2006 Report

Injury Deaths in Ontario

(includes 2003–2004 data)

Ontario Trauma Registry

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- coordinate and promote the development and maintenance of national health information standards;
- develop and manage health databases and registries;
- conduct analysis and special studies and participate in research;
- publish reports and disseminate health information; and
- coordinate and conduct education sessions and conferences.

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Executive Summary

The source of data for this report is the Ontario Trauma Registry (OTR) Death Data Set (DDS). This data set contains information on all injury deaths in Ontario, which is provided by the Office of the Chief Coroner of Ontario. The inclusion of an injury or trauma case is based on whether the case met the OTR definition of trauma, "injury resulting from the transfer of energy," applied clinically.

Provincial Analyses

Five-Year Trends

In 2003–2004, there were 3,856 injury deaths in Ontario. This represents an increase of 7% since 1999–2000 and an average annual increase of 1.4%. The age-standardized injury death rate in 2003–2004 was 2.9 deaths per 10,000 population compared to 3.0 per 10,000 in 1999–2000. This represents a five-year reduction of 3.3% and an average annual decrease of 0.7%.

Demographics

In 2003–2004, the mean age of injury deaths was 57 years. Males accounted for approximately two-thirds (64%, n = 2,472) of all injury deaths.

Persons 65 years of age and over constituted the largest percentage of injury deaths (43%, n = 1,650), followed by those between the ages of 35 and 64 years (35%, n = 1,338). Persons aged 20 to 34 years accounted for 14% (n = 567), and those under the age of 20 years accounted for 8% (n = 301).

Causes of Injury Death

Among injury deaths in 2003–2004, the leading causes of injury were unintentional falls (36%, n = 1,401), suicide and self-inflicted injury (excluding poisoning) (22%, n = 865) and motor vehicle collisions (22%, n = 860). Other causes of injury death included homicide and injury purposely inflicted (excluding poisoning) (4%, n = 168), drowning (4%, n = 135) and fire and flames (2%, n = 78).

Injury Deaths Due to Falling

In 2003–2004, unintentional falls accounted for 36% (n = 1,401) of all injury deaths in the province. The majority (85%, n = 1,187) of these deaths occurred among persons aged 65 years of age and over. Females represented 54% (n = 750) of all fall-related deaths.

Injury Deaths Due to Motor Vehicle Collisions

In 2003–2004, 22% (n = 860) of all injury-related deaths in Ontario were attributed to motor vehicle collisions. Males comprised more than two-thirds (67%, n = 575) of these deaths.

Of the motor vehicle collision deaths, nearly two-thirds (64%, n = 408) were drivers and over one-third (36%, n = 229) were passengers. The remainder (26%, n = 223) included motorcyclists, pedestrians, ATV and snowmobile riders.

Seatbelts were known to be present in the vehicle for 388 motor vehicle occupant deaths. Among these cases, seatbelts were used 61% (n = 238) of the time.

Drugs and/or alcohol were involved in nearly one-quarter (24%, n = 210) of all injury deaths due to motor vehicle collision.

Injury Deaths Due to Suicide

Deaths due to suicide (excluding poisoning) accounted for 22% (n = 865) of all injury deaths in Ontario in 2003–2004. Persons between the ages of 35 and 64 years comprised over one-half (57%, n= 490) of these deaths. Firearms were used in 17% (n = 145) of suicide and self-inflicted injury deaths (excluding poisoning) and 9% (n = 79) involved drugs and/or alcohol.

Firearm-Related Deaths

There were 209 firearm related deaths in 2003–2004, representing 5% of injury deaths in Ontario. Nearly all (93%, n = 195) of these deaths were among males. Of all firearm-related injury deaths, 69% (n = 145) were related to suicide and 29% (n = 60) were related to homicide. The remaining deaths were unintentional injuries or injuries where the intent was undetermined.

Work-Related Deaths

In 2003–2004, there were 105 work-related deaths in the province. The most commonly reported specific work environments were inside factory/plant/warehouse work (18%, n = 19), and commercial driver (18%, n = 19), farming (15%, n = 16) and construction (12%, n = 13). Nearly all (93%, n = 98) of these cases were male, and the mean age was 47 years.

Regional Analyses

Regional analyses were based on where the injury occurred rather than the person's place of residence, and reflect the seven Ontario health planning regions as defined by the Ministry of Health and Long-Term Care. From 1999–2000 to 2003–2004, the Northern region of Ontario consistently had the highest age-standardized injury death rate compared to the other regions in Ontario (5.3 per 10,000 population in 2003–2004). In 2003–2004, Toronto region experienced the lowest age-standardized injury death rate (2.5 per 10,000 population).

Ontario Trauma Registry 2006 Report: Injury Deaths in Ontario (includes 2003–2004 data)

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1. Introduction

A. Purpose of Report

The purpose of this report is to provide a descriptive analysis of injury-related deaths in Ontario. The data source for this report is the Ontario Trauma Registry Death Data Set (OTR DDS), which contains information from the Office of the Chief Coroner of Ontario as of November 2006.

B. About the Ontario Trauma Registry (OTR)

i) Goal

The goal of the Ontario Trauma Registry (OTR) is to facilitate the reduction of injury hospitalizations and deaths in the province of Ontario by identifying, describing and quantifying trauma in order to:

1. Increase awareness of injury as a public health problem in Ontario;
2. Assist injury prevention and treatment programs; and
3. Support injury-related analysis and research.

ii) History

The OTR, funded by the Ontario Ministry of Health and Long-Term Care, was established in May 1992. A multidisciplinary advisory committee provides guidance to the OTR. The Trauma Registry Advisory Committee (TRAC) includes representatives from the Ontario Ministry of Health and Long-Term Care, Ministry of Labour, Ministry of Transportation, CIHI, epidemiologists, trauma care providers, the Office of the Chief Coroner of Ontario and the Trauma Association of Canada. The current structure and implementation of the OTR is based on the data elements, data collection procedures, report formats and management procedures determined by TRAC.

The primary users of the OTR include the eleven lead trauma hospitals in Ontario, the members of TRAC and Area Emergency Health Services (EHS) Committees. The Area EHS Committees are part of regional planning networks composed of committees at the provincial, regional and local levels involving health care planners, providers and consumers in emergency health initiatives.

iii) Structure

For injury prevention programs to be effective, data are needed to clearly define the nature and scope of injury in the province. The OTR consists of three major sources of data as listed on the following page. Standard and ad hoc reports from these data sets detail demographic information, cause and nature of injury hospitalizations and deaths both provincially and regionally. This information is used by policy makers, planners, researchers and injury prevention specialists to develop and monitor injury prevention programs, and to improve trauma patient care.

The Ontario Trauma Registry is composed of three data sets:

1. The **Minimal Data Set** (MDS) contains demographic, diagnostic and procedural information on all acute care hospitalizations due to injury in acute care facilities in Ontario. These admissions are selected from the Discharge Abstract Database at CIHI and downloaded to the Registry's data processing system. As of 2005–2006 (2003–2004 data), inclusion criteria are based on specific External Cause of Injury Codes within the International Classification of Disease, 10th revision. Inclusions in the OTR MDS for fiscal year 1994 to 2002 are based on specific External Cause of Injury Codes within the International Classification of Disease, 9th revision (ICD-9) (E Codes).

   Examples of External Cause of Injury Codes that are included in the definition of trauma are motor vehicle collisions, including those involving pedestrians, motorcycles and bicycles, and falls, drownings and burns. External Cause of Injury Codes that are excluded are poisonings, adverse effects and complications. Appendix B—Trauma Definition: External Cause of Injury Code Inclusions and Exclusions lists the External Cause of Injury Codes that are included and excluded from the definition of trauma used for OTR MDS.

2. The **Comprehensive Data Set (CDS)** consists of detailed information on patients hospitalized with major trauma in 11 participating trauma facilities in the province. These lead trauma hospitals have been funded by the Ministry of Health and Long-Term Care for hardware, software and dedicated trauma staff including a Medical Director, Trauma Coordinator, Data Analyst and Administrative Assistant. The definition of major trauma in the OTR CDS is based on the Injury Severity Score (ISS), an international scoring system created to calculate the severity of injury, and an External Cause of Injury Code that falls within the OTR definition of trauma.

   Specialized trauma software (COLLECTOR and TRI-CODE from Digital Innovation Inc. and Tri-Analytics, Inc.) is used to collect and analyze data on approximately 3,600 cases annually. This software has been customized for the province of Ontario with input from participating hospitals and TRAC. Detailed data are collected including demographics, pre-hospital and hospital care, and patient outcomes including a 6-month follow up interview. Data are electronically transmitted to the OTR on a monthly basis.

3. The **Death Data Set (DDS)**, the data source for this report, is described in detail in the next chapter.

2. Methodological Notes

A. Data Source

The data source for this report is the **Ontario Trauma Registry Death Data Set (OTR DDS)**. Data comprising the OTR DDS are provided by the Office of the Chief Coroner of Ontario. The OTR DDS contains information on deaths in the province due to injury, including demographics, cause of death and factors contributing to death such as alcohol use. Reporting on all injury deaths rather than only in-hospital deaths provides a more complete picture of trauma in the province. Information contained in the database at the Office of the Chief Coroner is important to injury prevention programs because a large percentage of injured persons die before admission to hospital. Therefore, these persons are not captured in hospital-based statistics.

B. Definition of Trauma for Injury Deaths

As directed by the Ontario Trauma Patient Registry Task Force Report, the definition of trauma used by the OTR is injury resulting from the transfer of energy. The External Cause of Injury Codes are used to define trauma hospitalizations in the Minimal and Comprehensive Data Sets of the OTR. These codes can be found in Appendix B—Trauma Definition: External Cause of Injury Code Inclusions and Exclusions. However, the death data provided by the Office of the Chief Coroner does not include External Cause of Injury Codes. The Office of the Chief Coroner categorizes deaths using a classification system including death types, death factors, environments and involvements. These components describe the cause of death and the events surrounding the death.

To take advantage of the information documented by the Coroner's Office and to allow comparability with other sources of injury information, the OTR has developed a system to map the death type, death factor and environment components of the classification system used by the Office of the Chief Coroner to ICD-10-CA External Cause Code categories. This allows standardized reporting across the data sets of the OTR and comparisons to other sources of data. However, trauma deaths cannot always be mapped to specific External Cause Codes because of the differences in the ICD and Coroner's coding systems. A summary of the mapping methodology used is found in Appendix C—Trauma Definition: Mapping Methodology.

i) Selection Criteria

The electronic file provided to the OTR by the Integrated Justice Information Technology Division includes:

- All deaths documented with a death type of unintentional, homicide, suicide and undetermined; and
- Deaths documented with a death type of natural with documentation indicating a fall in an institution.

ii) The Classification System of the Office of the Chief Coroner

The following are the components of the classification system used by the Office of the Chief Coroner to categorize deaths.

Death Type

Death type is the classification of the intent of the action, force, instrument or disease that caused death. There are six death types defined by the Office of the Chief Coroner including unintentional, homicide, suicide, natural, undetermined and archaeological/ skeletal/animal remains. It is important to note that suicide deaths resulting from poisoning are not included in the definition of trauma and therefore are generally not included in other trauma reports provided by the OTR. However, Appendix E**,** Tables 10 and 11 report all suicide deaths (including poisoning) and have been included in this report to provide a more complete representation of suicide deaths in the province.

Death Factors

A death factor is an action, force, instrument or disease occurring in an environment, which leads directly toward death. For each death, the Coroner codes a primary death factor that identifies the most significant circumstances or events leading to death. There are over 80 death factors used by the Office of the Chief Coroner to describe the cause of death. TRAC and lead/trauma hospital staff reviewed these death factors in 1992. This group identified 39 death factors that parallel the definition of trauma used in the Minimal Data Set and that are used to define trauma in this report. A list of these death factors is found in Appendix D—Trauma Definition: Death Factors.

Motor vehicle crashes, shooting and drowning are examples of death factors that meet the definition of trauma. Examples of excluded death factors include alcohol poisoning and intestinal obstruction.

Environments

An environment is a combination of the location and the activity of the deceased when an action, force, instrument or disease was applied which led toward death. Up to four environments may be documented for each death. Over 80 environments are defined by the Office of the Chief Coroner. Environments are divided into the following categories: occupational, recreation and sporting, institutions (patients and inmates), general living and traveling. Examples of environments are hunting, snowmobiling, bicycles, drivers, passengers and pedestrians.

Involvements

An involvement is an activity or circumstance related to the deceased that did not directly lead to death but which may be of significance or a contributing factor. Involvements are generally combinations of certain environments, institutions, overdose agents or death factors that are of particular interest to the Coroner's office. Examples of involvements are alcohol and drug use, a fall in a nursing home or helmet use. The Office of the Chief Coroner codes more than 60 involvements; up to 3 can be coded per case.

C. Reporting Guidelines

This report:

- Is created by fiscal year and contains information on all injury deaths occurring in fiscal year 2003–2004 and trend analysis for injury deaths occurring between 1999–2000 through 2003–2004;
- Is created using data downloaded from the Office of the Chief Coroner of Ontario as of November 2006. Historical data dating back to 1987 have also been updated as of November 2006.
- Uses the population of the area in which the injury occurred for the denominator for rate calculations;
- Generally presents causes of death by External Cause of Injury Codes categories, although death factors are reported in Appendix E, Table 3;
- Has changed all references to "accident" reported by the ICD or Office of the Chief Coroner definitions to "incident" or "collision" to reinforce injury prevention efforts; "accidental" (as in accidental death type) has been changed to "unintentional";
- Uses historical data which may have been updated, therefore data may not always reconcile with data presented in previous reports;
- May present percentages that do not sum to 100% because of rounding;
- Does not include deaths with sex not documented in reports based on sex (e.g. single year of age by sex);
- Does not include suicide deaths resulting from poisoning as determined by the definition of trauma except in Tables 10 and 11 in Appendix E;
- Injury death rates are per 10,000 and are age standardized using 1991 population estimates from Statistics Canada;
- The number of injury deaths reported as dead on arrival (DOA) at hospital emergency departments since 2001 were lower than previous years. Discussions with the Office of the Chief Coroner revealed that this could be the result of several factors including an increased number of attempts being made to resuscitate patients who present at hospital emergency departments without vital signs and changes in coding practices; and
- Deaths due to unintentional falls that are not investigated by the Office of the Chief Coroner are not included in this report. Therefore, unintentional falls may be under reported in this report. In hospital deaths due to unintentional falls for the data year 2003–2004 may be found in the OTR Injury Hospitalizations 2005 Highlight Report.

3. Provincial Analysis

A. Trend Analysis

i) 1994–1995 Through 2003–2004

Between 1994–1995 and 2003–2004, the number of injury-related deaths decreased by 6%, from 4,120 to 3,856. This represents an average annual decrease of 0.6% over the past 10 years.

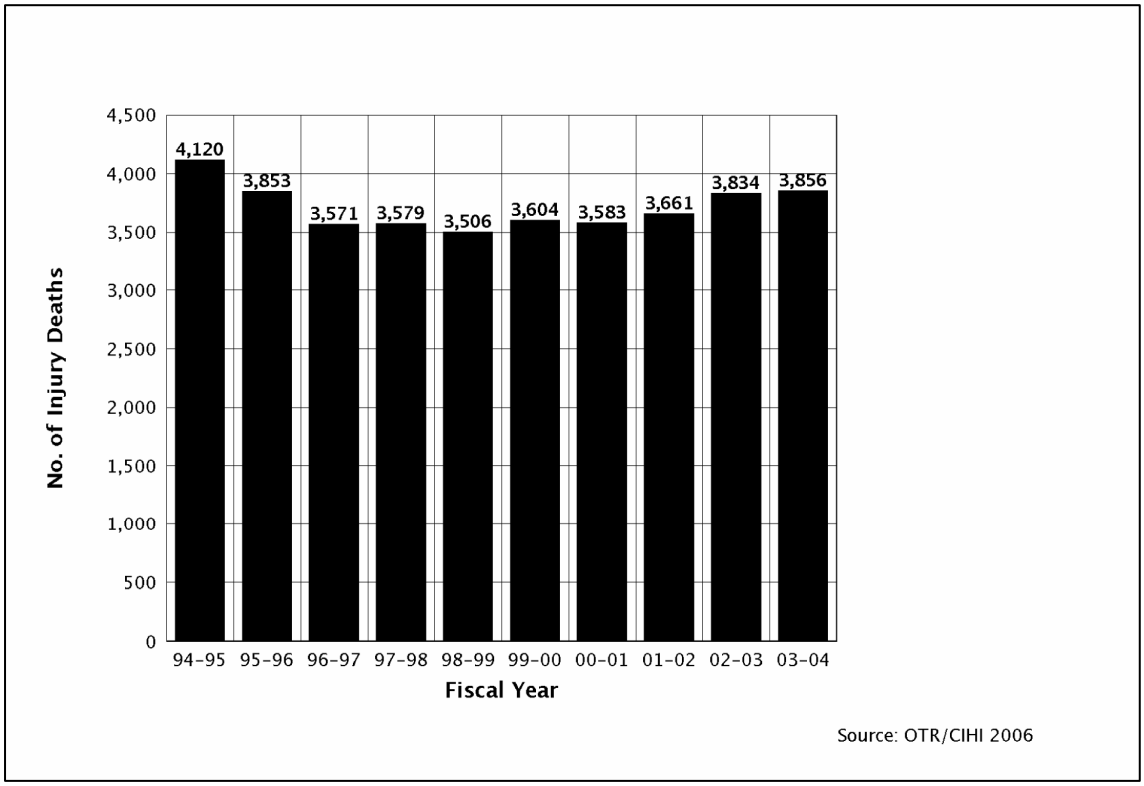

Figure 1. Injury Deaths in Ontario, 1994–1995 Through 2003–2004

ii) 1999–2000 Through 2003–2004

For the five fiscal years from 1999–2000 through 2003–2004:

- The number of deaths increased by 7% from 3,604 in 1999–2000 to 3,856 in 2003–2004, representing an average annual increase of 1.4%;
- The age standardized injury death rate decreased from 3.0 per 10,000 population in 1999–2000 to 2.9 per 10,000 in 2003–2004, representing a five-year reduction of 3.3% and an average annual decrease of 0.7%;
- Mean ages varied between 53 and 57 years; median ages varied between 51 and 56 years;
- Percentage of males decreased from 66% to 64%;

- The proportion of deaths due to motor vehicle collisions has decreased from 26% to 22%;
- The proportion of deaths due to unintentional falls has risen from 28% to 36%;
- Deaths due to suicide (excluding poisoning) ranged between 22% and 25%, homicides (excluding poisoning) ranged between 4% and 5%; and
- The proportion of injury deaths reported as dead on arrival (DOA) at hospital emergency has decreased from 16% to 4%.[i]

B. Demographics

In 2003–2004, the mean age of injury deaths was 57 years. Figure 2 shows that the greatest proportion of injury deaths occurred among persons aged 65 years and over (43%, n = 1,650), followed by those aged 35 to 64 years (35%, n = 1,338).

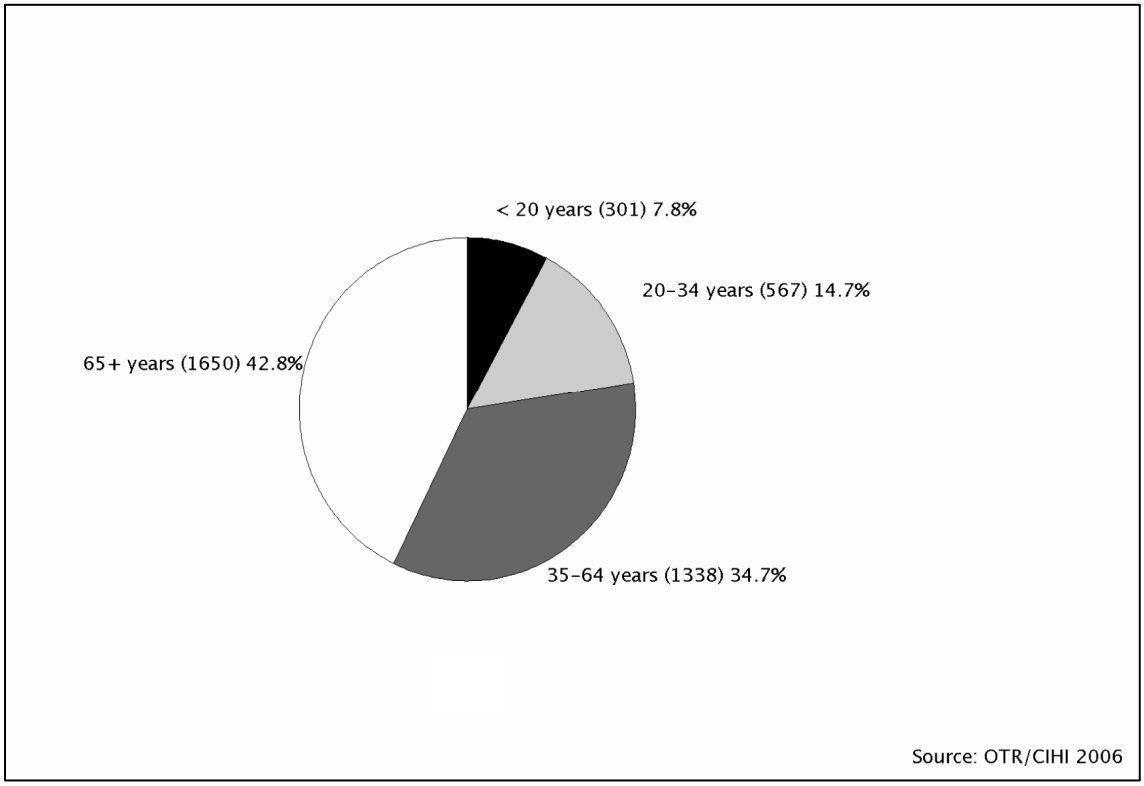

Figure 2. Injury Deaths by Age Group, 2003–2004

i. The number of injury deaths reported as dead on arrival (DOA) at hospital emergency departments in 2003 was lower than previous years. Discussions with the Office of the Chief Coroner revealed that this could be the result of several factors including, but not limited to, an increased number of attempts being made to resuscitate patients who present at hospital emergency departments without vital signs, administrative changes and changes in coding practices.

Males represented approximately two-thirds (64%, n = 2,472) of all injury deaths. Figure 3 illustrates that the distribution of injury deaths by age among males differed markedly from that of females. Over one-half (62%, n = 849) of female injury deaths occurred among those 65 years and over, whereas a little over one-quarter (32%, n = 795) of injury deaths among males occurred in this age group. The greatest proportion (41%, n = 1,009) of injury deaths among males were among those aged 35 to 64 years and 18% (n = 453) occurred in the 20 to 34 year age group.

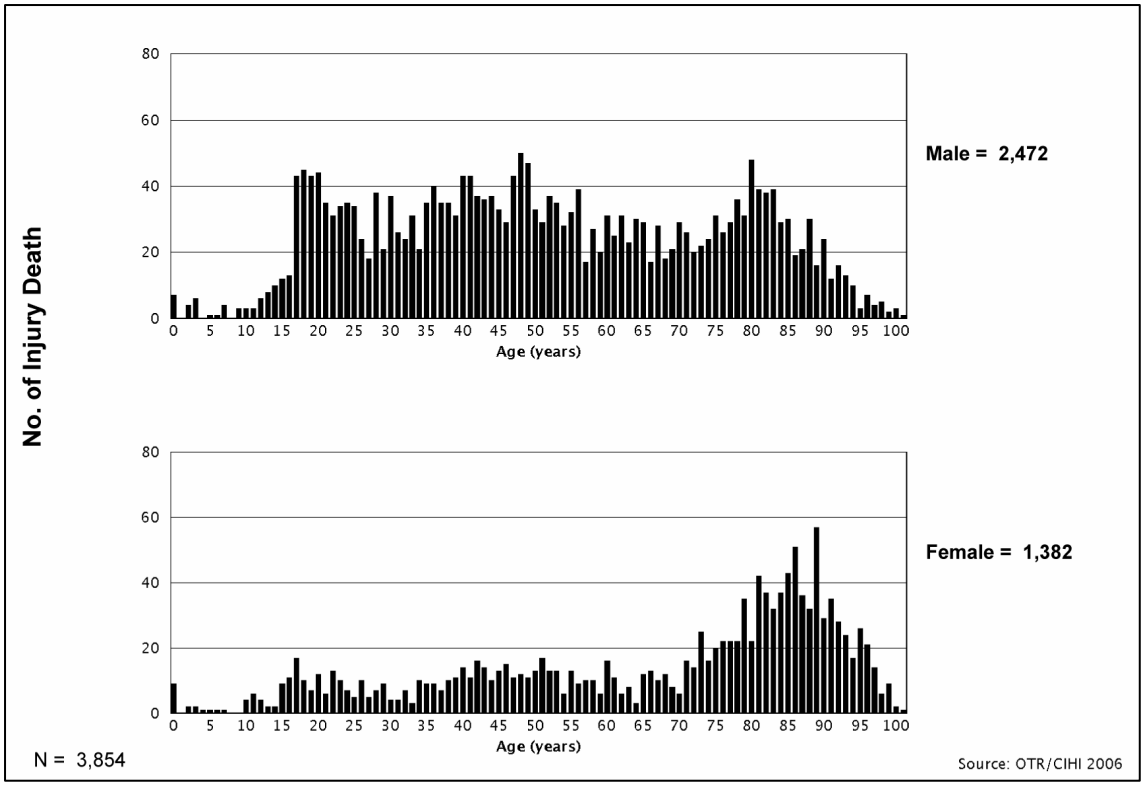

Figure 3. Injuries Deaths by Sex and Single Year of Age, 2003–2004

Note: Two cases with unknown sex.

C. Causes of Death

i) Overall Causes

Figure 4 shows that the leading three causes of injury-related death in 2003–2004 were unintentional falls (36%, n = 1,401), suicide and self-inflicted injury (excluding poisoning) (22%, n = 865), and motor vehicle collisions (22%, n = 860). The "All Other Causes" group, which represented 8% (n = 320) of the total, included (but was not limited to):

- Deaths due to injuries in which intentionality is undetermined (n = 87);
- Fire and flames (n = 78);
- Suffocation (n = 52);
- Natural and environmental factors (n = 34);
- Railway incidents (n = 18); and
- Pedal cycle incidents (n = 17).

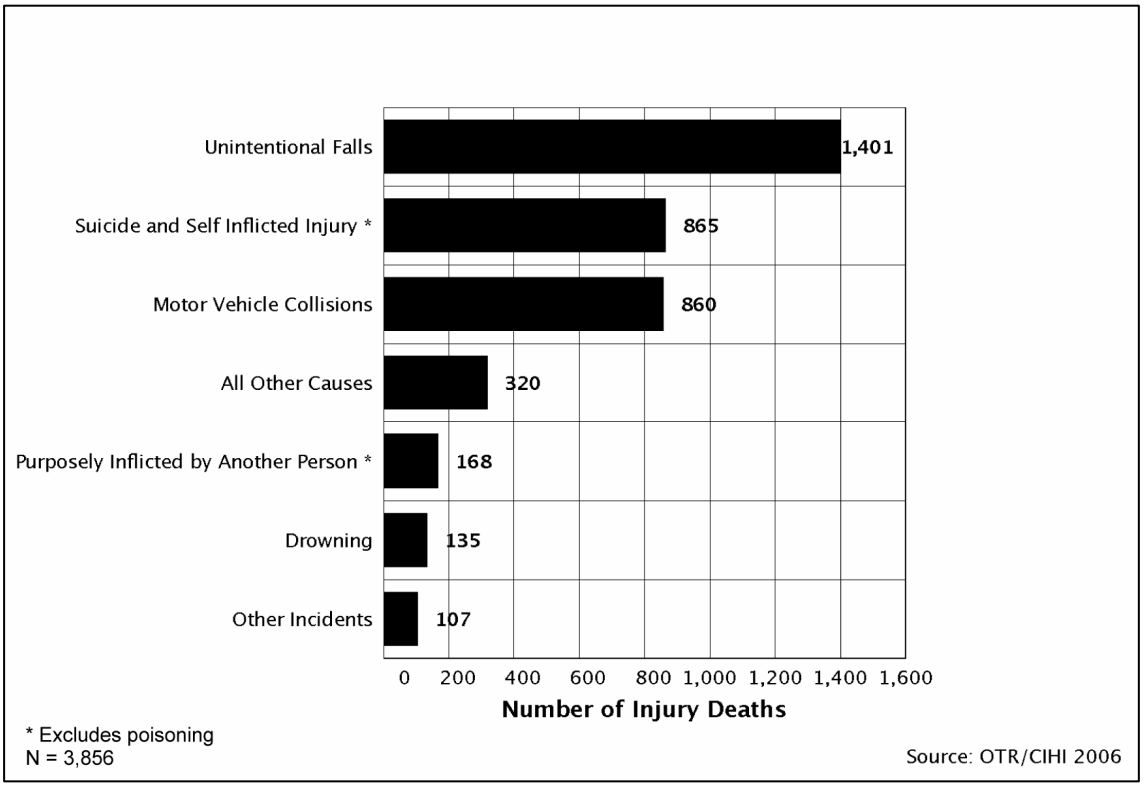

Figure 4. Causes of Injury Death, 2003–2004

ii) Causes by Age Group

Under 20 Years

In 2003–2004, 8% (n = 301) of all injury deaths occurred among children and teens under the age of 20 years. The percentage of all injury deaths among this age group is lower than its representation in the general population of Ontario estimated by Statistics Canada as of October 1, 2003, which was 25%.

Figure 5 shows that motor vehicle collisions (43%, n = 128), suicide and self-inflicted injuries (excluding poisoning) (21%, n = 62), and homicide and injury purposely inflicted (11%, n = 32) were the leading specific causes of injury-related death among persons under the age of 20.

The majority of suicides (87%, n = 54) occurred among those between the ages of 15 and 19 years. Similarly, the majority (77%, n = 98) of motor vehicle collision deaths were also between 15 and 19 years of age.

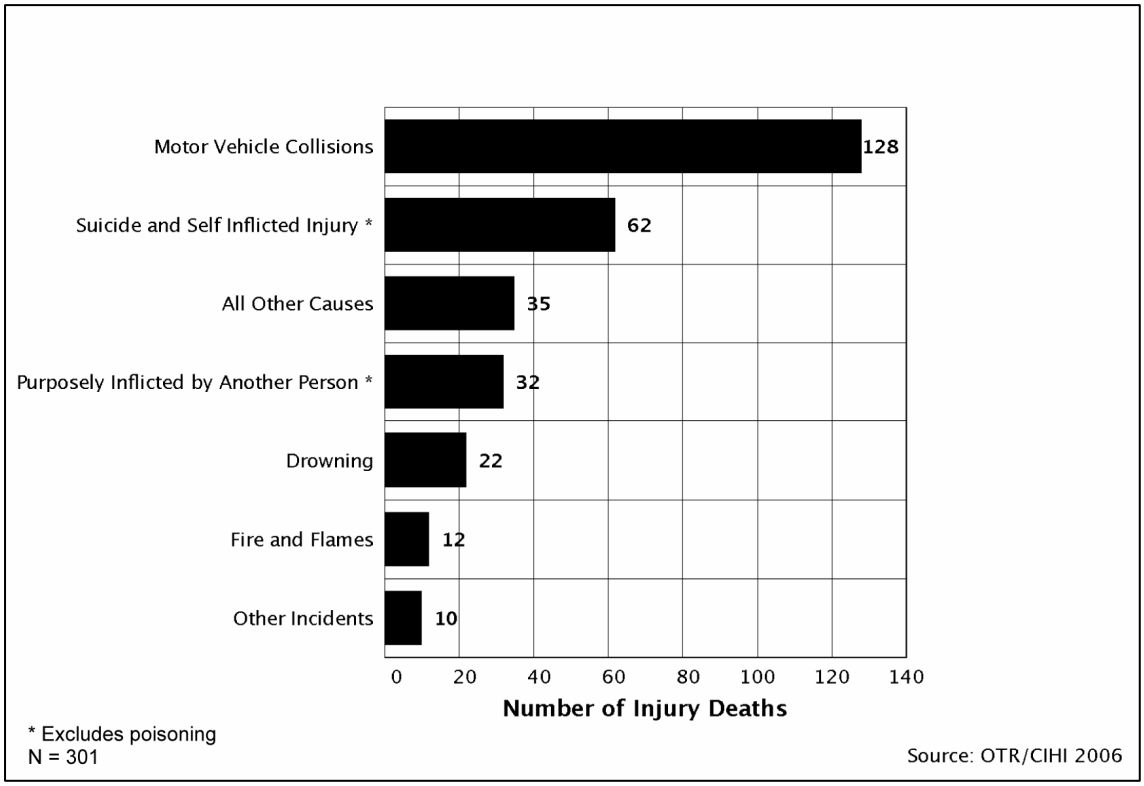

Figure 5. Causes of Injury Death Among Persons Under 20 Years, 2003–2004

20 to 34 Years

In 2003–2004, 14% (n = 567) of all injury deaths occurred among persons between the ages of 20 and 34 years. By comparison, this age group represented 21% of the general population of Ontario on October 1, 2003.

Figure 6 illustrates that motor vehicle collisions (38%, n = 218), suicide and self-inflicted injury (excluding poisoning) (32%, n = 179), and homicide and injury intentionally inflicted by another person (excluding poisoning) (10%, n = 59) were the leading causes of injury death among 20 to 34 year olds.

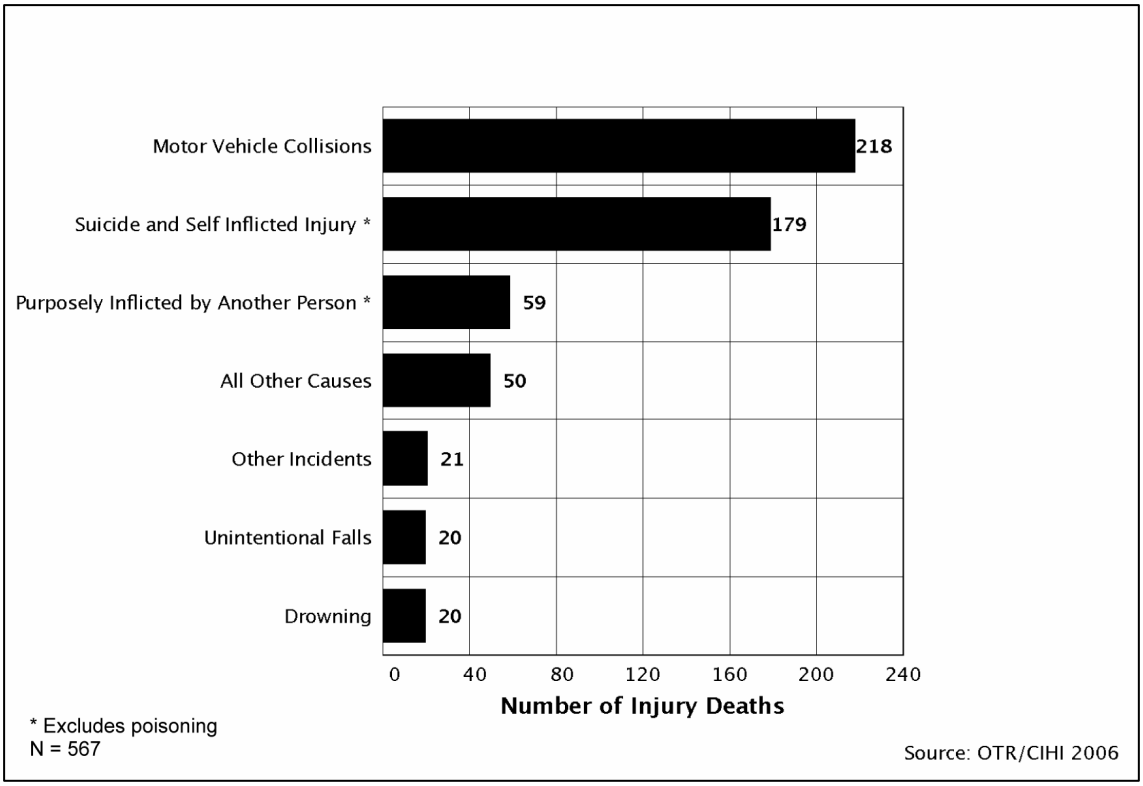

Figure 6. Causes of Injury Death Among Persons Aged 20 to 34 Years, 2003–2004

35 to 64 Years

One-third (35%, n = 1,338) of all injury-related deaths in 2003–2004 occurred among persons between the ages of 35 and 64 years. The percentage of all injury deaths experienced by this group is lower than its 41% representation in the general population of Ontario in 2003.

Figure 7 shows that over one-third (37%, n = 490) of injury deaths in this age group were attributed to suicide and self-inflicted injury (excluding poisoning), followed by motor vehicle collisions (25%, n = 331), and unintentional falls (14%, n = 192). Almost one-half (46%, n = 89) of deaths due to unintentional falls in this age group were among persons aged 55 to 64 years.

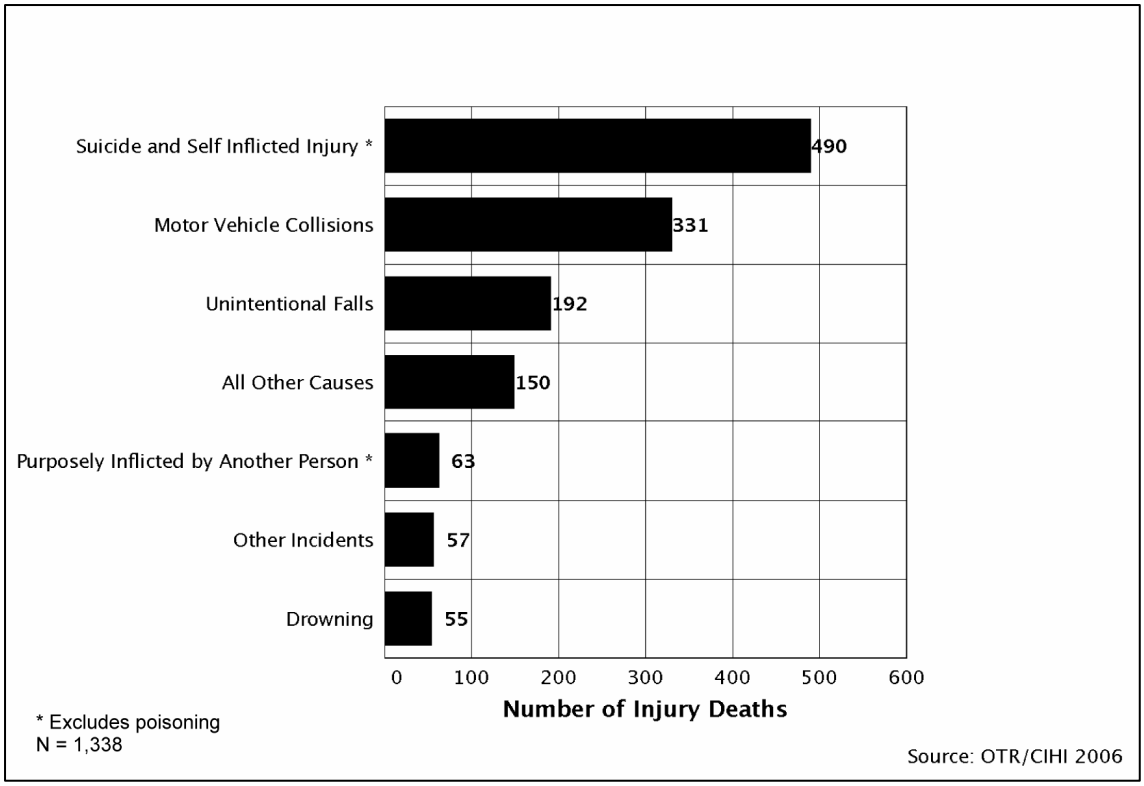

Figure 7. Causes of Injury Death Among Persons Aged 35 to 64 Years, 2003–2004

65 Years and Over

More than one-third (43%, n = 1,650) of all injury deaths in 2003–2004 occurred among persons 65 years of age and over. The proportion of all injury deaths in the province attributed to this age group is greater than its 13% representation in the Ontario general population as of October 1, 2003.

Figure 8 illustrates that unintentional falls accounted for nearly three-quarters (72%, n = 1,187) of the injury-related deaths among those 65 years of age and over. Motor vehicle collisions (11%, n = 183) and suicide and self-inflicted injury (excluding poisoning) (8%, n = 134) were also leading causes of injury death in this age group. Nearly one-half (49%, n = 577) of deaths due to unintentional falls in this age group were among persons 85 years of age and over.

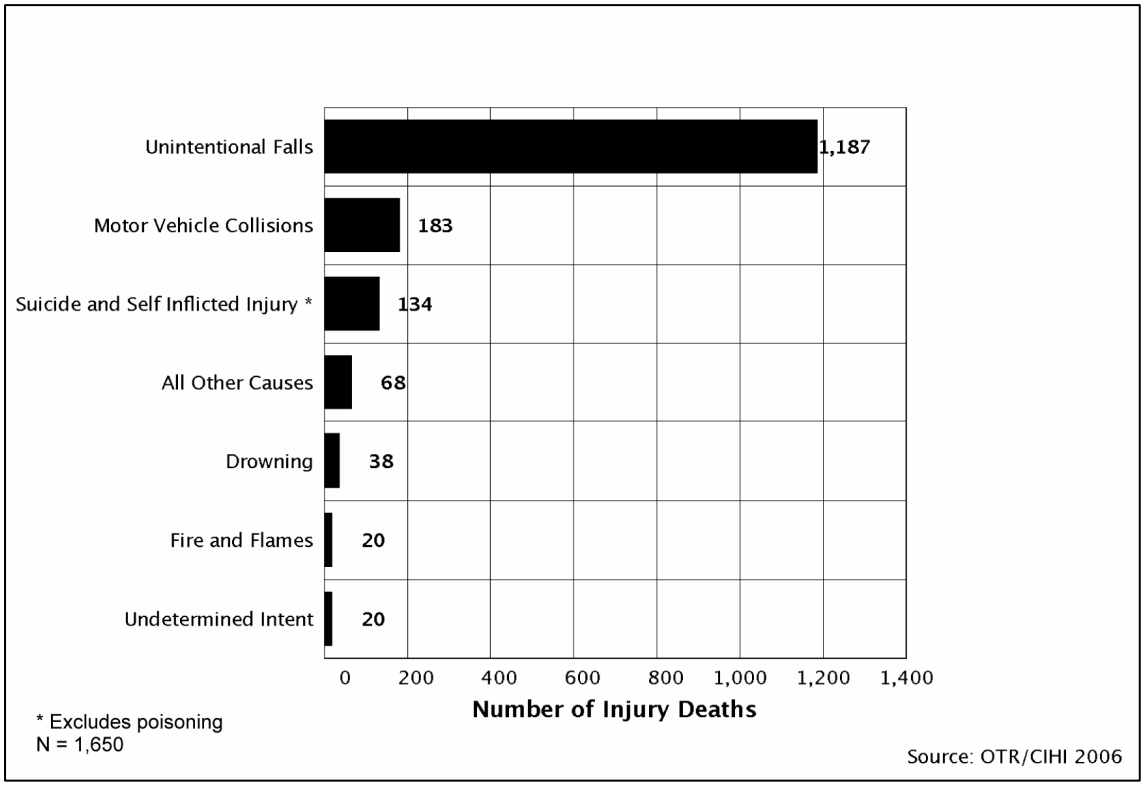

Figure 8. Causes of Injury Death Among Persons Aged 65 Years and Older, 2003–2004

iii) Falls

Unintentional falls included here are mapped to the ICD-10-CA External Cause of Injury Code category W00–W19. In 2003–2004, unintentional falls represented 36% (n = 1,401) of all injury-related deaths in the province. Figure 9 shows that of these deaths, the majority (85%, n = 1,187) occurred among persons aged 65 years and over. Fifty-four percent (n = 750) of all unintentional fall cases were female.

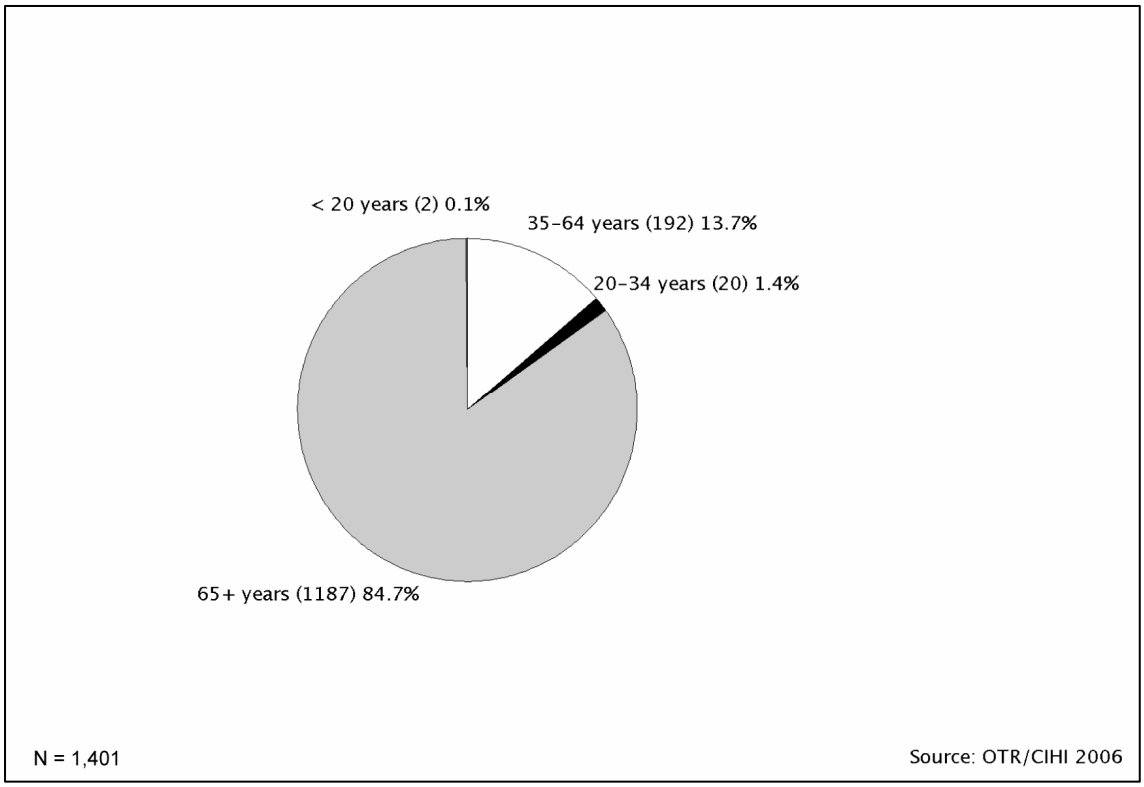

Figure 9. Deaths Due to Unintentional Falls by Age Group, 2003–2004

iv) Motor Vehicle Collisions

Motor vehicle collisions presented here are mapped to the ICD-10-CA External Cause of Injury Code category (motor vehicle traffic and non-traffic collisions). In 2003–2004, 22% (n = 860) of all injury deaths were due to motor vehicle collisions. More than one-third (38%, n = 331) of these cases were between the ages of 35 and 64 years, followed by those in the 20 to 34 year old age group (25%, n = 218). Persons under the age of 20 years accounted for 15% (n = 128) of motor vehicle collision deaths, with a further 21% (n = 183) of cases with 65 years of age and over.

Males represented 67% (n = 575) of these deaths. Figure 10 shows that there is a peak in the number of motor vehicle collision deaths around the age of 18 years among males.

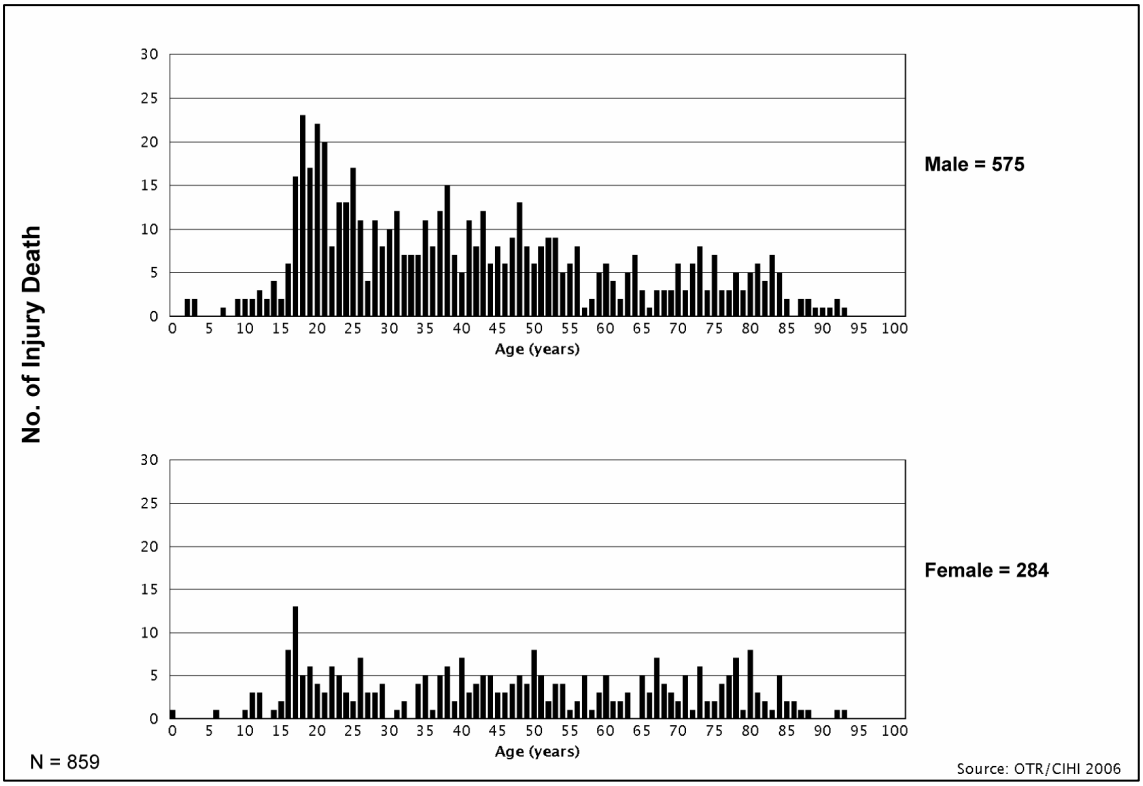

Figure 10. Motor Vehicle Collision Injury Deaths by Sex and Single Year of Age, 2003–2004

Note: One case with unknown sex.

Of the 860 motor vehicle collision deaths in 2003–2004, 637 were motor vehicle occupant deaths, of which nearly two-thirds (64%, n = 408) were drivers and just over one-third (36%, n = 229) were passengers. The remaining motor vehicle collision injury deaths (26%, n = 223) included motorcyclists, pedestrians, ATV and snowmobile riders.

Seatbelt use was not documented for 39% (n = 246) of motor vehicle occupant deaths. Of the 388 motor vehicle occupant deaths where seatbelt use was documented, 61% (n = 238) wore seatbelts and 39% (n = 150) did not. Seatbelts were not present for three cases.

Of the 408 motor vehicle driver deaths, 35% (n = 141) were wearing seatbelts and 22% (n = 90) were not. Seatbelt use was not documented for 43% (n = 174) of motor vehicle driver deaths.

Of the 229 motor vehicle passenger deaths, 42% (n = 97) were wearing seatbelts and 26% (n = 60) were not. Seatbelt use was not documented for 31% (n = 72) of motor vehicle passenger deaths.

Drugs and/or alcohol were involved in nearly one-quarter (24%, n = 210) of all motor vehicle collision injury deaths. The Office of the Chief Coroner codes drug and/or alcohol use through specific involvement codes. These codes are activities or circumstances that did not directly lead to death but that may have been contributing factors.

v) Drowning

Four percent (n = 135) of injury-related deaths in Ontario were due to drowning in 2003–2004. Note that only deaths due to unintentional drowning are included in this category. Figure 11 shows that the greatest proportion of deaths occurred among persons between the ages of 35 and 64 years (41%, n = 55). Males represented 84% (n = 114) of all drowning-related deaths.

Almost one-third (30%, n = 41) of all drowning injury deaths involved alcohol and/or drugs. Of these cases, the majority (80%, n = 33) involved alcohol only.

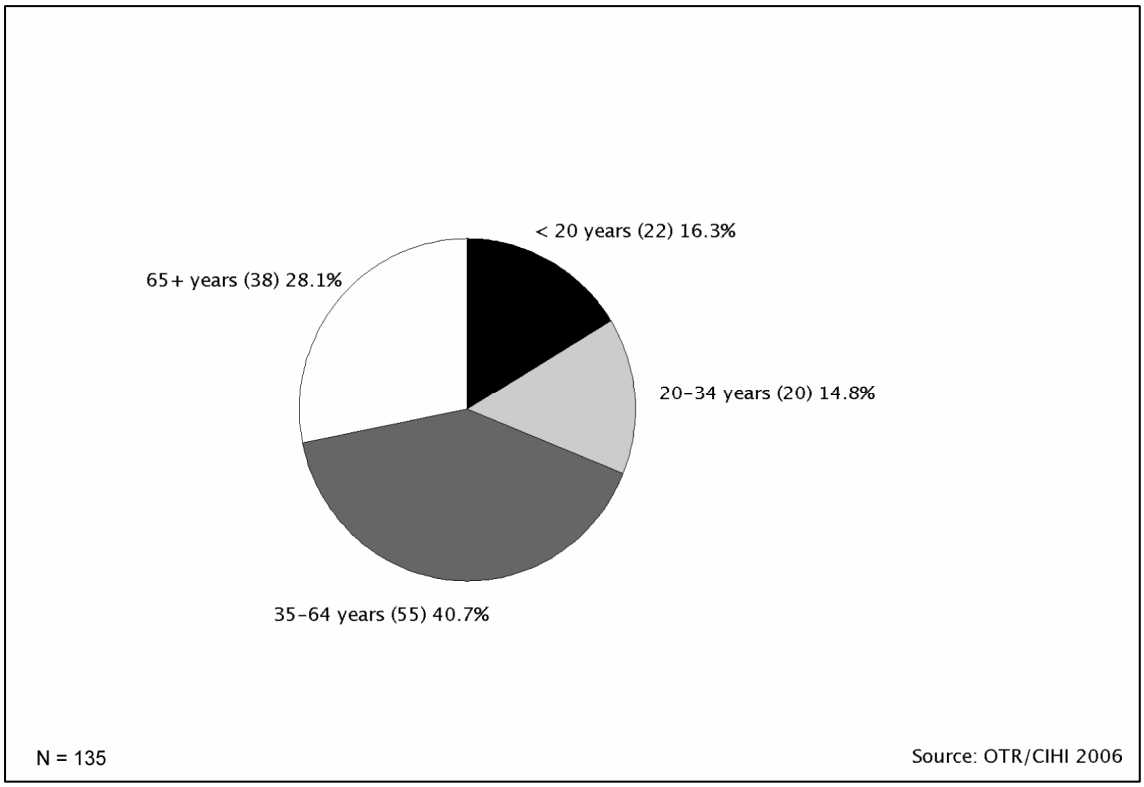

Figure 11. Deaths Due to Drowning by Age Group, 2003–2004

Drowning by Death Factor

In 2003–2004, there were 191 deaths due to drowning as defined by death factors, including both unintentional and intentional incidents. Of these cases:

- 13% (n = 24) were under the age of 20 years;
- 16% (n = 30) were between the ages of 20 and 34 years;
- 48% (n = 91) were between the ages of 35 and 64 years; and
- 24% (n = 46) were 65 years of age and over.

Figure 12 shows that the majority of drowning deaths occurred in open water (70%, n = 134), followed by deaths in the private pool (8%, n = 15). Bathtub and other types of water accounted for the remaining 22% (n = 42) of recorded drowning death factors.

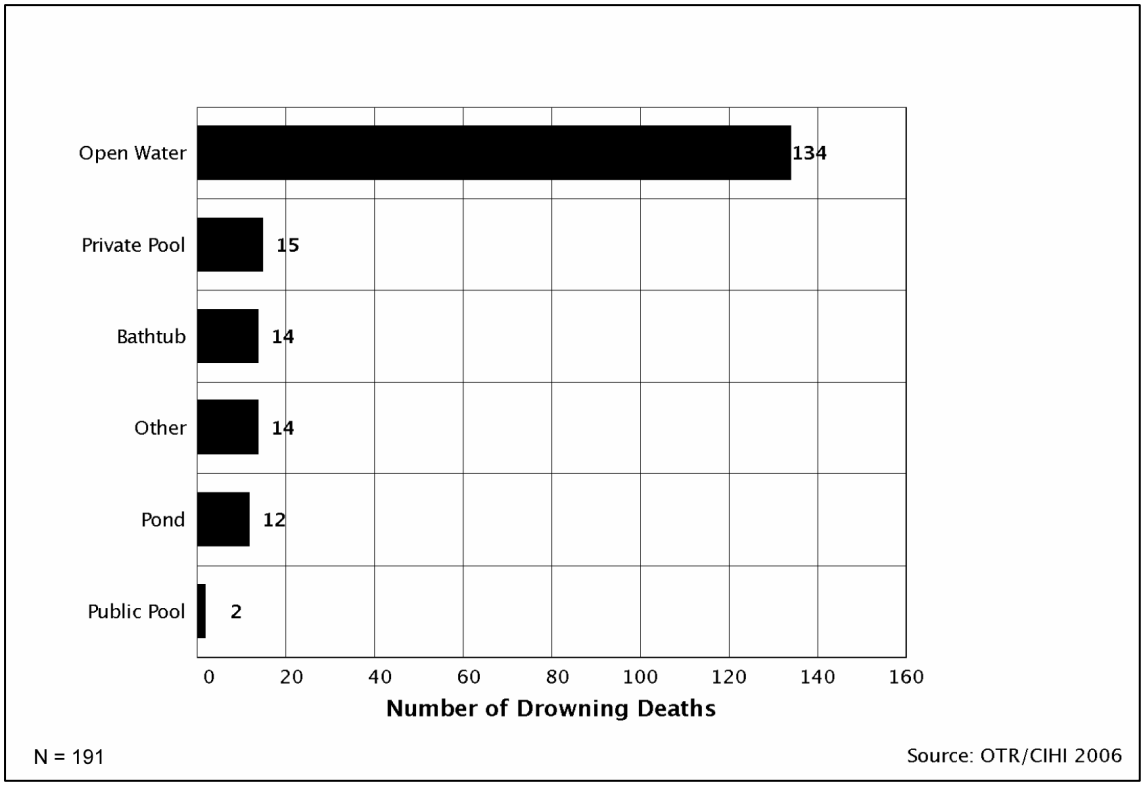

Figure 12. Death Due to Drowning by Death Factor, 2003–2004

D. Intentionality of Trauma Deaths

Of the injury deaths in Ontario in 2003–2004:

- 71% (n = 2,736) were unintentional;
- 22% (n = 865) were due to suicide and self-inflicted injury (excluding poisoning);
- 4% (n = 168) were due to homicide and injury purposely inflicted by another person; and
- 2% (n = 87) were of undetermined intent.

Intentionality was determined by death type, a component of the classification system used by the Office of the Chief Coroner.

i) Suicide

Suicide (Excluding Poisoning)

Deaths due to suicide (excluding poisoning) accounted for 22% (n = 865) of all injury-related deaths in 2003–2004. As shown in Figure 13, over one-half (57%, n = 490) of suicide deaths (excluding poisonings) occurred among those between the ages of 35 and 64 years. Males accounted for the majority (80%, n = 696) of suicide deaths reported. Firearms were used in 17% (n = 145) of suicides and self-inflicted injury deaths, and 9% (n = 79) involved drugs and/or alcohol.

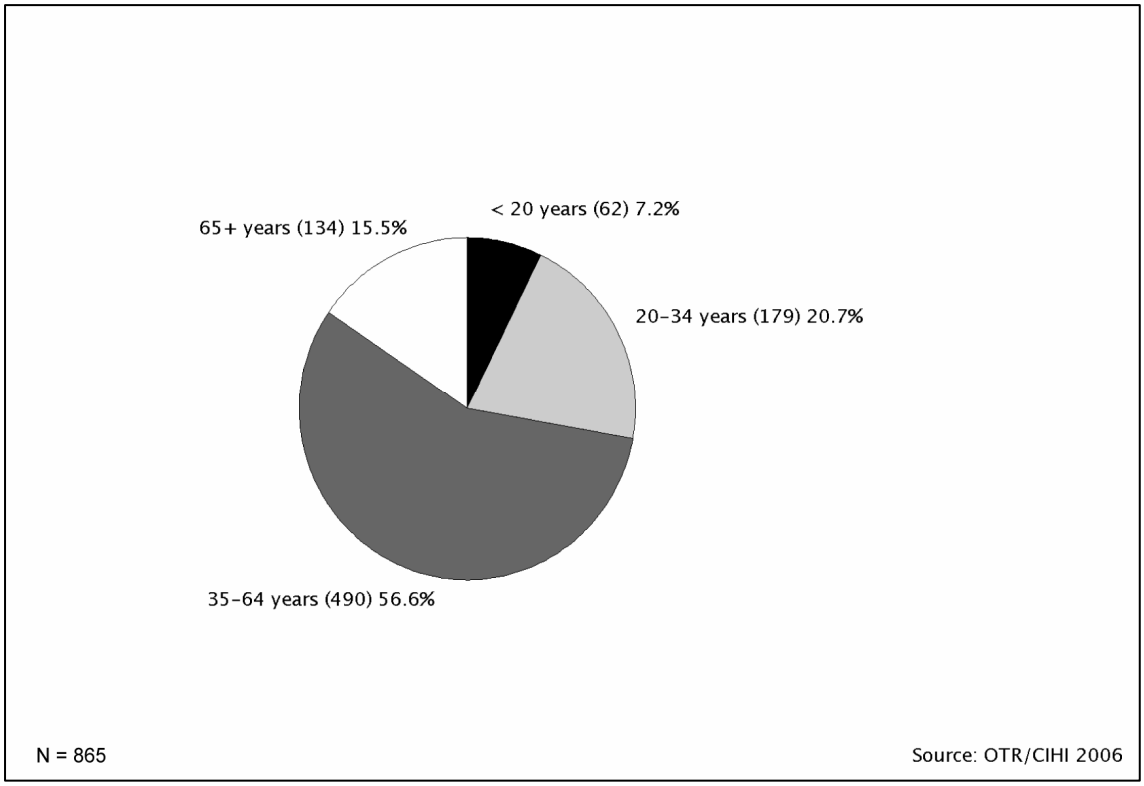

Figure 13. Deaths Due to Suicide (Excluding Poisoning) by Age Group, 2003–2004

Suicide (Including Poisoning)

A large portion of all injury is caused by mechanical energy. As a result, poisonings are often excluded in injury reports. In general, this report excludes poisonings because they do not fit the definition of trauma as *injury resulting from the transfer of energy such as mechanical, thermal or electric energy*. Appendix E, Tables 10 and 11 report all suicide deaths *including* poisoning by sex and age to provide a more complete representation of suicide deaths in Ontario. In 2003–2004, suicides *including* poisonings, accounted for 1,150 deaths.

Figure 14 shows that when analyzed by age group, over half (59%, n = 679) of all suicide deaths occurred among persons in the 35 to 64 year old age group.

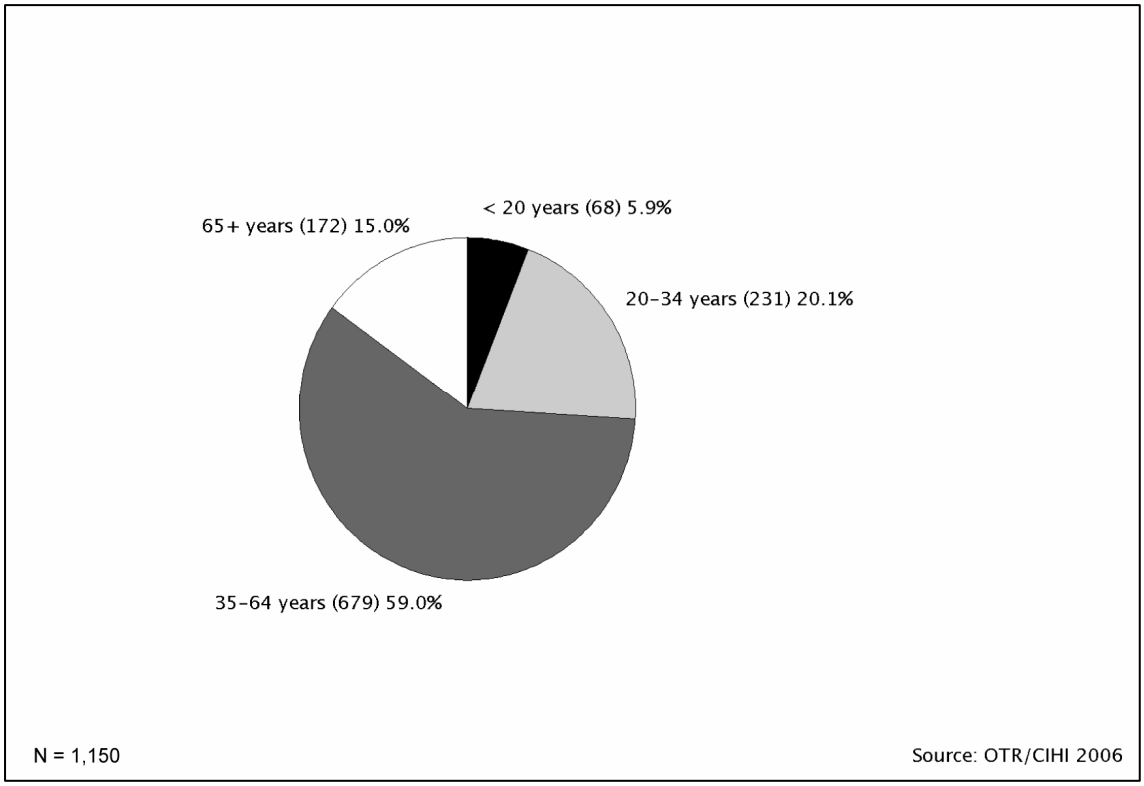

Figure 14. Deaths Due to Suicide (Including Poisoning) by Age Group, 2003–2004

In 2003–2004, males comprised 76% (n = 857) of all the suicide deaths including poisonings. Figure 15 shows that among males, hanging (40%, n = 339) was the leading specified means of suicide followed by the use of firearms (17%, n = 145). The most common methods of suicide among females were the use of drugs and alcohol (40%, n = 117) and hanging (24%, n = 71).

The "All Other" category accounted for 19% (n = 221) of all suicide deaths including poisoning. This category included vehicle collision trauma, suffocation, cuts and stabs, cuts from hand tools, setting fire to oneself, other fires, electrocution, and the use of gases, fumes and other poisons.

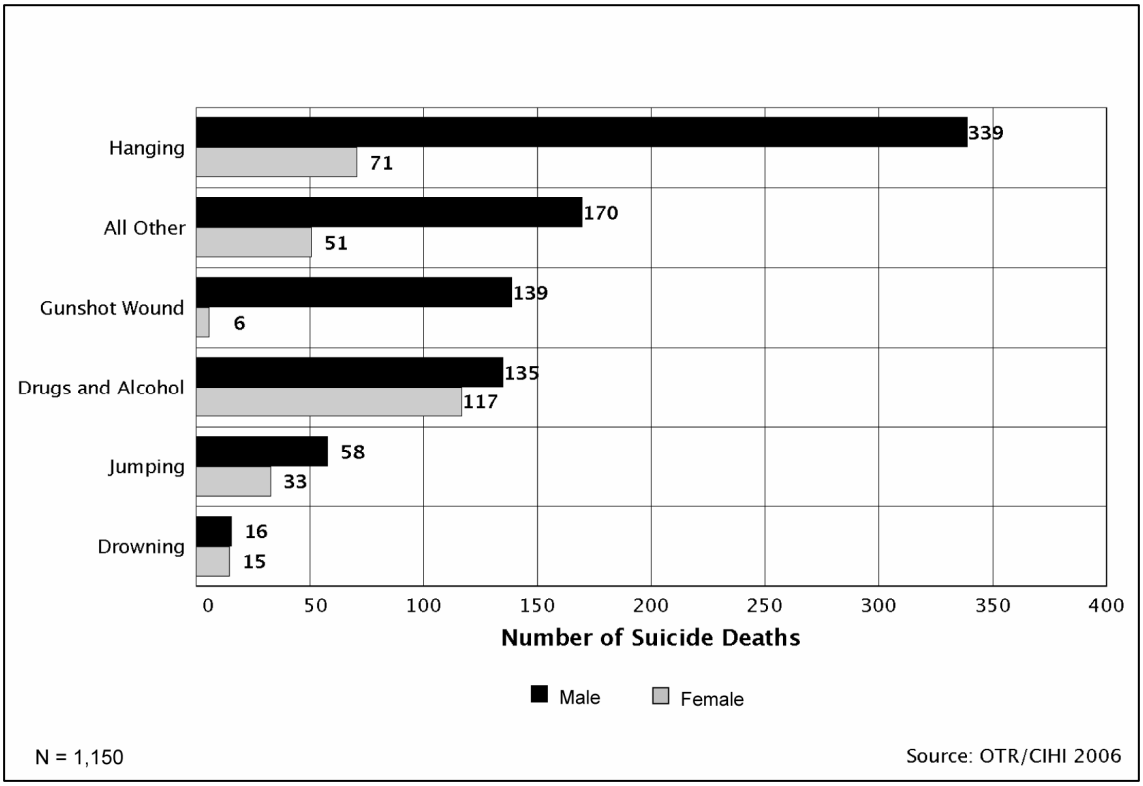

Figure 15. Deaths Due to Suicide (Including Poisoning) by Sex and Suicide Method, 2003–2004

ii) Homicide

In 2003–2004, 4% (n = 168) of all injury-related deaths were attributed to homicide and injury purposely inflicted by another person (excluding poisoning). Figure 16 shows that the greatest proportion (38%, n = 63) of these deaths was among persons between the ages of 35 to 64 years, followed by those aged 20 and 34 years (35%, n = 59).

There were 60 firearm-related homicides in 2003–2004, accounting for 36% of all homicides. Over three-quarters (87%, n = 52) of all firearm-related homicides were inflicted upon males. Drugs and/or alcohol were involved in 24% (n = 40) of injury deaths due to homicide.

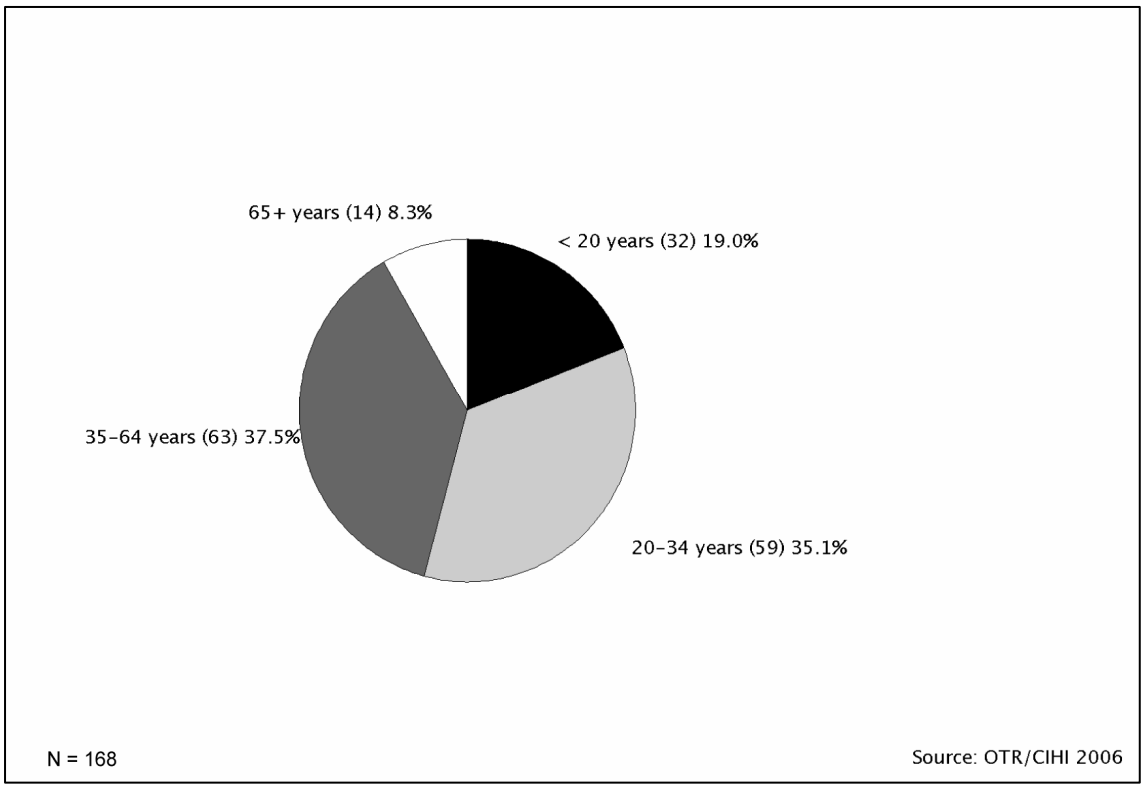

Figure 16. Deaths Due to Homicide (Excluding Poisonings) by Age Group, 2003–2004

E. Contextual Factors

i) Firearm-Related Deaths

Firearm related deaths represented 5% (n = 209) of all injury-related deaths in Ontario in 2003–2004. Of these, males accounted for 93% (n = 195).

Of the 209 firearm-related deaths in 2003–2004:

- 69% (n = 145) were related to suicide;
- 29% (n = 60) were related to homicide;
- 1% (n = 2) was unintentional; and
- 1% (n = 2) was of undetermined intent.

Figure 17 shows that persons aged 35 to 64 years accounted for the greatest proportion (47%, n = 99) of firearm-related deaths, followed by persons aged 20 to 34 years (28%, n = 58) and those over 65 years (18%, n = 38).

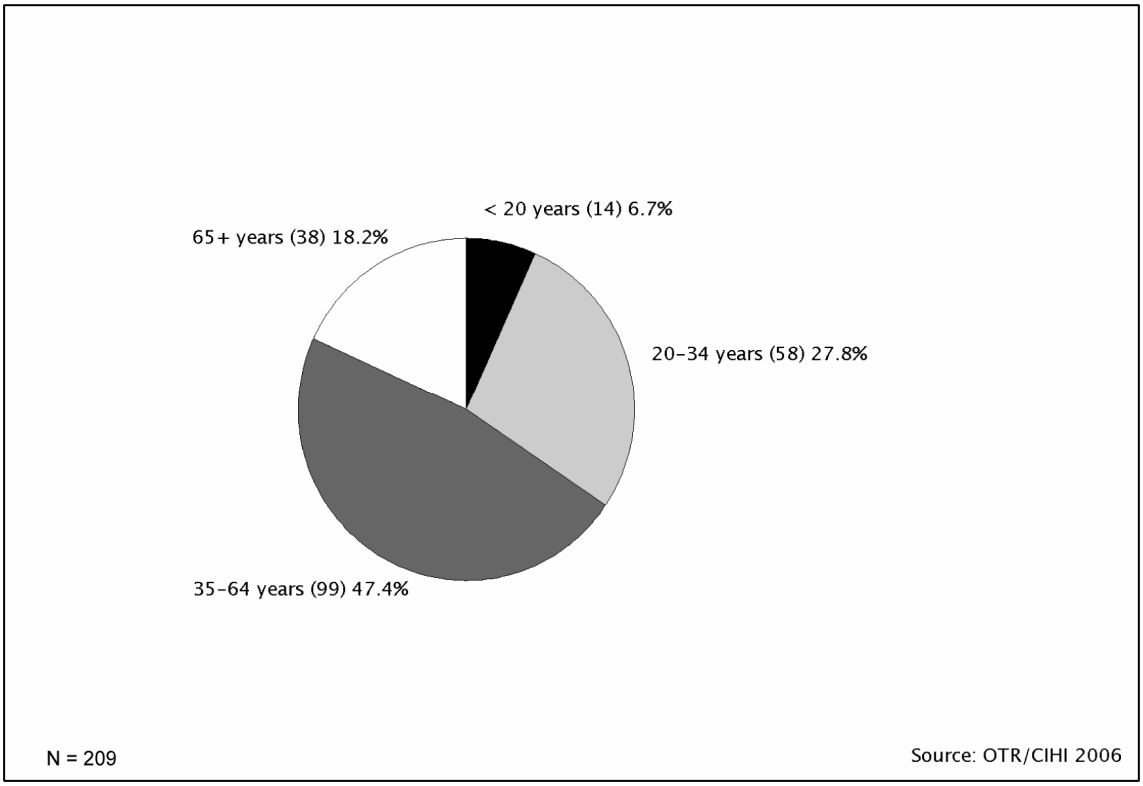

Figure 17. Firearm-Related Deaths by Age Group, 2003–2004

ii) Work-Related Deaths

The environment component of the classification system used by the Office of the Chief Coroner allows the identification of occupational deaths. There are 19 occupations identified by environment codes. In 2003–2004:

- There were 105 work-related deaths;
- 98 of these deaths (93%) were among males; and
- The mean age was 47 years.

Figure 18 shows the most common environments for work-related death. The leading specified environments in which work-related deaths occurred were:

- Factory, plant or warehouse (inside work), and commercial driver (18%, n = 19 respectively);
- Farming (15%, n = 16); and
- Construction (12%, n = 13).

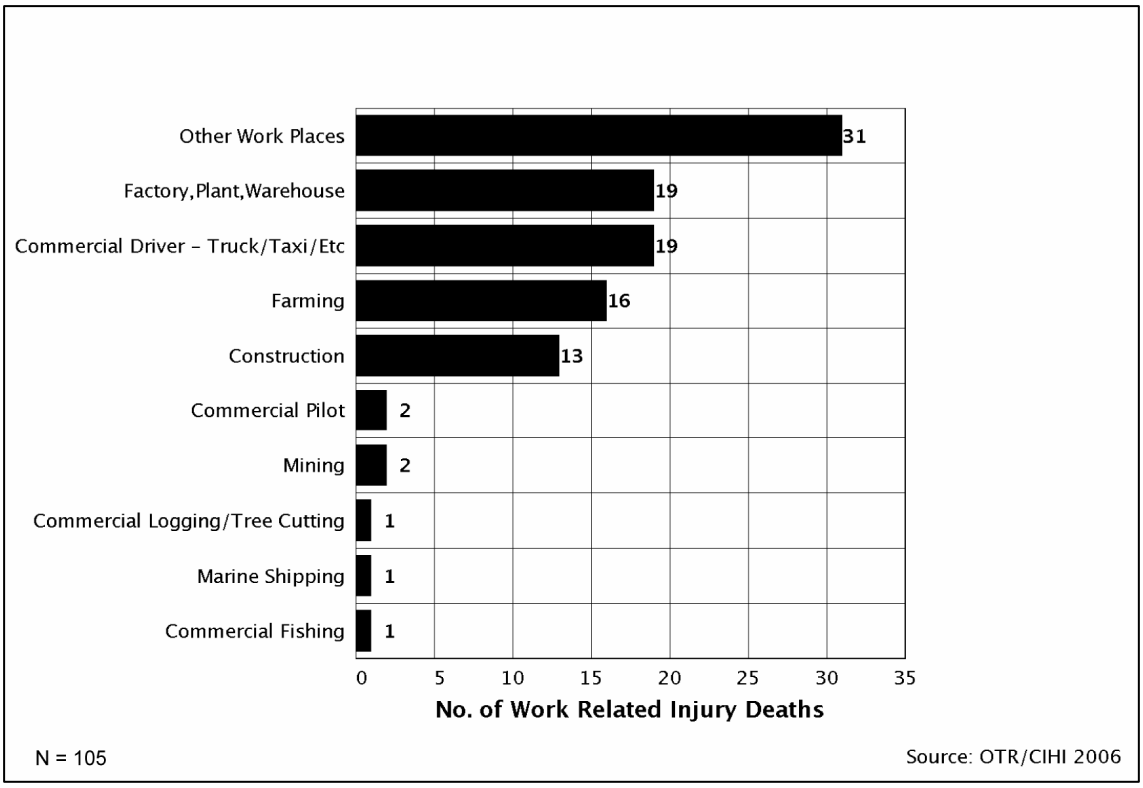

Figure 18. Work-Related Deaths by Work Environment, 2003–2004

iii) Drug and Alcohol Involvement

Figure 19 summarizes the involvement of drugs and/or alcohol in external causes of injury death. Use of drugs and/or alcohol is coded through specific involvement codes defined by the Office of the Chief Coroner. Involvements are activities or circumstances that did not directly lead to death, but may have been contributing factors. The greatest number of deaths involving drugs and/or alcohol was among motor vehicle collisions (n = 210).

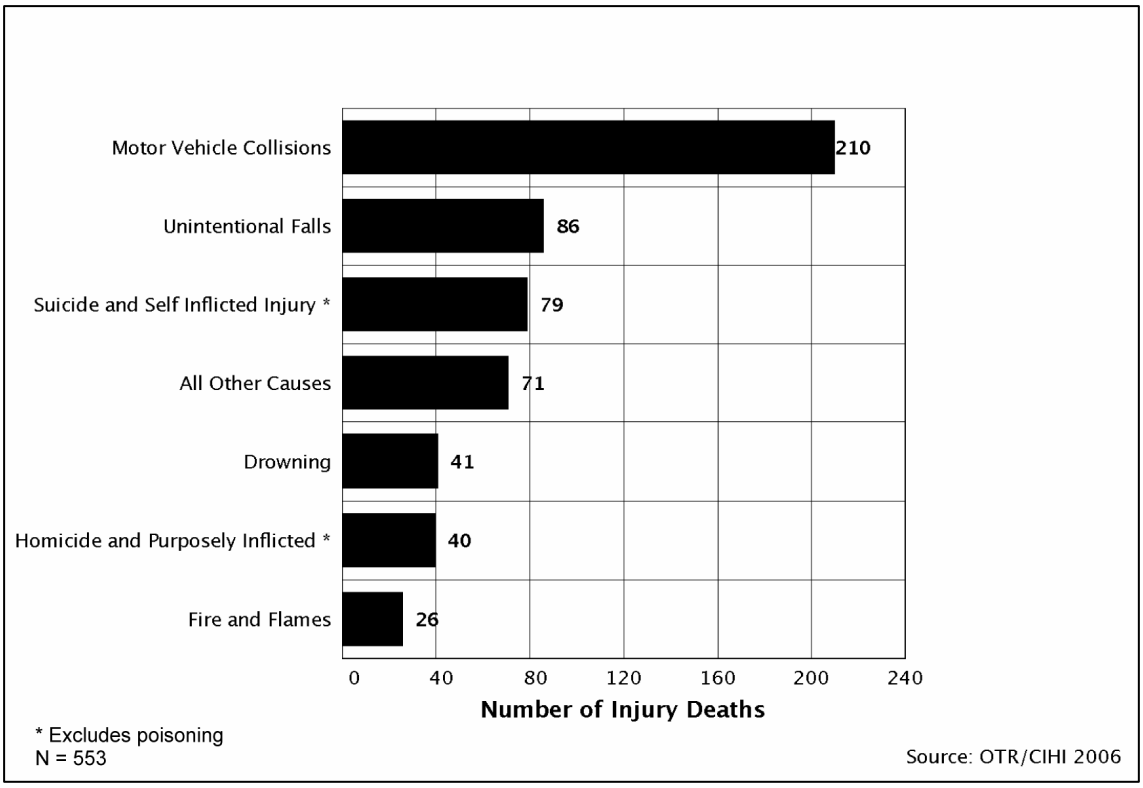

Figure 19. Injury Death With Drug/Alcohol Involvement by Cause of Injury, 2003–2004

4. Regional Analysis

A. Trend Analysis, 1999–2000 Through 2003–2004

Figure 20 shows that between 1999–2000 and 2003–2004 the age-adjusted rates of injury death in the seven health planning regions of Ontario varied. In each of the last five years the Northern region was characterized by the highest age-adjusted death rate of all regions, while the Toronto region experienced the lowest in 2003–2004. Regional analyses were based on where the injury occurred rather than the person's place of residence.

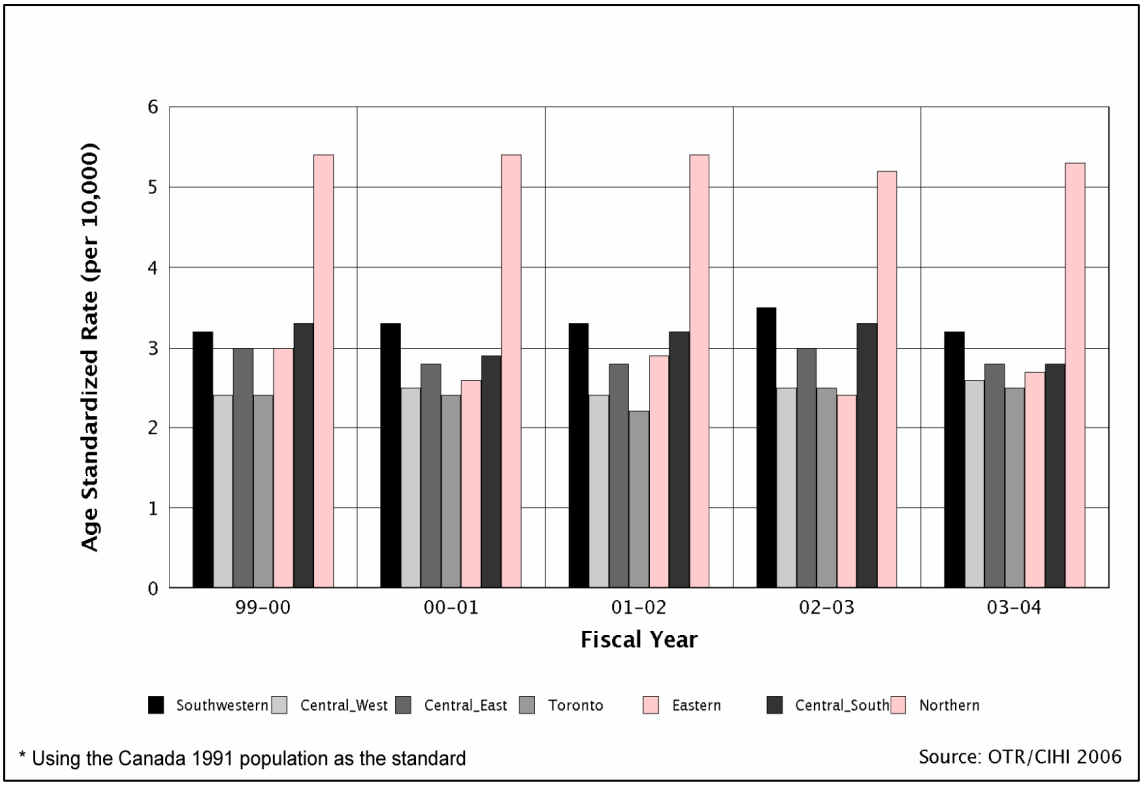

Figure 20. Age-Adjusted Injury Death Rates by Ontario Region, 1999–2000 Through 2003–2004

B. 2003–2004

Figure 21 illustrates regional variation in the number and rates of injury death in 2003–2004. The Northern region had 13% (n = 497) of injury deaths and was characterized by an injury death rate of 5.3 per 10,000 population. In contrast, the Toronto region had 19% of injury deaths (n = 744) and had the lowest injury death rate of 2.5 per 10,000 population.

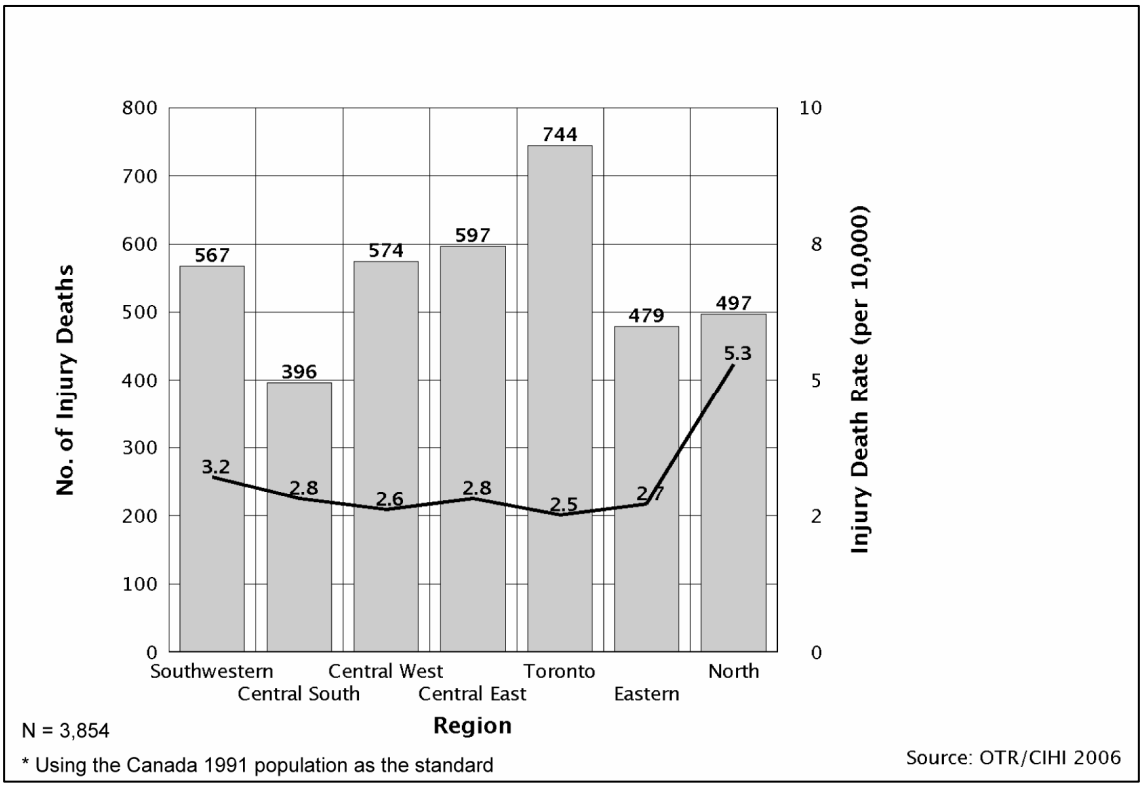

Figure 21. Age-Adjusted Injury Death Rates and Number of Injury Deaths by Ontario Health Planning Region, 2003–2004

C. Demographics

Figure 22 illustrates the distribution of injury deaths by age group in each health planning region. For cases under the age of 20 years, the range was from 4% in the Toronto region to 10% in the North region. The proportion of cases between the ages of 20 and 34 years ranged from 12% in the Central South region to 17% in the Southwestern region. Among cases aged 35 to 64 years, the proportion ranged from 31% in the Central East region to 41% in the Northern region. Finally, the proportion of cases 65 years of age and over ranged from 34% in the Northern region to 49% in the Toronto region.

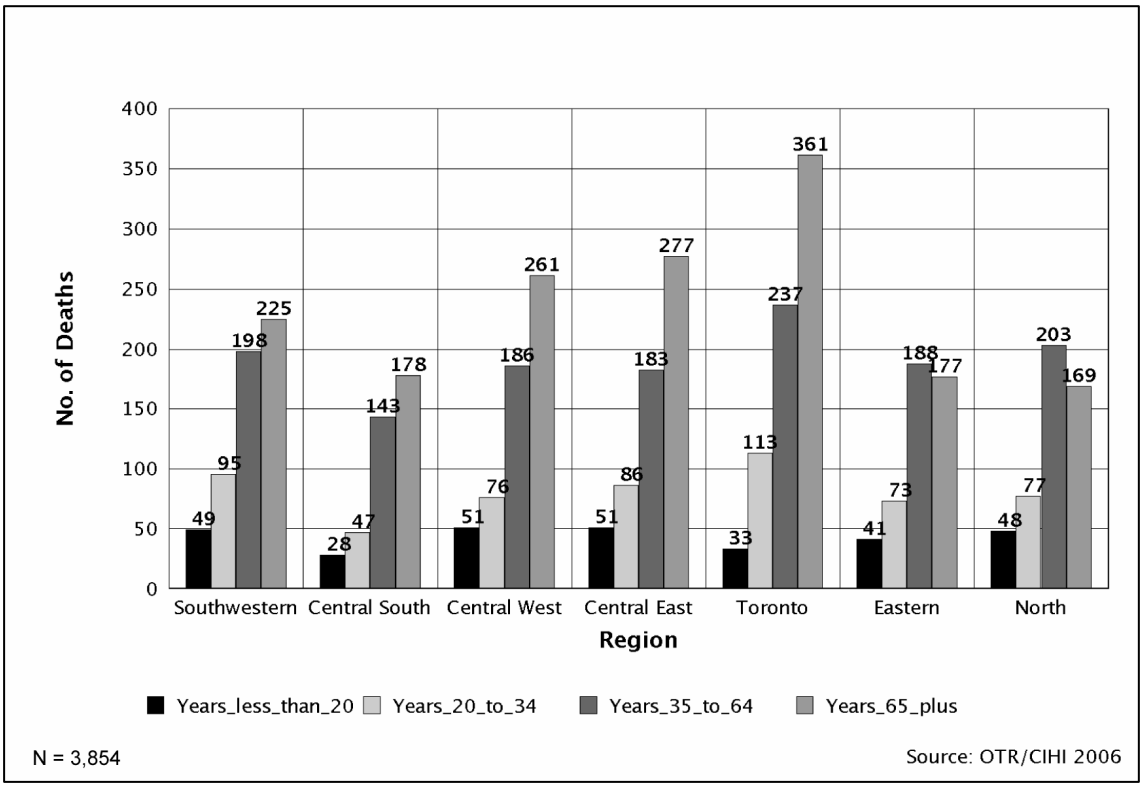

Figure 22. Trauma Deaths by Age Group and Ontario Health Planning Region, 2003–2004

Notes: Two cases with unknown age.
Cases with missing regional information or deaths that occurred out of province are excluded from this figure.

D. Causes of Death

Table 1 below shows proportions of injury deaths by cause for each health planning region:

- Falls ranged from 26% in the North region to 42% in each of the Central West region and Central South region;
- Motor vehicle collisions ranged from 12% in the Toronto region to 30% in the Southwester region;
- Suicide (excluding poisoning) ranged from 19% in the Central East region to 27% in the Toronto region;
- Drowning ranged from 1% in the Toronto region to 10% in the Northern region; and
- Homicide (excluding poisoning) ranged from 3% in the Northern region to 8% in the Toronto region.

Table 1. Injury Deaths by Cause of Injury and Health Planning Region of Ontario, 2003–2004

	SW	CS	CW	CE	T	E	N	TOTAL
Falls	183 (32%)	166 (42%)	242 (42%)	210 (35%)	324 (44%)	147 (31%)	127 (26%)	1,399 (36%)
MVC	172 (30%)	86 (22%)	135 (24%)	156 (26%)	88 (12%)	115 (24%)	108 (22%)	840 (22%)
Suicide*	111 (20%)	84 (21%)	119 (21%)	115 (19%)	200 (27%)	111 (23%)	125 (25%)	865 (22%)
Drowning	16 (3%)	13 (2%)	8 (2%)	27 (5%)	8 (1%)	22 (5%)	41 (10%)	135 (4%)
Homicide*	13 (2%)	14 (4%)	22 (4%)	23 (4%)	61 (8%)	21 (4%)	14 (3%)	168 (4%)
All Other	72 (13%)	33 (8%)	48 (8%)	66 (11%)	63 (8%)	63 (13%)	82 (17%)	447 (12%)
TOTAL	567 (100%)	396 (100%)	574 (100%)	597 (100%)	744 (100%)	479 (100%)	497 (100%)	3,854 (100%)

* Excluding poisoning

** **Note:** This table excludes deaths when there is no indication of "Primary Environment" or the death occurred out of province or place unknown.

Appendix A

Definitions of Terms

Note: All references to "accident" according to the International Classification of Diseases (ICD) or Office of the Chief Coroner definitions have been changed to "incident" or "collision" to reinforce injury prevention efforts; "accidental" (as in accidental death type) has been changed to "unintentional."

CIHI

The Canadian Institute for Health Information (CIHI) is an independent, pan-Canadian, not-for-profit organization working to improve the health of Canadians and the health care system by providing quality health information.

Comprehensive Data Set

One of three data sets held by the Ontario Trauma Registry (OTR). The Comprehensive Data Set (CDS) consists of detailed information on patients hospitalized with major trauma in eleven participating hospitals in the province. These lead/trauma hospitals have been funded by the Ministry of Health and Long-Term Care for hardware, software and dedicated trauma staff including a Medical Director, Trauma Coordinator, Data Analyst and Administrative Assistant. The definition of trauma in the Comprehensive Data Set is based on the Injury Severity Score (ISS), an international scoring system created to calculate the severity of injury, and an appropriate external cause code.

Death Data Set

One of three data sets held by of the Ontario Trauma Registry (OTR). Data comprising the Death Data Set (DDS) come from the Office of the Chief Coroner. The OTR DDS contains information on all deaths in the province due to injury, including demographics, cause of death and factors contributing to death such as alcohol use. Reporting on all injury deaths rather than only in-hospital deaths provides a more complete representation of trauma in the province.

Death Factors[ii]

A death factor is an action, force, instrument or disease occurring in an environment that led directly to death. At least one, and up to four, death factors may be documented for each death. The primary death factor refers to the most significant circumstances or events leading to death.

ii. Definitions are reproduced from the Coroners System Manual, Office of the Chief Coroner, Ministry of the Solicitor General.

Death Type[iii]

Death type is the classification of the intent of the action, force, instrument or disease that caused death. One death type is documented for each death. The following are the six death types defined by the Office of the Chief Coroner.

1. Natural;
2. Unintentional (defined as accidental by the Office of the Chief Coroner);
3. Suicide;
4. Homicide;
5. Undetermined; and
6. Skeletal/archaeological/animal remains.

External Cause of Injury Codes

The External Cause of Injury codes in the ICD coding system allows the classification and analysis of environmental events and circumstances as the cause of injury. External cause of injury codes vary depending on the coding system (for example, Unintentional Falls are coded as E880–888 in the ICD-9 coding system and are coded as W00–W19 in ICD-10-CA. Please see the definition *ICD (International Classification of Diseases)* for an explanation of the various coding systems. All OTR reports are based on the first valid external cause code recorded unless otherwise specified. External Cause Codes that are *included* in the trauma definition are listed in Appendix B. Note that External Cause Codes are termed e*xternal causes of morbidity and mortality* (V01–Y98) in the ICD-10-CA coding system.

Environment[iii]

An environment is a combination of the location where and the activity of the deceased when an action, force, instrument or disease was applied that led toward death. Any investigation may involve several different environments.

ICD (International Classification of Diseases)

The International Classification of Diseases is a World Health Organization (WHO) publication that classifies morbidity and mortality information for statistical purposes, and for the indexing of hospital records by disease and operations, for data storage and retrieval.

ICD-9

The International Classification of Diseases, 9th Revision is based on the official version of the World Health Organization.

ICD-10-CA

The International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Canada is based on the World Health Organization ICD-10 and is wholly comparable with that classification. ICD-10 is the official classification used for reporting mortality data in Canada; ICD-10-CA is the Canadian national standard for reporting morbidity statistics.

iii. Definitions are reproduced from the Coroners System Manual, Office of the Chief Coroner, Ministry of the Solicitor General.

Injury

Injury and trauma are used synonymously. Please see the definition of trauma.

Injury Deaths

Injury deaths are defined by the Ontario Trauma Registry using components of the classification system of the Chief Coroner that meet the definition of injury as the transfer of energy.

Involvements[iv]

An involvement is an activity or circumstance related to the deceased that did not directly lead to death but which may be of significance, or a contributing factor. Involvements are generally combinations of certain environments, institutions, overdose agents or death factors which are of particular interest to the Coroner's Office.

Mean

A measure of central tendency of a set of observations; the average.

Median

A measure of central tendency of a set of observations; 50th percentile (the value such that half of the data points fall above it and half below it).

Minimal Data Set

One of three data sets held by of the Ontario Trauma Registry (OTR). The Minimal Data Set (MDS) contains demographic, diagnostic and procedural information on all acute care hospitalizations due to injury in Ontario. These hospitalizations are selected from the Discharge Abstract Database (DAD) at CIHI and downloaded to the OTR data processing system. Selection is based on specific External Cause of Injury Codes within the ICD coding system.

Motor Vehicle Collision

A transport incident involving a motor vehicle. It is defined as a motor vehicle traffic incident or as a motor vehicle non-traffic incident according to whether the incident occurred on a public highway (traffic) or elsewhere (non-traffic).

Motor Vehicle Non-traffic Incident

Any motor vehicle incident that occurs entirely in any place other than a public highway.

iv. Definitions are reproduced from the Coroners System Manual, Office of the Chief Coroner, Ministry of the Solicitor General.

Motor Vehicle Traffic Incident

Any motor vehicle incident occurring on a public highway (e.g. originating, terminating, or involving a vehicle partially on the highway). A motor vehicle incident is assumed to have occurred on the highway unless another place is specified, except in the case of incidents involving only off-road motor vehicles, which are classified as non-traffic incidents unless the contrary is stated.

Municipalities[v]

The province has been divided into municipalities by the Office of the Chief Coroner each of which has a four-digit code. Major cities or towns have their own code while smaller towns may be included under the township number. A primary municipality is documented by the Office of the Chief Coroner to indicate where the injury occurred.

Other Incidents

Refers to the "Other Accidents" ICD-10-CA external cause category for the range. Unintentional gunshot wounds, injury caused by machinery and explosions are included in this external cause category.

Regions

Regions are identified in this report based on the primary municipality (i.e. where the injury occurred). There are seven health planning regions in Ontario (Southwest, Central South, Central West, Central East, Toronto, East, and North) as defined by the Ministry of Health and Long-Term Care.

Single Year of Age

Individual values for ages less than one year through one hundred years. This provides more detail than age groups.

Suicide

For the purposes of this report, suicide is defined as intentionally self-inflicted injuries (excluding poisoning) that result in death. Poisonings are excluded from the definition of trauma, and are therefore excluded from trauma reports. Information is provided in this report on all suicide deaths to provide a more complete representation of suicide in the province.

Trauma

Trauma is defined as injury resulting from the transfer of energy (i.e. kinetic, thermal). The OTR Death Data Set defines trauma by forty death factors for unintentional, suicide, homicide or undetermined deaths types. Trauma deaths that are coded with a natural death type that have an involvement code indicating a fall in an institution such as a nursing home are also included in the definition of trauma.

Trauma Registry Advisory Committee (TRAC)

The multidisciplinary group responsible for guiding the implementation and operation of the OTR.

v. Definitions are reproduced from the Coroners System Manual, Office of the Chief Coroner, Ministry of the Solicitor General.

Appendix B

Trauma Definition:
External Cause of Injury Code
Inclusions and Exclusions

Trauma Definition: External Cause Code Inclusions

The conceptual definition of trauma as *injury resulting from the transfer of energy* has been approved by the Ontario Trauma Registry Advisory Committee.

The following table lists the External Cause of Injury Code categories used for reporting purposes based on the trauma definition. "Incident" and "unintentional" have been substituted for the terms "accident" and "accidental" used in the ICD definitions.

A. OTR ICD-10-CA Inclusions

External Cause Code Category	Definition
V01–V99	Transport incidents
V01–V06, V09–V90	Land transport incidents
V91–V94	Water transport incidents
V95–V97	Air and space transport incidents
V98–V99	Other and unspecified transport incidents
W00–W19	Unintentional falls
W20–W45, W49	Exposure to inanimate mechanical forces
W50–W60, W64	Exposure to animate mechanical forces
W65–W70, W73, W74	Unintentional drowning and submersion
W75, W76, W77, W81, W83, W84	Other unintentional threats to breathing except due to inhalation of gastric contents, food, or other objects
W85–W94, W99	Exposure to electric current, radiation and extreme ambient air temperature and pressure
X00–X06, X08, X09	Exposure to smoke, fire and flames
X10–X19	Contact with heat and hot substances
X30–X39	Exposure to forces of nature
X50	Overexertion and strenuous or repetitive movements
X52	Prolonged stay in weightless environment
X58–X59	Unintentional exposure to other and unspecified factors
X70–X84	Intentional self-harm, excluding poisoning
X86, X91–X99, Y00–Y05, Y07–Y09	Assault, excluding poisoning
Y20–Y34	Event of undetermined intent, excluding poisonings
Y35–Y36	Legal intervention and operations of war

B. OTR ICD-9 Inclusions

E Code Category	Definition
E800–E807	Railway incidents
E810–E819	Motor vehicle traffic incidents
E820–E825	Motor vehicle non-traffic incidents
E826	Pedal cycles
E827–E829	Other road vehicle incidents
E830–E838	Water transport incidents
E840–E845	Air and space transport incidents
E846–E848	Vehicle incidents not elsewhere classifiable
E880–E888	Unintentional falls
E890–E899	Incidents caused by fire and flame
E900–E902, E906–E909	Incidents due to natural and environmental factors
E910 and E913	Incidents caused by drowning and suffocation
E914–E915	Foreign bodies (excluding choking)
E916–E928	Other incidents
E953–E958	Suicide and self-inflicted injury (excluding poisoning)
E960–E961, E963–E968	Homicide and injury purposely inflicted by other persons (excluding poisoning)
E970–E976, E978	Legal intervention
E983–E988	Injury undetermined whether unintentionally or purposely inflicted
E990–E998	Injury resulting from operations of war

The following lists the ICD-9 and ICD-10-CA External Cause Code categories that are *excluded* from the Ontario Trauma Registry definition of trauma.

ICD-10-CA Code Exclusions	Definition	ICD-9 E Code Exclusions	Definition
W78–W80	W78 Inhalation of gastric contents; W79 Inhalation and ingestion of food causing obstruction of respiratory tract; W80 Inhalation and ingestion of other objects causing obstruction of respiratory tract	E911–E912	Inhalation and ingestion of food and other objects causing obstruction
X20–X29	Contact with venomous animals and plants	E905	Venomous animals and plants
X40–X49*	Unintentional poisoning and exposure to noxious substances	E850–E858, E860–E869*	Poisonings by drugs or gases
X51	Travel and motion	E903	Travel and motion
X53, X54, X57, Y06	X53 Lack of food; X54 Lack of water; X57 Unspecified privation; Y06 Neglect and Abandonment	E904	Hunger, thirst, exposure, neglect
X60–X69*	Intentional self-harm by poisoning	E950–E952*	Suicide and self inflicted injury (poisonings)
X85, X87–X90*	Assault by poisoning	E962*	Assault by poisoning
Y10–Y19*	Poisonings of undetermined intent	E980–E982*	Poisoning undetermined whether unintentionally or purposely inflicted
Y40–Y59	Drugs, medicaments and biological substances causing adverse effects in therapeutic use	E930–E949	Drugs, medicinal and biological substances causing adverse effects
Y60–Y69	Misadventures to patients during surgical and medical care	E870–E876	Misadventures
Y70–Y82	Medical devices associated with adverse incidents in diagnostic and therapeutic use	New category—No ICD-9 Equivalent	
Y83–Y84	Surgical and other medical procedures as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedures	E878–E879	Complications
Y85–Y89	Sequelae of external causes of morbidity and mortality	E929, E959, E969, E977, E989, E999	Late effects
Y90–Y98	Supplementary factors related to causes of morbidity and mortality classified elsewhere	New category—No ICD-9 Equivalent	

Appendix C

Trauma Definition: Mapping Methodology

Mapping Methodology

The mapping methodology developed by OTR is divided into the following five sections:

i. Unintentional deaths (other than air or vehicle crash);
ii. Unintentional deaths for motor vehicle and air crashes;
iii. Natural deaths;
iv. Intentional and undetermined intentionality deaths; and
v. Other External Cause Code categories.

i. Unintentional Deaths (Other Than Air or Vehicle Crashes)

A death type indicating an unintentional death and a primary death factor other than a vehicle crash (620) or air crash (636) were mapped to the ICD-10-CA External Cause Code categories based on primary death factors as shown in Table C-1.

Table C-1. Mapping Unintentional Deaths (Other Than Air or Vehicle Crashes)

External Cause Code Category	Primary Death Factor
Unintentional Falls	Fall or jump, different level or height (660) Fall or jump, same level (665)
Fire and Flames	Fire, smoke inhalation (654) Fire, thermal injury (655)
Natural and Environmental Factors	Animal bites, kicks (615) Hyperthermia (657) Hypothermia (658) Lightning (645)
Suffocation	Asphyxia, airway obstruction (680) Asphyxia, chest compression (681) Asphyxia, environmental, other anoxic environment, suffocation (683) Asphyxia, hanging (678) Asphyxia, neck compression (679) Asphyxia, positional/restraint (669) Asphyxia, sexual (672) Asphyxia, strangulation (ligature, manual) (643)
Drowning	Drowning, bathtub (601) Drowning, open water (600) Drowning, other (605) Drowning, pond/quarry/casual water (604) Drowning, private pool (603) Drowning, public pool (602)

Table C-1. Mapping Unintentional Deaths (Other Than Air or Vehicle Crashes) (cont'd)

External Cause Code Category	Primary Death Factor
Other Incidents	Burns, chemical (656) Caught in machinery (622) Crushed and/or buried (621) Electrocution (640) Explosion (624) Shooting, air rifle/air pistol (633) Shooting, handgun (632) Shooting, rifle (630) Shooting, shotgun (631) Shooting, weapon not specified (634) Trauma, beating/assault (623) Trauma, blunt force (625) Trauma, cuts or stabs (610)

ii. Unintentional Deaths for Motor Vehicle and Air Crashes

A death type indicating an unintentional death and a primary death factor of a vehicle crash (620) or air crash (636) were mapped to ICD-10-CA External Cause Code categories based on environments as shown in Table C-2.

Table C-2. Mapping Unintentional Deaths for Motor Vehicle and Air Crashes

ICD-9 E Code Category	Environment
Railway Incidents	Railway worker, employee of railroad (155) Railway, not on board, trespasser (535)
Motor Vehicle Traffic Incidents	Ambulance (570) Motor vehicle driver (520) Motor vehicle passenger (521) Motorcycle driver (522) Motorcycle passenger (523) Pedestrian (525) Snowmobiling on road (244)
Motor Vehicle Non-traffic Incidents	Go Kart racing (242) Off road vehicles (excluding snowmobiles) (246) Snowmobiling off road (243)
Pedal Cyclist	Bicycle (528)
Other Road Vehicle Incidents	Horse back riding (220) Public transit (bus, streetcar, GO system) (526)

Table C-2. Mapping Unintentional Deaths for Motor Vehicle and Air Crashes (cont'd)

External Cause Code Category	Environment
Water Transport Incidents	Boating, non-power (canoe, kayak, etc.) (214) Boating, power/motorized (212) Boating, sailboat/sailboard (213) Swimming, snorkelling (210) Water Skiing (211)
Air and Space Transport Incidents	Hand glider, Parasailing (226) Ski diving, parachuting (225) Ultra light aircraft (227)
Vehicle Incidents Not Elsewhere Classifiable	Travelling (999)

iii. Natural Deaths

There are a number of deaths resulting from falls in institutions that are documented with a natural death type. The Trauma Registry Advisory Committee has decided that these deaths should be included in the Injury Deaths in Ontario. Natural deaths with one of the involvements listed below were mapped to the ICD-10-CA External Cause Code category V00–V19 (unintentional falls).

Involvements:

- Fall in LTC Facility (982)
- Fall, Other (984)

iv. Intentional and Undetermined Intentionality Deaths

The ICD-10-CA External Cause Code categories in Tables 1 and 2 correspond to deaths that are documented with an unintentional death type. The following points outline the mapping methodology for deaths with death types indicating suicide, homicide and undetermined.

a) All deaths with a death type of suicide, excluding those deaths due to poisoning as defined by death factors, were mapped to the ICD-10-CA External Cause Code category of X70–X84 (suicide and self-inflicted injury, excluding poisoning) for trauma reports. Figures 14 and 15 and Tables 10 and 11 in this report include all suicide deaths to show the complete picture of suicide in Ontario.

b) All deaths with a death type of homicide were mapped to the ICD-10-CA External Cause Code category of X86, X91–X99, Y00–Y05 and Y07–Y09 (homicide and injury purposely inflicted by others). Cases with death factors of child abuse (730) and blunt trauma—beating (623) were also mapped to this External Cause Code category. A small number of cases with a death factor indicating blunt trauma—beating who are documented with an unintentional death type were mapped to Other Incidents.

c) All deaths with a death type of undetermined were mapped to the External Cause Code category of Y20–Y34 (injury undetermined whether accidentally or purposely inflicted).

v. Other External Cause Code Categories

No injury deaths were mapped to the ICD-10-CA External Cause Code categories listed below because there are no corresponding primary death factors, environments or involvements.

- W44–W45—Foreign bodies;
- Y35—Legal intervention; and
- Y36—Injury resulting from operations of war.

These reporting categories were therefore excluded from all tables in Appendix E of this report.

Appendix D

Trauma Definition: Death Factors

Trauma Definition: Death Factors

The following are the thirty-nine Coroner's Death Factors used by the Ontario Trauma Registry to define trauma in the Death Data Set. The death factors are listed alphabetically and include the numeric code (in brackets) assigned by the Office of the Chief Coroner.

Death Factors	
Abuse, child (730)	Electrocution (640)
Animal bites, kicks (615)	Explosion (624)
Asphyxia, airway obstruction (680)	Fall or jump, different level or height (660)
Asphyxia, chest compression (681)	Fall or jump, same level (665)
Asphyxia, environmental, other anoxic environment, suffocation (683)	Fire, smoke inhalation (654)
Asphyxia, hanging (678)	Fire, thermal injury (655)
Asphyxia, neck compression (679)	Hyperthermia (657)
Asphyxia, positional/restraint (669)	Hypothermia (658)
Asphyxia, sexual (672)	Lightning (645)
Asphyxia, strangulation (ligature, manual) (643)	Shooting, air rifle/air pistol (633)
Burns, chemical (656)	Shooting, handgun (632)
Caught in machinery (622)	Shooting, rifle (630)
Crushed and/or buried (621)	Shooting, shotgun (631)
Drowning, bathtub (601)	Shooting, weapon not specified (634)
Drowning, open water (600)	Trauma, airplane crash (636)
Drowning, other (605)	Trauma, beating/assault (623)
Drowning, pond/quarry/casual water (604)	Trauma, blunt force (625)
Drowning, private pool (603)	Trauma, cuts or stabs (610)
Drowning, public pool (602)	Trauma, motor vehicle collision (620)
	Trauma, train/vehicle, train/pedestrian (626)

Appendix E

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TRAUMA INJURY DEATH HIGHTLIGHTS—ONTARIO, 1999–2000 Through 2003–2004

	1999–2000	2000–2001	2001–2002	2002–2003	2003–2004
No. of Trauma Deaths	3,604	3,583	3,661	3,834	3,856
Mean Age (Years)	52.8	53.4	53.7	55.0	56.8
Median Age (Years)	51	51	52	55	56
Death Rate per 10,000*	3.0	2.9	2.9	3.0	2.9

	No.	%	No.	%	No.	%	No.	%	No.	%
Males	2,389	66.3	2,353	65.7	2,405	65.7	2,471	64.4	2,472	64.1
D.O.A**	565	15.7	473	13.2	266	7.3	185	4.8	160	4.1
MVC Deaths	931	25.8	835	23.3	895	24.4	919	24.0	860	22.3
Seatbelt Worn***	260	27.9	225	26.9	266	29.7	250	27.2	238	27.7
Firearm Injuries	241	6.7	193	5.4	214	5.8	227	5.9	209	5.4
Unintentional Falls	1,017	28.2	1,105	30.8	1,120	30.6	1,269	33.1	1,401	36.3
Farming Deaths	12	0.3	23	0.6	13	0.4	12	0.3	16	0.4
Pediatric Deaths	144	4.0	161	4.5	146	4.0	140	3.7	104	2.7
Cycling Deaths	16	0.4	17	0.5	21	0.6	24	0.6	17	0.4

*** Death rates are per 10,000 population and are age standardized using Canada 1991 population estimates from Statistics Canada.**

**** The number of injury deaths reported as dead on arrival (DOA) at hospital emergency departments since 2001 was much lower than previous years. Discussions with the Office of the Chief Coroner revealed that this could be the result of several factors including an increased number of attempts being made to resuscitate patients who present without vital signs and changes in coding practices.**

***** Count includes all motor vehicle occupants, regardless of whether they were drivers or passengers. Denominator for percentage is the total number of MVC deaths.**

EXTERNAL CAUSES OF INJURY
FOR TRAUMA DEATHS—ONTARIO, 1999–2000 Through 2003–2004

EXTERNAL CAUSES OF INJURY	1999–2000		2000–2001		2001–2002		2002–2003		2003–2004	
	No.	%	No.	%	No.	%	No.	%	No.	%
	3,604	100.0	3,583	100.0	3,661	100.0	3,834	100.0	3,856	100.0
RAILWAY	13	0.4	13	0.4	8	0.2	14	0.4	18	0.5
MOTOR VEHICLE TRAFFIC	919	25.5	814	22.7	878	24.0	883	23.0	840	21.8
MOTOR VEHICLE NON TRAFFIC	12	0.3	21	0.6	17	0.5	36	0.9	20	0.5
PEDAL CYCLE	16	0.4	17	0.5	21	0.6	24	0.6	17	0.4
OTHER ROAD VEHICLE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
WATER TRANSPORT	0	0.0	0	0.0	1	0.0	1	0.0	2	0.1
AIR AND SPACE TRANSPORT	23	0.6	6	0.2	11	0.3	12	0.3	32	0.8
VEHICLE INCIDENTS NOT ELSEWHERE CLASSIFIED	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
UNINTENTIONAL FALLS	1,017	28.2	1,105	30.8	1,120	30.6	1,269	33.1	1,401	36.3
FIRE AND FLAMES	100	2.8	108	3.0	100	2.7	107	2.8	78	2.0
NATURAL AND ENVIRONMENTAL FACTORS	32	0.9	52	1.5	36	1.0	41	1.1	34	0.9
DROWNING	170	4.7	151	4.2	164	4.5	144	3.8	135	3.5

EXTERNAL CAUSES OF INJURY
FOR TRAUMA DEATHS—ONTARIO, 1999–2000 Through 2003–2004

EXTERNAL CAUSES OF INJURY	1999–2000		2000–2001		2001–2002		2002–2003		2003–2004	
	No.	%	No.	%	No.	%	No.	%	No.	%
	3,604	100.0	3,583	100.0	3,661	100.0	3,834	100.0	3,856	100.0
SUFFOCATION	43	1.2	52	1.5	46	1.3	49	1.3	52	1.3
OTHER INCIDENTS	101	2.8	139	3.9	134	3.7	108	2.8	107	2.8
SUICIDE & SELF INFLICTED INJURY (EXCL.POISONINGS)	891	24.7	865	24.1	883	24.1	866	22.6	865	22.4
ASSAULT AND INJURY PURPOSELY INFLICTED (EXCL.POISONINGS)	155	4.3	149	4.2	162	4.4	188	4.9	168	4.4
UNDETERMINED WHETHER UNINTENTIONALLY OR PURPOSELY INFLICTED	112	3.1	91	2.5	80	2.2	92	2.4	87	2.3

NOTE: Trauma deaths are mapped to ICD External Cause Codes using components of the Office of the Chief Coroner's classification system.

DEATH FACTORS FOR
TRAUMA DEATHS—ONTARIO, 1999–2000 Through 2003–2004

DEATH FACTOR	1999–2000		2000–2001		2001–2002		2002–2003		2003–2004	
	No.	%	No.	%	No.	%	No.	%	No.	%
	3,501	100.0	3,484	100.0	3,579	100.0	3,750	100.0	3,778	100.0
Abuse Child, (730)	7	0.2	4	0.1	2	0.1	5	0.1	2	0.1
Animal Bites, Kicks (615)	1	0.0	3	0.1	1	0.0	2	0.1	2	0.1
Asphyxia, Airway Obstruction (680)	14	0.4	35	1.0	18	0.5	15	0.4	29	0.8
Asphyxia, Chest Compression (681)	0	0.0	0	0.0	1	0.0	4	0.1	11	0.3
Asphyxia, Environ. Other Anoxic Enviro., Suffocation (683)	40	1.1	41	1.2	29	0.8	40	1.1	30	0.8
Asphyxia, Hanging (678)	388	11.1	374	10.7	385	10.8	383	10.2	414	11.0
Asphyxia, Neck Compression (679)	0	0.0	0	0.0	1	0.0	0	0.0	2	0.1
Asphyxia, Positional/Restraint (669)	2	0.1	8	0.2	13	0.4	20	0.5	22	0.6
Asphyxia, Sexual (672)	7	0.2	5	0.1	9	0.3	2	0.1	6	0.2
Asphyxia, Strangulation (Ligature, Manual) (643)	14	0.4	12	0.3	7	0.2	6	0.2	14	0.4
Burns, Chemical (656)	1	0.0	2	0.1	2	0.1	1	0.0	1	0.0
Caught in Machinery (622)	11	0.3	6	0.2	5	0.1	7	0.2	6	0.2
Crushed and/or Buried (621)	24	0.7	34	1.0	46	1.3	30	0.8	20	0.5
Drowning, Bathtub (601)	26	0.7	27	0.8	23	0.6	21	0.6	14	0.4
Drowning, Open Water (600)	172	4.9	138	4.0	158	4.4	151	4.0	134	3.5

DEATH FACTORS FOR
TRAUMA DEATHS—ONTARIO, 1999–2000 Through 2003–2004

DEATH FACTOR	1999–2000		2000–2001		2001–2002		2002–2003		2003–2004	
	No.	%	No.	%	No.	%	No.	%	No.	%
	3,501	100.0	3,484	100.0	3,579	100.0	3,750	100.0	3,778	100.0
Drowning, Other (605)	6	0.2	2	0.1	12	0.3	8	0.2	14	0.4
Drowning, Pond/Quarry/Casual Water (604)	15	0.4	23	0.7	14	0.4	11	0.3	12	0.3
Drowning, Private Pool (603)	14	0.4	16	0.5	13	0.4	14	0.4	15	0.4
Drowning, Public Pool (602)	3	0.1	2	0.1	4	0.1	3	0.1	2	0.1
Electrocution (640)	13	0.4	16	0.5	12	0.3	7	0.2	12	0.3
Explosion (624)	4	0.1	4	0.1	5	0.1	3	0.1	9	0.2
Fall or Jump, Different Level or Height (660)	317	9.1	337	9.7	358	10.0	337	9.0	336	8.9
Fall or Jump, Same Level (665)	811	23.2	887	25.5	880	24.6	1,053	28.1	1,177	31.2
Fire, Smoke Inhalation (654)	86	2.5	97	2.8	88	2.5	88	2.3	80	2.1
Fire, Thermal Injury (655)	34	1.0	37	1.1	33	0.9	26	0.7	22	0.6
Hyperthermia (657)	2	0.1	0	0.0	5	0.1	9	0.2	0	0.0
Hypothermia (658)	29	0.8	52	1.5	34	0.9	40	1.1	37	1.0
Lightning (645)	4	0.1	1	0.0	4	0.1	0	0.0	1	0.0
Shooting, Air Rifle, Air Pistol (633)	0	0.0	0	0.0	0	0.0	1	0.0	3	0.1
Shooting, Handgun (632)	61	1.7	63	1.8	75	2.1	76	2.0	82	2.2

DEATH FACTORS FOR
TRAUMA DEATHS—ONTARIO, 1999–2000 Through 2003–2004

DEATH FACTOR	1999–2000		2000–2001		2001–2002		2002–2003		2003–2004	
	No.	%	No.	%	No.	%	No.	%	No.	%
	3,501	100.0	3,484	100.0	3,579	100.0	3,750	100.0	3,778	100.0
Shooting, Rifle (630)	88	2.5	73	2.1	72	2.0	76	2.0	73	1.9
Shooting, Shotgun (631)	86	2.5	56	1.6	67	1.9	71	1.9	46	1.2
Shooting, Weapon Not Specified (634)	6	0.2	1	0.0	0	0.0	3	0.1	5	0.1
Trauma, Airplane Crash (636)	25	0.7	6	0.2	11	0.3	12	0.3	32	0.8
Trauma, Beating/Assault (623)	30	0.9	37	1.1	33	0.9	37	1.0	30	0.8
Trauma, Blunt Force (625)	58	1.7	83	2.4	76	2.1	74	2.0	63	1.7
Trauma, Cuts or Stabs (610)	70	2.0	76	2.2	100	2.8	100	2.7	78	2.1
Trauma, Motor Vehicle Collision (620)	1,032	29.5	924	26.5	981	27.4	1,004	26.8	927	24.5
Trauma, Train/Vehicle, Train/Pedestrian (626)	0	0.0	2	0.1	2	0.1	10	0.3	15	0.4

NOTE: This table excludes deaths where there is no indication of a Primary Death Factor or the Primary Death Factor is not included in the above categories.

TRAUMA DEATH RATE PER 10,000* POPULATION
BY COUNTY/REGIONAL MUNICIPALITY/DISTRICT OF INJURY, 1999–2000 Through 2003–2004

		1999–2000		2000–2001		2001–2002		2002–2003		2003–2004	
Region - County/R.M./District Name**		No. Deaths	Rate	No. Deaths	Rate	No. Deaths	Rate	No. Deaths	Rate	No. Deaths	Rate
Southwestern	- Bruce	24	3.6	44	6.2	36	5.3	31	4.5	18	2.3
	- Elgin	28	3.5	34	3.9	22	2.5	29	3.0	24	2.8
	- Essex	132	3.3	117	2.9	124	3.0	151	3.5	154	3.5
	- Grey	33	3.2	44	4.5	42	4.5	50	4.9	42	3.8
	- Huron	29	4.5	31	4.6	42	6.3	28	3.8	38	5.6
	- Kent	45	4.1	37	3.0	41	3.4	34	3.2	36	2.7
	- Lambton	33	2.3	58	4.5	49	3.5	49	3.3	49	3.6
	- Middlesex	106	2.4	132	2.9	121	2.7	157	3.5	147	3.1
	- Oxford	49	4.2	21	2.1	39	3.2	41	3.4	27	2.4
	- Perth	33	3.7	30	3.3	47	5.1	39	3.9	32	3.7
	Southwestern Total	**512**	**3.2**	**548**	**3.3**	**563**	**3.3**	**609**	**3.5**	**567**	**3.2**
Central South	- Brant	49	3.7	47	3.5	39	2.9	47	3.5	43	2.8
	- Haldimand-Norfolk R.M.	44	3.9	37	3.1	49	4.2	41	3.9	41	3.1
	- Hamilton-Wentworth R.M.	171	3.1	156	2.8	163	3.0	176	3.0	178	2.9
	- Niagara R.M.	158	3.4	134	2.9	152	3.2	154	3.4	134	2.6
	Central South Total	**422**	**3.3**	**374**	**2.9**	**403**	**3.2**	**418**	**3.3**	**396**	**2.8**

TRAUMA DEATH RATE PER 10,000* POPULATION
BY COUNTY/REGIONAL MUNICIPALITY/DISTRICT OF INJURY, 1999–2000 Through 2003–2004

		1999–2000		2000–2001		2001–2002		2002–2003		2003–2004	
Region—County/R.M./District Name**		No. Deaths	Rate	No. Deaths	Rate	No. Deaths	Rate	No. Deaths	Rate	No. Deaths	Rate
Central West	- Dufferin	23	5.1	17	3.6	22	4.5	21	4.6	25	4.5
	- Halton R.M.	97	2.6	102	2.7	101	2.4	92	2.1	140	3.2
	- Peel R.M	196	2.5	203	2.5	200	2.3	231	2.4	213	2.2
	- Waterloo R.M.	73	1.6	114	2.5	110	2.3	120	2.5	134	2.7
	- Wellington	72	3.8	54	2.8	60	2.9	64	3.1	62	2.9
	Central West Total	**461**	**2.4**	**490**	**2.5**	**493**	**2.4**	**528**	**2.5**	**574**	**2.6**
Central East	- Durham R.M.	145	3.2	159	3.4	178	3.6	184	3.7	169	3.2
	- Haliburton	17	8.8	10	4.3	19	13.3	16	9.5	15	10.1
	- Northumberland	40	4.0	36	3.8	33	3.5	38	3.9	31	3.0
	- Peterborough	59	3.9	54	3.4	54	3.2	63	4.3	74	4.1
	- Simcoe	125	3.3	126	3.2	133	3.2	130	3.2	135	3.2
	- Victoria	27	3.6	33	4.6	27	3.8	41	4.2	27	3.8
	- York R.M.	134	2.1	125	1.9	129	1.8	158	2.1	146	1.9
	Central East Total	**547**	**3.0**	**543**	**2.8**	**573**	**2.8**	**630**	**3.0**	**597**	**2.8**

TRAUMA DEATH RATE PER 10,000* POPULATION
BY COUNTY/REGIONAL MUNICIPALITY/DISTRICT OF INJURY, 1999–2000 Through 2003–2004

		1999–2000		2000–2001		2001–2002		2002–2003		2003–2004	
Region—County/R.M./District Name**		No. Deaths	Rate	No. Deaths	Rate	No. Deaths	Rate	No. Deaths	Rate	No. Deaths	Rate
Toronto		**667**	**2.4**	**691**	**2.4**	**640**	**2.2**	**755**	**2.5**	**744**	**2.5**
Eastern	**- Frontenac**	58	4.1	59	3.8	60	3.9	51	3.1	58	3.5
	- Hastings	52	4.3	44	3.3	51	4.0	47	3.1	41	2.8
	- Lanark	31	4.6	21	3.3	22	3.2	21	3.4	22	2.9
	- Leeds & Grenville	36	3.3	41	3.7	47	4.7	27	2.2	29	2.2
	- Lennox & Addington	6	1.5	4	0.9	5	1.4	4	1.1	12	2.7
	- Ottawa-Carleton R.M.	184	2.3	157	1.9	169	2.0	152	1.8	179	2.0
	- Prescott & Russell	24	3.0	29	3.6	25	3.1	26	3.5	31	3.8
	- Prince Edward	14	5.7	5	1.4	8	2.9	10	3.8	14	4.6
	- Renfrew	47	4.6	43	4.1	48	4.7	38	3.5	40	4.0
	- Stormont, Dundas & Glen.	45	3.9	42	3.3	53	4.4	47	3.8	53	4.3
	Eastern Total	**497**	**3.0**	**445**	**2.6**	**488**	**2.9**	**423**	**2.4**	**479**	**2.7**

TRAUMA DEATH RATE PER 10,000* POPULATION
BY COUNTY/REGIONAL MUNICIPALITY/DISTRICT OF INJURY, 1999–2000 Through 2003–2004

		1999–2000		2000–2001		2001–2002		2002–2003		2003–2004	
Region—County/R.M./District Name**		No. Deaths	Rate	No. Deaths	Rate	No. Deaths	Rate	No. Deaths	Rate	No. Deaths	Rate
North	- Algoma District	46	3.3	59	4.2	51	3.7	42	3.1	51	4.1
	- Cochrane District	59	6.5	38	4.1	30	3.2	40	4.7	27	3.2
	- Manitoulin District	15	11.3	3	2.2	17	12.1	10	7.3	9	6.9
	- Muskoka District	35	5.9	48	8.8	45	8.1	32	4.6	36	5.6
	- Nipissing District	45	5.3	48	5.2	47	5.0	43	4.7	40	3.7
	- Parry Sound District	28	6.3	43	9.9	27	6.5	38	7.0	49	10.3
	- Sudbury R.M.	64	3.8	52	3.1	70	4.1	61	3.7	82	4.4
	- Sudbury District	27	10.3	21	8.7	22	8.6	26	11.1	17	7.0
	- Timiskaming District	13	2.8	24	6.7	21	6.3	20	5.2	20	5.0
	- Kenora District	61	9.1	78	11.8	83	12.3	86	13.2	78	12.0
	- Rainy River District	18	8.3	13	5.0	8	3.0	12	5.4	16	6.5
	- Thunder Bay District	86	5.2	65	3.8	79	4.8	60	3.6	72	4.3
	North Total	**497**	**5.4**	**492**	**5.4**	**500**	**5.4**	**470**	**5.2**	**497**	**5.3**
Ontario		**3,603**	**3.0**	**3,583**	**2.9**	**3,660**	**2.9**	**3,833**	**3.0**	**3,854**	**2.9**

*** Death rates are per 10,000 population and are age standardized using Canada 1991 population estimates from Statistics Canada.**

**** Based on 'Primary Municipality', which indicates where an injury occurred.**

NOTE: This table excludes deaths where there is no indication of 'Primary Environment' or the death occurred out of province.

EXTERNAL CAUSES OF INJURY BY AGE GROUP FOR TRAUMA DEATHS—ONTARIO, 2003–2004

	<1	1–4	5–9	10–14	15–19	20–24	25–34	35–44	45–54	55–64	65–74	75–84	85+	Unk	Total	%
EXTERNAL CAUSES OF INJURY	**16**	**15**	**12**	**48**	**210**	**227**	**340**	**483**	**488**	**367**	**366**	**637**	**647**	**0**	**3,856**	**100.0**
% of DEATHS	**0.4**	**0.4**	**0.3**	**1.2**	**5.4**	**5.9**	**8.8**	**12.5**	**12.7**	**9.5**	**9.5**	**16.5**	**16.8**	**0.0**	**100.0**	
RAILWAY	0	0	0	1	5	2	3	4	3	0	0	0	0	0	**18**	**0.5**
MOTOR VEHICLE TRAFFIC	1	3	4	20	97	94	115	134	120	70	77	86	19	0	**840**	**21.8**
MOTOR VEHICLE NON TRAFFIC	0	1	0	1	1	3	6	4	3	0	0	0	1	0	**20**	**0.5**
PEDAL CYCLE	0	0	0	3	3	0	3	1	2	3	1	1	0	0	**17**	**0.4**
OTHER ROAD VEHICLE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0.0**
WATER TRANSPORT	0	0	0	0	0	0	1	1	0	0	0	0	0	0	**2**	**0.1**
AIR AND SPACE TRANSPORT	0	0	2	0	0	0	6	4	14	3	3	0	0	0	**32**	**0.8**
VEHICLE INCIDENTS NOT ELSEWHERE CLASSIFIED	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0.0**
UNINTENTIONAL FALLS	0	0	0	0	2	8	12	25	78	89	158	452	577	0	**1,401**	**36.3**
FIRE AND FLAMES	1	4	2	2	3	6	4	13	14	9	10	6	4	0	**78**	**2.0**
NATURAL AND ENVIRONMENTAL FACTORS	0	0	0	2	1	1	3	3	4	2	3	8	7	0	**34**	**0.9**
DROWNING	2	2	2	4	12	10	10	21	13	21	20	14	4	0	**135**	**3.5**
SUFFOCATION	7	1	0	0	2	2	4	7	7	10	8	1	3	0	**52**	**1.3**

EXTERNAL CAUSES OF INJURY BY AGE GROUP FOR TRAUMA DEATHS—ONTARIO, 2003–2004

	<1	1–4	5–9	10–14	15–19	20–24	25–34	35–44	45–54	55–64	65–74	75–84	85+	Unk	Total	%
EXTERNAL CAUSES OF INJURY	**16**	**15**	**12**	**48**	**210**	**227**	**340**	**483**	**488**	**367**	**366**	**637**	**647**	**0**	**3,856**	**100.0**
% of DEATHS	**0.4**	**0.4**	**0.3**	**1.2**	**5.4**	**5.9**	**8.8**	**12.5**	**12.7**	**9.5**	**9.5**	**16.5**	**16.8**	**0.0**	**100.0**	
OTHER INCIDENTS	0	1	1	1	7	7	14	22	25	10	11	8	0	0	**107**	**2.8**
SUICIDE & SELF INFLICTED INJURY (EXCL.POISONINGS)	0	0	0	8	54	60	119	200	166	124	66	45	23	0	**865**	**22.4**
ASSAULT AND INJURY PURPOSELY INFLICTED (EXCL.POISONINGS)	5	2	1	5	19	29	30	28	20	15	2	9	3	0	**168**	**4.4**
UNDETERMINED WHETHER UNINTENTIONALLY OR PURPOSELY INFLICTED	0	1	0	1	4	5	10	16	19	11	7	7	6	0	**87**	**2.3**

INTENTIONALITY (DEATH TYPE) BY AGE GROUP AND SEX FOR TRAUMA DEATHS—ONTARIO, 2003–2004

	<1	1–4	5–9	10–14	15–19	20–24	25–34	35–44	45–54	55–64	65–74	75–84	85+	UNK	Total	%
TOTAL																
- FEMALES	9	5	3	18	54	48	64	111	124	92	130	289	430	0	1,377	**35.8**
- MALES	7	10	9	30	156	179	274	372	363	274	233	346	216	0	2,469	**64.2**
No. of DEATHS	**16**	**15**	**12**	**48**	**210**	**227**	**338**	**483**	**487**	**366**	**363**	**635**	**646**	**0**	**3,846**	**100.0**
% of DEATHS	**0.4**	**0.4**	**0.3**	**1.2**	**5.5**	**5.9**	**8.8**	**12.6**	**12.7**	**9.5**	**9.4**	**16.5**	**16.8**	**0.0**	**100.0**	
UNINTENTIONAL																
- FEMALES	7	2	3	14	40	25	40	62	70	62	116	277	421	0	1,139	**29.6**
- MALES	4	10	8	20	93	108	140	177	212	154	172	297	193	0	1,588	**41.3**
No. of DEATHS	**11**	**12**	**11**	**34**	**133**	**133**	**180**	**239**	**282**	**216**	**288**	**574**	**614**	**0**	**2,727**	**70.9**
% of DEATHS IN AGE GRP	**68.8**	**80.0**	**91.7**	**70.8**	**63.3**	**58.6**	**53.3**	**49.5**	**57.9**	**59.0**	**79.3**	**90.4**	**95.0**	**0.0**		
SUICIDE*																
- FEMALES	0	0	0	1	12	16	15	37	44	24	10	4	6	0	169	**4.4**
- MALES	0	0	0	7	42	44	104	163	122	100	56	41	17	0	696	**18.1**
No. of DEATHS	**0**	**0**	**0**	**8**	**54**	**60**	**119**	**200**	**166**	**124**	**66**	**45**	**23**	**0**	**865**	**22.5**
% of DEATHS IN AGE GRP	**0.0**	**0.0**	**0.0**	**16.7**	**25.7**	**26.4**	**35.2**	**41.4**	**34.1**	**33.9**	**18.2**	**7.1**	**3.6**	**0.0**		
HOMICIDE*																
- FEMALES	2	2	0	2	2	6	7	10	6	4	0	6	2	0	49	**1.3**
- MALES	3	0	1	3	17	23	22	18	14	11	2	3	1	0	118	**3.1**
No. of DEATHS	**5**	**2**	**1**	**5**	**19**	**29**	**29**	**28**	**20**	**15**	**2**	**9**	**3**	**0**	**167**	**4.4**
% of DEATHS IN AGE GRP	**31.3**	**13.3**	**8.3**	**10.4**	**9.0**	**12.8**	**8.6**	**5.8**	**4.1**	**4.1**	**0.6**	**1.4**	**0.5**	**0.0**		
UNDETERMINED																
- FEMALES	0	1	0	1	0	1	2	2	4	2	4	2	1	0	20	**0.5**
- MALES	0	0	0	0	4	4	8	14	15	9	3	5	5	0	67	**1.7**
No. of DEATHS	**0**	**1**	**0**	**1**	**4**	**5**	**10**	**16**	**19**	**11**	**7**	**7**	**6**	**0**	**87**	**2.2**
% of DEATHS IN AGE GRP	**0.0**	**6.7**	**0.0**	**2.1**	**1.9**	**2.2**	**3.0**	**3.3**	**3.9**	**3.0**	**1.9**	**1.1**	**0.9**	**0.0**		

*** Excluding poisoning.**

This table excludes deaths where the Death Type is not included in the above categories.

Note: 2 cases have an unknown sex.

DRUG AND ALCOHOL INVOLVEMENTS BY EXTERNAL CAUSES OF INJURY

FOR TRAUMA DEATHS—ONTARIO, 2003–2004

EXTERNAL CAUSES OF INJURY	INVOLVEMENT			TOTAL No. of DEATHS W/INVOL.	TOTAL No. of DEATHS	% of DEATHS*
	DRUGS ONLY	ALCOHOL ONLY	DRUGS & ALCOHOL			
	72	**439**	**42**	**553**	**3,856**	**14.3**
RAILWAY	0	8	1	9	18	**50.0**
MOTOR VEHICLE TRAFFIC	17	178	5	200	840	**23.8**
MOTOR VEHICLE NON TRAFFIC	1	9	0	10	20	**50.0**
PEDAL CYCLE	0	3	0	3	17	**17.6**
OTHER ROAD VEHICLE	0	0	0	0	0	**0.0**
WATER TRANSPORT	0	1	0	1	2	**50.0**
AIR AND SPACE TRANSPORT	0	0	0	0	32	**0.0**
VEHICLE INCIDENTS NOT ELSEWHERE CLASSIFIED	0	0	0	0	0	**0.0**
UNINTENTIONAL FALLS	5	76	5	86	1,401	**6.1**
FIRE AND FLAMES	4	20	2	26	78	**33.3**
NATURAL AND ENVIRONMENTAL FACTORS	1	5	1	7	34	**20.6**
DROWNING	2	33	6	41	135	**30.4**

DRUG AND ALCOHOL INVOLVEMENTS BY EXTERNAL CAUSES OF INJURY

FOR TRAUMA DEATHS—ONTARIO, 2003–2004

EXTERNAL CAUSES OF INJURY	INVOLVEMENT			TOTAL No. of DEATHS W/INVOL.	TOTAL No. of DEATHS	% of DEATHS*
	DRUGS ONLY	ALCOHOL ONLY	DRUGS & ALCOHOL			
	72	**439**	**42**	**553**	**3,856**	**14.3**
SUFFOCATION	1	9	1	11	52	**21.2**
OTHER INCIDENTS	1	13	0	14	107	**13.1**
SUICIDE & SELF INFLICTED INJURY (EXCL.POISONINGS)	20	48	11	79	865	**9.1**
ASSAULT AND INJURY PURPOSELY INFLICTED (EXCL.POISONINGS)	17	14	9	40	168	**23.8**
UNDETERMINED WHETHER UNINTENTIONALLY OR PURPOSELY INFLICTED	3	22	1	26	87	**29.9**

Involvements for alcohol use are:

- Alcohol Involvement, Driver (815)

- Alcohol Involvement, Passenger (820)

- Alcohol Involvement, Pedestrian (825)

- Alcohol Involvement, Other Driver (830)

- Alcohol Involvement, Accidents not M.V.C (835)

- Alcohol Involvement (980)

Involvements for drug use are:

- Cocaine Detected in System (811)

- Methadone detected in system (814)

- Heroin detected in system (858)

- Ecstacy detected in system (871)

- GHB detected in system (872)

- Drug Involvement (970)

*** Involving drugs and/or alcohol.**

REPORTED SEATBELT USE FOR MOTOR VEHICLE OCCUPANT DEATHS—ONTARIO, 2003–2004

	SEATBELTS PRESENT				SEATBELTS NOT PRESENT		SEATBELT USE NOT DOCUMENTED		TOTAL No. of CASES	
	WORN		NOT WORN							
	TOTAL	%	TOTAL	%	TOTAL	%	TOTAL	%	TOTAL	%
TOTAL	**238**	**37.4**	**150**	**23.5**	**3**	**0.5**	**246**	**38.6**	**637**	**100**
MOTOR VEHICLE DRIVER	141	34.6	90	22.1	3	0.7	174	42.6	408	**100**
MOTOR VEHICLE PASSENGER	97	42.4	60	26.2	0	0.0	72	31.4	229	**100**

Note: Of the 860 MVC Deaths in 2003-2004, 223 of these deaths are not documented as motor vehicle occupants (i.e. drivers or passengers). These 223 Deaths include motorcyclists, pedestrians, ATV riders and snowmobilers.

Primary Environments reported in this table are:

- Motor Vehicle, Driver (520)

- Motor Vehicle, Passenger (521)

- Commercial Driver, Truck/taxi/Etc. (163)

Seatbelt use is documented as involvements:

- Seatbelt, Present But Not Worn (906)

- Seatbelt, Present Worn By Deceased (907)

- Seatbelt, Not Present (908)

FIREARM RELATED DEATHS
BY DEATH TYPE AND SEX—ONTARIO, 2003–2004

	UNINTENTIONAL	SUICIDE	HOMICIDE	UNDETERMINED	TOTAL	%
TOTAL						
No. OF DEATHS	2	145	60	2	**209**	**100.0**
% OF DEATHS*	1.0	69.4	28.7	1.0	**100.0**	
Males						
NO. OF DEATHS	2	139	52	2	**195**	**93.3**
% OF DEATHS*	1.0	71.3	26.7	1.0	**100.0**	
Females						
NO. OF DEATHS	0	6	8	0	**14**	**6.7**
% OF DEATHS*	0.0	42.9	57.1	0.0	**100.0**	

*** Percentage calculation based on row totals.**

Note: 0 cases have an unknown sex and were therefore excluded from this table.

SUICIDE* (INCLUDING POISONING) BY SEX
ONTARIO, 1999–2000 Through 2003–2004

		1999–2000	2000–2001	2001–2002	2002–2003	2003–2004
Males	**# of Deaths**	834	815	807	851	860
	Mean Age (Years)	45	43	44	45	46
	Median Age (Years)	43	41	43	44	44
Females	**# of Deaths**	243	251	291	243	296
	Mean Age (Years)	45	44	45	45	46
	Median Age (Years)	43	44	45	43	46
Total	**# of Deaths**	**1,077**	**1,066**	**1,098**	**1,094**	**1,156**
	Mean Age (Years)	**45**	**43**	**45**	**45**	**46**
	Median Age (Years)	**43**	**42**	**44**	**44**	**45**

*** Suicide deaths due to poisoning are excluded from the OTR definition of trauma. However, all suicide deaths are reported in this table to provide a complete picture of suicide in the province.**
Note: This table excludes cases where sex is not documented.

MECHANISM OF SUICIDE* (INCLUDING POISONING) BY SEX AND AGE GROUP, 2003–2004

	<1	1–4	5–9	10–14	15–19	20–24	25–34	35–44	45–54	55–64	65–74	75–84	85+	UNK	Total	%**
Hanging																
Males	0	0	0	6	34	27	53	92	57	33	16	17	4	0	**339**	**29.5**
Females	0	0	0	1	10	9	7	14	19	9	1	0	1	0	**71**	**6.2**
Total	0	0	0	7	44	36	60	106	76	42	17	17	5	0	**410**	**35.7**
Firearm Injury																
Males	0	0	0	1	1	8	14	24	21	32	23	10	5	0	**139**	**12.1**
Females	0	0	0	0	1	1	1	2	1	0	0	0	0	0	**6**	**0.5**
Total	0	0	0	1	2	9	15	26	22	32	23	10	5	0	**145**	**12.6**
Drugs & Alcohol																
Males	0	0	0	0	3	5	19	37	33	23	8	2	5	0	**135**	**11.7**
Females	0	0	0	1	1	4	14	21	35	21	12	6	2	0	**117**	**10.2**
Total	0	0	0	1	4	9	33	58	68	44	20	8	7	0	**252**	**21.9**
CO, Vehicle Exhaust, Furnace Fumes																
Males	0	0	0	0	0	3	7	15	12	10	5	4	0	0	**56**	**4.9**
Females	0	0	0	0	0	0	0	2	4	2	2	0	0	0	**10**	**0.9**
Total	0	0	0	0	0	3	7	17	16	12	7	4	0	0	**66**	**5.8**
Jumping																
Males	0	0	0	0	1	4	19	10	8	6	3	3	4	0	**58**	**5.0**
Females	0	0	0	0	0	2	4	6	8	5	5	0	3	0	**33**	**2.9**
Total	0	0	0	0	1	6	23	16	16	11	8	3	7	0	**91**	**7.9**

MECHANISM OF SUICIDE* (INCLUDING POISONING) BY SEX AND AGE GROUP, 2003–2004

	<1	1–4	5–9	10–14	15–19	20–24	25–34	35–44	45–54	55–64	65–74	75–84	85+	UNK	Total	%**
Drowning																
Males	0	0	0	0	1	1	3	2	3	3	1	0	2	0	**16**	**1.4**
Females	0	0	0	0	0	1	1	5	3	4	1	0	0	0	**15**	**1.3**
Total	0	0	0	0	1	2	4	7	6	7	2	0	2	0	**31**	**2.7**
All Other																
Males	0	0	0	0	6	4	14	25	27	18	11	7	2	0	**114**	**9.9**
Females	0	0	0	0	1	4	2	12	11	4	1	4	2	0	**41**	**3.6**
Total	0	0	0	0	7	8	16	37	38	22	12	11	4	0	**155**	**13.5**
Total																
Males	0	0	0	7	46	52	129	205	161	125	67	43	22	0	**857**	**74.5**
Females	0	0	0	2	13	21	29	62	81	45	22	10	8	0	**293**	**25.5**
Total	0	0	0	9	59	73	158	267	242	170	89	53	30	0	**1,150**	**100.0**

*** Mechanism of suicide is defined using Death Factors.**

**** Percents are of the total number of suicides for the year.**

Note: 6 cases are excluded because their "Environment Primary Indicator" are null.

Note: 0 cases have an unknown sex and were therefore excluded from this table.

TRAUMA DEATHS BY AGE GROUP AND SEX
BY REGION, 2003–2004

Age (Years)	Southwestern			Central South			Central West			Central East			Toronto			Eastern			North			Ontario		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total
<1	1	2	**3**	0	1	**1**	2	1	**3**	2	1	**3**	1	0	**1**	1	2	**3**	0	2	**2**	7	9	**16**
1–4	5	1	**6**	0	0	**0**	1	0	**1**	1	0	**1**	0	2	**2**	3	1	**4**	0	1	**1**	10	5	**15**
5–9	1	1	**2**	0	1	**1**	2	0	**2**	2	0	**2**	0	0	**0**	1	0	**1**	3	1	**4**	9	3	**12**
10–14	7	3	**10**	5	1	**6**	6	3	**9**	7	2	**9**	1	2	**3**	1	2	**3**	3	5	**8**	30	18	**48**
15–19	20	8	**28**	14	6	**20**	25	11	**36**	25	11	**36**	23	4	**27**	23	7	**30**	26	7	**33**	156	54	**210**
20–24	30	11	**41**	16	6	**22**	24	6	**30**	23	4	**27**	25	9	**34**	31	6	**37**	30	6	**36**	179	48	**227**
25–34	44	9	**53**	19	6	**25**	40	6	**46**	43	16	**59**	64	14	**78**	29	7	**36**	35	6	**41**	274	64	**338**
35–44	50	15	**65**	36	13	**49**	50	14	**64**	56	16	**72**	60	22	**82**	58	22	**80**	62	9	**71**	372	111	**483**
45–54	64	21	**85**	39	10	**49**	56	20	**76**	45	17	**62**	56	26	**82**	51	13	**64**	53	17	**70**	364	124	**488**
55–64	39	9	**48**	36	9	**45**	29	17	**46**	36	13	**49**	45	28	**73**	38	6	**44**	52	10	**62**	275	92	**367**
65–74	32	18	**50**	20	10	**30**	28	19	**47**	45	22	**67**	39	29	**68**	27	20	**47**	43	14	**57**	234	132	**366**
75–84	48	47	**95**	46	25	**71**	54	43	**97**	53	53	**106**	75	65	**140**	33	31	**64**	37	27	**64**	346	291	**637**
85+	26	54	**80**	29	48	**77**	37	80	**117**	33	71	**104**	50	103	**153**	26	40	**66**	13	35	**48**	214	431	**645**
Unknown	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
Total	**367**	**199**	**566**	**260**	**136**	**396**	**354**	**220**	**574**	**371**	**226**	**597**	**439**	**304**	**743**	**322**	**157**	**479**	**357**	**140**	**497**	**2,470**	**1,382**	**3,852**

Note: There are 2 cases with no documented age or sex. The sum of the regional totals does not equal the Ontario total due to missing data on the region of incident.

2 cases are excluded because the Environment Primary Indicator Is Not Equal To "Y".

MOTOR VEHICLE TRAUMA DEATHS BY AGE GROUP AND SEX BY REGION, 2003–2004

Age (Years)	Southwestern			Central South			Central West			Central East			Toronto			Eastern			North			Ontario		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total
<1	0	1	**1**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	1	**1**
1–4	1	0	**1**	0	0	**0**	1	0	**1**	1	0	**1**	0	0	**0**	1	0	**1**	0	0	**0**	4	0	**4**
5–9	0	0	**0**	0	1	**1**	1	0	**1**	1	0	**1**	0	0	**0**	0	0	**0**	1	0	**1**	3	1	**4**
10–14	3	2	**5**	1	0	**1**	4	1	**5**	4	2	**6**	0	0	**0**	0	1	**1**	1	2	**3**	13	8	**21**
15–19	10	7	**17**	4	3	**7**	15	6	**21**	14	10	**24**	3	0	**3**	9	5	**14**	9	3	**12**	64	34	**98**
20–24	16	7	**23**	7	2	**9**	15	2	**17**	8	3	**11**	4	2	**6**	14	4	**18**	12	1	**13**	76	21	**97**
25–34	21	5	**26**	6	2	**8**	18	5	**23**	18	8	**26**	12	2	**14**	12	2	**14**	7	2	**9**	94	26	**120**
35–44	14	8	**22**	12	5	**17**	15	5	**20**	8	7	**15**	10	3	**13**	19	9	**28**	17	6	**23**	95	43	**138**
45–54	20	12	**32**	8	7	**15**	14	4	**18**	7	4	**11**	10	4	**14**	9	5	**14**	13	6	**19**	81	42	**123**
55–64	10	3	**13**	7	3	**10**	5	2	**7**	8	4	**12**	5	4	**9**	4	4	**8**	7	4	**11**	46	24	**70**
65–74	8	5	**13**	2	1	**3**	3	6	**9**	11	13	**24**	7	6	**13**	4	4	**8**	4	3	**7**	39	38	**77**
75–84	9	7	**16**	9	4	**13**	4	4	**8**	9	11	**20**	9	4	**13**	3	6	**9**	5	2	**7**	48	38	**86**
85+	1	1	**2**	1	1	**2**	1	4	**5**	4	1	**5**	3	0	**3**	0	0	**0**	2	1	**3**	12	8	**20**
Unknown	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**
Total	**113**	**58**	**171**	**57**	**29**	**86**	**96**	**39**	**135**	**93**	**63**	**156**	**63**	**25**	**88**	**75**	**40**	**115**	**78**	**30**	**108**	**575**	**284**	**859**

Note: There is 1 case with no documented age or sex. The sum of the regional totals does not equal the Ontario total due to missing data on the region of incident.

EXTERNAL CAUSES OF INJURY BY SEX, 2003–2004

EXTERNAL CAUSES OF INJURY	FEMALES			MALES			TOTAL		
	No.	%*	MEAN AGE	No.	%*	MEAN AGE	No.	%*	MEAN AGE
	1,382	100	66.2	2,472	100	51.5	3,854	100	56.8
RAILWAY	4	0.3	29.5	14	0.6	29.8	18	0.5	29.7
MOTOR VEHICLE TRAFFIC	283	20.5	47.4	556	22.5	41.6	839	21.8	43.6
MOTOR VEHICLE NON TRAFFIC	1	0.1	34.0	19	0.8	34.0	20	0.5	34.0
PEDAL CYCLE	3	0.2	23.3	14	0.6	41.0	17	0.4	37.9
OTHER ROAD VEHICLE	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
WATER TRANSPORT	0	0.0	0.0	2	0.1	35.0	2	0.1	35.0
AIR AND SPACE TRANSPORT	6	0.4	48.0	26	1.1	43.0	32	0.8	43.9
VEHICLE INCIDENTS NOT ELSEWHERE CLASSIFIED	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
UNINTENTIONAL FALLS	750	54.3	82.8	651	26.3	73.7	1,401	36.4	78.6
FIRE AND FLAMES	28	2.0	46.7	50	2.0	45.9	78	2.0	46.2
NATURAL AND ENVIRONMENTAL FACTORS	13	0.9	66.0	21	0.8	57.0	34	0.9	60.4
DROWNING	21	1.5	49.1	114	4.6	46.6	135	3.5	47.0

EXTERNAL CAUSES OF INJURY BY SEX, 2003–2004

EXTERNAL CAUSES OF INJURY	FEMALES			MALES			TOTAL		
	No.	%*	MEAN AGE	No.	%*	MEAN AGE	No.	%*	MEAN AGE
	1,382	100	66.2	2,472	100	51.5	3,854	100	56.8
SUFFOCATION	19	1.4	45.5	33	1.3	45.0	52	1.3	45.2
OTHER INCIDENTS	16	1.2	52.3	91	3.7	43.7	107	2.8	45.0
SUICIDE & SELF INFLICTED INJURY (EXCL.POISONINGS)	169	12.2	44.7	696	28.2	45.9	865	22.4	45.6
ASSAULT AND INJURY PURPOSELY INFLICTED (EXCL.POISONINGS)	49	3.5	40.2	118	4.8	34.0	167	4.3	35.8
UNDETERMINED WHETHER UNINTENTIONALLY OR PURPOSELY INFLICTED	20	1.4	51.3	67	2.7	48.9	87	2.3	49.4

Note: There are 2 cases with no documented sex.

*** Denominator for percentage is column total.**