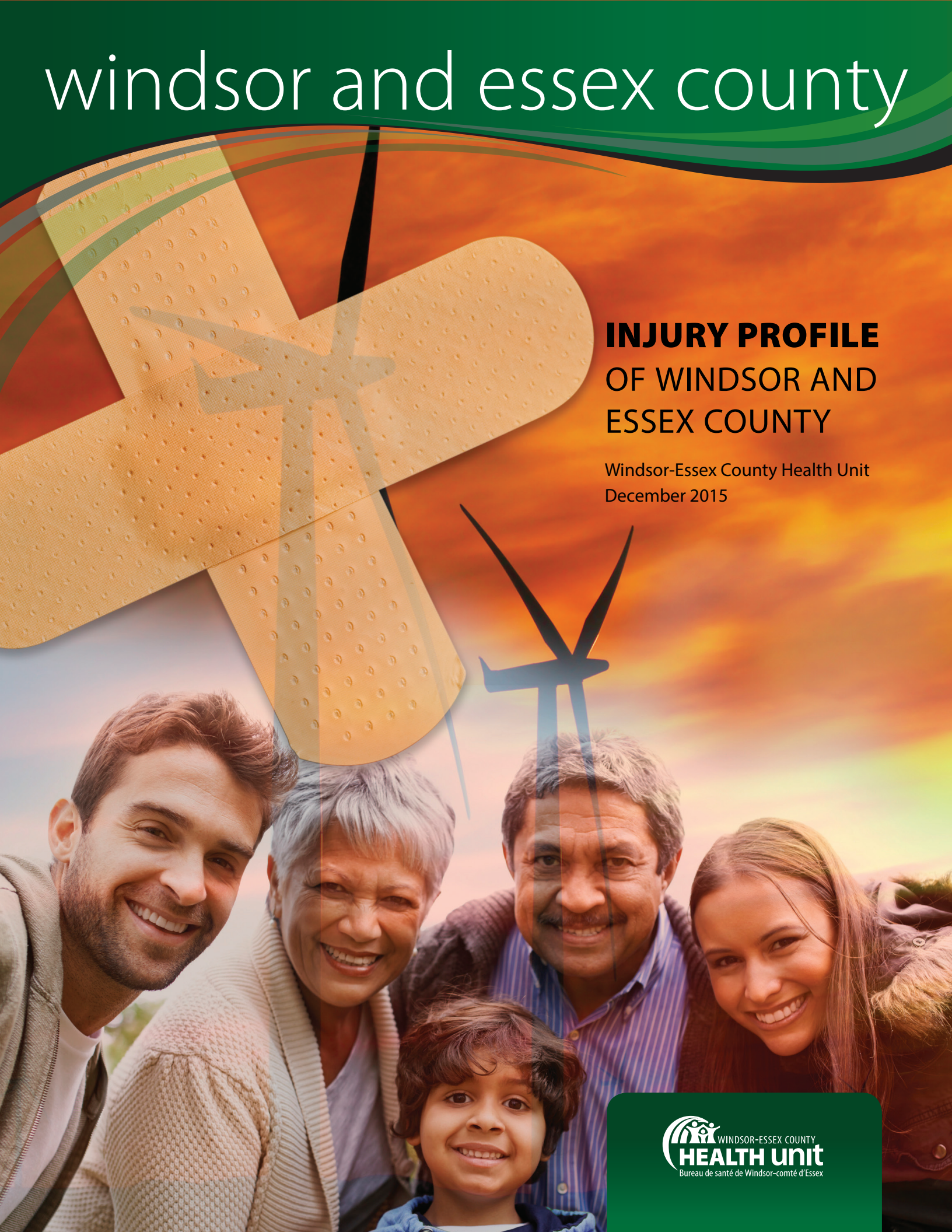
windsor and essex county

INJURY PROFILE OF WINDSOR AND ESSEX COUNTY

Windsor-Essex County Health Unit
December 2015



WINDSOR-ESSEX COUNTY HEALTH unit
Bureau de santé de Windsor-comté d'Essex

Author: Mackenzie Slifierz
Epidemiologist

Contributors: Kristy McBeth
Manager, Chronic Disease & Injury Prevention

Cindy Gignac
Health Promotion Specialist

Ashley Kirby
Program Evaluation Specialist

Editors: Ramsey D'Souza
Manager, Epidemiology, Planning, Evaluation, & Quality

Sherry Bergeron
Senior Planner

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Windsor-Essex County
Health Unit

Epidemiology, Planning,
Evaluation, and Quality
Department

1005 Ouellette Avenue
Windsor, Ontario N9A 4J8

www.wechu.org
519-258-2146

Injury Profile of Windsor and Essex County

Windsor-Essex County Health Unit

December 2015

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Executive Summary

The 2015 ***Injury Profile of Windsor and Essex County*** was prepared by the Windsor-Essex County Health Unit and provides an overview of the burden of injuries on the health of the local population. Each year there are over 30,000 visits to the emergency department (ED), over 1,500 hospitalizations, and approximately 140 deaths as a result of unintentional and intentional injuries sustained in Windsor-Essex County. Ranking of injury categories based on ED visits, hospitalizations, length of stay in the hospital, mortality, and potential years of life lost produced the following ranking of injuries from the most burdensome to least burdensome:

1. Falls
2. Motor vehicle collisions
3. Intentional self-harm
4. Other land transport collisions
5. Unintentional poisoning
6. Assault
7. Struck by or against an object
8. Suffocation
9. Fires or burns
10. Caught or crushed between objects
11. Foreign body in eye or orifice
12. Overexertion
13. Cut or pierce
14. Near-drowning/submersion
15. Bitten by dog or other mammal

Falls were the most burdensome injury in Windsor-Essex County by a wide margin. Overall, falls accounted for 30% of all injury-related ED visits, 45% of all injury-related hospitalizations, and 20% of all injury-related deaths in Windsor-Essex County. Motor-vehicle collisions and other land transport collisions (i.e., pedal cycles) were the second and fourth most burdensome injury in Windsor-Essex County, respectively. Intentional self-harm was the third most burdensome injury and had the greatest injury-related mortality rate; over 25% of all injury-related deaths were due to self-harm. The fifth most burdensome injury in Windsor-Essex County was unintentional poisoning. Cumulatively, fatal injuries caused by self-harm, motor vehicle collisions, and unintentional poisoning result in a total loss of over 2,000 years of potential life

each year in Windsor-Essex County. It is anticipated that the ranking of these injury categories will allow for improved strategic planning around injury prevention.

Further in-depth analysis was completed for the top five most burdensome injuries in Windsor-Essex County which includes falls, motor vehicle collisions, self-harm, other land transport collisions, and unintentional poisoning. Data for motor vehicle and other land transport collisions were analyzed together. The key findings for the top five most burdensome injuries in the region are as follows:

Fall-Related Injuries:

- Injuries due to falls are increasing and it is primarily affecting the senior population (slightly more females than males are affected).
- Most of these falls are occurring within the home or residential institutions, particularly among residents from the Windsor, Leamington, and Kingsville areas.

Motor Vehicle and Other Land Transport Collisions:

- Motor vehicle collisions and other land transport collisions are decreasing. Of those individuals injured in a collision, 51% occupied a car and 22% occupied a pedal cycle.
- ED visits were greatest among adolescents and young adults (15-24 years old), and males were much more likely to be involved in a fatal collision.
- Transport collision fatalities were greatest among residents of the Amherstburg and Leamington areas.

Intentional Self-Harm:

- Injuries due to intentional self-harm are decreasing; there has been a 28% reduction in the rate of ED visits for injuries caused by self-harm from 2003 to 2013.
- The dynamic of self-harm injuries is complex. Females and teens are more likely to visit the ER for self-harm injuries, but males and middle-aged adults (40-44 years old) are more likely to sustain fatal injuries.
- Nearly all self-harm injuries and fatalities occur within the home of the injured individual, and fatalities are greatest among residents in the Windsor metropolitan area.

Unintentional Poisoning:

- Injuries due to unintentional poisoning are decreasing.
- Young children (0-4 years old) make up the bulk of ED visits for this injury, but fatalities are greatest among middle-aged males (45-54 years old).
- Over 90% of unintentional poisoning fatalities involved medication.
- The rate of fatalities was greatest among residents of the Windsor metropolitan area.

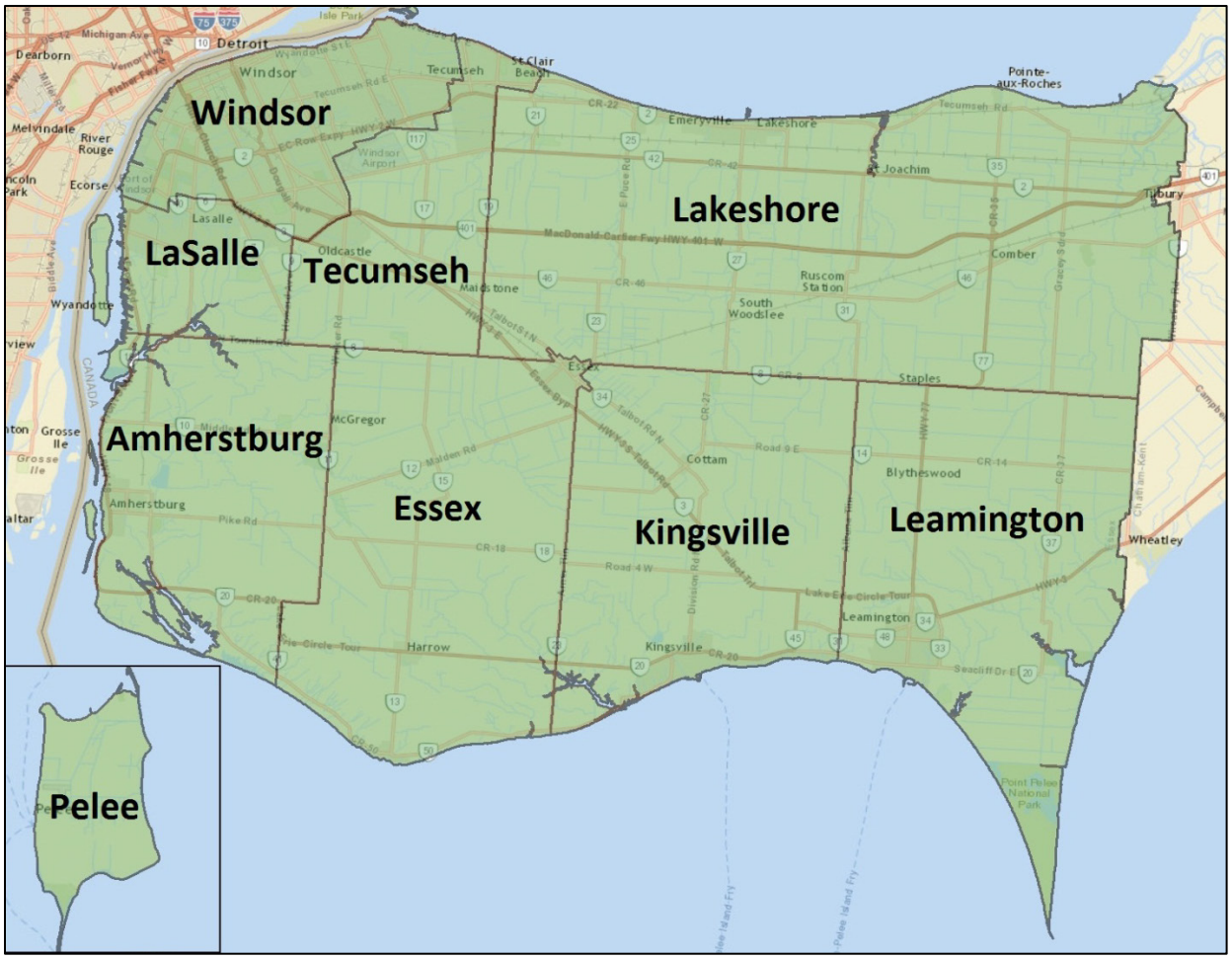
Overall, injuries resulting from falls, motor vehicle collisions, other land transport collisions, intentional self-harm, and unintentional poisoning pose a considerable risk to the population health of Windsor-Essex County and warrant further focus from injury prevention strategies.

Introduction

Community Profile of Windsor-Essex County

Windsor-Essex County is the southern-most district of Ontario with a regional population of 402,000 residents and a geographical land area of 1,850 km^2. Windsor-Essex County contains nine municipalities (**Figure 1**) and is situated between two large bodies of freshwater: Lake St. Clair and Lake Erie. The region also contains many islands, including Pelee Island which is the southern-most inhabited landmass in all of Canada.

Figure 1. Municipalities of Windsor-Essex County.



The population of Windsor-Essex County is known for its diversity which is evidenced by the multitude of languages, cultures, and ethnicities observed throughout the region. The region is also known for its strong manufacturing sector which accounts for nearly 20% of the total workforce. The Windsor-Detroit border represents a focal point for trade and travel in North America as over 25% of all trade goods and 7 million vehicles cross this border point annually[1].

Some important population statistics related to the social determinants of health are reported in **Table 1A** for Windsor-Essex County and Ontario. Educational achievement is slightly lower in Windsor-Essex County when compared to the province; non-completion of high school is greater and completion of a post-secondary education is lower in the adult population (25 – 64 years old) of Windsor-Essex County. There are considerable income inequalities in Windsor-Essex County as well, particularly among children and youth. Residents of Windsor-Essex County are burdened by extreme poverty; nearly 1 in 4 children and youth (<18 years old) live in poverty in the region. Windsor-Essex County also has the largest proportion (33%) of low-income families living in low-income neighborhoods in Canada; a measure that is directly related with the inability to escape the cycle of poverty[2]. These socio-economic inequalities are important determinants of population health, including chronic illness and injury.

Table 1A. Demographic and socio-economic profile of Windsor-Essex County compared to Ontario (2011).

Population Measure	Windsor-Essex County	Ontario
Population Structure		
Total population	388,780	12,851,820
Population of children and youth (≤19 years old)	24.5%	23.7%
Population of seniors (≥65 years old)	15.2%	14.6%
Total immigrant population	21.4%	28.5%
Visible minority population	15.2%	25.9%
Aboriginal identity	2.0%	2.4%
First language learned at home and commonly used		
English	74.8%	69.8%
French	3.1%	4.0%
Non-official language	22.1%	26.3%
Education of adult population (25 – 64 years old)		
No certificate, diploma, or degree	12.3%	10.9%
High school diploma or equivalent	29.5%	24.3%
Post-secondary education	58.2%	64.8%
Income		
Median after-tax individual income	$26,807	$28,118
Median after-tax household total income	$52,855	$58,717
Population living in poverty based on after-tax low-income measure	17.5%	13.9%
Children and youth (<18 years old) living in poverty based on after-tax low-income measure	22.9%	17.3%

Source: Statistics Canada. 2013. Windsor-Essex County Health Unit (Health Region), Ontario and Ontario (table). Health Profile. 2011 National Household Survey. Statistics Canada Catalogue no. 82-228-XWE. Ottawa. Released December 12, 2013.

Injuries and Public Health

Injuries represent a significant burden within the healthcare system but many injuries are preventable. The *Cost of Injury in Canada* (2015) report created by Parachute revealed that intentional and unintentional injuries cost Ontario $8.8 billion and 5,785 lives in 2010. That same report states that "preventable injury is the leading cause of death for Canadians aged one to 44, and claims more lives in Canada than all other causes"[3].

Public health has a leading role in the monitoring and prevention of injuries at a population level. The ultimate goal of public health is to reduce the frequency, severity, and impact of injuries within the population. The Ontario Ministry of Health and Long-Term Care set guidelines and recommendations under the Ontario Public Health Standards (OPHS) for mandatory public health injury prevention programs. The Prevention of Injury and Substance Misuse Program Standard is structured around four key areas which include:

- Alcohol and other substance abuse
- Falls across the lifespan
- Road and off-road safety
- Other areas of public health importance for the prevention of injuries as identified by local surveillance.

This report covers both unintentional (those that occur without intent to cause injury) and intentional injuries (those that are caused intentionally either by oneself or another). It is expected that the determination of the burden of injuries on population health using a quantitative approach will support the strategic planning around injury prevention initiatives in Windsor-Essex County.

Objective

The purpose of this report is to provide a profile of the burden of all injuries in Windsor-Essex County (Section A) and to provide a detailed analysis of the top five most burdensome injuries in the community (Section B). More specifically, this report will aim to:

- Provide epidemiological analysis of injury surveillance data, including describing the frequency and distribution of injuries using various stratifying variables such as sex, age, and location of injury.
- Describe emerging and longitudinal trends in the injury data.
- Identify populations at risk for each injury and for whom public health inventions would benefit most.

Methods

Section A: Quantitative Injury Profile

The objective of this section of the report is to provide a quantitative profile of injuries in Windsor-Essex County. The quantitative injury profile was created by defining overarching injury categories and then the following data were extracted and analyzed for each injury category that was defined:

- Emergency department visits
- Hospitalizations from emergency departments
- Average length of stay in the hospital
- Mortality rate
- Potential years of life lost

Injury categories were then ranked based on the five previously described measures and a rank of sums was completed to create a final overall rank of the burden of injury in the Windsor-Essex County population. Each measure carries the same weight in the ranking scheme.

Section B: Detailed Analysis of the Top Five Injury Categories

The objective of this section of the report is to provide a detailed analysis of the top five ranked injury categories from Section A. For each of the top five injury categories, data for emergency department visits and mortality were extracted and analyzed to determine:

- Temporal trend of injury incidence (ED visits)
- Top 10 specific causes of injury (ED visits and mortality)
- Sex distribution (ED visits and mortality)
- Age distribution (ED visits and mortality)
- Place of occurrence (ED visits and mortality)
- Geographical distribution (mortality)

The top five injury categories analyzed in this section were falls, motor vehicle and other land transport collisions, self-harm, and unintentional poisoning (due to the similarity of motor vehicle and other land transport collisions, these injury categories were collated, analyzed, and reported together).

This section of the report identifies target populations where injury prevention strategies will have the greatest potential impact. It is anticipated that this assessment will help guide program planning and implementation.

Data Sources and Injury Classification

The data used in developing the quantitative injury profile (Section A) and the detailed analysis of the top five injury categories (Section B) originated from the sources described in **Table 2A**.

The injury data is reported according to codes defined by the International Classification of Disease 10 (ICD10-CA), Chapter 20: External Causes of Morbidity and Mortality. Each cause of injury is represented by a 3-character code (ie. W19); however, some of these codes are broken down further into 4-character codes. These codes can be categorized based on a common overarching cause, such as falls or self-harm. In this report, analysis and reporting of injury data was completed using injury categories defined in **Table 3A**.

For privacy and quality reasons, data were not released if the numerator was less than 5 or the denominator was less than 30. Injury data in this report has been age-standardized where specified; otherwise, the crude rate is reported. This method removes the effect of age which can distort comparisons. In general, Windsor-Essex has a slightly older population; having both a higher proportion of seniors and a higher ratio of seniors to youth when compared to Ontario.

Table 2A. Sources and year of data used for developing Sections A and B of the present report.

Measure	Source	Distributor	Section A	Section B
Emergency Department Visits	National Ambulatory Care Reporting System	IntelliHEALTH, MOHLTC	2003-2013	2014
Hospitalization from Emergency Department	National Ambulatory Care Reporting System	IntelliHEALTH, MOHLTC	2003-2013	–
Average length of stay	Discharge Abstract Database	IntelliHEALTH, MOHLTC	2004-2013	–
Mortality data	Ontario Office of Registrar General	IntelliHEALTH, MOHLTC	2003-2011	2007-2011
Potential years of life lost (75)	Ontario Office of Registrar General	IntelliHEALTH, MOHLTC	2005-2011	–

MOHLTC – Ontario Ministry of Health and Long-Term Care

Table 3A. Categorization of injuries by international classification of disease (ICD) codes.

Injury Category	ICD10-CA Codes	Definition
Unintentional Injuries		
Near-drowning or submersion	W65-W74, V90, V92	Injury resulting from submersion in a fluid, including bathtub, swimming pool, natural water, boating.
Falls	W00-W19	Injury resulting from falling, including falling on the same level (sidewalk), from one level to another (stairs), falling from an object (wheelchair, ladder, toilet).
Motor vehicle collisions (traffic and non-traffic)	V02-04, V09.0, V09.2, V12-14 , V19.0-19.2, V19.4-19.6, V20-79, V80.3-80.5, V80.9, V81.0-81.1, V82.0-82.1, V82.8, V83-86, V87-89	Occupant or pedestrian sustains an injury from a collision involving a motor vehicle, which includes cars, trucks, vans, buses, motor-cycles, and ATVs.
Other land transport collisions	Any codes from V01-V89 not included in the motor vehicle collisions category above.	Occupant or pedestrian sustains an injury from a collision with non-motor transport, including pedal cycles, animals, and railway.
Unintentional poisoning	X40-X49	Injury resulting from exposure to a substance, including drugs, chemicals, and noxious gases.
Suffocation	W75-W84	Injury resulting from accidental suffocation, including choking on food or other object, oxygen deprivation.
Fires or burns	X00-X19	Injury from fire, including burns (hot fluids, heating appliances, any type of fire) or injured during fire event (falling debris in burning house), but excludes arson.
Overexertion	X50	Injury that results from overexertion and strenuous or repetitive movements, including lifting heavy objects, marathon running, rowing.
Cut or pierce	W25-W29, W45-W46	Injury resulting from accidental contact with a sharp object, including glass, scissors, needle, knife, axe, lawnmower, and power tools.
Struck by or against an object	W20-W22, W50-W52	Injury resulting from being accidentally struck by or against an object, including sports equipment, inanimate objects, but excludes assaults and transport collisions.
Caught or crushed between objects	W23	Injury from being caught, crushed, jammed, or pinched between or in an object (doors), but excludes transport-related injuries.
Bitten by dog or other mammal	W54, W55	Injury from being bitten by a dog or other land mammal, excluding marine mammals.
Foreign body – eye or orifice	W44	Injury resulting from an object that penetrates the eye or natural orifice.
Intention Injuries		
Self-harm	X60-X84, Y87.0	Any injury resulting from intentional self-harm, including self-poisoning (drugs, gas), hanging, and firearms.
Assault	X85-Y09, Y87.1	Any injury resulting from being intentionally harmed by another, including being harmed by firearm, sharp or blunt object, and bodily force.

Section A: Quantitative Injury Profile

Frequency of Injury Incidence

The frequency of injuries in a population can be assessed by measuring the rate of emergency department (ED) visits and hospitalizations. **Table 4A** describes the rate of emergency department visits and hospitalizations for all injuries, unintentional injuries (those occurring without an intent of harm), intentional injuries (e.g., self-harm, assault), and injuries of an undetermined intent for Windsor-Essex County and Ontario during the period of 2003-2013.

The rates of all injury-related ED visits were all significantly lower in Windsor-Essex County when compared to the province. Similarly, the rates of all injury-related hospitalizations were lower in Windsor-Essex County when compared to the province with the exception of the rate of intentional injuries which did not differ between Windsor-Essex County and the province.

There is an average of 30,291 ED visits due to injuries each year in Windsor-Essex County: 93% of the visits are for unintentional injuries and 6% of these visits are for intentional injuries. Furthermore, there is an average of 1,587 hospitalizations due to injuries each year in Windsor-Essex County: 80% are for unintentional injuries and 16% are for intentional injuries.

Table 4A. Mean age-standardized rate of emergency department (ED) visits and hospitalizations for injuries in Windsor-Essex County and Ontario (2003-2013).

Injury Type	Emergency Dept. Visits for Injuries† in Windsor-Essex County	Emergency Dept. Visits for Injuries† in Ontario	Hospitalizations for Injuries† in Windsor-Essex County	Hospitalizations for Injuries† in Ontario
All injuries	7,807*	10,228	409*	478
All unintentional injuries	7,294*	9,753	328*	396
All intentional injuries	450*	423	66	72
All injuries of undetermined intent	71*	60	17*	12

† Injuries per 100,000 individuals per year.
* Value is statistically different (P<0.05) from provincial value.
ED visits: Ambulatory Emergency External Cause [2003-2013], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [July 22, 2015].
Hospitalizations: Ambulatory Emergency External Cause [2003-2013], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [July 22, 2015].
Population estimates: Population Estimates [2003-2013], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [July 22, 2015].

Frequency of Injury-Related Mortality

The rate of mortality resulting from all injuries, unintentional injuries, intentional injuries, and injuries of undetermined intent in Windsor-Essex County and Ontario during the period of 2003-2011 is reported in **Table 5A**. The injury-related mortality rates did not differ significantly between Windsor-Essex County and Ontario. In Windsor-Essex County, there is an average of 140 deaths due to injuries each year: 67% of these deaths are unintentional and 28% are intentional. For 2003-2011, analysis of the temporal trend revealed there has been no significant change in the annual rate of injury-related mortalities.

Table 5A. Mean age-standardized rate of injury-related mortalities in Windsor-Essex County and Ontario (2003-2011).

Injury Type	Injury-related Mortality Rate† in Windsor-Essex County	Injury-related Mortality Rate† in Ontario
All injuries	35.86	34.63
All unintentional injuries	24.01	23.74
All intentional injuries	9.96	9.4
All injuries of undetermined intent	1.89	1.49

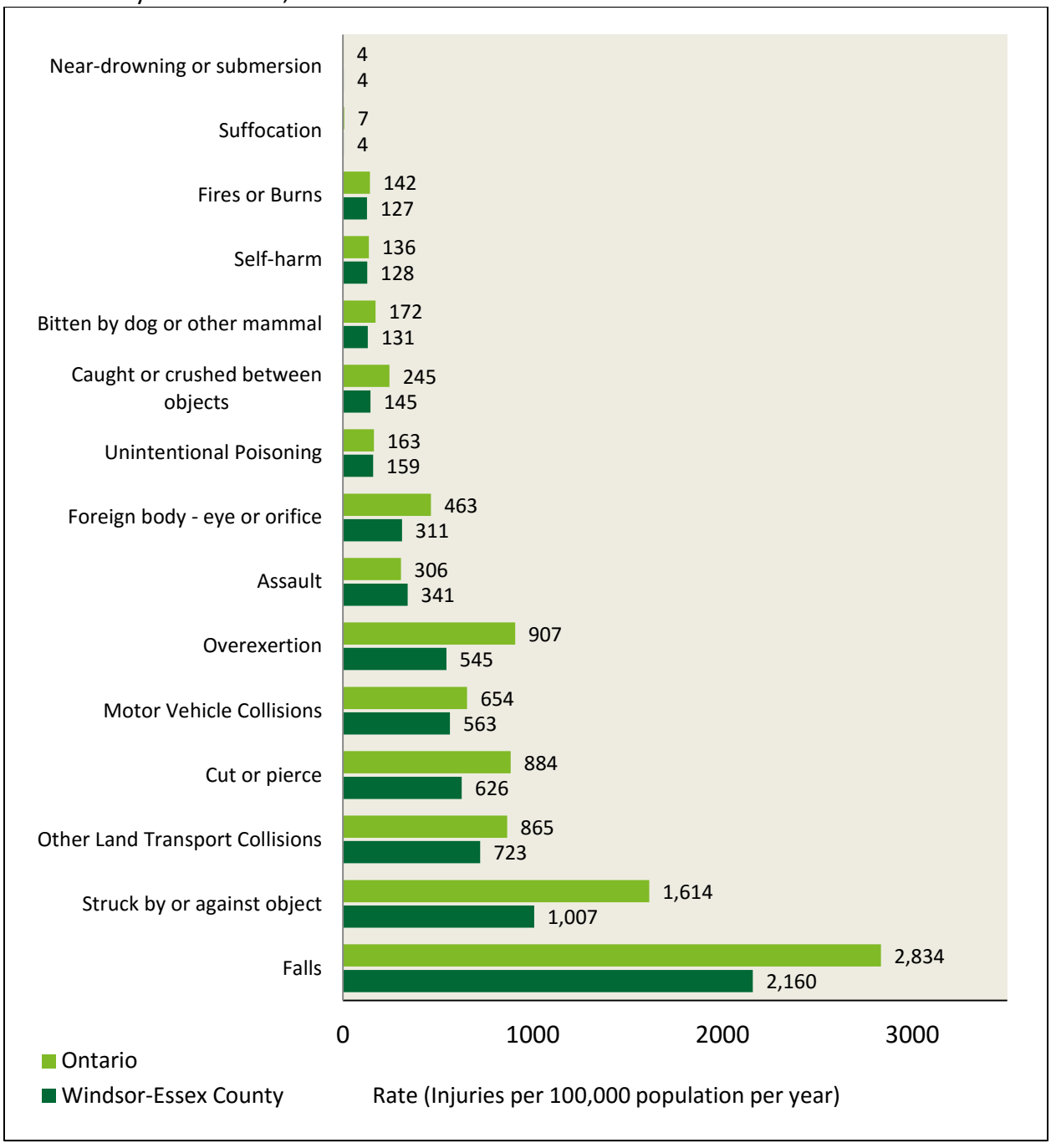
† Injuries per 100,000 individuals per year.
* Value is statistically different (P<0.05) from provincial value.
Mortality: Death [2003-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [July 22, 2015].
Population estimates: Population Estimates [2003-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [July 22, 2015].

Emergency Department Visits by Injury Category

The rate of emergency department (ED) visits for injuries according to defined injury categories (defined in **Table 3A**) for the period of 2003-2013 in Windsor-Essex County and Ontario is reported in **Figure 1A**. The categories are arranged in descending order from lowest to highest frequency as they appear in Windsor-Essex County. Injury-related visits to the ER were primarily due to falls which account for over 30% of injury-related ED visits annually in Windsor-Essex County. The rate of ED visits due to falls (2,160 ED visits per 100,000 individuals per year) in Windsor-Essex County was twice as high as the next leading cause of ED visit which was being struck by or against an object (1,007 ED visits per 100,000 individuals per year). Near-drowning or submersion (4 ED visits per 100,000 individuals per year) and suffocation (4 ED visits per 100,000 individuals per year) accounted for the lowest rates of ED visits in Windsor-Essex County. Almost all rates of injury-related ED visits in Windsor-Essex County were lower than or similar to the provincial rates.

To be more specific, the top fifteen causes of injuries resulting in ED visits in Windsor-Essex County (2003-2013) is reported in **Table 6A** (injuries are reported by individual ICD10 category). Falling on the same level due to a slip, trip, or stumble (excludes snow and ice) was the top cause of injury-related ED visits (736 ED visits per 100,000 individuals per year) in Windsor-Essex County from 2003-2013. Four of the top fifteen categories were related to falling, indicating that fall-related incidents are a considerable cause of injury in Windsor-Essex County. Overexertion and strenuous or repetitive movements (includes lifting heavy objects) was the second leading cause of injury-related ED visits (540 ED visits per 100,000 individuals per year) in Windsor-Essex County from 2003-2013 and this trend warrants further monitoring. Further information on the number of emergency department visits for each calendar year (2003-2013) is reported in **Supplementary Table 1** (Appendix A).

Figure 1A. Mean age-standardized rate for emergency department visits for injuries in Windsor-Essex County and Ontario, 2003-2013.



ED visits: Ambulatory Emergency External Cause [2003-2013], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [July 22, 2015].
Population estimates: Population Estimates [2003-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [July 22, 2015].

Table 6A. Mean crude rate for emergency department (ED) visits by specific injury codes in Windsor-Essex County, 2003-2013.

Rank	Injury	ICD10 Code	Average ED visits per year	Rate†
1	Fall on same level from slipping, tripping, and stumbling (excludes snow or ice)	W01	2,860	736
2	Overexertion and strenuous or repetitive movements (includes lifting heavy objects)	X50	2,099	540
3	Striking against or struck by other object	W22	1,867	480
4	Unspecific fall (accidental fall that is not otherwise stated)	W19	1,601	412
5	Foreign body entering into or through eye or natural orifice (excludes obstruction of respiratory tract)	W44	1,187	305
6	Other fall on same level (bumping against object, from or off toilet, or not otherwise stated)	W18	1,175	302
7	Fall on and from stairs and steps	W10	1,094	281
8	Car occupant injured in collision with car, pick-up truck, or van	V43	993	255
9	Assault by bodily force (includes unarmed brawl or fight)	Y04	890	229
10	Exposure to other and unspecified inanimate mechanical forces	W49	726	187
11	Contact with knife, sword or dagger	W26	713	183
12	Striking against or struck by sports equipment	W21	628	162
13	Foreign body or object entering through skin (excludes knife, sword, dagger, needle, power tools, sharp glass)	W45	601	154
14	Struck by thrown, projected or falling object	W20	564	145
15	Caught, crushed, jammed, or pinched in or between objects	W23	558	144

† Injuries per 100,000 individuals per year.

ED visits: Ambulatory Emergency External Cause [2003-2013], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Sept 15, 2015].

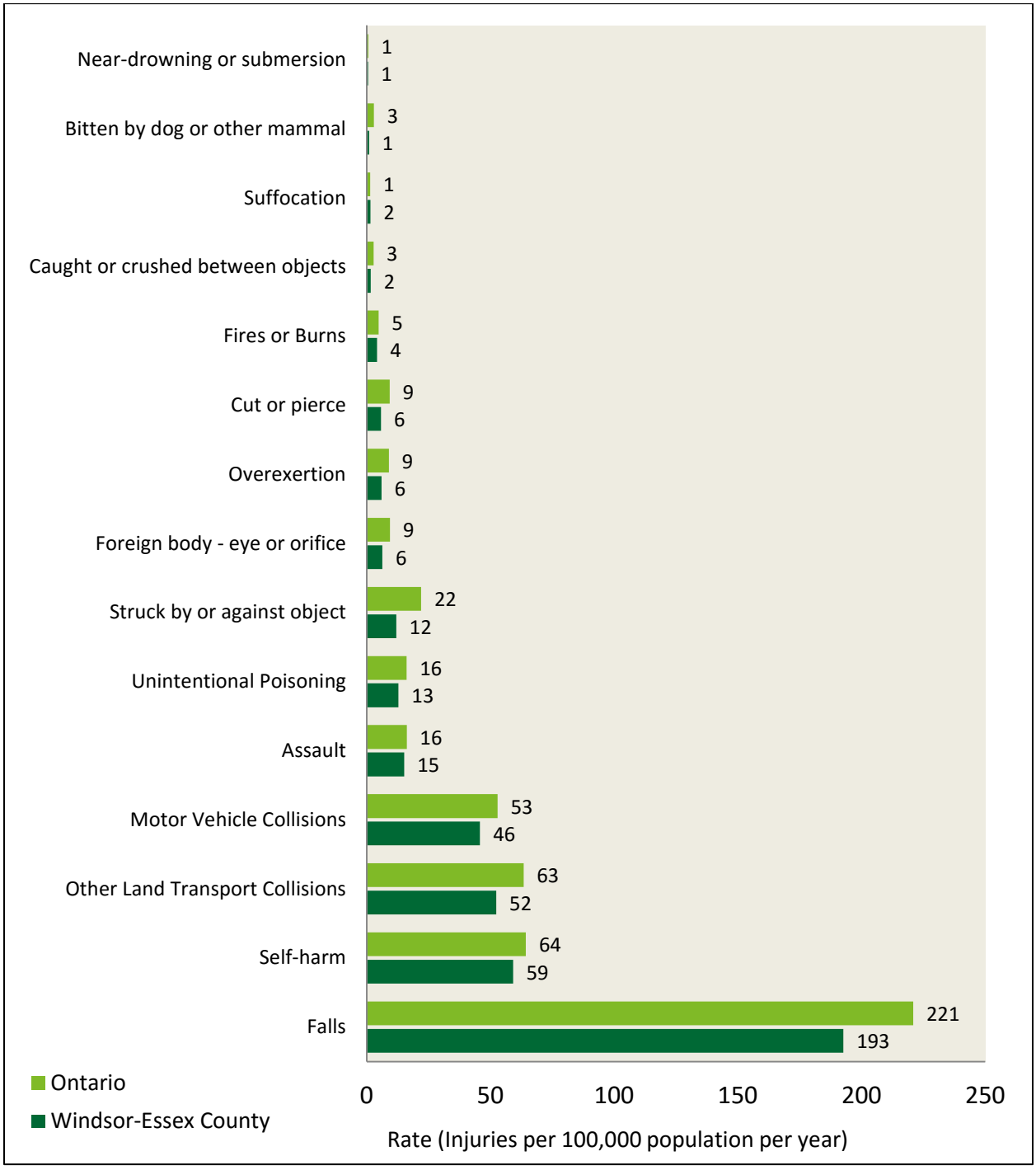
Population estimates: Population Estimates [2003-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Sept 15, 2015].

Hospitalizations by Injury Category

The rate of hospitalizations for injuries according to injury categories (defined in **Table 3A**) are reported in **Figure 2A** for the period of 2003-2013 in Windsor-Essex County and Ontario. The categories are arranged in descending order from lowest to highest frequency as they appear in Windsor-Essex County. Falls had the highest injury-related hospitalization rate (193 hospitalizations per 100,000 individuals per year) and accounted for over 45% of injury-related hospitalizations annually in Windsor-Essex County. In fact, the rate of hospitalizations for falls in Windsor-Essex County was greater than the combined rate for the next 5 leading causes of injuries (self-harm, other land transport collisions, and motor vehicle collisions, assault, and unintentional poisoning). The lowest injury-related hospitalization rates were for near-drowning or submersion (1 hospitalization per 100,000 individuals per year), bitten by a dog or other mammal (1 hospitalization per 100,000 individuals per year), and suffocation (2 hospitalizations per 100,000 individuals per year). Almost all injury-related hospitalization rates in Windsor-Essex County were lower than or similar to the provincial rates.

Specifically, the top fifteen causes of injuries resulting in hospitalization in Windsor-Essex County (2003-2013) are reported in **Table 7A** (injuries are reported by individual ICD10 category). Falling on the same level due to a slip, trip, or stumble (excludes snow and ice) was the top cause of injury-related hospitalizations (107 hospitalizations per 100,000 individuals per year) in Windsor-Essex County from 2003-2013. In addition to being the leading cause, falls also accounted for the next 3 leading causes of injury-related hospitalizations in Windsor-Essex County. Apart from falls, the next leading cause of injury-related hospitalizations is intentional self-poisoning by and exposure to antiepileptic, sedativehypnotic, antiparkinsonism and psychotropic drugs not elsewhere classified (19 hospitalizations per 100,000 individuals per year). Further information on the number of hospitalizations for each calendar year (2003-2013) is reported in **Supplementary Table 2** (Appendix A).

Figure 2A. Mean age-standardized rate for hospitalizations for injuries in Windsor-Essex County and Ontario, 2003-2013.



Hospitalizations: Ambulatory Emergency External Cause [2003-2013], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [July 22, 2015].
Population estimates: Population Estimates [2003-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [July 22, 2015].

Table 7A. Mean crude rate for hospitalizations by specific injury codes in Windsor-Essex County, 2003-2013.

Rank	Injury	ICD10 Code	Average hospitalized per year	Rate†
1	Fall on same level from slipping, tripping, and stumbling (excludes snow or ice)	W01	415	107
2	Unspecific fall (accidental fall that is not otherwise stated)	W19	254	65
3	Other fall on same level (bumping against object, from or off toilet, or not otherwise stated)	W18	220	57
4	Fall on and from stairs and steps	W10	107	28
5	Intentional self-poisoning by and exposure to antiepileptic, sedativehypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified	X61	72	19
6	Overexertion and strenuous or repetitive movements (includes lifting heavy objects)	X50	60	15
7	Fall involving bed	W06	57	15
8	Car occupant injured in collision with car, pick-up truck, or van	V43	48	12
9	Assault by bodily force (includes unarmed brawl or fight)	Y04	40	10
10	Other fall from one level to another	W17	39	10
11	Fall on same level involving ice and snow	W00	37	10
12	Fall on and from ladder	W11	37	9
13	Falls involving wheelchairs and other types of walking devices (including motorized scooters)	W05	29	7
14	Fall involving chair	W07	28	7
15	Inhalation of gastric contents (includes asphyxia by vomit)	W78	7	2

† Injuries per 100,000 individuals per year.

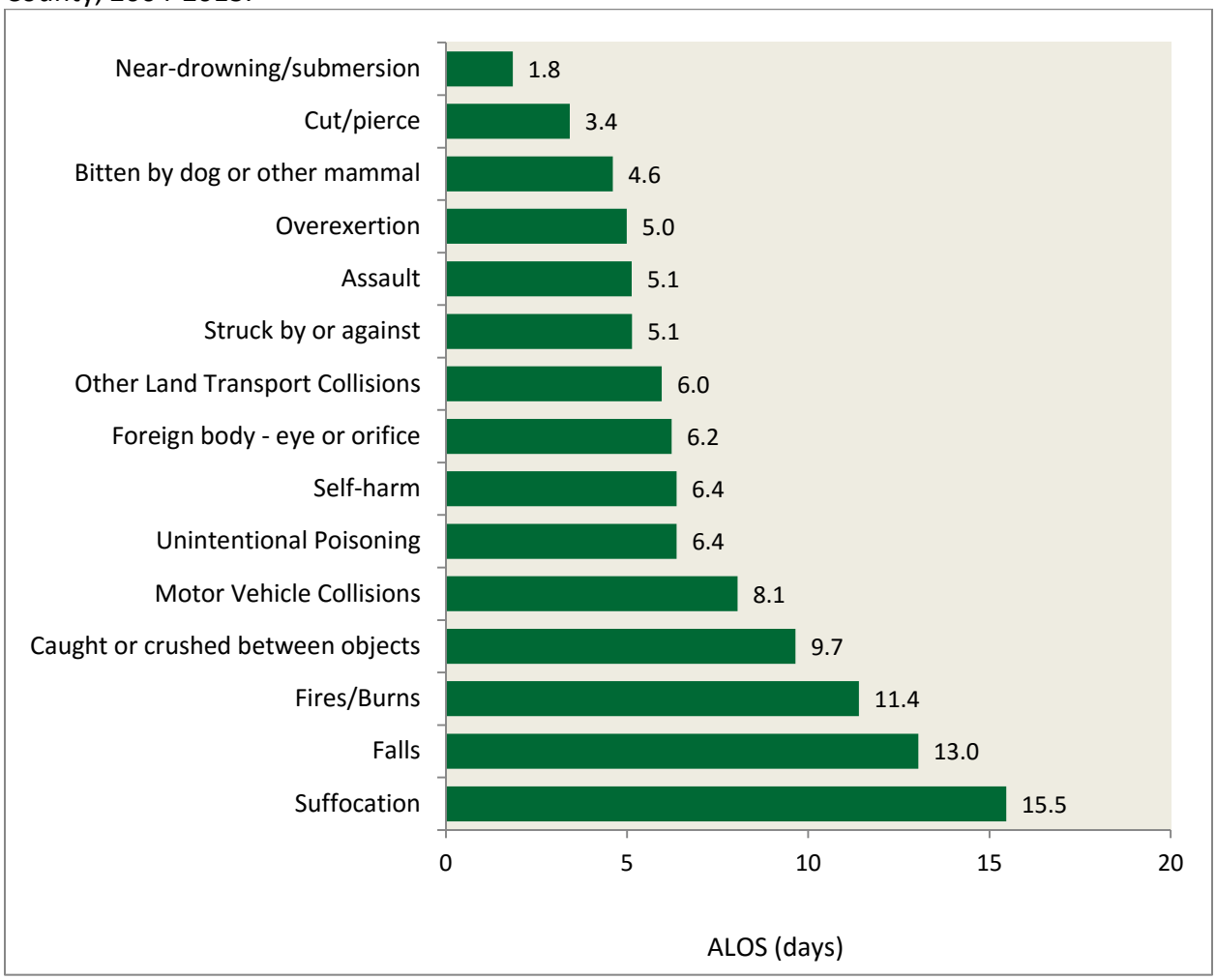
Hospitalizations: Ambulatory Emergency External Cause [2003-2013], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Sept 15, 2015].

Population estimates: Population Estimates [2003-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Sept 15, 2015].

Average Length of Stay (ALOS) by Injury Category

The average length of stay (ALOS) is the average number of days patients were hospitalized for a particular condition. The data reported in **Figure 3A** is the ALOS for injury-related hospitalizations using patient data from Windsor-Essex County during the period of 2004-2013. The ALOS is presented by injury category (defined in **Table 3A**) in descending order from the lowest to highest ALOS. The average length of stay in the hospital was greatest for individuals injured by suffocation (15.5 days), falls (13.0 days), and fires or burns (11.4 days). In contrast, the average length of stay in the hospital was shortest for those injured by near-drowning or submersion (1.8 days), being cut or pierced (3.4 days), and bitten by a dog/mammal (4.6 days).

Figure 3A. Average length of stay (ALOS) for injury-related hospitalizations in Windsor-Essex County, 2004-2013.

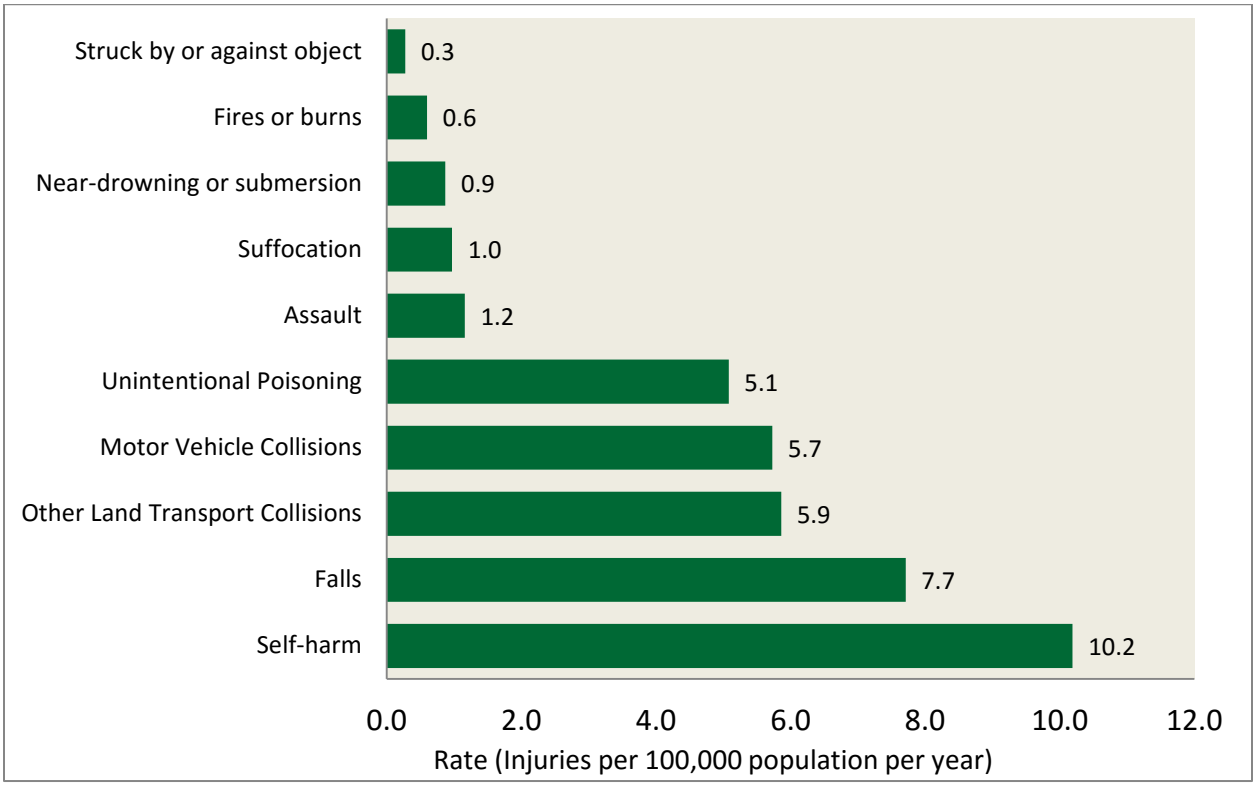


ALOS: Hospital In-Patient Data [2004-2013], Provincial Health Planning Database (PHPDB) Extracted: [August 11, 2015], Health Planning Branch, Ontario MOHLTC.

Mortality Rate by Injury Category

Figure 4A describes the rate for injury-related mortalities according to the injury categories (defined in **Table 3A**) for the period of 2003-2011 in Windsor-Essex County The categories are arranged in descending order from lowest to highest frequency as they appear in Windsor-Essex County. Mortality rates for bitten by a dog or other mammal, foreign body in eye or orifice, and caught or crushed between an object(s) could not be reported to protect personal identifying information. There were no deaths due to overexertion or being cut or pierced during this time period. Self-harm had the highest injury-related mortality rate (10.2 deaths per 100,000 individuals per year) and accounted for over 25% of injury-related deaths in Windsor-Essex County. Falls was the second leading injury-related mortality rate (7.7 deaths per 100,000 individuals per year). The lowest reportable mortality rates for injuries were due to being struck by or against an object (0.3 deaths per 100,000 individuals per year) and fires or burns (0.6 deaths per 100,000 individuals per year).

Figure 4A. Mean age-standardized mortality rate by injury category in Windsor-Essex County, 2003-2011.

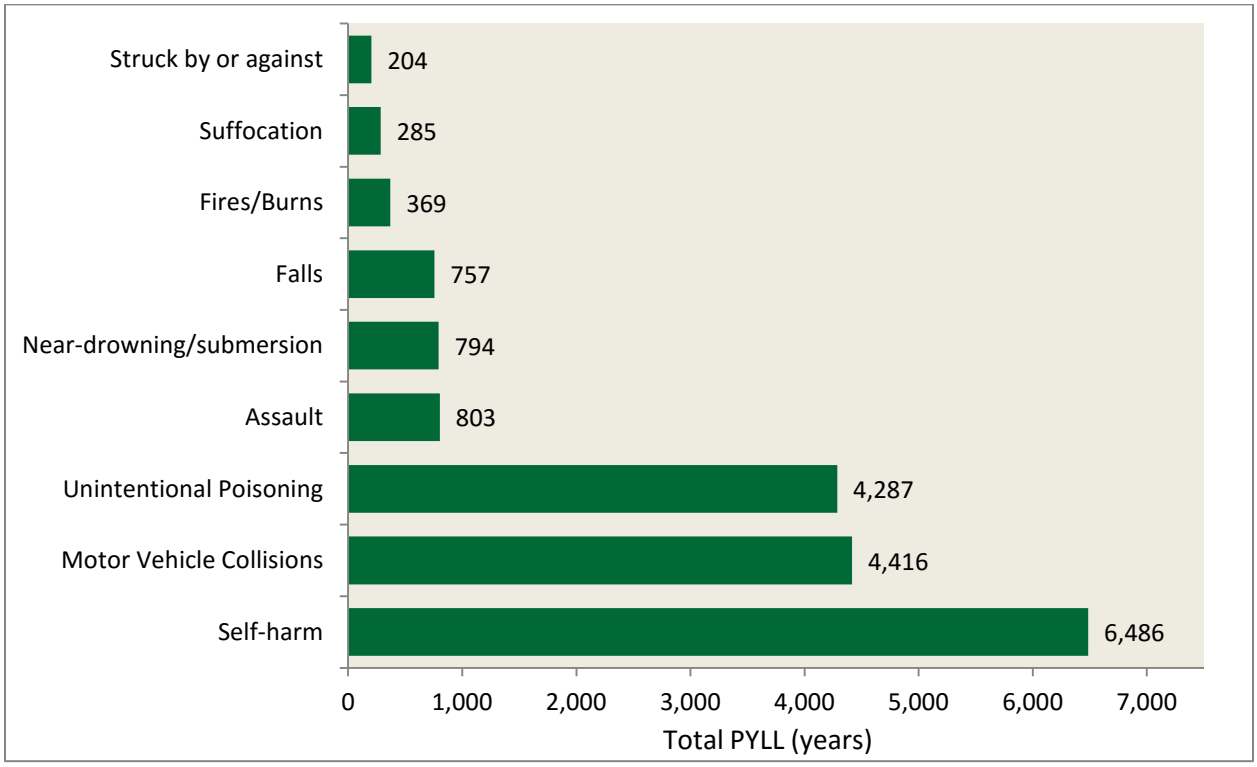


Mortality: Death [2003-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [July 22, 2015].
Population estimates: Population Estimates [2003-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [July 22, 2015].

Potential Years of Life Lost (PYLL) by Category

The potential years of life lost (PYLL) is a measure of how many years of life were lost due to premature mortality. It is calculated by using an age of 75 (standard age of life expectancy) minus the age at death. Total PYLL is the sum of all cases for a specified time period. The total PYLL for injuries in Windsor-Essex County for the period of 2005-2011 is presented in **Figure 5A**. The total PYLL for other land transport collisions, caught or crushed between objects, and bitten by a dog or mammal could not be reported to protect personal identifying information. The total PYLL was equal to zero for overexertion, cut/pierce, and foreign body in eye or orifice. Self-harm accounted for the most potential years of life lost (6,486 years); from 2005 to 2011, over 35% of potential years of life lost due to injury were due to self-harm. The next highest total PYLL was due to motor vehicle collisions (4,416 years) and unintentional poisoning (4,287 years). Together, self-harm, motor vehicle collisions, and unintentional poisoning accounted for 82.5% of all potential years of life lost from 2005 to 2011. The injuries with the lowest PYLL include being struck by or against an object (204 years) and suffocation (285 years).

Figure 5A. Total potential years of life lost (PYLL) by injury, Windsor-Essex County, 2005-2011.



PYLL: Ontario Mortality Data [2005-2011], Provincial Health Planning Database (PHPDB) Extracted: [August 11, 2015], Health Planning Branch, Ontario MOHLTC.
Population estimate: Population Estimates [2005-2011], Provincial Health Planning Database (PHPDB) Extracted: [August 11, 2015], Health Planning Branch, Ontario MOHLTC.

Ranking of Injuries

Injury categories were ranked by their burden in the areas of emergency department visits, hospitalizations, ALOS, mortality, and PYLL (**Table 8A**). Those ranking first were the most burdensome (i.e. highest rate of hospitalizations) and those ranking last were the least burdensome (i.e. lowest mortality rate). The individual ranks were then summed and overall ranks were assigned (**Table 9A**), in which case the injury ranking first was the most burdensome injury in the community.

Table 8A. Ranking of injuries by emergency department (ED) visits, hospitalizations, average length of stay (ALOS), mortality, and potential years of life lost (PYLL).

Injury Category	ED visits	Hospital-izations	ALOS	Mortality	PYLL	Sum of Ranks
Near-drowning/ submersion	15	15	15	8	5	**58**
Falls	1	1	2	2	6	**12**
Motor vehicle collisions	5	4	5	4	2	**20**
Other land transport collisions	3	3	9	3	10	**28**
Unintentional poisoning	9	6	6	5	3	**29**
Suffocation	14	13	1	7	8	**43**
Fires or burns	13	11	3	9	7	**43**
Overexertion	6	9	12	13	12	**52**
Cut or pierce	4	10	14	13	12	**53**
Struck by or against	2	7	10	10	9	**38**
Caught or crushed between objects	10	12	4	11	10	**47**
Bitten by dog or other mammal	11	14	13	12	11	**61**
Foreign body (eye or orifice)	8	8	8	12	12	**48**
Self-harm	12	2	7	1	1	**23**
Assault	7	5	11	6	4	**33**

Table 9A. Overall ranking of the burden of injuries in Windsor-Essex County.

Overall Rank	Injury Category	Definition
1	Falls	Injury resulting from falling, including falling on the same level (sidewalk), from one level to another (stairs), falling from an object (wheelchair, ladder, toilet).
2	Motor vehicle collisions (traffic and non-traffic)	Occupant or pedestrian sustains an injury from a collision involving a motor vehicle, which includes cars, trucks, vans, buses, motor-cycles, and ATVs.
3	Self-harm	Any injury resulting from intentional self-harm, including self-poisoning (drugs, gas), hanging, and firearms.
4	Other land transport collisions	Occupant or pedestrian sustains an injury from a collision with non-motor transport, including pedal cycles, animals, and railway.
5	Unintentional poisoning	Injury resulting from exposure to a substance, including drugs, chemicals, and noxious gases.
6	Assault	Any injury resulting from being intentionally harmed by another, including being harmed by firearm, sharp or blunt object, bodily force, or maltreatment.
7	Struck by or against an object	Injury resulting from being accidentally struck by or against an object, including sports equipment, inanimate objects, but excludes assaults and transport collisions.
8	Suffocation	Injury resulting from accidental suffocation, including choking on food or other object, oxygen deprivation.
9	Fire or burns	Injury from fire, including burns (hot fluids, heating appliances, any type of fire) or injured during fire event (falling debris in burning house), but excludes arson.
10	Caught or crushed between objects	Injury from being caught, crushed, jammed, or pinched between or in an object (doors), but excludes transport-related injuries.
11	Foreign body in eye or orifice	Injury resulting from an object that penetrates the eye or natural orifice.
12	Overexertion	Injury that results from overexertion and strenuous or repetitive movements, including lifting heavy objects, marathon running, rowing.
13	Cut or pierce	Injury resulting from accidental contact with a sharp object, including glass, scissors, needle, knife, axe, lawnmower, power tools.
14	Near-drowning or submersion	Injury resulting from submersion in a fluid, including bathtub, swimming pool, natural water, boating.
15	Bitten by dog or other mammal	Injury from being bitten by a dog or other land mammal, excluding marine mammals.

Summary

As a result of injury, over 30,000 individuals visit the emergency department and over 1,500 are hospitalized annually in Windsor-Essex County. On average, 140 injury-related deaths occur annually in Windsor-Essex County, resulting in the loss of over 2,600 potential years of life.

Key Findings

- Falls were the most burdensome injury within the Windsor-Essex County population by a wide margin.
- Falls accounted for over 30% of all injury-related ED visits, 45% of all injury-related hospitalizations, and 20% of all injury-related deaths in Windsor-Essex County.
- The second and third most burdensome injuries in Windsor-Essex County were motor vehicle collisions and self-harm, respectively.
- In Windsor-Essex County, self-harm had the highest injury-related mortality rate; over 25% of all injury-related deaths were due to self-harm.
- Intentional poisoning by consumption of pharmaceutical drugs was the top cause for incidents of self-harm resulting in hospitalization.
- The least burdensome injuries resulted from being cut or pierced, near-drowning or submersion, and being bitten by a dog or other mammal.

All injuries are a broad public health problem and stakeholders, including public health, private corporations, non-governmental organizations, individual citizens, and municipal government, can play a role in helping to reduce the current incidence of injury in our community. Through the collaborative creation of an effective injury prevention strategy, Windsor-Essex County will be able to better understand what puts people at risk for intentional and unintentional injury in our community and will help to determine the most effective ways to prevent those injuries.

Section B: Detailed Analysis of the Top Five Injury Categories

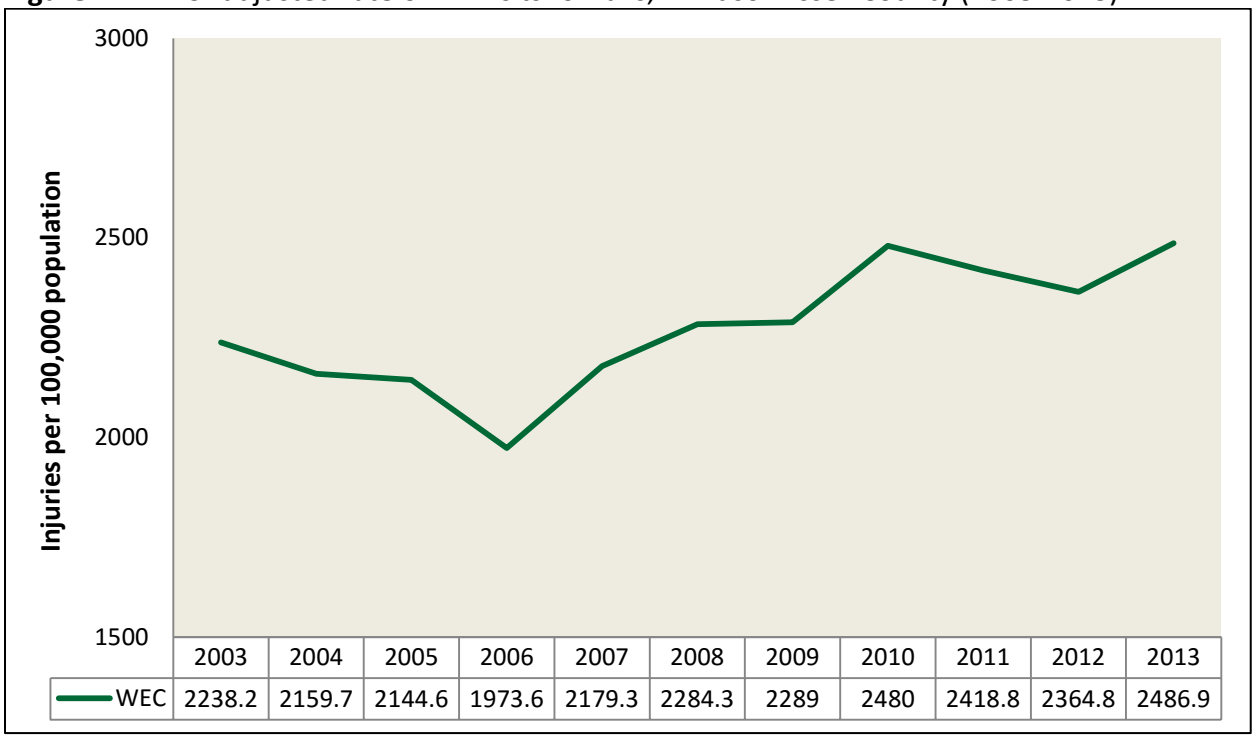
Falls

Falling represents the most burdensome cause of injuries in Windsor-Essex County by a wide margin. Fall-related injuries account for 30% of all injury-related ED visits and 45% of all injury-related hospitalizations. Those hospitalized for a fall-related injury will spend an average of 8 days in the hospital. Deaths due to falling account for 20% of all injury-related mortalities and 108 potential years of life lost annually in Windsor-Essex County. The rate of ED visits for falls has been steadily rising and, from 2003 to 2013, the rate of ED visits for falls increased by 11% (see **Figure 1.1B**). This trend warrants further monitoring and the consideration of approaches to mitigate this trend would be prudent.

What are injuries resulting from a fall?

Injury Category	ICD10-CA Codes	Definition
Falls	W00-W19	Injury resulting from falling, including falling on the same level (sidewalk), from one level to another (stairs), falling from an object (wheelchair, ladder, toilet).

Figure 1.1B – Unadjusted rate of ED visits for falls, Windsor-Essex County (2003-2013).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
WEC	2238.2	2159.7	2144.6	1973.6	2179.3	2284.3	2289	2480	2418.8	2364.8	2486.9

Source: Public Health Ontario. Snapshots: Windsor-Essex County Health Unit: Emergency department visits for injuries due to falls – crude rate (both sexes) 2003-2013. Toronto, ON: Ontario Agency for Health Protection and Promotion. Accessed: [Oct 26, 2015]

Top 10 Specific Causes (ED Visits and Mortality)

There were 10,257 visits to the ED in Windsor-Essex County for fall-related injuries between January 1, 2014 and December 31, 2014. Nearly 1 in 3 of all injury-related ED visits was due to falling. Specifically, the primary cause of falling, was slipping, tripping, and stumbling on the same level (excluding snowy or icy surfaces) which accounted for 25% of all ED visits for fall-related injuries (see **Table 1.1B**). There were 252 mortalities in Windsor-Essex County due to falls between January 1, 2007 and December 31, 2011 (average of 50 mortalities per year). The cause of the fall-related injury was unspecified for 37% of fall-related mortalities. Falling on the same level (W18 and W01) was the leading specified cause of fall-related mortalities and accounted for 36% of fall-related mortalities.

Table 1.1B – The Top 10 causes of emergency department visits (2014) and mortalities (2007-2011) due to falls in Windsor-Essex County.

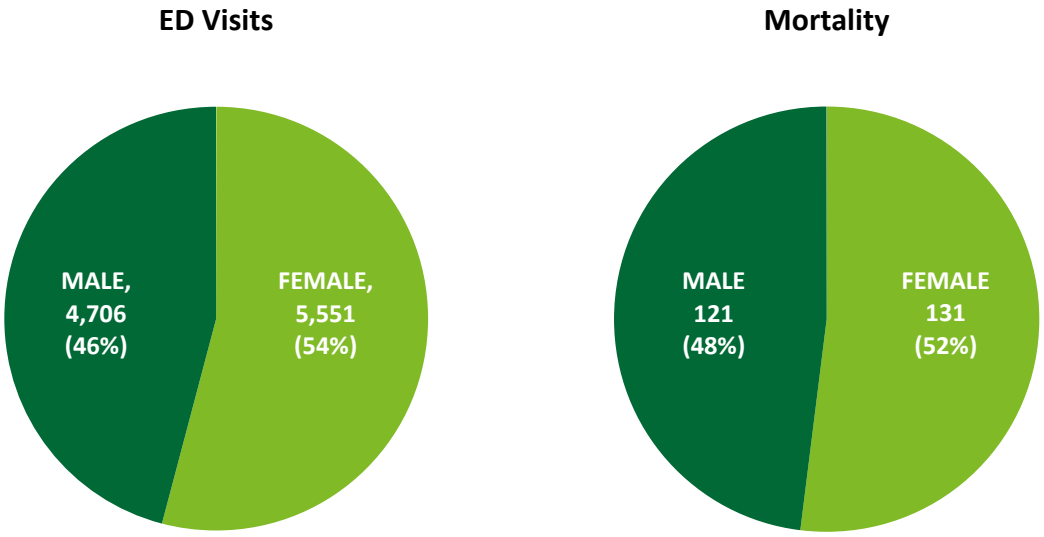
Rank	Cause of Emergency department visits (ICD10 Code)	ED visits	Cause of Mortality (ICD10 Code)	Deaths
1	Fall on same level from slipping, tripping and stumbling (W01)	2,581	Unspecified fall (W19)	94
2	Unspecified fall (W19)	2,106	Other fall on same level (ie. off toilet) (W18)	64
3	Other fall on same level (ie. off toilet) (W18)	1,588	Fall on same level from slipping, tripping and stumbling (W01)	27
4	Fall on and from stairs and steps (W10)	1,175	Fall on and from stairs and steps (W10)	24
5	Fall involving ice-skates, skis, roller-skates or skateboards (W02)	373	Fall involving bed (W06)	17
6	Other fall from one level to another (ie. into cavity, hole, shaft, well) (W17)	328	Fall involving chair (W07)	7
7	Fall involving bed (W06)	327	Fall involving wheelchair (W05)	5
8	Fall involving chair (W07)	222	Fall from, out of or through building or structure (W13)	5
9	Fall involving wheelchair (W05)	204	Fall on and from ladder (W11)	<5
10	Fall on and from ladder (W11)	184	Other fall from one level to another (ie. into cavity, hole, shaft, well) (W17)	<5

Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015]. Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Sex Distribution (ED visits and Mortality)

The sex distribution of ED visits and mortalities due to fall-related injuries in Windsor-Essex County is reported in **Figure 1.2B**. Females were disproportionately affected by falls; females accounted for 54% of ED visits and 52% of mortalities related to falls. In other words, in 2014, Windsor-Essex County females made 845 more visits to the ED and suffered 10 more fall-related mortalities than males.

Figure 1.2B –ED visits (2014) and mortalities (2007-2011) due to fall injuries by sex (Windsor-Essex County).

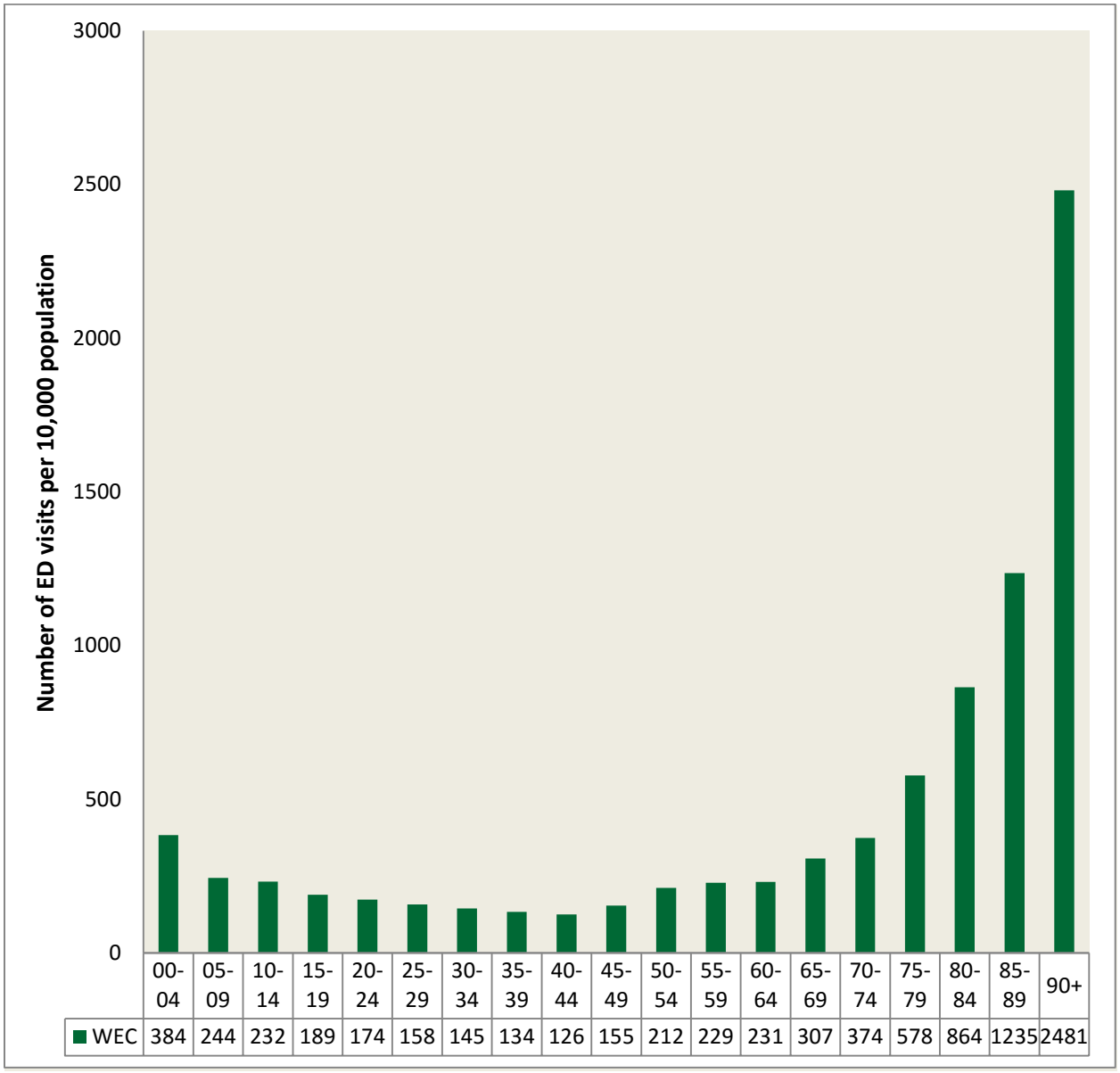


Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015]. Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Age Distribution (ED visits and Mortality)

The age distribution of the rate of fall-related ED visits in Windsor-Essex County (2014) is reported in **Figure 1.3B**. The rate of ED visits for fall-related injuries was greatest among seniors: 36% of those who visited the ED for fall-related injuries were 65 years old and over. However, children and youth under 15 years old accounted for nearly 1 in 5 visits to the ED for fall-related injuries.

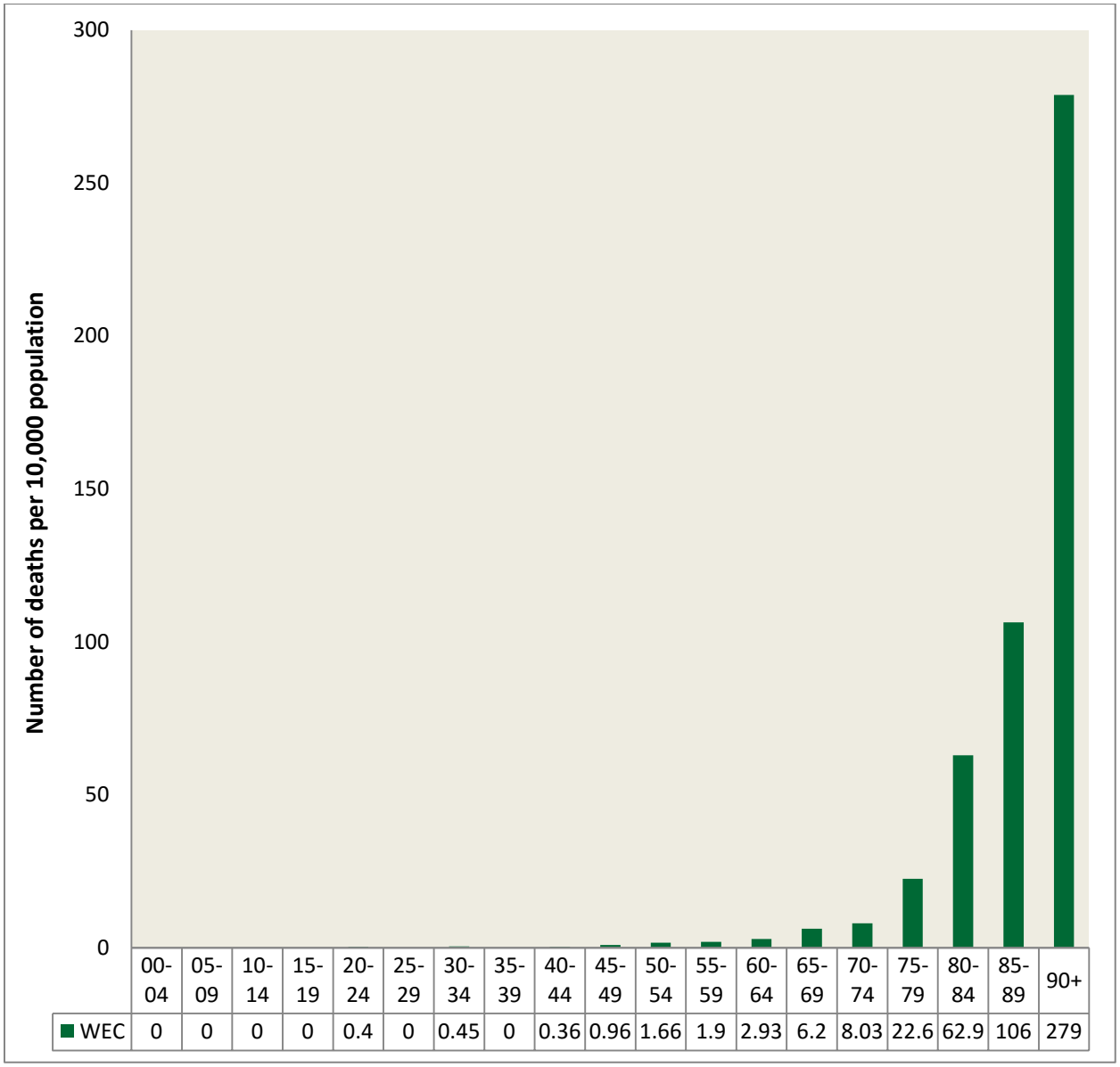
Figure 1.3B – ED visits due to fall injuries by age group (Windsor-Essex County, 2014).



Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

The age distribution of the rate of fall-related mortalities in Windsor-Essex County (2007-2011) is reported in **Figure 1.4B**. Similar to ED visits, the rate of fall-related mortalities was greatest among seniors, particularly those over 90 years old. Windsor-Essex County seniors (65 years old and over) accounted for 91% of fall-related mortalities and each year 46 seniors will sustain a fatal injury due to falling.

Figure 1.4B – Fatal fall injuries by age (Windsor-Essex County, combined 5-year period: 2007-2011).



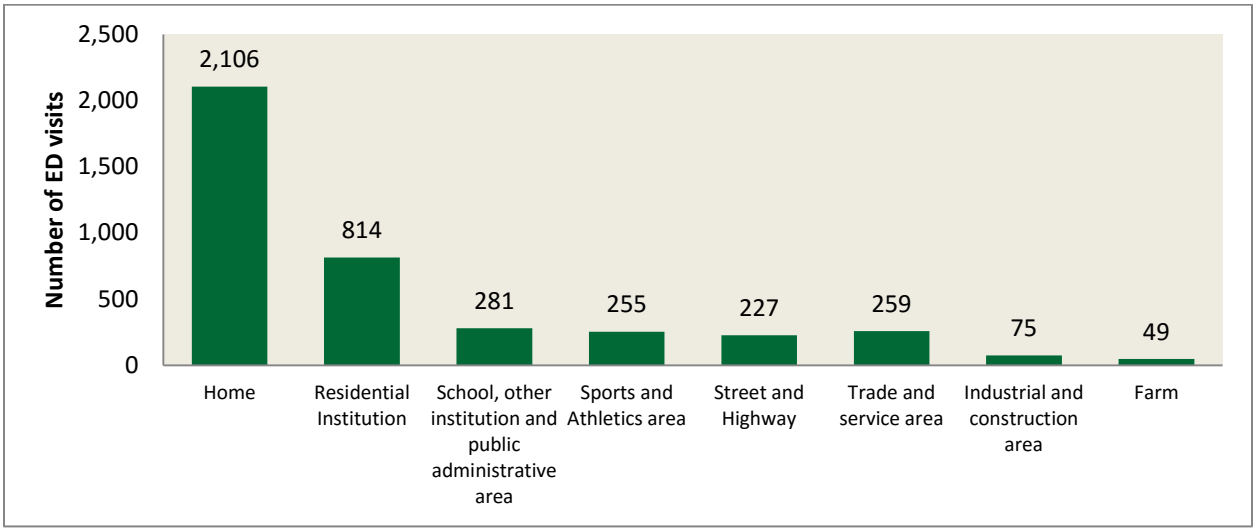
	00-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
WEC	0	0	0	0	0.4	0	0.45	0	0.36	0.96	1.66	1.9	2.93	6.2	8.03	22.6	62.9	106	279

Source: Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Place of Occurrence (ED visits and Mortality)

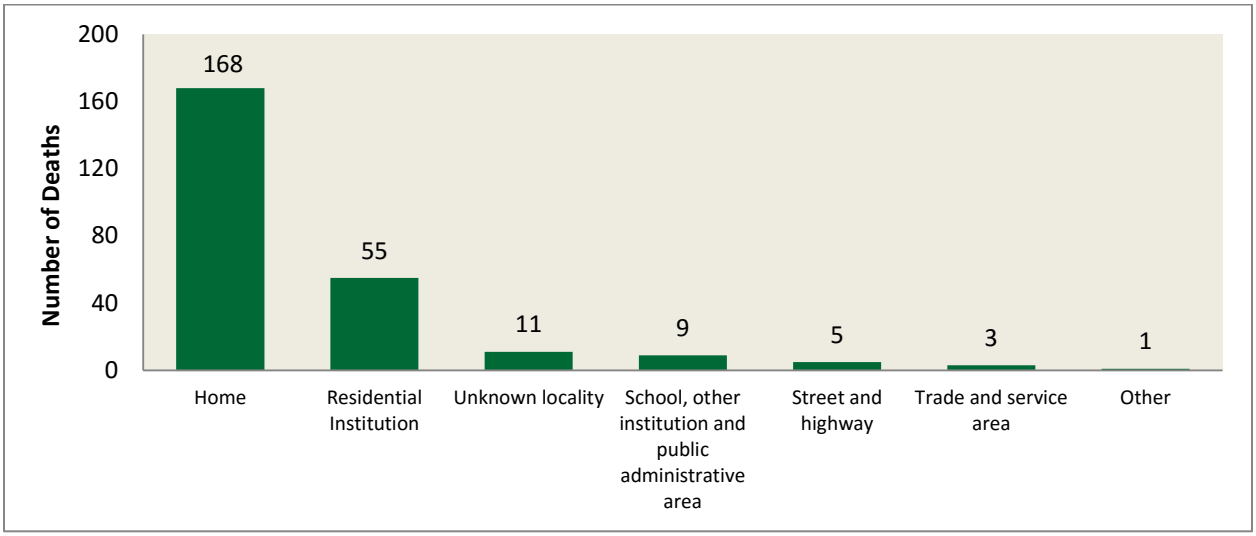
The place of occurrence of fall-related ED visits and mortalities are reported in **Figure 1.5B** and **Figure 1.6B**, respectively. The home was the primary place of occurrence of the fall injury; 2 in 3 fall-related mortalities occur in the home and over 1 in 5 fall-related mortalities occur in residential institutions (when the location is specified).

Figure 1.5B - ED visits due to fall injuries by place of occurrence (Windsor-Essex County, 2014).



Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

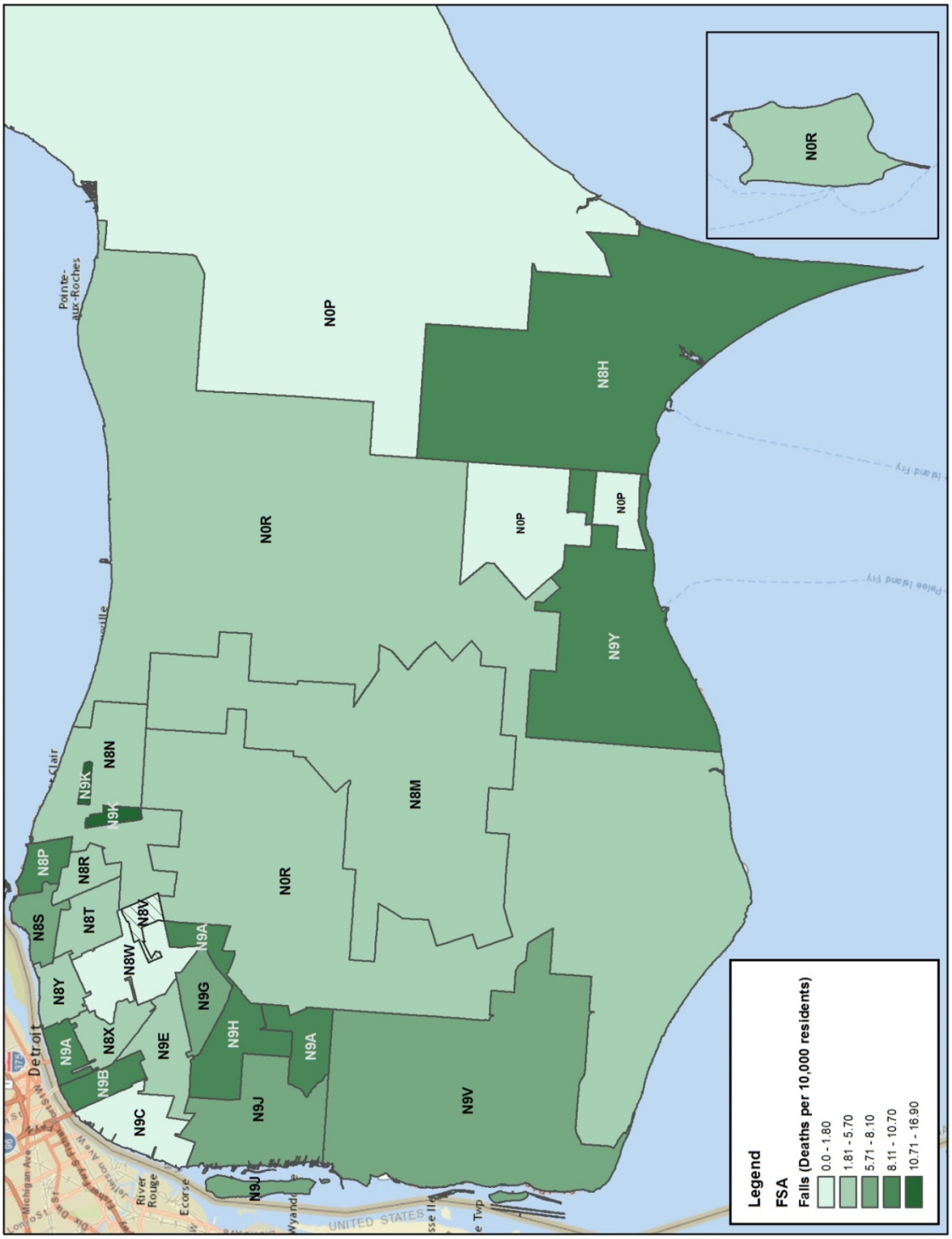
Figure 1.6B – Fatal fall injuries by place of occurrence (Windsor-Essex County, combined 5-year period: 2007-2011).



Source: Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Location of Injured Residents (Mortality)

Figure 1.7B – Rate of mortalities due to falls by location of injured resident (2007-2011).



Source: Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Key Findings

The key findings for fall-related injuries in Windsor-Essex County include:

- Falls accounted for 1 in 3 of all injury-related visits to the emergency department.
- The overall rate of fall-related injuries has been steadily increasing over the past decade.
- Falling on the same level was the primary cause of fall-related ED visits and mortalities when the cause was specified.
- Females were disproportionately affected by falls; 845 more women than men visited the ED in 2014 for a fall-related injury.
- The rate of fall-related ED visits and mortalities was greatest among seniors (65 years old and over); this age group accounted for 9 in 10 fall-related mortalities.
- Most (67%) fall-related mortalities occur within the home of the injured individual, but a considerable number (20%) of fall-related mortalities occur within residential institutions.
- The rate of fall fatalities is greater within some pockets of the Windsor metropolitan area as well as the Leamington and Kingsville areas.

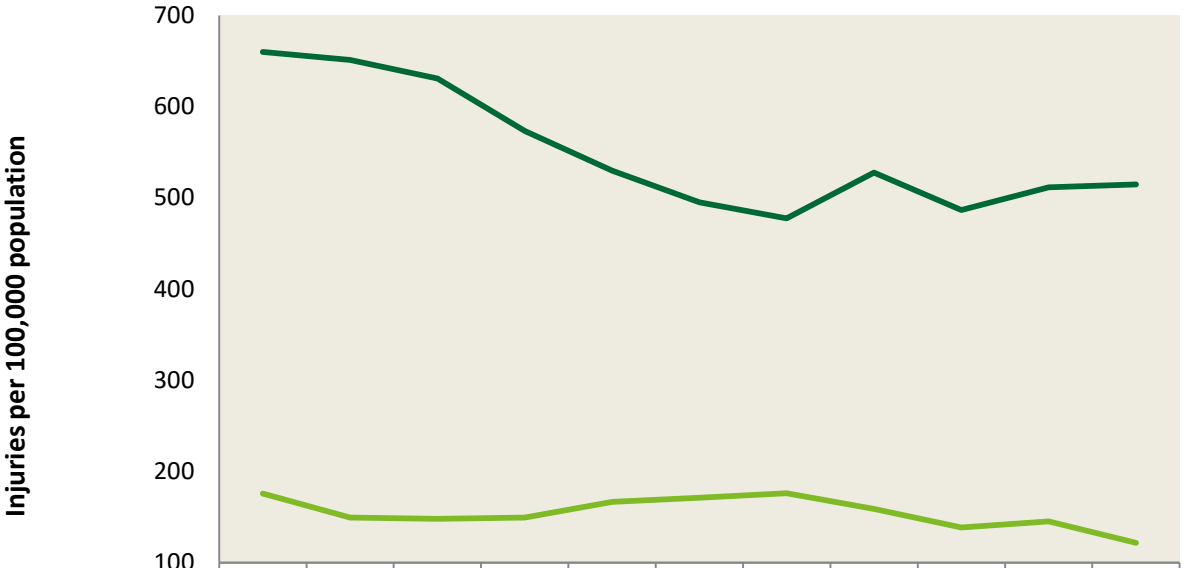
Motor Vehicle and Other Land Transport Collisions

Motor vehicle collisions and other land transport collisions represent the second and fourth most burdensome cause of injuries in Windsor-Essex County, respectively. Each year there are approximately 2,600 ED visits and 20 mortalities due to transport collisions in Windsor-Essex County. The trend in the rate of ED visits for motor vehicle collisions and other land transport collisions is reported in **Figure 2.1B**. The rate of ED visits for motor vehicle collisions and other land transport collisions has decreased by 22% and 31%, respectively, since 2003.

What are injuries resulting from a transport collision?

Injury Category	ICD10-CA Codes	Definition
Motor vehicle collisions (traffic and non-traffic)	V02-04, V09.0, V09.2, V12-14 , V19.0-19.2, V19.4-19.6, V20-79, V80.3-80.5, V80.9, V81.0-81.1, V82.0-82.1, V82.8, V83-86, V87-89	Occupant or pedestrian sustains an injury from a collision involving a motor vehicle, which includes cars, trucks, vans, buses, motor-cycles, and ATVs.
Other land transport collisions	Any codes from V01-V89 not included in the motor vehicle collisions category above.	Occupant or pedestrian sustains an injury from a collision with non-motor transport, including pedal cycles, animals, and railway.

Figure 2.1B – Unadjusted rate of ED visits for motor vehicle and other land transport collisions, Windsor-Essex County (2003-2013).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
WEC (motor)	660	650.9	630.9	573.1	529.8	494.9	477.4	527.6	486.4	511.6	514.6
WEC (other)	175.9	149.4	147.9	149.3	166.5	171.2	176.1	159.1	138.6	145.3	121.6

Source: Public Health Ontario. Snapshots: Windsor-Essex County Health Unit: ED visits for injuries due to motor vehicle collisions and other land transport collisions – crude rate (both sexes) 2003-2013. Toronto, ON: Ontario Agency for Health Protection and Promotion. Accessed: [Oct 22, 2015].

Top 10 Specific Causes (ED visits and Mortality)

The primary cause of injury for motor vehicle collisions is when a car occupant is injured in a collision with a car, truck or van (see **Table 2.1B**) which represents 44% of ER visits for motor vehicle collisions. In 35% of fatal cases, the type of collision is unspecified. An overturning car, collision with a pedestrian, and motorcycle collision were the next leading causes of mortality when the vehicle and collision type were specified.

Table 2.1B - The Top 10 causes of emergency department visits (2014) and mortalities (2007-2011) due to motor vehicle collisions in Windsor-Essex County.

Rank	Cause of Emergency department visits (ICD10 Code)	ED visits	Cause of Mortality (ICD10 Code)	Deaths
1	Car occupant injured in collision with car, pick-up truck or van (V43)	968	Motor- or nonmotor-vehicle accident, type of vehicle unspecified (V89)	26
2	Car occupant injured in non-collision transport accident (overturning) (V48)	150	Traffic accident of specified type but victim's mode of transport unknown (V87)	15
3	Pedestrian injured in collision with car, pick-up truck or van (V03)	145	Car occupant injured in non-collision transport accident (eg., overturning) (V48)	8
4	Occupant of special all-terrain or other motor vehicle designed primarily for off-road use, injured in transport accident (V86)	123	Pedestrian injured in collision with car, pick-up truck or van (V03)	7
5	Car occupant injured in collision with fixed or stationary object (V47)	107	Motorcycle rider injured in collision with car, pick-up truck or van (V23)	5
6	Pedal cyclist injured in collision with car, pick-up truck or van (V13)	97	Car occupant injured in collision with car, pick-up truck or van (V43)	<5
7	Pedal cyclist injured in other and unspecified transport accidents (V19)	94	Occupant of special all-terrain or other motor vehicle designed primarily for off-road use, injured in transport accident (V86)	<5
8	Motor- or nonmotor-vehicle accident, type of vehicle unspecified (V89)	79	Pedal cyclist injured in other and unspecified transport accidents (V19)	<5
9	Car occupant injured in other and unspecified transport accidents (V49)	70	Car occupant injured in other and unspecified transport accidents (V49)	<5
10	Motorcycle rider injured in noncollision transport accident (V28)	54	Occupant of pick-up truck or van injured in noncollision transport accident (V58)	<5

Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015]. Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Injuries arising from a non-collision event involving a pedal cycle (e.g., rider eject from pedal cycle) accounted for 88% of ED visits for other land transport injuries (**see Table 2.2B**). The next 3 leading causes of other land transport injuries also involved a pedal cycle and, in total, a pedal cycle was involved in almost every type of other land transport injury. Two types of fatal injuries were recorded over the reported 5-year period (2007-2011), both with less than 5 fatalities, and include a non-collision event involving a pedal cycle and railway train collision with a pedestrian.

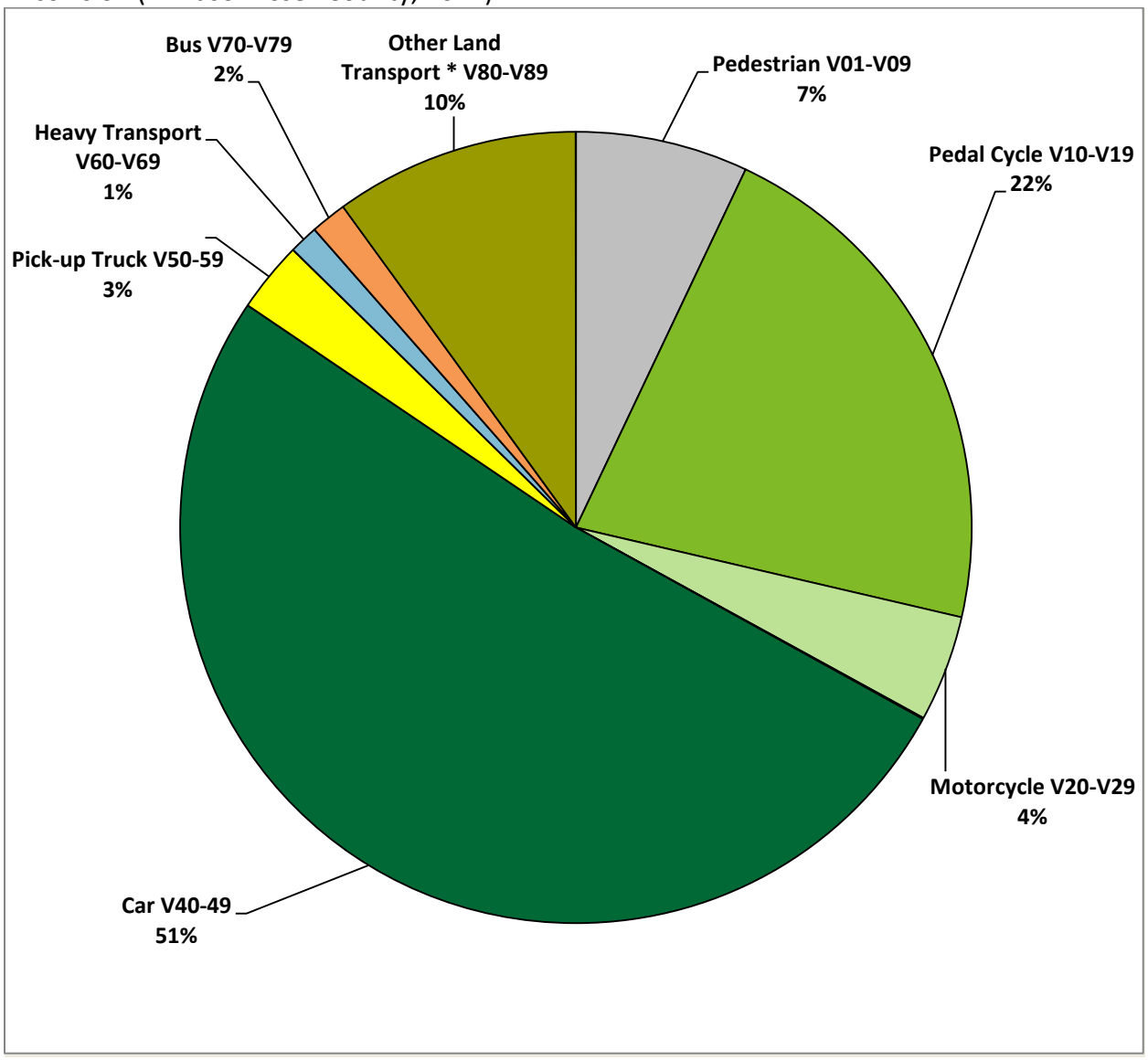
Table 2.2B - The Top 10 causes of emergency department visits (2014) and mortalities (2007-2011) due to other land transport collisions in Windsor-Essex County.

Rank	Cause of Emergency department Visits (ICD10 Code)	ED visits	Cause of Mortality (ICD10 Code)	Deaths
1	Pedal cyclist injured in noncollision transport accident (V18)	339	Pedal cyclist injured in noncollision transport accident (V18)	<5
2	Pedal cyclist injured in collision with fixed or stationary object (V17)	23	Pedestrian injured in collision with railway train or railway vehicle (V05)	<5
3	Pedal cyclist injured in collision with other pedal cycle (V11)	7	—	—
4	Pedestrian injured in collision with pedal cycle (V01)	6	—	—
5	Occupant of railway train or railway vehicle injured in transport accident (V81)	<5	—	—
6	Pedestrian injured in collision with railway train or railway vehicle (V05)	<5	—	—
7	Pedestrian injured in collision with other nonmotor vehicle (V06)	<5	—	—
8	Pedal cyclist injured in collision with other nonmotor vehicle (V16)	<5	—	—
9	—	—	—	—

Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015]. Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

The ED visits for the motor vehicle collision and the other land transport collision categories were merged and ED visits were plotted by type of transport vehicle occupied by injured individual (see **Figure 2.2B**). Just over half (51%) of all ED visits were car occupants who were injured in a transport collision and nearly 1 in 4 of all ED visits were pedal cyclists who were injured in a transport collision. Nearly 200 pedestrians (7%) visited the ED as a result of a transport collision. There were less than five injuries caused by three-wheeled motor vehicles (V30-V39) in Windsor-Essex County in 2014 and so these results were not reported.

Figure 2.2B – Proportion of ED visits by type of transport vehicle occupied by injured individual in collision (Windsor-Essex County, 2014).



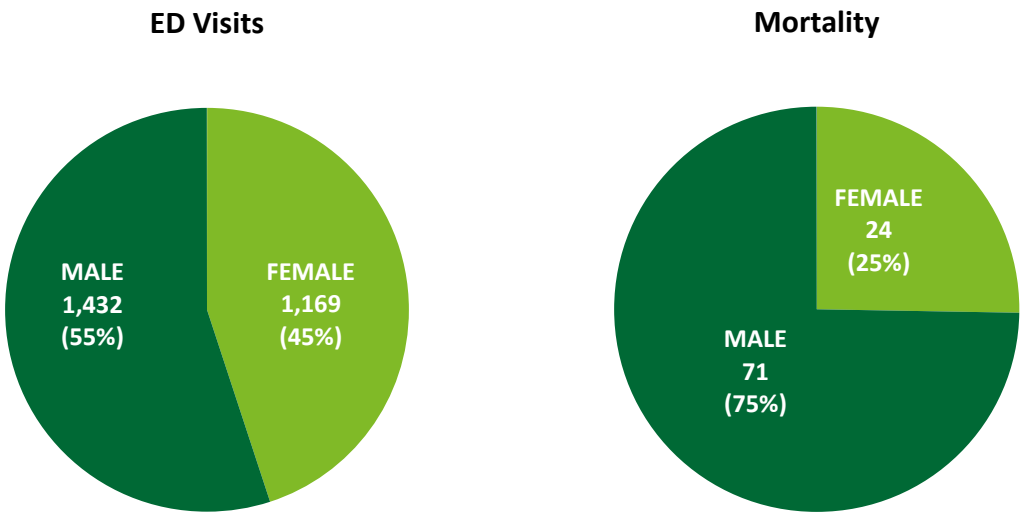
Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Sex Distribution (ED visits and Mortality)

The sex distribution of ED visits and mortalities due to transport collisions in Windsor-Essex County is reported in **Figure 2.3B**. A greater proportion of males visited the ED due to injuries resulting from a transport collision. The proportion of mortalities resulting from transport collisions was also disproportionate among males and females; for 75% mortalities, the sex of the injured individual was male. In general, Windsor-Essex County males appeared more likely to sustain both fatal and non-fatal injuries from transport vehicle collisions.

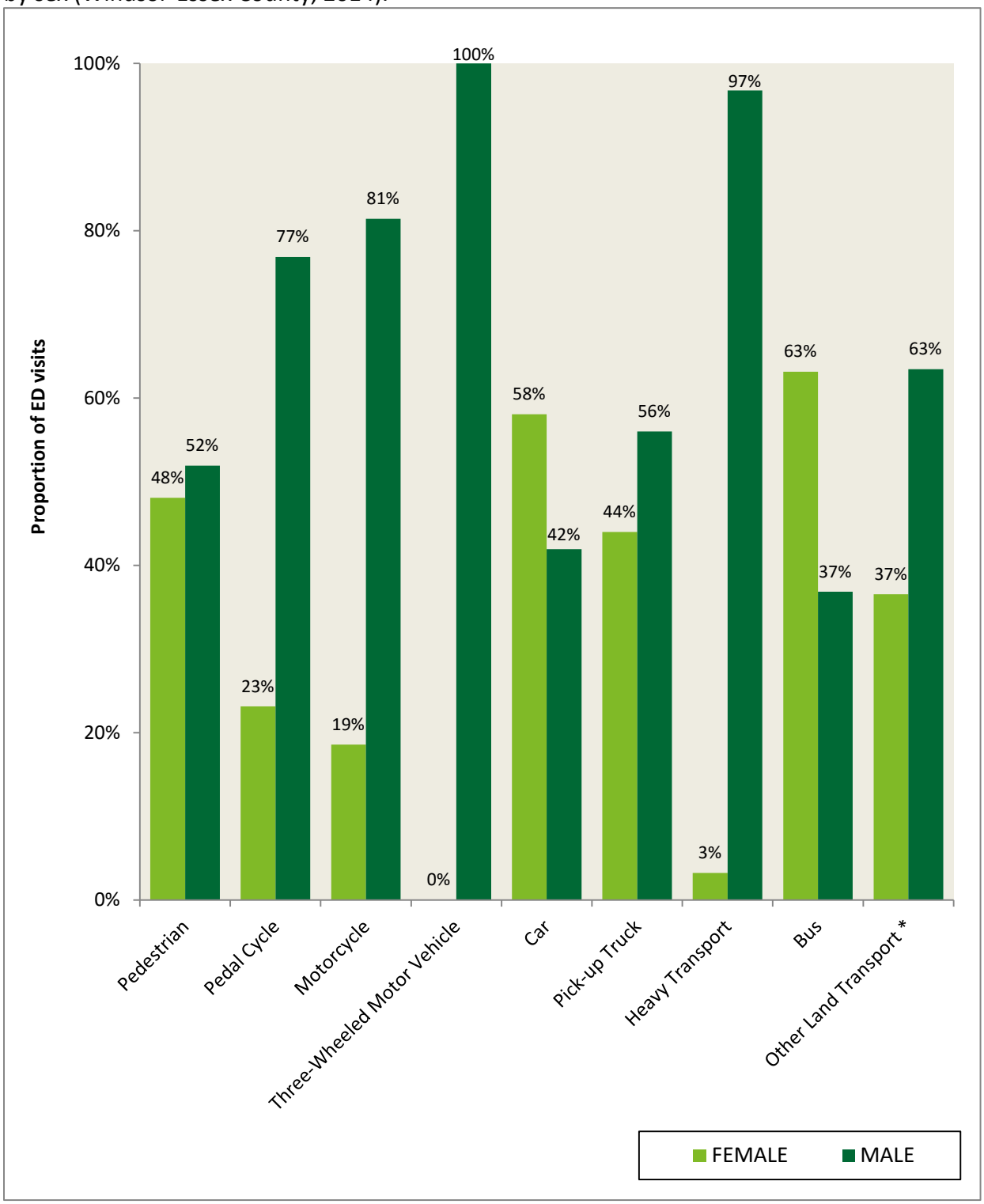
The sex distribution was also analyzed for ED visits by type of transportation involved in the collision (see **Figure 2.4B**). The proportion of males to females was relatively balanced for pedestrians involved in a collision. However, the proportion of males injured in a collision was higher for pedal cycles, motorcycles, three-wheeled motor vehicles, trucks, heavy transport, and other land transport. The proportion of females injured in a collision was higher for cars and buses.

Figure 2.3B –ED visits (2014) and mortalities (2007-2011) due to motor vehicle and other land transport collisions (combined) by sex (Windsor-Essex County).



Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015]. Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Figure 2.4B - Proportion of ED visits by type of transportation involved in collision (combined) by sex (Windsor-Essex County, 2014).

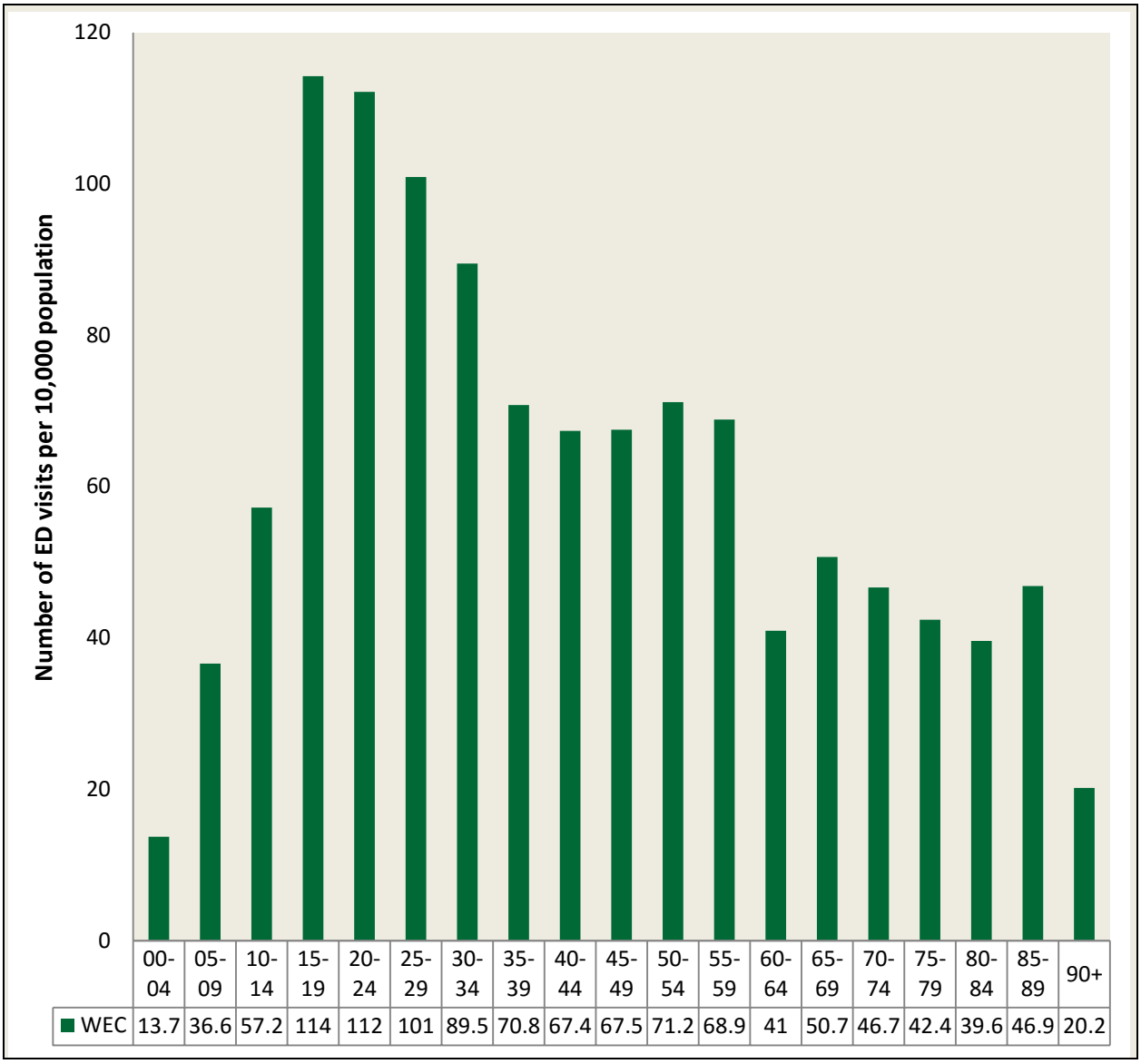


Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Age Distribution (ED visits and Mortality)

The age distribution of the rate of ED visits for injuries resulting from a transport collision is reported in **Figure 2.5B**. The rate of ED visits is greatest among those aged 15-24 years old followed by those aged 25-34 years old. Children (0-4 years old) and seniors (>65 years old) had the lowest rates of transport collision-related ED visits. In general, the rate of ED visits resulting from a transport collision is greatest among youth and young adults.

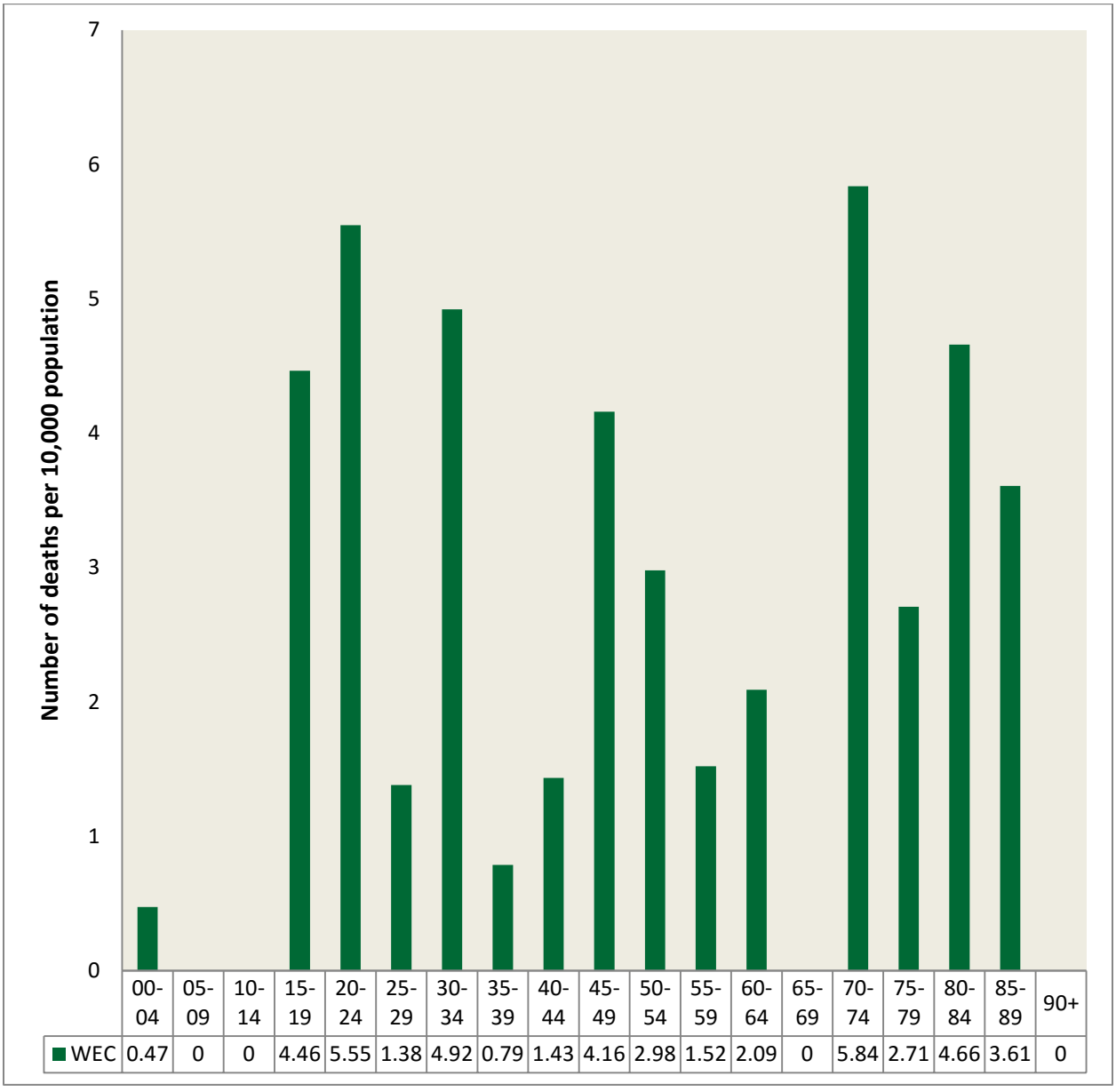
Figure 2.5B - ED visits due to transport collision injuries (combined) by age (Windsor-Essex County, 2014).



Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

The age distribution of the rate of fatal injuries resulting from a transport collision is reported in **Figure 2.6B**. The mortality rates are more variable than the ED rates and several age groups appear to sustain a greater number of fatal injuries than other age groups. Those aged 15-24 years old, 30-34 years old, and over 70 years old had a greater rate of mortality caused by transport collisions than other age groups. In general, seniors and young drivers appear to have more fatal injuries sustained from transport collisions.

Figure 2.6B – Fatal transport collision injuries (combined) by age (Windsor-Essex County, combined 5-year period: 2007-2011).

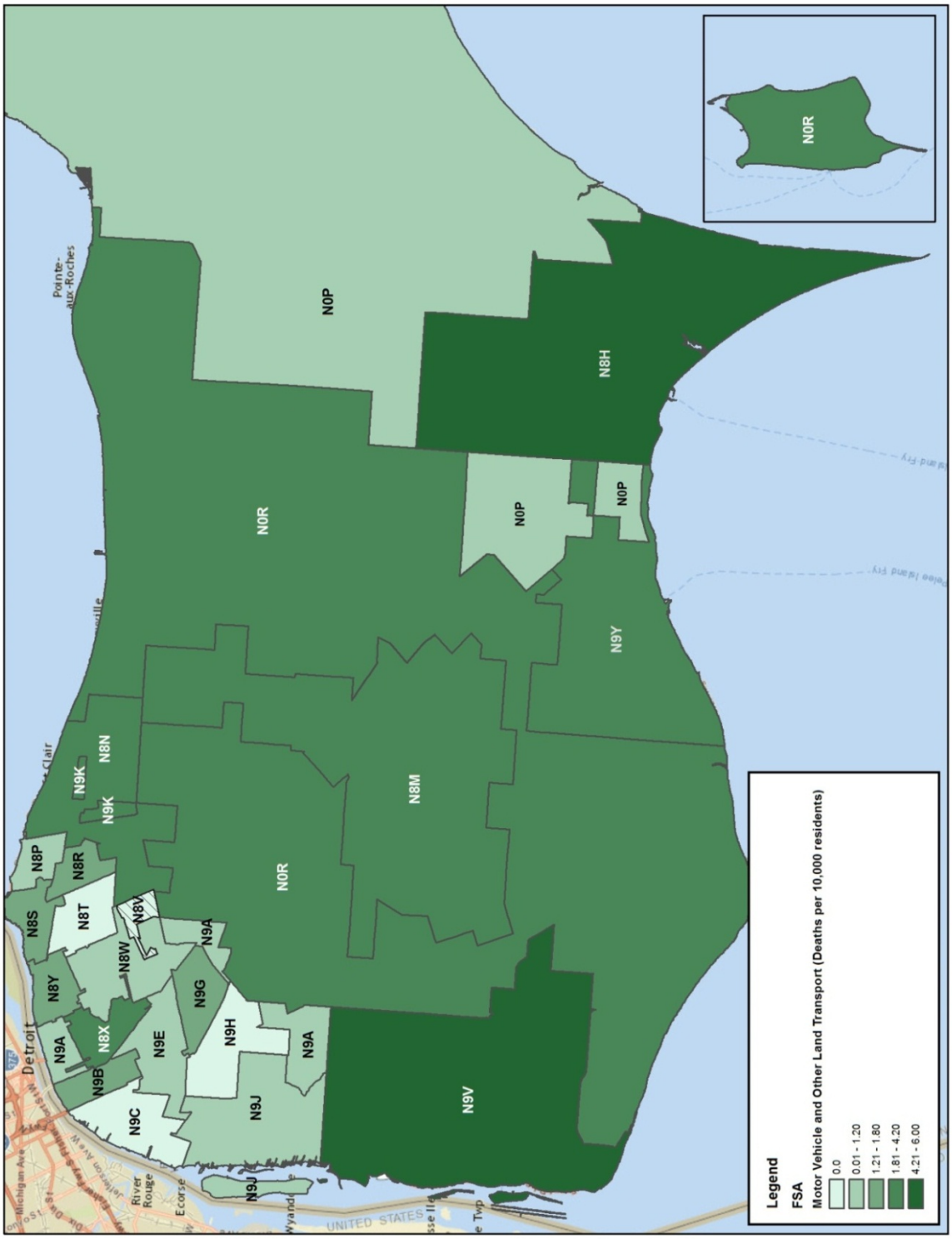


	00-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
WEC	0.47	0	0	4.46	5.55	1.38	4.92	0.79	1.43	4.16	2.98	1.52	2.09	0	5.84	2.71	4.66	3.61	0

Source: Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Location of Injured Residents (Mortality)

Figure 2.7B –Mortality rate of transport collisions by location of injured resident (2007-2011).



Source: Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Key Findings

The key findings related to injuries sustained from motor vehicle collisions and other land transport collisions are as follows:

- There are approximately 2,600 ED visits and 20 deaths each year in Windsor-Essex County as a result of transport collisions.
- The overall rate of motor vehicle collisions and other land transport collisions has been decreasing since 2003.
- For motor vehicle collisions, ar occupants injured in a collision with a car, pick-up truck or van is the top cause of ED visits for motor vehicle collisions by a wide margin. In 35% of fatal cases, the type of collision is unspecified. The leading causes of mortality (where the type of collision and vehicle is specified) include overturning the car, collision with a pedestrian, and motorcycle collision.
- For other land transport collisions, almost all events resulting in injury involved a pedal cyclist in some way.
- Overall, 1 in 2 transport injuries were sustained by an occupant of a car and 1 in 5 transport injuries were sustained by an occupant of a pedal cycle.
- Males were more likely to be injured from a transport collision and substantially more likely to endure a fatal injury from transport collisions; however, the sex of the injured individual varied by the type of transport vehicle occupied by the injured individual.
- Emergency department visits for transport collisions were greatest among youth (15-24 years old) but multiple age groups, particularly youth and seniors, had a greater rate of transport collision fatalities.
- The rate of transport collision fatalities was greatest in the Amherstburg and Leamington regions.

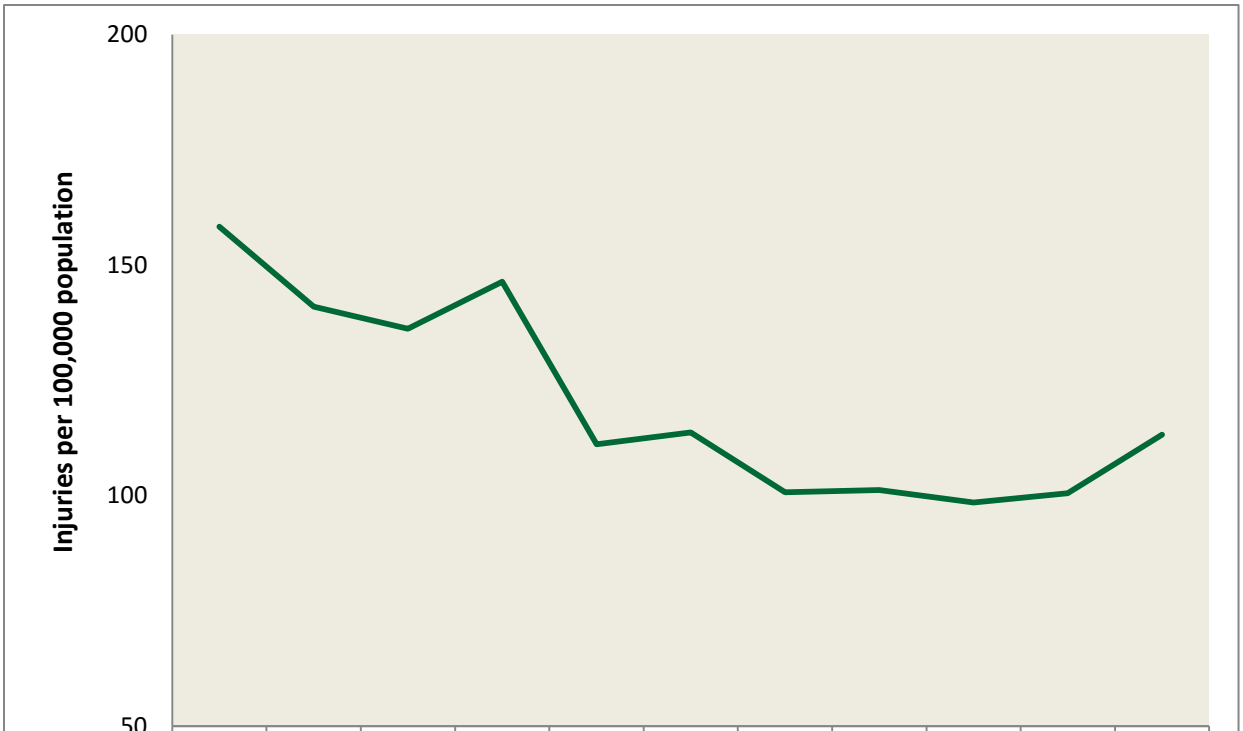
Self-Harm

Injuries caused by self-harm (whereby there is intent to injury oneself) are the third most burdensome type of injury in Windsor-Essex County and the only intentional injury type ranked in the top five injury categories. On average, there are 411 visits to the ED and 41 deaths each year in Windsor-Essex County due to injuries caused by self-harm; this causes 926 potential years of life lost annually. From 2003 to 2013 the overall rate of ED visits for self-harm has decreased by 28% in Windsor-Essex County (see **Figure 3.1B**).

What are injuries resulting from self-harm?

Injury Category	ICD10-CA Codes	Definition
Self-harm	X60-X84, Y87.0	Any injury resulting from intentional self-harm, including self-poisoning (drugs, gas), hanging, and firearms.

Figure 3.1B – Unadjusted rate of ED visits for self-harm, Windsor-Essex County (2003-2013).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
WEC	158.3	141	136.2	146.4	111.1	113.7	100.7	101.2	98.5	100.5	113.2

Source: Public Health Ontario. Snapshots: Windsor-Essex County Health Unit: Emergency department visits for injuries due to self-harm – crude rate (both sexes) 2003-2013. Toronto, ON: Ontario Agency for Health Protection and Promotion. Accessed: [Oct 26, 2015].

Top 10 Specific Causes (ED visits and Mortality)

There were 501 ED visits in Windsor-Essex County in 2014 for injuries caused by self-harm. The primary cause of ED visits for self-harm injuries is intentional self-poisoning with antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs not elsewhere classified; this type of self-poisoning resulted in 177 ED visits, accounting for 35% of self-harm ED visits (see **Table 3.1B**). Nearly 80% of self-harm ED visits are caused by self-poisoning and in almost all cases the poison was some form of medication. The leading cause of ED visits that was not a self-poisoning event was injury caused by a sharp object which accounted for 16% of ED visits for self-harm.

From January 1, 2007 to December 31, 2011, there were 207 mortalities (41 mortalities per year) in Windsor-Essex County due to injuries caused by self-harm. The leading cause of mortality, by a wide margin, was self-harm by hanging, strangulation, or suffocation which accounted for 48% of self-harm mortalities (see **Table 3.1B**). The next leading causes of mortality were self-poisoning with gas or vapour (7% of self-harm mortalities) and self-harm by rifle, shotgun, or large firearm (7% of self-harm mortalities). Despite self-poisoning with medications causing nearly 80% of self-harm ED visits, it only accounted for less than 20% of self-harm mortalities.

Table 3.1B - The Top 10 causes of emergency department visits (2014) and mortalities (2007-2011) due to self-harm in Windsor-Essex County.

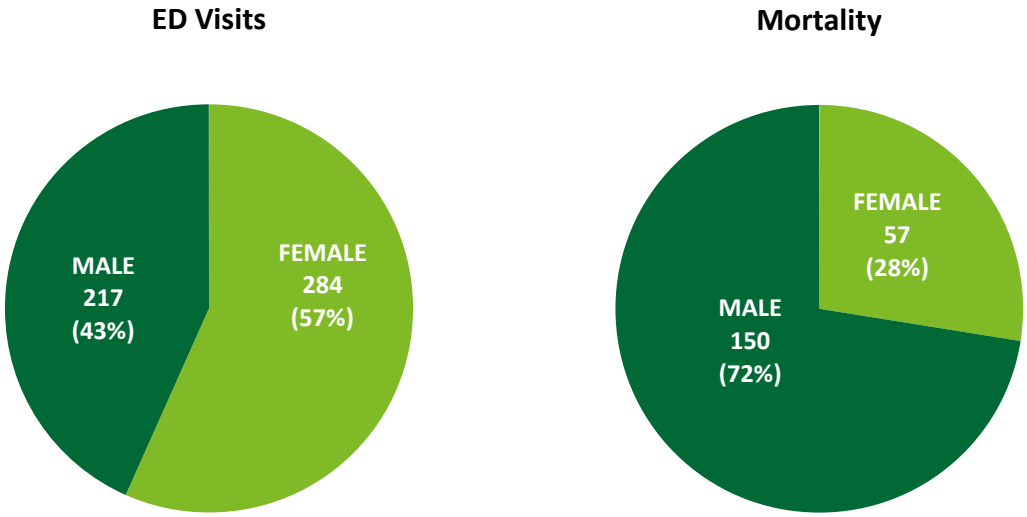
Rank	Cause of Emergency department visits (ICD10 Code)	ED visits	Cause of Mortality (ICD10 Code)	Deaths
1	Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified (X61)	177	Intentional self-harm by hanging, strangulation and suffocation (X70)	100
2	Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics (X60)	86	Intentional self-poisoning by and exposure to other gases and vapours (X67)	14
3	Intentional self-harm by sharp object (X78)	79	Intentional self-harm by rifle, shotgun and larger firearm discharge (X73)	14
4	Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances (X64)	62	Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, anti-parkinsonism and psychotropic drugs, not elsewhere classified (X61)	12
5	Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified (X62)	27	Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances (X64)	11
6	Intentional self-poisoning by and exposure to other and unspecified chemicals and noxious substances (X69)	16	Intentional self-harm by drowning and submersion (X71)	11
7	Intentional self-harm by hanging, strangulation and suffocation (X70)	12	Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified (X62)	10
8	Intentional self-poisoning by and exposure to alcohol (X65)	12	Intentional self-harm by sharp object (X78)	7
9	Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system (X63)	7	Intentional self-harm by other and unspecified firearm discharge (X74)	6
10	Intentional self-harm by other specified means (X83)	7	Intentional self-harm by jumping from a high place (X80)	5

Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015]. Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Sex Distribution (ED visits and Mortality)

The sex distribution for self-harm ED visits and mortalities is reported in **Figure 3.2B**. The proportion of ED visits for self-harm injury in Windsor-Essex County was disproportionately female; 57%, or 67 additional ED visits, were from females. However, for self-harm mortalities, the opposite was true: 72% of self-harm mortalities were male. This difference may be due to the type of intentional self-harm injury which is associated with ED visits and mortalities as described in the previous section.

Figure 3.2B –ED visits (2014) and mortalities (2007-2011) due to self-harm injuries by sex (Windsor-Essex County).

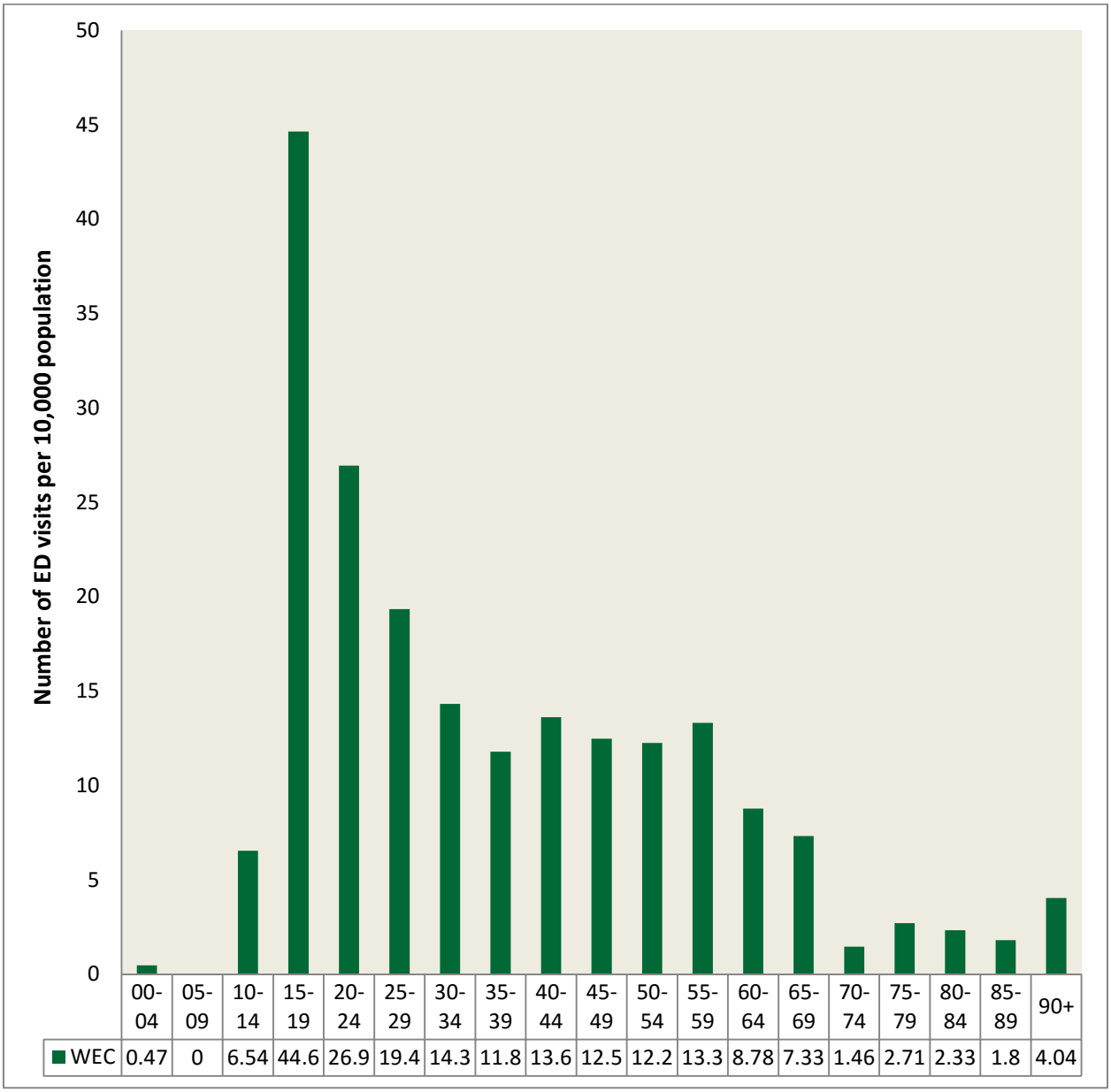


Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015]. Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Age Distribution (ED visits and Mortality)

The age distribution of the rate of ED visits for self-harm injuries is reported in **Figure 2.5B**. Those aged 15-19 years old had the greatest rate of ED visits for self-harm injuries, followed by those aged 20-24 years old. Children (<10 years old) and seniors (≥65 years old) has the lowest rates of ED visits due to self-harm injuries.

Figure 3.3B - ED visits due to self-harm by age (Windsor-Essex County, 2014).

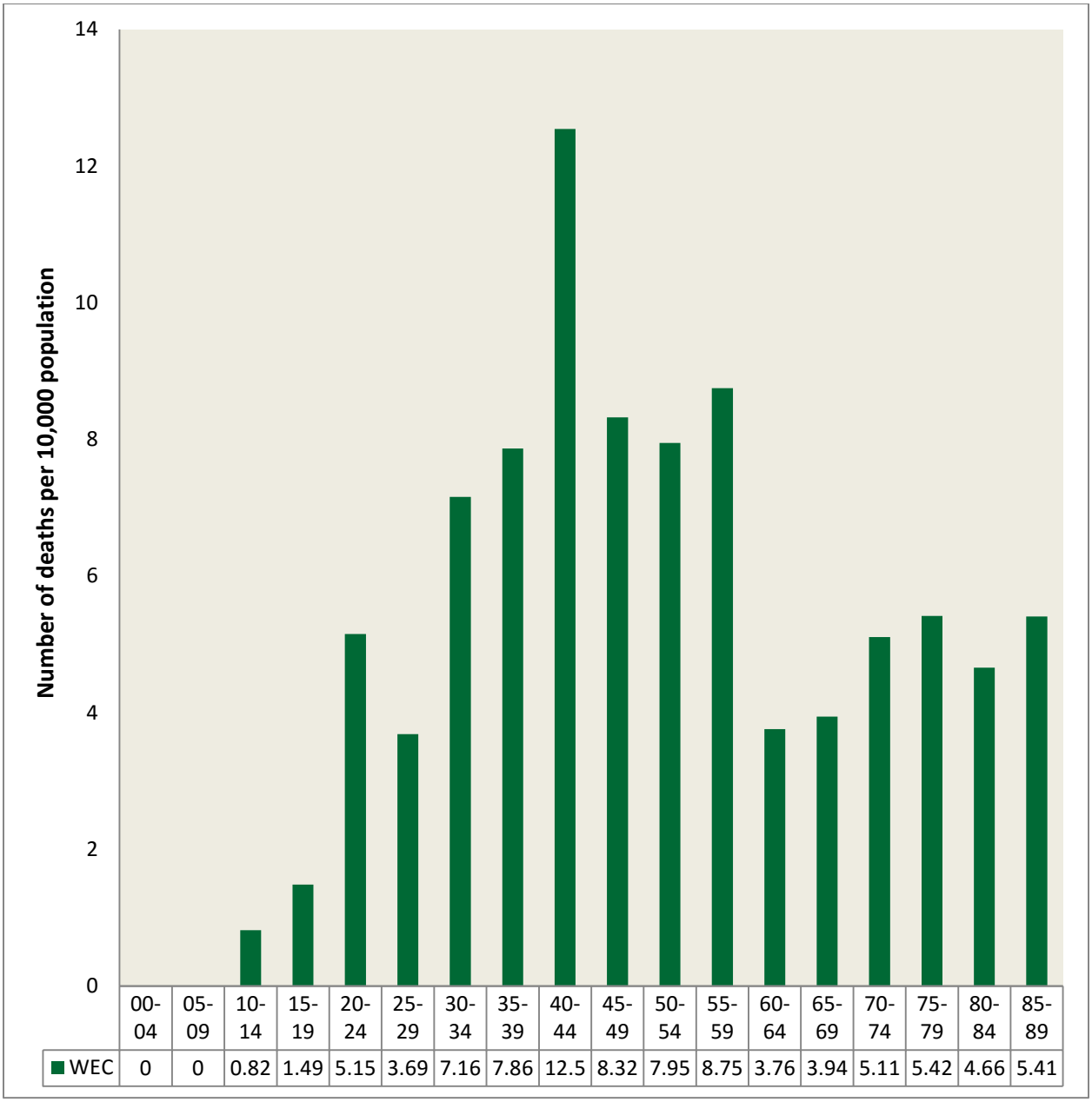


	00-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
WEC	0.47	0	6.54	44.6	26.9	19.4	14.3	11.8	13.6	12.5	12.2	13.3	8.78	7.33	1.46	2.71	2.33	1.8	4.04

Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

The age distribution of the rate of mortalities for self-harm injuries is reported in **Figure 2.5B**. The rate of mortality due to self-harm injuries was greatest among those aged 40-45 years old. In general, middle-aged adults (30-59 years old) had greater rates of self-harm mortality than children and youth (0-19 years old) or seniors (≥65 years old).

Figure 3.4B – Fatal self-harm injuries by age (Windsor-Essex County, combined 5-year period: 2007-2011).



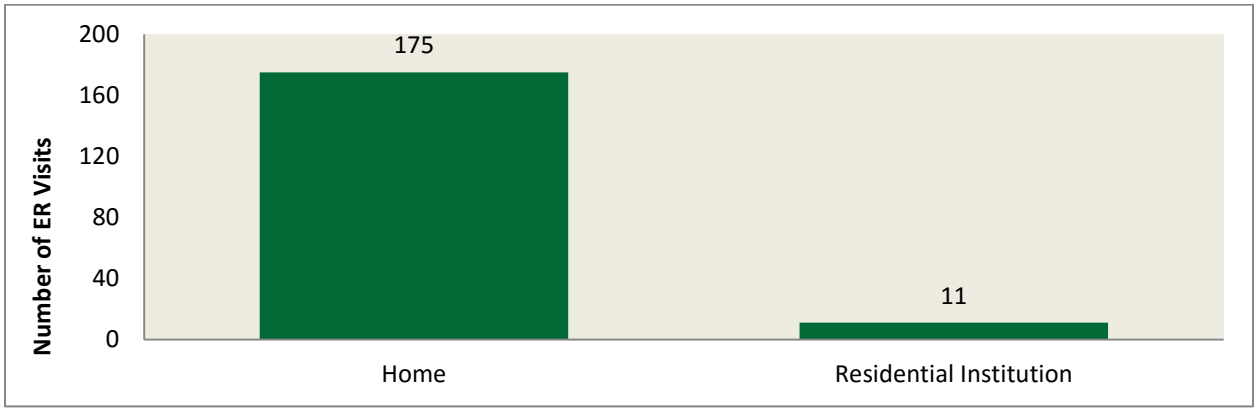
	00-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89
WEC	0	0	0.82	1.49	5.15	3.69	7.16	7.86	12.5	8.32	7.95	8.75	3.76	3.94	5.11	5.42	4.66	5.41

Source: Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Place of Occurrence (ED visits and Mortality)

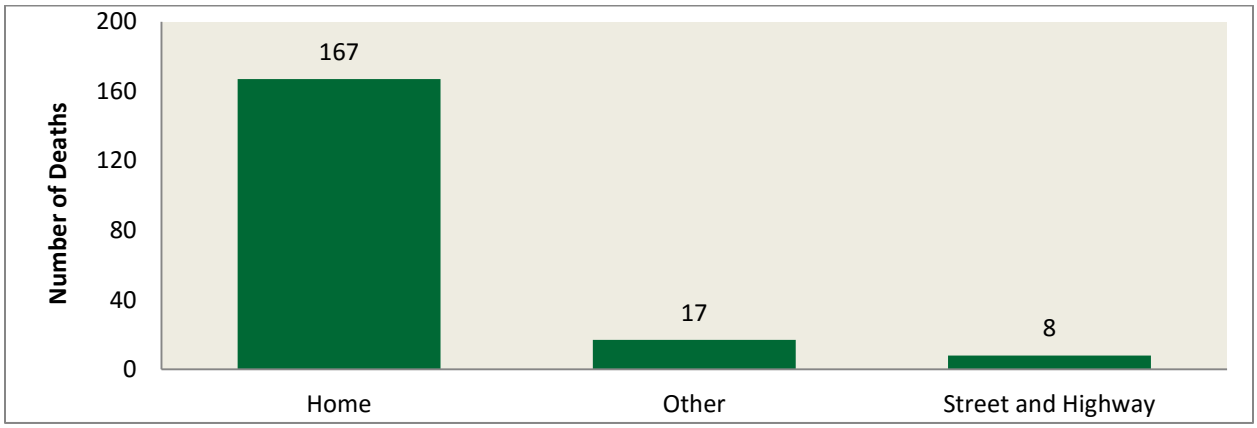
The place of occurrence of self-harm injuries is reported in **Figure 3.5B** for ED visits and **Figure 3.6B** for fatal injuries. The home is the primary place of occurrence of self-harm injuries but in 37% of ED visits the place of occurrence was unknown. In Windsor-Essex County (2007-2011), less than five self-harm mortalities were reported as occurring in trade and service areas, industrial and construction areas, schools and public institutions, and farms.

Figure 3.5B – ED visits for self-harm injuries by place of occurrence (Windsor-Essex County, 2014).



Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

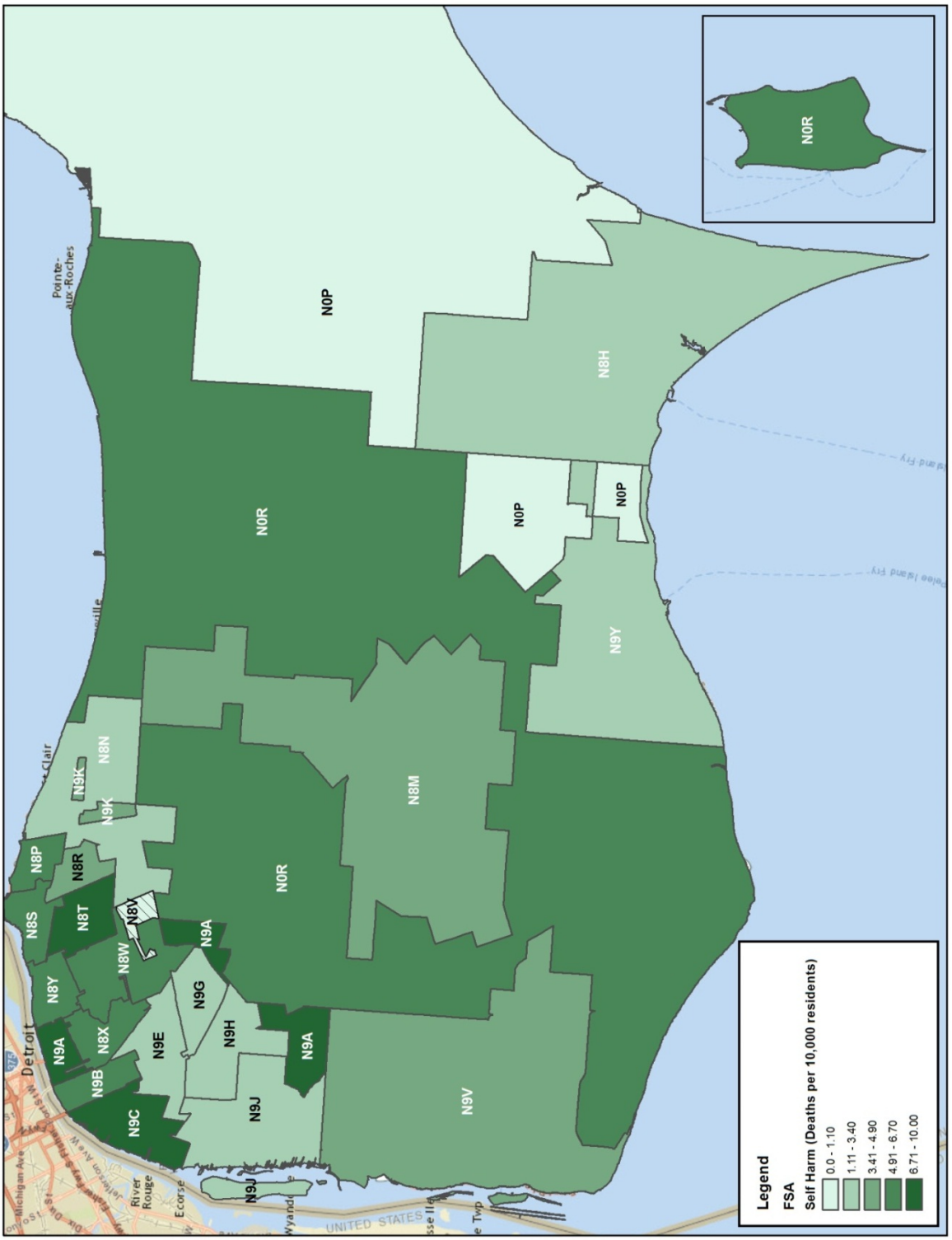
Figure 3.6B - Fatal self-harm injuries by place of occurrence (Windsor-Essex County, combined 5-year period: 2007-2011).



Source: Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Location of Injured Residents (Mortality)

Figure 3.7B – Rate of mortalities due to self-harm by location of injured resident (2007-2011).



Source: Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Key Findings

Overall, the key findings for injuries caused by intentional self-harm are summarized below:

- From 2003 to 2013, the rate of ED visits for self-harm injuries has decreased by 28% in Windsor-Essex County.

- Nearly 80% of ED visits for self-harm were caused by self-poisoning with some type of medication. The top cause of self-harm ED visits is self-poisoning by and exposure to anti-epileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs.

- The top cause of self-harm mortalities by a wide margin was hanging, strangulation and suffocation.

- A greater proportion of females visited the ED for self-harm injury but a much greater proportion of males endure fatal self-harm injuries.

- Self-harm ED visits were greatest among youth (15-19 years old), but self-harm fatalities were greatest among middle-aged adults (40-44 years old).

- Most self-harm fatalities (81%) occur within the injured individual's home.

- The rate of self-harm fatalities is greatest within the Windsor metropolitan area.

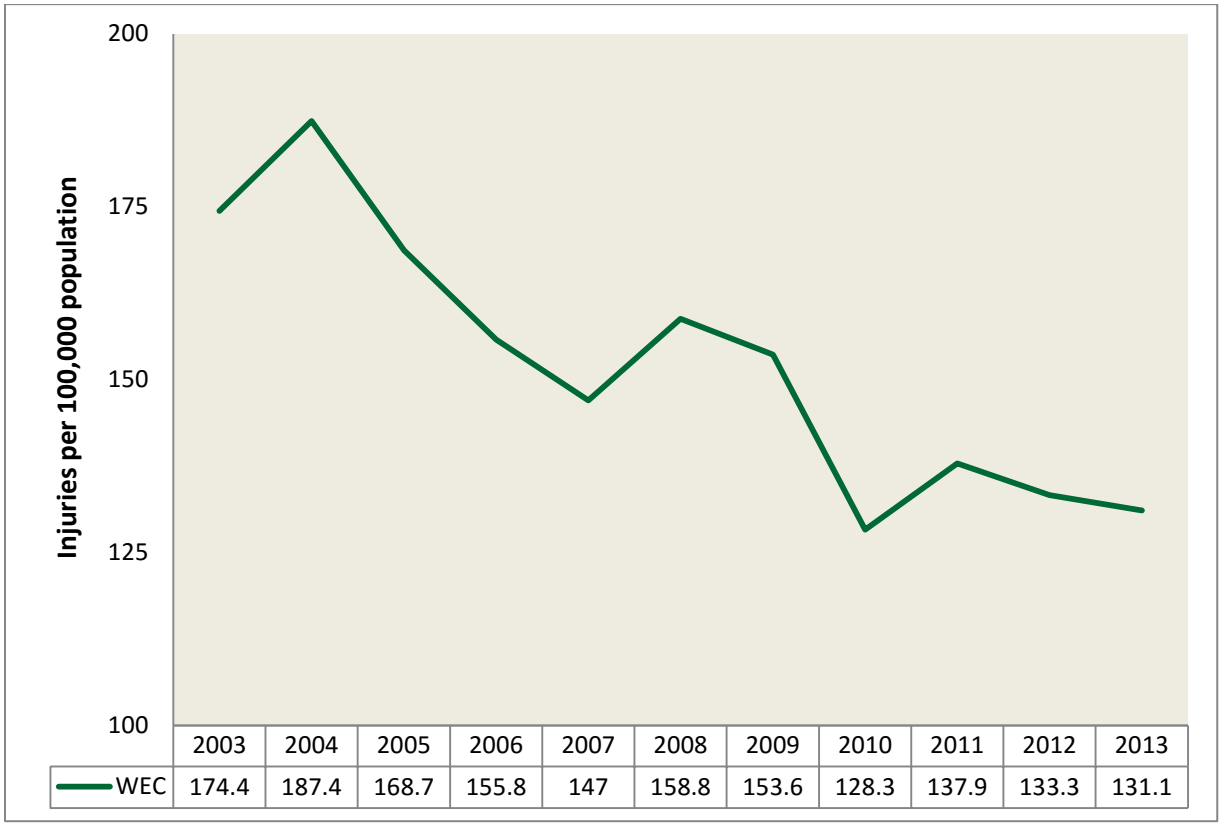
Unintentional Poisoning

Injury resulting from unintentional poisoning is the fifth most burdensome type of injury in Windsor-Essex County. On average, there are 546 visits to the ED and 28 mortalities each year in Windsor-Essex County due to unintentional poisoning. The rate of ED visits for unintentional poisoning has been decreasing; from 2003 to 2013 there has been a 25% in the rate of ED visits for unintentional poisoning (see **Figure 4.1B**).

What are injuries resulting from unintentional poisoning?

Injury Category	ICD10-CA Codes	Definition
Unintentional poisoning	X40-X49	Injury resulting from exposure to a substance, including drugs, chemicals, and noxious gases.

Figure 4.1B – Unadjusted rate of ED visits for unintentional poisoning, Windsor-Essex County (2003-2013).



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
WEC	174.4	187.4	168.7	155.8	147	158.8	153.6	128.3	137.9	133.3	131.1

Source: Public Health Ontario. Snapshots: Windsor-Essex County Health Unit: Emergency department visits for injuries due to unintentional poisoning – crude rate (both sexes) 2003-2013. Toronto, ON: Ontario Agency for Health Protection and Promotion. Accessed: [Oct 26, 2015].

Top 10 Specific Causes (ED visits and Mortality)

There were 599 ED visits for unintentional poisoning in 2014 in Windsor-Essex County. The primary cause of ED visits for unintentional poisoning is accidental poisoning by and exposure to other and unspecified chemicals and noxious substances (includes soaps and detergents, paints and dyes, corrosives/acids, vapours, and poisonous vegetation/foods); this cause accounted for 29% of ED visits for unintentional poisoning (see **Figure 4.1B**). Over 50% of ED visits for unintentional poisoning involved some type of medication.

Table 4.1B - The Top 10 causes of emergency department visits (2014) due to unintentional poisoning in Windsor-Essex County.

Rank	Cause of ED Visit (ICD10 Code)	Poisons	ED visits
1	Accidental poisoning by and exposure to other and unspecified chemicals and noxious substances (X49)	▪ corrosive aromatics, acids and caustic ▪ alkalis ▪ glues and adhesives ▪ metals including fumes and ▪ vapours ▪ paints and dyes ▪ plant foods and fertilizers ▪ poisoning foodstuffs, plants, and NOS ▪ soaps and detergents	171
2	Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances (X44)	▪ agents primarily acting on smooth and skeletal muscles and the respiratory system ▪ anaesthetics (general)(local) ▪ drugs affecting the cardiovascular system or gastrointestinal system ▪ hormones and synthetic substitutes ▪ systemic and haematological agents ▪ systemic antibiotics and other anti-infectives ▪ therapeutic gases ▪ topical preparations ▪ vaccines ▪ water-balance agents and drugs affecting mineral and uric acid metabolism	115
3	Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified (X41)	▪ antidepressants ▪ barbiturates ▪ hydantoin derivatives ▪ iminostilbenes ▪ methaqualone compounds ▪ neuroleptics ▪ psychostimulants ▪ succinimides and oxazolidinediones ▪ tranquillizers	101

Rank	Cause of ED Visit (ICD10 Code)	Poisons	ED visits
4	Accidental poisoning by and exposure to other gases and vapours (X47)	▪ carbon monoxide ▪ lacrimogenic gas [tear gas] ▪ motor (vehicle) exhaust gas ▪ nitrogen oxides ▪ sulfur dioxide ▪ utility gas	71
5	Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified (X42)	▪ cannabis (derivatives) ▪ cocaine ▪ codeine ▪ heroin ▪ lysergide [LSD] ▪ mescaline ▪ methadone ▪ morphine ▪ opium (alkaloids)	53
6	Accidental poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics (X40)	▪ 4-aminophenol derivatives ▪ nonsteroidal anti-inflammatory drugs [NSAID] ▪ pyrazolone derivatives ▪ salicylates	44
7	Accidental poisoning by and exposure to alcohol (X45)	▪ alcohol: · NOS · butyl [1-butanol] · ethyl [ethanol] · isopropyl [2-propanol] · methyl [methanol] · propyl [1-propanol] ▪ fusel oil	20
8	Accidental poisoning by and exposure to organic solvents and halogenated hydrocarbons and their vapours (X46)	▪ benzene and homologues ▪ carbon tetrachloride [tetrachloromethane] ▪ chlorofluorocarbons ▪ petroleum (derivatives)	13
9	Accidental poisoning by and exposure to pesticides (X48)	▪ fumigants ▪ fungicides, herbicides, insecticides, rodenticides ▪ wood preservatives	8
10	Accidental poisoning by and exposure to other drugs acting on the autonomic nervous system (X43)	▪ parasympatholytics [anticholinergics and antimuscarinics] and spasmolytics ▪ parasympathomimetics [cholinergics] ▪ sympatholytics [antiadrenergics] ▪ sympathomimetics [adrenergics]	<5

Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015]. Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Between January 1, 2007 and December 31, 2011, there were 140 mortalities due to unintentional poisoning. In over 90% of cases, some type of medication was the cause of mortality. The primary cause of mortality due to unintentional poisoning was accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances (this includes many varieties of medications such as hormones, antibiotics, cardiovascular drugs, and anaesthetic); 44% of unintentional poisoning mortalities were due to substances found within this category (see **Table 4.2B**). If medications are excluded, the leading cause of unintentional poisoning mortalities would be accidental poisoning by and exposure to alcohol.

Table 4.2B - The Top 10 causes of mortalities (2007-2011) due to unintentional poisoning in Windsor-Essex County.

Rank	Cause of Mortality (ICD10 Code)	Poisons	Deaths
1	Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances (X44)	▪ agents primarily acting on smooth and skeletal muscles and the respiratory system ▪ anaesthetics (general)(local) ▪ drugs affecting the cardiovascular system or gastrointestinal system ▪ hormones and synthetic substitutes ▪ systemic and haematological agents ▪ systemic antibiotics and other anti-infectives ▪ therapeutic gases ▪ topical preparations ▪ vaccines ▪ water-balance agents and drugs affecting mineral and uric acid metabolism	61
2	Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified (X42)	▪ cannabis (derivatives) ▪ cocaine ▪ codeine ▪ heroin ▪ lysergide [LSD] ▪ mescaline ▪ methadone ▪ morphine ▪ opium (alkaloids)	53
3	Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified (X41)	▪ antidepressants ▪ barbiturates ▪ hydantoin derivatives ▪ iminostilbenes ▪ methaqualone compounds ▪ neuroleptics ▪ psychostimulants ▪ succinimides and oxazolidinediones	12

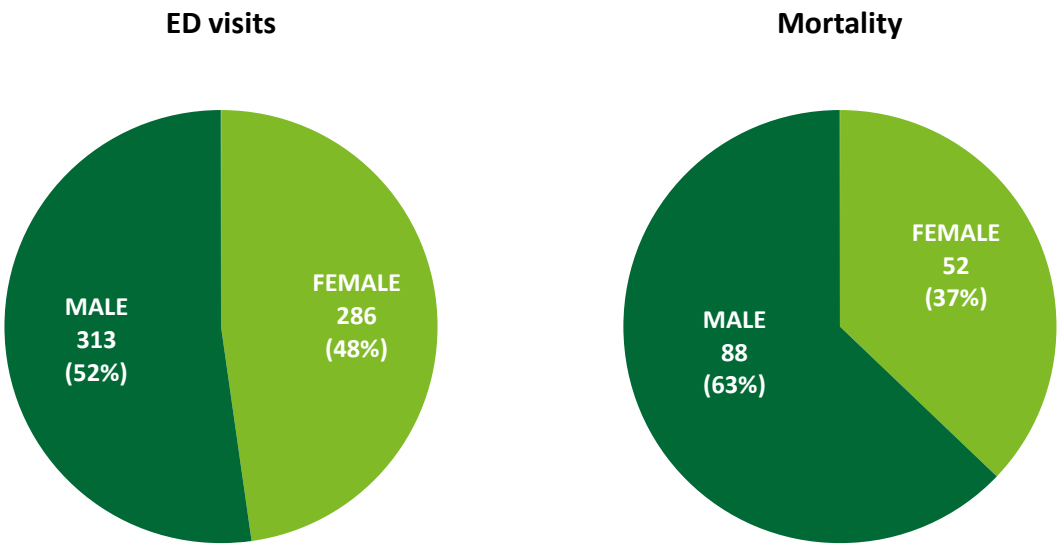
Rank	Cause of Mortality (ICD10 Code)	Poisons	Deaths
		▪ tranquillizers	
4	Accidental poisoning by and exposure to alcohol (X45)	▪ alcohol: · NOS · butyl [1-butanol] · ethyl [ethanol] · isopropyl [2-propanol] · methyl [methanol] · propyl [1-propanol] ▪ fusel oil	10
5	Accidental poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics (X40)	▪ 4-aminophenol derivatives ▪ nonsteroidal anti-inflammatory drugs [NSAID] ▪ pyrazolone derivatives ▪ salicylates	<5
6	Accidental poisoning by and exposure to other gases and vapours (X47)	▪ carbon monoxide ▪ lacrimogenic gas [tear gas] ▪ motor (vehicle) exhaust gas ▪ nitrogen oxides ▪ sulfur dioxide ▪ utility gas	<5

Source: Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Sex Distribution (ED visits and Mortality)

The sex distribution for ED visits and mortalities resulting from unintentional poisoning are reported in **Figure 4.2B**. Slightly more males than females visited the ED for unintentional poisoning. Mortalities caused by unintentional poisoning were disproportionately greater for males; there was a 26% difference between males and females for mortalities.

Figure 4.2B –ED visits (2014) and mortalities (2007-2011) due to unintentional poisoning by sex (Windsor-Essex County).

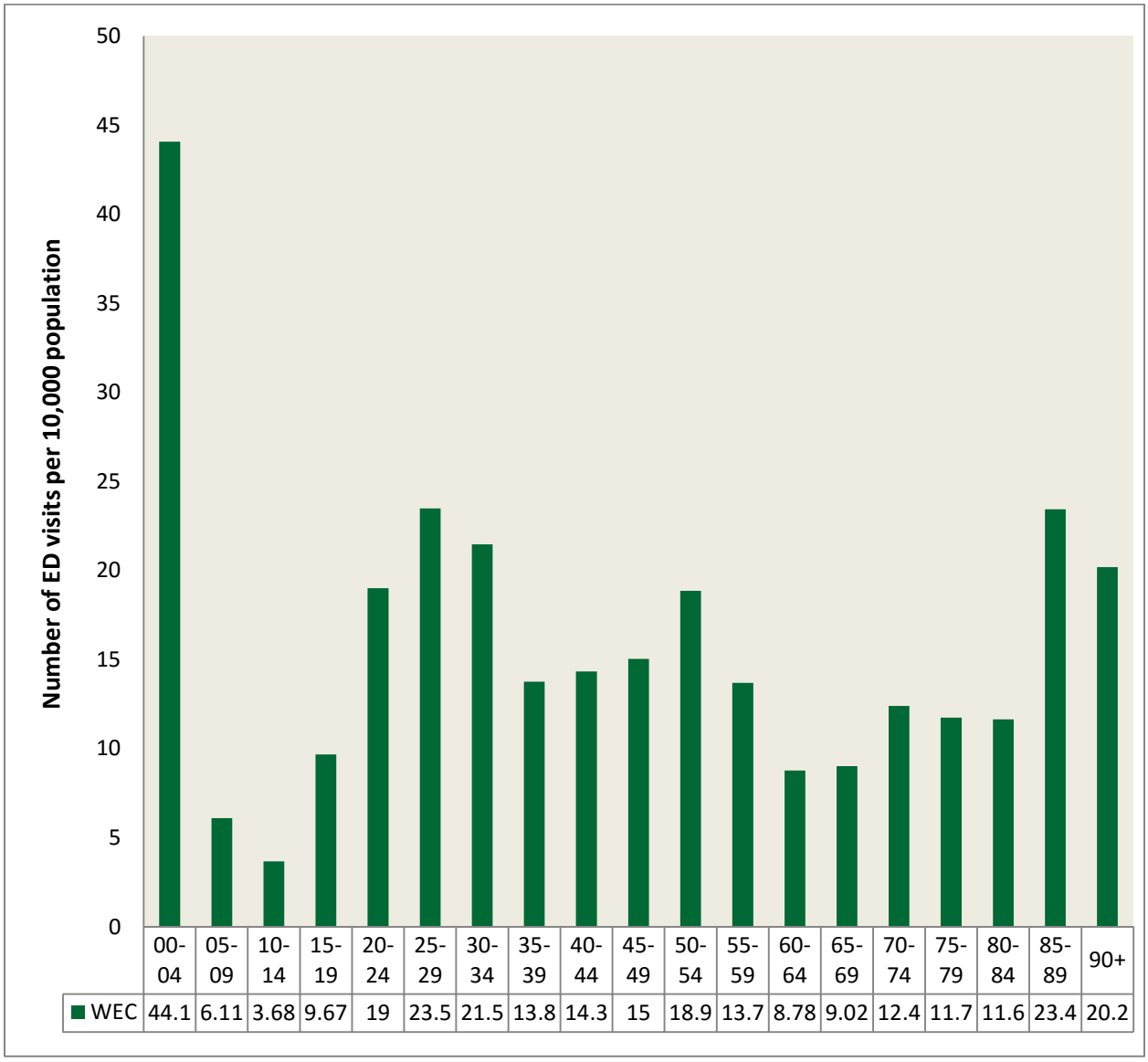


Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015]. Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Age Distribution (ED visits and Mortality)

The age distribution of the rate of ED visits for unintentional poisoning in Windsor-Essex County is reported in **Figure 4.3B**. The rate of ED visits for unintentional poisoning was greatest for young children (0-4 years old). Young adults (25-34 years old) and seniors (85+ years old) had the next highest rate of ED visits for unintentional poisoning. Otherwise, there was little variation by age group with no other notable trends.

Figure 4.3B - ED visits due to unintentional poisoning by age (Windsor-Essex County, 2014).

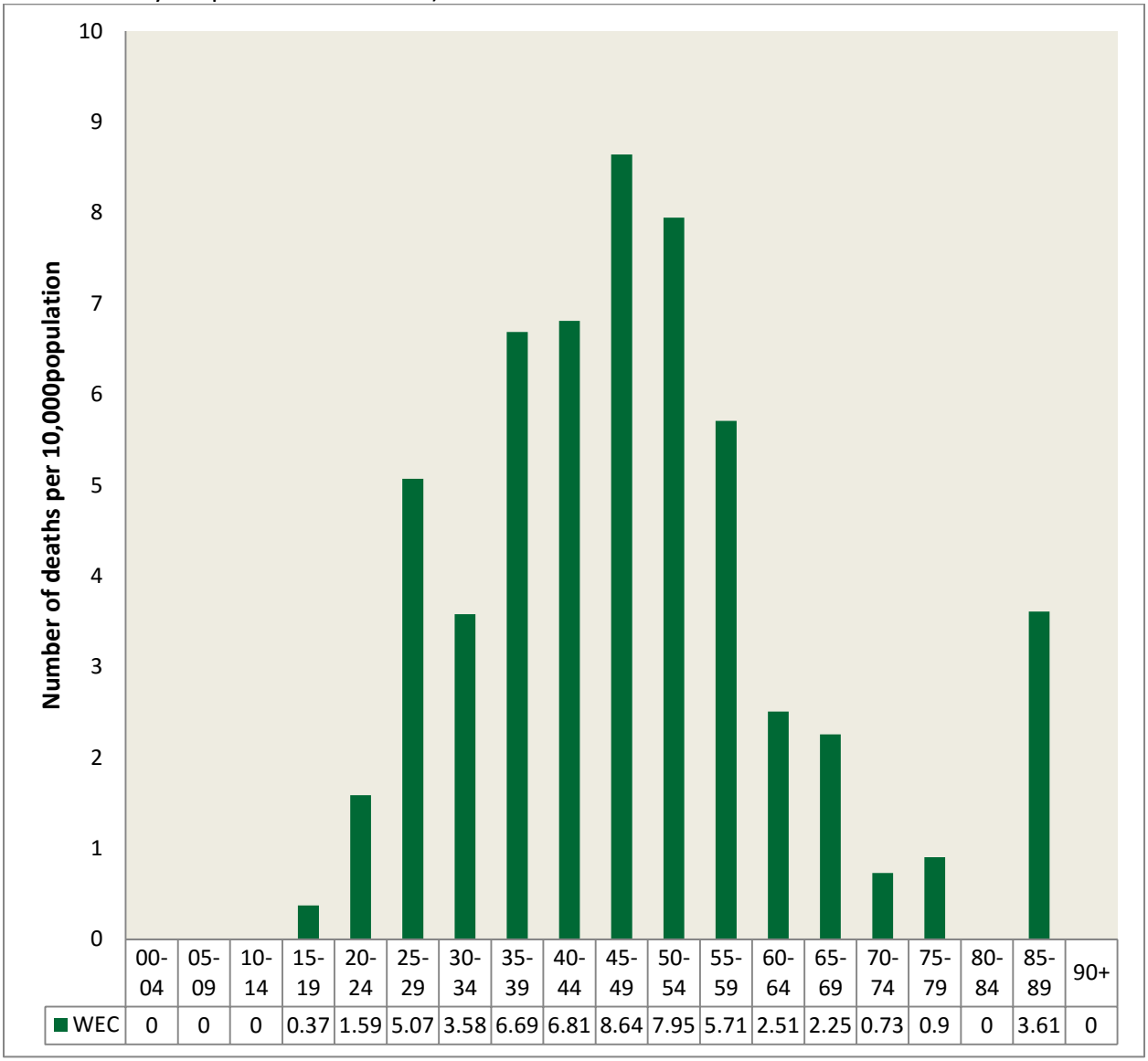


	00-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
WEC	44.1	6.11	3.68	9.67	19	23.5	21.5	13.8	14.3	15	18.9	13.7	8.78	9.02	12.4	11.7	11.6	23.4	20.2

Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

The age distribution of the rate of mortality due to unintentional poisoning in Windsor-Essex County is reported in **Figure 4.4B**. The mortality rate was greatest among middle aged adults, particularly those aged 45-54 years old. Despite the large rate of ER visits for young children (0-4 years old) as previously described, the mortality rate among this age group is very low.

Figure 4.4B – Fatal injuries due to unintentional poisoning by age (Windsor-Essex County, combined 5-year period: 2007-2011).



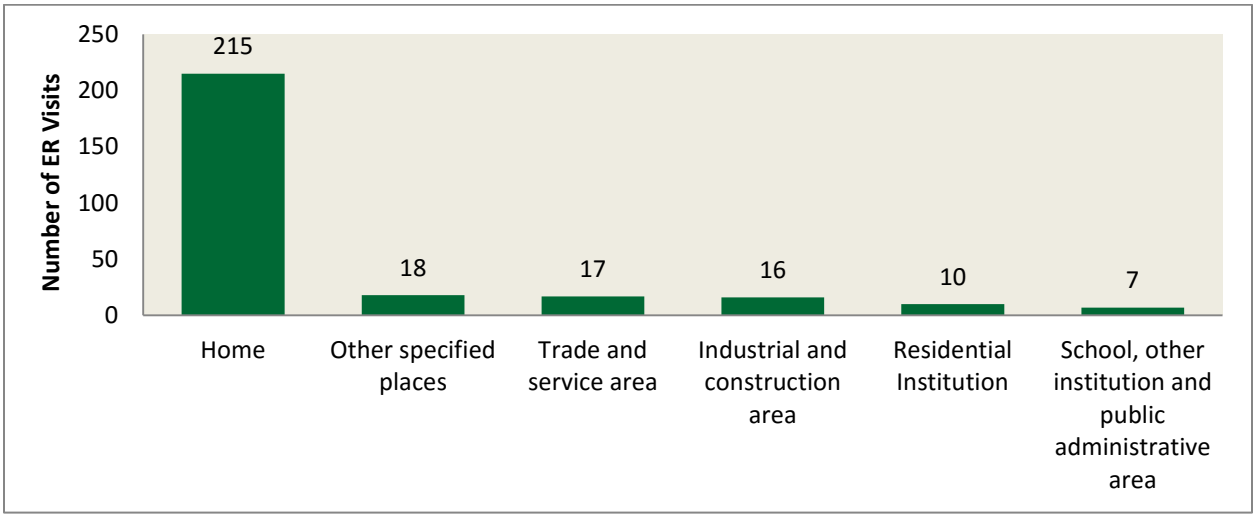
	00-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
WEC	0	0	0	0.37	1.59	5.07	3.58	6.69	6.81	8.64	7.95	5.71	2.51	2.25	0.73	0.9	0	3.61	0

Source: Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Place of Occurrence (ED visits and Mortality)

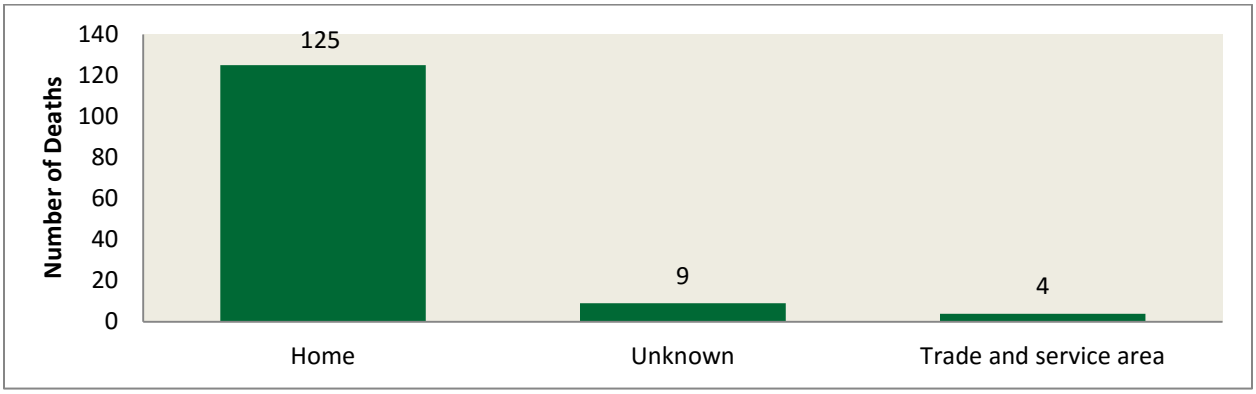
The place of occurrence of ED visits and mortalities caused by unintentional poisoning are reported in **Figure 4.5B** and **Figure 4.6B**, respectively. The home was the primary place of occurrence for unintentional poisoning; 90% of unintentional poisoning mortalities occurred within the individual's home. Other notable places of occurrence for unintentional poisoning include trade and service areas, industrial and construction areas, residential institutions, and schools or other public institutions.

Figure 4.5B - ED visits due to unintentional poisoning by place of occurrence (Windsor-Essex County, 2014).



Source: Ambulatory Emergency External Cause [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

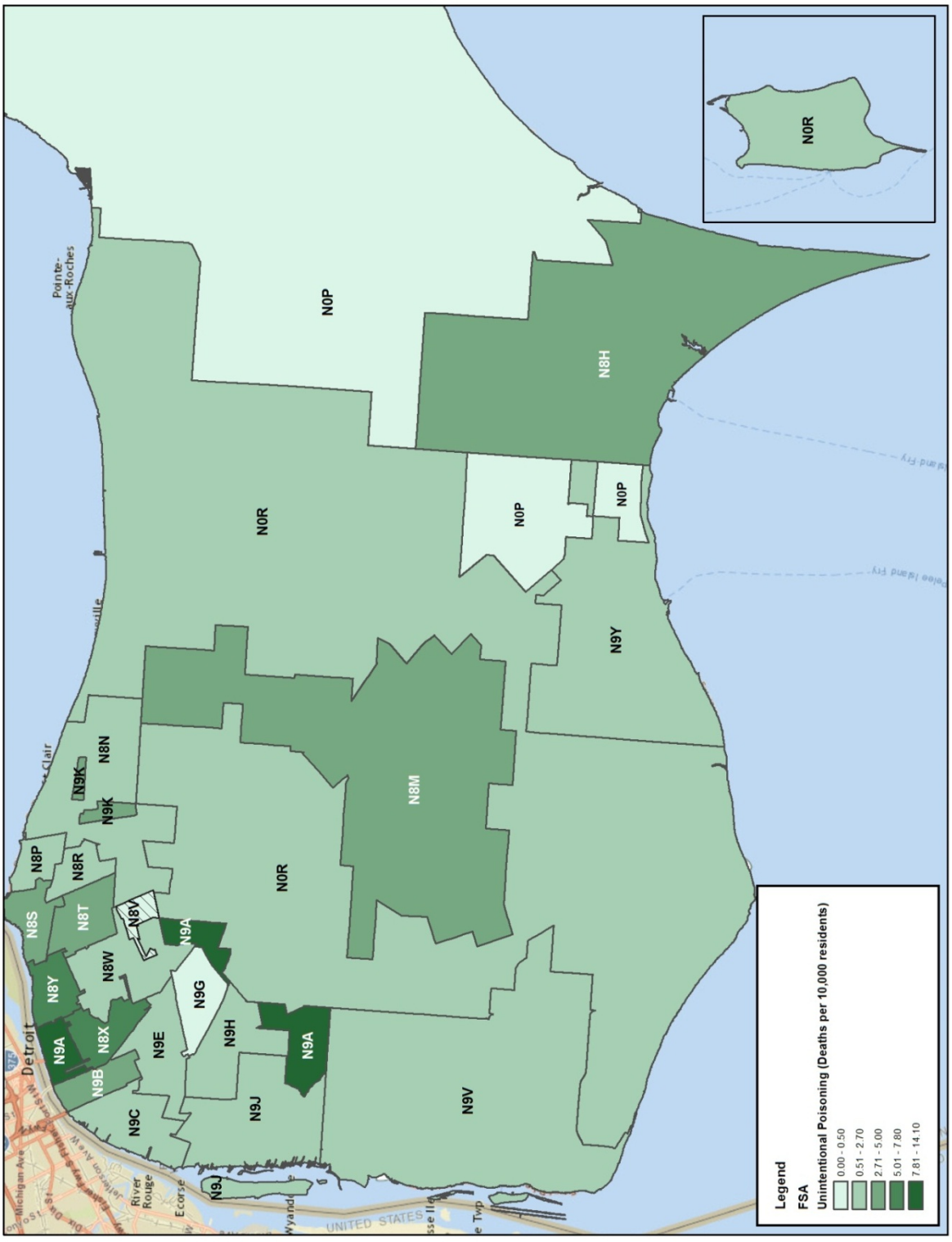
Figure 4.6B - Fatal injuries due to unintentional poisoning by place of occurrence (Windsor-Essex County, combined 5-year period: 2007-2011).



Source: Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Location of Injured Resident (Mortality)

Figure 4.7B – Unintentional poisoning mortality rate by location of injured resident (2007-11).



Source: Death [2007-2011], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: [Oct 22, 2015].

Key Findings

The overall findings for injuries caused by unintentional poisoning are summarized below:

- The overall rate of unintentional poisoning has been decreasing since 2003.
- The top cause of ED visits for unintentional poisoning is exposure to other and unspecified chemicals and noxious substances.
- The top cause of unintentional poisoning mortalities was exposure to other and unspecified drugs, medicaments and biological substances (i.e., medications).
- Over 90% of unintentional poisoning fatalities involved medication.
- Males were more likely to visit the ER and sustain a fatal injury due unintentional poisoning.
- Young children (0-4 years old) were the most likely to visit the ER for unintentional poisoning, but the greatest rate of mortalities occurred among those aged 45-54.
- Nearly 90% of unintentional poisoning mortalities occur within the individual's home.
- The rate of fatalities due to unintentional poisoning was greatest within certain pockets of the Windsor metropolitan area.

Summary

The top five most burdensome injury types in Windsor-Essex County are: falls, motor vehicle collisions, other land transport collisions, self-harm, and unintentional poisoning. This report highlights the various causes and demographic factors associated with these top 5 injuries, including sex, age, and geography.

Key Findings

Fall-Related Injuries:

- Injuries due to falls are increasing and it is primarily affecting the senior population (slightly more females than males are affected).
- Most of these falls are occurring within the home or residential institutions, particularly among residents from the Windsor, Leamington, and Kingsville areas.

Motor Vehicle and Other Land Transport Collisions:

- Motor vehicle collisions and other land transport collisions are decreasing. Of those individuals injured in a collision, 51% occupied a car and 22% occupied a pedal cycle.
- ED visits were greatest among adolescents and young adults (15-24 years old), and males were much more likely to be involved in a fatal collision.
- Transport collision fatalities were greatest among residents from the Amherstburg and Leamington areas.

Intentional Self-Harm:

- Injuries due to intentional self-harm are decreasing; there has been a 28% reduction in the rate of ED visits for injuries caused by self-harm from 2003 to 2013.
- The dynamic of self-harm injuries is complex. Females and teens are more likely to visit the ED for self-harm injuries, but males and middle-aged adults (40-44 years old) are more likely to sustain fatal injuries.
- Nearly all self-harm injuries and fatalities occur within the home of the injured individual, and fatalities are greatest among residents in the Windsor metropolitan area.

Unintentional Poisoning:

- Injuries due to unintentional poisoning are decreasing.
- Young children (0-4 years old) make up the bulk of ED visits for this injury, but fatalities are greatest among middle-aged males (45-54 years old).
- Over 90% of unintentional poisoning fatalities involved medication. The rate of fatalities was greatest among residents of the Windsor metropolitan area.

Target Populations

The Ontario Public Health Standards recommends a balance of universal and targeted programs as a means to improving public health. Target populations are groups of individuals with common identifiable characteristics who are at the greatest risk and would benefit the most from public health interventions. The target populations described in **Table 5.1B** are based on the quantitative information presented in this report (i.e., those groups with the greatest incidence of injury as elucidated by rates of ED visits and mortality).

Table 5.1B. Target Populations in Windsor-Essex County for Injury Prevention Strategies.

Injury Category	Primary Causes	Sex	Age Groups	Place of Occurrence	Geography
Falls	Slip, trip, stumble, or other falls on the same level	Females	>65 years old	Home, Residential Institutions	Windsor, Kingsville, Leamington
Transport Collisions	Car occupant injured in collision; pedal cyclist injured in collision	Males	15-24 years old	N/A	Kingsville, Leamington
Self-Harm	Self-poisoning by medication	Females	15-24 years old	Home	Windsor
	Hanging, strangulation, or suffocation	Males	40-44 years old	Home	Windsor
Unintentional Poisoning	Accidental exposure to chemicals	Males & Females	0-4 years old	Home	Windsor, LaSalle, Tecumseh
	Accidental over-dosing on medications	Males	45-54 years old	Home	Windsor, LaSalle, Tecumseh

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3. Parachute. (2015). The Cost of Injury in Canada. Parachute: Toronto, ON. http://www.parachutecanada.org/downloads/research/Cost_of_Injury-2015.pdf

Appendix A

Supplementary Table 1. Number of emergency department visits for the top fifteen causes of injuries in Windsor-Essex County, 2003-2013.

Injury	ICD10	Caught, crushed, jammed, or pinched in or between objects	Struck by thrown, projected or falling object	Foreign body or object entering through skin (excludes knife, sword, dagger, needle, power tools, sharp glass)	Striking against or struck by sports equipment	Contact with knife, sword or dagger	Exposure to other and unspecificied inanimate mechanical forces	Assault by bodily force (includes unarmed brawl or fight)	Car occupant injured in collision with car, pick-up truck, or van	Fall on and from stairs and steps	Other fall on same level (bumping against object, from or off toilet, or not otherwise stated)	Foreign body entering into or through eye or natural orifice (excludes obstruction of respiratory tract)	Unspecific fall (accidental fall that is not otherwise stated)	Striking against or struck by other object	Overexertion and strenuous or repetitive movements (includes lifting heavy objects)	Fall on same level from slipping, tripping, and stumbling (excludes snow or ice)
		W23	W20	W45	W21	W26	W49	Y04	V43	W10	W18	W44	W19	W22	X50	W01
2003		742	590	602	740	862	784	920	1,355	1,095	799	1,419	1,363	2,192	2,533	3,063
2004		742	669	539	623	873	784	920	1,180	1,079	1,203	1,498	1,064	2,295	2,619	2,811
2005		667	602	603	683	783	858	930	1,125	1,098	1,165	1,356	1,030	2,131	2,410	2,936
2006		544	576	583	687	799	795	987	1,108	989	1,143	1,304	981	1,833	2,122	2,838
2007		544	526	676	582	680	834	889	916	997	1,272	1,244	1,285	1,711	2,058	2,878
2008		484	484	644	559	682	640	917	836	1,032	1,083	1,064	1,345	1,793	1,926	3,408
2009		417	517	456	608	626	661	889	767	1,133	902	981	2,160	1,607	1,663	2,699
2010		500	584	653	609	629	632	865	881	1,185	1,129	1,014	2,200	1,814	1,889	2,766
2011		484	556	617	516	625	603	826	848	1,159	1,228	1,028	2,083	1,783	1,788	2,695
2012		512	559	627	656	649	713	855	947	1,105	1,367	1,049	2,084	1,753	1,936	2,669
2013		503	546	607	645	638	685	791	955	1,161	1,631	1,101	2,021	1,623	2,146	2,694
Mean		**558**	**564**	**601**	**628**	**713**	**726**	**890**	**993**	**1,094**	**1,175**	**1,187**	**1,601**	**1,867**	**2,099**	**2,860**

Supplementary Table 2. Number of hospitalizations for the top fifteen causes of injuries in Windsor-Essex County, 2003-2013.

Injury	ICD10	Inhalation of gastric contents (includes asphyxia by vomit)	Fall involving chair	Falls involving wheelchairs and other types of walking devices (including motorized scooters)	Fall on and from ladder	Fall on same level involving ice and snow	Other fall from one level to another	Assault by bodily force (includes unarmed brawl or fight)	Car occupant injured in collision with car, pick-up truck, or van	Fall involving bed	Overexertion and strenuous or repetitive movements (includes lifting heavy objects)	Intentional self-poisoning by and exposure to antiepileptic, sedativehypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified	Fall on and from stairs and steps	Other fall on same level (bumping against object, from or off toilet, or not otherwise stated)	Unspecific fall (accidental fall that is not otherwise stated)	Fall on same level from slipping, tripping, and stumbling (excludes snow or ice)
		W78	W07	W05	W11	W00	W17	Y04	V43	W06	X50	X61	W10	W18	W19	W01
2003		<5	23	22	46	42	49	37	76	50	65	164	119	222	198	482
2004		<5	30	22	36	47	52	36	62	71	75	120	115	229	198	389
2005		<5	35	35	38	55	48	39	65	71	57	93	101	215	154	429
2006		0	17	18	27	21	40	59	59	57	66	80	89	226	144	422
2007		5	23	29	33	39	40	44	48	51	43	49	95	237	208	431
2008		<5	26	19	38	48	28	40	37	53	53	41	97	210	228	461
2009		6	24	34	43	42	38	54	35	57	62	39	111	184	275	424
2010		<5	32	34	43	35	44	32	36	47	73	58	113	214	284	401
2011		<5	39	32	29	36	38	44	34	60	59	44	117	217	362	372
2012		13	23	30	39	10	21	24	39	56	49	45	106	239	344	363
2013		32	32	41	34	37	31	31	33	59	56	64	119	230	399	388
Mean		7	28	29	37	37	39	40	48	57	60	72	107	220	254	415

Windsor-Essex County
Health Unit

Epidemiology, Planning,
Evaluation, and Quality Dept.

1005 Ouellette Avenue
Windsor, Ontario N9A 4J8
www.wechu.org
519-258-2146

WINDSOR-ESSEX COUNTY
HEALTH unit
Bureau de santé de Windsor-comté d'Essex