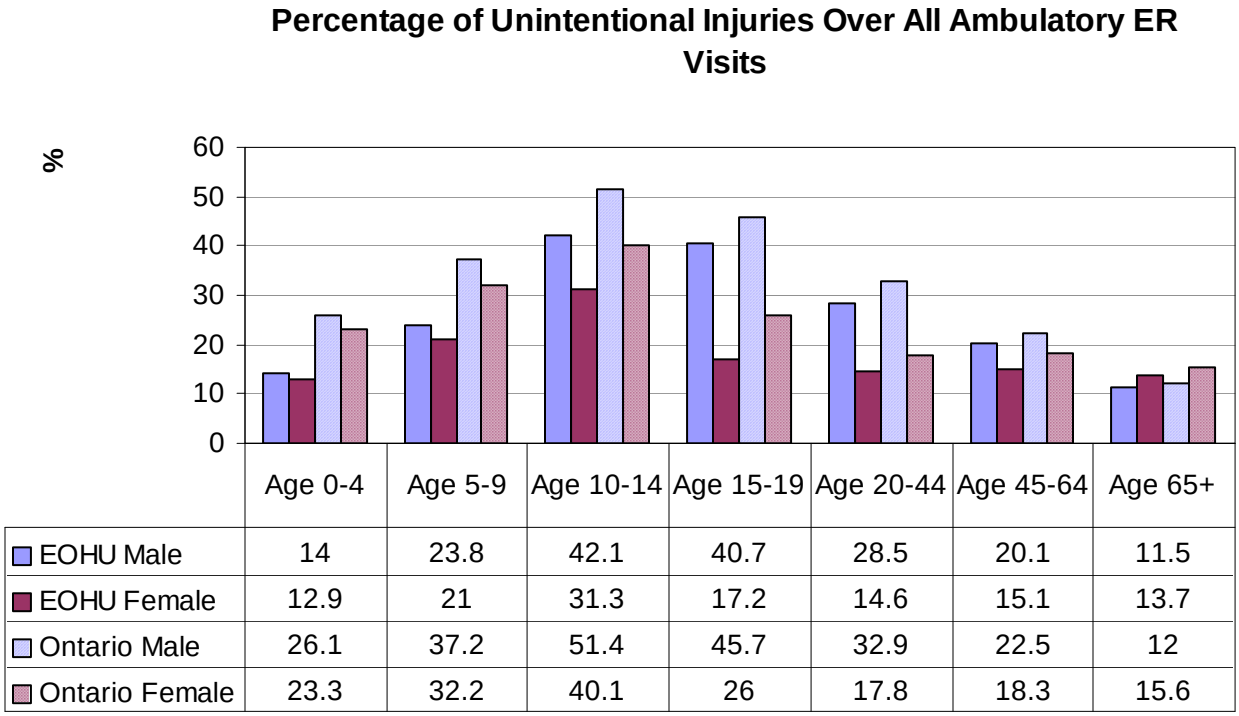
Key Findings:

- Half of all repetitive strain injuries happen while at work

6.2 Ambulatory Emergency Room Visits for Unintentional Injuries

Many unintentional injuries, while requiring medical treatment, do not result in a hospital admission. Patients are more likely to receive treatment at the hospital emergency room and then return home.

The proportion of emergency room visits due to unintentional injuries varies greatly by sex and age. As shown in Figure 41, unintentional injuries account for around 13% of all injury-related ER visits in children under the age of 5. In males between the ages of 10 and 19 unintentional injuries account for over 40% of all injury-related ER visits. The EOHU territory also differs from Ontario, as the proportion of unintentional injuries in all emergency visits is consistently lower than in the rest of the province.

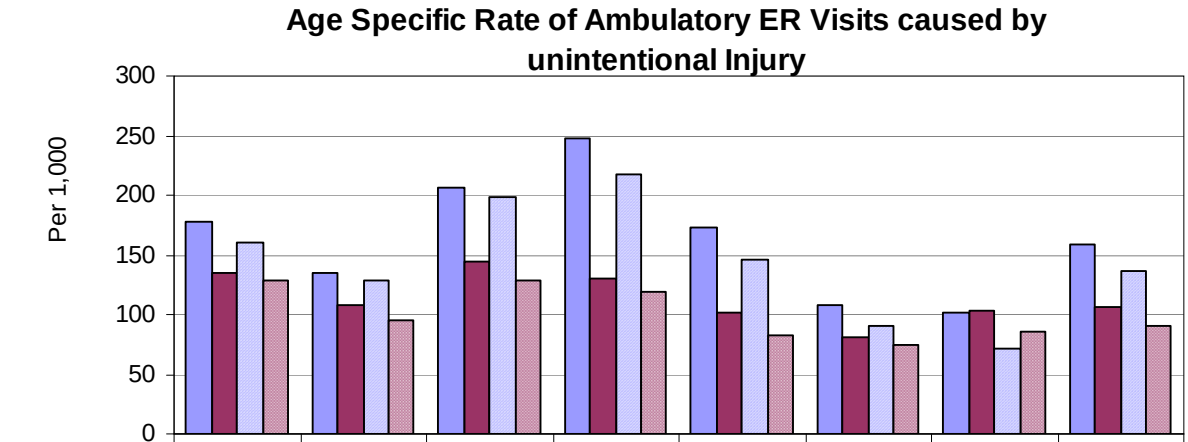


	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+
EOHU Male	14	23.8	42.1	40.7	28.5	20.1	11.5
EOHU Female	12.9	21	31.3	17.2	14.6	15.1	13.7
Ontario Male	26.1	37.2	51.4	45.7	32.9	22.5	12
Ontario Female	23.3	32.2	40.1	26	17.8	18.3	15.6

Figure 41. Percentage of Unintentional Injuries Over All Ambulatory ER Visits by Age Group, 2003-2006

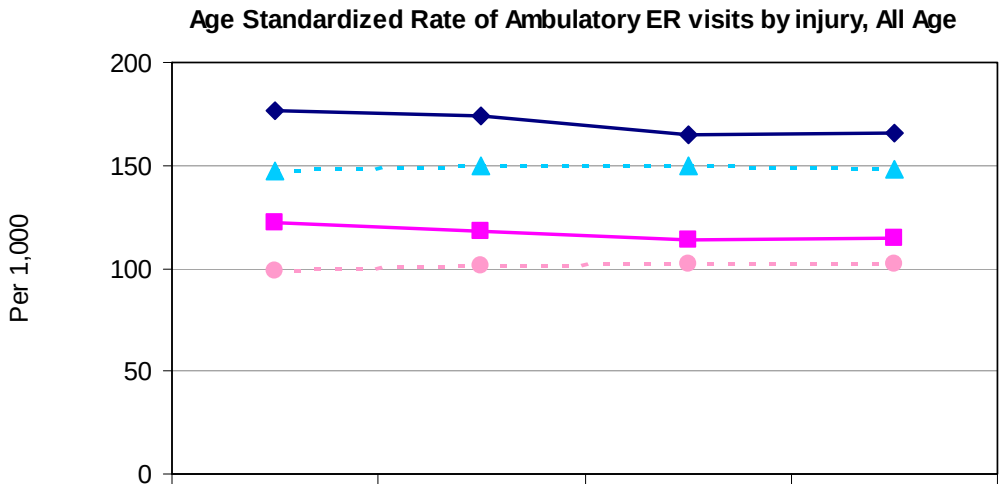
Although unintentional injuries represent a smaller proportion of emergency room visits in the EOHU region compared to Ontario, the rate of ER visits is higher for all age groups.

In Figure 42, injury rates have been standardized for seniors aged 65 and up and when all age groups are combined. EOHU residents have nearly 20 more ambulatory emergency visits for unintentional injury per 1,000 than the rest of the province.



	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Male	177.8	134.6	205.9	247.4	172.4	107.3	101.3	158.8
EOHU Female	135.6	107.7	144.8	130.7	101.8	80.9	103.5	106.5
Ontario Male	160.8	127.8	197.7	216.8	146.4	91.2	72.2	136.0
Ontario Female	127.9	95.7	128.4	119.8	82.4	74.0	85.2	91.1

Figure 42. Age-Specific Rate of Ambulatory ER Visits for Unintentional Injury, By Sex and Age Group, 2003-2006



	2003	2004	2005	2006
EOHU Male	176.7	173.9	164.6	165.9
EOHU Female	122.3	118.1	114.1	114.4
Ontario Male	147.2	149.7	150.0	148.0
Ontario Female	98.6	101.3	102.1	102.2

Figure 43. Age-Standardized Rate of Ambulatory ER Visits for Unintentional Injury, By Sex and Year, 2003-2006

The EOHU region has higher ambulatory rates of unintentional injury for every age group and for both sexes when compared to the province and have remained relatively consistent between 2003 and 2006.

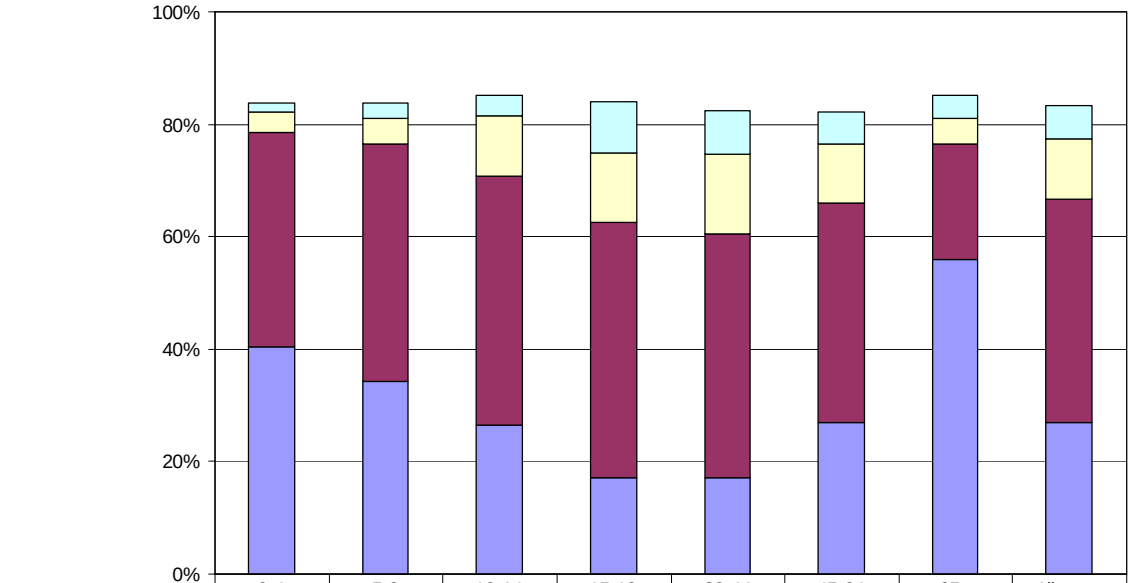
Key Findings:

- Unintentional injuries represent a smaller proportion of emergency room visits in the EOHU region, but the rate of ER visits is higher than Ontario
- Forty percent of emergency room visits due to unintentional injury are among 10-19 year old males

6.2.1 Leading Causes of Unintentional Injuries

The four leading causes of unintentional injury are falls, mechanical forces, overexertion and privation as well as motor vehicle accidents (MVA). Exposure to mechanical forces includes both animate and inanimate forces. Inanimate mechanical forces include being struck or thrown, being struck by a projectile or falling object, striking against or being struck by sports equipment, being caught, crushed, jammed or pinched in or between objects, having contact with powered or non-powered hand tools, as well as a handgun discharge but does not include assault or intentional self-harm. Animate mechanical forces include being hit, struck, kicked, twisted, bitten or scratched by another person, being bitten by any animal, and having contact with plant thorns and spines as well as sharp leaves.

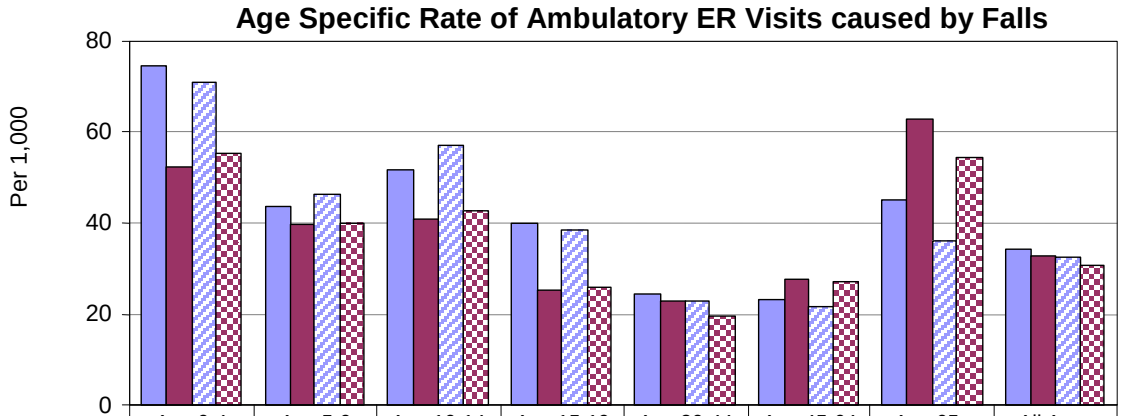
The highest proportion of falls within unintentional injuries is in children under the age of 10. The proportions decrease in the middle age groups, only to increase late in life, reaching 45% in males and 64% in females over the age of 65. Figure 44 illustrates the proportions of the four leading causes of unintentional injury by age for the EOHU territory. It is clear that falls account for a large proportion of injuries in seniors (over the age of 65). Additional causes of unintentional injury not seen in Figure 44 include heat and hot substances, venomous animals and plants, and accidental poisoning.



	0-4	5-9	10-14	15-19	20-44	45-64	65+	All ages
MVA	1.6%	2.8%	3.8%	9.3%	7.7%	5.5%	3.9%	6.0%
Overexertion/privation	3.9%	4.4%	10.7%	12.2%	14.2%	10.6%	4.8%	10.7%
Mechanical forces	38.0%	42.3%	44.3%	45.4%	43.2%	39.0%	20.5%	39.7%
Falls	40.4%	34.3%	26.4%	17.2%	17.2%	27.0%	55.9%	26.9%

Figure 44. Leading Causes of Ambulatory Unintentional Injury by Age Group, 2003-2006

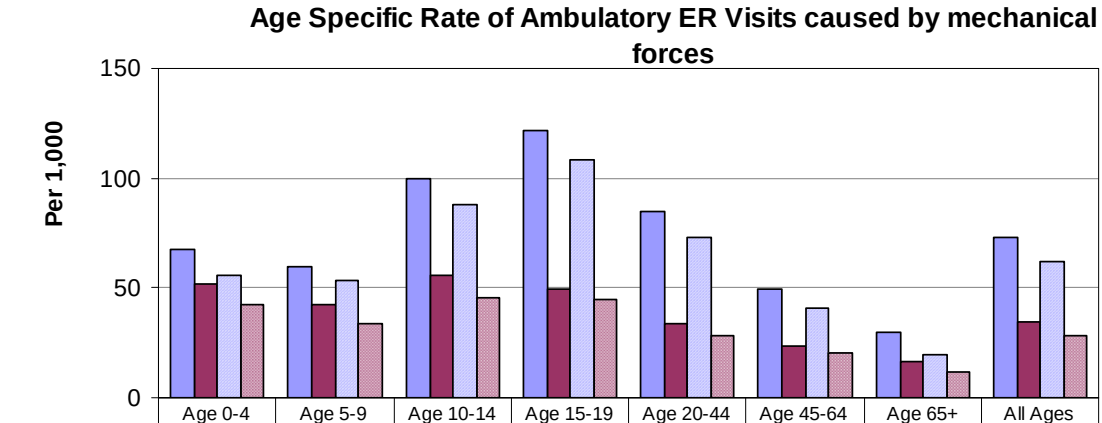
Ambulatory visits to the emergency room due to falls are most frequent in the youngest age groups and in seniors over the age of 65 (Figure 45). Of local concern are the higher rates of fall among seniors (aged 65 and up) in the EOHU region compared to the province for both sexes.



	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Male	74.3	43.6	51.7	40.1	24.5	23.2	45.4	34.4
EOHU Female	52.4	39.5	41.0	25.2	22.7	27.7	62.6	32.9
Ontario Male	70.7	46.3	57.3	38.3	22.8	21.5	35.9	32.4
Ontario Female	55.1	39.8	42.8	26.1	19.5	27.4	54.6	31.0

Figure 45. Age-Specific Rates of Ambulatory ER Visits Caused by Falls (2003-2006)

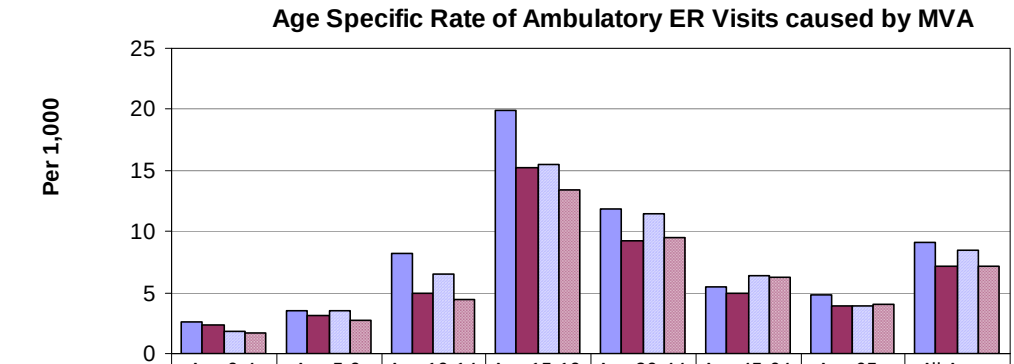
Ambulatory ER visits for unintentional injuries caused by mechanical forces follows a similar pattern to rates of falling. The rates of mechanical injuries are higher during the period of active play and work as well as being higher in males. Again, rates in the EOHU territory are consistently higher than rates in Ontario, for both sexes and all age groups.



	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Male	67.6	59.8	99.4	121.3	84.7	49.4	30.0	73.1
EOHU Female	51.5	42.7	55.6	49.8	33.8	23.7	16.2	34.5
Ontario Male	55.4	53.7	87.9	108.0	73.4	41.0	19.3	62.1
Ontario Female	42.4	33.8	45.6	44.9	28.3	20.5	11.9	28.7

Figure 46. Age-Specific Rates of Ambulatory ER Visits Caused by Mechanical Forces (Age-Standardized for 65+ and all ages) (2003-2006)

Injuries resulting from MVA (Figure 47) have been a growing public concern for a number of years. Youth aged 15 to 19 have an injury rate from MVA that is twice as high as adults aged 20 to 44 and almost four-fold that of drivers 45 years and older. Males are injured more frequently than females and male youth aged 15 to 19 years in Eastern Ontario have about 30% more ambulatory emergency room visits caused by MVA than their counterparts in the rest of the province.



	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Male	2.6	3.5	8.2	20.0	11.9	5.5	4.8	9.1
EOHU Female	2.3	3.1	4.9	15.2	9.2	4.9	3.9	7.2
Ontario Male	1.9	3.5	6.6	15.5	11.5	6.4	4.0	8.4
Ontario Female	1.6	2.7	4.4	13.4	9.4	6.2	4.0	7.2

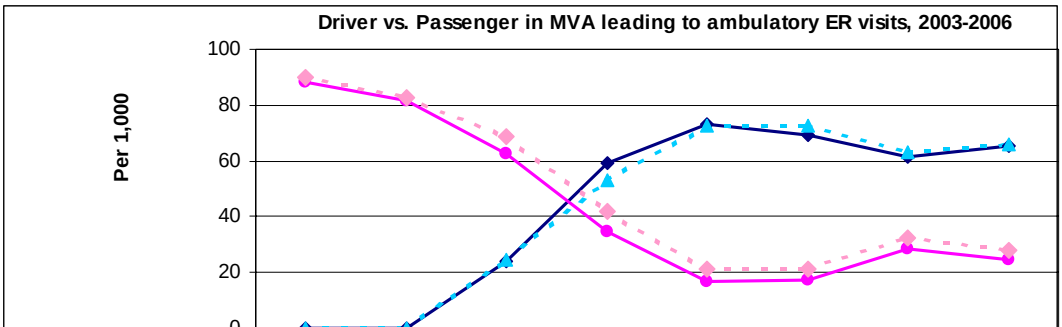
Figure 47. Age-Specific Rates of Ambulatory ER Visits Caused by MVA (Age-Standardized for 65+ and the Group All Ages) (2003-2006)

Key Findings:

- The leading causes of ambulatory ER visits due to unintentional injury are: Falls, mechanical forces, overexertion/privation and MVA
- The rate of ER visits due to falling is higher in seniors from the EOHU region than seniors in Ontario
- Males aged 15-19 in the EOHU region are more likely than males in Ontario to have an ER visit due to a MVA

6.2.2 Focus on MVA as Cause of Ambulatory ER Visits

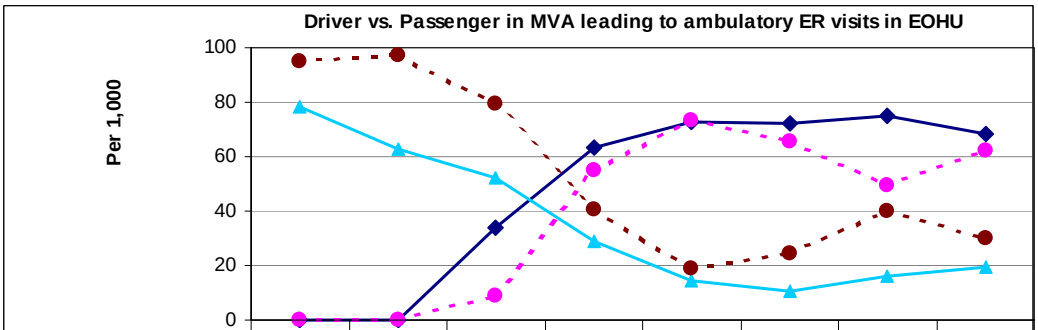
Focusing specifically on ambulatory emergency visits caused by MVA, it is interesting to look more closely at injuries to the driver versus passenger as a function of age and sex. As expected the vast majority of ambulatory emergency visits caused by MVA in children aged less than 10 years occur while the child is a passenger, however a small proportion of these accidents occurred while the child was the driver (Figure 48). The reader must bear in mind that MVA include all motor vehicles (including farm equipment, scooters, ATVs, and snowmobiles) on and off public roads.



	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Driver	0	0	24.3	59.1	73	69.3	61.7	65.3
EOHU Passenger	88.2	81.7	62.6	34.5	16.6	17.3	28.6	24.4
Ontario Driver	0	0	24.5	53.3	72.6	72.7	63	66.2
Ontario Passenger	90	82.7	68.9	41.7	21.4	21.2	32.2	28

Figure 48. Driver vs. Passenger in MVA Leading to Ambulatory ER Visits 2003-2006

The following figure (Figure 49) indicates that both sexes are more likely to be injured as passengers when less than 15 years of age and as drivers in the older age groups. Female passengers of a vehicle involved in a MVA visit the ER more frequently than male passengers. Among drivers of a vehicle involved in a MVA, males are more likely to make an ambulatory ER visit.



	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
Driver Male	0	0	33.8	63.1	72.7	72.5	75.2	68.1
Driver Female	0	0	9.1	55.1	73.4	65.8	49.3	62.4
Passenger Male	78.6	63	52.1	28.9	14.6	10.4	16.3	19.3
Passenger Female	95	97	79.5	40.4	18.7	24.6	40	29.8

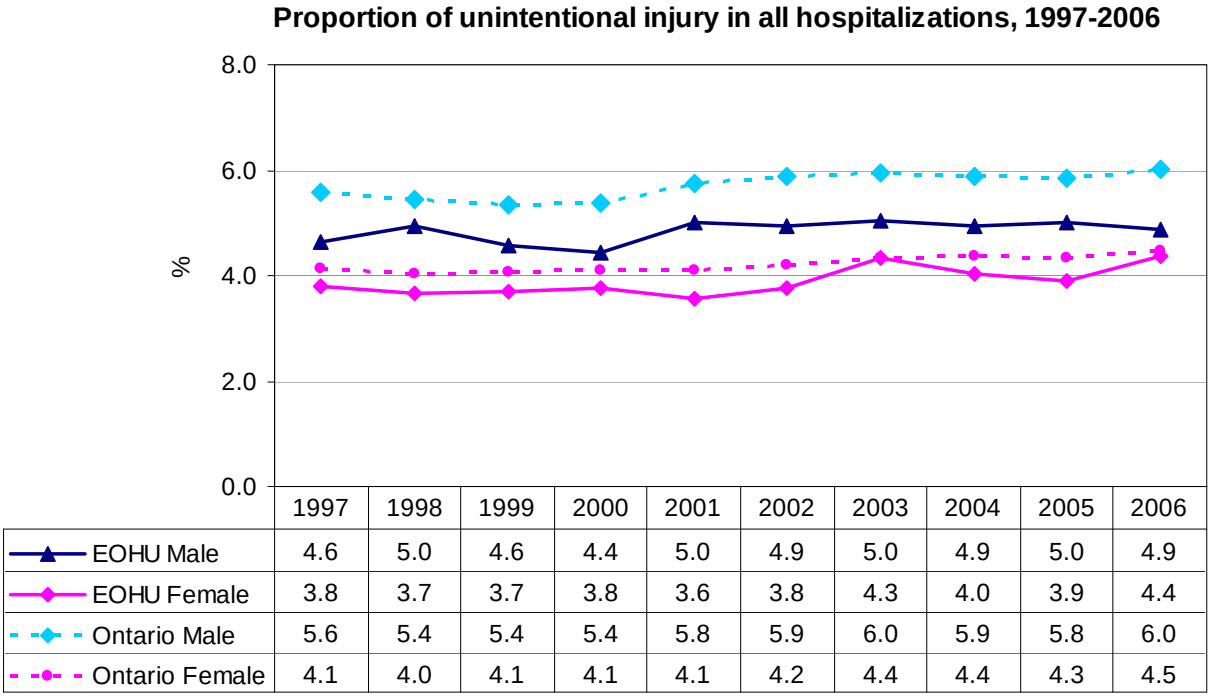
Figure 49. Driver or Passenger in MVA leading to an ambulatory ER visit 2003-2006 EOHU only

Key Findings:

- Female passengers are more likely to experience an ER visit due to MVA than male passengers
- Male drivers are more likely to visit the ER due to MVA than female drivers

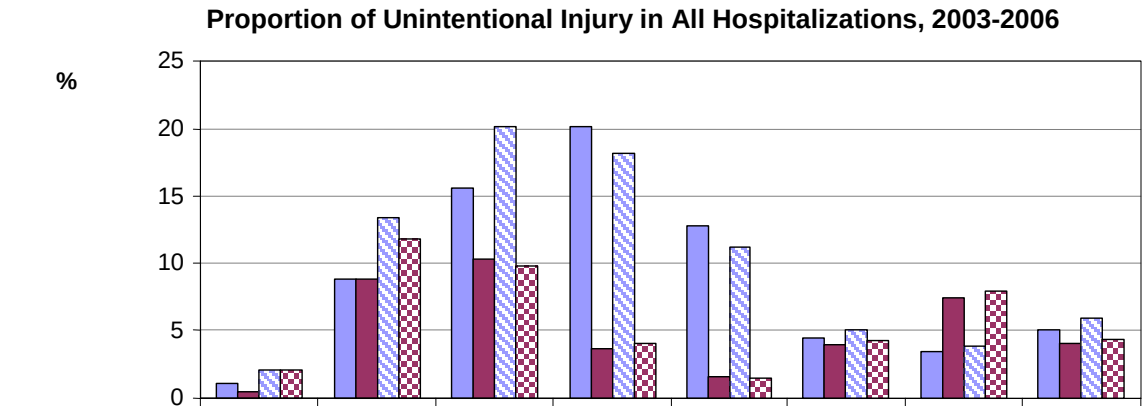
6.3 Hospitalizations for Unintentional Injuries

From 1997 to 2006, unintentional injuries accounted for between 5.4% and 6.0% of hospitalizations for males and between 4.0% and 4.5 % for females in Ontario. These proportions were slightly lower in the EOHU region where unintentional injuries accounted for between 4.6% and 5.0% of all hospitalizations in males and between 3.7% and 4.4% in females (Figure 50).



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
EOHU Male	4.6	5.0	4.6	4.4	5.0	4.9	5.0	4.9	5.0	4.9
EOHU Female	3.8	3.7	3.7	3.8	3.6	3.8	4.3	4.0	3.9	4.4
Ontario Male	5.6	5.4	5.4	5.4	5.8	5.9	6.0	5.9	5.8	6.0
Ontario Female	4.1	4.0	4.1	4.1	4.1	4.2	4.4	4.4	4.3	4.5

Figure 50. Proportion of Unintentional Injuries in Total Hospital Discharges, 1997-2006

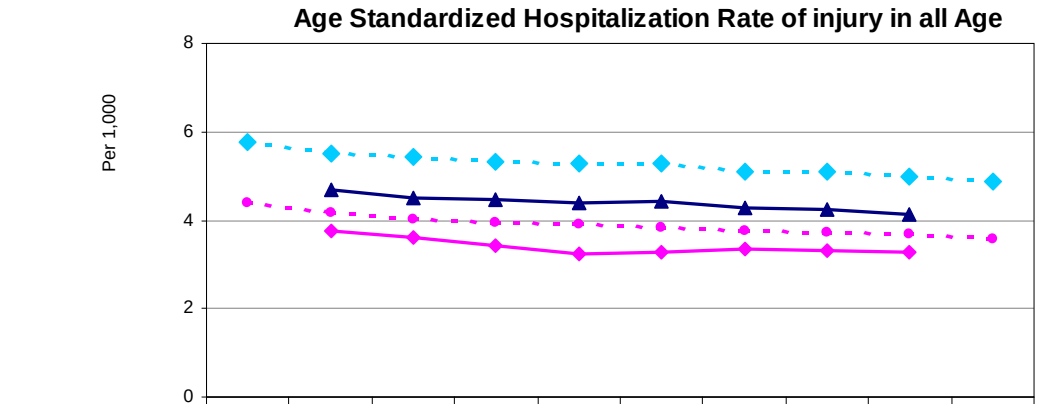


	Age00-04	Age05-09	Age10-14	Age15-19	Age20-44	Age45-64	Age65+	All Age
EOHU Male	1.0	8.9	15.7	20.1	12.8	4.5	3.5	5.0
EOHU Female	0.5	8.9	10.3	3.8	1.5	4.0	7.4	4.2
Ontario Male	2.1	13.4	20.1	18.1	11.3	5.0	3.8	5.9
Ontario Female	2.1	11.8	9.8	4.1	1.4	4.2	8.0	4.4

Figure 51. Proportion of Unintentional Injuries in Total Discharges by Age Group, 2003-2006

The proportion of hospitalizations caused by unintentional injuries shows variation by age group. Among children and youth (5 to 19 years old), unintentional injuries account for the highest proportion of all hospitalizations. The highest percentage of unintentional injuries is in children aged 10 to 14 years, which is three times more than for the total population. In addition, the proportion of unintentional injuries in 5 to 14 year olds is lower in the EOHU catchment area than in the rest of the province. The other noteworthy result is that the rate of unintentional injury among seniors (over the age of 65) is higher than in any of the other adult age groups (Figure 52).

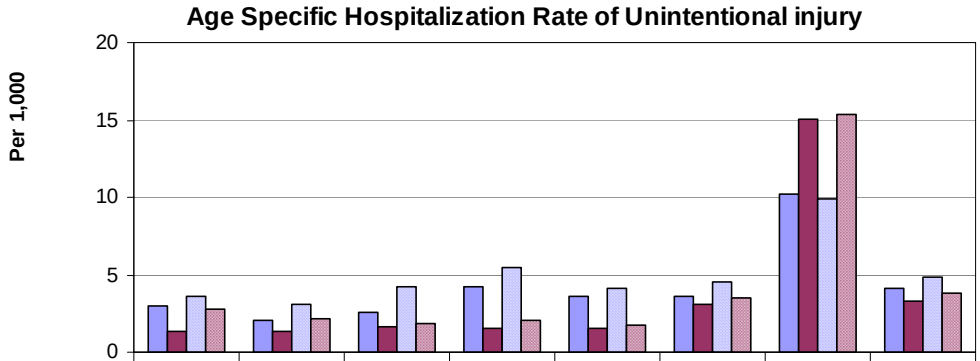
Age-standardized hospitalizations for injury in Ontario appear fairly constant over the last ten years with a rate of 3 to 6 cases per 1,000 people. These rates do show a slow but steady decrease from 1997 to 2006 for both sexes in the EOHU region as well as in the entire province. In Ontario for example, the age-standardized hospitalization rate dropped from 5.75 to 4.86 cases per 1,000 males and from 4.37 to 3.56 cases per 1,000 females over time. Within the EOHU region, the hospitalization rate decreased from 4.68 cases in 1997 to 4.14 cases per 1,000 males in 2006 and from 3.77 to 3.28 cases per 1,000 females during the same time period. The age-standardized hospitalization rates for the EOHU region, in both males and females, are lower than the rates in Ontario for every year over the 10-year period; these differences, although relatively small, are consistent (Figure 52).



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Ontario Male	5.7	5.5	5.4	5.3	5.3	5.3	5.1	5.1	5.0	4.9
Ontario Female	4.4	4.2	4.0	3.9	3.9	3.8	3.8	3.7	3.7	3.6
EOHU Male		4.7	4.5	4.5	4.4	4.4	4.3	4.2	4.1	
EOHU Female		3.8	3.6	3.4	3.2	3.3	3.3	3.3	3.3	

Figure 52. Age-Standardized Hospitalization Rates of Unintentional Injuries in Total Hospital Discharges, 1997-2006

Age-specific hospitalization rates for unintentional injuries (Figure 53) are between 2.0 and 3.6 cases per 1,000 population for children between the ages of 0 and 9 years and the rates are similar in both Ontario and the EOHU territory. Rates are higher for males than females in all age groups except in the group aged 65 and up, where female injury rates surpass males, most likely as a result of injuries due to falls. The age-standardized hospitalization rates in seniors (65 years and older) are higher than any other age group, especially among females. In both Ontario and the EOHU territory, the age-standardized hospitalization rates averaged around 10 cases per 1,000 males and 15 cases per 1,000 females between 2003 and 2006.



	Age00-04	Age05-09	Age10-14	Age15-19	Age20-44	Age45-64	Age65+	All Age
EOHU Male	3.0	2.0	2.6	4.2	3.6	3.6	10.2	4.2
EOHU Female	1.4	1.3	1.6	1.6	1.5	3.1	15.1	3.3
Ontario Male	3.6	3.1	4.2	5.5	4.2	4.6	9.9	4.9
Ontario Female	2.8	2.1	1.9	2.0	1.8	3.5	15.3	3.8

Figure 53. Age-Specific Hospitalization Rates for Unintentional Injury, 2003-2006

Key Findings:

- Children aged 15-19 years represent the largest proportion of hospitalizations due to unintentional injury.
- Seniors aged 65 years and up have the highest rate of hospitalization due to unintentional injury.
- Rates of hospitalization due to unintentional injury are higher in males than females, except over the age of 65 where females have higher rates than males.

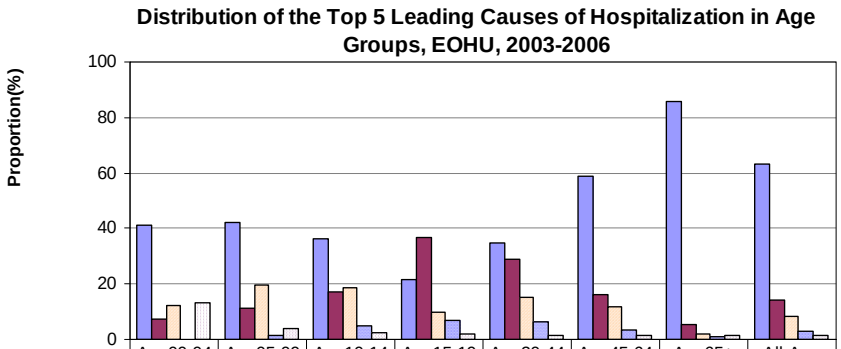
6.3.1 Leading Causes of Hospitalization for Unintentional Injuries

The leading causes of unintentional injury are similar for both Ontario and the EOHU territory. Falls are the most prominent cause of hospitalization for unintentional injury accounting for almost half of all injuries to males and three quarters of all injuries in females, both in Ontario and the EOHU territory. Motor Vehicle Accidents (MVA) are responsible for just under 15% of all unintentional injuries. While the overall proportion of falls is higher in females than in males, the proportion of MVA is higher in males than females.

Table 5. Leading Causes of Hospitalization Due to Unintentional Injuries, All Ages, 2003-2006

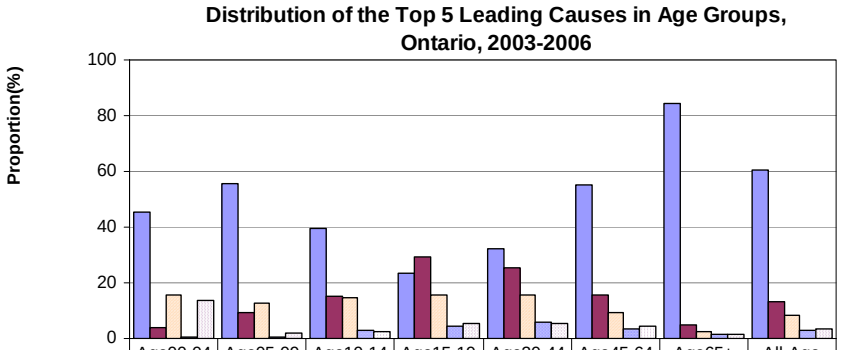
	EOHU			Ontario		
	Male	**Female**	**Both**	**Male**	**Female**	**Both**
	%	**%**	**%**	**%**	**%**	**%**
Falls	49.3	76.1	63.1	48.1	72.7	60.4
MVA	20.1	8.9	14.3	16.9	9.3	13.1
Inanimate mechanical forces	13.4	3.5	8.3	13.1	3.7	8.4
Overexertion/privation	3.5	2.7	3.1	3.7	2.1	2.9
Animate mechanical forces	3.5	1.5	2.5	3.3	1.3	2.3
Poisoning	1.7	1.7	1.7	3.6	3.4	3.5
Fire	0.5	0.3	0.4	0.9	0.3	0.6
Others	8.0	5.4	6.7	10.5	7.1	8.8

The following two figures show the distribution of the top 5 unintentional injuries by age group for the EOHU territory (Figure 54) and the province of Ontario (Figure 55).



	Age00-04	Age05-09	Age10-14	Age15-19	Age20-44	Age45-64	Age65+	All Age
Falls	41.0	42.0	36.1	21.5	34.8	58.7	85.7	63.1
MVA	7.2	11.1	17.2	36.6	28.8	16.0	5.4	14.3
Inanimate mechanical forces	12.0	19.8	18.9	9.9	15.2	11.6	2.1	8.3
Overexertion/privation	0.0	1.2	4.9	7.0	6.6	3.3	1.2	3.1
Accidental poisoning	13.3	3.7	2.5	1.7	1.3	1.4	1.2	1.7

Figure 54. Top 5 Leading Causes of Unintentional Injury by Age Group, EOHU, 2003-2006



	Age00-04	Age05-09	Age10-14	Age15-19	Age20-44	Age45-64	Age65+	All Age
Falls	45.3	55.8	39.7	23.7	32.1	55.3	84.5	60.4
MVA	3.9	9.3	15.2	29.4	25.2	15.6	4.8	13.1
Inanimate mechanical forces	15.6	12.6	14.6	15.5	15.4	9.0	2.3	8.4
Overexertion/privation	0.3	0.7	2.8	4.2	5.9	3.7	1.3	2.9
Accidental poisoning	13.5	1.7	2.6	5.5	5.4	4.4	1.4	3.5

Figure 55. Top 5 Leading Causes of Unintentional Injury by Age Group, Ontario, 2003-2006

Among all injury patients discharged from hospital, falls account for close to half of all injuries occurring in the two youngest age groups (0-4 and 5-9 years old). The proportion of falls decreases slightly in patients aged 10 to 44 years, and then increases again after the age of 45. In patients aged 65 and older, falls account for 84.5% of total hospital discharges due to injury in Ontario and 85.7% in the EOHU region. In both the EOHU territory and in Ontario, MVA accounts for a larger proportion of hospital discharges due to injury in patients between the ages of 10 and 64 years. Inanimate mechanical forces are responsible for around 15% of all hospital discharges after an injury, even from birth, and this remains constant until it drops down after the age of 64. Overexertion or privation account for more than 4% of hospital discharges due to injury after the age of 15 and remain at the highest level until the age of 45 in both Ontario and the EOHU territory. Accidental poisoning is one of the top 3 reasons for hospitalizations for the age group 0-4 years and accounts for more than 13% of total injuries in both Ontario and the EOHU territory in this age group.

Key Findings:

- The leading causes of death in the EOHU region are falls, MVA, inanimate mechanical forces, overexertion/privation, animate mechanical forces, accidental poisoning and fire
- Falling is the number one cause of death in every age-group except for teenagers aged 15-19 years
- In teens 15-19 years MVA is the leading cause of death

6.3.2 Length of Stay in Hospital due to Unintentional Injuries

Length of stay in hospital (LoS) represents the number of days a patient stayed in hospital (number of days from admission to discharge). The average LoS due to unintentional injury is slightly longer than the LoS for all causes of hospitalization. The leading causes of injury, ranked by LoS, are burns, falls and MVA, followed by inanimate mechanical forces, overexertion/privation, and animate mechanical forces (Figure 56). There is little difference in LoS between the EOHU region and Ontario, most likely due to the small number of cases.

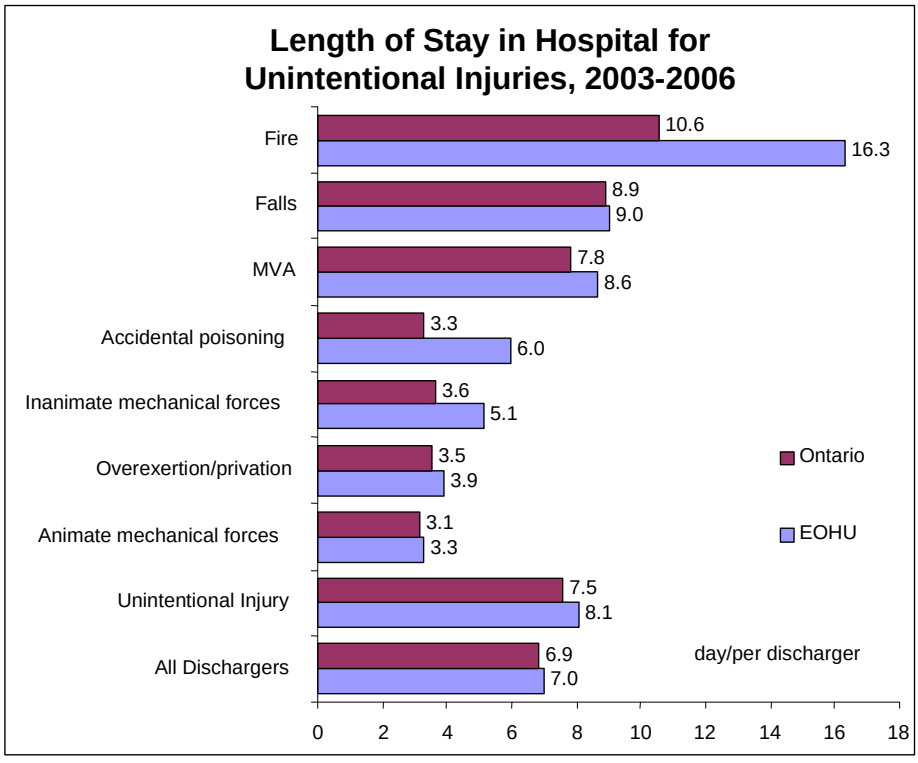
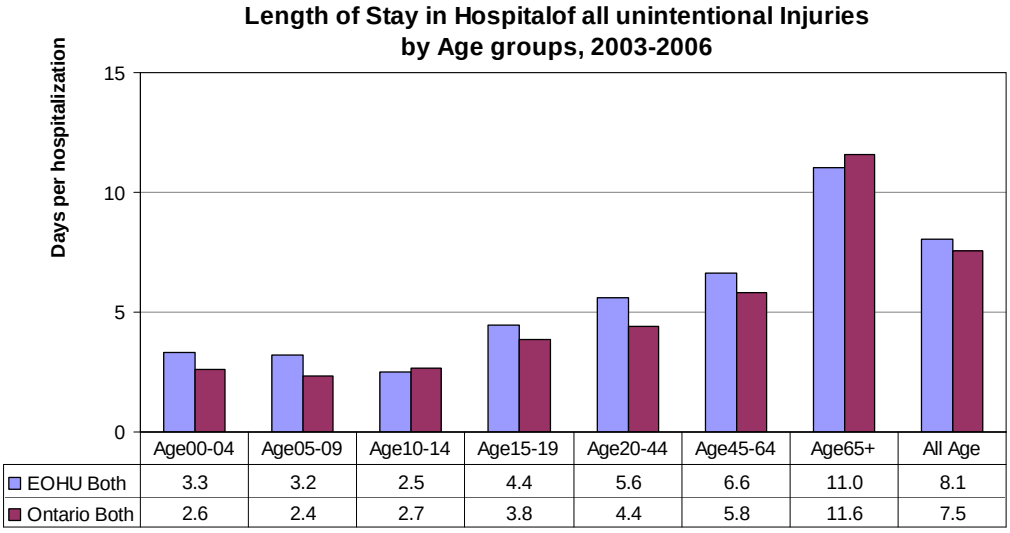


Figure 56. Length of Stay in Hospital for the Leading Causes of Injury, All Ages, 2003-2006

The average LoS for all patients with an injury is 8.1 days per case in the EOHU territory and 7.5 days per case in Ontario. The LoS tends to be slightly longer as the patient's age

increases but the length is fairly constant at around 2.5 - 6.5 days per case from age 0 to 64 years. For patients over the age of 65, the average LoS is more than 11.0 days per case. There is not much difference between LoS in the EOHU territory and the province of Ontario (Figure 57).



	Age00-04	Age05-09	Age10-14	Age15-19	Age20-44	Age45-64	Age65+	All Age
EOHU Both	3.3	3.2	2.5	4.4	5.6	6.6	11.0	8.1
Ontario Both	2.6	2.4	2.7	3.8	4.4	5.8	11.6	7.5

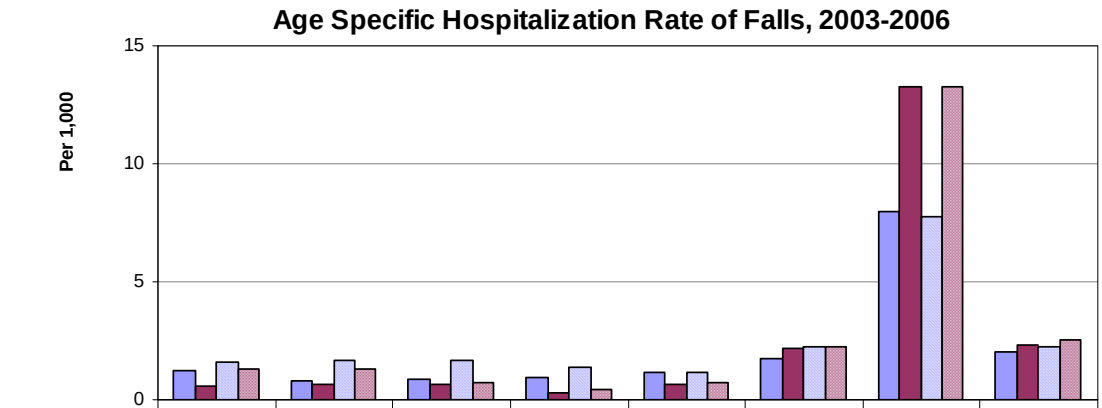
Figure 57. Length of Hospital Stay for All Unintentional Injuries by Age Group, 2003-2006

Key Findings:

- The longest length of stay in hospital rates are due to burns, falls, MVA and mechanical force injuries

6.3.3 Accidental Falls

As seen in Figure 58, between 2003 and 2006, the age-standardized hospitalization rates of unintentional injuries caused by falls (all ages) are 2.0 per 1,000 males in the EOHU territory and 2.2 per 1,000 males in Ontario. These rates are similar for females with 2.3 per 1,000 in the EOHU territory and 2.5 per 1,000 in Ontario. The age-specific hospitalization rates for injuries caused by falls average around 1 to 2 cases per 1,000 in all of the age groups except for 65 and over. At age 65 the rate increases to 7-8 cases per 1,000 males and to more than 13 cases per 1,000 females in both the EOHU territory and in Ontario.



	Age00-04	Age05-09	Age10-14	Age15-19	Age20-44	Age45-64	Age65+	All Age
EOHU Male	1.2	0.8	0.9	1.0	1.1	1.8	8.0	2.0
EOHU Female	0.6	0.6	0.6	0.3	0.6	2.2	13.3	2.3
Ontario Male	1.6	1.7	1.7	1.4	1.2	2.2	7.7	2.2
Ontario Female	1.3	1.3	0.8	0.4	0.7	2.2	13.3	2.5

Figure 58. Age specific hospitalization rate of fall in age groups, 2003-2006

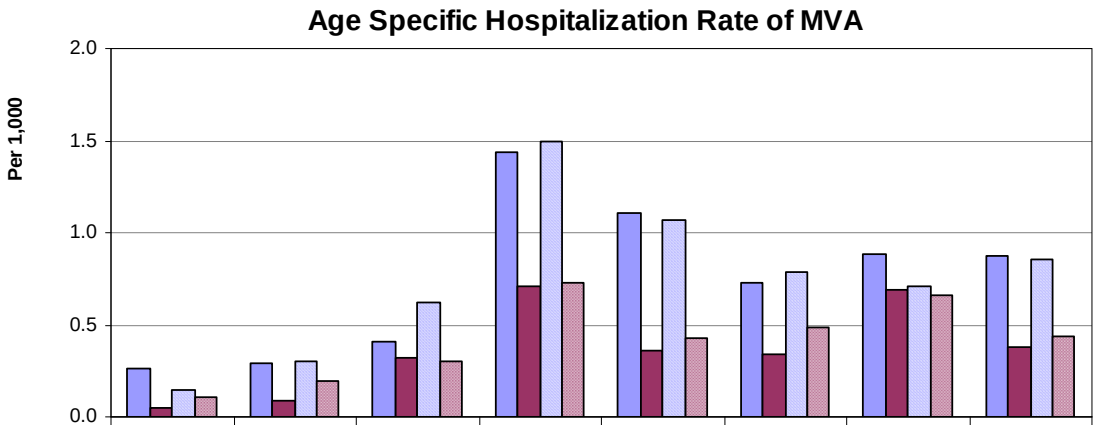
Key Findings:

- The rate of hospitalization due to falls is highest in seniors over the age of 65.

6.3.4 Motor Vehicle Accidents (MVA)

Age-standardized hospitalization rates of MVA are 0.9 per 1,000 males and 0.4 per 1,000 females in both the EOHU territory and Ontario.

Motor vehicle accidents are more frequent among young males than any other age group and consequently the age-specific hospitalization rate for MVA is highest in people 15 to19 years of age than in the older age groups. The age-specific hospitalization rate for MVA is also higher in males compared to females, in all age groups (Figure 59).



	Age00-04	Age05-09	Age10-14	Age15-19	Age20-44	Age45-64	Age65+	All Age
EOHU Male	0.3	0.3	0.4	1.4	1.1	0.7	0.9	0.9
EOHU Female	0.1	0.1	0.3	0.7	0.4	0.3	0.7	0.4
Ontario Male	0.1	0.3	0.6	1.5	1.1	0.8	0.7	0.9
Ontario Female	0.1	0.2	0.3	0.7	0.4	0.5	0.7	0.4

Figure 59. Age-Specific Hospitalization Rate of MVA by Age Group, 2003-2006

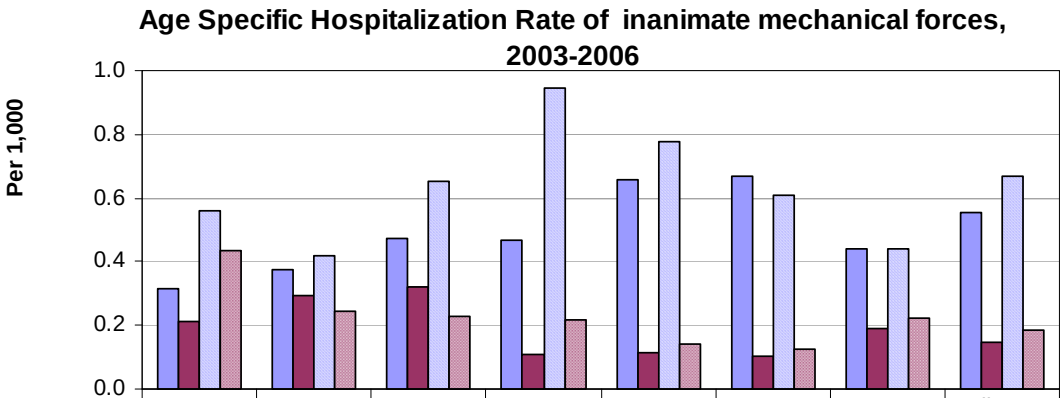
Key Findings:

- Males are more likely to be hospitalized due to MVA than females

6.3.5 Inanimate Mechanical Forces

Exposure to inanimate mechanical forces (IMF) means being struck, punched, crushed or ruptured by any object but does not include injuries due to animals. This type of injury occurs most often at work or while children are playing therefore, the age-specific hospitalization rates of inanimate mechanical forces typically increase after age 10 and remain relatively constant until the age of 65 when the rates are lower (Figure 60).

The age-standardized hospitalization rates for inanimate mechanical forces are 2.0 per 1,000 males in the EOHU region and 2.2 per 1,000 males in Ontario, similarly the rates are 2.3 per 1,000 females in the EOHU region and 2.2 per 1,000 for females in Ontario.



	Age00-04	Age05-09	Age10-14	Age15-19	Age20-44	Age45-64	Age65+	All Age
EOHU Male	0.3	0.4	0.5	0.5	0.7	0.7	0.4	0.6
EOHU Female	0.2	0.3	0.3	0.1	0.1	0.1	0.2	0.1
Ontario Male	0.6	0.4	0.7	0.9	0.8	0.6	0.4	0.7
Ontario Female	0.4	0.2	0.2	0.2	0.1	0.1	0.2	0.2

Figure 60. Age-Specific Hospitalization Rate for IMF, All Ages, 2003-2006

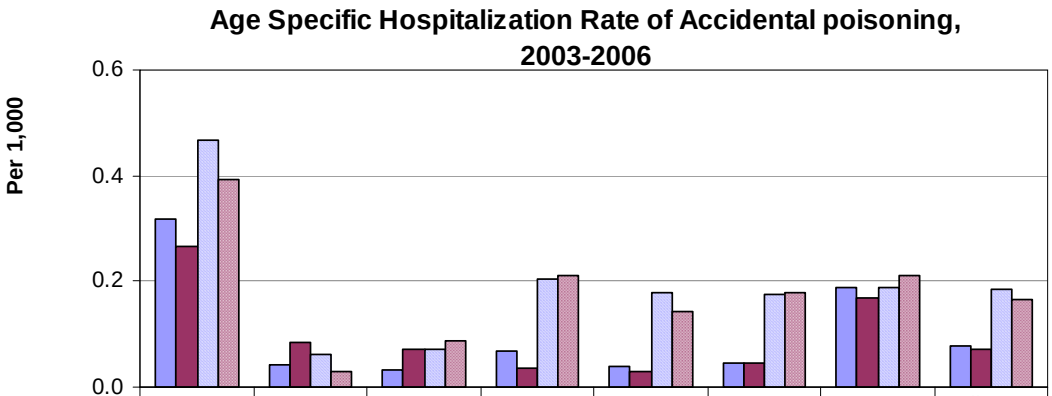
Key Findings:

- Rates of mechanical force injuries are similar for males and females in both the EOHU region and Ontario

6.3.6 Accidental Poisoning

Accidental poisoning includes inadvertent drug use, or accidents during the use of medical drugs or biological substances in medical and surgical procedures. From 2003 to 2006, age-standardized hospitalization rates of accidental poisoning are 0.1 per 1,000 in the EOHU territory and 0.2 per 1,000 in Ontario.

Accidental poisoning is a major cause of injury in very young children. The proportions of accidental poisoning among all injury events are at 13% in this age group in both Ontario and the EOHU territory during the 2003-2006 period and as a result, the age-specific hospitalization rate for accidental poisoning is concentrated in the 0-4 year age group (Figure 61).



	Age00-04	Age05-09	Age10-14	Age15-19	Age20-44	Age45-64	Age65+	All Age
EOHU Male	0.3	0.0	0.0	0.1	0.0	0.0	0.2	0.1
EOHU Female	0.3	0.1	0.1	0.0	0.0	0.0	0.2	0.1
Ontario Male	0.5	0.1	0.1	0.2	0.2	0.2	0.2	0.2
Ontario Female	0.4	0.0	0.1	0.2	0.1	0.2	0.2	0.2

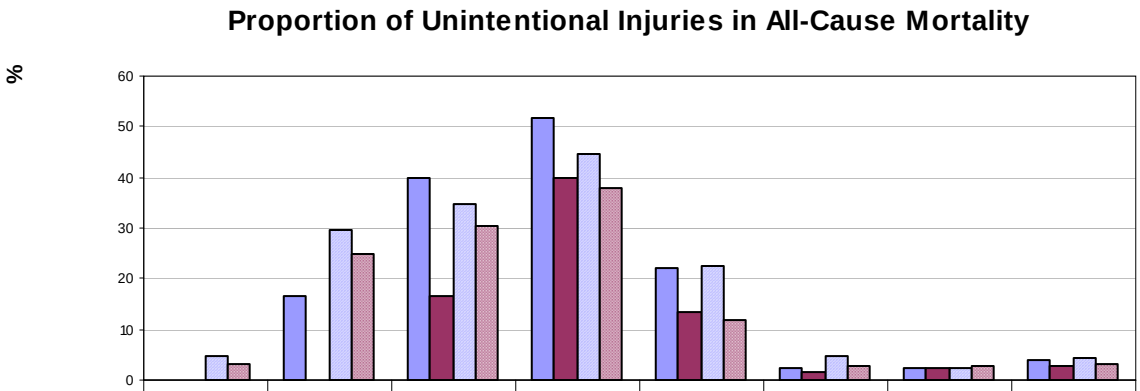
Figure 61. Age-Specific Hospitalization Rate for Poisoning, All Ages, 2003-2006

Key Findings:

- Hospitalization due to accidental poisoning is most common in young children under the age of 4
- Rates of hospitalization due to accidental poisoning are lower for the EOHU region than Ontario

6.4 Mortality from Unintentional Injuries

The leading causes of death differ by age group and sex. In the younger age groups, particularly between 5 and 45 years of age, unintentional injuries as a whole are the leading cause of death. In teenagers (15 to 19 years of age) in particular, unintentional injuries account for almost half of all deaths. In the older age groups (45-64 and 65+), the proportion of unintentional injuries decrease and chronic diseases such as cancer and heart disease become the leading causes of death. Males are more likely to die from an unintentional injury than females, both in Ontario and in the Eastern Ontario region (Figure 62).



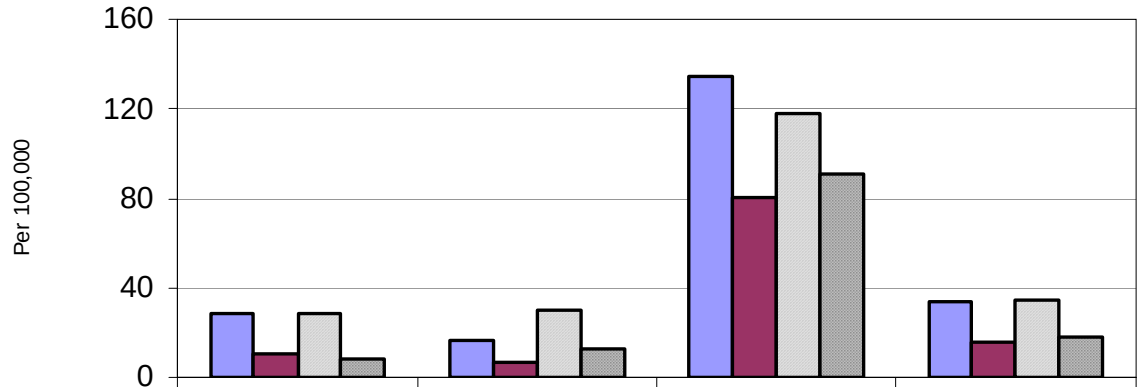
	Age 00-04	Age 05-09	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65+	All Ages
EOHU Male	0.0	16.7	40.0	51.7	22.1	2.6	2.4	3.8
EOHU Female	0.0	0.0	16.7	40.0	13.3	1.5	2.3	2.6
Ontario Male	4.6	29.5	34.6	44.5	22.7	4.5	2.3	4.2
Ontario Female	3.1	25.0	30.6	38.0	11.9	2.9	2.8	3.2

Figure 62. Proportion of Unintentional Injuries in All-Cause Mortality, by Age Group, 2000-2004

When mortality rates are considered it is clear that unintentional injuries are responsible for a large number of deaths among seniors (65 years of age or more) and that these rates are similar for the EOHU and Ontario. The proportion of deaths due to unintentional injury in males is nearly double the proportion in females. The only result that differs from expected is the mortality rate due to unintentional injuries in EOHU males aged 65 years or more, as this rate is almost 20% higher than the provincial rate (Figure 63).

Teenaged males (aged 15 to 19 years) in Eastern Ontario have nearly twice the provincial age-specific mortality rates (per 100,000 population) due to motor vehicle accidents (38.8 vs. 20.1). Teenaged females (aged 15 to 19 years) show a similar pattern, with a mortality rate due to MVA more than 40% higher than the provincial rate (11.8 vs. 8.4). All teenagers in Eastern Ontario have a mortality rate from motor vehicle accidents 80% higher than the rest of Ontario (25.7 vs. 14.4).

Another area of concern for the EOHU region is mortality due to intentional self-harm, which affects both sexes and all age groups. Females aged 15 to19 years from Eastern Ontario have a suicide rate 50% higher than the provincial rate (5.89 vs. 3.93). Males aged 20-44 in Eastern Ontario also have a suicide rate that is higher than the provincial rate (32.79 vs. 19.46). The same finding holds true for females aged 45 to 64 years and males aged 65 years and older; their age-standardized suicide rates are 50 to 85% higher than the provincial rate (13.84 vs. 7.50 for females aged 45 to 64 years and 22.80 vs. 15.72 for males aged 65 year and older).

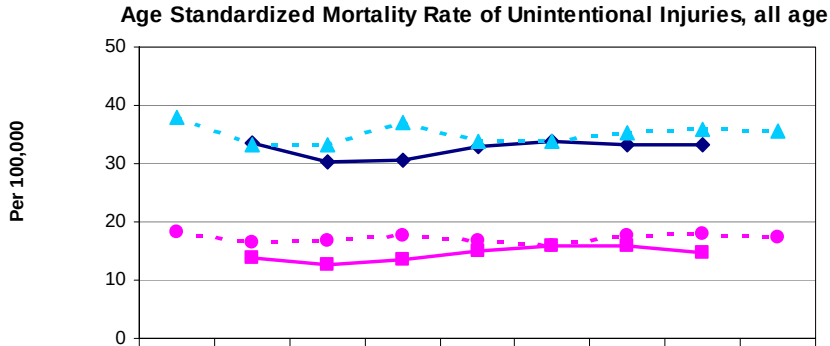


	20-44	45-64	65+*	All ages*
EOHU Male	28.6	16.7	134.5	33.7
EOHU Female	10.3	6.5	80.6	15.5
Ontario Male	28.9	30.2	117.5	34.4
Ontario Female	8.5	12.4	90.5	17.7

*** The rates in 65+ & all age groups are standardized**

Figure 63. Age-Specific Mortality Rates due to Unintentional Injury (per 100,000), 2000-2004

When looking at age-standardized mortality rates for unintentional injuries (all ages combined), it is apparent that rates remain fairly constant over the last decade, with rates in males being approximately double the rates in females. The rates for the EOHU territory are similar to those in Ontario when all ages are combined (Figure 64).

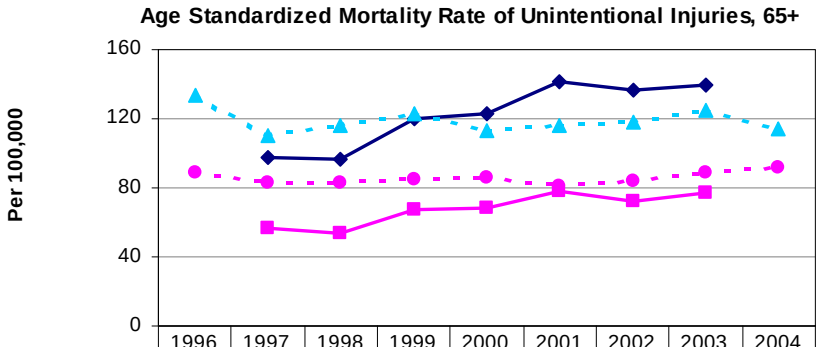


	1996	1997	1998	1999	2000	2001	2002	2003	2004
EOHU Male		33.4	30.4	30.6	33.1	33.7	33.3	33.2	
EOHU Female		13.9	12.6	13.5	15.0	15.8	15.9	14.7	
Ontario Male	38.0	33.2	33.3	37.1	33.8	33.8	35.2	35.9	35.5
Ontario Female	18.3	16.4	16.8	17.5	16.7	16.0	17.6	17.9	17.4

Figure 64. Age-Standardized Mortality Rates Due to Unintentional Injury (per 100,000), All Ages, 1996-2004

The age-standardized mortality rates for unintentional injuries in people 65 years of age and older show relatively stable rates over time. The rates are also consistently higher for males compared to females. The biggest difference occurs in the oldest age group where the rates are

much higher and the gap between the two sexes is smaller (Figure 65). Males in the EOHU region aged 65 years and older have much higher mortality rates than the rest of the province (134.5 per 100,000 vs. 117.5 per 100,000).



	1996	1997	1998	1999	2000	2001	2002	2003	2004
EOHU Male		97.5	96.3	119.9	123.1	141.5	136.8	139.7	
EOHU Female		56.3	53.3	67.1	68.1	77.8	71.9	77.1	
Ontario Male	133.7	109.9	116.0	122.7	113.5	116.5	117.8	124.8	114.6
Ontario Female	88.5	83.3	82.6	84.4	86.2	80.8	83.9	88.4	92.1

Figure 65. Mortality Rates Due to Unintentional Injury (per 100,000), Age 65+, 1996-2004

Key Findings:

- Unintentional injury is the leading cause of death for people 5 to 45 years old
- Males are more likely to die from an unintentional injury than females
- Mortality rates due to unintentional injury in males over the age of 65 are 20% higher in the EOHU region than in Ontario

6.4.1 Leading Causes of Death from Unintentional Injury

The leading causes of death show a variation in rates by age group and sex. When all ages and sexes are looked at together, the three most frequent causes of mortality due to unintentional injury in the EOHU region are motor vehicle accidents (MVA) (36.6%), falls (23.0%) and accidental poisoning (9.4%). In Ontario, the leading causes of death are the same except that MVA account for a slightly smaller proportion of the unintentional injuries (28.3%) (Table 6).

Table 6 Leading Causes of Death Due to Unintentional Injury, All Ages, 2000-2004

	EOHU			Ontario		
	Male	Female	Both	Male	Female	Both
	%	%	%	%	%	%
Unintentional injury*	3.8	2.6	3.2	4.1	3.1	3.6
Motor vehicle accidents	43.4	26.4	36.6	33.7	21.1	28.3
Falls	19.5	28.3	23.0	23.7	34.5	28.3
Accidental poisoning	10.1	8.5	9.4	11.4	6.9	9.5
Other Causes	27.1	36.8	31.0	31.2	37.6	33.9

*: Percentages represent the proportion of unintentional injuries over all deaths

Examining age-specific causes of mortality due to unintentional injury, the proportion and ranking of these causes vary greatly. In Ontario, MVA accounts for 75% of unintentional injuries leading to death in the 15-19 year old age group, drops to 51% in adults 20 to 44 years of age and is lowest at 10.6% in the group 65 years and older. In Eastern Ontario, MVA account for 95% of all deaths caused by unintentional injuries in the 15-19 year old age group, 66% in adults aged 20 to 44 years and 12% in seniors aged 65 years and older.

Falls account for fewer unintentional injuries resulting in death than MVA. In 15 to 19 year olds, 2.4% of all deaths are caused by falling, this proportion increases with age to 4.5% for those aged 20-44 years, 16.1% in the 45-64 year old age group and 45.5% for seniors 65 years or more.

Table 7 Leading Causes of Death Due to Unintentional Injury, Aged 65+, 2000-2004

	EOHU			Ontario		
	Male	Female	Both	Male	Female	Both
	%	%	%	%	%	%
Unintentional Injury*	2.3	2.3	2.3	2.3	2.7	2.5
Falls	38.9	36.8	37.8	45.6	45.4	45.5
Motor vehicle accidents	12.5	13.2	12.8	13.9	8.6	10.9
Suffocation	9.7	--	6.1	6.3	5.2	5.7
Other Causes	38.9	47.3	43.2	34.2	40.9	38

*: Percentages represent the proportion of unintentional injuries over all deaths

Key Findings:

- The leading causes of mortality due to unintentional injury are: MVA, falls and accidental poisoning
- Mortality due to MVA is highest among 15-19 year olds and lowest over the age of 65
- Mortality due to falls are lowest among 15-19 year olds and highest over the age of 65

6.4.2 Potential Years of Life Lost (PYLL)

Table 8 details potential years of life lost (PYLL) due to unintentional injuries in the EOHU region and in Ontario. MVA accounts for the vast majority of PYLL due to unintentional injuries, mainly because of the high number of young males involved in MVA.

Table 8 PYLL (Potential Years of Life Lost) per 1,000 population

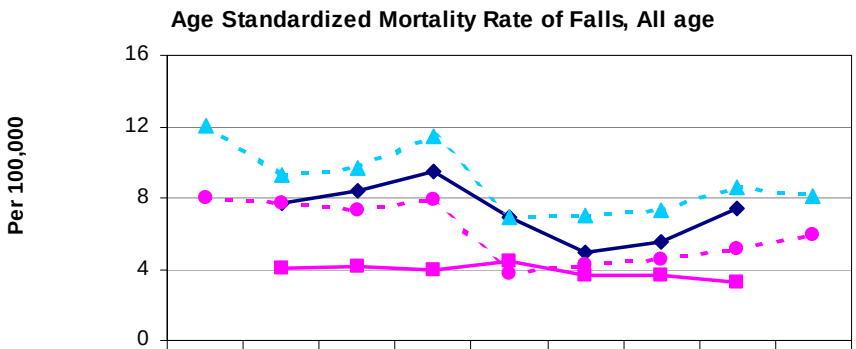
	EOHU			Ontario		
	Male	**Female**	**Both**	**Male**	**Female**	**Both**
Unintentional injury	6.55	2.18	4.38	7.03	2.53	4.80
Motor vehicle accidents	4.87	1.38	3.14	3.52	1.41	2.47
Accidental poisoning	0.68	0.37	0.53	1.10	0.42	0.76
Mechanical forces	0.33	0.09	0.21	0.23	0.03	0.13
Falls	0.14	0.19	0.17	0.47	0.13	0.31

Key Findings:

- MVA are responsible for the most potential years of life lost

6.4.3 Major Injuries

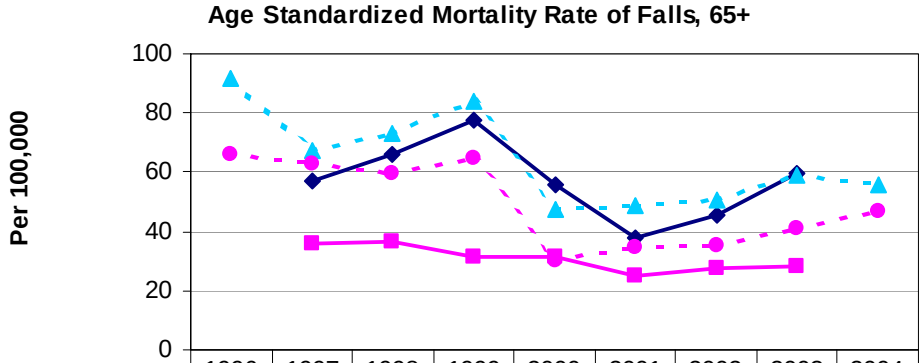
The next few graphs illustrate the variation in age-standardized mortality over the last nine years, for both falls and MVA. It should be noted that some of these graphs show a sharp decrease in injury rates in Ontario from 1999 to 2000. As explained in the methodology section, it was during that period that injury coding changed from the ICD-9 to the ICD-10. The apparent decrease in mortality rates may be due to changes in the coding rules; caution should be used when interpreting rates between 1999 and 2000.



	1996	1997	1998	1999	2000	2001	2002	2003	2004
EOHU Male		7.7	8.4	9.5	6.9	4.9	5.5	7.4	
EOHU Female		4.1	4.1	3.9	4.4	3.7	3.6	3.2	
Ontario Male	12.1	9.2	9.6	11.5	6.9	7.0	7.3	8.6	8.1
Ontario Female	8.0	7.7	7.3	7.9	3.8	4.2	4.6	5.1	5.9

Figure 66. Age-standardized mortality rates caused by falls, 1996-2004

Figures 66 and 67 illustrate the variation in the age-standardized mortality rates due to falls for all ages (Figure 66) and then only for adults aged 65 and over (Figure 67) over the last nine years. It is interesting to note that the two graphs have similar patterns of rates with the main difference between them being higher rates of mortality due to falls in the older population. Males consistently have higher rates of mortality due to falling than females and the Eastern Ontario area tends to have a lower rate of mortality due to falls than all of Ontario.

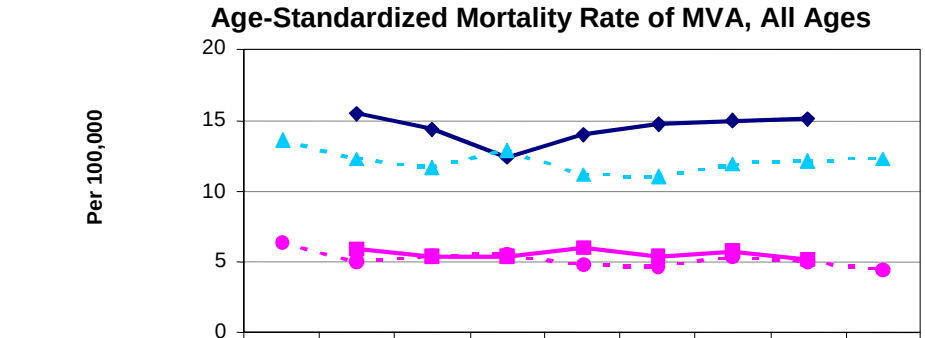


	1996	1997	1998	1999	2000	2001	2002	2003	2004
EOHU Male		56.9	65.8	77.8	55.6	38.1	45.6	59.9	
EOHU Female		35.8	36.3	31.7	31.4	25.1	27.7	28.4	
Ontario Male	91.8	67.2	72.9	84.1	47.2	48.7	51.0	59.2	55.6
Ontario Female	66.3	63.0	59.4	65.0	30.3	34.3	35.4	41.2	46.9

Figure 67. Age-Standardized Mortality Rates Due to Falls, Age 65+, 1996-2004

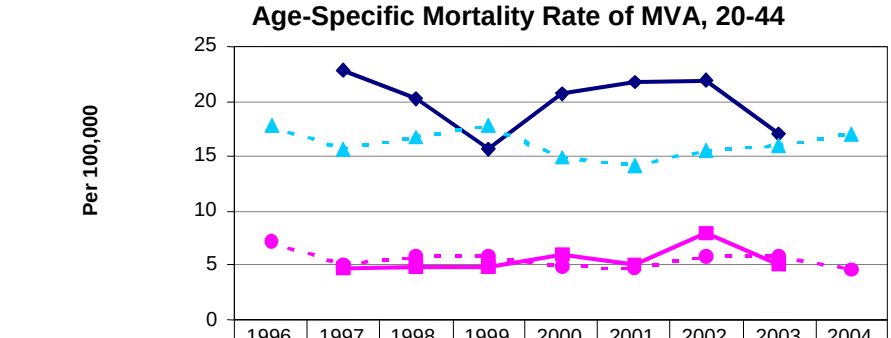
The mortality rates of MVA for all ages over the last nine years are shown in Figure 68. Of concern are the rates for the EOHU territory, which are consistently higher than the provincial rates over the last decade. As with most types of injuries, males are between two and three

times more likely than females to be killed in an MVA. A similar pattern is observed in the Age-Specific MVA mortality rates for 20 to 44 year olds. MVA mortality rates for males in the EOHU territory are consistently higher than the provincial rates and are higher than the mortality rates for females (Figure 69).



	1996	1997	1998	1999	2000	2001	2002	2003	2004
EOHU Male		15.5	14.4	12.4	14.0	14.8	14.9	15.0	
EOHU Female		5.9	5.4	5.4	6.1	5.4	5.8	5.2	
Ontario Male	13.7	12.3	11.6	12.8	11.2	11.1	11.9	12.1	12.3
Ontario Female	6.3	5.0	5.5	5.5	4.8	4.7	5.4	5.0	4.5

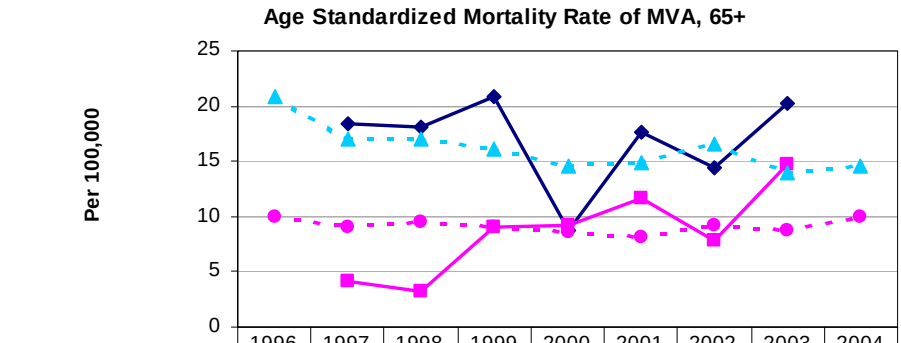
Figure 68. Age-Standardized Mortality Rates Due to MVA, All Ages, 1996-2004



	1996	1997	1998	1999	2000	2001	2002	2003	2004
EOHU Male		22.8	20.2	15.6	20.7	21.8	21.9	17.0	
EOHU Female		4.8	4.8	4.9	6.0	5.0	8.0	5.0	
Ontario Male	17.8	15.7	16.8	17.8	14.9	14.2	15.4	16.0	17.0
Ontario Female	7.2	5.0	5.9	5.8	4.9	4.8	5.8	5.8	4.6

Figure 69. Age-specific mortality rates caused by MVA in Age 20-44 year, 1996-2004

As seen in Figure 70, MVA mortality rates for both males and females over the age of 65 in Ontario have been decreasing over last decade. The same is true for males in the EOHU territory, however MVA mortality rates for females in the EOHU territory have been increasing, from 4.1 deaths per 100,000 in 1997 to almost 15 deaths per 100,000 in 2003.



	1996	1997	1998	1999	2000	2001	2002	2003	2004
EOHU Male		18.4	18.1	20.9	8.8	17.6	14.4	20.3	
EOHU Female		4.1	3.2	9.0	9.1	11.6	7.9	14.8	
Ontario Male	20.9	17.1	17.0	16.1	14.6	14.9	16.5	13.9	14.5
Ontario Female	10.0	9.1	9.5	9.0	8.6	8.2	9.2	8.7	9.9

Figure 70. Age-Standardized Mortality Rates Due to MVA, Age 65+, 1996-2004

Key Findings:

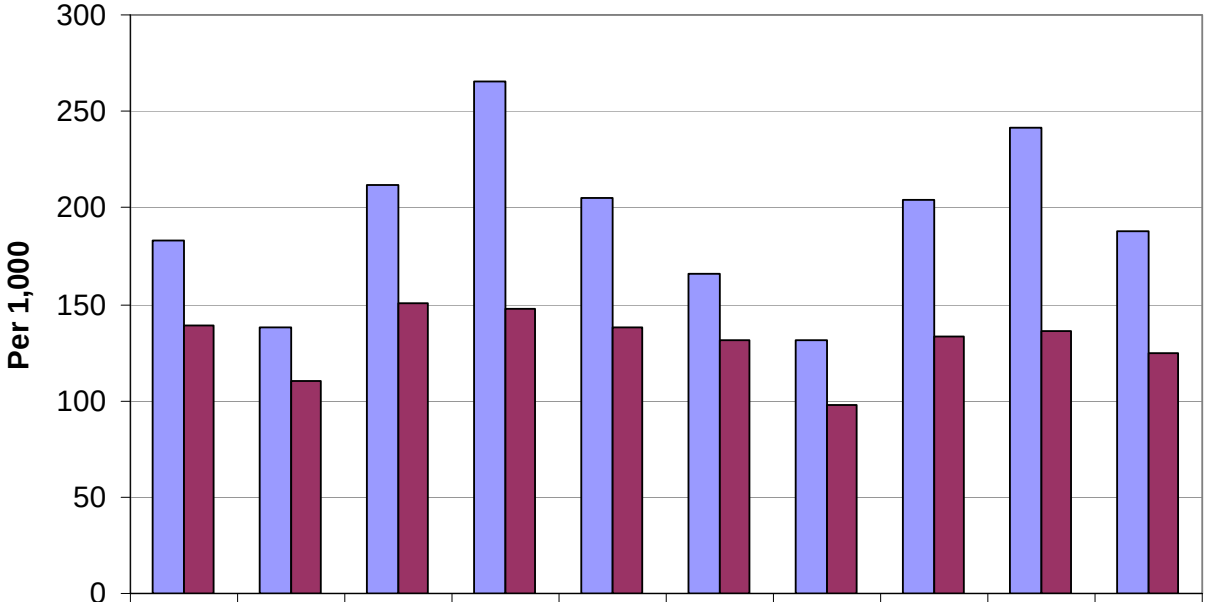
- Males have a higher rate of mortality due to falls than females
- The rate of mortality due to falls is higher in Ontario than in the EOHU region
- Males have a higher rate of mortality due to MVA than females.
- Over the last decade the mortality rate due to MVA males over the age of 65 has been decreasing, but it has been increasing in women of the same age
- The EOHU region has a higher rate of mortality due to MVA overall than Ontario

7 Injuries in Children and Youth in Eastern Ontario

This section is dedicated specifically to injuries among children and youth under the age of 20. The goal is to highlight trends in injuries among children that are different from the adult populations or overall rates, which were explored in more detail in the previous sections. In general, rates of injury in children are highest between the ages of 0 and 4 and in teenagers between the ages of 15 and 19. Rates of injury appear to be consistently lower between 5 and 9 years of age.

7.1 Ambulatory ER Visits due to Injury in All Children

As seen in Figure 71, the rates of ambulatory ER visits per age group and for all children are higher in the EOHU region than in Ontario. When all injuries are considered together, teenagers (aged 15-19 years) have the highest rates of ambulatory ER visits, while children aged 5-9 years have the lowest rates. Males have consistently higher rates of injury resulting in an ambulatory ER visit regardless of age group. These trends for age and gender are very similar in the EOHU region and Ontario.



	Age 0-4	Age 5-9	Age 10-14	Age1 5-19	Under 20	Age 0-4	Age 5-9	Age 10-14	Age1 5-19	Under 20
	EOHU					Ontario				
Male	183.1	137.6	212.1	265.2	204.8	166.0	131.0	204.0	241.4	188.1
Female	139.2	109.8	150.2	147.7	137.7	131.0	97.9	133.3	136.4	124.9

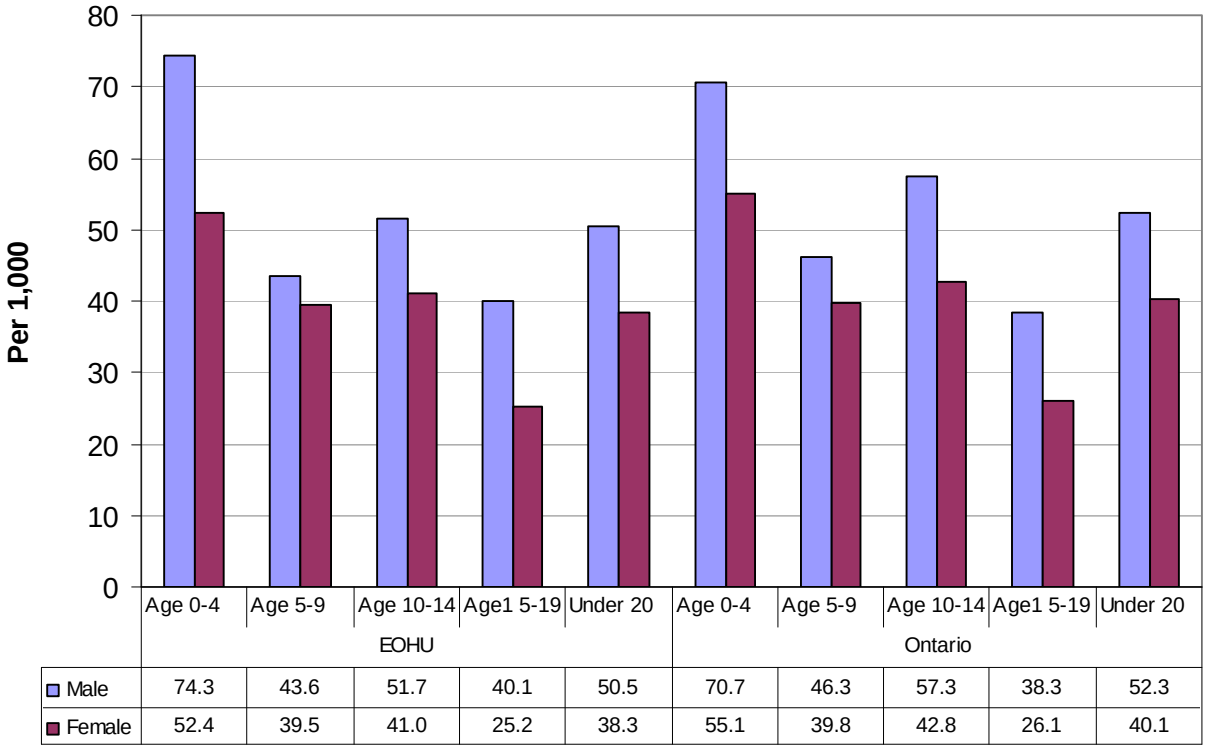
Figure 71. Age-Specific Ambulatory Rate of All Injury (per 1,000), Aged 0-20 Years

The five leading causes of ambulatory ER visits due to injury in children and youth under the age of 20 in Eastern Ontario are similar for the different age groups, with some specific exception. The most common leading causes of injury are falls, animate and inanimate mechanical forces, overexertion/travel/privation and motor vehicle accidents. One notable exception is in the youngest group of children (aged 0-4 years) where accidental poisoning is the 5th leading cause of injury. The order and rate of injury varies slightly between the different age groups and more details can be seen in Table 9.

Table 9. Leading Causes of Ambulatory ER Visits due to Injury in Children of Eastern Ontario

Age Group	Leading Causes of Injury (Rate per 1,000)
0-4 Years	• Falls (63.1) • Inanimate Mechanical Force (39.9) • Animate Mechanical Force (9.2) • Overexertion/Travel/Privation (6.6) • Accidental Poisoning (5.1)
5-9 Years	• Falls (43.5) • Inanimate Mechanical Force (34.6) • Animate Mechanical Force (9.3) • Overexertion/Travel/Privation (5.4) • Motor Vehicle Accidents (3.1)
10-14 Years	• Falls (50.2) • Inanimate Mechanical Force (50.0) • Animate Mechanical Force (17.3) • Overexertion/Travel/Privation (16.9) • Motor Vehicle Accidents (5.5)
15-19 Years	• Inanimate Mechanical Force (59.7) • Falls (32.3) • Overexertion/Travel/Privation (19.3) • Animate Mechanical Force (17.5) • Motor Vehicle Accidents (14.5)

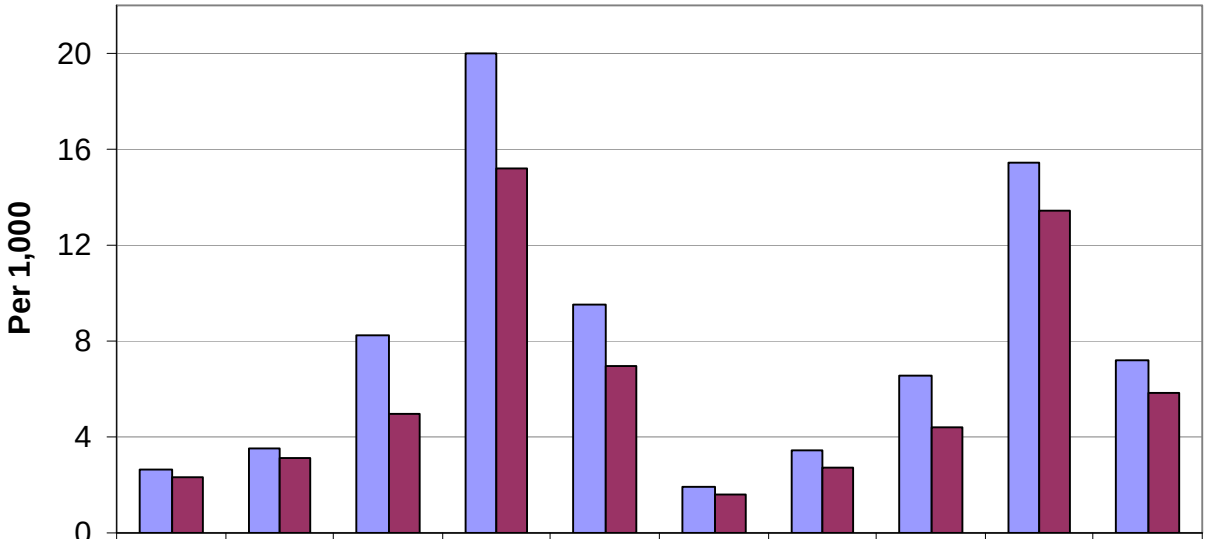
When rates of ambulatory ER visits due to falling are examined it is clear that males have higher rates of falling than females in all age groups (Figure 72). The rates of ambulatory ER visits due to falling are slightly higher in children aged 0-4 years and teens aged 15-19 years in the EOHU region than in Ontario and lower in the other age groups. Overall, the rates of falling are similar between the EOHU region and the province.



	EOHU					Ontario				
Male	74.3	43.6	51.7	40.1	50.5	70.7	46.3	57.3	38.3	52.3
Female	52.4	39.5	41.0	25.2	38.3	55.1	39.8	42.8	26.1	40.1

Figure 72. Age-Specific Rate of Ambulatory ER visit due to Falls Among Children Under 20 Years of Age

Looking at ambulatory rates of injury due to MVA in children and youth under the age of 20 it is clear that teenagers aged 15-19 years have the highest rate of injury. It is also apparent that the rates of injury due to MVA are higher in the EOHU region then in Ontario for every age group.



	Age 0-4	Age 5-9	Age 10-14	Age1 5-19	Under 20	Age 0-4	Age 5-9	Age 10-14	Age1 5-19	Under 20
	EOHU					Ontario				
Male	2.6	3.5	8.2	20.0	9.5	1.9	3.5	6.6	15.5	7.2
Female	2.3	3.1	4.9	15.2	6.9	1.6	2.7	4.4	13.4	5.8

Figure 73. Age Age-Specific Rate of Ambulatory ER visit due to MVA in Children Under 20 Years of Age

Key Findings:

- Males in have a higher rate of injury than females under the age of 20
- Teenagers aged 15-19 have the highest rates of ambulatory ER visits due to MVA

7.2 Hospitalizations due to Injury in All Children

The rates of hospitalization due to injury in children and youth under the age of 20 are much lower than the rates of ambulatory ER visits. Trends by age and gender are similar to those seen in ambulatory injuries, males have higher rates than females and teenagers aged 15-19 years have the highest rates. One difference in the rates of hospitalization due to injury compared to rates of ambulatory visits is that children aged 10-14 no longer have the second highest rates and children in the youngest age group (aged 0-4 years) have taken this spot.

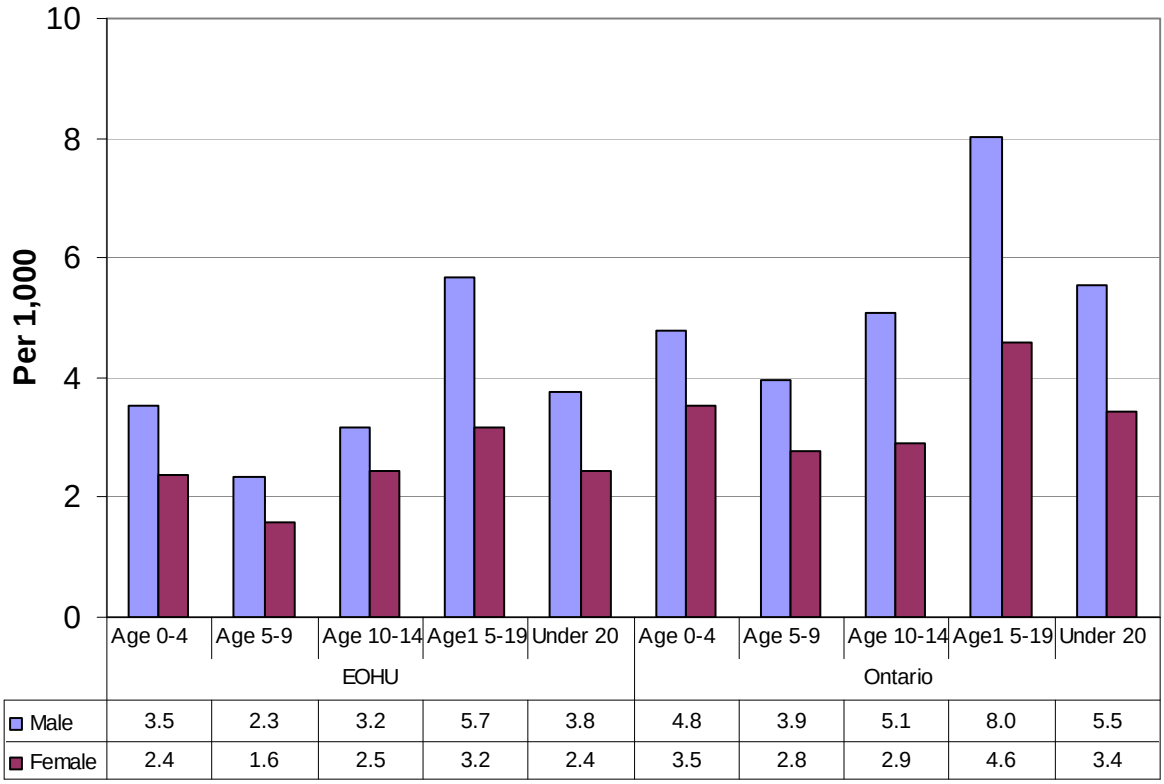


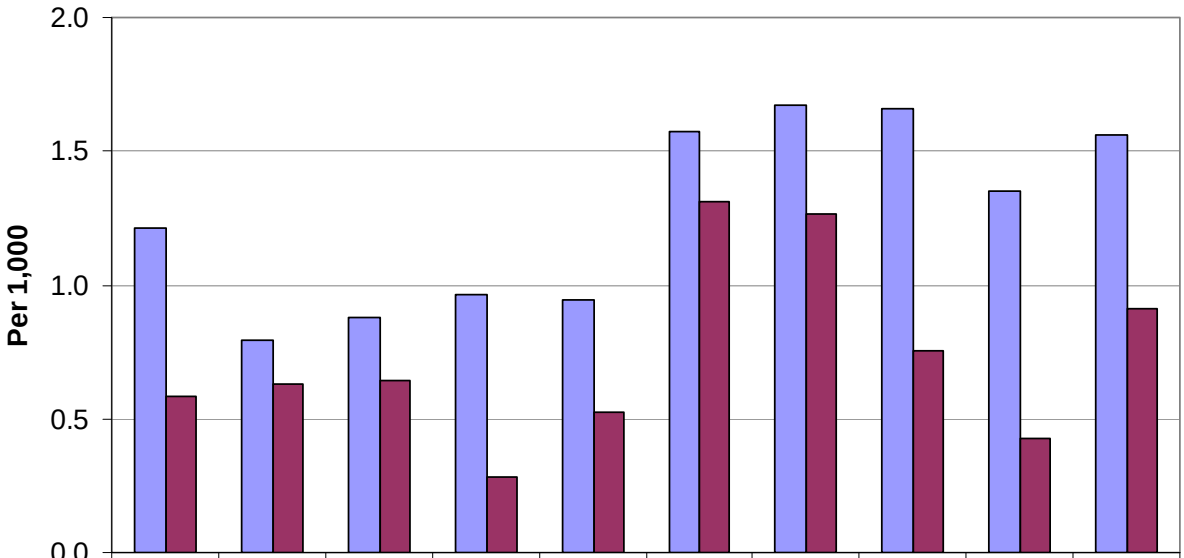
Figure 74. Age-Specific Hospitalization Rates for All Injuries, Under Age 20

The five leading causes of hospitalization due to injury in children under the age of 20 in the EOHU region are very similar to the leading causes of injury-related ambulatory ER visits. As seen in Table 10, the most common leading causes are falls, animate and inanimate mechanical forces, overexertion/travel/privation and motor vehicle accidents. Accidental poisoning also appears in the leading causes for children aged 0-4 years and 5-9 years. Teenagers (aged 15-19 years) have motor vehicle accidents as the leading cause and intentional self-harm as the third leading cause of injury-related hospitalizations.

Table 10. Leading Causes of Hospitalization due to Injury in All Children in Eastern Ontario

Age Group	Leading Causes of Injury (Rate per 1,000)
0-4 Years	• Falls (0.90) • Accidental Poisoning (0.29) • Inanimate Mechanical Force (0.26) • Animate Mechanical Force (0.16) • Motor Vehicle Accidents (0.16)
5-9 Years	• Falls (0.71) • Inanimate Mechanical Force (0.33) • Motor Vehicle Accidents (0.19) • Animate Mechanical Force (0.13) • Accidental Poisoning (0.06)
10-14 Years	• Falls (0.76) • Inanimate Mechanical Force (0.40) • Motor Vehicle Accidents (0.36) • Animate Mechanical Force (0.14) • Overexertion/Travel/Privation (0.10)
15-19 Years	• Motor Vehicle Accidents (1.08) • Falls (0.64) • Intentional Self-Harm (0.50) • Animate Mechanical Forces (0.36) • Inanimate Mechanical Forces (0.29)

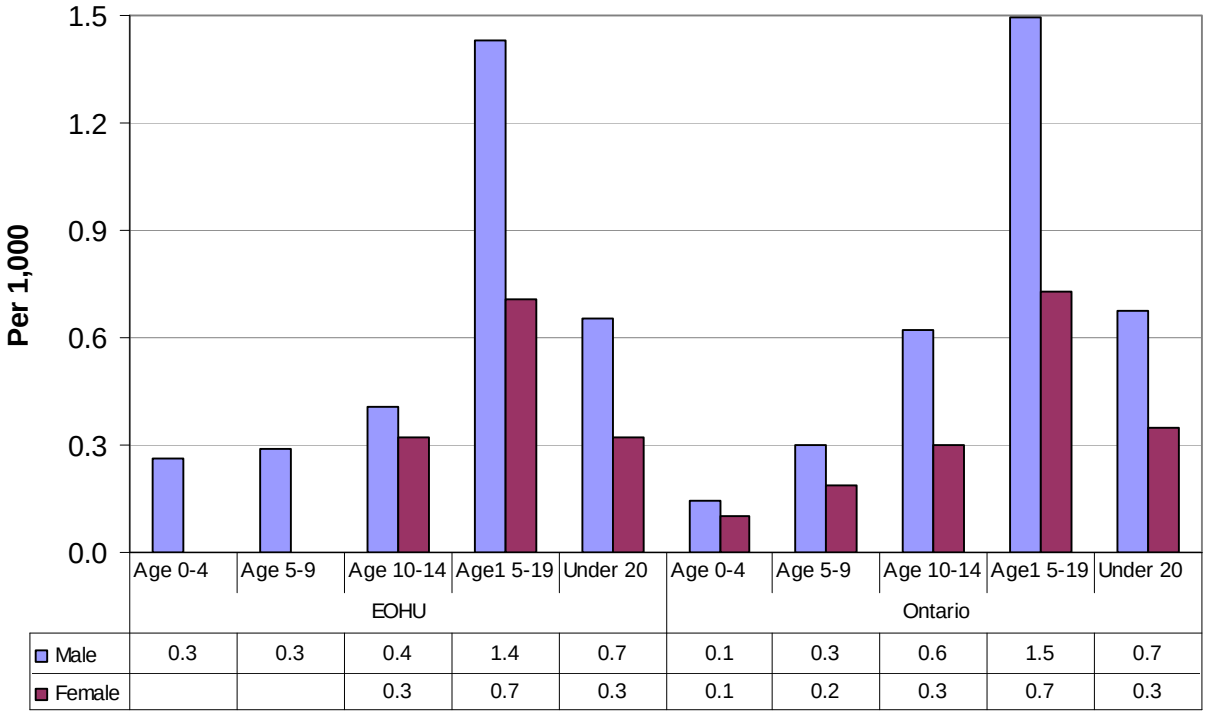
The hospitalization rates due to falls in the EOHU region are lower than the rates in Ontario and this is true for all age groups (Figure 75). Overall, males have higher rates of hospitalization due to falls than females.



	EOHU					Ontario				
	Age 0-4	Age 5-9	Age 10-14	Age1 5-19	Under 20	Age 0-4	Age 5-9	Age 10-14	Age1 5-19	Under 20
Male	1.2	0.8	0.9	1.0	0.9	1.6	1.7	1.7	1.4	1.6
Female	0.6	0.6	0.6	0.3	0.5	1.3	1.3	0.8	0.4	0.9

Figure 75. Age-Specific Hospitalization Rate for Falls in Children Under the Age of 20

The age-specific hospitalization rate due to MVA is highest among teenagers aged 15-19 years as well as among males from all age groups. The rates are very similar in the EOHU region to the rates in Ontario.



	EOHU					Ontario				
	Age 0-4	Age 5-9	Age 10-14	Age1 5-19	Under 20	Age 0-4	Age 5-9	Age 10-14	Age1 5-19	Under 20
Male	0.3	0.3	0.4	1.4	0.7	0.1	0.3	0.6	1.5	0.7
Female			0.3	0.7	0.3	0.1	0.2	0.3	0.7	0.3

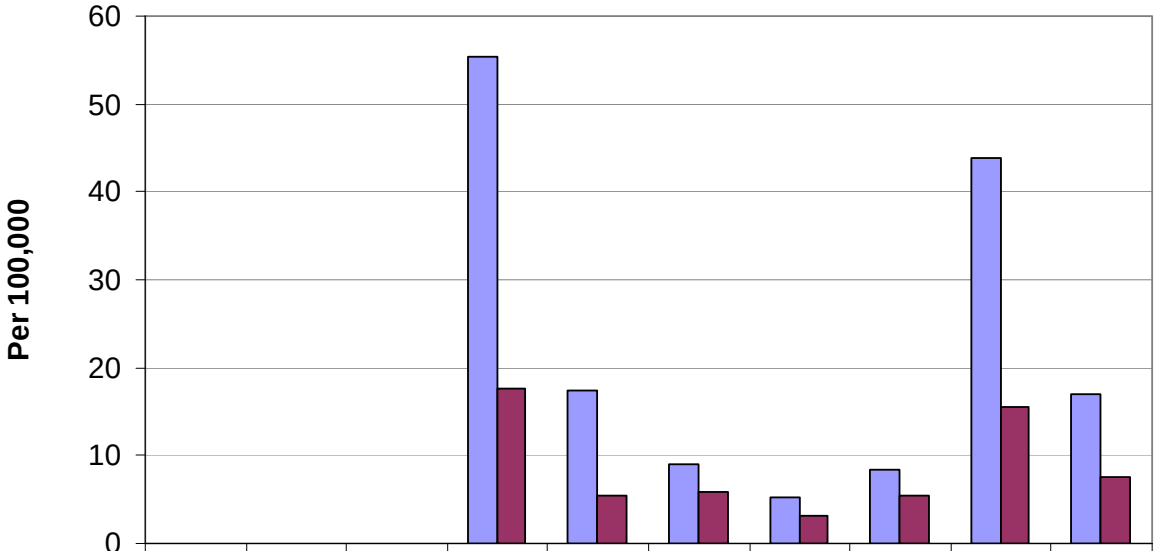
Figure 76. Age-Specific Hospitalization Rate of MVA in Children Under 20 Years of Age

Key Findings:

- Injury-related hospitalizations are highest among teenagers aged 15-19 years for all causes and specially MVA
- Males have higher rates of hospitalization due to injury than females
- The highest rate of hospitalization due to falls is among children 0-4 years

7.3 Mortality due to Injury in All Children

There were only 30 deaths that were directly related to any type of injury in Eastern Ontario in children under the age of 20 between 2000 and 2004. The size of the sample makes it impossible to separate this group into smaller categories. When all children are considered together, the leading cause of death is MVA, representing 73% of all injury-related mortality in this region. The second leading cause of injury-related death is suicide, which represents 20% of injury-related mortality in children the EOHU region.



	Age 0-4	Age 5-9	Age 10-14	Age1 5-19	Under 20	Age 0-4	Age 5-9	Age 10-14	Age1 5-19	Under 20
	EOHU					Ontario				
Male	0.0			55.4	17.4	9.0	5.2	8.3	43.8	17.1
Female	0.0	0.0		17.7	5.5	5.8	3.1	5.4	15.6	7.6

Figure 77. Age-Specific Mortality Rate for All Injury, Aged 0-20 Years

Key Findings:

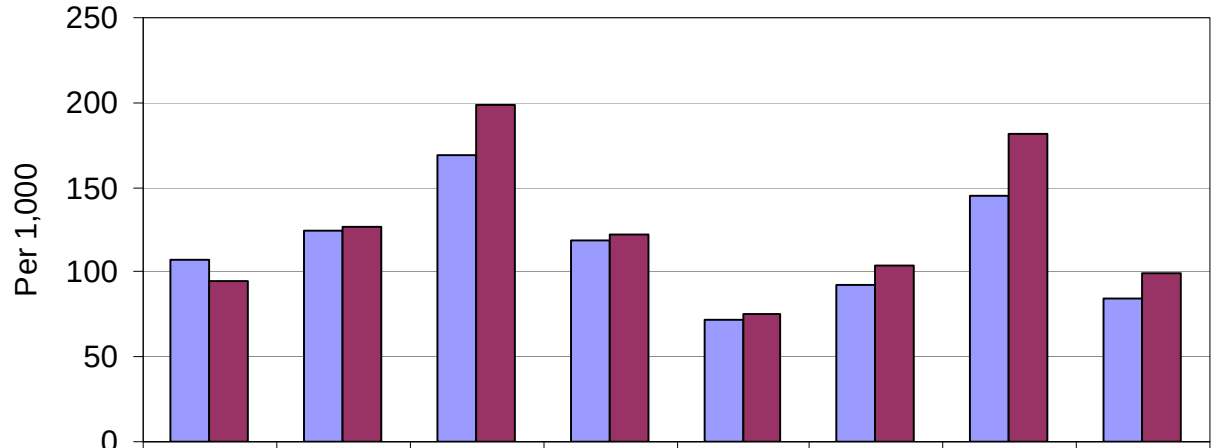
- There were only 30 injury-related deaths in children in Eastern Ontario between 2000-2004
- MVA accounts for almost three quarters of all injury-related mortality
- Suicide accounts for close to one quarter of injury-related mortality

8 Injuries in Seniors (Aged 65 and Up)

This section is intended to highlight injury-related trends among the oldest age groups. Overall, rates of injury increase with age and females have higher rates of injury than males. The exception is MVA-related injuries, which have a similar rate for all age groups and males have higher rates than females.

8.1 Ambulatory ER Visits due to Injury in Seniors

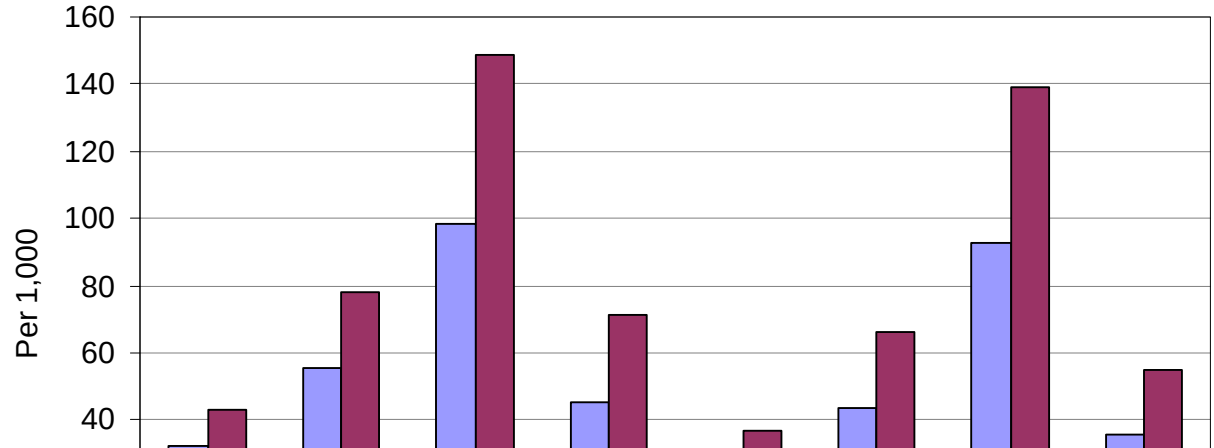
As seen in Figure 78, the rates of ambulatory ER visits due to injury show a large increase with age. There is also a difference in gender as males have higher rates of ambulatory ER visits due to injury than females between the ages of 65 and 74, but females have higher rates of injury after age 74. The rates of injury are higher in the EOHU region than in Ontario.



	EOHU				Ontario			
	Age 65-74	Age 75-84	Age 85+	Age 65+	Age 65-74	Age 75-84	Age 85+	Age 65+
Male	107.7	124.6	169.2	118.2	72.2	92.2	144.6	84.7
Female	94.8	126.7	199.1	121.7	75.2	104.3	181.6	99.8

Figure 78. Age-Specific Rate of Ambulatory ER Visits for Injury in Seniors (Aged 65 and up)

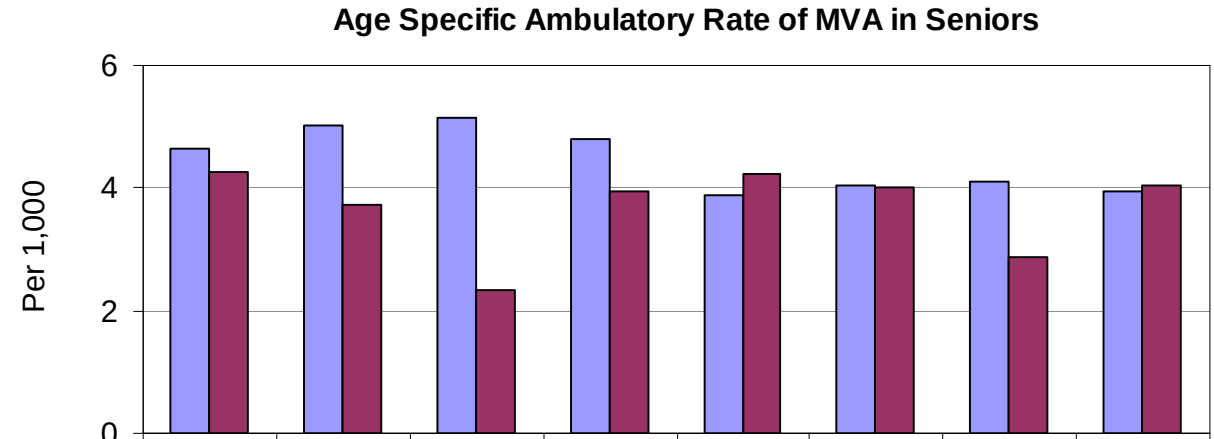
The rates of ambulatory ER visits for falls increase with age and females have consistently higher rates than males (Figure 79). The rates of falling are higher in the EOHU region than in Ontario for both males and females and for all age groups.



	EOHU				Ontario			
	Age 65-74	Age 75-84	Age 85+	Age 65+	Age 65-74	Age 75-84	Age 85+	Age 65+
Male	32.4	55.1	98.1	45.2	23.4	43.4	92.9	35.9
Female	43.2	78.1	148.7	71.4	36.7	65.9	139.1	54.6

Figure 79. Age-Specific Rate of Ambulatory ER Visits due Falls in Seniors (Aged 65 and Up)

The rates of ambulatory ER visits due to MVA in seniors are much lower than the rates of falling and show very different trends. Males in the EOHU region have higher rates of MVA-related injuries than females in the EOHU region as well as higher rates than males in Ontario. The injury rates in males in the EOHU region also show a slight increase with age. The rates of MVA in females in the EOHU region show a larger decrease with age than females in Ontario.



	EOHU				Ontario			
	Age 65-74	Age 75-84	Age 85+	Age 65+	Age 65-74	Age 75-84	Age 85+	Age 65+
Male	4.6	5.0	5.2	4.8	3.9	4.0	4.1	4.0
Female	4.3	3.7	2.3	3.9	4.2	4.0	2.9	4.0

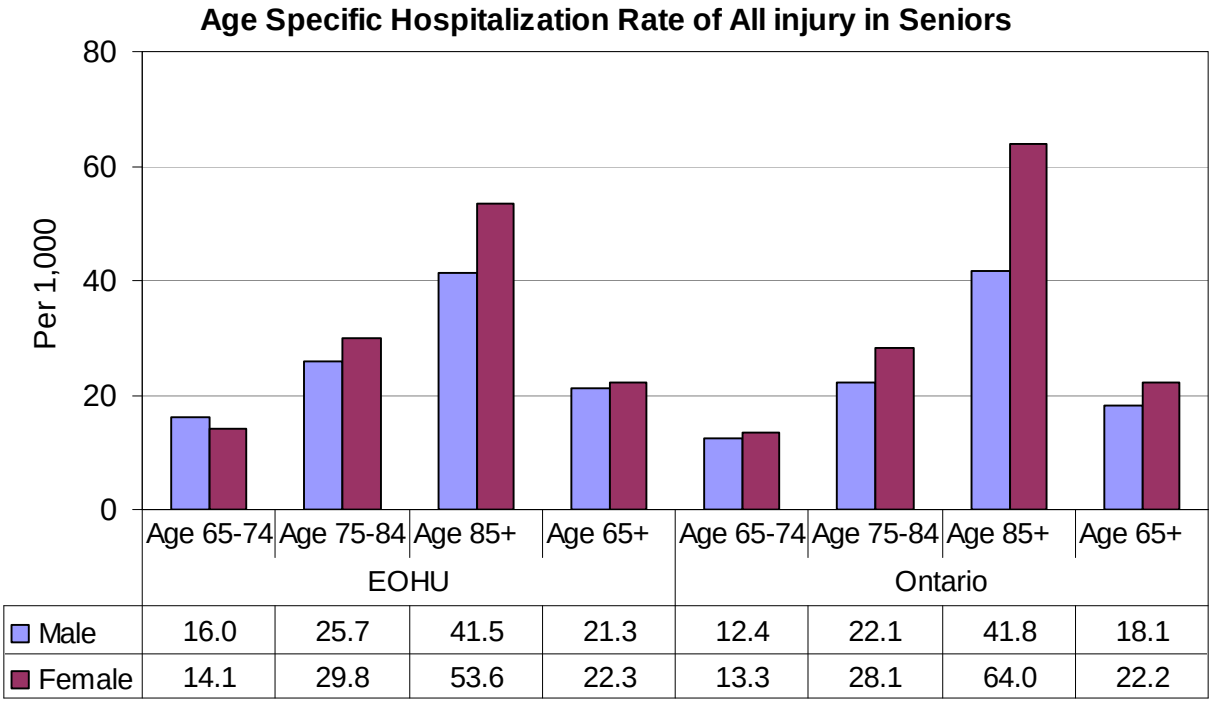
Figure 80. Age-Specific Rate of Ambulatory ER Visits due to MVA in Seniors (Aged 65 and Up)

Key Findings:

- Females have a higher rate of injury-related ambulatory ER visits than males after the age of 74
- Males have higher rates of MVA-related injury and females have higher rates of falling injuries
- Injury-related ER visits increase with age and are higher in EO than Ontario

8.2 Hospitalizations due to Injury in Seniors

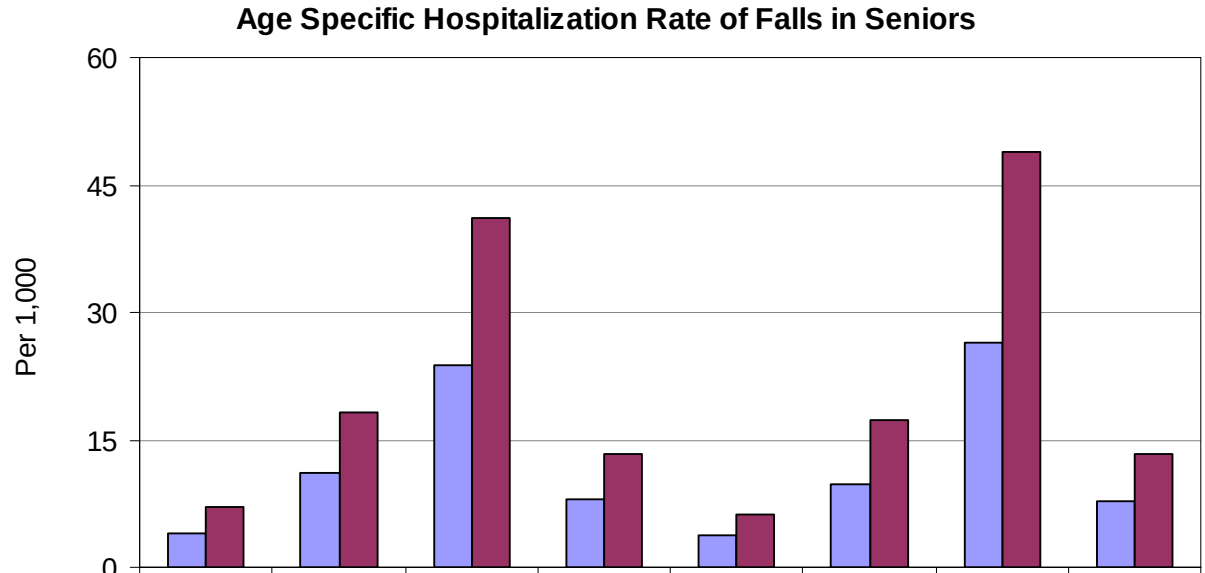
The trends for in the rates of injury-related hospitalizations among seniors (aged 65 and over) are very similar to the trends seen in the rates of injury-related ambulatory ER visits. Hospitalization rates show a dramatic increase with age and females have higher rates than males in both the EOHU region and Ontario. The regional rates are very similar to the rates seen in the province for all age groups.



	EOHU				Ontario			
	Age 65-74	Age 75-84	Age 85+	Age 65+	Age 65-74	Age 75-84	Age 85+	Age 65+
Male	16.0	25.7	41.5	21.3	12.4	22.1	41.8	18.1
Female	14.1	29.8	53.6	22.3	13.3	28.1	64.0	22.2

Figure 81. Age-Specific Hospitalization Rates of All Injury in Seniors (Aged 65 and Up)

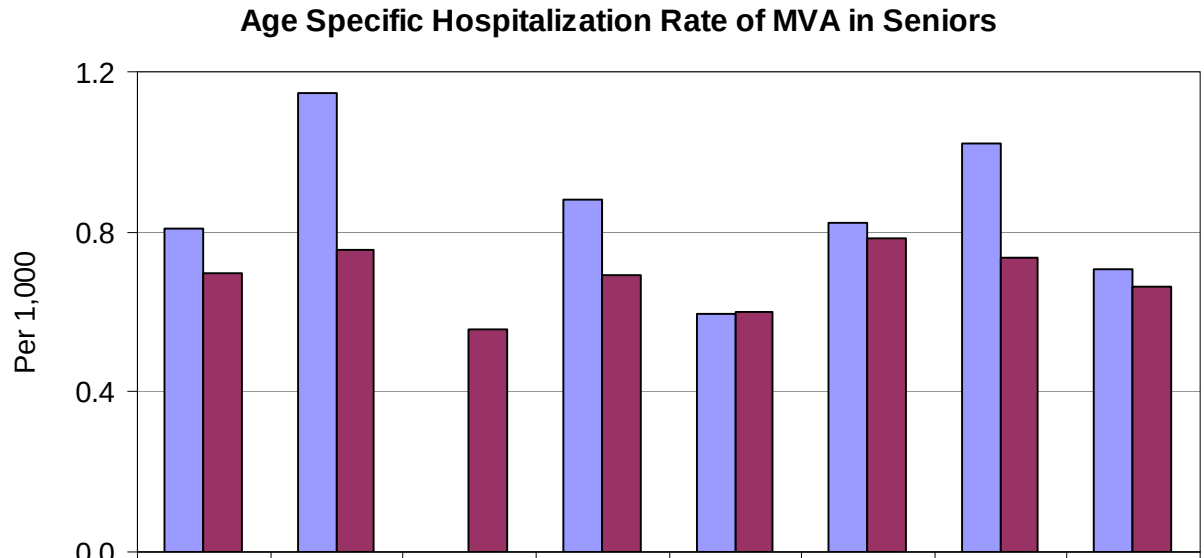
The rates of hospitalization due to falls in seniors are higher in females than males and increase with age. Rates are higher in Ontario than in the EOHU region.



	EOHU				Ontario			
	Age 65-74	Age 75-84	Age 85+	Age 65+	Age 65-74	Age 75-84	Age 85+	Age 65+
Male	4.0	11.2	23.7	8.0	3.8	9.8	26.4	7.7
Female	7.0	18.1	41.1	13.3	6.1	17.3	48.8	13.3

Figure 82. Age-Specific Rate of Hospitalizations due to Falls in Seniors (Aged 65 and Up)

Rates of hospitalization due to MVA in seniors aged 65 and over quite low and typically consist of very few cases. Males have higher rates of hospitalization due to MVA than females. The EOHU region has higher rates than Ontario.



	EOHU				Ontario			
	Age 65-74	Age 75-84	Age 85+	Age 65+	Age 65-74	Age 75-84	Age 85+	Age 65+
Male	0.81	1.15		0.88	0.60	0.82	1.02	0.71
Female	0.70	0.75	0.55	0.69	0.60	0.78	0.73	0.66

Blank Cell: Not reportable due to small number

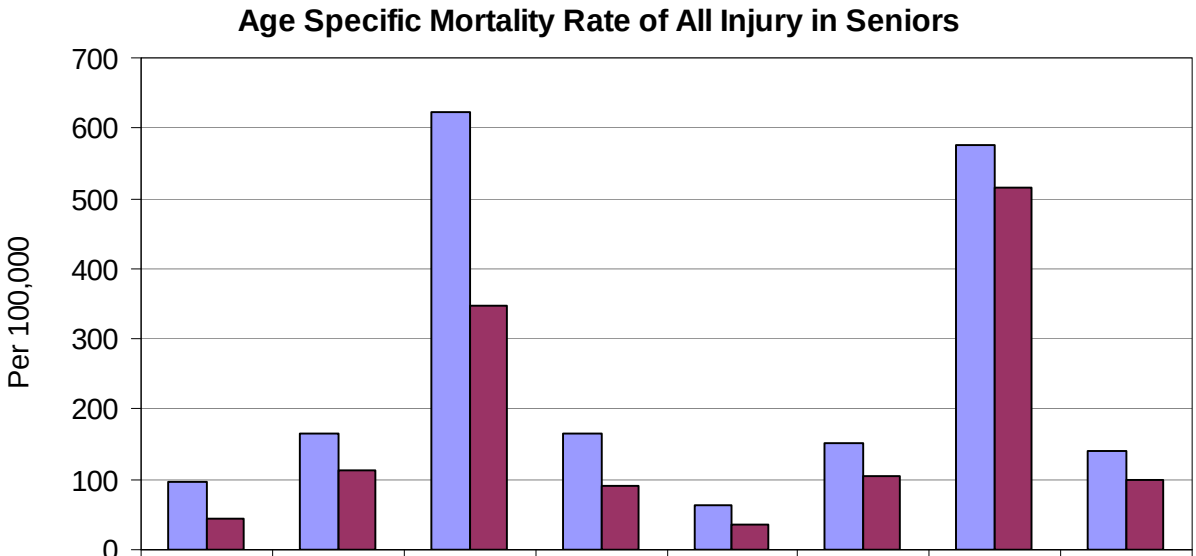
Figure 83. Age-Specific Rate of Hospitalizations due to MVA in Seniors (Aged 65 and Up)

Key Findings:

- Females have higher rates of hospitalization due to injury overall than males
- Females have higher rates of falling than males, males have higher rates of MVA
- Rates of hospitalization due to falling increase with age

8.3 Mortality due to Injury in Seniors

The rate of mortality due to injury in seniors aged 65 and over increases dramatically with age for both males and females in the EOHU region and in Ontario. This increase is not gradual and the bulk of the injury-related deaths are in people in the oldest age category, 85 years and older. Figure 84, showing the mortality rates associated with falling in seniors looks very similar the mortality rates for all injuries combined. Falling represents a large proportion of the mortality in this older segment of the population. There were very few MVA-related deaths among seniors in the EOHU region, making it impossible to identify specific trends for this cause of death.



	EOHU				Ontario			
	Age 65-74	Age 75-84	Age 85+	Age 65+	Age 65-74	Age 75-84	Age 85+	Age 65+
Male	96.4	164.2	621.7	166.2	63.3	152.8	575.6	139.7
Female	43.1	113.4	347.9	90.4	37.2	104.4	515.6	99.9

Figure 84. Age-Specific Mortality Rates for all Injuries in Seniors (Aged 65 and Up)

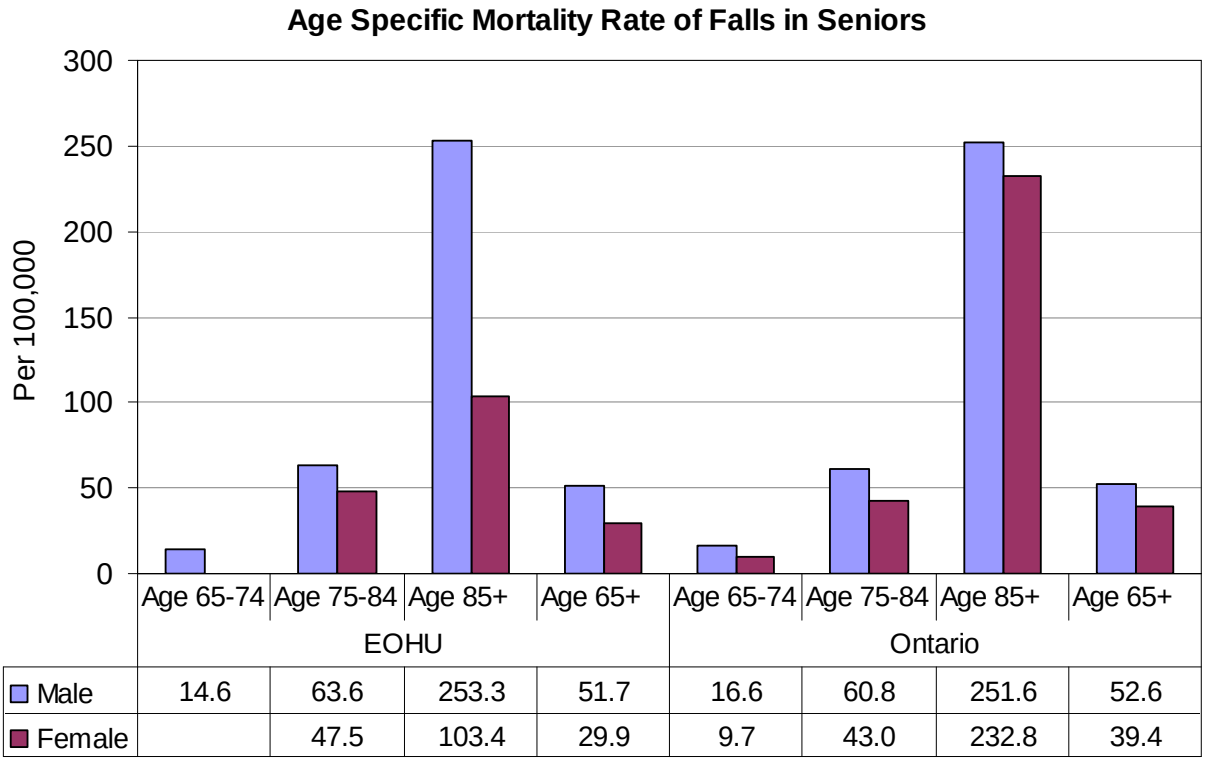


Figure 85. Age-Specific Mortality Rates of Falls in Seniors (Aged 65 and Up)

Key Findings:

- Injury-related mortality rates increase with age with the highest rates in the oldest age group, 85 and older.
- Males have higher mortality rates than females in all groups

9 Conclusions

The analysis of injury prevalence, ambulatory ER visits, hospitalization rates, and mortality rates reveal specific areas where the EOHU region is at a disadvantage compared to the province.

All injuries represent about a quarter of all ambulatory emergency room visits in Eastern Ontario and about a third in Ontario. The rate of injury-related ambulatory ER visits, however is higher in Eastern Ontario than in the province for every age group.

Assault-related injuries are more frequent in males than females. Males also have higher rates of ambulatory ER visits, hospitalizations, and mortality. The EOHU region has fewer assault-related injuries than Ontario considering ambulatory ER visits, hospitalizations, and deaths.

Ambulatory ER visits and hospitalizations due self-inflicted injuries are more frequent in females than males. The rates of self-inflicted injuries are higher in the EOHU region than in Ontario. Ambulatory ER visits resulting from self-harm injuries are among teens aged 15 to 19 years, although the rate is higher for females than males. The rates of ambulatory ER visits for injuries in the EOHU region are higher than Ontario for all age groups and both sexes.

An area of concern in the EOHU region is mortality from intentional self-harm or suicide. Contrary to the rates of ambulatory ER visits and hospitalizations, suicide rates are higher in males than females and in everyone over the age of 15 . Females aged 15 to 19 years in Eastern Ontario have a 50% higher rate of suicide than the rest of the province. Males aged 20-44 in Eastern Ontario also have a much higher suicide rate than the province. The potential years of life lost among males in the EOHU region is 5.47 per 1,000 population, which is equivalent to more than 500 years of life lost over a five-year period.

Among unintentional injuries, falls are responsible for a greater proportion of injury in Eastern Ontario than in the province as a whole. In the EOHU region, falls occur more frequently at home and affect more residents aged 65 years and over than in the rest of Ontario. Falls are responsible for almost half of all hospitalizations due to injury in males and three quarters of hospitalizations due to injury in females, in both Ontario and the EOHU territory.

The rate of falling and the rate of falls resulting in injury vary by age group. In the younger population (24 years old and under), the rate of falls is higher while the rate of resulting injury is relatively low compared to other age groups. On the other hand, the rate of falls in seniors (65 years and older) is lower than other age groups while the rate of resulting injury is higher.

The EOHU region has a higher overall rate of ambulatory ER visits due to unintentional injuries than the rest of the province. These high rates most likely reflect the higher rates of injury due to by motor vehicle accidents. Youth aged 15 to 19 years have a rate of injury resulting from MVA that is twice as high as those aged 20 to 44 and almost four times that of drivers over the age of 45. Males are injured in MVA more frequently than females, while male

youth (15 to 19 years) in Eastern Ontario have about 30% more ambulatory emergency visits due to MVA than their counterparts in the province and nearly double the provincial mortality rate. Females aged 15 to 19 years showed a similar pattern, with mortality rates due to MVA more than 40% higher than the province. Overall teens from Eastern Ontario had a mortality rate due to motor vehicle accidents that is 80% higher than Ontario. Ultimately, these high mortality rates also translate into an increased number of potential years of life lost due to MVA when compared to Ontario. MVAs in the EOHU region cause a loss of 4.87 potential years of life to area males, which is almost as many as are lost due to suicide.

Appendix 1 – International Classification of Diseases

External causes of morbidity and mortality (Injury)
(ICD9 & ICD10)

Chapter	No.	Heading	External causes of injury	
			ICD-10	ICD-9
		All External causes	V01-Y98	E800-E999
I		Unintentional Injuries	V01-X59, Y85-Y86	E800-E869, E880-E929,
	1	Transport accidents	V00-V99	E800-E848
	2	Pedestrian injured in transport accident	V00-V09	E806.2, E814.7, E818.7, E822.7, E826.0, E827.0, E828.0, E829.0
	3	Motor vehicle accidents	V02-V04, V090, V092, V12-V14, V190-V192, V194-V196, V2-V7, V803-V805, V810-V811, V820-V821, V83-V86, 870-V878, V880-V888, V890, V892	E810-E825
	4	Motor Vehicle Traffic Accidents	V02-V04, V090, V092, V12-V14, V190-V192, V194-V196	E810-E819
	5	Motor Vehicle non-traffic Accidents	V2-V7, V803-V805, V810-V811, V820-V821, V83-V86, 870-V878, V880-V888, V890, V892	E820-E825
	6	Other land transport accidents	V01, V05-V06, V091, V093-V099, V10-V11, V15-V18, V193, V198-V199, V800, V802, V806-V809, V812-V819, V822-V829, V879, V889, V891, V893, V899	E800-E807, E826-E829
	7	Other transport accidents	V90-V99, Y85	E830-E848, E929.0-E929.1
	8	Accidental Falls	W00-W19	E880-E888
	9	Accidental drowning and submersion	W65-W74	E910
	10	Accidental fire	X0	E890-E899
	11	Accidental poisoning	X4	E850-E869, E924.1
	12	Accidental suffocation	W75-W84	E911-E913
	13	Other non-transport accidents	W20-W31, W35-W64, W85-W99, X10-X39, X5, Y86	E900-E909, E914-E929
II		Intentional Injuries	X60-Y09, Y870-Y871	E950-E969
	1	Intentional self-harm	X60-X84, Y870	E950-E959
	2	Assault	X85-Y09, Y871	E960-E969
III		Legal intervention	Y35, Y890	E970-E978
IV		Other events of undetermined intent	Y10-Y34, Y872, Y899	E980-E989
V		Operations of war and their sequelae	Y36, Y891	E990-E999
VI		Complications of medical care	Y40-Y84, Y88	E870-E879, E930-E949

Appendix 2 – Ambulatory ER visit Rates Due to Various Types of Injury

(per 1,000 population) (Blank cells contained number too small to report, n≤5)

Ambulatory ER visit

EOHU

Males

	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
All injury	183.14	137.56	212.05	265.19	185.43	116.26	118.44	170.23
Unintentional injuries (V01-X59, Y85-86)	177.80	134.61	205.88	247.40	172.47	107.31	101.31	158.72
Motor Vehicle Accidents (V01-99)	2.64	3.54	8.23	19.98	11.89	5.46	4.80	9.07
Falls (W00-19)	74.25	43.57	51.66	40.07	24.45	23.22	45.38	34.38
Accidental poisoning (X40-49)	4.92	0.92	0.57	1.63	1.86	1.30	1.00	1.71
Accidental fire (X00-09)	0.74	0.62	0.44	1.27	1.12	0.58	0.31	0.84
Suffocation (W75-84)					0.00	0.06	0.13	0.06
Drowning & submersion (W65-74)				0.00	0.00			0.02
Inanimate mechanical forces (W20-49)	51.25	47.02	72.21	94.09	77.28	45.22	26.52	62.94
Animate mechanical forces (W50-64)	16.39	12.82	27.16	27.24	7.38	4.21	3.44	10.15
Electric current, radiation etc.(X85-99)				0.63	1.01	0.47		0.59
Heat or hot substances (X10-19)	4.71	1.12	1.05	2.16	1.81	1.09	0.75	1.67
Venomous animals & plants (X20-29)	1.90	2.00	1.62	1.67	1.82	1.87	1.56	1.80
Forces of nature (X30-39)	0.37	0.54	0.64	0.87	0.51	0.28		0.47
Overexertion, etc. (X50-57)	5.29	4.66	17.01	28.31	23.82	10.75	4.92	16.75
Intentional self-harm (X60-84)		0.00	0.47	2.33	2.09	1.04	0.38	1.36
Assault (X85-Y09)	0.37	0.54	3.04	10.49	5.28	1.40	0.50	3.65

Females

	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
All injury	139.17	109.77	150.22	147.71	115.50	91.31	113.14	117.20
Unintentional injuries (V01-X59, Y85-86)	135.57	107.68	144.82	130.77	101.78	80.85	103.50	106.40
Motor Vehicle Accidents (V01-99)	2.33	3.15	4.94	15.20	9.21	4.94	3.93	7.15
Falls (W00-19)	52.41	39.47	40.97	25.20	22.75	27.66	62.62	32.86
Accidental poisoning (X40-49)	4.19	0.63	0.50	1.49	1.31	0.95	1.01	1.32
Accidental fire (X00-09)	0.79			0.25	0.44	0.26	0.17	0.36
Suffocation (W75-84)		0.00						0.05
Drowning & submersion (W65-74)		0.00	0.00	0.00	0.00	0.01	0.00	0.01
Inanimate mechanical forces (W20-49)	35.30	32.13	42.14	36.64	27.64	18.74	12.98	26.90
Animate mechanical forces (W50-64)	16.16	10.53	13.43	13.15	6.12	4.99	3.23	7.63
Electric current, radiation etc.(X85-99)					0.15			0.11
Heat or hot substances (X10-19)	4.03	1.05	1.31	2.66	2.22	1.10	0.64	1.85
Venomous animals & plants (X20-29)	1.32	1.38	1.31	0.74	1.20	1.69	1.78	1.38
Forces of nature (X30-39)			0.39	0.43	0.21	0.07		0.19
Overexertion, etc. (X50-57)	6.84	6.00	20.96	17.93	15.20	9.26	5.43	12.46
Intentional self-harm (X60-84)	0.00	0.00	1.67	6.45	2.97	1.71	0.43	2.12
Assault (X85-Y09)	0.32	0.25	1.46	5.10	2.60	0.71	0.16	1.77

Both sexes combined

	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
All injury	161.18	123.72	181.93	208.27	150.67	103.95	116.30	144.11
Unintentional injuries (V01-X59, Y85-86)	156.70	121.20	176.14	190.89	137.34	94.25	103.42	133.00
Motor Vehicle Accidents (V01-99)	2.49	3.34	6.63	17.67	10.55	5.20	4.28	8.12
Falls (W00-19)	63.34	41.53	46.45	32.86	23.60	25.41	55.59	33.83
Accidental poisoning (X40-49)	4.55	0.77	0.54	1.56	1.59	1.13	1.01	1.52
Accidental fire (X00-09)	0.77	0.42	0.31	0.77	0.79	0.43	0.23	0.61
Suffocation (W75-84)	0.16					0.05	0.10	0.05
Drowning & submersion (W65-74)				0.00	0.00			0.02
Inanimate mechanical forces (W20-49)	43.28	39.60	57.56	66.26	52.61	32.15	19.29	45.06
Animate mechanical forces (W50-64)	16.28	11.68	20.47	20.41	6.75	4.60	3.33	8.92
Electric current, radiation etc.(X85-99)		0.13		0.41	0.58	0.26		0.35
Heat or hot substances (X10-19)	4.37	1.09	1.18	2.40	2.01	1.09	0.68	1.76
Venomous animals & plants (X20-29)	1.61	1.69	1.47	1.22	1.51	1.78	1.67	1.59
Forces of nature (X30-39)	0.26	0.36	0.52	0.65	0.36	0.18	0.11	0.33
Overexertion, etc. (X50-57)	6.06	5.33	18.93	23.28	19.54	10.01	5.17	14.63
Intentional self-harm (X60-84)		0.00	1.06	4.33	2.53	1.37	0.40	1.73
Assault (X85-Y09)	0.34	0.40	2.27	7.88	3.95	1.06	0.32	2.73

Ontario

Males

Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
166.03	130.98	204.04	241.40	162.26	100.84	85.03	148.65
160.85	127.85	197.75	216.85	146.55	91.32	72.23	136.03
1.89	3.46	6.56	15.45	11.50	6.42	3.95	8.44
70.65	46.25	57.33	38.27	22.80	21.47	35.90	32.38
5.57	0.96	0.86	2.14	2.04	1.27	0.88	1.86
0.68	0.28	0.41	1.03	0.92	0.52	0.22	0.68
0.23	0.05	0.06	0.04	0.04	0.07	0.14	0.07
0.10	0.06	0.04	0.04	0.02	0.02	0.02	0.03
45.96	42.89	64.47	83.99	66.78	38.01	17.48	53.83
9.44	10.81	23.40	24.02	6.59	3.00	1.82	8.23
0.11	0.06	0.08	0.46	0.61	0.27	0.04	0.36
4.41	0.79	0.74	1.74	1.38	0.84	0.45	1.33
1.35	1.59	1.24	1.01	1.24	1.32	0.99	1.24
0.10	0.20	0.30	0.53	0.33	0.22	0.18	0.28
5.48	4.89	16.24	23.11	16.47	8.12	3.07	12.31
0.05	0.02	0.33	2.20	1.84	0.97	0.26	1.17
0.25	0.57	3.60	17.41	8.44	2.10	0.39	5.53

Females

Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
130.99	97.90	133.31	136.41	95.02	83.36	93.51	100.98
127.88	95.76	128.47	119.82	82.47	74.03	85.30	91.12
1.64	2.73	4.37	13.41	9.45	6.24	4.05	7.19
55.12	39.81	42.80	26.06	19.54	27.35	54.58	30.97
4.71	0.67	0.87	2.39	1.71	1.29	1.04	1.68
0.46	0.17	0.17	0.35	0.29	0.21	0.12	0.25
0.22	0.04	0.03	0.03	0.04	0.04	0.11	0.06
0.06	0.02	0.02	0.02	0.01	0.01	0.01	0.02
33.53	26.03	34.81	34.29	23.82	17.03	9.73	23.23
8.87	7.79	10.83	10.60	4.50	3.45	2.20	5.44
0.10	0.05	0.05	0.13	0.13	0.05	0.02	0.09
3.03	0.79	0.81	2.16	1.50	1.04	0.51	1.36
1.07	0.92	0.72	0.80	0.89	1.17	0.89	0.94
0.09	0.11	0.23	0.32	0.13	0.08	0.09	0.13
7.69	5.87	17.59	15.37	10.14	7.55	4.21	9.38
0.03	0.01	1.50	5.89	2.59	1.30	0.25	1.87
0.20	0.25	1.23	5.06	3.04	0.90	0.23	1.96

Both sexes combined

Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
148.90	114.74	169.49	190.18	128.87	92.11	90.19	125.24
144.73	112.09	163.91	169.52	114.74	82.68	80.03	114.01
1.77	3.10	5.49	14.46	10.48	6.33	3.98	7.82
63.06	43.09	50.23	32.31	21.18	24.41	46.63	31.88
5.15	0.82	0.86	2.26	1.88	1.28	0.96	1.77
0.57	0.22	0.29	0.70	0.61	0.36	0.17	0.47
0.23	0.04	0.04	0.03	0.04	0.06	0.12	0.06
0.08	0.04	0.03	0.03	0.02	0.01	0.01	0.02
39.89	34.61	49.98	59.74	45.45	27.53	13.37	38.66
9.16	9.32	17.26	17.48	5.55	3.22	2.02	6.86
0.11	0.06	0.07	0.30	0.37	0.16	0.03	0.23
3.74	0.79	0.78	1.95	1.44	0.94	0.48	1.34
1.21	1.26	0.99	0.91	1.07	1.24	0.93	1.09
0.09	0.15	0.27	0.43	0.23	0.15	0.13	0.21
6.56	5.37	16.90	19.33	13.33	7.84	3.69	10.87
0.04	0.02	0.90	4.00	2.22	1.13	0.25	1.51
0.23	0.41	2.44	11.39	5.76	1.50	0.31	3.77

Appendix 3 - Hospitalization Rates Due to Various Types of Injury

(per 1,000 population) (Blank cells contained number too small to report, n≤5)

Hospitalization

EOHU

Males

	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
All injury	3.54	2.33	3.17	5.66	5.33	7.27	21.31	7.05
Unintentional injuries (V01-X59, Y85-86)	3.01	2.04	2.63	4.26	3.62	3.64	10.23	4.18
Motor Vehicle Accidents (V01-99)		0.29	0.40	1.43	1.11	0.73	0.88	0.87
Falls (W00-19)	1.22	0.79	0.88	0.97	1.14	1.77	7.99	2.00
Accidental poisoning (X40-49)	0.32						0.19	0.08
Accidental fire (X00-09)	0.00		0.00	0.03			0.00	0.02
Suffocation (W75-84)			0.00	0.00	0.00		0.00	0.02
Drowning & submersion (W65-74)		0.00	0.00	0.00	0.00	0.00	0.00	
Inanimate mechanical forces (W20-49)	0.32	0.37	0.47	0.47	0.66	0.67	0.44	0.55
Animate mechanical forces (W50-64)	0.32		0.20	0.57	0.09	0.08		0.15
Electric current, radiation etc.(X85-99)		0.00	0.00				0.00	0.01
Heat or hot substances (X10-19)		0.00		0.00			0.00	
Venomous animals & plants (X20-29)	0.00	0.00		0.00		0.00	0.00	
Forces of nature (X30-39)	0.00	0.00	0.00	0.00				
Overexertion, etc. (X50-57)	0.00	0.00		0.20	0.21	0.12	0.13	0.15
Intentional self-harm (X60-84)	0.00	0.00		0.27	0.45	0.36	0.00	0.27
Assault (X85-Y09)	0.11	0.00		0.23	0.17	0.05		0.11

Females

	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
All injury	2.38	1.59	2.45	3.15	3.71	6.76	22.29	6.00
Unintentional injuries (V01-X59, Y85-86)	1.38	1.34	1.60	1.59	1.53	3.07	15.12	3.34
Motor Vehicle Accidents (V01-99)		0.08	0.32	0.71	0.36	0.34	0.69	0.38
Falls (W00-19)	0.58	0.63	0.64	0.28	0.63	2.18	13.28	2.33
Accidental poisoning (X40-49)							0.17	0.07
Accidental fire (X00-09)		0.00	0.00	0.00				
Suffocation (W75-84)		0.00	0.00	0.00	0.00	0.00		
Drowning & submersion (W65-74)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Inanimate mechanical forces (W20-49)		0.29	0.32		0.12	0.10	0.19	0.15
Animate mechanical forces (W50-64)	0.00				0.07			0.07
Electric current, radiation etc.(X85-99)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heat or hot substances (X10-19)		0.00	0.00	0.00			0.00	
Venomous animals & plants (X20-29)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forces of nature (X30-39)	0.00	0.00	0.00	0.00	0.00	0.00		
Overexertion, etc. (X50-57)	0.00			0.21	0.12	0.10	0.20	0.11
Intentional self-harm (X60-84)	0.00	0.00		0.74	0.59	0.42	0.15	0.38
Assault (X85-Y09)		0.00	0.00				0.00	0.03

Both sexes combined

	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
All injury	2.96	1.96	2.82	4.45	4.53	7.02	22.11	6.57
Unintentional injuries (V01-X59, Y85-86)	2.20	1.69	2.13	2.97	2.58	3.36	13.21	3.83
Motor Vehicle Accidents (V01-99)	0.16	0.19	0.36	1.08	0.74	0.54	0.77	0.63
Falls (W00-19)	0.90	0.71	0.76	0.64	0.89	1.97	11.17	2.23
Accidental poisoning (X40-49)	0.29				0.03	0.05	0.17	0.07
Accidental fire (X00-09)			0.00					0.02
Suffocation (W75-84)			0.00	0.00	0.00	0.00		0.01
Drowning & submersion (W65-74)		0.00	0.00	0.00	0.00	0.00	0.00	
Inanimate mechanical forces (W20-49)	0.26	0.33	0.40	0.29	0.39	0.39	0.31	0.35
Animate mechanical forces (W50-64)	0.16	0.13	0.14	0.36	0.08	0.06	0.09	0.11
Electric current, radiation etc.(X85-99)		0.00	0.00				0.00	0.01
Heat or hot substances (X10-19)		0.00		0.00			0.00	0.01
Venomous animals & plants (X20-29)	0.00	0.00		0.00		0.00	0.00	
Forces of nature (X30-39)	0.00	0.00	0.00	0.00				
Overexertion, etc. (X50-57)	0.00		0.10	0.21	0.17	0.11	0.17	0.13
Intentional self-harm (X60-84)	0.00	0.00		0.50	0.52	0.39	0.08	0.33
Assault (X85-Y09)		0.00		0.14	0.10	0.03		0.07

Ontario

Males

Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
4.80	3.95	5.07	8.02	6.55	8.17	18.06	7.88
3.57	3.14	4.22	5.50	4.18	4.60	9.95	4.90
0.14	0.30	0.62	1.49	1.07	0.78	0.71	0.86
1.57	1.67	1.66	1.35	1.19	2.24	7.74	2.24
0.47	0.06	0.07	0.21	0.18	0.18	0.19	0.18
0.04	0.03	0.03	0.05	0.05	0.05	0.05	0.05
0.06	0.01	0.01	0.01	0.01	0.01	0.04	0.02
0.04	0.02	0.01	0.00	0.00	0.00	0.01	0.01
0.56	0.42	0.65	0.95	0.77	0.61	0.44	0.67
0.12	0.17	0.41	0.55	0.15	0.07	0.07	0.17
0.01			0.02	0.02	0.01	0.01	0.01
0.27	0.03	0.02	0.02	0.03	0.04	0.03	0.05
0.01	0.02	0.01	0.00	0.01	0.01	0.01	0.01
0.01			0.02	0.02	0.03	0.03	0.02
0.02	0.01	0.11	0.21	0.27	0.19	0.14	0.19
		0.06	0.53	0.57	0.39	0.13	0.36
0.13	0.01	0.06	0.87	0.57	0.17	0.05	0.35

Females

Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
3.52	2.76	2.89	4.57	4.20	6.98	22.23	6.58
2.80	2.13	1.87	2.05	1.79	3.55	15.35	3.79
0.10	0.19	0.30	0.73	0.43	0.49	0.66	0.44
1.31	1.27	0.75	0.43	0.71	2.25	13.25	2.51
0.39	0.03	0.09	0.21	0.14	0.18	0.21	0.17
0.02	0.01	0.01	0.01	0.01	0.02	0.02	0.01
0.04	0.01	0.00	0.00	0.00	0.01	0.04	0.01
0.02	0.01	0.00		0.00	0.00	0.00	0.00
0.44	0.25	0.23	0.22	0.14	0.12	0.22	0.19
0.09	0.09	0.11	0.13	0.05	0.05	0.07	0.07
0.01				0.00	0.00	0.00	0.00
0.20	0.01	0.02	0.01	0.01	0.02	0.03	0.03
0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.01
0.00			0.01	0.00	0.01	0.02	0.01
0.00	0.02	0.06	0.11	0.08	0.11	0.20	0.09
	0.00	0.34	1.40	0.83	0.52	0.13	0.58
0.08	0.01	0.01	0.09	0.07	0.03	0.03	0.05

Both sexes combined

Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
4.17	3.37	4.01	6.34	5.38	7.57	20.67	7.30
3.19	2.65	3.07	3.82	2.99	4.08	13.23	4.42
0.12	0.24	0.46	1.12	0.75	0.64	0.68	0.65
1.44	1.47	1.22	0.90	0.96	2.24	11.06	2.44
0.43	0.05	0.08	0.21	0.16	0.18	0.20	0.18
0.03	0.02	0.02	0.03	0.03	0.03	0.03	0.03
0.05	0.01	0.01	0.01	0.01	0.01	0.04	0.01
0.03	0.02	0.01	0.00	0.00	0.00	0.00	0.01
0.50	0.33	0.45	0.59	0.46	0.37	0.32	0.43
0.10	0.13	0.26	0.34	0.10	0.06	0.07	0.12
0.01			0.01	0.01	0.01	0.00	0.01
0.23	0.02	0.02	0.02	0.02	0.03	0.03	0.04
0.01	0.02	0.01	0.00	0.01	0.01	0.01	0.01
0.01		0.00	0.02	0.01	0.02	0.03	0.01
0.01	0.02	0.09	0.16	0.18	0.15	0.18	0.14
		0.19	0.96	0.69	0.46	0.13	0.47
0.11	0.01	0.04	0.49	0.32	0.10	0.04	0.20

Appendix 4 - Mortality Rates Due to Various Types of Injury

(per 100,000 population) (Blank cells contained number too small to report, n≤5)

Mortality

EOHU

Males

	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
All injury	0.00		5.31	55.45	65.58	39.64	166.24	57.58
Unintentional injuries (V01-X59, Y85-86)	0.00		5.31	41.59	28.62	16.65	134.52	33.71
Motor Vehicle Accidents (V01-99)	0.00		5.31	38.81	20.27	7.14	15.87	15.10
Falls (W00-19)	0.00	0.00	0.00	0.00	0.00		51.65	6.39
Accidental poisoning (X40-49)	0.00	0.00	0.00	0.00	4.77			3.14
Accidental fire (X00-09)	0.00	0.00	0.00	0.00	0.00			
Suffocation (W75-84)	0.00	0.00	0.00	0.00	0.00		12.40	1.57
Drowning & submersion (W65-74)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Inanimate mechanical forces (W20-49)	0.00	0.00	0.00					1.30
Animate mechanical forces (W50-64)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electric current, radiation etc.(X85-99)	0.00	0.00	0.00	0.00	0.00		0.00	
Heat or hot substances (X10-19)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Venomous animals & plants (X20-29)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forces of nature (X30-39)	0.00	0.00	0.00	0.00	0.00	0.00		
Overexertion, etc. (X50-57)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Intentional self-harm (X60-84)	0.00	0.00	0.00		32.79	21.41	22.80	20.63
Assault (X85-Y09)	0.00	0.00	0.00				0.00	

Females

	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
All injury	0.00	0.00		17.66	16.89	21.17	90.37	22.10
Unintentional injuries (V01-X59, Y85-86)	0.00	0.00			10.25	6.51	80.56	15.45
Motor Vehicle Accidents (V01-99)	0.00	0.00			5.43	3.26	13.53	5.37
Falls (W00-19)	0.00	0.00	0.00	0.00		0.00	29.94	3.91
Accidental poisoning (X40-49)	0.00	0.00	0.00	0.00				1.48
Accidental fire (X00-09)	0.00	0.00	0.00	0.00	0.60			
Suffocation (W75-84)	0.00	0.00	0.00	0.00	0.00	0.00		
Drowning & submersion (W65-74)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Inanimate mechanical forces (W20-49)	0.00	0.00	0.00	0.00		0.00	0.00	
Animate mechanical forces (W50-64)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electric current, radiation etc.(X85-99)	0.00	0.00	0.00	0.00	0.00	0.00		
Heat or hot substances (X10-19)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Venomous animals & plants (X20-29)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forces of nature (X30-39)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Overexertion, etc. (X50-57)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Intentional self-harm (X60-84)	0.00	0.00	0.00		6.03	13.84	4.03	5.67
Assault (X85-Y09)	0.00	0.00	0.00	0.00				

Both sexes combined

	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
All injury	0.00			37.12	41.38	30.53	121.00	39.12
Unintentional injuries (V01-X59, Y85-86)	0.00			27.13	19.49	11.65	101.24	23.95
Motor Vehicle Accidents (V01-99)	0.00			25.70	12.89	5.22	14.55	10.29
Falls (W00-19)	0.00	0.00	0.00	0.00			37.40	4.76
Accidental poisoning (X40-49)	0.00	0.00	0.00	0.00	3.60	2.41	5.25	2.27
Accidental fire (X00-09)	0.00	0.00	0.00	0.00				0.47
Suffocation (W75-84)	0.00	0.00	0.00	0.00	0.00		6.40	0.81
Drowning & submersion (W65-74)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Inanimate mechanical forces (W20-49)	0.00	0.00	0.00					0.82
Animate mechanical forces (W50-64)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electric current, radiation etc.(X85-99)	0.00	0.00	0.00	0.00	0.00	0.40		
Heat or hot substances (X10-19)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Venomous animals & plants (X20-29)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Forces of nature (X30-39)	0.00	0.00	0.00	0.00	0.00	0.00		
Overexertion, etc. (X50-57)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Intentional self-harm (X60-84)	0.00	0.00	0.00	8.57	19.49	17.68	12.51	13.07
Assault (X85-Y09)	0.00	0.00	0.00					0.82

Ontario

Males

	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
All injury	9.00	5.22	8.34	43.82	55.59	56.86	139.74	54.47
Unintentional injuries (V01-X59, Y85-86)	7.40	4.80	6.23	27.66	28.87	30.25	117.51	34.40
Motor Vehicle Accidents (V01-99)	2.37	2.40	3.77	20.07	14.20	10.66	14.86	11.72
Falls (W00-19)				0.75	1.36	5.06	52.64	7.64
Accidental poisoning (X40-49)		0.00		1.27	6.17	5.33	2.36	3.88
Accidental fire (X00-09)	0.49	0.60		0.35	0.70	1.02	1.91	0.82
Suffocation (W75-84)	1.60		0.40	0.46	0.73	1.14	7.34	1.54
Drowning & submersion (W65-74)	2.23	1.08	0.74	1.61	1.31	1.11	1.98	1.38
Inanimate mechanical forces (W20-49)				0.58	0.95	1.61	0.98	0.87
Animate mechanical forces (W50-64)	0.00	0.00	0.00			0.10		0.05
Electric current, radiation etc.(X85-99)	0.00	0.00	0.00		0.30	0.25		0.19
Heat or hot substances (X10-19)	0.00	0.00	0.00	0.00		0.00	0.33	0.05
Venomous animals & plants (X20-29)	0.00	0.00	0.00	0.00	0.00		0.00	0.01
Forces of nature (X30-39)		0.00	0.00	0.29	0.36	0.50	1.57	0.45
Overexertion, etc. (X50-57)	0.00	0.00	0.00	0.00	0.00	0.02		
Intentional self-harm (X60-84)	0.00	0.00	1.49	11.33	19.48	20.19	15.72	14.59
Assault (X85-Y09)	0.98		0.40	3.45	3.36	1.56	0.94	2.20

Females

	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
All injury	5.79	3.12	5.39	15.61	16.76	23.63	99.94	24.94
Unintentional injuries (V01-X59, Y85-86)	4.20	2.69	3.95	10.65	8.45	12.43	90.50	17.72
Motor Vehicle Accidents (V01-99)	1.16	1.62	2.46	8.35	4.81	5.25	9.60	5.06
Falls (W00-19)	0.00	0.00			0.28	1.63	39.44	4.97
Accidental poisoning (X40-49)		0.00		0.48	1.99	2.97	1.85	1.61
Accidental fire (X00-09)	0.72	0.44			0.41	0.49	1.54	0.55
Suffocation (W75-84)	1.23	0.37			0.12	0.48	4.70	0.82
Drowning & submersion (W65-74)	0.58		0.42	0.30	0.18	0.36	0.46	0.29
Inanimate mechanical forces (W20-49)		0.00			0.10	0.08	0.18	0.10
Animate mechanical forces (W50-64)			0.00	0.00	0.00			
Electric current, radiation etc.(X85-99)	0.00	0.00	0.00	0.00				
Heat or hot substances (X10-19)	0.00	0.00	0.00	0.00	0.00	0.08	0.15	0.03
Venomous animals & plants (X20-29)	0.00	0.00	0.00	0.00		0.00		
Forces of nature (X30-39)		0.00	0.00		0.08	0.22	0.53	0.14
Overexertion, etc. (X50-57)	0.00	0.00	0.00	0.00	0.00	0.00	0.10	
Intentional self-harm (X60-84)	0.00	0.00	1.14	3.93	5.69	7.51	4.22	4.61
Assault (X85-Y09)	1.16	0.37		0.73	1.13	0.80	0.74	0.88

Both sexes combined

	Age 0-4	Age 5-9	Age 10-14	Age 15-19	Age 20-44	Age 45-64	Age 65 and +	All ages
All injury	7.42	4.19	6.90	30.07	36.32	40.36	116.83	39.48
Unintentional injuries (V01-X59, Y85-86)	5.83	3.76	5.12	19.37	18.74	21.40	101.86	25.89
Motor Vehicle Accidents (V01-99)	1.78	2.02	3.13	14.36	9.54	7.98	11.59	8.36
Falls (W00-19)		0.09		0.47	0.83	3.36	44.87	6.18
Accidental poisoning (X40-49)		0.00		0.88	4.10	4.16	2.03	2.74
Accidental fire (X00-09)	0.60	0.52	0.26	0.21	0.56	0.76	1.69	0.68
Suffocation (W75-84)	1.42	0.31	0.29	0.29	0.43	0.81	5.69	1.14
Drowning & submersion (W65-74)	1.42	0.61	0.58	0.97	0.75	0.73	1.17	0.83
Inanimate mechanical forces (W20-49)				0.38	0.53	0.85	0.53	0.48
Animate mechanical forces (W50-64)			0.00			0.06		0.03
Electric current, radiation etc.(X85-99)	0.00	0.00	0.00		0.16	0.14		0.10
Heat or hot substances (X10-19)	0.00	0.00	0.00	0.00			0.22	0.04
Venomous animals & plants (X20-29)	0.00	0.00	0.00	0.00				0.01
Forces of nature (X30-39)		0.00	0.00	0.18	0.22	0.36	0.97	0.29
Overexertion, etc. (X50-57)	0.00	0.00	0.00	0.00	0.00		0.07	0.01
Intentional self-harm (X60-84)	0.00	0.00	1.32	7.72	12.64	13.90	9.16	9.54
Assault (X85-Y09)	1.07	0.34	0.35	2.12	2.25	1.18	0.84	1.55