2005 Report

Major Injury in Ontario

(includes 2003–2004 data)

Ontario Trauma Registry

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- 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 Comprehensive Data Set. Trauma cases were selected based on an Injury Severity Score (ISS) > 12 and on External Cause of Injury inclusion and exclusion criteria. Cases also met one of the following criteria:

- Were admitted to a participating facility; or
- Were treated in the Emergency Department of a participating facility (not admitted); or
- Died in the Emergency Department of a participating facility after treatment was initiated (not admitted).

Overall Trends

In 2003–2004, there were 3,755 cases hospitalized with major trauma in 11 participating facilities across 14 sites in Ontario. This represents an increase of 9% compared to 1999–2000, and an average annual increase of 2.4% from 1999–2000 to 2003–2004.

In 2003–2004, these major trauma cases accounted for 55,259 days in the participating facilities. Most (72%, n = 2,714) of these cases were male patients, and the average age of all cases was 44 years. The average age has fluctuated over the last five years between 41 years in 2000–2001 and 44 years in 2003–2004.

Of the 3,755 cases, 15% (n = 561) died, either in-hospital (n = 449) or in the emergency department (DIE) (n = 112). The number of in-hospital deaths has increased by 5% since 1999–2000, an average annual increase of 1%. The number of DIEs has increased by 15% since 1999–2000, with an average annual increase of 5%.

Trends by Cause

Motor vehicle collisions were responsible for nearly one-half of the hospitalizations (46%, n = 1,717), followed by unintentional falls (32%, n = 1,217). Where specific cause of injury is noted, injury purposefully inflicted by another person (i.e. homicide and assault) (8%, n = 315) and suicide and self-inflicted injury (excluding poisoning) (2%, n = 71) were the next most common causes of injury. When causes of injury were analyzed by age group, motor vehicle collisions and falls were the leading two causes in all age groups except among cases aged 20 to 34 years. Although motor vehicle collisions (excluding cyclists) were responsible for the majority (59%, n = 473) of cases in this age group, the second most common cause of injury was injury purposely inflicted by another person (17%, n = 133).

Among the 1,814 cases injured in motor vehicle collisions, 56% (n = 954) were drivers and 22% (n = 369) were passengers. Motor vehicle collisions accounted for 38% (n = 215) of major injury deaths.

Among the 1,217 cases injured in unintentional falls, the most common specified types of falls were falls on or from stairs/steps (20%, n = 241) and falls from slipping, tripping and stumbling (18%, n = 216). Falls were responsible for 38% (n = 213) of major injury in-hospital deaths.

Context of Injury

Ten percent (n = 367) of the major trauma cases were injured while involved in a sports or recreational-related activity. Seven percent (n = 251) of admissions were documented to be (paid) work-related. Eleven percent (n = 423) of the cases had a positive blood alcohol concentration, defined as greater than or equal to 17.0 mmol/L.

Clinical Aspects of Injury

The most common injury types were internal organ injuries (86%, n = 3,217), followed by musculoskeletal (71%, n = 2,676) and superficial (41%, n = 1,542) injuries. Ninety-three percent (n = 3,480) of cases were documented with blunt injury (includes lacerations), 5% (n = 195) had penetrating injuries and 2% (n = 80) were hospitalized due to burns.

For all cases, the average injury severity score (ISS) was 25. Since 1999–2000, the mean ISS has changed very little. In 2003–2004, the highest mean ISS occurred among cases injured by foreign bodies (excluding chocking) (ISS = 35, n = 1) followed by motor vehicle boarding/alighting (ISS = 35, n = 3) and suffocation (ISS = 34, n = 1) and in vehicle incidents not elsewhere classified (ISS = 34, n = 1). The highest ISS also occurred among cases with burn injuries (as opposed to blunt or penetrating) (ISS = 28).

The average length of stay (LOS) was 15 days. The average LOS remained constant from 1999–2000 to 2001–2002, followed by an increase of 6% in 2002–2003. A decrease of 11% was noted between 2002–2003 and 2003–2004. In 2003–2004, the longest average LOS was among suicide and self-inflicted injury cases (LOS = 27 days) and among cases with burn injuries (LOS = 28 days).

Of the 3,194 cases discharged alive, 62% (n = 1,982) were discharged home either with or without support services, 17% (n = 554) were discharged to a rehabilitative facility, and 15% (n = 494) were transferred to another acute care facility.

Ontario Trauma Registry 2005 Report
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Table of Contents

1. Introduction

1.1 Purpose of Report

The purpose of this report is to provide a descriptive analysis of patients hospitalized with major trauma in the 11 lead trauma hospitals in Ontario. The data source for this report is the Ontario Trauma Registry Comprehensive Data Set (OTR CDS). Trauma cases were selected based on an Injury Severity Score (ISS) > 12 and using External Cause of Injury inclusion and exclusion criteria.

1.2 About the Ontario Trauma Registry (OTR)

1.2.1 Goal

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

1. Permit planning and evaluation of prevention programs, legislative changes and cost expenditures; and
2. Aid in resource allocation decisions and contribute to cost reductions.

1.2.2 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 Ministry of Health and Long-Term Care, Ministry of Labour, Ministry of Transportation, CIHI, epidemiologists, trauma care providers, the Office of the Chief Coroner and the Trauma Association of Canada. The current structure and implementation of the OTR are based on data elements, data collection procedures, report formats and management procedures determined by TRAC.

The primary users of the OTR include 11 participating facilities, 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.

1.2.3 Structure

For injury prevention programs to be effective, data are needed to clearly define the nature and scope of injury in the province. The use of the International Classification of Disease (ICD) External Cause of Injury coding system for all injury admissions facilitates the analysis of injury data in Ontario. The OTR consists of three major sources of data as listed below. Standard and ad hoc reports from these data sets detail demographic information, cause and nature of injury admissions and deaths provincially. This information is used by researchers and injury prevention specialists to develop and monitor injury prevention programs.

The Ontario Trauma Registry is composed of 3 datasets:

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. Selection criteria for inclusion in the OTR MDS are based on specific External Cause of Injury Codes within the International Classification of Disease, 9th revision (ICD-9) (E Codes). For the 2005 Report (2003–2004 data), inclusion criteria will be based on specific External Cause of Injury Codes within the International Classification of Disease, 10th revision.

   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 **Death Data Set** from the Office of the Chief Coroner contains information on all deaths in the province due to injury. There are approximately 3,500 injury deaths annually in Ontario. Reporting on all injury deaths rather than in-hospital deaths (as reported in the OTR MDS) provides a more complete picture of trauma in the province. Information contained in the database at the Office of the Chief Coroner is indispensable to injury prevention programs because a significant percentage of injured persons die before admission to hospital.

   Trauma is defined in the Death Data Set using components of the Office of the Chief Coroner's classification system of death types, death factors, environments and involvements. The OTR has developed a system to map the classification system used by the Office of the Chief Coroner to External Cause of Injury Codes to allow standardized reporting across the data sets of the OTR and comparisons to other sources of data. Information in the Death Data Set includes demographics, cause of death and factors contributing to death such as alcohol use.

3. The **Comprehensive Data Set**, the data source for this report, is described in detail in the next chapter.

2. Methods

2.1 Data Source

The data source for this report is the **OTR CDS**. The OTR CDS consists of detailed information on patients hospitalized with major trauma in 11 participating facilities across 14 sites 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 (CDS) is based on the Injury Severity Score (ISS), an international scoring system created to calculate the severity of injury, and an appropriate External Cause of Injury Code (Appendix B). External Cause of Injury Code inclusion criteria have been expanded for the CDS to include other causes of injury where appropriate as determined by the CDS Working Group. Appendix C describes these additional guidelines.

Specialized trauma software (COLLECTOR and TRI-CODE from Digital Innovations and Tri-Analytics, Inc.) is used to collect and analyze data on approximately 4,000 cases annually. This software has been customized for the province of Ontario with input from participating facilities and the Trauma Registry Advisory Committee (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 monthly to the OTR to create the CDS.

2.2 Inclusion/Exclusion Criteria

2.2.1 Definition of Trauma

Trauma is defined in the CDS as any case:

- With an ISS > 12 and an appropriate External Cause of Injury Code (Appendix B) who meet one of the following criteria:
  - Admitted to a participating facility; or
  - Treated in the Emergency Department of a participating facility (not admitted); or
  - Died in the Emergency Department of a participating facility after treatment is initiated (not admitted).

Additional trauma definition guidelines, as established by the CDS Working Group and the TRAC, are found in Appendices B and C.

2.2.2 Participating Facilities

The following 11 participating facilities (across 14 sites) provide data for the OTR CDS:

- Children's Hospital of Eastern Ontario, Ottawa
- Hamilton Health Sciences Corporation, Hamilton (2 sites)
- Hospital for Sick Children, Toronto
- Hôtel-Dieu Grace Hospital, Windsor
- Kingston General Hospital, Kingston
- London Health Science Centre, London (2 sites)
- The Ottawa Hospital, Ottawa (2 sites)

- St. Joseph's Health Centre (formerly Sudbury General Hospital), Sudbury
- St. Michael's Hospital, Toronto
- Sunnybrook and Women's College Health Science Centre, Toronto
- Thunder Bay Regional Hospital, McKellar Campus, Thunder Bay

In this report, data from facilities are reported according to a letter of the alphabet ("A" to "N") so that specific facilities cannot be identified.

2.3 Data Elements

2.3.1 Data Dictionary

The OTR CDS Data Dictionary has been prepared by the OTR with input from participating facility staff and members of the TRAC. The purpose of the document is to define each data element in the customized Ontario version of COLLECTOR. The Data Dictionary includes a list of commonly used abbreviations and their meanings, the field name, the field type and field length for each data element, and an explanation of what is required for the data element as well as a list of menu choices wherever appropriate.

The Data Dictionary is updated routinely to reflect recommendations made by the TRAC Subcommittee and the CDS Working Group, to clarify definitions based on questions from participating facility staff and to reflect software changes. Data Dictionary appendices include the definition of trauma, Minimal Data Set (MDS) trauma patient definition (External Cause of Injury List), list of participating facilities, CIHI physician services, non-operative procedures definitions and Motor Vehicle Collision Report information. The latest update of the Data Dictionary was published in July 2005 and is available electronically through CIHI's client services Web site.

A complete list of CDS data elements can be found in Appendix D.

2.3.2 Working Group

The CDS Working Group discusses data collection and definition issues raised by participating facilities. This group meets by teleconference throughout the year on an as-needed basis. Minutes from the meetings are distributed to all users and the Data Dictionary is updated to reflect recommendations made by the Working Group.

Current members of the CDS Working Group are:

- Maureen Brennan Barnes, Children's Hospital of Eastern Ontario, Ottawa
- Tanya Charyk Stewart, London Health Sciences Centre, London
- Susan Jaglal, University of Toronto Department of Physical Therapy, Toronto
- Yvonne St. Pierre, St. Joseph's Health Centre, Sudbury
- Dr. Ken Reid, Kingston General Hospital, Kingston
- Joyce Williamson, London Health Sciences Centre, London
- Lana Jeanveau, St. Joseph's Health Centre, Sudbury
- Margaret Kreller, Hospital for Sick Children, Toronto

2.3.3 Data Quality

There are over 90 detailed edit checks in the COLLECTOR software package to ensure data accuracy, consistency and completeness. These edits include range checks, cross checks, validity checks, date sequence edits and edits for blank fields.

CIHI performs various validity checks on the data submitted by the lead/trauma hospitals, such as checking that the diagnosis codes are valid and for completeness of the data. If the data do not pass CIHI validations, a notification of errors is sent to the lead/trauma hospitals who are then asked to resubmit the corrected or complete data.

CIHI has implemented a data quality framework to provide a means to systematically assess, improve and document data quality for all databases at CIHI. Data quality is defined as "fitness for use" from the user's perspective. Using the data quality framework, the OTR CDS is currently being assessed on the basis of five dimensions: accuracy, timeliness, comparability, usability and relevance. Each of these five dimensions is made up of related characteristics, which are operationalized using detailed criteria. A description of CIHI's Data Quality Framework is available on CIHI's Web site (www.cihi.ca). Once the OTR CDS data quality report is completed, a summary will be posted on the CIHI Web site.

2.4 Reporting Guidelines

This report:

- Contains data from 11 participating facilities across 14 sites transmitted to the OTR as of October 18, 2005.
- Is created by fiscal year of discharge as approved by the TRAC Committee (October 2004). In previous years, the report was created by fiscal year of admission.
- Contains totals which may not match exactly when comparing with previous reports, since facilities may update data from previous years.
- Reports on 5-year trends (1999–2000 to 2003–2004).
- Does not include admissions due to suicide or homicide resulting from poisoning.
- Generally reports cases rather than admissions; because patients may be transferred between participating hospitals, the same individual patient may be included more than once in the CDS.
- Includes in-hospital deaths and DIEs (Died in Emergency) that occur in participating hospitals; deaths that occur before active treatment is initiated (i.e. Dead on Arrival) are not included.
- Reports data from facility sites according to a letter of the alphabet ("A" to "N") so that specific facilities cannot be identified.
- The lead trauma hospitals submit data to the OTR by site. The data tables in Appendix H report on 14 individual sites.
- May report percentages that do not add to 100% because of rounding.
- Reports cause of injury by the primary External Cause of Injury Code documented; up to three External Cause of Injury Codes (i.e. primary, secondary and tertiary) can be documented in the Comprehensive Data Set.
- Calculates percentages using all records as denominators unless otherwise stated.

- Tables produced by age and/or sex may not sum to the total because cases with unknown age and/or unknown sex are included in the total but not in the individual age or sex categories.
- Injury data are collected using the International Classification of Diseases, 10th revision, Canada (ICD-10-CA) and the Canadian Classification of Health Interventions (CCI).
- As of 2002–2003, diagnostic information was received coded to the International Classification of Diseases, 10th Revision, Canada (ICD-10-CA).

3. Overall Trend Analysis

3.1 2003–2004 Highlights

In the 2003–2004 OTR CDS, there were 3,755 injury cases with an ISS > 12 and an appropriate cause of injury treated in 11 participating facilities (across 14 sites) in Ontario.

- 3,755 injury cases accounting for 55,259 hospital days
- Mean length of stay (LOS) is 15 days (median = 8)
- Mean ISS is 25 (median = 24)
- 561 deaths, which includes 449 in-hospital deaths (admitted patients) and 112 deaths in the Emergency Department (DIEs)
- 2,714 (72%) are male
- 1,949 (52%) are direct admissions
- Mean age for all cases is 44 years (median = 43)
- 1,460 (39%) of cases are less than 35 years of age
- 114 (3%) are out of province residents
- 1,365 (36%) of patients have ventilator days documented; the mean number of ventilator days is 6 days (median = 2)
- 184 (5%) have intracranial pressure (ICP) monitoring days documented; the mean number of ICP days is 4 days (median = 3)
- 423 (11%) have a blood alcohol concentration greater than or equal to 17.0 mmol/L
- The most common injury type is internal organ (86%) followed by muscoloskeletal (71%) and superficial (41%) injuries
- 3,480 (93%) of cases have blunt injury
- 251 (7%) are work related
- 367 (10%) of injuries occur in a sports and recreational related activity
- 238 (6%) of cases have an incomplete Glasgow Coma Scale due to the administration of paralytic agents

3.2 Trend Analysis 1999–2000 to 2003–2004

Over the past 5 years, the number of cases in the CDS has increased from 3,435 in 1999–2000 to 3,755 in 2003–2004 (Appendix H, Table 1). This represents a 9% increase compared to 1999–2000, and an average annual increase of 2.4% between 1999–2000 and 2003–2004.

Of the 3,755 cases, 561 (15%) died either in-hospital or DIE. The number of in-hospital deaths has increased by 5% since 1999–2000, with an average annual increase of 1%. The percentage of the total caseload attributed to in-hospital deaths has fluctuated between 11.1% and 12.4% over the past five years. The number of DIEs has increased by 15% since 1999–2000, with an average annual increase of 5% from 1999–2000 to 2003–2004. DIEs as a percentage of the total caseload has fluctuated between 2.3% to 3.0% over the last five years.

The mean ISS has remained relatively constant at 25 from 1999–2000 to 2003–2004.

The mean LOS remained relatively constant at 16 days from 1999–2000 to 2001-2002. The mean LOS increased from 16 days in 2001–2002 to 17 days in 2002-2003, an increase of 6%, and decreased to 15 days in 2003–2004, representing a decrease of 11%.

3.3 Demographic Analysis

Figure 1 shows the injury cases by age group. Cases:

- Less than 20 years of age account for:
  - 18% (n = 660) of all cases
  - 15% (n = 8,213) of participating hospital days
- Between the ages of 20–34 years account for:
  - 21% (n = 800) of all cases
  - 21% (n = 11,428) of participating hospital days
- Between the ages of 35–64 years account for:
  - 36% (n = 1,360) of all cases
  - 39% (n = 21,464) of participating hospital days
- Aged 65 years of age and over account for:
  - 25% (n = 930) of all cases
  - 26% (n = 14,146) of participating hospital days

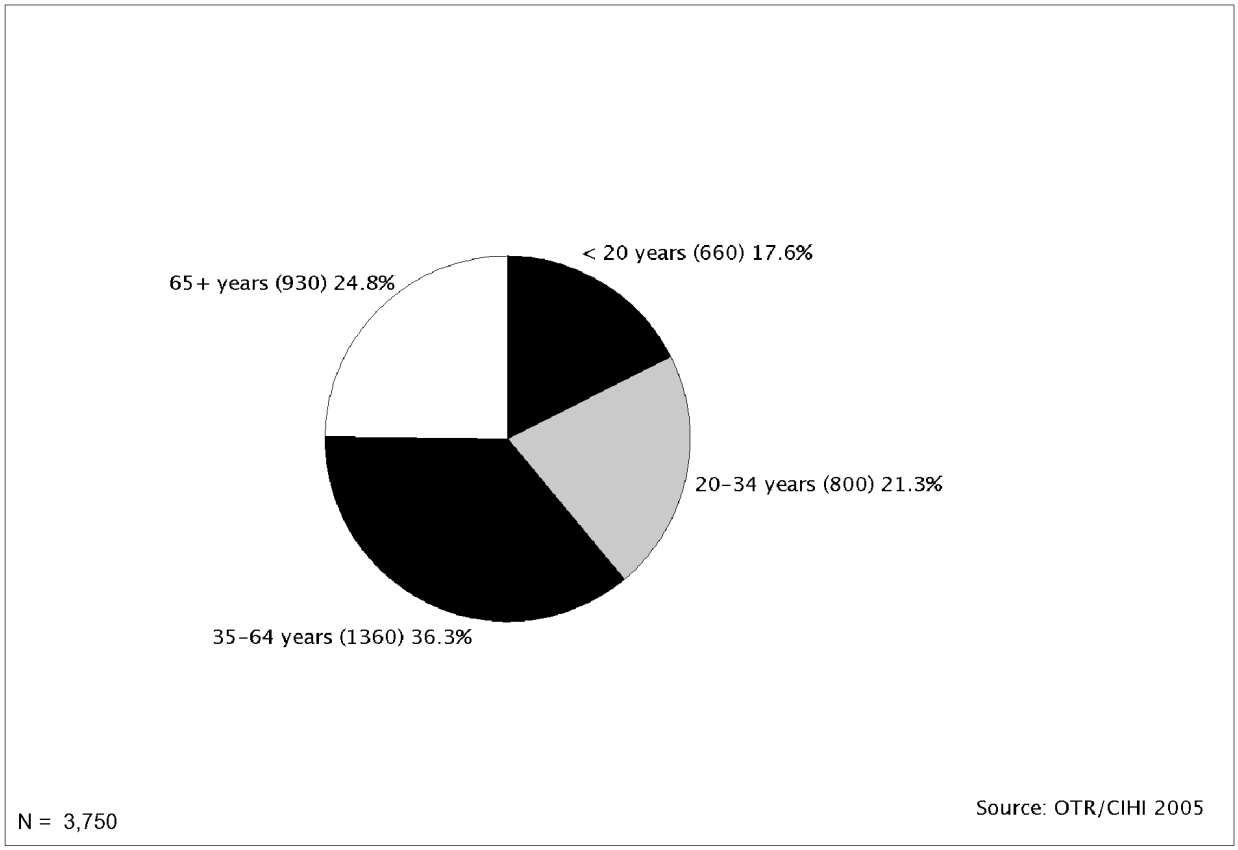


Figure 1. Injury Cases by Age Group, 2003–2004*

***Note:** 5 cases with unknown age

As seen in Figure 2, males account for the greatest (72%) number of cases, with a large peak in young males around 18 years of age.

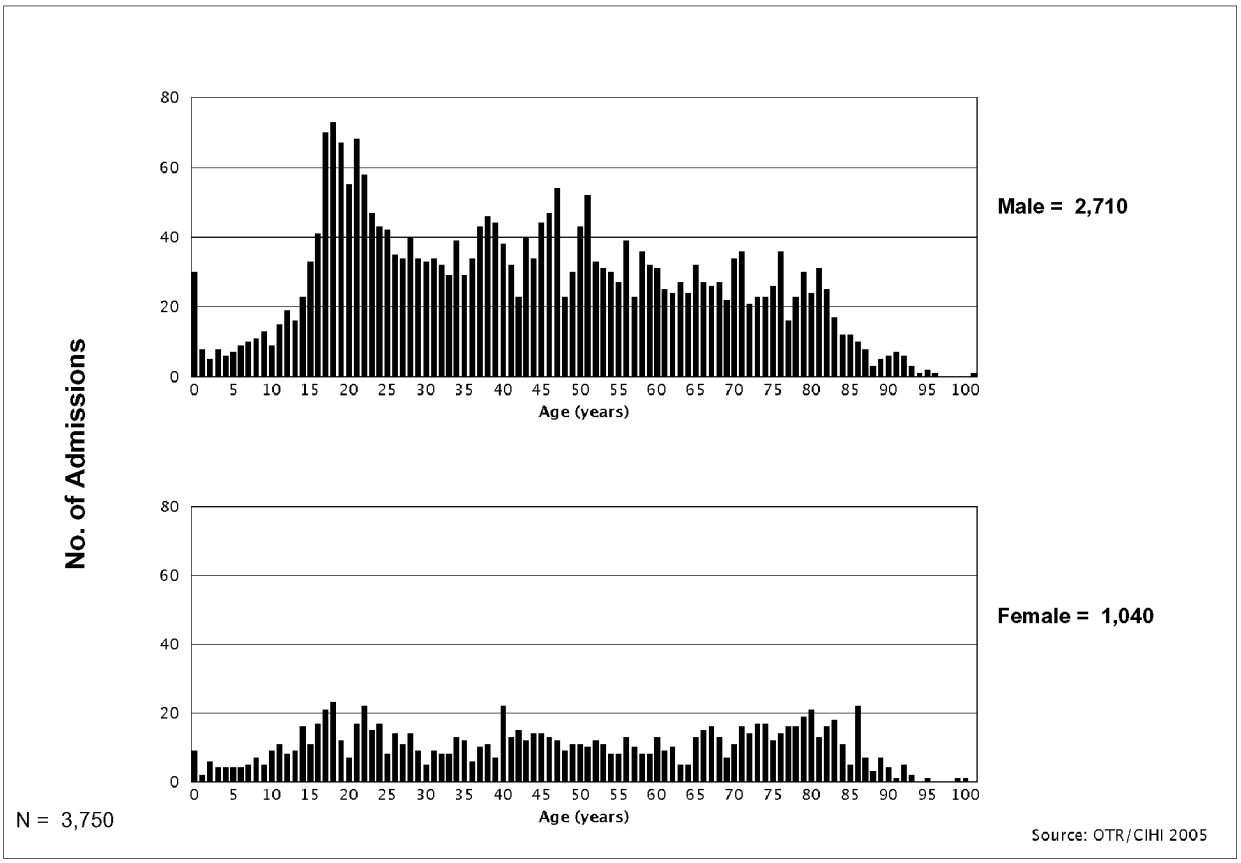


Figure 2. Injuries by Single Year of Age and Sex—All Cases, 2003–2004*

***Note:** 5 cases with unknown age

4. Analysis of Causes of Injury

4.1 Overall Causes

Figure 3 shows the causes of injury for the 3,755 cases in the 2003–2004 CDS. Motor vehicle collisions were responsible for about half of the cases (46%, n = 1,717). Unintentional falls were the second most common cause of major injury hospitalizations (32%, n = 1,217).

Tables 13 and 14 in Appendix H show highlights for the most common causes of injury.

The mean ages for the most common causes of injury are (Appendix H, Table 14):

- 38 years for motor vehicle collisions (median = 34)
- 59 years for unintentional falls (median = 64)
- 29 years for assault and injury purposely inflicted by another person (median = 26)
- 39 years for suicide and self inflicted injury (median = 34)

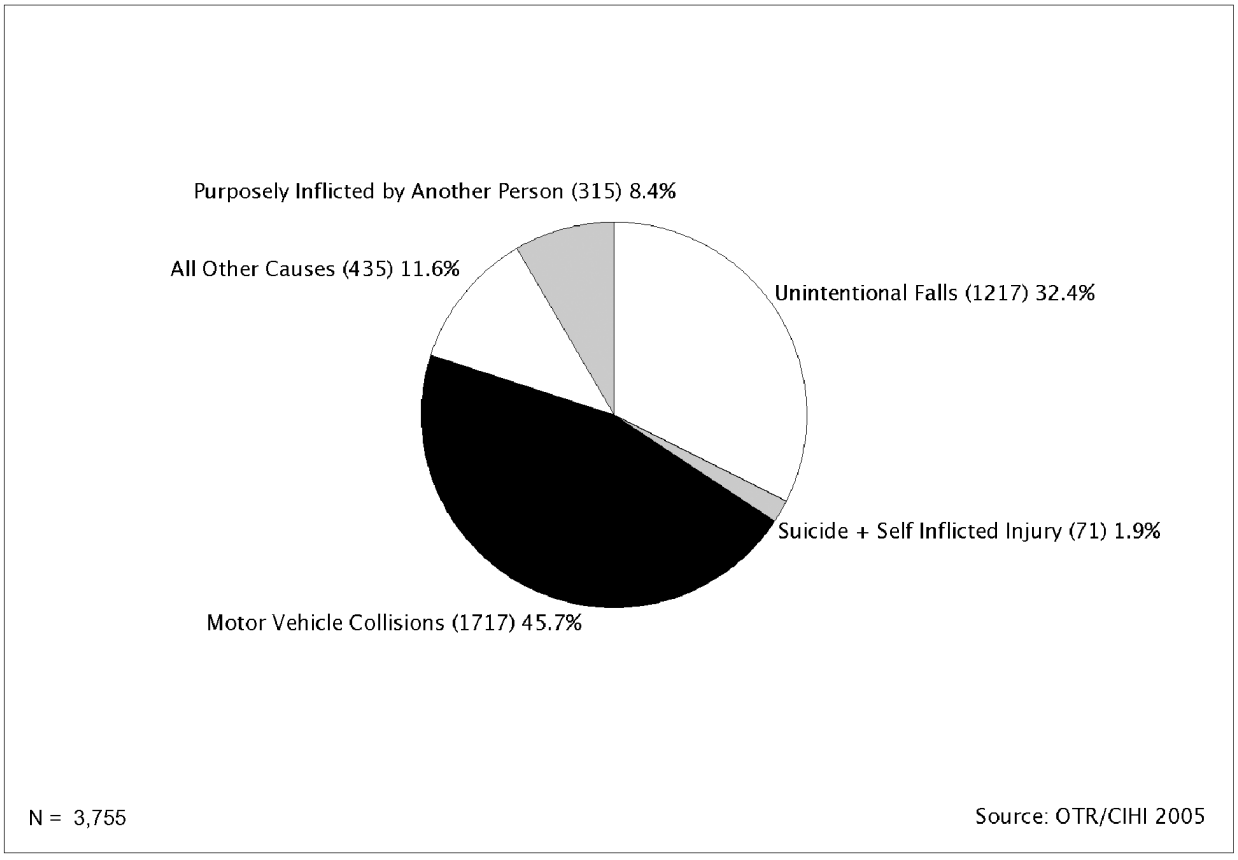


Figure 3. Causes of Injury—All Cases, 2003–2004

4.2 Causes by Age Group

4.2.1 Cases Under 20 Years of Age

Figure 4 shows the causes of injury among cases under the age of 20 years (n = 660). Motor vehicle collisions *excluding* those involving cyclists* comprised just over half of these cases (53%, n = 348), followed by unintentional falls (16%, n = 104). Injuries purposely inflicted by another person were responsible for 12% of cases (n = 81) and cycling incidents were responsible for 7% of the cases (n = 49).

***Note**: Cyclists are reported separately from motor vehicle collisions in cases under age 35 because 64% (n = 65) of cycling incidents occurred among this age group.

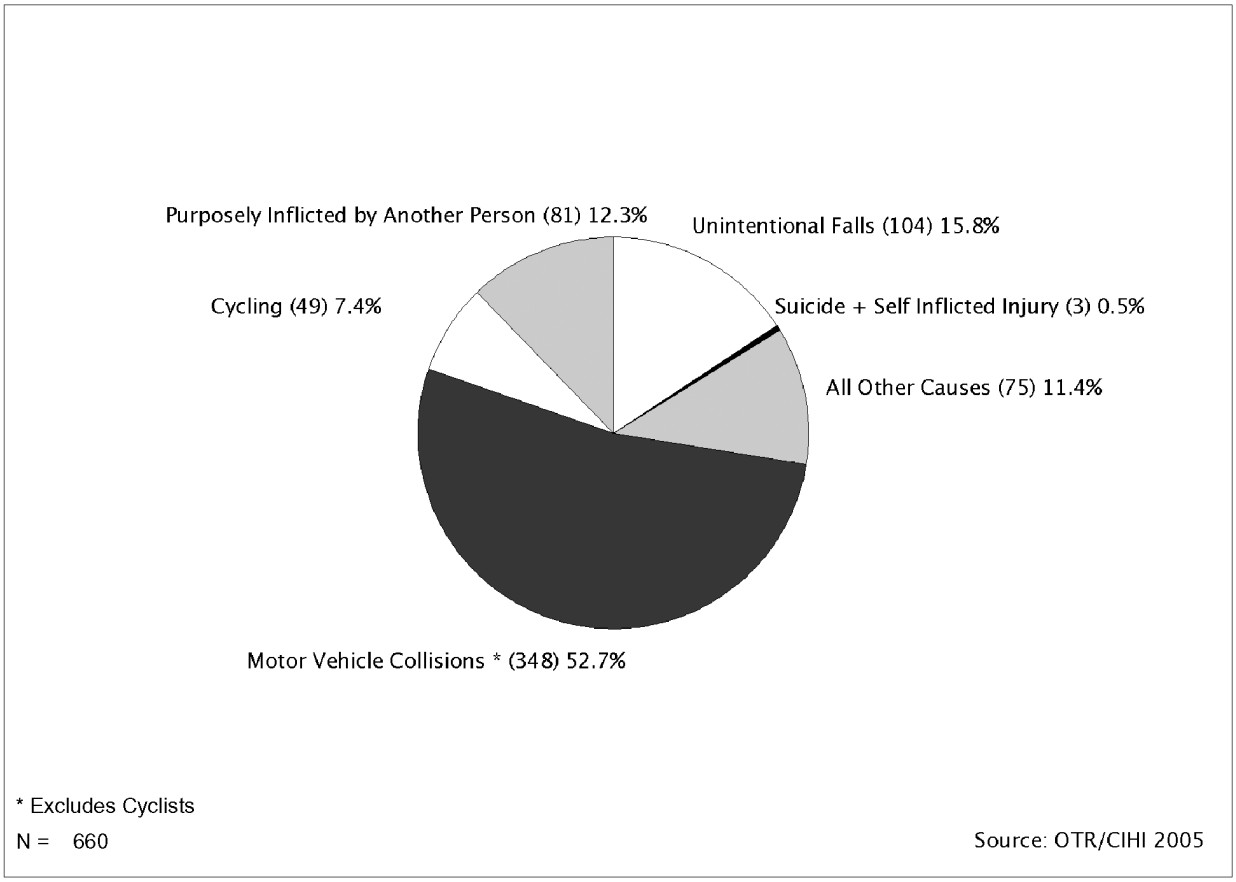


Figure 4. Causes of Injury—Cases Under 20 Years of Age, 2003–2004

4.2.2 Cases Aged 20 to 34 Years

Figure 5 shows the causes of injury for cases aged 20 to 34 years (n = 800). Motor vehicle collisions *excluding* those involving cyclists* were responsible for 59% (n = 473) of the cases. The next most common causes of injury were injuries purposely inflicted by another person (17%, n = 133) and unintentional falls (10%, n = 83).

***Note**: Cyclists are reported separately from motor vehicle collisions in cases under age 35 because 64% (n = 65) of cycling incidents occurred among this age group.

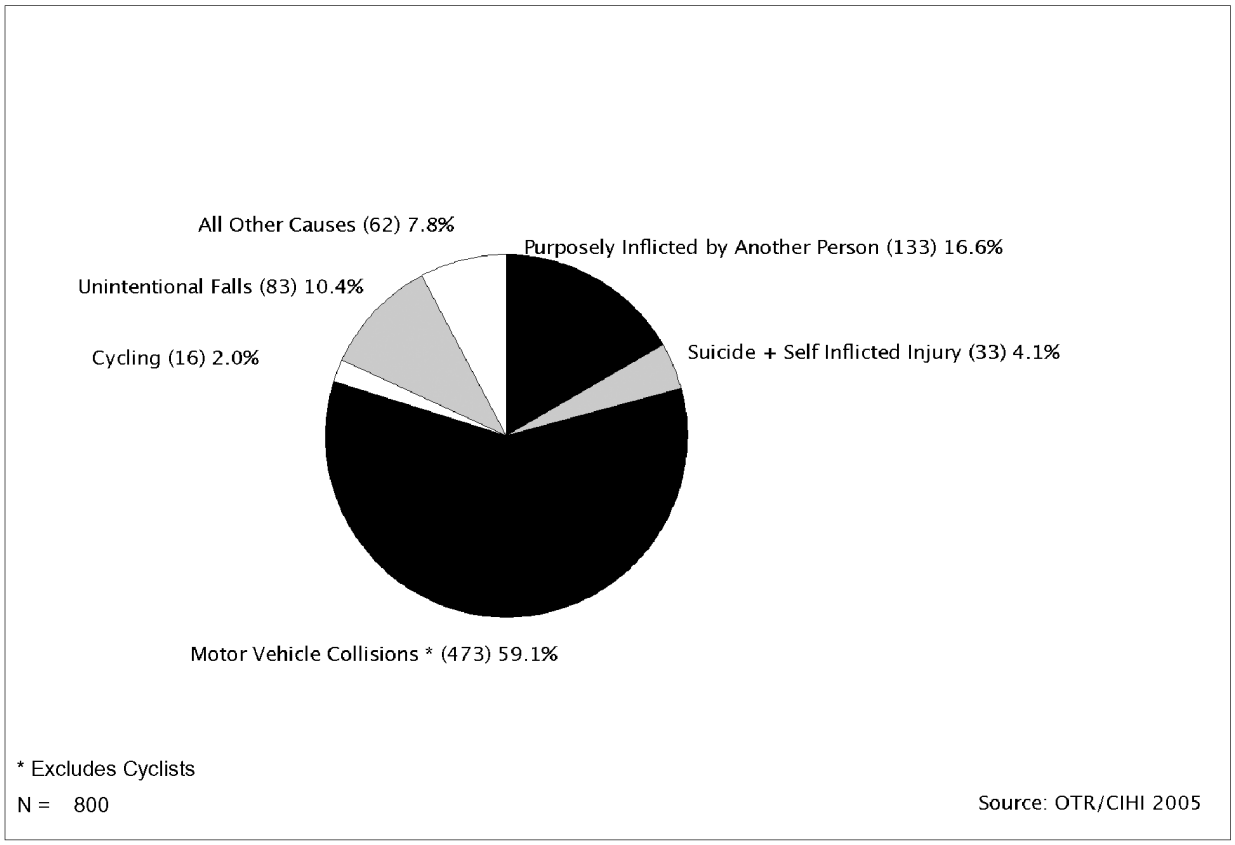


Figure 5. Causes of Injury—Cases Aged 20 to 34 Years, 2003–2004

4.2.3 Cases Aged 35 to 64 Years

Figure 6 shows the causes of injury for cases between 35 and 64 years of age (n = 1,360). Motor vehicle collisions *including* those involving cyclists were responsible for almost half of the cases (45%, n = 618), followed by unintentional falls (31%, n = 422).

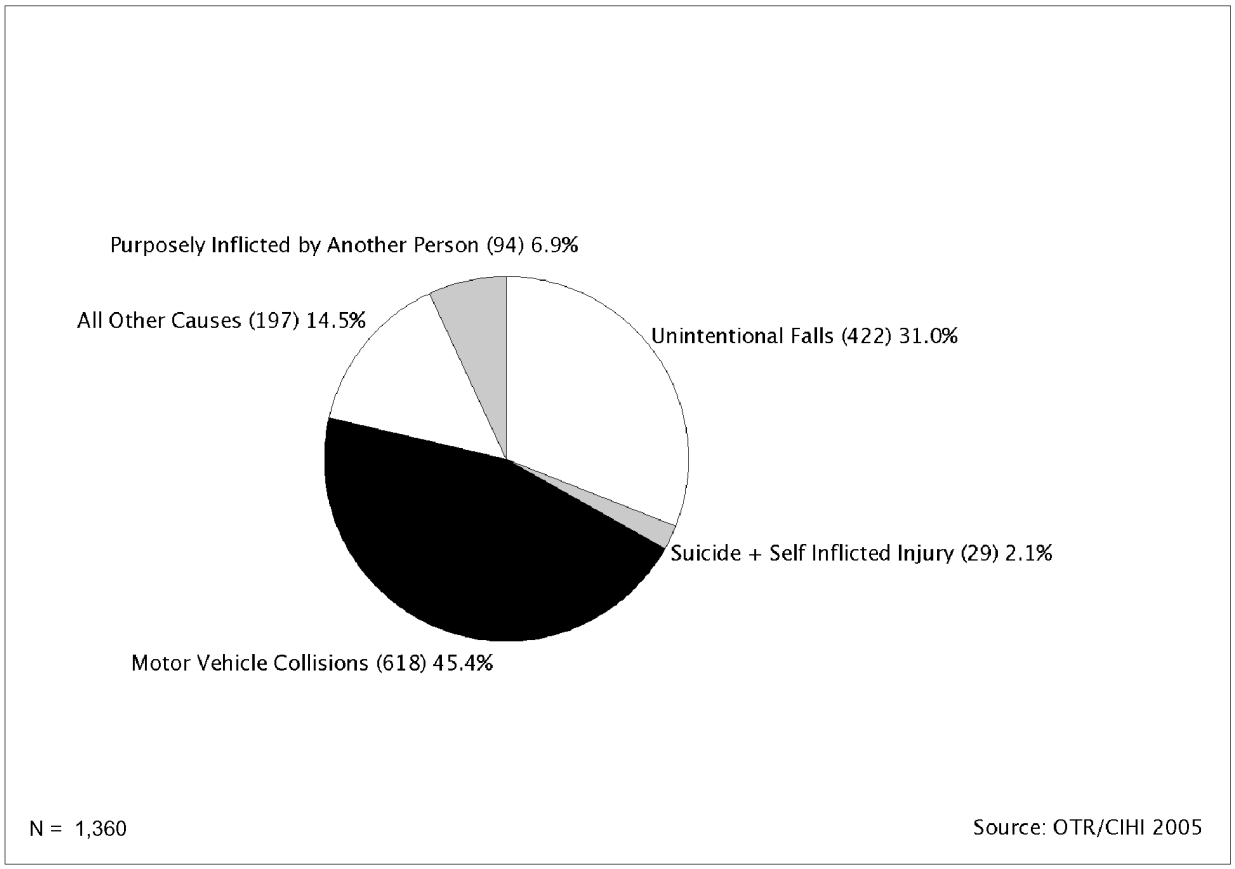


Figure 6. Causes of Injury—Cases Aged 35 to 64 Years, 2003–2004

4.2.4 Cases Aged 65 Years and Over

Figure 7 shows the causes of injury for cases aged 65 years and over (n = 930). Unintentional falls were responsible for the majority of cases (65%, n = 608), followed by motor vehicle collisions *including* those involving cyclists (26%, n = 239). Together, these two causes of injury were responsible for 91% (n = 847) of the cases in this age group.

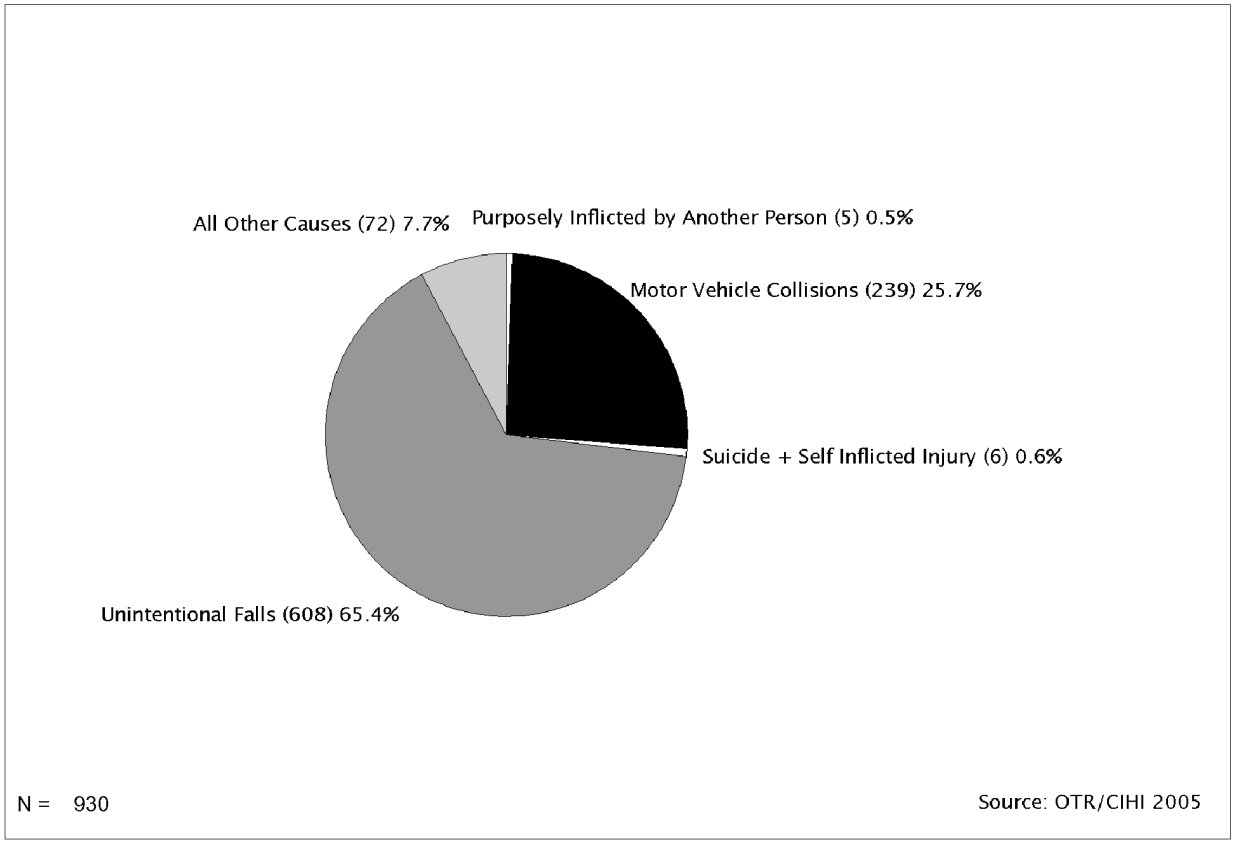


Figure 7. Causes of Injury—Cases Aged 65 Years and Over, 2003–2004

4.3 Motor Vehicle Collisions

4.3.1 Motor Vehicle Traffic and Non-Traffic Incidents

A motor vehicle is defined within the ICD coding system as any mechanically or electrically powered device, not operated on rails, upon which any person or property may be transported or drawn upon a highway. Automobiles, buses, construction machinery, farm and industrial machinery, fire engines, motorcycles, motorized bicycles, trolley buses not operating on rails, trucks and vans are all included in this category. A motor vehicle collision is a transport collision involving a motor vehicle. A motor vehicle traffic collision occurs on a public highway. A motor vehicle non-traffic collision occurs entirely in any place other than a public highway.

In the 2003–2004 CDS, motor vehicle traffic and non-traffic incidents account for:

- 1,717 cases (46% of all cases)
- 215 (38%) of injury deaths

Figure 8 shows the motor vehicle traffic and non-traffic injury cases by age group. Half (50%, n = 858) of the cases are under 35 years of age.

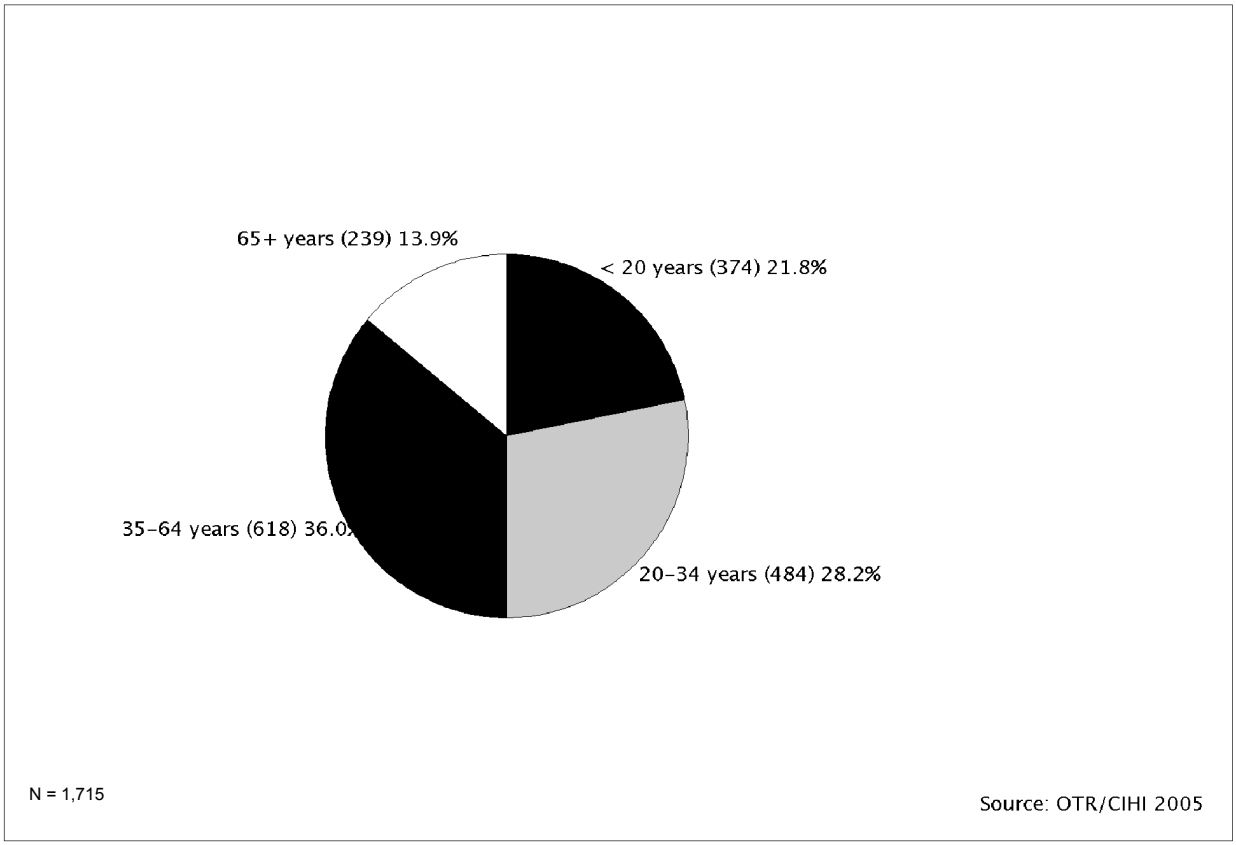


Figure 8. Motor Vehicle Traffic and Non-Traffic Incidents by Age Group, 2003–2004*

***Note:** 2 cases with unknown age

Figure 9 shows there is a peak in the number of traffic and non-traffic incidents in young adult males around 17 years of age and a smaller peak in young adult females around the same age.

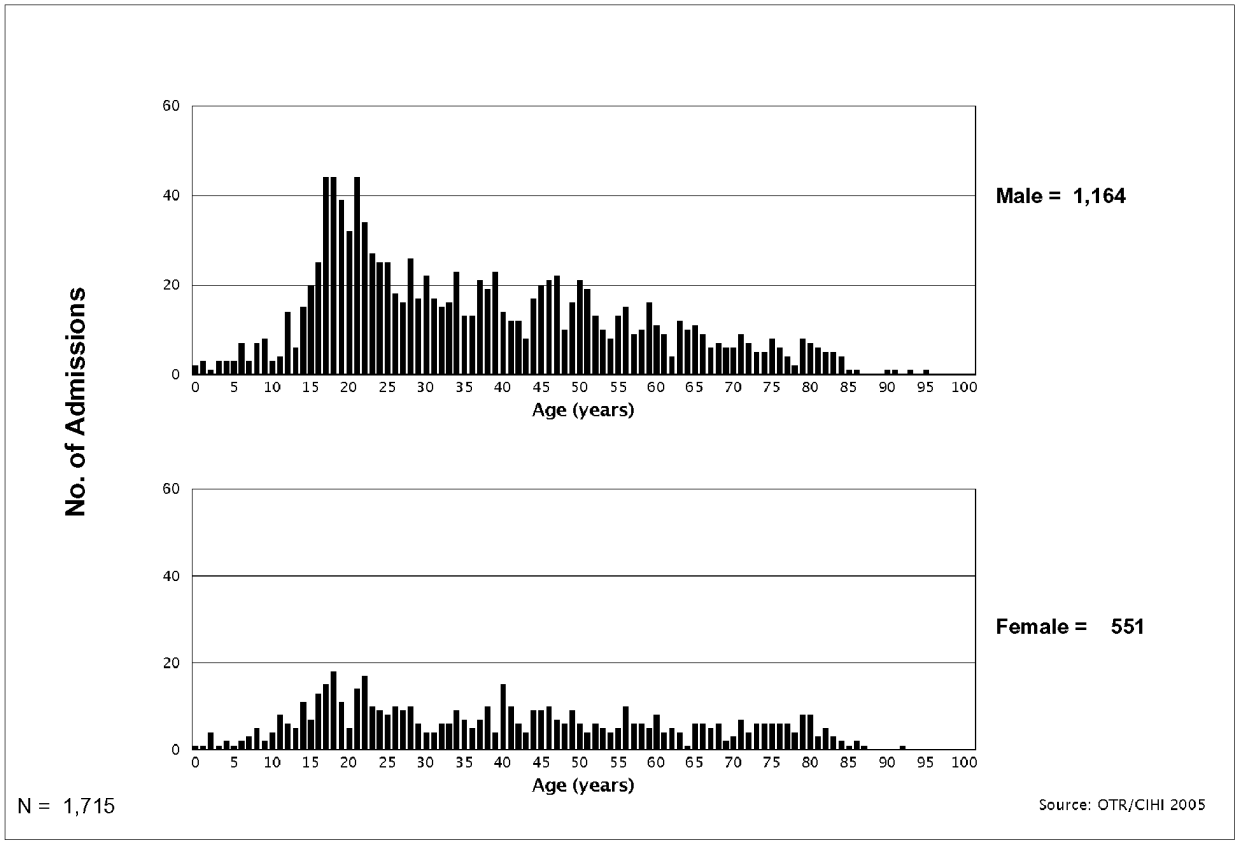


Figure 9. Traffic and Non-Traffic Incidents by Sex and Single Year of Age, 2003–2004*

***Note:** 2 cases with unknown age

The mean LOS for motor vehicle collision injuries is 17 days (median = 10). The mean age is 38 years (median = 34). Almost all (over 99%, n = 1,709) motor vehicle collision injuries are documented as blunt injury. The mean ISS is 27 (median = 24).

The mean LOS for motor vehicle collision deaths in 2003–2004 is 6 days (median = 2). The mean age is 45 and the median age is 43 years. Almost all motor vehicle collision deaths are documented as blunt injury (over 99%, n = 214). The mean ISS is 38 (median = 38).

4.3.2 Injured Persons

The ICD coding system identifies the injured person for transport incidents through the use of a required third digit.

Figure 10 shows the 1,717 motor vehicle traffic and non-traffic injury cases in the 2003–2004 CDS by injured person. Over half are drivers (56%, n = 954), including 132 motorcycle drivers. Passengers comprised over one fifth (22%, n = 369) of the injured cases, of which 15 were motorcycle passengers.

Nine percent (n = 147) of the 1,717 motor vehicle traffic and non-traffic injury cases in the 2003–2004 CDS are motorcycle drivers or passengers.

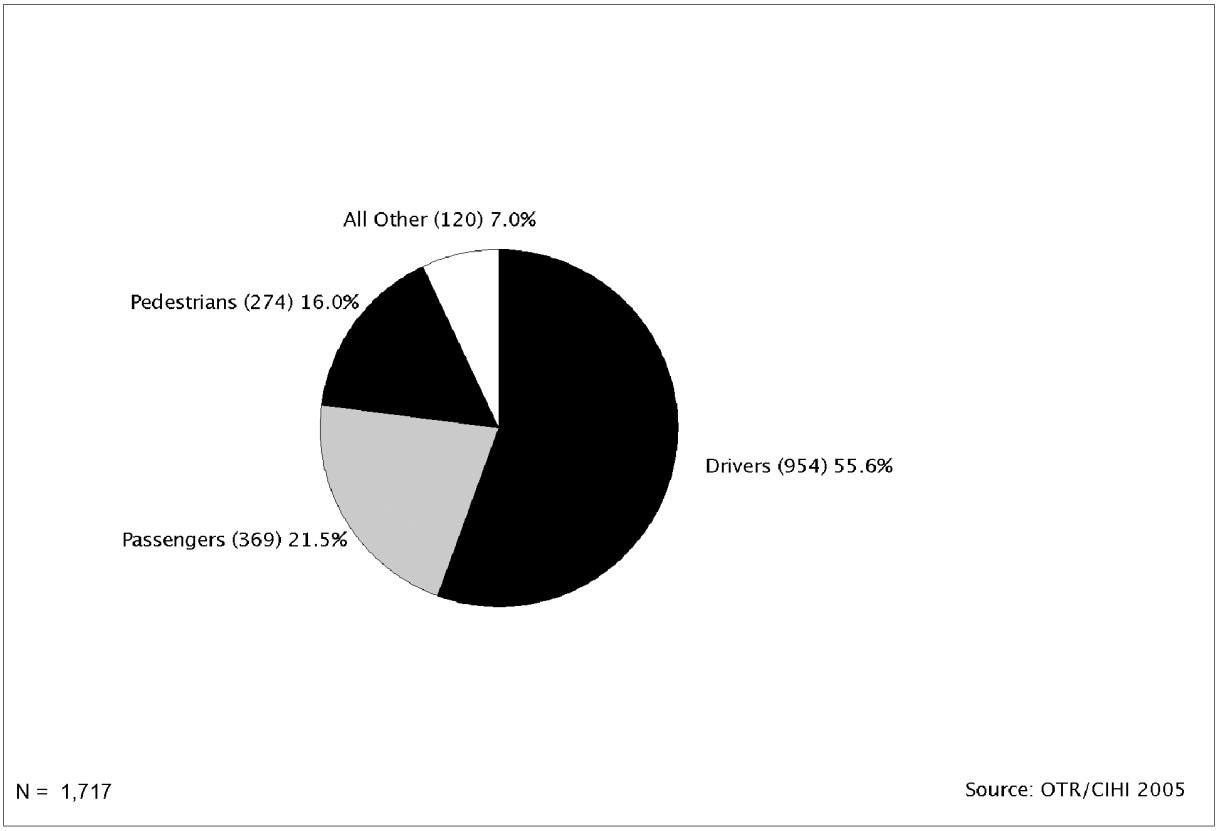


Figure 10. Motor Vehicle Collisions by Injured Person—All Cases, 2003–2004*

***Note:** Drivers and passengers categories include those injured while riding a motorcycle

Figure 11 shows the 215 deaths due to motor vehicle collisions in the 2003–2004 CDS by injured person. Half are drivers (50%, n = 108), which includes 10 motorcycle drivers. Less than one-quarter (22%, n = 48) are pedestrians.

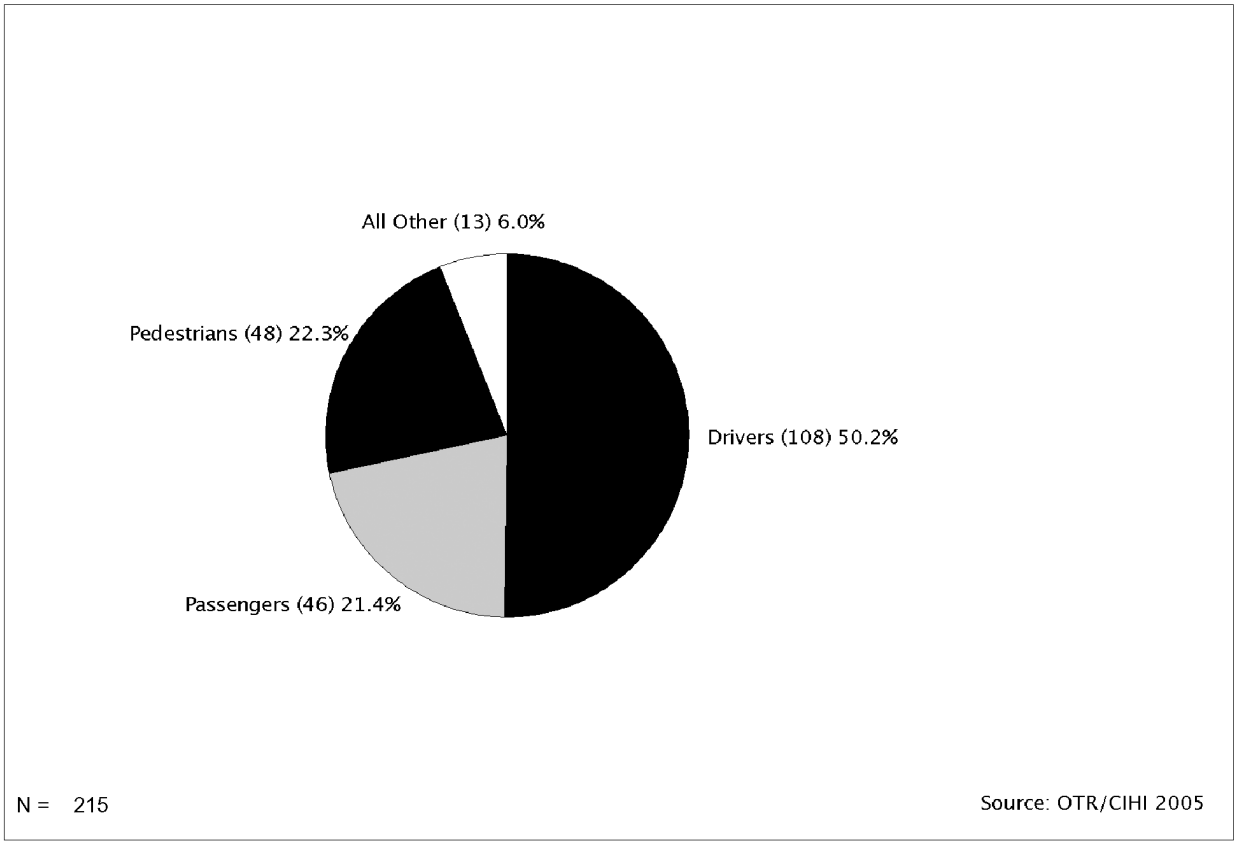


Figure 11. Motor Vehicle Collisions by Injured Person—Deaths, 2003—2004*

***Note:** Drivers and passengers categories include those injured while riding a motorcycle

Figures 12 and 13 (found on the following page) summarize use of protective devices for motor vehicle collision occupants; both survivors and those who died. Seatbelt use is documented in over half (52%, n = 533) of motor vehicle occupants for survivors, but somewhat less so for deaths (44%, n = 62). For 10% of survivors and 12% of deaths (n = 105 and n = 17, respectively) protective equipment was noted to be available but not used.

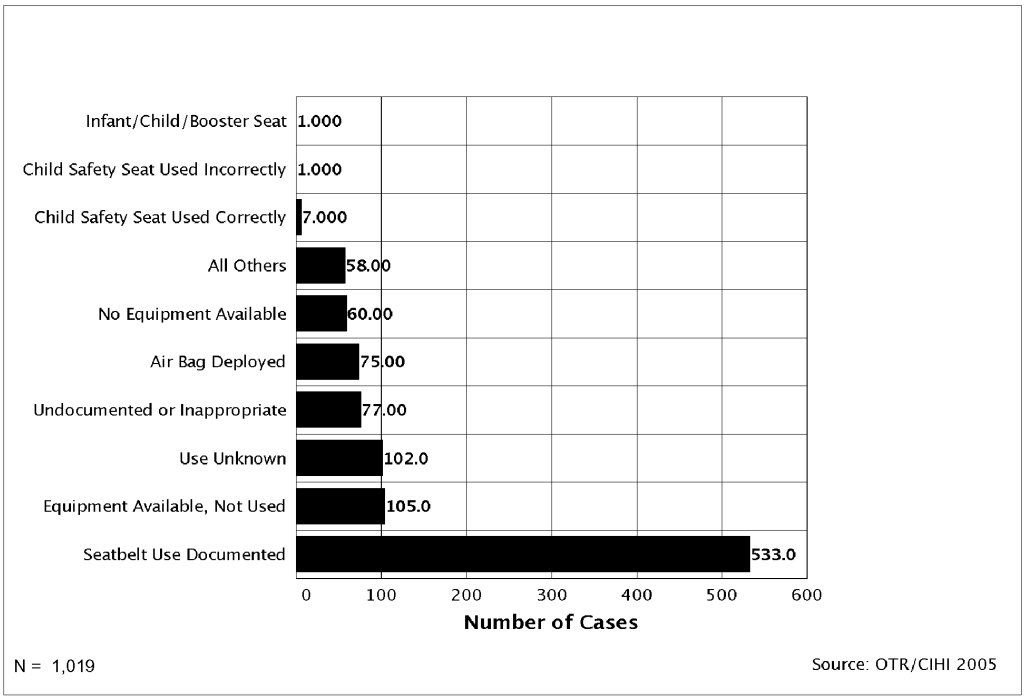


Figure 12. Protective Devices Summary for Motor Vehicle Collisions—Occupant Survivors, 2003–2004*

***Note:** Excludes boarding/alighting incidents

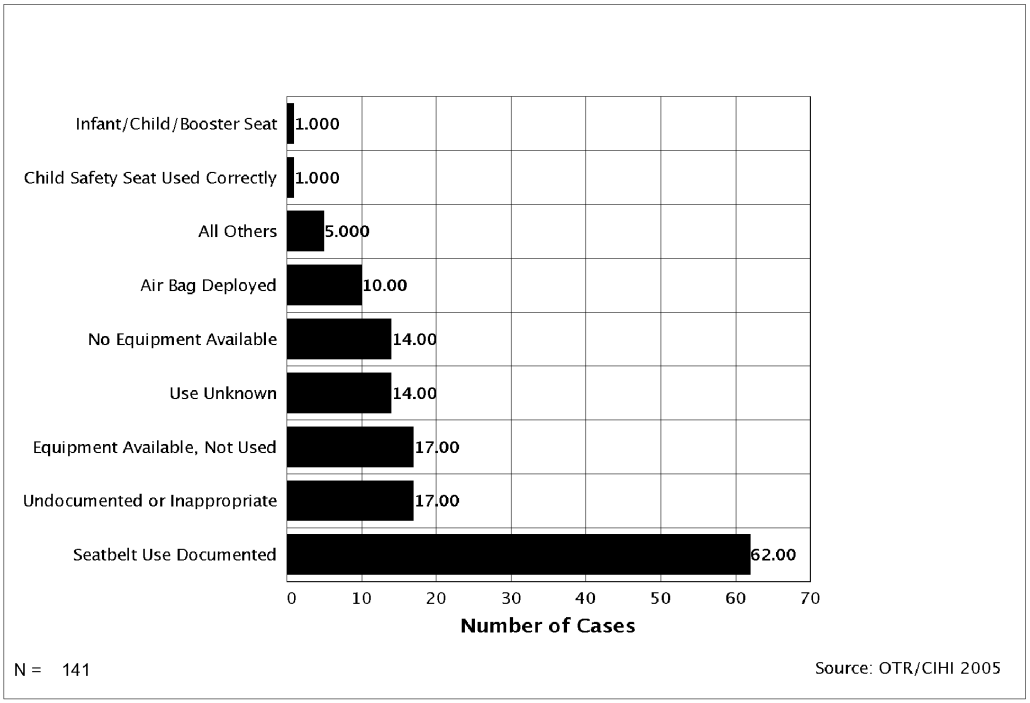


Figure 13. Protective Devices Summary for Motor Vehicle Collisions—Occupant Deaths, 2003–2004*

***Note:** Excludes boarding/alighting incidents

4.4 Unintentional Falls

In the 2003–2004 CDS, unintentional falls account for:

- 32% (n = 1,217) of all cases
- 38% (n = 213) of all injury deaths

The mean LOS for falls is 14 days (median = 7). The mean age is 59 years (median age = 64). Almost all (over 99%, n = 1,214) falls are documented as blunt injury. The mean ISS is 22 (median = 21).

For deaths due to falls (n = 213):

- The mean ISS is 26 (median = 25)
- The mean age is 69 years (median = 73)
- The mean LOS is 9 days (median = 5)

Figure 14 shows that more males experienced major injury due to falls than females. For both males and females the number of falls increased with advancing age.

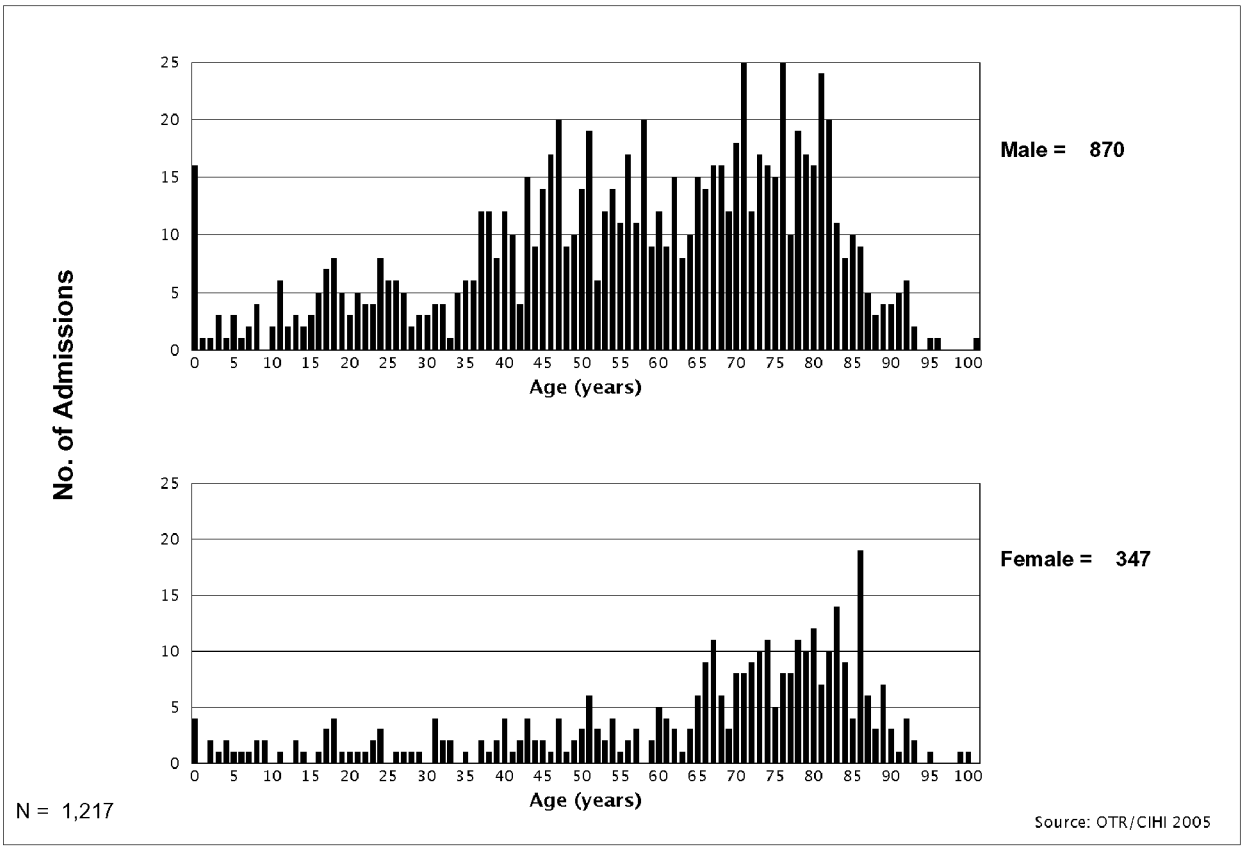


Figure 14. Unintentional Falls by Sex and Single Year of Age, 2003–2004

The ICD-10-CA External Cause of Injury Code category W00-W19 defines injuries due to unintentional falls as follows:

- W00—Involving ice and snow
- W01—Slipping, tripping, stumbling
- W02—Involving skates, skis, sport boards, and rollerblades
- W03—Collisions, pushing, shoving by or with other person
- W04—While being carried or supported by another person
- W05—Involving wheelchair and other types of walking devices
- W06—Involving bed
- W07—Involving chair
- W08—Involving other furniture
- W09—Playground equipment
- W10—Stairs or steps
- W11—On or from a ladder
- W12—On or from scaffolding
- W13—From or out of or through building/other structure
- W14—From tree
- W15—From cliff
- W16—Diving or jumping into water
- W17—Other fall from one level to another
- W18—Other fall on same level
- W19—Unspecified fall

Among the 1,217 cases injured in unintentional falls, the most common specified types of falls were falls on or from stairs/steps (20%, n = 241) and falls caused by slipping, tripping and stumbling (18%, n = 216).

Figure 15 shows the number of unintentional falls by sex for each External Cause of Injury Code category.

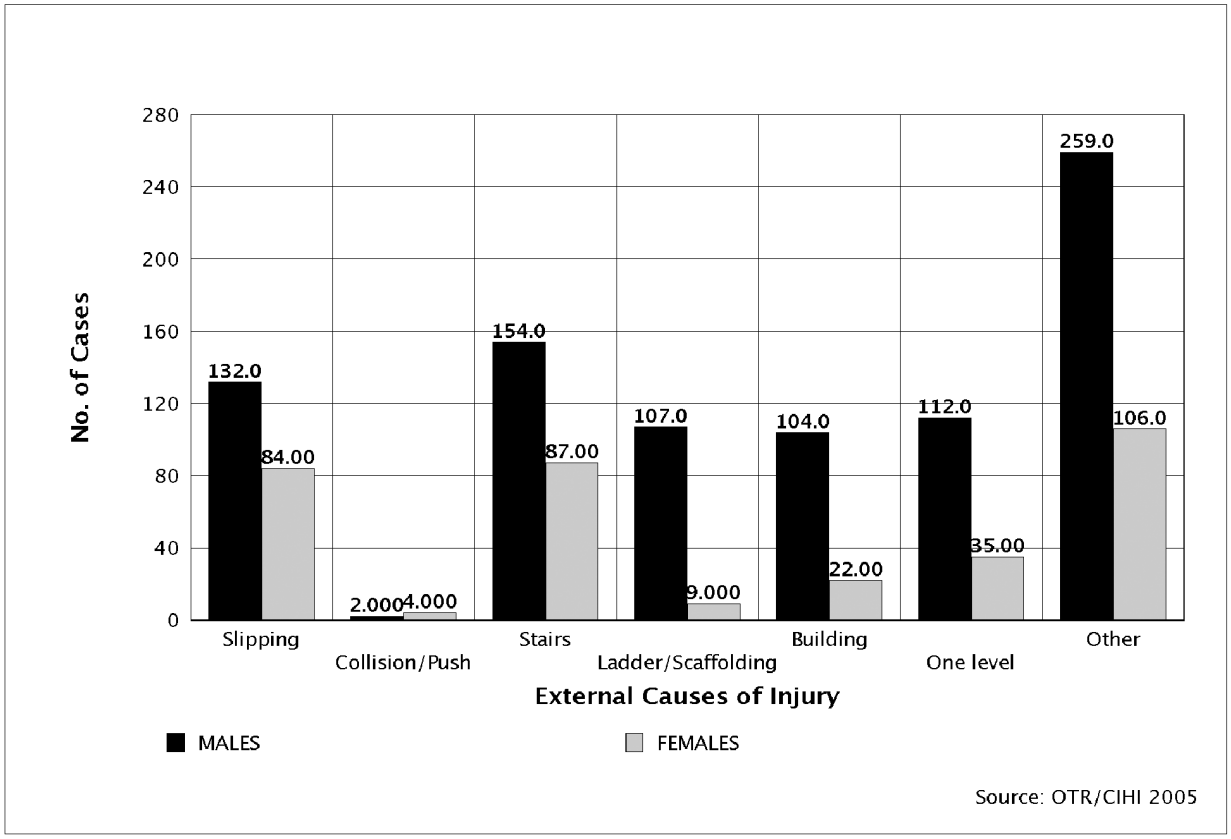


Figure 15. Unintentional Falls by External Causes of Injury and Sex, 2003–2004

Figure 16 shows cases of unintentional falls by age group. Half of the unintentional falls are cases aged 65 years and over (50%, n = 608). The most common specified cause of falls in this age group are falls from slipping, tripping and stumbling (27%, n = 162).

Cases aged 35 to 64 years comprise 35% (n = 422) of all unintentional falls. The most common specified cause of falls in this age group is falls on or from stairs or steps (22%, n = 94).

Eight percent (n = 104) of the cases occur among persons under 20 years of age. The most common specified cause of falls in this age group are falls involving skates, skis, sport boards and rollerblades (19%, n = 20).

Only 7% (n = 83) of all cases due to unintentional falls occurred among those between 20 to 34 years of age. The most common cause of major trauma hospitalization due to falls in this age group are falls from, out of, or through buildings or other structures (37%, n = 31).

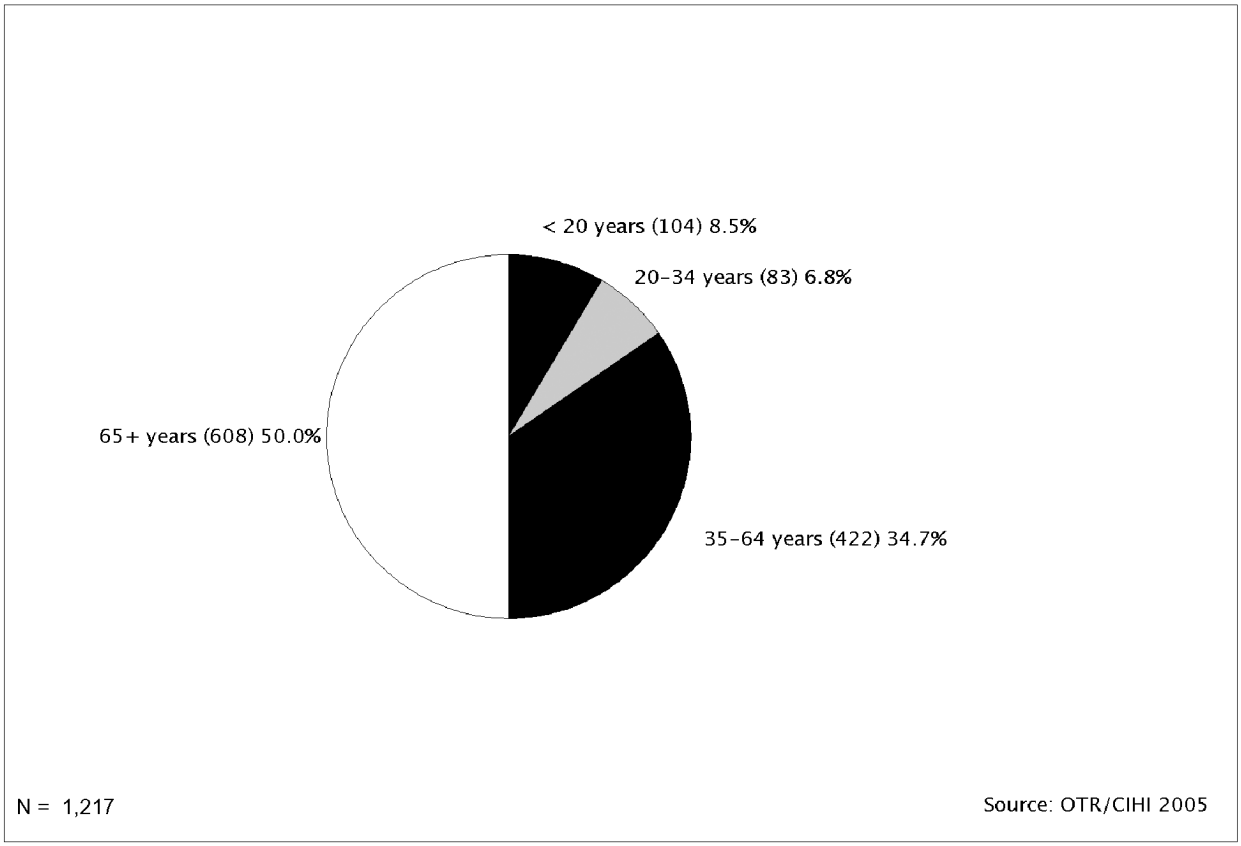


Figure 16. Unintentional Falls by Age Group, 2003–2004

4.5 Intentional Injuries

4.5.1 Suicide and Self Inflicted Injury (Excluding Poisoning)

There were 71 cases admitted to lead/trauma hospitals due to suicide and self inflicted injury (excluding poisoning) in the 2003–2004 CDS, accounting for 2% of cases and 4% (n = 25) of all injury deaths. The majority of self-inflicted injuries admitted to lead/trauma hospitals are males (72%, n = 51). The mean length of stay for suicide and self-inflicted injury (excluding poisoning) is 27 days (median = 17). The mean ISS is 29 (median = 26).

Figure 17 shows self-inflicted injury cases by age group. Forty-six percent (n = 33) of the cases occurred among persons aged 20 to 34 years, followed by persons between the ages of 35 to 64 years (41%, n = 29). The mean age for self-inflicted injury is 39 (median = 34).

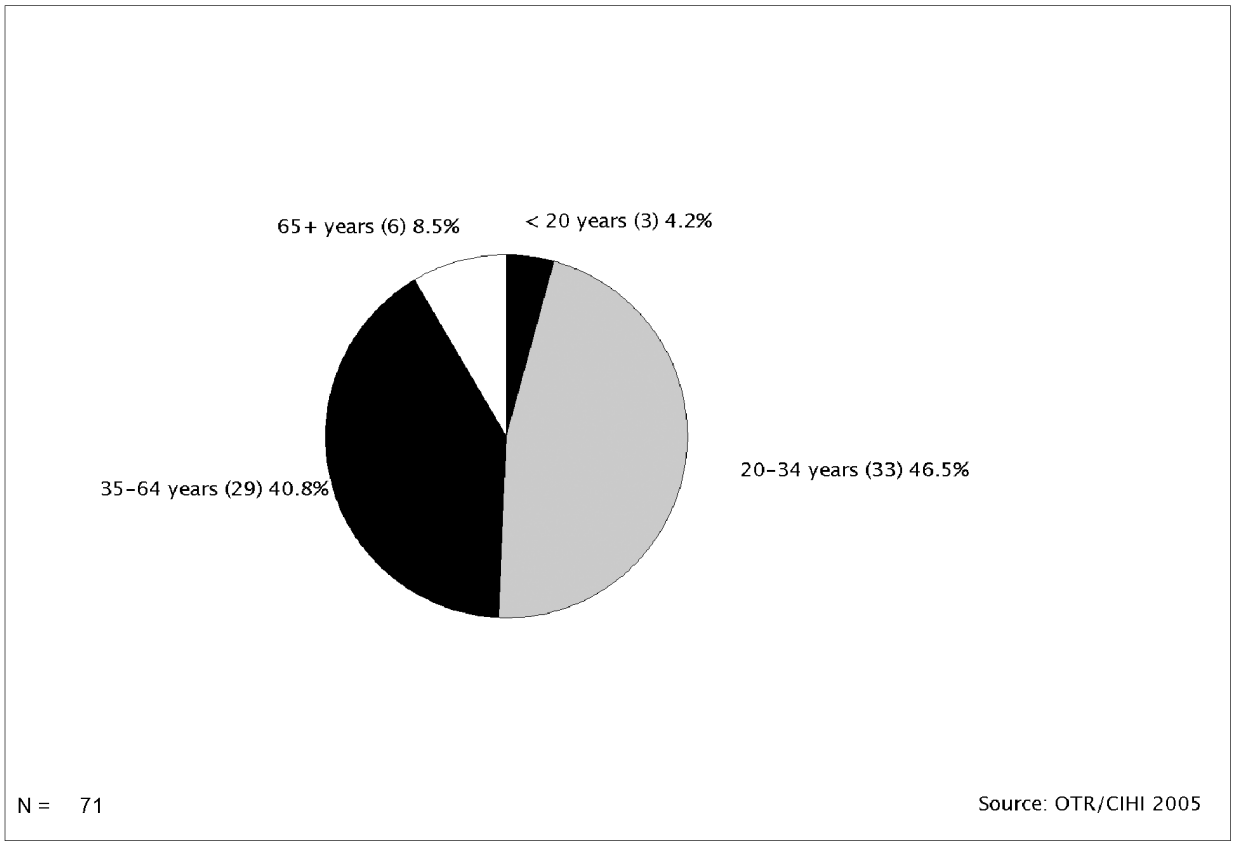


Figure 17. Suicide and Self-Inflicted Injury (Excluding Poisoning) (X70–X84) by Age Group, 2003–2004

As seen in Figure 18, the most common specified means of self-inflicted injury (excluding poisoning) were by jumping (38%, n = 27) followed by gunshot wounds (14%, n = 10).

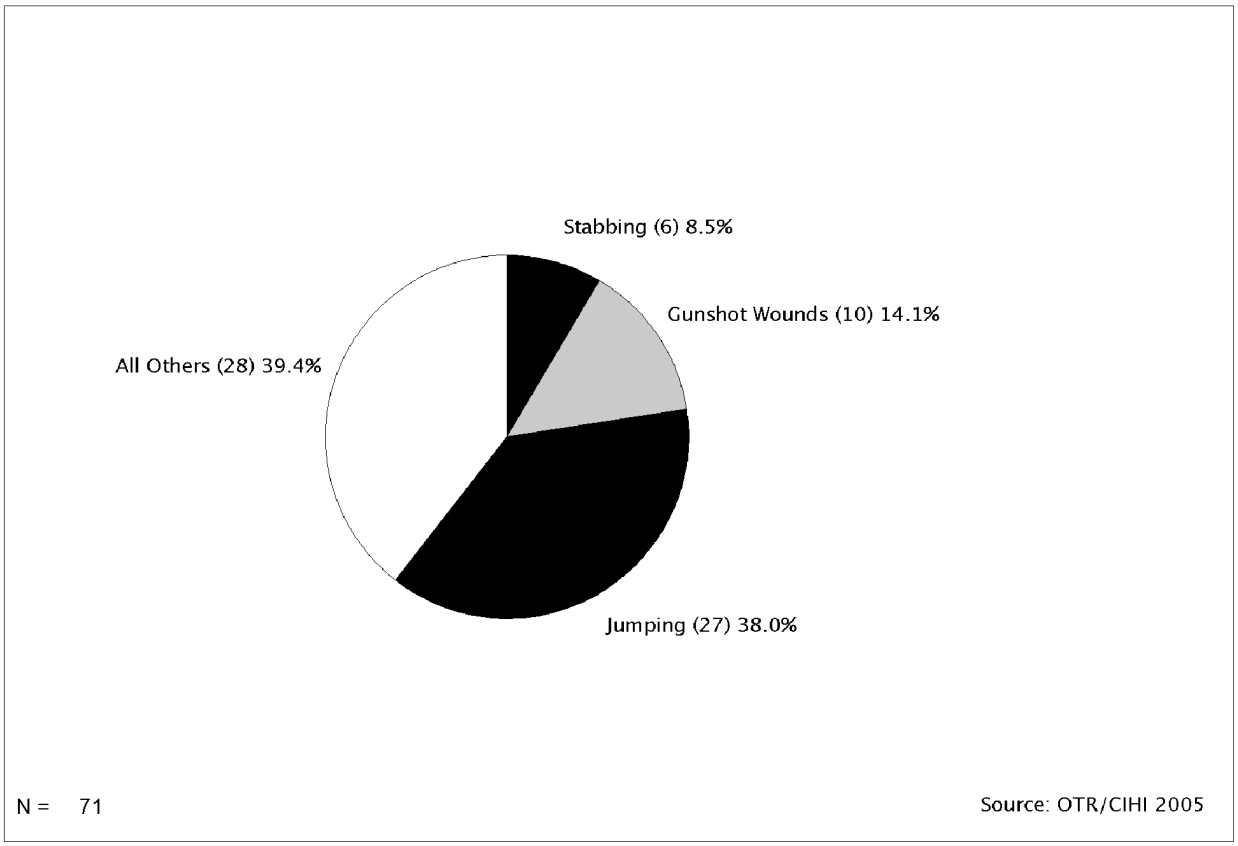


Figure 18. Means of Suicide and Self-Inflicted Injury (Excluding Poisoning) (X70–X84), 2003–2004

4.5.2 Assault and Injury Purposely Inflicted by Another Person

There were 315 cases due to assault and injury purposely inflicted by another person in the 2003–2004 CDS accounting for 8% of cases and 8% (n = 45) of all injury deaths.

Figure 19 shows these cases by age group. Almost half are aged 20 to 34 years (42%, n = 133), followed by cases aged 35 to 64 years (30%, n = 94). The mean age is 29 (median = 26).

The mean LOS is 11 days (median = 6). The mean ISS is 22 (median = 20). Ninety-three percent (n = 290) of these cases are males.

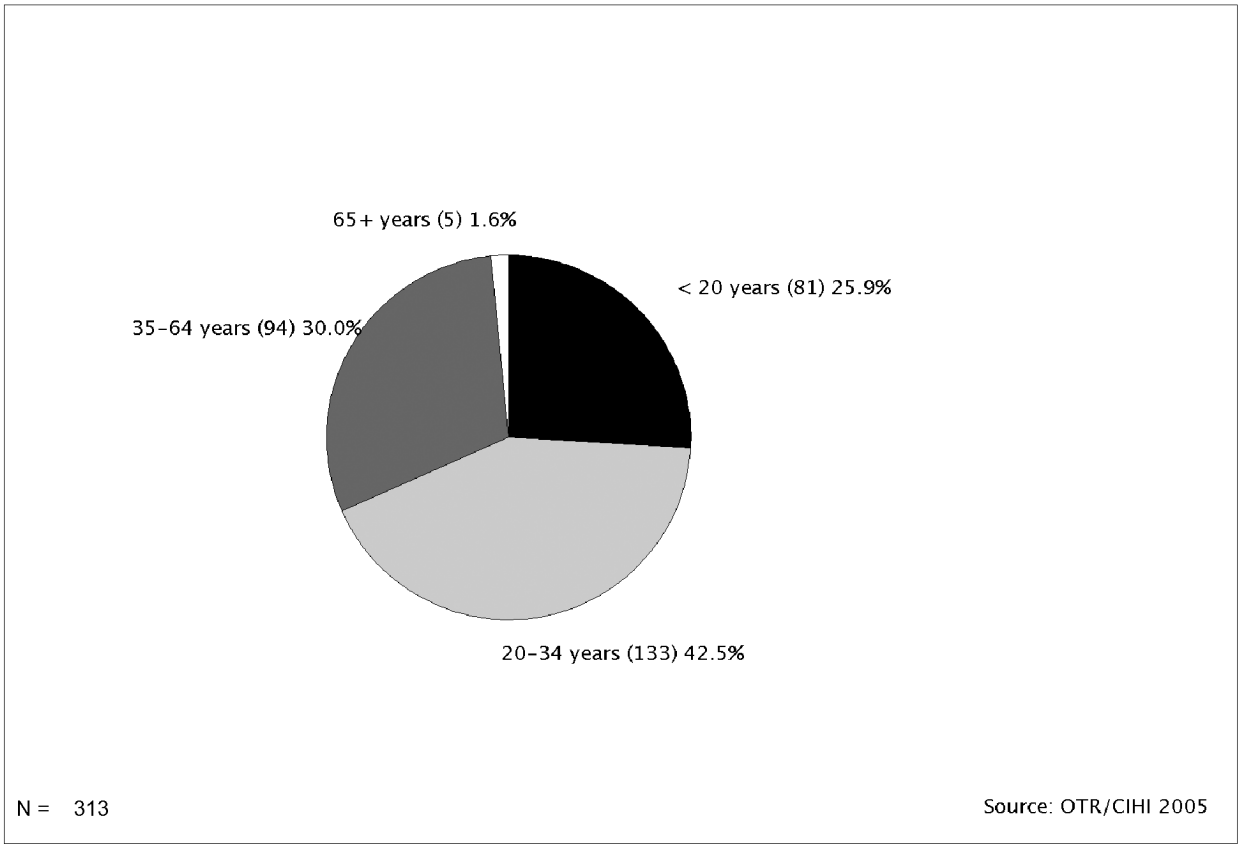


Figure 19. Injury Purposely Inflicted by Another Person (Excluding Poisoning) by Age Group, 2003–2004*

***Note:** 2 cases with unknown age

Figure 20 shows that the most common specified means of injury purposely inflicted by another person are stabbing (28%, n = 89) and fighting (23%, n = 72), followed by gunshot wounds (21%, n = 67).

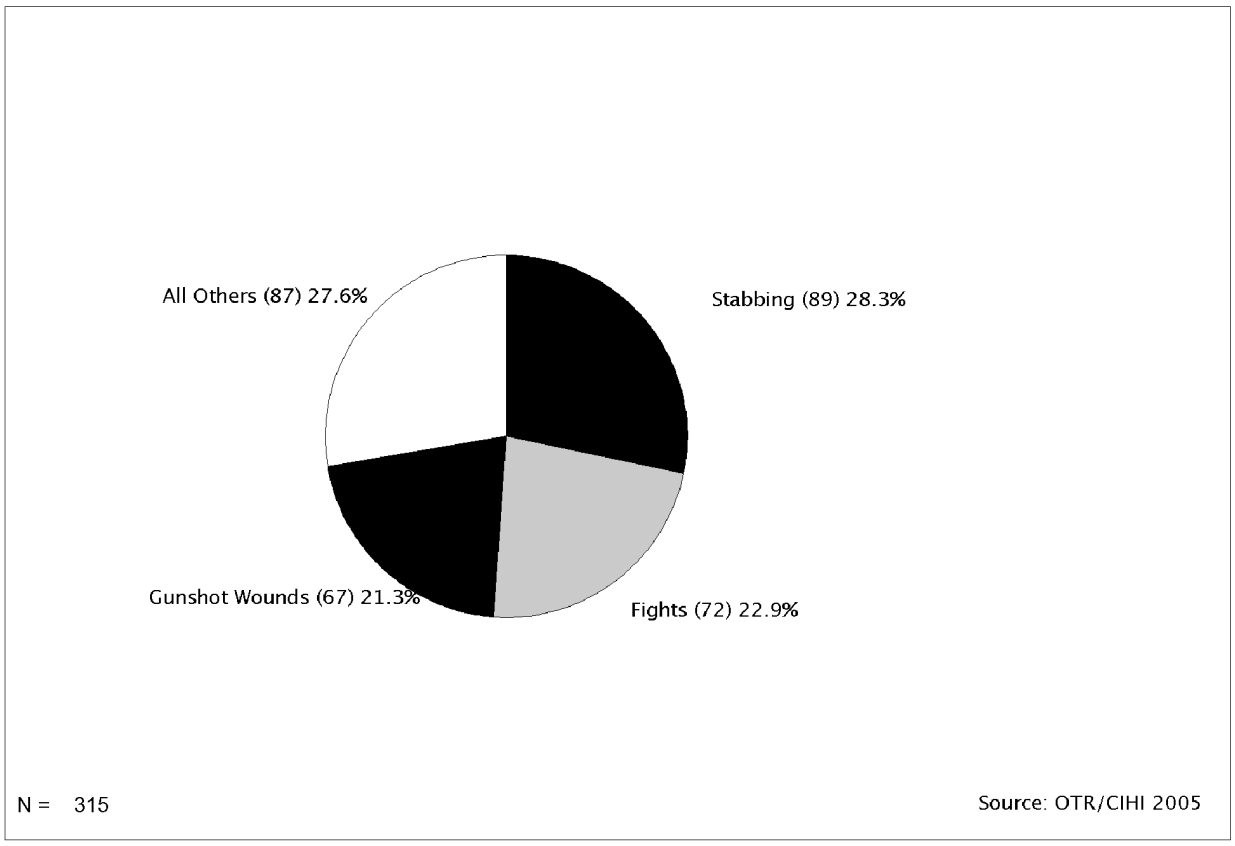


Figure 20. Means of Injury Purposely Inflicted by Another Person (Excluding Poisoning), 2003–2004

4.6 Cycling Injuries

Injuries due to cycling are defined using appropriate ICD-10-CA External Cause of Injury Codes identifying the injured person as a cyclist.

In the 2003–2004 CDS, cycling incidents account for 3% (n = 102) of all cases, 1% (n = 3) of all in-hospital deaths and 1% (n = 1) of DIEs.

For these cases:

- Mean age is 30 years
- Mean ISS is 22
- Mean length of stay is 17 days

4.7 Other Causes of Injury

In this report, 435 (12%) injury cases are reported as due to all other causes (other than motor vehicle collisions, unintentional falls and intentional injury). All other causes account for 63 (11%) of deaths. All other causes include injuries due to railway incidents, motor vehicle boarding or alighting, other road vehicles, water transport, air and space transport, vehicle incidents not elsewhere classified, fire and flames, natural and environmental factors, drowning, suffocation, foreign bodies (excluding choking), injuries due to legal intervention, injuries in which the intentionality is undetermined and injuries due to operations of war.

5. Context of Injury

5.1 Place of Injury

Place of injury is documented in the CDS based on ICD definitions.

As seen in Table 7, Appendix H, 3,731 cases (over 99%) are documented with a place of injury:

- 1,769 (47%) indicate a street or highway
- 859 (23%) indicate home as the place of injury

There are 24 cases (0.6%) that do not have a place of injury documented in the 2003–2004 CDS.

5.2 Work Related Injury

251 (7%) of cases are work related injuries. Of these cases:

- Mean ISS is 25
- Mean age is 44 years
- Mean LOS in hospital is 17 days
- 20 (8%) died in-hospital, 5 (2%) are DIE
- 239 (95%) are male

5.3 Sports and Recreational Injury

The OTR CDS permits the documentation of whether the injured person was involved in a sports or recreational activity at the time of injury, and if so, specification of the type of activity. Currently, the sports and recreation code in the OTR CDS distinguishes 99 types of sports and recreational activities.

Ten percent (n = 367) of injury admissions are due to participation in sports and recreational activities as defined by the customized sports and recreational activity code in the CDS.

The most common sports and recreational injuries documented in the 2003–2004 CDS are cycling (23%, n = 85), skiing (18%, n = 65), all terrain vehicles (13%, n = 48), horse back riding (7%, n = 24) and dirt biking/mini biking/motocross (6%, n = 23).

Table 1 provides further information about sports and recreational injuries and leading activities.

Table 1. Summary Statistics for Sport and Recreational Injury Activities, 2003–2004

Activity	Cases n (%*)	Mean			Males n (%**)	In-Hosp. Deaths n (%**)	DIEs n (%**)
		Age (years)	ISS	LOS (days)			
Cycling	85 (23)	30	21	15	65 (76)	2 (2)	0
Skiing	65 (18)	31	24	11	56 (86)	3 (5)	1 (2)
All terrain vehicle	48 (13)	33	23	12	40 (83)	2 (4)	0
Horse back riding	24 (7)	44	25	8	10 (42)	2 (8)	1 (4)
Dirt bike/ mini bike/ motocross	23 (6)	24	22	7	20 (87)	1 (4)	0
ALL SPORTS/REC	**367**	**30**	**23**	**14**	**290 (79)**	**12 (3)**	**5 (1)**

* Percent of all sports and recreational injuries (n = 367)
** Percent within cause of sport and recreational injury

5.4 Blood Alcohol Concentration (BAC)

The TRAC has recommended that blood alcohol concentration (BAC) be routinely collected at lead/trauma hospitals on all trauma patients over 10 years of age when the patient is admitted within 12 hours of the incident.

There are 423 cases (11%) in the 2003–2004 CDS with a positive BAC, which is defined as ≥ 17.0 mmol/L. Among these cases, 45%(n = 191) are admitted due to motor vehicle collisions, 26%(n = 111) are admitted due to injury purposely inflicted by another person and 23%(n = 96) are admitted due to unintentional falls.

Table 2 provides further information about cases with BAC ≥ 17.0 mmol/L and the leading causes of injury among these cases.

Table 2. Summary Statistics for Cases with Blood Alcohol Concentration ≥ 17.0 mmol/L, 2003–2004

Cause	Cases n (%*)	Mean			Males n (%**)	In-Hosp. Deaths n (%**)	DIEs n (%**)
		Age (years)	ISS	LOS (days)			
Motor vehicle collision	191 (45)	35	27	18	169 (88)	21 (11)	3 (2)
Intentionally inflicted by others	111 (26)	32	21	9	88 (79)	11 (10)	1 (1)
Unintentional fall	96 (23)	48	23	16	86 (90)	21 (22)	3 (3)
ALL POSITIVE BAC	**423**	**38**	**24**	**15**	**365 (86)**	**57 (13)**	**7 (2)**

* Percent of all positive BAC cases (n = 423)
** Percent within cause of injury

6. Clinical Aspects of Injury

6.1 Type of Injury

3,480 (93%) of cases are documented with blunt injury, 195 (5%) with penetrating injury and 80 (2%) with burns.

6.2 Prehospital Care

COLLECTOR has been customized to include several data elements to describe the patient's care at the scene and enroute to hospital. Included in prehospital care data elements are mode of transport information, vital signs and non-operative procedures at the scene.

As seen in Table 9, Appendix H:

- 541 cases (14%) required extrication from the scene
- Mean scene time is 20 minutes (defined as the time the ambulance arrived at the scene to the time the ambulance left the scene) (median = 18)
- Mean prehospital time is 69 minutes (defined as the time of incident to the time the ambulance arrives at the first hospital) (median = 52)

Note: the 95th percentile is used for prehospital time calculations to exclude those cases who are not transported directly from the scene and therefore have long prehospital times.

6.3 Discharge Disposition

Figure 21a shows the discharge disposition of all cases. In the 2003–2004 CDS, 15% (n = 561) of the 3,755 cases died, either in-hospital or DIE.

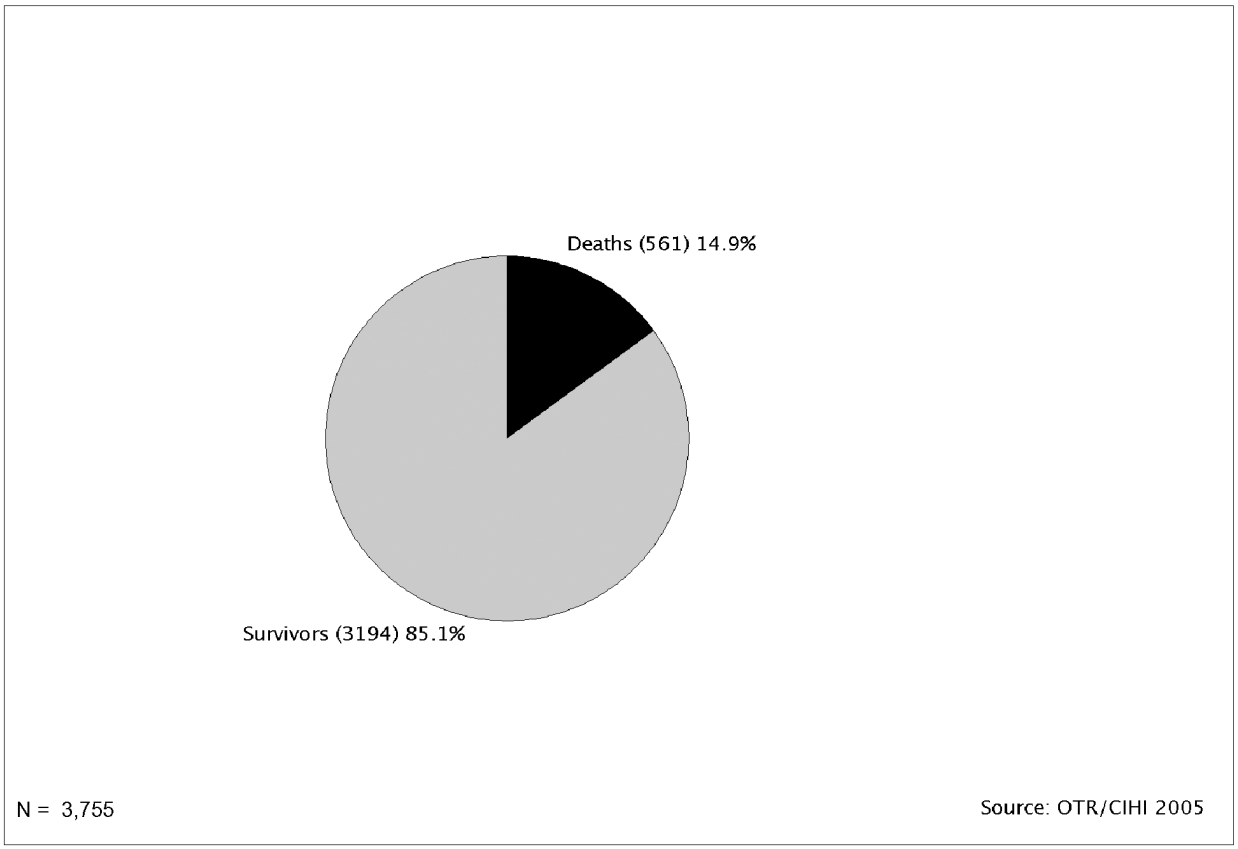


Figure 21a. Discharge Disposition—All Cases, 2003–2004

Figure 21b shows the discharge disposition of the survivors:

- 62% (n = 1,982) were discharged home including 441 discharged home with support services
- 17% (n = 554) were discharged to a rehabilitative facility
- 15% (n = 494) were discharged to an acute care facility
- 5% (n = 164) were discharged to chronic care, nursing home, or other facility

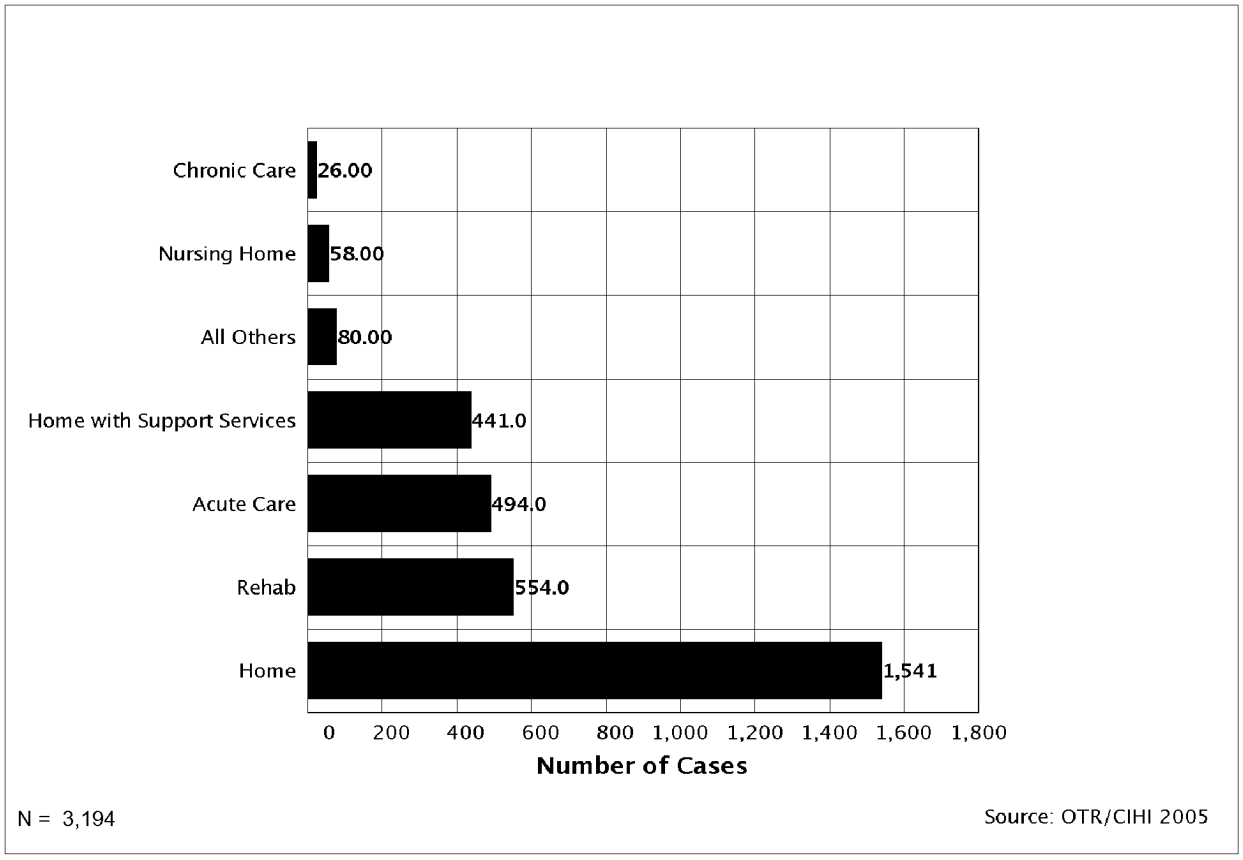


Figure 21b. Discharge Disposition—Survivors, 2003–2004

6.4 Deaths

6.4.1 All Cases

In the 2003–2004 CDS, there were a total of 561 deaths (15% of all cases). These deaths include 449 in-hospital deaths (12% of all cases) and 112 DIEs (3% of all cases).

Figure 22 shows the causes of deaths for these cases. Of these deaths:

- 38% (n = 215) were due to motor vehicle collisions
- 38% (n = 213) were due to unintentional falls

Tables 11 and 13 in Appendix H show some highlight statistics for all deaths:

- Mean age is 54 years (median = 56)
- Mean ISS is 33 (median = 27)
- 70% (n = 395) were males
- 88% (n = 496) of deaths had a blunt injury, 7% (n = 40) had a penetrating injury and 4% (n = 25) had a burn injury
- Mean LOS was 8 days (median = 3)
- 56% (n = 316) had post mortem examinations documented as completed
- 13% (n = 73) of the cases donated organs

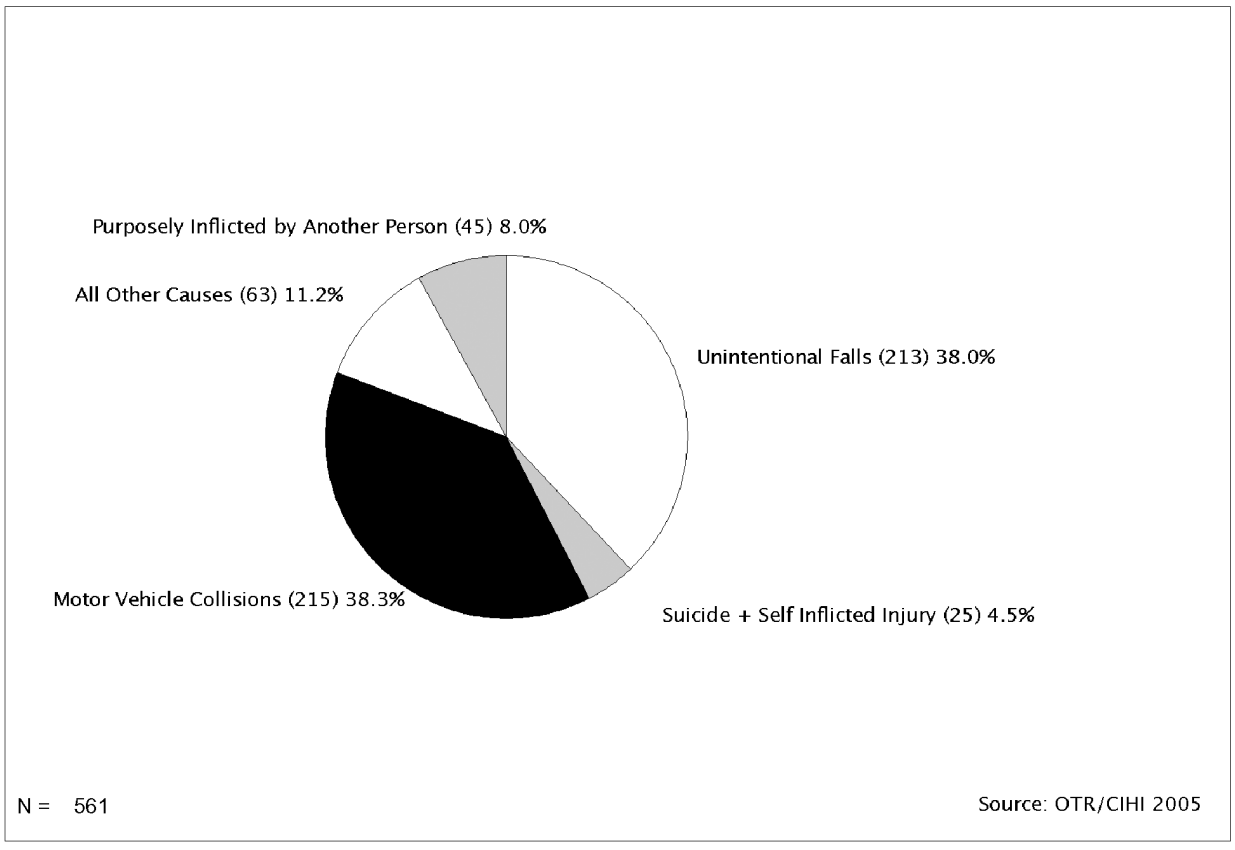


Figure 22. Causes of Death—All Cases, 2003–2004

Figure 23 shows the causes of injury for cases who died compared to survivors.

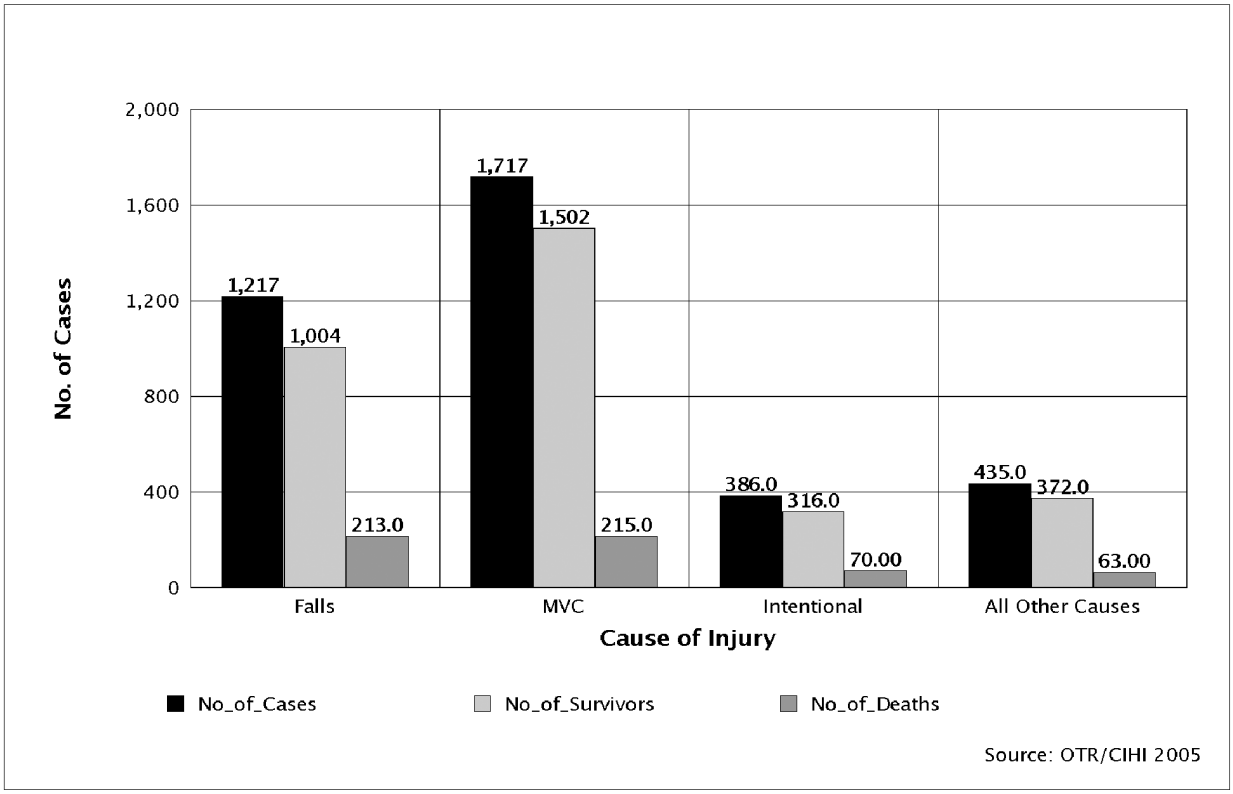


Figure 23. All Cases by Outcome and Cause of Injury, 2003-2004

6.4.2 In-Hospital Deaths

In the 2003–2004 CDS, there were 449 in-hospital deaths. In total, these cases were responsible for 3,348 hospital days (6% of total days). The mean LOS was 7 days (median = 3), the mean age was 55 years, and the mean ISS was 32. Over two thirds of the in-hospital deaths were male (72%, n = 323).

6.4.3 DIEs (Died in Emergency)

In the 2003–2004 CDS, there were 112 DIEs. Of these cases:

- Mean ISS is 36
- Mean age is 47 years
- 64% (n = 72) are male

6.5 ISS (Injury Severity Score)

The ISS is an internationally recognized scoring system developed to assign a level of severity to injury. ISS scores range from 1 (minor) to 75 (major). Cases with ISS > 12 are included in the CDS.

In the 2003–2004, the mean ISS was 25 (median = 24).

Figure 24 shows the mean ISS by age group and outcome. Among all cases, the mean ISS was slightly higher in the 20 to 34 year age group (ISS = 26). Among deaths, the mean ISS was considerably higher for all age groups compared to survivors. The highest mean ISS for deaths was seen in the 20 to 34 year age group (ISS = 39).

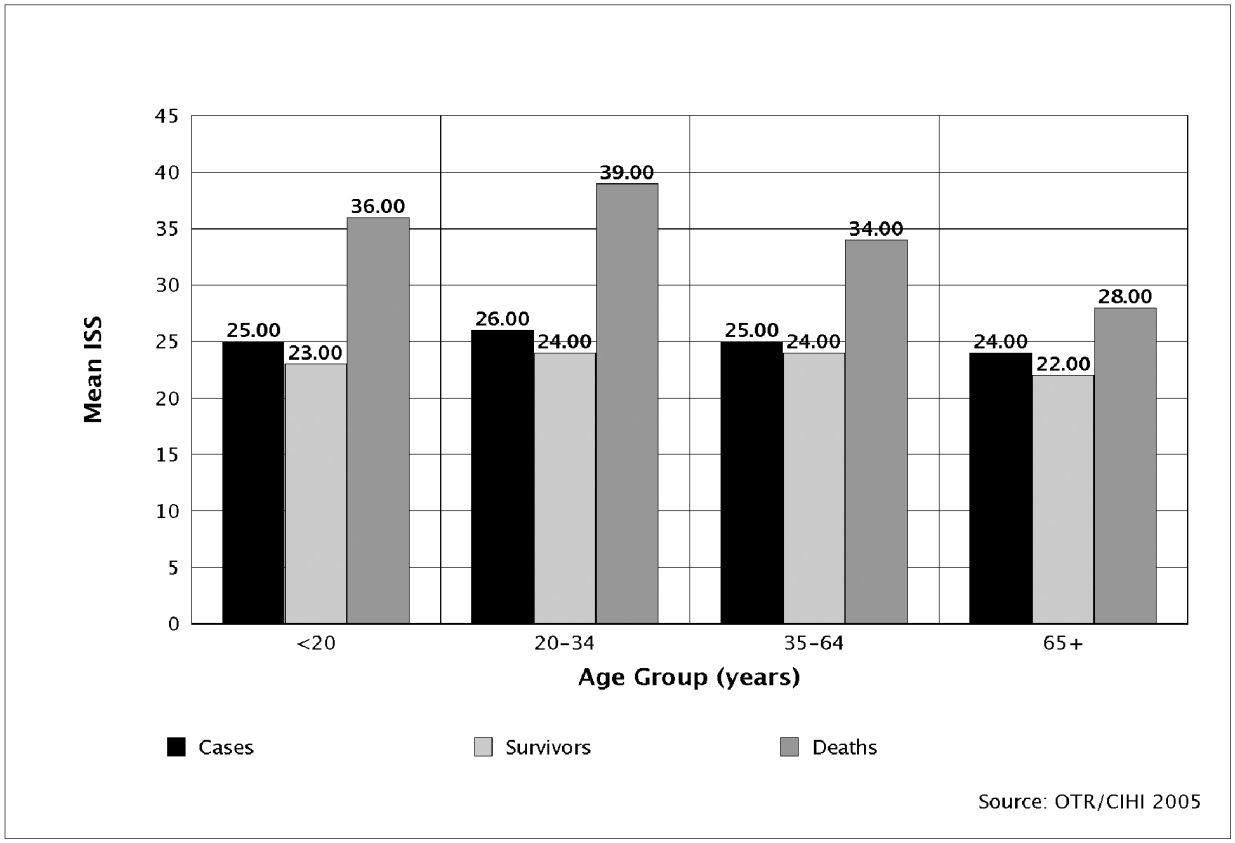


Figure 24. Mean Injury Severity Score (ISS) by Outcome and Age Group, 2003–2004

Figure 25 shows the mean ISS by outcome and cause of injury. Among all cases, survivors, and deaths, the highest mean ISS is among motor vehicle collisions (ISS = 27, 25, and 38, respectively).

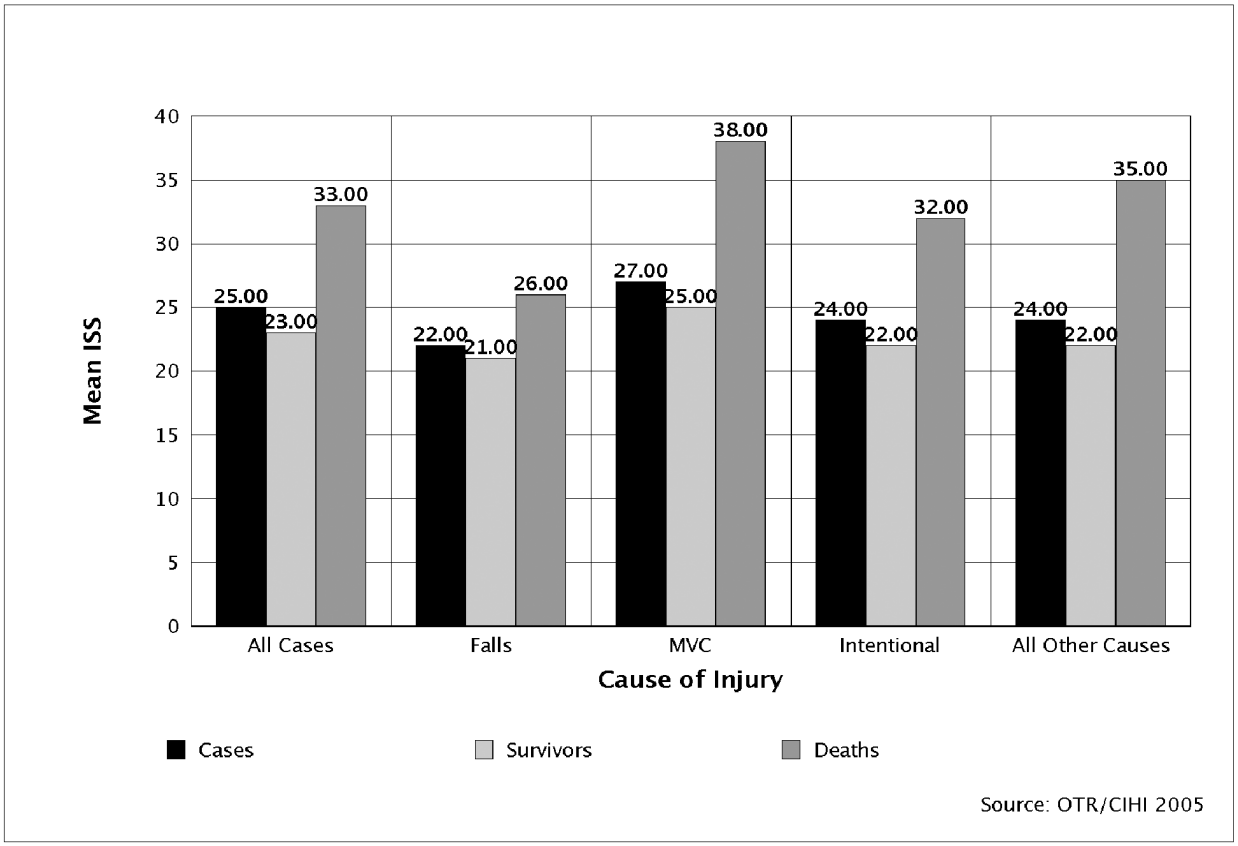


Figure 25. Mean Injury Severity Score (ISS) by Outcome and Cause of Injury, 2003–2004

Figure 26 shows the mean ISS by outcome and type of injury. Among all cases and deaths, the highest mean ISS is found among cases with burn injuries (ISS = 28, 37, respectively). Among survivors, the highest mean ISS is found among cases with burn injuries and cases with blunt injuries (ISS = 23).

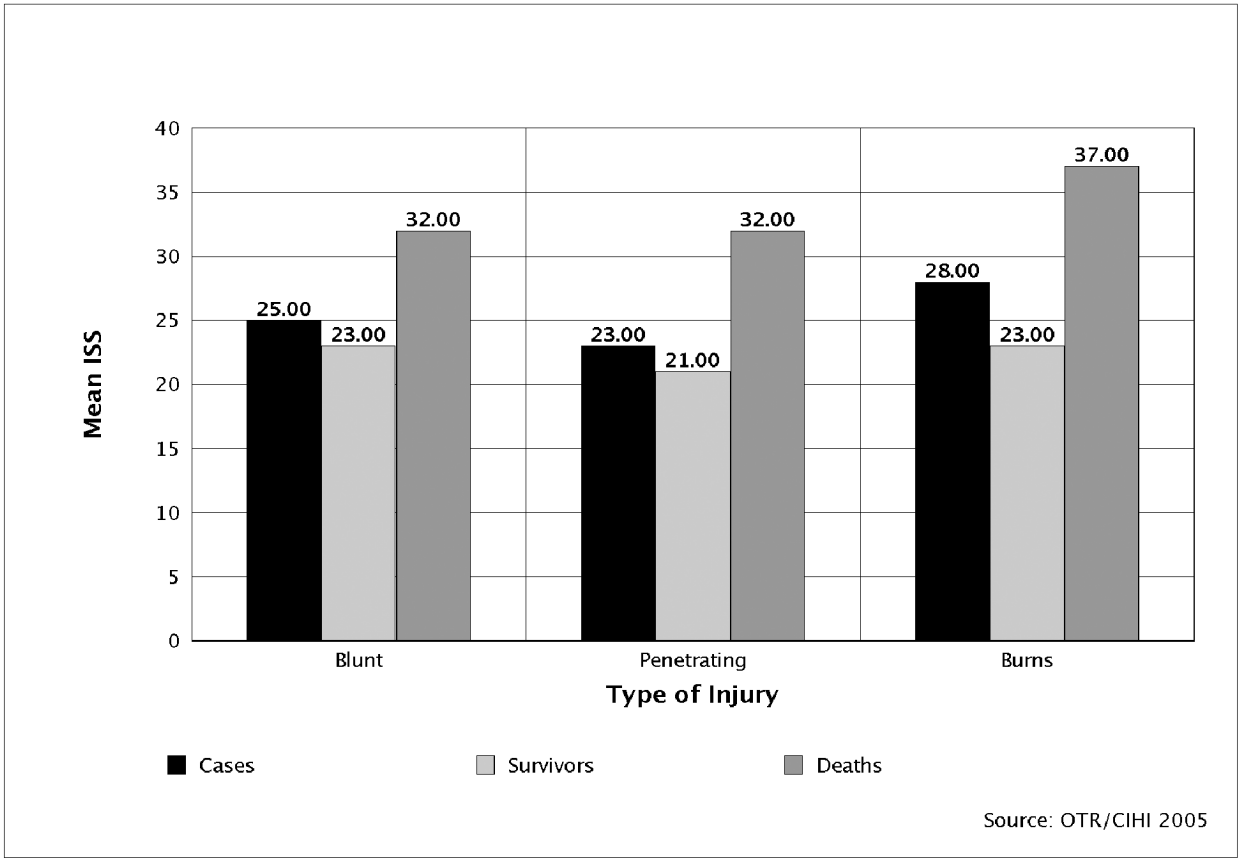


Figure 26. Mean Injury Severity Score (ISS) by Outcome and Type of Injury, 2003–2004

6.6 Length of Stay

LOS is defined as the total number of hospital days as calculated from date of admission to date of discharge or death. Patients who are not admitted are excluded from LOS calculations.

Injury cases in the 2003–2004 CDS accounted for 55,259 hospital days with a mean LOS of 15 days (median = 8).

Figure 27 shows mean LOS by outcome and age group. Among all cases and survivors, the highest mean LOS is among cases in the 35 to 64 year age group and the 65 years of age and over age group (LOS = 16, 18 days, respectively). Among deaths, the highest mean LOS is among cases 65 years of age and over (LOS = 10 days). There is a general trend of increasing LOS with increasing age group.

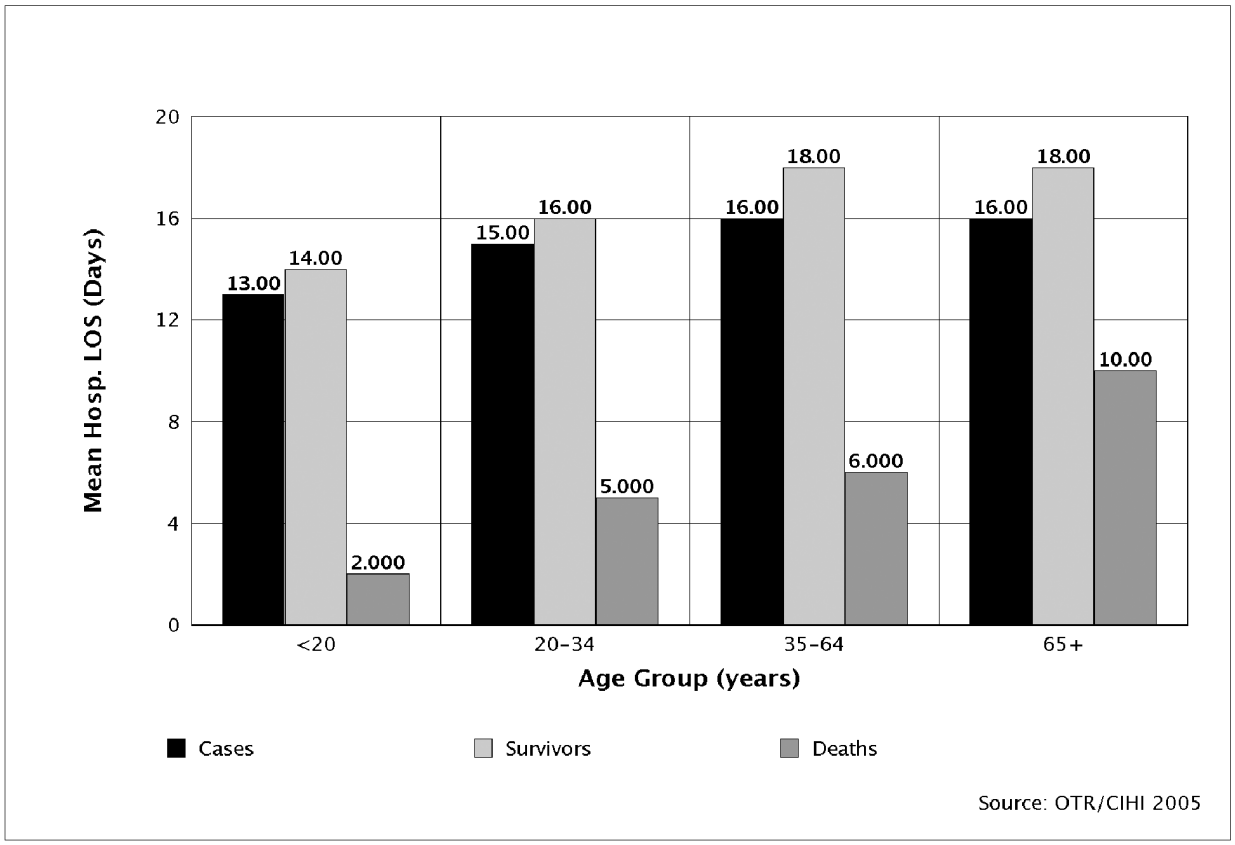


Figure 27. Mean Length of Stay (LOS) by Outcome and Age Group, 2003–2004

Figure 28 shows mean LOS by outcome and major cause of injury. For all cases and survivors, the highest mean LOS is among motor vehicle collisions (LOS = 17, 18 days, respectively). Among deaths, the highest mean LOS is among unintentional falls (LOS = 9 days).

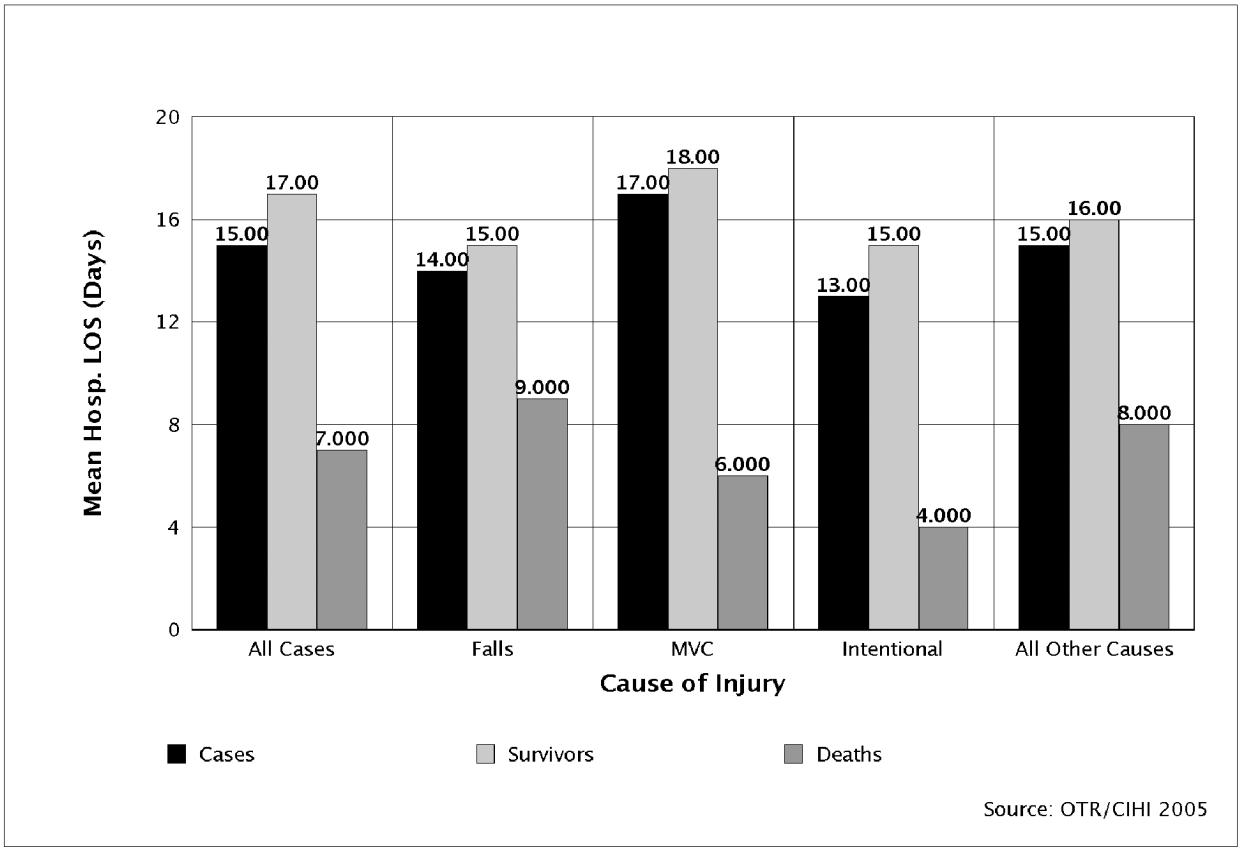


Figure 28. Mean Length of Stay (LOS) by Outcome and Cause of Injury, 2003–2004

Figure 29 shows mean LOS by outcome and type of injury. For all cases and survivors, the highest mean LOS is among cases with burn injuries (LOS = 28 and 37, respectively). For deaths, burns and blunt injuries have the highest mean LOS (LOS = 8 days, each).

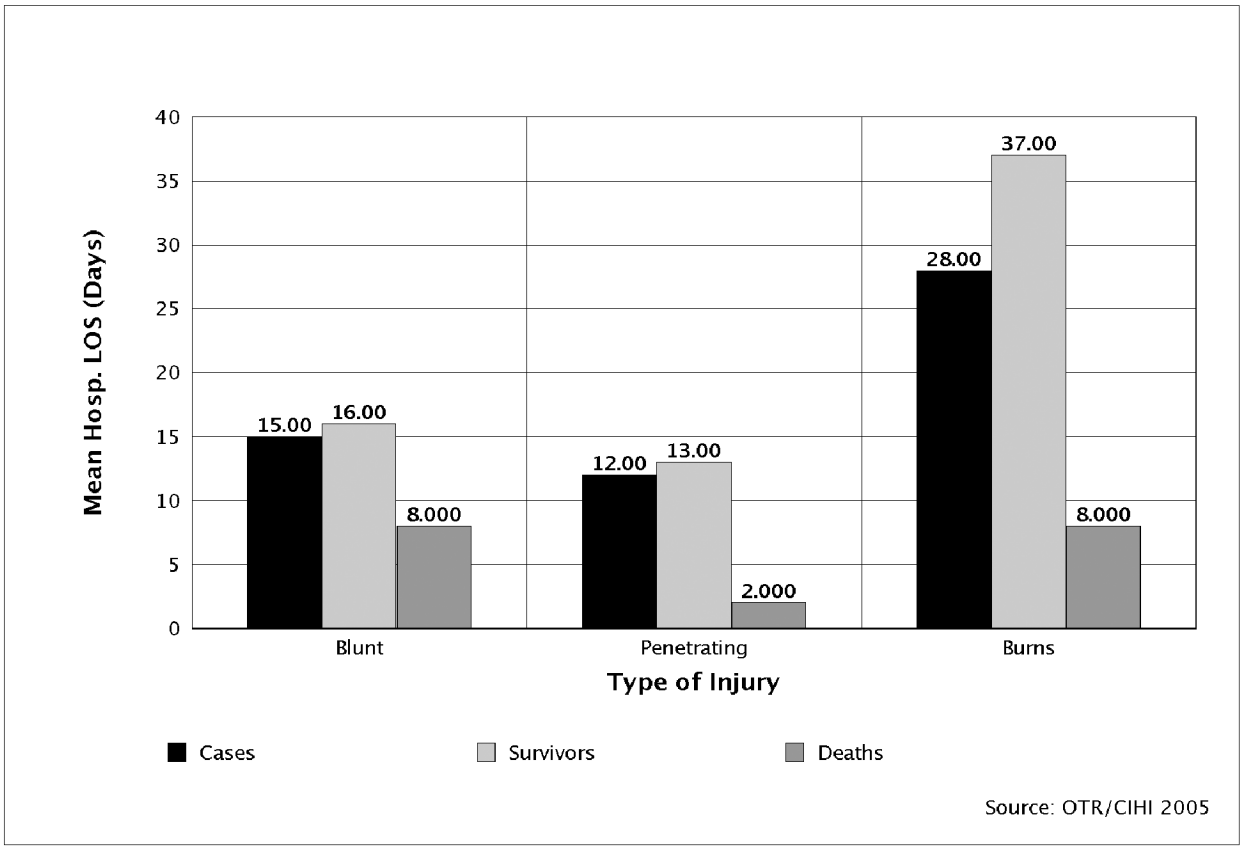


Figure 29. Mean Length of Stay (LOS) by Outcome and Type of Injury, 2003–2004

6.7 Special Care Units

For the purposes of the CDS, Special Care Units include intensive care and observation units with a normal patient-to-nurse ratio of at least 2:1.

Of the 2,311 cases (62% of all cases) in the CDS that stayed in a Special Care Unit in 2003–2004, 83% (n = 1,922) were discharged from hospital alive, and 17% (n = 389) died.

Table 3 shows further information for cases treated in special care units.

Table 3. Summary Statistics for Special Care Unit (SCU) Cases, 2003–2004

Discharge Status	Cases n (%*)	Mean			
		Age (years)	ISS	SCU LOS (days)	Hospital LOS (days)
Discharged alive	1,922 (83)	42	26	8	21
Died in hospital	389 (17)	55	31	6	8
ALL SCU CASES	**2,311**	**44**	**27**	**8**	**21**

* Percent of all special care unit cases (n = 2,311)

6.8 PRE Analysis

PRE analysis is a methodology that can be used by a trauma institution for self-audit. To implement PRE using TRISS[1] each patient is characterized by the Revised Trauma Score (RTS) measured at hospital admission and the Injury Severity Score (ISS) based on surgery, CT scan, autopsy or definitive diagnosis. Each patient's values are plotted on a graph with ISS and RTS axes. Survivors (L) and non-survivors (D) have different plotting symbols. The sloping line identified as "P_s50" represents the combinations of RTS and ISS which have a 0.50 probability of survival for patients in the baseline population (see Appendix E).

Patients whose RTS-ISS coordinates are above the P_s50 line (non-shaded region) have probabilities of survival less than 0.50. Patients whose coordinates are below the line (shaded region) have survival probabilities which exceed 0.50. Survivors whose coordinates are above the P_s50 line (non-shaded region) and non-survivors whose coordinates are below the line (shaded region) are considered atypical (unexpected in a statistical sense) and worthy of medical review. Data from such non-survivors may be reviewed for the possibility of predictive index failure, health care system failure, or therapeutic failure. Reviews for exceptional survivors may provide guidelines for future patient management.

1. TRISS is a calculated field by COLLECTOR based on the first recorded set of vital signs at the lead/trauma hospital. It combines both physiologic and anatomic indices to characterize the severity of injury and estimate patient survival probability.

Appendix G shows PRE analyses for adult patients 15–54 years of age and 55+ years of age for blunt and penetrating wounds. PRE analysis for pediatric patients (less than 15 years of age) is also shown. Due to the current features available in COLLECTOR software, PRE analyses are conducted on cases in 2003-2004 based on fiscal year of admission and not on fiscal year of discharge.

6.8.1 Blunt Injuries: 1999–2000 through 2003–2004

As indicated above, PRE analyses are available for 5 different groups. However, only blunt injuries to adults offer enough cases to provide meaningful comparison across the five years of data since 1999–2000.

Table 4 shows that over the past 5 years the proportion of unexpected deaths among adults aged 15 to 54 years hospitalized with blunt injuries has fluctuated from a low of 0.6% (n = 11) in 2001–2002 to a high of 1.2% (n = 22) in 1999–2000 and 2003-2004. The percentage of unexpected survivors has ranged from 0.2% (n = 3) in 2000–2001 to 0.5% (n = 9) in 2001–2002 and 2003-2004.

Table 4. PRE Analyses of Adult (Aged 15 to 54 years) Blunt Injuries, 1999–2000 to 2003–2004

	1999–2000 n (%)	2000–2001 n (%)	2001–2002 n (%)	2002–2003 n (%)	2003-2004 n (%)
Unexpected Deaths	22 (1.2)	15 (0.8)	11 (0.6)	20 (1.0)	22 (1.2)
Unexpected Survivors	7 (0.4)	3 (0.2)	9 (0.5)	5 (0.3)	9 (0.5)
Eligible Cases	1,827	1,855	1,960	1,962	1,869

PRE analyses indicate that percentage of unexpected deaths among cases 55 years of age and over has fluctuated from a low of 7.0% (n = 79) in 2001-2002 to a high of 9.2% (n = 94) in 1999–2000. The proportion of unexpected survivors has also fluctuated, with a low of 0.7% (n = 7) in 1999–2000 and a high of 2.0% (n = 20) in 2000–2001 (Table 5).

Table 5. PRE Analyses of Adult (Aged 55+ years) Blunt Injuries, 1999–2000 to 2003–2004

	1999–2000 n (%)	2000–2001 n (%)	2001–2002 n (%)	2002–2003 n (%)	2003-2004 n (%)
Unexpected Deaths	94 (9.2)	82 (8.3)	79 (7.0)	90 (7.5)	100 (8.2)
Unexpected Survivors	7 (0.7)	20 (2.0)	9 (0.8)	21 (1.7)	17 (1.4)
Eligible Cases	1,019	983	1,136	1,208	1,225

Appendix A

Definition of Terms

Appendix A—Definition of Terms

Note: In this report, the terms "accident" and "accidentally" used in the International Classification of Diseases have been replaced with "incident" and "unintentionally".

Acute Care Hospital
A hospital in which active treatment is received.

Admission
An admission to a participating acute care hospital in Ontario as a result of injury defined by an appropriate ICD External Cause of Injury Code and an ISS > 12. Admissions include hospital deaths. For more information on inclusion criteria for admissions in the Comprehensive Data Set, refer to Appendices B and C.

Admission Day
The day of the week the patient is admitted to hospital.

Age Groups
The age groups used by the OTR for reporting have been selected for comparability to other sources of information and to report on specific trends such as injury in children, young adults and in the elderly. Generally, the age groups reported are: <1, 1–4, 5–9, 10–14, 15–19, 20–24, 25–34, 35–44, 45–54, 55–64, 65–74, 75–84 and over 85 years of age. Age groups have been adjusted in Table 17 to match the Ontario Road Safety Annual Report from the Ministry of Transportation.

Aircraft
Any device for transporting passengers or goods in the air including airplanes, balloons, bombers, gliders, parachutes and military aircraft.

AIS
The Abbreviated Injury Scale was developed to provide researchers with a numeric method for ranking and comparing injuries by severity, and to standardize the terminology used to describe injuries. The AIS is a consensus derived, anatomically based system that classifies individual injuries by body region on a 6-point ordinal severity scale ranging from AIS 1 (minor) to AIS 6 (currently untreatable).

Autopsy
Refers to a case for which a post mortem examination or autopsy was completed.

BAC
A positive blood alcohol concentration (BAC) is greater than or equal to 17.0 mmol/L. The Trauma Registry Advisory Committee recommends that BAC be routinely collected on all trauma patients 10 years of age and over with an ISS (Injury Severity Score) > 12 who is admitted within 12 hours of the incident.

Blunt Injury Type
Injury type reflects the cause of injury (e.g. a motor vehicle collision, a blow to the head). Blunt injury may include deep lacerations but does not include any injury in which a missile such as a knife or bullet enters the body.

Burn Injury Type
Isolated burns with an ISS > 12 or burns with AIS = 1 are documented as a burn injury. These cases would not be included in a TRISS analysis. A burn injury with another injury AIS > 1 should be documented as a blunt or penetrating injury type depending on the other injury.

Case
A case in the Comprehensive Data Set is any patient who has an ISS > 12 and an appropriate External Cause of Injury Code and who meets one of the following criteria:

- Admitted to a lead/trauma hospital;
- Treated in the Emergency Department of a lead/trauma hospital (not admitted);
- Die in the Emergency Department of a lead/trauma hospital after treatment is initiated (not admitted).

Chronic Care
The level of care required by a person who is chronically ill or has a functional disability (physical or mental) whose acute phase of illness is over, whose vital processes may or may not be stable, whose potential for rehabilitation may be limited and who requires a range of therapeutic services, medical management and/or skilled nursing care plus provision for meeting psychosocial needs. The period of time during which care is required is unpredictable but usually consists of months or years.

CIHI
The Canadian Institute for Health Information (CIHI) was established in February 1994. This not-for-profit corporation was created by integrating the Hospital Medical Records Institute (HMRI), the MIS Group and specific health information programs from Health Canada and Statistics Canada.

COLLECTOR
Specialized software from Digital Innovation, Inc and Tri-Analytics, Inc. used by participating hospitals to collect prehospital, demographic, nature and cause of injury and follow up information on severely injured patients. This software has been customized for use in Ontario.

Comprehensive Data Set
One of three major data sets of the OTR that includes data on severely injured patients admitted to trauma hospitals in the province. Inclusion in the Comprehensive Data Set is based on injury severity.

Cyclists
Any person riding on a pedal cycle or in a sidecar or trailer attached to such a vehicle.

Death Data Set from the Office of the Chief Coroner
One of three major data sets of the OTR that includes data on all injury deaths in the province of Ontario. These data are provided by the Office of the Chief Coroner.

Deaths
All deaths occurring in participating hospitals with an ISS > 12. Those patients who are DOA (dead on arrival) are excluded.

DIE
A DIE (Died in Emergency) is defined as a patient who dies in the emergency department after any active treatment or resuscitation by the trauma team or emergency department physician after the patient enters the emergency department. DIEs may include patients who arrive VSA (vital signs absent) if treatment or resuscitation is initiated. Patients who are admitted to hospital and die in the emergency department while waiting for transfer are considered an in-hospital death rather than a DIE.

Direct Admission
A direct admission is defined as a patient whose first contact with a hospital is at a participating hospital (not referred).

Discharged Alive
An admitted patient that is discharged from hospital alive, including those patients that sign themselves out against medical advice.

Discharge Disposition
A patient's discharge disposition is the location to which the patient is discharged or the services arranged for the patient immediately upon discharge from the lead/trauma hospital. Discharge disposition is documented as inappropriate for deaths. Menu options for discharge disposition include home, home with support services, another acute care facility, general rehabilitation facility, chronic care facility, nursing home, special rehabilitation facility, Foster Care/Children's Aid and other.

Driver
A driver of a motor vehicle is the occupant of the motor vehicle operating it or intending to operate it.

English Speaking
Refers to patients who are reasonably conversant in the English language and do not require an interpreter.

External Cause of Injury
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. COLLECTOR allows hospitals to document up to 3 External Cause of Injury Codes. 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.

Extrication Required
Extrication is documented if a patient was trapped and required release from the scene of the incident. Examples include extrication from motor vehicles, dwellings on fire and falls where extrication is required.

General Rehabilitation
See Rehabilitation definition. General rehabilitation involves less intensive rehabilitation of shorter duration than special rehabilitation.

Homicide
Injuries inflicted by another person with intent to injure or kill, by any means.

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 manuals may be located in hospital Health Record Departments or in public libraries.

ICD-9
The International Classification of Diseases, 9th Revision is based on the official version of the World Health Organization's 9th revision.

ICD-9-CM
In 1977, a Steering Committee was convened by the National Centre for Health Statistics to provide advice on the development of a clinical modification of the ICD-9 with increased detail necessary for medical research. ICD-9-CM is totally compatible with ICD-9, meeting the need for comparability of morbidity and mortality statistics at the international level.

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 national standard for reporting morbidity statistics.

ICP Days
Refers to the number of days that intracranial pressure is monitored. ICP days include any part of one day up to midnight including the days the ICP is discontinued (excluding the day ICP is begun). ICP monitoring is used to evaluate a head injured patient's response to therapy and may also be used as a treatment modality to vent cerebrospinal fluid.

In-Hospital Deaths
A patient who dies after arrival at the participating hospital, excluding those patients who are dead on arrival (DOA).

Injured Person
An injured person is identified by a subdivision of the External Causes of Injury Codes for all transport External Cause Codes. Injured persons include drivers, passengers, pedestrians, cyclists and other specified persons.

Injury Resulting from Operations of War
An External Cause of Injury Code category used to classify injuries to military personnel and civilians caused by war and civil insurrection and occurring during the time of war and insurrection.

Injury Type
Refers to the patient's most serious injury and may be classified as blunt, penetrating or burns. In determining the type of injury, the cause of injury is considered. Also see definitions for penetrating injury type, blunt injury type and burn injury type.

Injury Undetermined Whether Unintentionally or Purposely Inflicted
An External Cause of Injury Code category used when after a thorough investigation by the medical examiner, coroner, or other legal authority, it cannot be determined whether the injuries are unintentional, suicidal or intentional.

Intentional Injury
Intentional injury refers to injury purposely inflicted by another person or by the patient.

Intubated
Refers to patients who are intubated for airway maintenance.

Injury Severity Score (ISS)
The Injury Severity Score is an internationally recognized scoring system developed to assign a level of severity to injury. ISS scores range from 1 (minor) to 75 (major).

Late Effects
Conditions reported as such or occurring as sequelae one year or more after injury. Late effects are excluded from the definition of trauma.

Legal Intervention
An E Code category used to classify injuries inflicted by the police or other law enforcing agents, including military on duty, in the course of arresting or attempting to arrest lawbreakers, suppressing disturbances, maintaining order and other legal action.

Length of Stay (LOS)
Total number of hospital days as calculated from date of admission to date of discharge or death.

Master Numbering System
A system developed for the purpose of bringing together all Health Facilities and Programs under one system of identification. Included are health and health related units, facilities, clinics, programs and services. Each such organization has been assigned a unique four digit identifying code. A two digit alphabetic code is used to identify the type of institution.

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

Median
A measure of central tendency of a set of observations; 50^{th} percentile (the point above and below which 50% of data fall).

Minimal Data Set
One of three major data sets of the OTR that includes data on injury admissions to acute care hospitals in Ontario. Data are downloaded from the CIHI Discharge Abstract Database.

Month of Admission
Reports are generated by the month in which a patient was admitted to hospital rather than discharge date.

Motor Vehicle
Any mechanically or electrically powered device, not operated on rails, upon which any person or property may be transported or drawn upon a highway. Any object such as a trailer, coaster, sled, or wagon being towed by a motor vehicle is considered a part of the motor vehicle. This category includes automobiles, buses, fire engines, motorcycles, mopeds or scooters, vans, trucks, and construction machinery, farm and industrial machinery, steam rollers, tractors, army tanks, highway graders, or similar vehicles on wheels or treads, while in transport under its own power.

Motor Vehicle Incident
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 occurs on a public highway or elsewhere.

Motor Vehicle Non-Traffic Incident
Any motor vehicle incident which occurs entirely in any place other than a public highway.

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.

Motorcycle
A two wheeled motor vehicle having one or two riding saddles and sometimes having a third wheel for the support of a sidecar. The sidecar is considered part of the motorcycle.

Nature of Injury
Injury Diagnosis Codes have been divided into the following broad categories of injuries to accommodate the reporting of both ICD-9 and ICD-10-CA codes: superficial, musculoskeletal, burns and corrosion, internal organs, crushing, open wound (including traumatic amputation), blood vessels, nerves and spinal cord, other and unspecified. The specific diagnosis codes that define these categories are found in Appendix E—Nature of Injury Reporting Categories.

Off Road Motor Vehicle
A motor vehicle of special design, to enable it to negotiate rough or soft terrain or snow. Examples of special design are high construction, special wheels and tires, driven by treads, or support on a cushion of air. This category includes all terrain vehicles, army tanks, hovercrafts, and snowmobiles.

Operative Procedures
Up to 10 operative procedures may be documented for 5 OR visits at the primary and secondary hospital and 10 OR visits at the participating hospital.

OR Visits per Admission
Refers to the number of OR encounters for the patient's admission. Up to 99 OR visits may be documented for each patient. Detailed information is collected on 5 OR visits at the primary and secondary hospital and 10 OR visits at the participating hospital.

Organ Donations
Up to 4 specific organs or tissue may be documented. Participating hospitals may also document if greater than 4 organs or tissue samples were procured.

Other Incidents
This is a category that has been created from several ICD-10-CA External Cause of Injury Codes. For specific ICD-10-CA codes included in this category, please see the ***External Cause Groupings*** document.

Other Road Vehicle
Any device, except a motor vehicle in, on, or by which any person or property may be transported on a highway. This category includes pedal cycles, animals carrying persons or goods, animal drawn vehicles, animals harnessed to conveyances and streetcars.

Outcome
Refers to whether the patient lived or died.

Out of Province Residents
Defined as a patient whose province of residence is not Ontario.

Paralytic Agents
The purpose of collecting the number of paralytic agents in the Comprehensive Data Set is not to document the number of paralytic agents administered but the number of cases in which the Glasgow Coma Score could not be calculated because a paralytic agent was administered. Paralytic agents stop muscular activity and help preserve or increase cerebral venous draining in severe head injury, helping to reduce or keep the intracranial pressure in the normal range.

Participating Hospital
One of eleven hospitals (14 sites) in the province which contribute data on severely injured patients to the Comprehensive Data Set using specialized software and dedicated staff.

Patient Days
The number of days a patient is hospitalized.

Pedal Cycle
Any road transport vehicle operated solely by pedals including bicycles, pedal cycles and tricycles.

Pedal Cyclist
Any person riding on a pedal cycle or in a sidecar attached to such a vehicle. Also see definition for cyclist.

Pedestrian
Any person involved in an incident who was not at the time of the incident riding in or on a motor vehicle, railroad train, streetcar, animal-drawn or other vehicle, or on a bicycle or animal. The pedestrian category includes a person changing a tire on a vehicle, in or operating a pedestrian conveyance, making adjustments to the motor of a vehicle or on foot.

Pedestrian Conveyance
Any human powered device by which a pedestrian may move other than by walking or by which a walking person may move another pedestrian including baby carriages, wagons, ice skates, roller skates, scooters, skateboards, skis, sleds and wheelchairs.

Penetrating Injury Type
Refers to an injury caused by a missile entering the body. Missiles include bullets, knives and items such as pieces of sharp glass or metal.

Place of Injury
The ICD options are used to specify place of injury for all cases in the Comprehensive Data Set. Options include home, farm, mine, industry, recreation, street, public building, residential institution, other and unspecified. A place of injury may be documented for the primary, secondary and tertiary External Cause of Injury Codes.

Prehospital Time
Prehospital time is calculated based on the incident time to the time the ambulance arrived at the first hospital.

Protective Devices
Any devices in use or not in use by the injured patient at the time of the incident. Menu options for protective devices include none, lap and shoulder belt, lap belt only, lap belt only of combined assembly, child safety seat used incorrectly, child safety seat used correctly, air bag deployed, other passive restraint device, helmet, equipment available, but not used, no equipment available, use unknown, other safety equipment used, infant seat (less than 20 pounds), child seat (between 20–40 pounds), booster seat (greater than 40 pounds), seatbelt NFS and helmet flew off. Up to 4 menu options may be documented.

Public Highway
A public highway or traffic way is the entire width between property lines of every way or place, of which any part is open to the use of the public for purposes of vehicular traffic as a matter of right or custom. This category excludes private driveways, parking lots, and roads in airfields, farms industrial premises, mines, private grounds or quarries.

Railway Incident
A transport incident involving a railway train or other railway vehicle operated on rails, whether in motion or not.

Readmission
A readmission is a related inpatient admission to the same participating hospital related to a previous trauma (ISS > 12) within unlimited time.

Region
There are 7 health planning regions in Ontario (Southwest, Central South, Central West, Central East, Toronto, East, and North) defined by the Ministry of Health and Long Term Care according to residence codes.

Rehabilitation
That required by a person whose condition is relatively stable but unlikely to be resolved through convalescence or the normal healing process and who requires a specialized rehabilitation program to restore or improve functional ability. The intensity and duration of the type of care is dependent on the nature of the disability and the patient progress, but maximum benefits usually can be expected within a period of several months. Also see Special Rehabilitation or General Rehabilitation.

Residence Code
Unique four digit numbers have been assigned to each municipality and populated Indian Reserve or settlement in the province to classify patient residence information. The first two digits represent the county, district or regional municipality in which the place is located. Digits three and four identify municipalities within the county.

Roadway
That part of the public highway designed, improved, and ordinarily used, for vehicular travel. This excludes driveways, parking lots, ramps, roads in farms, airfields, industrial premises, private grounds, mines and quarries.

Scene Time
Scene time is calculated based on the time the ambulance arrived at the scene to the time the ambulance left the scene.

SCU
A Special Care Unit is any unit where the normal patient: nurse ratio is 2:1. Other beds such as ED or the recovery room may be documented as an SCU bed if they are used for > 24 hours as an SCU bed. SCUs include surgical ICUs, pediatric ICUs, neuro ICUs, burn ICUs, ICUs stepdown/observation units or other designated SCUs. Up to 5 SCU visits may be documented.

Single Year of Age
Individual values for ages less than 1 year through 100 years which may be used rather than age groups.

Small Boat
Any watercraft propelled by paddle, oars, or a small motor, with a passenger capacity of less than ten.

Special Rehabilitation
See Rehabilitation definition. Special rehabilitation involves more intensive rehabilitation of longer duration than general rehabilitation.

Suicide
Self inflicted injuries specified as intentional excluding admissions that result from poisonings.

Survivors
Refers to those patients who are discharged alive.

Total Admissions
Total number of patients admitted to hospital excluding those who are Dead on Arrival (DOA), Died in Emergency (DIE) and discharged from the Emergency Department.

Total Patient Days
Sum of length of stay for all admissions.

Transfers
A transferred patient is one whose first contact with a hospital is with a non-participating hospital and who is subsequently transferred to a participating hospital.

Transport Incident
Any incident (ICD-9 codes E800–E848 and ICD-10-CA codes V01-V99) involving a device designed primarily for, or being used at the time primarily for, conveying persons or goods from one place to another. In classifying incidents which involve more than one kind of transport, the following order of precedence of transport incidents should be used: aircraft and spacecraft, watercraft, motor vehicle, railway, other road vehicles.

Incidents involving agricultural and construction machines, such as tractors, cranes, and bulldozers, are regarded as transport incidents only when these vehicles are under their own power on a highway, otherwise the vehicles are regarded as machinery. Vehicles which can travel on land or water, such as hovercraft and other amphibious vehicles, are regarded as watercraft when on the water, as motor vehicles when on the highway, and as off road vehicles when on land, but off the highway.

Trauma
Injury resulting from the transfer of energy e.g. kinetic, thermal. See Appendix B for External Causes of Injury Codes used to define trauma.

Trauma Registry Advisory Committee (TRAC)
The multidisciplinary group responsible for guiding the implementation and operation of the OTR.

Ventilator Days
The number of days the patient was intubated and mechanically ventilated intermittently or continuously excluding nonintubated patients on BIPAP and intubated patients on CPAP. Ventilator days include any part of 1 day up to midnight including the day the ventilator is discontinued and excluding the day the ventilator is begun. A ventilator day is counted if a ventilated patient is admitted and discharged in the same day or if the ventilation is started and discontinued in the same day. Routine intubation for OR is not included.

Watercraft
Any device for transporting passengers or goods on the water.

Appendix B

Trauma Definition:
External Cause of Injury Code Inclusions and Exclusions

Appendix B—Trauma Definition: External Cause of Injury Code Inclusions and Exclusions

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

The following lists the categories used for trauma reporting purposes based on this definition. "Incident" and "unintentional" have been substituted for the terms "accidents" and "accidental" used in the ICD definitions.

A. OTR CDS 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 CDS 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

Trauma Definition: External Cause of Injury Code Exclusions

The following lists the ICD-9 and ICD-10-CA External Cause codes that are *excluded* from the Ontario Trauma Registry based on the 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

Definition of Trauma

Appendix C—Definition of Trauma

The following points are guidelines for inclusion criteria for the Comprehensive Data Set. The inclusion and exclusion criteria for the Comprehensive Data Set listed below reflect discussion by the TRAC, the TRAC Subcommittee and the Comprehensive Data Set Working Group.

New inclusion criteria are effective for patients admitted on and after April 1, 1995.

1. Patients included in the Comprehensive Data Set must have an ISS > 12 with an appropriate External Cause of Injury Code as defined by the Minimal Data Set Trauma Patient Definition (attached). In addition to the included External Cause of Injury Codes, patients admitted with the following External Cause of Injury Codes may also be included in the Comprehensive Data Set (as of April 1, 1995).

   External Cause of Injury Code Exceptions

   - Inhalation injury as defined in the AIS dictionary should be used as a reference when there is documentation of the carboxyhemoglobin level. Inhalation injury should not be used in drowning or hanging cases.
   - Ingestion poisoning resulting in a physical injury with an ISS > 12 can be included. An example is a perforated esophagus due to chemical ingestion. If the perforated esophagus was due to vomiting, the case would not be included.
   - AIS 90 injuries describing length of unconsciousness and level of consciousness (includes response to painful stimuli) found in the Head section of the AIS Dictionary can be used for hypoxic injury including hanging, strangulation and near drowning. Any documented head injury (i.e. hypoxic brain injury, cerebral edema) from the post mortem report or diagnostic tests (i.e. CT, X-ray) must be included for these cases. If there is no documented head injury either from diagnostic tests or a post mortem examination, level of consciousness cannot be used. As stated in the AIS Dictionary, length of unconsciousness should always be used in preference to level of consciousness. Length of unconsciousness is defined from the first time the patient is known to be unconscious to the time the patient wakes up or is pronounced dead.

2. Patients that are DIEs (Died in Emergency) are included and will be included in reports created centrally. A DIE is defined as a patient who dies in the emergency department after any active treatment or resuscitation by the trauma team or emergency department physician after the patient enters the emergency department. DIEs may include patients who arrive VSA if treatment or resuscitation is initiated. Patients who are admitted to hospital and die in the emergency department while waiting for transfer are considered an in-hospital death rather than a DIE.

3. Patients that are DOAs (Dead on Arrival) are excluded. A DOA is defined as a patient who has not had active treatment by the trauma team or emergency department physician and is pronounced dead in the emergency department.

4. The injury must have occurred within 1 year of hospital admission and be the first admission to the lead/trauma hospital. Patients admitted with chronic subdurals are included in the Comprehensive Data Set as a new record if the injury occurred within one year and the admission is the first to the lead/trauma hospital.

5. The trauma team leader or trauma team need not be activated.

6. Patients may bypass the emergency department and be directly admitted to a service.

7. Patients with ISS > 12 and an appropriate External Cause of Injury Code who are treated in the emergency department at a lead/trauma hospital and transferred to another lead/trauma hospital for admission should be included in both lead/trauma hospitals.

8. These cases will be reported centrally in the lead/trauma hospital where the majority of the critical care is given rather than using the longest length of stay.

9. Only cases where active care is being given should be included. Patients who are admitted to a lead/trauma hospital for convalescence or rehabilitation because the facility is closer to home should not be included.

10. If a trauma patient with ISS < 12 is admitted to hospital and then is further injured in hospital (ISS < 12), the case should not be included in either instance. Injuries should not be combined. If the second incident results in an ISS > 12 the case should be included but the injuries from the first incident should not be included but should be listed as a comorbidity if they contribute to the patient LOS. The only injuries used for scoring are the ones sustained related to the incident resulting in an ISS > 12.

11. A trauma patient (ISS > 12) admitted to a lead/trauma hospital who is further injured in hospital (ISS > 12) should be considered two separate incidents and would require two records in the Comprehensive Data Set.

General Coding Guidelines

1. Every data element in the Comprehensive Data Set should be documented. As of April 1, 1995 blanks are not acceptable except in cases where data elements are skipped by COLLECTOR. All menus include unknown and inappropriate as a menu selection to facilitate documenting every data element.

   Unknown should be used in cases where the information is not documented. Unknown should also be used if there are two conflicting sources of information that cannot be verified or for data elements where the information is expected to be made available but has not arrived at the time the record is closed. In cases where there are conflicting sources of information, the Medical Director should be consulted.

   Inappropriate is used when the information would not be meaningful or appropriate for a specific case. An example is a BAC in a child less than 10 years of age or occupation in a non-work related injury.

2. Dates and times should be documented whenever they are known. Many calculations are done in COLLECTOR including prehospital time, scene time and length of stay. It is important that all dates and times are entered sequentially for these calculations to be done. Data checks have been built in to alert the user to times that are not sequential. For example, the time the ambulance call is received and the time the ambulance is dispatched (Screen 3.3) must be sequential. If these times are documented as the same on the Ambulance Call Report, the second time should be documented as one second later. A best guess should not be used in order to maintain the integrity of the data. It is possible to enter "U" in portions of the date and time data elements in COLLECTOR when all the information is not available. A data element has been added to COLLECTOR to document the approximate date of injury (i.e. within 1 week, within 1 month, within 3 months, within 1 year) when the actual date is not available.

3. Old injuries such as healing fractures should not be included. Only injuries that are related to the cause of admission should be documented.

4. When patients are readmitted to a participating hospital with a missed injury, the missed injury should be added to the original list of injuries. If the patient is admitted for the first time to the lead/trauma hospital with a missed injury, all injuries relating to the ISS > 12 incident should be documented.

Appendix D

External Cause of Injury Reporting Categories

Appendix D—External Cause of Injury Reporting Categories

External Cause Code Groups	ICD-10-CA Codes	ICD-9 Codes
MOTOR VEHICLE TRAFFIC—Driver	V30.5, V31.5, V32.5, V33.5, V34.5, V35.5, V36.5, V37.5, V38.5, V39.4, V40.5, V41.5, V42.5, V43.5, V44.5, V45.5, V46.5, V47.5, V48.5, V49.4, V50.5, V51.5, V52.5, V53.5, V54.5, V55.5, V56.5, V57.5, V58.5, V59.4, V60.5, V61.5, V62.5, V63.5, V64.5, V65.5, V66.5, V67.5, V68.5, V69.4, V70.5, V71.5, V72.5, V73.5, V74.5, V75.5, V76.5, V77.5, V78.5, V79.4, V83.0, V84.0, V85.0, V86.00, V86.08	E810–E816, E818–E819 (.0)
MOTOR VEHICLE TRAFFIC—Passenger	V30.6, V31.6, V32.6, V33.6, V34.6, V35.6, V36.6, V37.6, V38.6, V39.5, V40.6, V41.6, V42.6, V43.6, V44.6, V45.6, V46.6, V47.6, V48.6, V49.5, V50.6, V51.6, V52.6, V53.6, V54.6, V55.6, V56.6, V57.6, V58.6, V59.5, V60.6, V61.6, V62.6, V63.6, V64.6, V65.6, V66.6, V67.6, V68.6, V69.5, V70.6, V71.6, V72.6, V73.6, V74.6, V75.6, V76.6, V77.6, V78.6, V79.5, V83.1, V84.1, V85.1, V86.10, V86.18	E810–E816, E818–E819 (.1)
MOTOR VEHICLE TRAFFIC—Motorcycle Driver	V20.4, V21.4, V22.4, V23.4, V24.4, V25.4, V26.4, V27.4, V28.4, V29.4	E810–E816, E818–E819 (.2)
MOTOR VEHICLE TRAFFIC—Motorcycle Passenger	V20.5, V21.5, V22.5, V23.5, V24.5, V25.5, V26.5, V27.5, V28.5, V29.5	E810–E816, E818–E819 (.3)
MOTOR VEHICLE TRAFFIC—Pedestrian	V02.1, V02.9, V03.1, V03.9, V04.1, V04.9, V09.2	E810–E816, E818–E819 (.7)
MOTOR VEHICLE TRAFFIC—Pedal Cyclist	V12 (.4 .5 .9) V13 (.4 .5 .9) V14 (.4 .5 .9) V19 (.4 .5 .6)	E810–E816, E818–E819 (.6)

External Cause Code Groups	ICD-10-CA Codes	ICD-9 Codes
MOTOR VEHICLE TRAFFIC—Other/ Unspecified	V20.9, V21.9, V22.9, V23.9, V24.9, V25.9, V26.9, V27.9, V28.9, V29.6, V29.8, V29.9, V30.7, V30.9, V31.7, V31.9, V32.7, V32.9, V33.7, V33.9, V34.7, V34.9, V35.7, V35.9, V36.7, V36.9, V37.7, V37.9, V38.7, V38.9, V39.6, V39.8, V39.9, V40.7, V40.9, V41.7, V41.9, V42.7, V42.9, V43.7, V43.9, V44.7, V44.9, V45.7, V45.9, V46.7, V46.9, V47.7, V47.9, V48.7, V48.9, V49.6, V49.8, V49.9, V50.7, V50.9, V51.7, V51.9, V52.7, V52.9, V53.7, V53.9, V54.7, V54.9, V55.7, V55.9, V56.7, V56.9, V57.7, V57.9, V58.7, V58.9, V59.6, V59.8, V59.9, V60.7, V60.9, V61.7, V61.9, V62.7, V62.9, V63.7, V63.9, V64.7, V64.9, V65.7, V65.9, V66.7, V66.9, V67.7, V67.9, V68.7, V68.9, V69.6, V69.8, V69.9, V70.7, V70.9, V71.7, V71.9, V72.7, V72.9, V73.7, V73.9, V74.7, V74.9, V75.7, V75.9, V76.7, V76.9, V77.7, V77.9, V78.7, V78.9, V79.6, V79.8, V79.9, V82.1, V83.2, V83.3, V84.2, V84.3, V85.2, V85.3, V86 (.2, .30, .38), V87 (.0 .1 .2 .3 .4 .5 .6 .7. 8) V89.2	E810–E816, E818–E819 (.4, .5, .8, .9)
MOTOR VEHICLE NON TRAFFIC—Driver	V30.0, V31.0, V32.0, V33.0, V34.0, V35.0, V36.0, V37.0, V38.0, V39.0, V40.0, V41.0, V42.0, V43.0, V44.0, V45.0, V46.0, V47.0, V48.0, V49.0, V50.0, V51.0, V52.0, V53.0, V54.0, V55.0, V56.0, V57.0, V58.0, V59.0, V60.0, V61.0, V62.0, V63.0, V64.0, V65.0, V66.0, V67.0, V68.0, V69.0, V70.0, V71.0, V72.0, V73.0, V74.0, V75.0, V76.0, V77.0, V78.0, V79.0, V83.5, V84.5, V85.5, V86.50, V86.51, V86.58	E820–E823, E825 (.0)
MOTOR VEHICLE NON TRAFFIC—Passenger	V30.1, V31.1, V32.1, V33.1, V34.1, V35.1, V36.1, V37.1, V38.1, V39.1, V40.1, V41.1, V42.1, V43.1, V44.1, V45.1, V46.1, V47.1, V48.1, V49.1, V50.1, V51.1, V52.1, V53.1, V54.1, V55.1, V56.1, V57.1, V58.1, V59.1, V60.1, V61.1, V62.1, V63.1, V64.1, V65.1, V66.1, V67.1, V68.1, V69.1, V70.1, V71.1, V72.1, V73.1, V74.1, V75.1, V76.1, V77.1, V78.1, V79.1, V83.6, V84.6, V85.6, V86.60, V86.61, V86.68	E820–E823, E825 (.1)
MOTOR VEHICLE NON TRAFFIC—Motorcycle Driver	V20.0, V21.0, V22.0, V23.0, V24.0, V25.0, V26.0, V27.0, V28.0, V29.0	E820–E823, E825 (.2)
MOTOR VEHICLE NON TRAFFIC—Motorcycle Passenger	V20.1, V21.1, V22.1, V23.1, V24.1, V25.1, V26.1, V27.1, V28.1, V29.1	E820–E823, E825 (.3)

External Cause Code Groups	ICD-10-CA Codes	ICD-9 Codes
MOTOR VEHICLE NON TRAFFIC—Pedestrian	V02.0, V03.0, V04.0, V09.0	E820–E823, E825 (.7)
MOTOR VEHICLE NON TRAFFIC—Pedal Cyclist	V12 (.0 .1 .2) V13 (.0 .1 .2) V14 (.0 .1 .2) V19 (.0 .1 .2)	E820–E823, E825 (.6)
MOTOR VEHICLE NON TRAFFIC—Other/ Unspecified	V20.2, V21.2, V22.2, V23.2, V24.2, V25.2, V26.2, V27.2, V28.2, V29.2, V29.3, V30.2, V30.3, V31.2, V31.3, V32.2, V32.3, V33.2, V33.3, V34.2, V34.3, V35.2, V35.3, V36.2, V36.3, V37.2, V37.3, V38.2, V38.3, V39.2, V39.3, V40.2, V40.3, V41.2, V41.3, V42.2, V42.3, V43.2, V43.3, V44.2, V44.3, V45.2, V45.3, V46.2, V46.3, V47.2, V47.3, V48.2, V48.3, V49.2, V49.3, V50.2, V50.3, V51.2, V51.3, V52.2, V52.3, V53.2, V53.3, V54.2, V54.3, V55.2, V55.3, V56.2, V56.3, V57.2, V57.3, V58.2, V58.3, V59.2, V59.3, V60.2, V60.3, V61.2, V61.3, V62.2, V62.3, V63.2, V63.3, V64.2, V64.3, V65.2, V65.3, V66.2, V66.3, V67.2, V67.3, V68.2, V68.3, V69.2, V69.3, V70.2, V70.3, V71.2, V71.3, V72.2, V72.3, V73.2, V73.3, V74.2, V74.3, V75.2, V75.3, V76.2, V76.3, V77.2, V77.3, V78.2, V78.3. V79.2, V79.3, V80 (.3 .4 .5) V82.0, V83.7, V83.9, V84.7, V84.9, V85.7, V85.9, V86.7, V86.90, V86.91, V86.98, V88 (.0 .1 .2 .3 .4 .5 .6 .7. 8) V89.0	E820–E823, E825 (.4, .5, .8, .9)
MOTOR VEHICLE Boarding or Alighting	V20.3, V21.3, V22.3, V23.3, V24.3, V25.3, V26.3, V27.3, V28.3, V30.4, V31.4, V32.4, V33.4, V34.4, V35.4, V36.4, V37.4, V38.4, V40.4, V41.4, V42.4, V43.4, V44.4, V45.4, V46.4, V47.4, V48.4, V50.4, V51.4, V52.4, V53.4, V54.4, V55.4, V56.4, V57.4, V58.4, V60.4, V61.4, V62.4, V63.4, V64.4, V65.4, V66.4, V67.4, V68.4, V70.4, V71.4, V72.4, V73.4, V74.4, V75.4, V76.4, V77.4, V78.4, V83.4, V84.4, V85.4, V86.4	E817 (all 4th digits), E824 (all 4th digits)
RAILWAY—Occupant	V81 (.0 .1 .2 .3 .4 .5 .6 .7 .8 .9)	E800–E807 (.0.1)
RAILWAY—Pedestrian	V05 (.0 .1 .9)	E800–E807 (.2)
RAILWAY—Pedal Cyclist	V15 (.0 .1 .2 .3 .4 .5 .9)	E800–E807 (.3)
RAILWAY—Other	V80.6	E800–E807 (.8.9)
OTHER ROAD VEHICLE—Pedestrian	V01 (.0 .1 .9) V06 (.0 .1 .9) V09.1, V09.3, V09.9	E826–E829 (.0)
OTHER ROAD VEHICLE—Pedal cyclist	V10 (.0 .1 .2 .3 .4 .5 .9) V11 (.0 .1 .2 .3 .4 .5 .9) V12.3, V13.3, V14.3, V16 (.0 .1 .2 .3 .4 .5 .9) V17 (.0 .1 .2 .3 .4 .5 .9) V18 (.0 .1 .2 .3 .4 .5 .9) V19 (.3 .8 .9)	E826–E829 (.1)

External Cause Code Groups	ICD-10-CA Codes	ICD-9 Codes
OTHER ROAD VEHICLE—Animal-rider/ occupant of animal-drawn vehicle	V80 .0, V80.1, V80.2, V80.7, V80.8, V80.9	E826–E829 (.2 .3)
OTHER ROAD VEHICLE—Occupant of streetcar	V82 (.2, .3, .4, .5, .6, .7, .8, .9)	E826–E829 (.4)
OTHER ROAD VEHICLE—Other	V87.9, V88.9, V89 (.1 .3)	E826–E829 (.8 .9)
WATER TRANSPORT—Involving Drowning/ Submersion	V90 (.0 .1 .2 .3 .4 .5 .6 .7 .8 .9) V92 (.0 .1 .2 .3 .4 .5 .6 .7 .8 .9)	E830, E832 (.0, .1, .2, .3, .4, .5, .6, .8, .9)
WATER TRANSPORT—Incident to/on watercraft not causing drowning and submersion	V91 (.0 .1 .2 .3 .4 .5 .6 .7 .8 .9) V93 (.0 .1 .2 .3 .4 .5 .6 .7 .8 .9)	E831, E833, E834, E835, E836, E837 (.0, .1, .2, .3, .4, .5, .6, .8, .9)
WATER TRANSPORT—Other/Unspecified	V94 (.0 .1 .2 .3 .4 .5 .6 .7 .8 .9)	E838 (.0, .1, .2, .3, .4, .5, .6, .8, .9)
Air and Space Transport	V95 (.0, .1, .2, .3, .4, .8, .9) V96 (.0, .1, .2, .8, .9) V97 (.0, .1, .2, .3, .8)	E840–E845 (.0, .1, .2, .3, .4, .5, .6, .7, .8, .9)
Vehicle Incidents Not Elsewhere Classified	V89.9, V98, V99	E846–E848
UNINTENTIONAL FALLS—slipping, tripping and stumbling	W01	E885
UNINTENTIONAL FALLS—collision with/ pushed by, another person	W03	E886
UNINTENTIONAL FALLS—Fall on/from stairs and steps	W10	E880
UNINTENTIONAL FALLS—Fall on/from ladder or scaffolding	W11, W12	E881
UNINTENTIONAL FALLS—Fall from, out of or through building or structure	W13	E882
UNINTENTIONAL FALLS—Other fall from one level to another	W06, W07, W08, W09, W14, W15, W16, W17	E883, E884
UNINTENTIONAL FALLS—Other/ Unspecified fall	W00, W02, W04, W05, W18, W19	E888

External Cause Code Groups	ICD-10-CA Codes	ICD-9 Codes
Fire and Flames	X00–X06, X08, X09	E890–E899
Drowning	W65–W70, W73, W74	E910
Operations of War	Y36	E990–E998
Legal Intervention	Y35	E970–E976, E978
Attempted Suicide and Self-Inflicted Injury (Excluding Poisoning)	X70–X84	E953–E958
Undetermined Whether Unintentionally or Purposely Inflicted (Excluding Poisonings)	Y20–Y34	E983–E988
Assault and Injury Purposely Inflicted (Excluding Poisonings)	X86, X91–X99, Y00–Y05, Y07–Y09	E960, E961, E963–E968
Suffocation	W75, W76, W77, W81, W83, W84	E913
Foreign Bodies (Excluding Choking)	W44, W45	E914, E915
Cutting and Piercing	W25, W26, W27, W28, W29, W60	E920
Unintentional Firearm Injuries	W32, W33, W34	E922
Machinery-Related Injuries	W24, W30, W31	E919
Overexertion and Strenuous/Repetitive Movements	X50	E927
Struck By or Against Objects and Persons	W20, W21, W22, W50, W51, W52	E916, E917
Explosive Material	W39, W40	E923
Hot Substances	X10–X19	E924
Electric Current	W85-W87	E925
Caught, crushed, jammed or pinched in or between objects	W23	E918
Explosion of pressure vessel	W35, W36, W37, W38	E921
Exposure to radiation	W88–W91, X32	E926
Other/Unspecified	W41, W42, W43, W49, X58–X59	E887, E928
Natural and Environmental Factors	W53, W54, W55, W56, W57, W58, W59, W64, W92, W93, W94, W99, X30–X31, X33–X39, X52	E900, E901, E902, E906, E907, E908, E909

Appendix E

Nature of Injury Reporting Categories

Appendix E—Nature of Injury Reporting Categories

Description	ICD-10 Code Range	ICD-9 Code Range
Superficial	S00, S05.0, S05.1, S05.8, S05.9, S10, S20, S30, S40, S50, S60, S70, S80, S90, T00, T09.0, T11.0, T13.0, T14.0	910–924
Musculoskeletal	S02, S12, S22, S32, S42, S52, S62, S72, S82, S92, T02, T08, T10, T12, T14.2, S03, S13, S23, S33, S43, S53, S63, S73, S83, S93, T03, T11.2, T13.2, T14.3, S09.10, S09.18, S16, S29.00, S29.08, S39.00, S39.08, S46, S56, S66, S76, S86, S96, T06.4, T09.5, T11.5, T13.5, T14.6	800–848
Burns and Corrosion	T20–T32	940–949
Internal Organ	S06, S09.7, S09.8, S09.9, S26, S27, S36, S37, S39.6, T06.5	850–854, 860–869
Crushing	S07, S17, S28.0, S38.0, S38.1, S47, S57, S67, S77, S87, S97, T04	925–929
Open Wound, including Traumatic Amputation	S01, S05.2-S05.7, S09.2, S11, S21, S31, S41, S51, S61, S71, S81, S91, T01, T09.1, T11.1, T13.1, T14.1, S08, S18, S28.1, S38.2, S38.3, S48, S58, S68, S78, S88, S98, T05, T11.6, T13.6, T14.7	870–887, 890–897
Blood Vessels	S09.0, S15, S25, S35, S45, S55, S65, S75, S85, S95, T06.3, T11.4, T13.4, T14.5	900–904
Nerves and Spinal Cord	S04, S14, S24, S34, S44, S54, S64, S74, S84, S94, T06.0, T06.1, T06.2, T11.3, T13.3, T14.4	950–957
Other and Unspecified	S19, S29.7, S29.8, S29.9, S39.7, S39.8, S39.9, S49, S59, S69, S79, S89, S99, T06.8, T07, T09.8, T09.9, T11.8, T11.9, T13.8, T13.9, T14.8, T14.9, T15, T16, T18, T19, T33, T34, T35, T66, T67, T68, T69, T70, T71, T73 (excludes T73.0, T73.1), T75 (excludes T75.3)	930–939, 959, 990–994 (excluding 933.1, 994.2, 994.3, 994.6)

Appendix F

Comprehensive Data Set Data Elements

Appendix F—Comprehensive Data Set Data Elements

"Restricted" in the Comments column means that the specific data element is unavailable to researchers.

Data Element—Group/Single	Data Element—Single	Comments
Accident Number		
ACS Filters		
Address (Legal Next of Kin)	Street Address City Province Country Postal Code Postal Code (Other Country)	**Restricted**
Address (Patient)	Street Address City Province Country Postal Code Postal Code (Other Country)	**Restricted**
Admission Date		
Admitting Service		
Age		
Age Units		
AIS Code		
AIS Version		
ALC Days: Number of, Reasons For, Form Completed, Date Ready		
BAC (mm/L)	Primary Hospital Secondary Hospital Lead/Trauma Hospital	
Campus Number		
Cause of Injury: Specify		
Chart Number		**Restricted**
Collision Detail Comorbidities	Primary Impact, Secondary Impact	
Complications		
Coroner Notified?		
CT Scan Location	Primary Hospital Secondary Hospital Lead/Trauma Hospital	
Date of Arrival	Primary Hospital Secondary Hospital Lead/Trauma Hospital Lead/Trauma Hospital ED	
Date of Birth		

Data Element—Group/Single	Data Element—Single	Comments
Date of Departure	Primary Hospital Secondary Hospital Lead/Trauma Hospital ED	
Dates: Scene	Date Call Received Date Dispatched Date Arrived at Scene Date Arrived at Patient Date Departed from Scene	
Direct Admission to Service (Bypass ED)		
Disposition		
Disposition: Other		
Distance Ejected (in Meters)		
External Cause of Injury Codes (ICD-9-CM)	Primary, Secondary, Tertiary, Sports/Recreational	
External Cause Codes (ICD-10-CA)		
ED Physician (Lead/Trauma Hospital)		**Restricted**
Ejected From Vehicle		
Extrication Required?		
Extrication Time		
FIM Components	At Discharge, At Follow Up	
FIM Total Score	At Discharge, At Follow Up	
FIM Type	At Discharge, At Follow Up	
FIM: Taken From Chart at Discharge?		
Follow Up: Admissions Related to Injury in 6 Months Post Discharge?		
Follow Up: Contact		
Follow Up: Date		
Follow Up: Hospital Admitted To		
Follow Up: Level of Employment		
Follow Up: Level of Study		
Follow Up: Percent of Previous Income		
Follow Up: Therapy Received after Discharge?		
Follow Up: Therapy Type (Other)		
Follow Up: Therapy Type		
Geocode of Incident Location		
Glasgow Coma Scale	**Scene, Primary Hospital, Secondary Hospital, Lead/Trauma Hospital** Eye Opening Motor Response Verbal Response Total GCS	

Data Element—Group/Single	Data Element—Single	Comments
Health Number (Ontario)		**Restricted**
Health Number (Other than Ontario)		**Restricted**
Heart Rate	Scene Primary Hospital Secondary Hospital Lead/Trauma Hospital	
Height (not collected as of April 1, 1995)		
Home with Support Services		
Home with Support Services: Other		
ICD-9-CM Injury Codes		
ICD-10-CA Injury Codes		
ICP Days	Primary Hospital Secondary Hospital Lead/Trauma Hospital	
Impact Location	Primary Impact Secondary Impact	
Impact Type		
Incident Date		
Incident Location (if out of Province): Other		
Incident Location (if out of Province)		
Incident Time		
Injury Text		**Restricted**
Injury Type (Primary)		
Institution Discharged to Outside of Ontario		**Restricted**
Institution Discharged to Outside of Canada		**Restricted**
Institution Discharged to Inside of Ontario		**Restricted**
Institution Transferred To	Primary Hospital Secondary Hospital Second Secondary Hospital Lead/Trauma Hospital	**Restricted** **Restricted** **Restricted** **Restricted**
Intentional Injury		
Intubated (was the patient)?	Scene Primary Hospital Secondary Hospital Lead/Trauma Hospital	
Is this a Readmission?		
ISS		
IV Lines	Primary Hospital Secondary Hospital Lead/Trauma Hospital	

Data Element—Group/Single	Data Element—Single	Comments
Language Spoken	Patient, Legal Next of Kin	
Legal Next of Kin: Relationship to Patient		
Length of Stay	Special Care Units Lead/Trauma Hospital	
MAIS		
Memo Fields	Demographic Follow Up Injury Lead/Trauma Hospital Lead/Trauma Hospital Care Nursing Outcome Primary Hospital Quality Assurance Readmission Scene Secondary Hospital System	**Restricted** **Restricted** **Restricted** **Restricted** **Restricted** **Restricted** **Restricted** **Restricted** **Restricted** **Restricted** **Restricted** **Restricted** **Restricted**
Modes of Transport	**Scene, From Primary Hospital, From Secondary Hospital** First Provider Second Provider Third Provider	
Name: Legal Next of Kin Middle name not collected as of April 1, 1995	Surname, First Name, Middle Name	**Restricted**
Name: Patient	Surname, First Name, Middle Name	**Restricted**
Non Operative Procedures	Scene Primary Hospital Secondary Hospital Lead/Trauma Hospital	
Occupation		
Occupation (Other)		
OR Visits: Dates	Primary Hospital (5 Visits) Secondary Hospital (5 Visits) Lead/Trauma Hospital (10 Visits)	
OR Visits: Elapsed Times	Primary Hospital (5 Visits) Secondary Hospital (5 Visits) Lead/Trauma Hospital (10 Visits)	
OR Visits: Finish Time	Primary Hospital (5 Visits) Secondary Hospital (5 Visits) Lead/Trauma Hospital (10 Visits)	
OR Visits: Number of	Primary Hospital Secondary Hospital Lead/Trauma Hospital	
OR Visits: Procedures	Primary Hospital (5 Visits) Secondary Hospital (5 Visits) Lead/Trauma Hospital (10 Visits)	

Data Element—Group/Single	Data Element—Single	Comments
OR Visits: Services Performing Operation Procedures	Primary Hospital (5 Visits) Secondary Hospital (5 Visits) Lead/Trauma Hospital (10 Visits)	
OR Visits: Start Time	Primary Hospital (5 Visits) Secondary Hospital (5 Visits) Lead/Trauma Hospital (10 Visits)	
Organ Donation: Was family approached?		
Organs Donated: List of		
Organs Donated: Were Organs Donated?		
Overflow		
Paralytic Agents in Effect	Scene Primary Hospital Secondary Hospital Lead/Trauma Hospital	
Pediatric Trauma Score	Scene Primary Hospital Secondary Hospital Lead/Trauma Hospital	
Place of Death		
Place of Injury	Primary, Secondary, Tertiary	
Place of Injury: Specify		
Police Force		**Restricted**
Police Force Division		**Restricted**
Position in Vehicle		
Post ED Destination		
Post Mortem Examination Done?		
Post Mortem Report Received?		
Post OR Destination		
Post OR Destination: SCU		
Predot Code		
Prehospital Number	**First, Second and Third Provider** From Scene From Primary Hospital From Secondary Hospital	
Prehospital Time: Total		
Protective Devices		
Protective Devices (Other)		
Qualified Personnel (Number of)	**First, Second and Third Provider** From Scene From Primary Hospital From Secondary Hospital	
RANCHOS at Discharge		
Readmission	Number of Readmissions	

Data Element—Group/Single	Data Element—Single	Comments
Referring Physician	Primary Hospital Secondary Hospital	**Restricted**
Residence Code		
Residence: Province of		
Respiration Rate (Unassisted)	Scene Primary Hospital Secondary Hospital Lead/Trauma Hospital	
Revised Trauma Score: Total	Scene Primary Hospital Secondary Hospital Lead/Trauma Hospital	
Runsheet Available	**First, Second and Third Provider** From Scene From Primary Hospital From Secondary Hospital	
Scene Time: Total		
Separation	Date, Time, Status	
Service Transfers	**Type of Service, Date Admitted, Date Discharged, Length of Stay** Up to six Service Transfers	
Sex		
Special Care Units	**Type of Special Care Unit, Date Admitted, Date Discharged, Length of Stay** Up to 5 SCUs	
Systolic Blood Pressure	Scene Primary Hospital Secondary Hospital Lead/Trauma Hospital	
Telephone Number (Patient)		**Restricted**
Temperature	Primary Hospital Secondary Hospital Lead/Trauma Hospital	
Time of Arrival	Primary Hospital Secondary Hospital Lead/Trauma Hospital Lead/Trauma Hospital ED	
Time of Departure	Primary Hospital Secondary Hospital Lead/Trauma Hospital ED	
Times: Scene	Time Call Received Time Call Dispatched Time Arrived at Scene Time Arrived at Patient Time Departed from Scene	

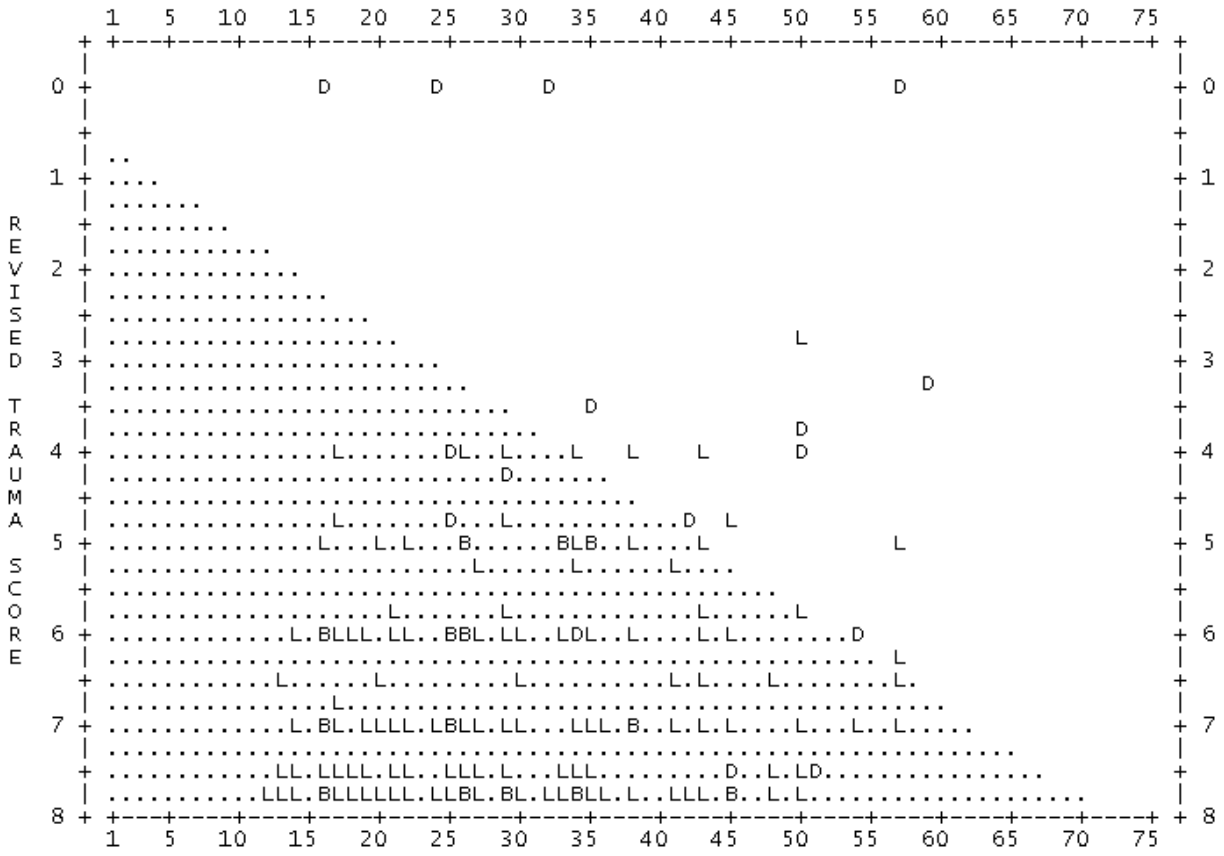
Data Element—Group/Single	Data Element—Single	Comments
Transport Mode to Discharge Care Facility (not collected as of April 1, 1995)		
Trauma Number		
Trauma Team Activated		
Trauma Team Leader		**Restricted**
TRISS		
Vehicle Type		
Vehicle Type: Other		
Ventilator Days	Primary Hospital Secondary Hospital Lead/Trauma Hospital	
Weight		
Work Related?		

Appendix G

PRE Analysis

Appendix G—PRE Analysis

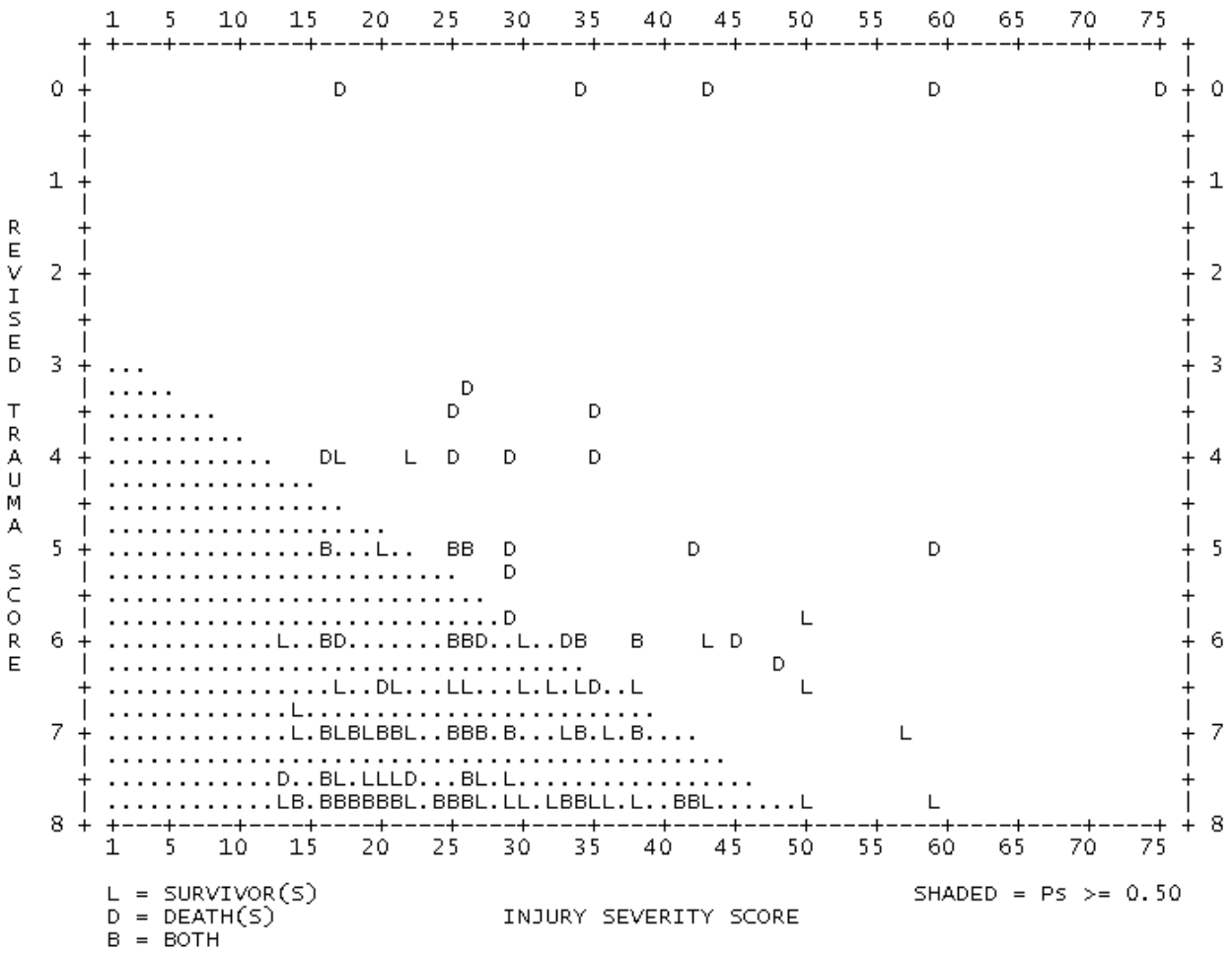
PRECHART Adult Blunt (15 - 54) 2003-2004 Data



No. of Unexpected Deaths: 22
No. of Unexpected Survivors: 9

Note: PRE analyses are conducted on cases in 2003-2004 based on fiscal year of admission and not on fiscal year of discharge.

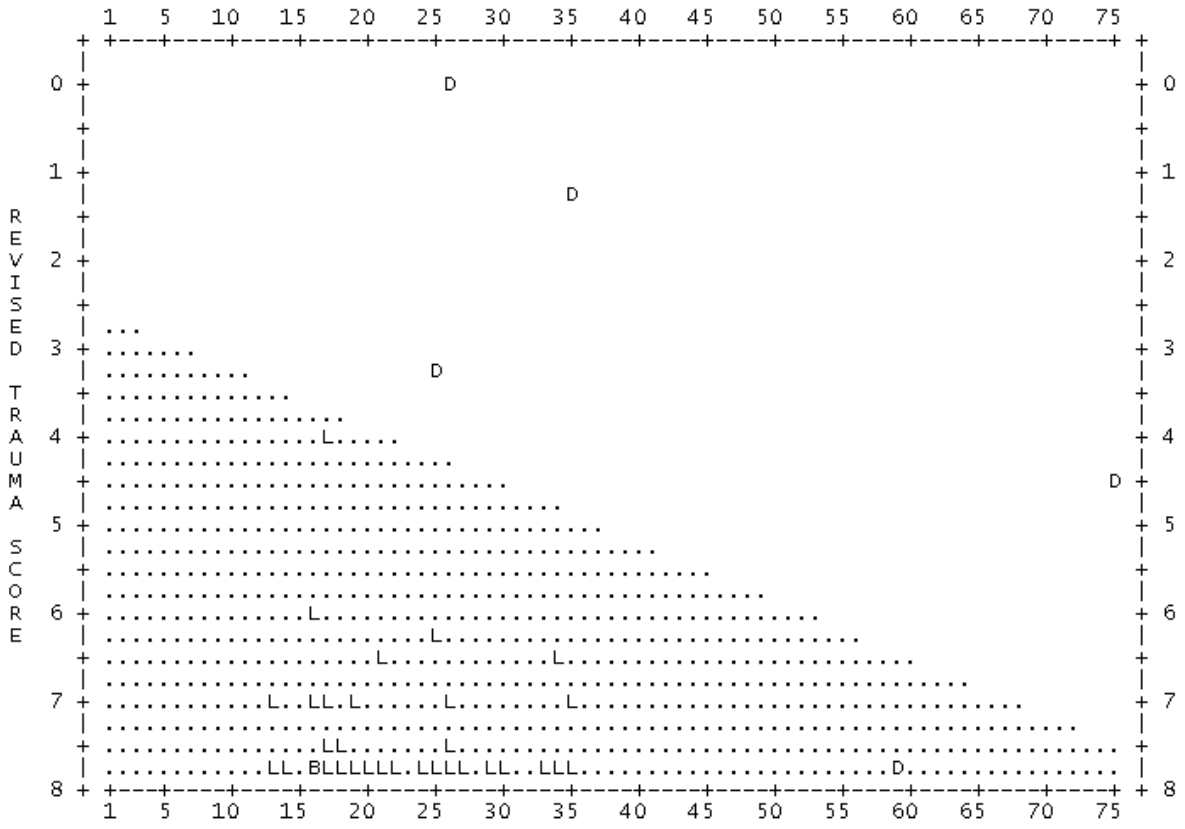
PRECHART Adult Blunt (55+) 2003-2004 Data



No. of Unexpected Deaths: 100
No. of Unexpected Survivors: 17

Note: PRE analyses are conducted on cases in 2003-2004 based on fiscal year of admission and not on fiscal year of discharge.

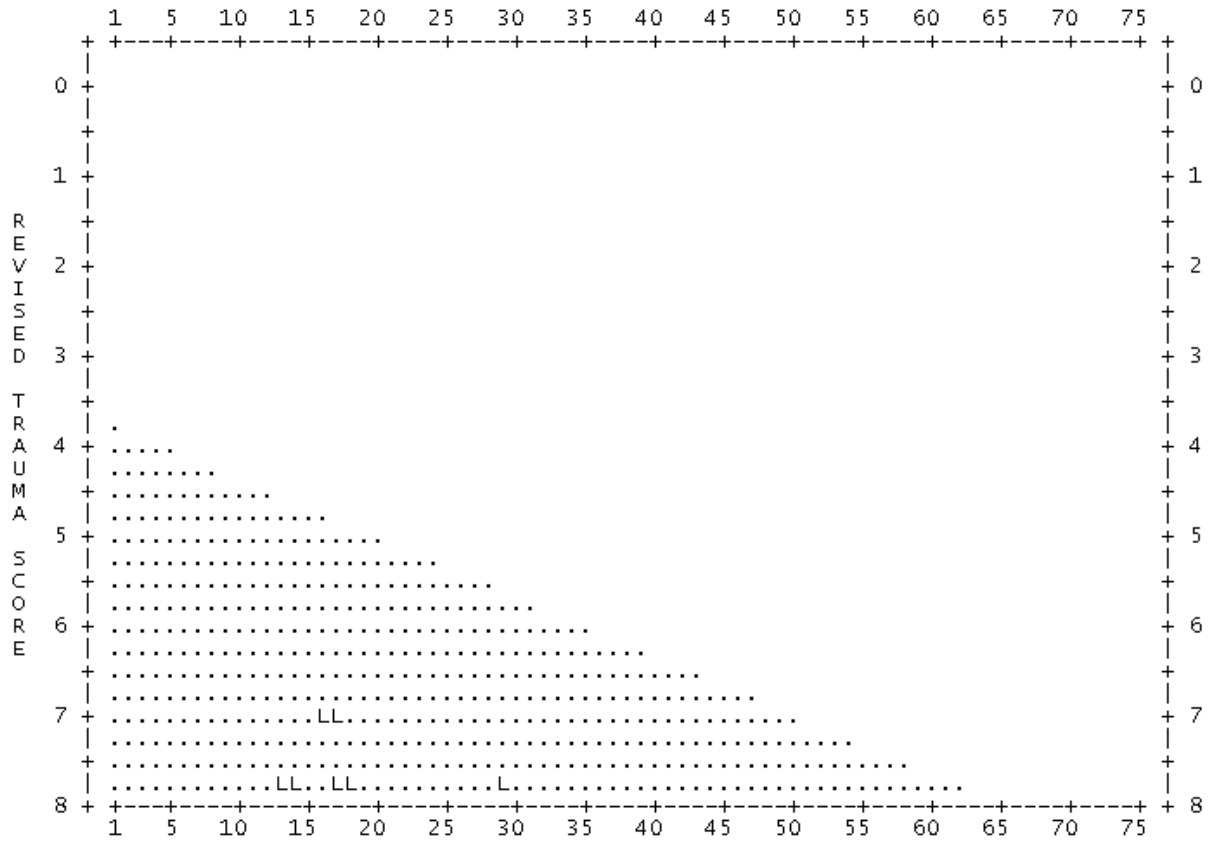
PRECHART Adult Penetrating (15 - 54) 2003-2004 Data



No. of Unexpected Deaths: 2
No. of Unexpected Survivors: 0

Note: PRE analyses are conducted on cases in 2003-2004 based on fiscal year of admission and not on fiscal year of discharge.

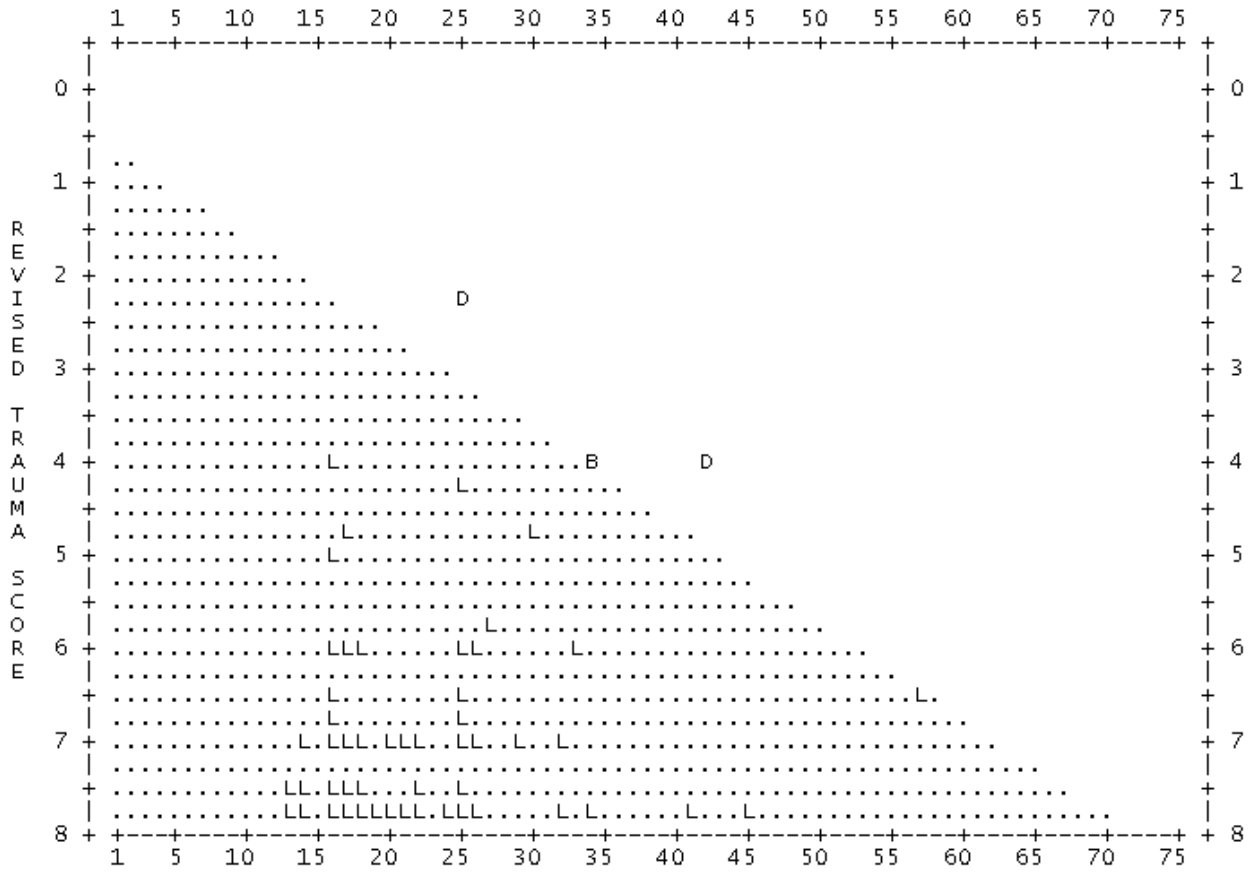
PRECHART Adult Penetrating (55+) 2003-2004 Data



No. of Unexpected Deaths: 0
No. of Unexpected Survivors: 0

Note: PRE analyses are conducted on cases in 2003-2004 based on fiscal year of admission and not on fiscal year of discharge.

PRECHART Pediatric 2003-2004 Data



No. of Unexpected Deaths: 1
No. of Unexpected Survivors: 0

Note: PRE analyses are conducted on cases in 2003-2004 based on fiscal year of admission and not on fiscal year of discharge.

Appendix H

Data Tables

Appendix H—Data Tables

Table of Contents

Table 1. Trend Analysis Report, 1999–2000 to 2003–2004

		1999–2000		2000–2001		2001–2002		2002–2003		2003–2004	
		No.	%	No.	%	No.	%	No.	%	No.	%
No. of Cases		3,435	-	3,432	-	3,668	-	3,943	-	3,755	-
In-Hospital Deaths		426	12.4	403	11.7	426	11.6	436	11.1	449	12.0
Died in Emergency Room		97	2.8	92	2.7	85	2.3	114	2.9	112	3.0
Direct Admissions		1,534	44.7	1,589	46.3	1,757	47.9	1,955	49.6	1,949	51.9
Males		2,426	70.6	2,467	71.9	2,622	71.5	2,797	70.9	2,714	72.3
Age Groups	**< 20 Years**	640	18.6	701	20.4	677	18.5	746	18.9	660	17.6
	20–34 Years	756	22.0	811	23.6	820	22.4	856	21.7	800	21.3
	35–64 Years	1,279	37.2	1,211	35.3	1,308	35.7	1,441	36.5	1,360	36.2
	65 + Years	757	22.0	709	20.7	862	23.5	897	22.7	930	24.8
	Unknown Age	3	0.1	-	-	1	0.0	3	0.1	5	0.1
Type of Injury	**Blunt**	3,181	92.6	3,148	91.7	3,378	92.1	3,614	91.7	3,480	92.7
	Penetrating	143	4.2	192	5.6	190	5.2	228	5.8	195	5.2
	Burns	111	3.2	91	2.7	100	2.7	101	2.6	80	2.1
External Cause of Injury	**MVC**	1,681	48.9	1,646	48.0	1,728	47.1	1,822	46.2	1,717	45.7
	Falls	988	28.8	982	28.6	1,101	30.0	1,173	29.7	1,217	32.4
	Intentional	323	9.4	372	10.8	382	10.4	442	11.2	386	10.3
	All other	443	12.9	432	12.6	457	12.5	506	12.8	435	11.6
Discharge Disposition	**Deaths**	523	15.2	495	14.4	511	13.9	550	13.9	561	14.9
	Home	1,149	33.4	1,295	37.7	1,375	37.5	1,522	38.6	1,541	41.0
	Home W/Support Service	632	18.4	535	15.6	435	11.9	473	12.0	441	11.7
	Other Acute Care Facility	462	13.4	473	13.8	586	16.0	623	15.8	494	13.2

Table 1. Trend Analysis Report, 1999–2000 to 2003–2004 (cont'd)

		1999–2000		2000–2001		2001–2002		2002–2003		2003–2004	
		No.	%	No.	%	No.	%	No.	%	No.	%
Discharge Disposition (cont'd)	**General Rehab**	262	7.6	272	7.9	292	8.0	323	8.2	324	8.6
	Chronic Care	22	0.6	25	0.7	27	0.7	37	0.9	26	0.7
	Nursing Home	40	1.2	39	1.1	67	1.8	77	2.0	58	1.5
	Special Rehab	250	7.3	228	6.6	262	7.1	250	6.3	230	6.1
	Foster Care	12	0.3	13	0.4	17	0.5	12	0.3	11	0.3
	Other	78	2.3	55	1.6	92	2.5	72	1.8	67	1.8
	Unknown	5	0.1	2	0.1	4	0.1	4	0.1	2	0.1
Injury Severity Score	**Mean**	25	-	25	-	25	-	25	-	25	-
	Standard Deviation	11	-	11	-	11	-	11	-	10	-
	Median	25	-	22	-	24	-	22	-	24	-
Age (Years)	**Mean**	43	-	41	-	43	-	43	-	44	-
	Standard Deviation	23	-	23	-	24	-	24	-	23	-
	Median	40	-	38	-	40	-	41	-	43	-
Length of Stay (Days)	**Mean**	16	-	16	-	16	-	17	-	15	-
	Standard Deviation	22	-	24	-	22	-	29	-	26	-
	Median	9	-	9	-	9	-	8	-	8	-

Intentional Injury Includes:

- Suicide excluding poisoning (ICD-9-CM: E953–E958 and ICD-10-CA: X70–X84)
- Injury purposely inflicted by other person (ICD-9-CM: E960, E961, E963–E968 and ICD10-CA: X86, X91–X99, Y00–Y05, Y07–Y09)

Table 2. Patient Days, Mean and Median LOS by Sex and Age, 2003–2004 Cases

			<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
No. of Cases	**Females**	**Count**	9	16	25	53	84	78	99	122	111	89	139	156	59	1	1,041
		%	0.9	1.5	2.4	5.1	8.1	7.5	9.5	11.7	10.7	8.5	13.4	15.0	5.7	0.1	100
	Males	**Count**	30	27	50	82	284	271	352	363	387	288	271	240	65	4	2,714
		%	1.1	1.0	1.8	3.0	10.5	10.0	13.0	13.4	14.3	10.6	10.0	8.8	2.4	0.1	100
	Total	**Count**	39	43	75	135	368	349	451	485	498	377	410	396	124	5	3,755
		%	1.0	1.1	2.0	3.6	9.8	9.3	12.0	12.9	13.3	10.0	10.9	10.5	3.3	0.1	100
Length of Hospital Stay	**Females**	**No. Days**	68	147	216	733	1,245	1,671	1,453	1,557	1,912	1,332	2,276	2,196	807	6	15,619
		%*	0.4	0.9	1.4	4.7	8.0	10.7	9.3	10.0	12.2	8.5	14.6	14.1	5.2	0.0	100
		Mean	7.6	9.8	8.6	14.1	15.2	22.3	15.0	14.3	18.0	15.3	17.1	15.6	14.7	6.0	16
		S.D.	10.8	10.9	8.7	15.9	22.8	50.3	20.5	18.0	23.9	21.4	25.9	15.8	17.1	N/A	24
		Median	5.0	6.0	6.0	7.5	8.5	10.0	8.0	9.0	11.5	8.0	9.0	11.0	7.0	6.0	9
	Males	**No. Days**	159	424	413	1,115	3,693	3,051	5,253	6,112	6,038	4,513	3,888	3,778	1,201	2	39,640
		%*	0.4	1.1	1.0	2.8	9.3	7.7	13.3	15.4	15.2	11.4	9.8	9.5	3.0	0.0	100
		Mean	5.3	17.7	8.6	14.9	13.6	12.0	15.6	17.2	16.1	16.3	14.5	16.4	20.4	1.0	15
		S.D.	6.1	24.7	13.1	28.0	22.8	17.9	27.0	40.6	26.3	20.1	18.2	32.1	25.5	0.0	27
		Median	3.0	9.0	5.0	6.0	6.0	7.0	8.0	9.0	9.0	10.0	7.0	8.0	9.0	1.0	8
	Total	**No. Days**	227	571	629	1,848	4,938	4,722	6,706	7,669	7,950	5,845	6,164	5,974	2,008	8	55,259
		%*	0.4	1.0	1.1	3.3	8.9	8.5	12.1	13.9	14.4	10.6	11.2	10.8	3.6	0.0	100
		Mean	5.8	14.6	8.6	14.6	13.9	14.3	15.5	16.5	16.5	16.1	15.4	16.1	17.6	2.7	15
		S.D.	7.4	20.7	11.7	23.7	22.8	28.9	25.7	36.6	25.8	20.4	21.1	27.1	22.0	2.9	26
		Median	3.0	6.0	5.0	7.0	7.0	8.0	8.0	9.0	9.0	9.0	7.0	9.0	8.0	1.0	8

Note: Cases with no LOS recorded and unknown sex are excluded from LOS calculations

Note: 0 cases with unknown sex

* Percentage calculated within sex.

Table 3. Patient Days, Mean and Median LOS by Sex and Age for In-Hospital Deaths, 2003–2004 Cases

			<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
No. of Cases	**Females**	**Count**	1	0	1	0	8	3	11	13	10	9	25	30	15	0	126
		%	0.8	0	0.8	0	6.3	2.4	8.7	10.3	7.9	7.1	19.8	23.8	11.9	0	100
	Males	**Count**	2	1	3	5	22	22	33	31	41	27	52	60	22	2	323
		%	0.6	0.3	0.9	1.5	6.8	6.8	10.2	9.6	12.7	8.4	16.1	18.6	6.8	0.6	100
	Total	**Count**	3	1	4	5	30	25	44	44	51	36	77	90	37	2	449
		%	0.7	0.2	0.9	1.1	6.7	5.6	9.8	9.8	11.4	8.0	17.1	20.0	8.2	0.4	100
Length of Hospital Stay	**Females**	**No. Days**	1	0	6	0	22	7	25	126	124	25	220	325	114	0	995
		%*	0.1	0	0.6	0	2.2	0.7	2.5	12.7	12.5	2.5	22.1	32.7	11.5	0	100
		Mean	1.0	0	6.0	0	2.8	2.3	2.3	9.7	12.4	2.8	8.8	10.8	7.6	0	8
		S.D.	0	0	0	0	2.7	2.3	1.8	18.6	13.1	2.1	15.5	16.9	7.8	0	13
		Median	1.0	0	6.0	0	1.0	1.0	1.0	2.0	8.0	2.0	3.0	6.0	4.0	0	3
	Males	**No. Days**	8	1	3	11	46	92	254	140	175	167	568	495	391	2	2,353
		%*	0.3	0.0	0.1	0.5	2.0	3.9	10.8	5.9	7.4	7.1	24.1	21.0	16.6	0.1	100
		Mean	4.0	1.0	1.0	2.2	2.1	4.2	7.7	4.5	4.3	6.2	10.9	8.3	17.8	1.0	7
		S.D.	1.4	0	0.0	1.8	2.1	5.9	11.3	7.7	4.6	8.5	19.4	8.6	28.2	0.0	13
		Median	4.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	5.5	7.5	1.0	2
	Total	**No. Days**	9	1	9	11	68	99	279	266	299	192	788	820	505	2	3,348
		%*	0.3	0.0	0.3	0.3	2.0	3.0	8.3	7.9	8.9	5.7	23.5	24.5	15.1	0.1	100
		Mean	3.0	1.0	2.3	2.2	2.3	4.0	6.3	6.0	5.9	5.3	10.2	9.1	13.6	1.0	7
		S.D.	2.0	0	2.5	1.8	2.2	5.6	10.1	12.0	7.6	7.6	18.1	11.9	22.6	0.0	13
		Median	3.0	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	3.0	6.0	6.0	1.0	3

Note: Cases with no LOS recorded and unknown sex are excluded from LOS calculations

Note: 0 cases with unknown sex

* Percentage calculated within sex.

Table 4. Denominators by Institution Code, 2003–2004

	Institution Code														TOTAL
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
No. of Cases	110	493	349	44	73	469	177	128	75	214	968	206	405	44	3,755
No. of Cases Discharged Alive	97	417	298	30	65	386	153	125	64	188	820	166	346	39	3,194
No. of Deaths*	13	76	51	14	8	83	24	3	11	26	148	40	59	5	561
No. who Died in Emergency Room	2	11	10	3	3	20	1	0	5	8	28	16	4	1	112
No. of Pediatric Cases (<18 Years of Age)	10	19	11	0	73	12	23	128	68	26	51	14	6	44	485
No. of Cases (>10 Years of Age)**	108	489	349	44	50	469	174	53	42	199	968	204	404	22	3,575
No. of Cases <20 (Years of Age)	13	44	34	0	73	34	35	128	68	34	114	18	21	44	660
No. of Cases 20–64 (Years of Age)	74	293	241	23	0	281	95	0	4	118	671	122	238	0	2,160
No. of Cases >64 (Years of Age)	23	152	74	21	0	154	47	0	3	62	183	65	146	0	930

This table provides denominators to allow calculation of percentage.

* The total number of deaths reported include in-hospital deaths and DIE's. Deaths occuring at the scene are excluded.

** Number of cases for pediatric >10 years of age can be used for BAC calculation.

Table 5. Demographics by Institution Code, 2003–2004 Cases

		Institution Code														
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	TOTAL
Total Number of Cases	**Number**	110	493	349	44	73	469	177	128	75	214	968	206	405	44	3,755
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Direct Admissions	**Number**	82	226	169	27	28	211	77	41	34	154	508	139	240	13	1,949
	%	74.5	45.8	48.4	61.4	38.4	45.0	43.5	32.0	45.3	72.0	52.5	67.5	59.3	29.5	51.9
Readmissions	**Number**	0	0	0	0	0	0	0	0	0	0	102	0	0	0	102
	%	0	0	0	0	0	0	0	0	0	0	10.5	0	0	0	2.7
<20 Years of Age	**Number**	13	44	34	0	73	34	35	128	68	34	114	18	21	44	660
	%	11.8	8.9	9.7	0	100.0	7.2	19.8	100.0	90.7	15.9	11.8	8.7	5.2	100.0	17.6
>=65 Years of Age	**Number**	23	152	74	21	0	154	47	0	3	62	183	65	146	0	930
	%	20.9	30.8	21.2	47.7	0	32.8	26.6	0	4.0	29.0	18.9	31.6	36.0	0	24.8
Out-of-Province Residents	**Number**	3	7	12	5	19	6	8	0	0	3	14	7	30	0	114
	%	2.7	1.4	3.4	11.4	26.0	1.3	4.5	0	0	1.4	1.4	3.4	7.4	0	3.0
Positive BAC (>=17.0mmol/l)	**Number**	19	74	47	3	0	53	24	0	1	31	108	27	36	0	423
	%	17.3	15.0	13.5	6.8	0	11.3	13.6	0	1.3	14.5	11.2	13.1	8.9	0	11.3
Age (Years)	**Mean**	44.4	49.6	45.2	62.5	10.9	50.8	45.7	8.3	14.4	45.9	43.4	50.3	52.8	9.5	44.4
	Standard Deviation	21.5	21.9	20.4	20.7	5.1	21.6	22.3	4.9	16.7	24.9	20.4	20.3	22.1	5.3	23.4
	Median	40.0	48.0	43.0	64.0	12.0	51.0	46.0	9.0	12.0	43.0	40.0	51.0	51.0	10.5	43.0

Table 6. Injury Severity Score (ISS) and Glasgow Coma Score (GCS) by Institution Code, 2003–2004 Cases

		Institution Code														
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	TOTAL
ISS—All Cases	Mean	23.7	24.3	25.9	22.2	23.0	22.6	25.2	20.6	25.9	21.6	27.4	23.9	23.9	21.8	24.7
	S. D.	7.8	9.4	11.4	10.2	9.9	8.1	13.3	6.8	11.8	8.0	11.9	10.0	8.9	7.9	10.4
	Median	25.0	25.0	24.0	19.0	20.0	21.0	20.0	17.5	24.0	18.0	26.0	22.0	25.0	20.0	24.0
ISS—Survivors	Mean	23.3	22.9	23.9	19.7	21.1	21.8	23.1	20.5	24.6	20.8	25.7	21.8	23.2	20.4	23.3
	S. D.	8.0	8.2	9.4	6.3	6.8	7.2	9.9	6.6	10.2	7.3	10.5	7.5	8.4	6.9	8.9
	Median	25.0	22.0	21.0	17.0	18.0	20.0	20.0	17.0	22.0	17.0	24.0	19.0	22.0	17.0	21.0
ISS—Deaths	Mean	26.6	31.4	37.5	27.7	38.4	26.4	38.8	26.7	33.2	28.0	37.2	32.5	28.4	32.2	32.6
	S. D.	5.3	12.0	15.0	14.5	16.5	10.4	22.0	13.6	17.5	9.8	14.3	14.0	10.5	7.5	13.9
	Median	25.0	29.0	35.0	25.0	36.0	25.0	26.0	22.0	26.0	25.5	34.0	26.0	25.0	34.0	27.0
GCS	Mean	12.4	13.5	13.7	13.4	13.1	13.8	14.0	13.0	13.2	13.5	13.9	12.9	13.5	13.1	13.6
	S. D.	4.1	2.8	3.2	3.5	3.9	2.7	2.3	3.7	3.2	3.0	2.6	3.7	3.0	3.3	3.0
	Median	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
GCS Incomplete Due to Use of Paralytic Agents	Number	13.0	26.0	37.0	4.0	12.0	15.0	11.0	6.0	8.0	18.0	38.0	19.0	30.0	1.0	238.0
	%	11.8	5.3	10.6	9.1	16.4	3.2	6.2	4.7	10.7	8.4	3.9	9.2	7.4	2.3	6.3

Table 7. Type and Place of Injury by Institution Code, 2003–2004 Cases

		Institution Code														
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	TOTAL
Blunt	**Number**	100	448	341	33	70	443	171	125	73	206	836	196	395	43	3,480
	%	90.9	90.9	97.7	75.0	95.9	94.5	96.6	97.7	97.3	96.3	86.4	95.1	97.5	97.7	92.7
Penetrating	**Number**	6	44	7	0	1	8	4	3	1	8	96	7	10	0	195
	%	5.5	8.9	2.0	0	1.4	1.7	2.3	2.3	1.3	3.7	9.9	3.4	2.5	0	5.2
Burns	**Number**	4	1	1	11	2	18	2	0	1	0	36	3	0	1	80
	%	3.6	0.2	0.3	25.0	2.7	3.8	1.1	0	1.3	0	3.7	1.5	0	2.3	2.1
Sports/Recreational Injuries	**Number**	16	24	29	0	32	40	30	29	19	18	78	33	6	13	367
	%	14.5	4.9	8.3	0	43.8	8.5	16.9	22.7	25.3	8.4	8.1	16.0	1.5	29.5	9.8
Work Related	**Number**	8	39	38	1	0	31	4	0	0	8	96	8	18	0	251
	%	7.3	7.9	10.9	2.3	0	6.6	2.3	0	0	3.7	9.9	3.9	4.4	0	6.7
Home	**Number**	31	93	47	18	16	133	50	26	16	76	165	78	101	9	859
	%	28.2	18.9	13.5	40.9	21.9	28.4	28.2	20.3	21.3	35.5	17.0	37.9	24.9	20.5	22.9
Industrial	**Number**	1	37	19	2	0	26	1	0	0	5	51	7	8	1	158
	%	0.9	7.5	5.4	4.5	0	5.5	0.6	0	0	2.3	5.3	3.4	2.0	2.3	4.2
Recreation/Sport	**Number**	2	20	12	2	7	15	4	4	4	9	11	4	9	2	105
	%	1.8	4.1	3.4	4.5	9.6	3.2	2.3	3.1	5.3	4.2	1.1	1.9	2.2	4.5	2.8
Street/Highway	**Number**	38	218	218	9	25	213	84	62	38	98	510	67	163	26	1,769
	%	34.5	44.2	62.5	20.5	34.2	45.4	47.5	48.4	50.7	45.8	52.7	32.5	40.2	59.1	47.1
Other	**Number**	38	124	53	13	25	76	38	25	17	26	230	45	124	6	840
	%	34.5	25.2	15.2	29.5	34.2	16.2	21.5	19.5	22.7	12.1	23.8	21.8	30.6	13.6	22.4

* Place of injury is documented for all cases in the Comprehensive Data Set using ICD categories. There are 24 cases that do not have a documented place of injury.

Table 8. External Cause of Injury by Institution Code, 2003–2004 Cases

			Institution Code														
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	TOTAL
Unintentional Falls	**Survivor**	**Number**	31	176	62	14	20	154	44	27	14	67	184	57	148	6	1,004
		%	28.2	35.7	17.8	31.8	27.4	32.8	24.9	21.1	18.7	31.3	19.0	27.7	36.5	13.6	26.7
	Deaths	**Number**	6	32	8	8	1	38	12	0	2	12	41	14	39	0	213
		%	5.5	6.5	2.3	18.2	1.4	8.1	6.8	0	2.7	5.6	4.2	6.8	9.6	0	5.7
	All	**Number**	37	208	70	22	21	192	56	27	16	79	225	71	187	6	1,217
		%	33.6	42.2	20.1	50.0	28.8	40.9	31.6	21.1	21.3	36.9	23.2	34.5	46.2	13.6	32.4
Motor Vehicle Traffic	**Survivor**	**Number**	30	129	173	6	20	151	71	58	30	70	415	50	138	17	1,358
		%	27.3	26.2	49.6	13.6	27.4	32.2	40.1	45.3	40.0	32.7	42.9	24.3	34.1	38.6	36.2
	Deaths	**Number**	2	24	31	2	3	25	8	2	2	11	65	11	11	3	200
		%	1.8	4.9	8.9	4.5	4.1	5.3	4.5	1.6	2.7	5.1	6.7	5.3	2.7	6.8	5.3
	All	**Number**	32	153	204	8	23	176	79	60	32	81	480	61	149	20	1,558
		%	29.1	31.0	58.5	18.2	31.5	37.5	44.6	46.9	42.7	37.9	49.6	29.6	36.8	45.5	41.5
Motor Vehicle Non-Traffic	**Survivor**	**Number**	4	10	12	1	5	17	22	5	9	9	18	17	14	1	144
		%	3.6	2.0	3.4	2.3	6.8	3.6	12.4	3.9	12.0	4.2	1.9	8.3	3.5	2.3	3.8
	Deaths	**Number**	0	1	2	0	1	3	0	1	1	0	2	1	2	1	15
		%	0	0.2	0.6	0	1.4	0.6	0	0.8	1.3	0	0.2	0.5	0.5	2.3	0.4
	All	**Number**	4	11	14	1	6	20	22	6	10	9	20	18	16	2	159
		%	3.6	2.2	4.0	2.3	8.2	4.3	12.4	4.7	13.3	4.2	2.1	8.7	4.0	4.5	4.2

Table 8. External Cause of Injury by Institution Code, 2003–2004 Cases (cont'd)

			Institution Code														
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	TOTAL
Assault and Injury Purposely Inflicted (excl. Poisonings)	**Survivor**	**Number**	12	60	11	0	3	17	5	10	1	21	97	12	18	3	270
		%	10.9	12.2	3.2	0	4.1	3.6	2.8	7.8	1.3	9.8	10.0	5.8	4.4	6.8	7.2
	Deaths	**Number**	1	10	2	0	0	4	1	0	2	1	19	2	3	0	45
		%	0.9	2.0	0.6	0	0	0.9	0.6	0	2.7	0.5	2.0	1.0	0.7	0	1.2
	All	**Number**	13	70	13	0	3	21	6	10	3	22	116	14	21	3	315
		%	11.8	14.2	3.7	0	4.1	4.5	3.4	7.8	4.0	10.3	12.0	6.8	5.2	6.8	8.4
Suicide and Self-Inflicted Injury (excl. Poisonings)	**Survivor**	**Number**	1	14	6	0	0	4	0	0	0	5	12	1	3	0	46
		%	0.9	2.8	1.7	0	0	0.9	0	0	0	2.3	1.2	0.5	0.7	0	1.2
	Deaths	**Number**	2	4	4	2	0	1	1	0	0	1	4	4	1	1	25
		%	1.8	0.8	1.1	4.5	0	0.2	0.6	0	0	0.5	0.4	1.9	0.2	2.3	0.7
	All	**Number**	3	18	10	2	0	5	1	0	0	6	16	5	4	1	71
		%	2.7	3.7	2.9	4.5	0	1.1	0.6	0	0	2.8	1.7	2.4	1.0	2.3	1.9
All Other	**Survivor**	**Number**	19	28	34	9	17	43	11	25	10	16	94	29	25	12	372
		%	17.3	5.7	9.7	20.5	23.3	9.2	6.2	19.5	13.3	7.5	9.7	14.1	6.2	27.3	9.9
	Deaths	**Number**	2	5	4	2	3	12	2	0	4	1	17	8	3	0	63
		%	1.8	1.0	1.1	4.5	4.1	2.6	1.1	0	5.3	0.5	1.8	3.9	0.7	0	1.7
	All	**Number**	21	33	38	11	20	55	13	25	14	17	111	37	28	12	435
		%	19.1	6.7	10.9	25.0	27.4	11.7	7.3	19.5	18.7	7.9	11.5	18.0	6.9	27.3	11.6

Table 9. Scene Information by Institution Code, 2003–2004 Cases

		Institution Code														
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	TOTAL
Prehospital Time (Minutes) 95th Percentile*	**Mean**	119.6	55.9	59.4	45.0	78.9	72.3	90.2	77.5	67.5	74.7	65.5	93.8	65.3	50.6	69.4
	Standard Deviation	112.5	58.4	42.6	0.0	83.8	68.4	70.4	67.5	55.5	87.8	62.8	92.8	56.6	22.3	67.5
	Median	70.0	46.0	52.0	45.0	53.0	54.0	74.0	57.0	56.0	58.5	50.0	65.0	54.5	49.0	52.0
Scene Time (Minutes)	**Mean**	22.0	19.4	18.5	18.5	16.8	20.6	23.5	13.7	15.5	19.4	20.1	23.5	20.4	17.3	20.1
	Standard Deviation	13.9	10.0	10.8	8.8	10.5	10.8	12.2	6.7	10.4	10.9	16.9	19.3	10.1	8.0	13.2
	Median	18.0	17.0	16.0	17.0	15.0	18.0	20.0	13.0	14.0	18.0	18.0	19.0	18.0	15.5	18.0
Admissions With Scene Time >1 Hour	**Number**	3.0	2.0	3.0	0.0	0.0	3.0	3.0	0.0	1.0	2.0	3.0	7.0	2.0	0.0	29.0
	%	4.0	0.7	1.1	0.0	0.0	1.0	2.4	0.0	2.3	1.3	0.6	4.2	1.1	0.0	1.3
Admissions With Extrication Required	**Number**	9.0	39.0	120.0	1.0	4.0	80.0	26.0	3.0	11.0	30.0	107.0	59.0	47.0	5.0	541.0
	%	8.2	7.9	34.4	2.3	5.5	17.1	14.7	2.3	14.7	14.0	11.1	28.6	11.6	11.4	14.4

* The 95th percentile is used for prehospital time calculations to exclude those who are not transported directly from the scene and therefore have long prehospital times (i.e. days/weeks). Of the 2,616 cases with prehospital times in 2003–2004, 130 (5%) had times greater than 694 minutes.

Table 10. Participating Hospital Care, 2003–2004 Cases

		Institution Code														
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	TOTAL
Length of Hospital Stay (Days)	All Cases Mean	15.0	15.3	11.7	22.6	15.3	17.1	16.6	11.9	9.6	12.6	17.5	12.5	15.5	14.5	15.4
	All Cases S.D.	20.7	36.2	13.9	59.3	35.8	21.1	28.8	16.2	9.0	12.5	29.8	19.0	19.4	20.0	26.1
	All Cases Median	8.0	7.0	7.0	7.0	5.0	10.0	7.0	6.0	7.0	8.0	9.0	6.5	10.0	6.0	8.0
	Survivors Mean	16.3	16.8	12.4	29.0	16.4	18.9	17.8	12.1	9.8	12.9	18.8	13.5	16.4	15.6	16.5
	Survivors S.D.	21.5	38.6	13.8	68.4	36.9	22.1	30.3	16.3	9.0	12.3	30.9	20.0	19.9	20.6	27.3
	Survivors Median	9.0	8.0	7.5	8.0	6.0	12.0	8.5	7.0	7.0	8.5	10.0	7.0	10.0	7.0	9.0
	Deaths Mean	3.6	5.9	7.0	5.3	2.0	6.3	8.3	1.7	6.5	9.6	8.9	6.3	9.8	3.5	7.5
	Deaths S.D.	3.9	8.6	13.6	7.4	2.2	7.4	12.2	1.2	8.4	14.1	18.2	9.0	14.1	3.0	13.1
	Deaths Median	2.0	2.0	2.0	1.0	1.0	3.0	4.0	1.0	3.5	6.0	2.0	2.0	5.0	3.0	3.0
Length of SCU Stay (Days)	All Cases Mean	5.5	6.4	6.9	4.9	4.0	9.8	7.9	4.3	3.6	4.6	9.6	6.1	10.5	7.7	7.9
	All Cases S.D.	6.7	16.5	10.9	5.8	4.7	10.5	11.1	4.6	5.4	5.1	15.9	7.3	13.0	8.0	12.9
	All Cases Median	4.0	3.0	3.0	2.5	2.0	6.0	3.0	2.0	1.0	3.0	4.0	4.0	6.0	5.0	4.0
	Survivors Mean	6.1	6.6	7.2	5.4	4.3	11.1	7.9	4.4	3.7	4.3	10.3	6.1	11.1	8.2	8.3
	Survivors S.D.	7.2	17.6	10.7	5.8	5.0	11.0	10.7	4.7	5.6	4.8	17.0	7.3	13.5	8.3	13.5
	Survivors Median	4.0	3.0	4.0	3.0	2.0	7.0	3.0	2.0	1.0	3.0	4.0	4.0	6.0	5.0	4.0
	Deaths Mean	2.6	5.4	5.4	4.0	2.0	4.7	8.1	2.5	2.6	6.2	6.5	5.9	6.9	3.5	5.8
	Deaths S.D.	2.0	7.5	12.2	5.9	2.2	5.9	12.8	2.1	2.6	6.7	10.0	7.7	8.6	3.0	8.8
	Deaths Median	2.0	2.0	2.0	1.0	1.0	2.0	3.0	2.5	1.0	5.0	3.0	2.0	4.0	3.0	2.0
Length of Stay ≥ 3 Days	Number	94.0	405.0	282.0	32.0	48.0	395.0	150.0	110.0	62.0	175.0	800.0	146.0	338.0	38.0	3,075.0
	%	85.5	82.2	80.8	72.7	65.8	84.2	84.7	85.9	82.7	81.8	82.6	70.9	83.5	86.4	81.9
Number of O.R. Visits per Case	Mean	1.5	1.4	1.4	1.3	1.7	1.4	1.3	1.6	1.3	1.3	1.7	1.4	1.5	1.3	1.5
	S.D.	1.1	0.9	0.8	0.7	1.4	0.9	0.7	1.5	0.6	0.5	1.5	0.8	0.9	0.7	1.1
	Median	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Table 10. Participating Hospital Care, 2003–2004 Cases (cont'd)

		Institution Code														
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	TOTAL
Cases With ICP Days > 0	**Number**	0.0	52.0	3.0	0.0	8.0	27.0	0.0	6.0	5.0	30.0	32.0	5.0	8.0	8.0	184.0
	%	0.0	10.5	0.9	0.0	11.0	5.8	0.0	4.7	6.7	14.0	3.3	2.4	2.0	18.2	4.9
ICP Days	**Mean**	0.0	3.3	7.3	0.0	4.4	4.3	0.0	4.2	4.0	3.8	6.2	6.6	3.8	3.4	4.3
	S.D.	0.0	2.6	2.5	0.0	2.0	2.6	0.0	2.9	1.2	3.1	12.0	4.3	2.6	1.7	5.6
	Median	0.0	2.5	7.0	0.0	3.5	4.0	0.0	4.0	4.0	3.0	3.0	9.0	2.5	3.5	3.0
Cases With Ventilation Days > 0	**Number**	40.0	225.0	128.0	14.0	24.0	157.0	67.0	24.0	28.0	57.0	398.0	66.0	118.0	19.0	1,365.0
	%	36.4	45.6	36.7	31.8	32.9	33.5	37.9	18.8	37.3	26.6	41.1	32.0	29.1	43.2	36.4
Ventilation Days	**Mean**	3.3	5.0	5.4	1.9	3.0	4.0	5.2	3.3	3.0	3.9	8.8	2.6	4.0	3.4	5.6
	S.D.	4.8	6.9	6.6	2.0	2.7	4.0	6.8	3.1	2.3	4.4	25.0	3.8	5.8	3.5	14.4
	Median	1.0	1.0	2.0	1.0	1.5	2.0	3.0	1.5	2.0	2.0	2.0	1.0	1.5	1.0	2.0

Table 11. Deaths by Institution Code, 2003–2004 Cases

		Institution Code														
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	TOTAL
ISS for Deaths	**Mean**	26.6	31.4	37.5	27.7	38.4	26.4	38.8	26.7	33.2	28.0	37.2	32.5	28.4	32.2	32.6
	S.D.	5.3	12.0	15.0	14.5	16.5	10.4	22.0	13.6	17.5	9.8	14.3	14.0	10.5	7.5	13.9
	Median	25.0	29.0	35.0	25.0	36.0	25.0	26.0	22.0	26.0	25.5	34.0	26.0	25.0	34.0	27.0
In-Hospital Deaths	**Number**	11.0	65.0	41.0	11.0	5.0	63.0	23.0	3.0	6.0	18.0	20.0	24.0	55.0	4.0	449.0
	%	10.0	13.2	11.7	25.0	6.8	13.4	13.0	2.3	8.0	8.4	12.4	11.7	13.6	9.1	12.0
Die in Emergency Department (DIE)	**Number**	2.0	11.0	10.0	3.0	3.0	20.0	1.0	0.0	5.0	8.0	28.0	16.0	4.0	1.0	112.0
	%	1.8	2.2	2.9	6.8	4.1	4.3	0.6	0.0	6.7	3.7	2.9	7.8	1.0	2.3	3.0
Post Mortem Examination	**Number**	5.0	41.0	32.0	6.0	5.0	41.0	7.0	1.0	8.0	15.0	01.0	25.0	28.0	1.0	316.0
	%	38.5	53.9	62.7	42.9	62.5	49.4	29.2	33.3	72.7	57.7	68.2	62.5	47.5	20.0	56.3
Patients who Donate Organs	**Number**	0.0	9.0	8.0	3.0	4.0	10.0	4.0	0.0	1.0	2.0	16.0	5.0	9.0	2.0	73.0
	%	0.0	11.8	15.7	21.4	50.0	12.0	16.7	0.0	9.1	7.7	10.8	12.5	15.3	40.0	13.0

Percentage Denominators:

The denominator used in the percentage calculations is the total number of admissions for specific institution. The only exception as those below.

Denominator for Post Mortem Examinations & Patients who donate organs is the total number of deaths for specific institution.

Table 12. Outcome Scores by Institution Code, 2003–2004 Cases

		Institution Code														
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	TOTAL
No. of Cases		110.00	493.00	349.00	44.00	73.00	469.00	177.00	128.00	75.00	214.00	968.00	206.00	405.00	44.00	3755.00
ISS	**Mean**	23.69	24.26	25.86	22.23	22.96	22.58	25.22	20.64	25.87	21.64	27.44	23.89	23.94	21.77	24.67
	S.D.	7.76	9.38	11.42	10.25	9.88	8.06	13.28	6.83	11.82	8.01	11.88	10.02	8.91	7.88	10.39
	Median	25.00	25.00	24.00	19.00	20.00	21.00	20.00	17.50	24.00	18.00	26.00	22.00	25.00	20.00	24.00
RTS @ L/T	**Mean**	7.43	7.57	7.60	7.59	7.33	7.55	7.63	7.30	7.26	7.51	7.63	7.40	7.59	7.46	7.56
	S.D.	0.85	0.69	0.73	0.69	0.96	0.72	0.68	0.96	1.14	0.84	0.62	0.87	0.73	0.81	0.74
	Median	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84
TRISS	**Mean**	0.89	0.91	0.91	0.91	0.95	0.91	0.92	0.96	0.93	0.91	0.92	0.88	0.91	0.97	0.91
	S.D.	0.21	0.12	0.17	0.13	0.10	0.11	0.14	0.10	0.13	0.17	0.14	0.18	0.13	0.04	0.14
	Median	0.97	0.94	0.97	0.94	0.99	0.94	0.95	0.99	0.98	0.96	0.97	0.94	0.94	0.98	0.96
ASCOT	**Mean**	0.90	0.90	0.92	0.90	0.95	0.92	0.94	0.96	0.93	0.91	0.96	0.89	0.91	0.98	0.93
	S.D.	0.20	0.17	0.18	0.15	0.09	0.13	0.12	0.09	0.15	0.18	0.09	0.20	0.14	0.04	0.14
	Median	0.98	0.96	0.98	0.93	0.98	0.97	0.97	0.99	0.98	0.98	0.98	0.96	0.96	0.99	0.98

ISS—Injury Severy Score

RTS @ L/T—Revised Trauma Score at Lead/Trauma Hospital

TRISS—Trauma and Injury Severity Score

ASCOT—A Severity Characterization of Trauma

Table 13. Total Injuries and Deaths by External Causes of Injury and Sex, 2003–2004 Cases

		Females				Males				Total			
		No. of Injury	% of Injury	No. of Deaths	% of Deaths	No. of Injury	% of Injury	No. of Deaths	% of Deaths	No. of Injury	% of Injury	No. of Deaths	% of Deaths
Total		1,041	100.0	166	100.0	2,714	100.0	395	100.0	3,755	100.0	561	100.0
Railway	**Pedestrians**	4	0.4	1	0.6	7	0.3	0	0	11	0.3	1	0.2
	Pedal Cyclists	0	0	0	0	0	0	0	0	0	0	0	0
	Occupants and Other	0	0	0	0	1	0.0	1	0.3	1	0.0	1	0.2
	Subtotal	4	0.4	1	0.6	8	0.3	1	0.3	12	0.3	2	0.4
Motor Vehicle Traffic	**Pedestrians**	108	10.4	15	9.0	154	5.7	31	7.8	262	7.0	46	8.2
	Pedal Cyclists	11	1.1	0	0	42	1.5	4	1.0	53	1.4	4	0.7
	Drivers	213	20.5	31	18.7	504	18.6	60	15.2	717	19.1	91	16.2
	Passengers	165	15.9	22	13.3	177	6.5	20	5.1	342	9.1	42	7.5
	Motorcycle Drivers	6	0.6	0	0	112	4.1	9	2.3	118	3.1	9	1.6
	Motorcycle Passengers	11	1.1	2	1.2	4	0.1	0	0	15	0.4	2	0.4
	Other	13	1.2	1	0.6	38	1.4	5	1.3	51	1.4	6	1.1
	Subtotal	527	50.6	71	42.8	1,031	38.0	129	32.7	1,558	41.5	200	35.7

Table 13. Total Injuries and Deaths by External Causes of Injury and Sex, 2003–2004 Cases (cont'd)

		Females				Males				Total			
		No. of Injury	% of Injury	No. of Deaths	% of Deaths	No. of Injury	% of Injury	No. of Deaths	% of Deaths	No. of Injury	% of Injury	No. of Deaths	% of Deaths
Motor Vehicle Non-Traffic	**Pedestrians**	2	0.2	0	0	10	0.4	2	0.5	12	0.3	2	0.4
	Pedal Cyclists	0	0	0	0	0	0	0	0	0	0	0	0
	Drivers	12	1.2	1	0.6	93	3.4	6	1.5	105	2.8	7	1.2
	Passengers	6	0.6	1	0.6	6	0.2	1	0.3	12	0.3	2	0.4
	Motorcycle Drivers	2	0.2	0	0	12	0.4	1	0.3	14	0.4	1	0.2
	Motorcycle Passengers	0	0	0	0	0	0	0	0	0	0	0	0
	Other	2	0.2	0	0	14	0.5	3	0.8	16	0.4	3	0.5
	Subtotal	24	2.3	2	1.2	135	5.0	13	3.3	159	4.2	15	2.7
Motor Vehicle Boarding or Alighting		1	0.1	1	0.6	2	0.1	0	0	3	0.1	1	0.2
Other Road vehicle	**Pedestrians**	2	0.2	1	0.6	4	0.1	1	0.3	6	0.2	2	0.4
	Pedal Cyclists	12	1.2	0	0	37	1.4	0	0	49	1.3	0	0.0
	Other	14	1.3	2	1.2	13	0.5	1	0.3	27	0.7	3	0.5
	Subtotal	28	2.7	3	1.8	54	2.0	2	0.5	82	2.2	5	0.9
Water Transport		8	0.8	0	0	7	0.3	2	0.5	15	0.4	2	0.4
Air and Space Transport		2	0.2	0	0	12	0.4	1	0.3	14	0.4	1	0.2
Vehicle Incidents Not Elsewhere Classified		0	0	0	0	1	0.0	0	0	1	0.0	0	0.0
Unintentional Falls		347	33.3	64	38.6	870	32.1	149	37.7	1,217	32.4	213	38.0
Fire and Flames		19	1.8	9	5.4	44	1.6	19	4.8	63	1.7	28	5.0

Table 13. Total Injuries and Deaths by External Causes of Injury and Sex, 2003–2004 Cases (cont'd)

		Females				Males				Total			
		No. of Injury	% of Injury	No. of Deaths	% of Deaths	No. of Injury	% of Injury	No. of Deaths	% of Deaths	No. of Injury	% of Injury	No. of Deaths	% of Deaths
Natural and Environmental Factors		7	0.7	1	0.6	14	0.5	2	0.5	21	0.6	3	0.5
Drowning		1	0.1	1	0.6	3	0.1	2	0.5	4	0.1	3	0.5
Suffocation		1	0.1	1	0.6	0	0	0	0	1	0.0	1	0.2
Foreign Bodies (excl. Choking)		0	0	0	0	1	0.0	0	0	1	0.0	0	0.0
Suicide and Self-Inflicted Injury (excl. Poisonings)		20	1.9	5	3.0	51	1.9	20	5.1	71	1.9	25	4.5
Assault and Injury Purposely Inflicted		25	2.4	6	3.6	290	10.7	39	9.9	315	8.4	45	8.0
Legal Intervention		0	0	0	0	0	0	0	0	0	0	0	0
Undetermined Whether Unintentionally or Purposely Inflicted		1	0.1	0	0	9	0.3	2	0.5	10	0.3	2	0.4
Operations of War		0	0	0	0	1	0.0	0	0	1	0.0	0	0.0
Other Incidents		20	1.9	0	0	148	5.5	9	2.3	168	4.5	9	1.6
All Other		6	0.6	1	0.6	33	1.2	5	1.3	39	1.0	6	1.1

Table 14. Injury Case Summary by External Causes of Injury and Sex, 2003–2004 Cases

		Females					Males					Total				
		Mean			Median	S.D.	Mean			Median	S.D.	Mean			Median	S.D.
		Age	ISS	LOS	LOS	LOS	Age	ISS	LOS	LOS	LOS	Age	ISS	LOS	LOS	LOS
Total		47.9	25.2	15.8	9.0	24.0	43.0	24.5	15.2	8.0	26.8	44.4	24.7	15.4	8.0	26.1
Railway	**Pedestrians**	37.3	36.5	29.3	36.0	15.8	28.9	31.1	22.5	10.0	24.6	31.9	33.1	25.2	22.0	20.8
	Pedal Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Occupants and Other	0	0	0	0	0	45.0	41.0	0	0	0	45.0	41.0	0	0	0
	Subtotal	37.3	36.5	29.3	36.0	15.8	30.9	32.4	22.5	10.0	24.6	33.0	33.8	25.2	22.0	20.8
Motor Vehicle Traffic	**Pedestrians**	46.3	25.2	17.2	10.0	19.1	40.2	27.7	17.7	8.0	24.1	42.7	26.6	17.5	9.0	22.1
	Pedal Cyclists	18.5	20.8	17.8	14.0	13.2	29.6	23.3	27.2	7.0	63.3	27.3	22.8	25.1	8.0	56.3
	Drivers	40.8	28.9	16.8	11.0	20.7	40.6	27.9	17.3	10.0	25.1	40.7	28.2	17.2	10.0	23.9
	Passengers	39.3	27.6	18.5	10.0	35.4	27.8	26.1	15.1	8.0	23.3	33.3	26.8	16.7	9.0	29.7
	Motorcycle Drivers	41.2	19.2	15.5	15.0	14.9	37.8	25.7	15.0	11.0	14.6	38.0	25.4	15.0	11.0	14.5
	Motorcycle Passengers	36.7	36.1	28.2	12.0	55.1	28.3	22.0	13.3	11.0	12.3	34.5	32.3	23.9	12.0	46.7
	Other	39.5	24.6	8.8	7.0	8.8	36.1	26.1	14.0	10.0	19.8	37.0	25.7	12.7	9.0	17.7
	Subtotal	40.9	27.5	17.4	10.0	26.5	37.4	27.1	17.0	9.0	26.2	38.6	27.2	17.2	9.5	26.3

Table 14. Injury Case Summary by External Causes of Injury and Sex, 2003–2004 Cases (cont'd)

		Females					Males					Total				
		Mean			Median	S.D.	Mean			Median	S.D.	Mean			Median	S.D.
		Age	ISS	LOS	LOS	LOS	Age	ISS	LOS	LOS	LOS	Age	ISS	LOS	LOS	LOS
Motor Vehicle Non-Traffic	**Pedestrians**	37.0	29.0	22.0	22.0	25.5	35.2	30.7	28.8	6.0	67.9	35.5	30.4	27.7	6.0	61.9
	Pedal Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Drivers	32.2	23.7	11.5	9.0	8.1	34.8	22.8	12.2	7.0	13.9	34.5	22.9	12.1	7.0	13.4
	Passengers	28.7	25.2	21.2	8.0	21.4	25.2	30.8	7.5	8.5	3.6	26.9	28.0	13.7	8.0	15.5
	Motorcycle Drivers	37.5	19.5	2.5	2.5	2.1	26.3	28.1	16.5	11.0	14.6	27.9	26.9	14.3	10.0	14.4
	Motorcycle Passengers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Other	65.5	21.5	8.0	8.0	5.7	37.4	22.7	18.4	9.0	27.9	40.9	22.6	17.0	9.0	26.1
	Subtotal	34.9	24.0	13.5	8.0	13.7	33.9	24.2	14.2	7.0	23.8	34.0	24.2	14.1	7.0	22.6
Motor Vehicle Boarding or Alighting		82.0	66.0	0	0	0	22.5	19.0	12.5	12.5	9.2	42.3	34.7	12.5	12.5	9.2
Other Road Vehicle	**Pedestrians**	47.0	34.0	10.5	10.5	13.4	37.3	31.0	25.5	30.0	17.2	40.5	32.0	20.5	24.5	16.5
	Pedal Cyclists	25.3	19.1	6.8	4.5	6.0	34.8	20.5	10.3	6.0	14.2	32.5	20.1	9.4	6.0	12.7
	Other	36.9	24.2	8.5	5.0	6.2	50.5	25.9	8.0	5.5	10.4	43.4	25.0	8.2	5.0	8.3
	Subtotal	32.6	22.7	7.9	5.0	6.4	38.8	22.6	10.9	7.0	14.0	36.7	22.6	9.9	6.0	12.1
Water Transport		15.3	20.9	12.4	10.0	6.4	36.1	38.1	11.2	9.5	8.7	25.0	28.9	11.9	10.0	7.2
Air and Space Transport		24.0	30.5	10.5	10.5	6.4	49.3	21.0	12.4	10.0	13.1	45.7	22.4	12.1	10.0	12.2
Vehicle Incidents Not Elsewhere Classified		0	0	0	0	0	18.0	34.0	9.0	9.0	0	18.0	34.0	9.0	9.0	0

Table 14. Injury Case Summary by External Causes of Injury and Sex, 2003–2004 Cases (cont'd)

		Females					Males					Total				
		Mean			Median	S.D.	Mean			Median	S.D.	Mean			Median	S.D.
		Age	ISS	LOS	LOS	LOS	Age	ISS	LOS	LOS	LOS	Age	ISS	LOS	LOS	LOS
Unintentional Falls		64.0	21.7	13.4	7.0	18.7	56.5	22.2	14.2	7.0	31.5	58.6	22.0	14.0	7.0	28.5
Fire and Flames		47.6	33.1	17.1	5.5	31.0	41.8	29.6	29.8	17.0	43.1	43.6	30.6	25.8	12.0	39.9
Natural and Environmental Factors		61.9	23.7	14.3	5.0	15.4	46.1	20.6	14.4	6.5	17.6	51.3	21.7	14.3	5.0	16.5
Drowning		72.0	26.0	1.0	1.0	0	21.3	22.0	1.5	1.5	0.7	34.0	23.0	1.3	1.0	0.6
Suffocation		57.0	34.0	4.0	4.0	0	0	0	0	0	0	57.0	34.0	4.0	4.0	0
Foreign Bodies (excl. Choking)		0	0	0	0	0	37.0	35.0	5.0	5.0	0	37.0	35.0	5.0	5.0	0
Suicide and Self-Inflicted Injury (excl. Poisonings)		31.4	28.1	28.4	11.5	46.9	42.2	28.9	27.0	21.0	26.7	39.2	28.6	27.4	17.0	33.5
Assault and Injury Purposely Inflicted		28.9	23.3	20.0	9.5	34.3	29.3	22.4	9.8	6.0	11.7	29.3	22.5	10.6	6.0	14.7
Legal Intervention		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Undetermined Whether Unintentionally or Purposely Inflicted		1.4	17.0	8.0	8.0	0	60.1	26.7	19.1	11.0	20.3	54.2	25.7	17.8	9.5	19.2
Operations of War		0	0	0	0	0	21.0	14.0	5.0	5.0	0	21.0	14.0	5.0	5.0	0
Other Incidents		43.6	21.5	17.3	7.0	18.6	41.6	21.6	14.7	8.0	23.6	41.8	21.6	15.0	8.0	23.1
All Other		48.7	19.2	4.2	4.0	2.4	39.4	23.6	12.4	9.0	14.7	40.8	22.9	11.3	7.5	14.0

Table 15. External Causes of Injury by Age Group, 2003–2004 Cases

		<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	%
No. of Cases		39	43	75	135	368	349	451	485	498	377	410	396	124	5	3755	0
% of Cases		0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
Railway	**Pedestrians**	0	0	0	0	6	0	0	1	3	0	1	0	0	0	11	0.3
	Pedal Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Occupants and Other	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
	Subtotal	0	0	0	0	6	0	0	1	4	0	1	0	0	0	12	0.3
Motor Vehicle Traffic	**Pedestrians**	1	5	14	26	18	16	24	29	37	24	34	29	3	2	262	7.0
	Pedal Cyclists	0	0	6	8	12	3	8	7	4	1	4	0	0	0	53	1.4
	Drivers	0	0	0	4	84	102	132	110	111	79	50	42	3	0	717	19.1
	Passengers	2	12	12	26	83	46	36	24	26	23	22	26	4	0	342	9.1
	Motorcycle Drivers	0	0	0	1	8	13	27	30	20	17	2	0	0	0	118	3.1
	Motorcycle Passengers	0	0	0	1	4	1	2	0	5	2	0	0	0	0	15	0.4
	Other	0	0	1	1	6	10	14	6	2	2	3	6	0	0	51	1.4
	Subtotal	3	17	33	67	215	191	243	206	205	148	115	103	10	2	1558	41.5

Table 15. External Causes of Injury by Age Group, 2003–2004 Cases (cont'd)

		<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	%
Motor Vehicle Non-Traffic	**Pedestrians**	0	1	3	1	0	0	1	0	2	1	3	0	0	0	12	0.3
	Pedal Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Drivers	0	0	3	6	13	20	17	16	13	11	3	2	1	0	105	2.8
	Passengers	0	0	0	0	5	2	2	1	1	1	0	0	0	0	12	0.3
	Motorcycle Drivers	0	0	0	1	2	4	3	3	1	0	0	0	0	0	14	0.4
	Motorcycle Passengers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Other	0	0	2	1	1	0	1	3	4	2	1	1	0	0	16	0.4
	Subtotal	0	1	8	9	21	26	24	23	21	15	7	3	1	0	159	4.2
Motor Vehicle Boarding or Alighting		0	0	0	0	0	1	1	0	0	0	0	1	0	0	3	0.1
Other Road Vehicle	**Pedestrians**	0	0	0	1	0	1	0	1	2	0	1	0	0	0	6	0.2
	Pedal Cyclists	0	0	1	15	7	1	4	4	6	6	5	0	0	0	49	1.3
	Other	0	0	0	2	1	1	2	6	9	6	0	0	0	0	27	0.7
	Subtotal	0	0	1	18	8	3	6	11	17	12	6	0	0	0	82	2.2
Water Transport		0	0	1	3	2	3	2	2	2	0	0	0	0	0	15	0.4
Air and Space Transport		0	0	0	0	0	2	0	5	4	1	2	0	0	0	14	0.4
Vehicle Incidents Not Elsewhere Classified		0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
Unintentional Falls		20	11	17	19	37	32	51	113	163	146	243	262	103	0	1217	32.4
Fire and Flames		0	4	1	2	3	3	7	16	6	8	7	4	2	0	63	1.7
Natural and Environmental Factors		0	2	0	1	0	0	1	3	5	3	2	1	3	0	21	0.6
Drowning		0	0	1	1	0	0	0	0	1	0	1	0	0	0	4	0.1

Table 15. External Causes of Injury by Age Group, 2003–2004 Cases (cont'd)

		<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	%
Suffocation		0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
Foreign Bodies (excl. Choking)		0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
Suicide and Self-Inflicted Injury (excl. Poisonings)		0	0	0	1	2	12	21	14	8	7	3	2	1	0	71	1.9
Assault and Injury Purposely Inflicted		12	2	2	1	64	63	70	53	30	11	4	1	0	2	315	8.4
Legal Intervention		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Undetermined Whether Unintentionally or Purposely Inflicted		0	1	0	0	0	0	0	3	1	1	1	2	1	0	10	0.3
Operations of War		0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
Other Incidents		4	4	11	13	6	6	15	31	24	22	14	15	2	1	168	4.5
All Other		0	1	0	0	3	6	10	3	7	2	4	2	1	0	39	1.0

Table 16. External Causes of Injury by Age Group for Falls, 2003–2004 Cases (ICD-10-CA W00–W19)

		<1	1–4	5–9	10–14	15–19	20–24	25–34	35–44	45–54	55–64	65–74	75–84	85+	TOTAL	%
No. of Cases		20	11	17	19	37	32	51	112	163	146	243	262	103	1216	100
% of Cases		1.6	0.9	1.4	1.6	3	2.6	4.2	9.2	13.4	12	20	21.5	8.5	100	0
W00—Involving Ice and Snow		0	0	0	0	0	0	0	1	2	7	17	13	0	40	3.3
W01—Slipping, Tripping and Stumbling		0	0	1	2	1	2	2	8	23	15	55	70	37	216	17.8
W02—Involving Skates, Skis, Sport Boards and Rollerblades	**Ice Skates**	0	0	0	1	0	0	0	2	1	1	1	0	0	6	0.5
	Skis	0	0	1	2	0	1	0	0	1	1	0	2	1	9	0.7
	Roller Skates/ Rollerblades	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.1
	Skateboards	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0.2
	Snowboards	0	0	0	2	10	1	1	0	2	0	0	0	0	16	1.3
	Other Unspecified	0	0	0	1	0	0	0	1	0	1	0	1	0	4	0.3
	Subtotal	0	0	1	7	12	2	1	3	4	3	1	3	1	38	3.1
W03—Collision With/Pushing by Another Person		0	0	1	0	2	0	2	1	0	0	0	0	0	6	0.5
W04—While Being Carried or Supported by Other Persons		10	0	1	0	0	0	0	0	0	0	0	0	0	11	0.9
W05—Involving Wheelchair and Other Types of Walking Devices		1	0	0	0	0	0	0	0	0	1	3	4	0	9	0.7
W06—Involving Bed		2	2	0	0	0	0	0	2	1	1	8	9	4	29	2.4
W07—Involving Chair		0	0	0	0	0	0	0	0	1	3	2	2	0	8	0.7

Table 16. External Causes of Injury by Age Group for Falls, 2003–2004 Cases (ICD-10-CA W00–W19) (cont'd)

		<1	1–4	5–9	10–14	15–19	20–24	25–34	35–44	45–54	55–64	65–74	75–84	85+	TOTAL	%
W08—Involving Other Furniture		3	1	0	0	0	0	0	1	0	0	2	2	0	9	0.7
W09—Playground Equipment		0	1	0	0	1	0	0	0	0	0	0	0	0	2	0.2
W10—On/From Stairs/Steps		2	3	1	3	2	4	11	18	41	35	48	54	19	241	19.8
W11—On/From Ladder		0	0	0	0	0	1	4	15	20	21	25	5	0	91	7.5
W12—On/From Scaffolding		0	0	1	0	0	2	3	6	6	5	1	1	0	25	2.1
W13—From, Out of or Through Building or Structure		0	2	4	1	9	16	15	28	25	14	7	3	2	126	10.4
W14—From Tree		0	0	3	2	0	0	0	4	3	3	2	0	0	17	1.4
W15—From Cliff		0	0	0	1	1	0	1	0	2	0	1	0	0	6	0.5
W16—Diving/ Jumping Into Water		0	0	0	1	1	1	2	1	0	0	0	0	0	6	0.5
W17—Other Fall From One Level to Another		2	1	3	1	6	2	7	12	10	10	9	5	1	69	5.7
W18—Other Fall on Same Level		0	0	1	1	1	2	3	6	8	11	27	38	20	118	9.7
W19—Unspecified Fall		0	1	0	0	1	0	0	6	17	17	35	53	19	149	12.3

Note: 1 case coded in ICD-9 has been excluded (admitted in 2001).

Table 17. External Causes of Injury by Age Group* for Traffic, Non-Traffic and Other Road Vehicle Incidents, 2003–2004

		0–4	5–9	10–15	16	17	18	19	20	21–24	25–34	35–44	45–54	55–64	65–74	75+	UNK	TOTAL	%
No. of Admissions		21	42	125	40	60	62	51	39	182	274	240	243	175	128	118	2	1802	100
% of Admissions		1.2	2.3	6.9	2.2	3.3	3.4	2.8	2.2	10.1	15.2	13.3	13.5	9.7	7.1	6.5	0.1	100	0
Motor Vehicle Traffic	**Drivers**	0	0	5	7	24	32	20	16	86	132	110	111	79	50	45	0	717	39.8
	Passengers	14	12	39	12	24	17	17	7	39	36	24	26	23	22	30	0	342	19.0
	Motorcycle Drivers	0	0	1	1	3	1	3	3	10	27	30	20	17	2	0	0	118	6.5
	Motorcycle Passengers	0	0	2	0	1	0	2	0	1	2	0	5	2	0	0	0	15	0.8
	Pedal Cyclists	0	6	10	6	2	2	0	0	3	8	7	4	1	4	0	0	53	2.9
	Pedestrians	6	14	30	5	1	4	4	4	12	24	29	37	24	34	32	2	262	14.5
	Other	0	1	2	1	2	1	1	4	6	14	6	2	2	3	6	0	51	2.8
	Subtotal	20	33	89	32	57	57	47	34	157	243	206	205	148	115	113	2	1558	86.5
Motor Vehicle Non-Traffic	**Drivers**	0	3	9	4	2	1	3	2	18	17	16	13	11	3	3	0	105	5.8
	Passengers	0	0	1	2	0	2	0	0	2	2	1	1	1	0	0	0	12	0.7
	Motorcycle Drivers	0	0	1	0	0	2	0	1	3	3	3	1	0	0	0	0	14	0.8
	Motorcycle Passengers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedal Cyclists	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pedestrians	1	3	1	0	0	0	0	0	0	1	0	2	1	3	0	0	12	0.7
	Other	0	2	2	0	0	0	0	0	0	1	3	4	2	1	1	0	16	0.9
	Subtotal	1	8	14	6	2	5	3	3	23	24	23	21	15	7	4	0	159	8.8

Table 17. External Causes of Injury by Age Group* for Traffic, Non-Traffic and Other Road Vehicle Incidents, 2003–2004 (cont'd)

		0–4	5–9	10–15	16	17	18	19	20	21–24	25–34	35–44	45–54	55–64	65–74	75+	UNK	TOTAL	%
Motor Vehicle Boarding or Alighting		0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	3	0.2
Other Road Vehicle	**Pedal Cyclists**	0	1	19	1	1	0	1	1	0	4	4	6	6	5	0	0	49	2.7
	Pedestrians	0	0	1	0	0	0	0	0	1	0	1	2	0	1	0	0	6	0.3
	Other	0	0	2	1	0	0	0	0	1	2	6	9	6	0	0	0	27	1.5
	Subtotal	0	1	22	2	1	0	1	1	2	6	11	17	12	6	0	0	82	4.6

***Note:** These age groups match the Ontario Road Safety Annual Report from the Ontario Ministry of Transportation.

Table 18. Total Injuries and Injury Type by 5 Year Age Group, 2003–2004 Cases

	<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*	77	83	176	306	1037	986	1254	1335	1287	938	873	785	224	10	9371	
% of Total**	2.1	2.2	4.7	8.1	27.6	26.3	33.4	35.6	34.3	25.0	23.2	20.9	6.0	0.3		
Superficial	14	13	33	51	166	155	223	221	225	150	142	120	28	1	1542	41.1
Musculoskeletal	22	25	51	85	287	286	374	394	398	287	229	179	56	3	2676	71.3
Burns and Corrosion	1	4	0	2	7	6	11	25	16	13	10	7	1	0	103	2.7
Internal Organ	36	35	70	125	333	309	366	397	397	313	362	362	108	4	3217	85.7
Crushing	0	0	0	2	3	3	2	6	4	4	0	4	1	0	29	0.8
Open Wound, Including Traumatic Amputation	4	5	17	32	164	161	187	201	164	110	88	83	21	2	1239	33.0
Blood Vessels	0	0	0	2	27	27	30	34	22	20	11	12	3	0	188	5.0
Nerves and Spinal Cord	0	1	3	5	39	24	48	34	39	29	19	9	3	0	253	6.7
Other and Unspecified	0	0	2	2	11	15	13	23	22	12	12	9	3	0	124	3.3

Note: If an admission has injuries which fall into several of the injury types above, each type will be counted once. Otherwise, if a case has several injuries which all fall into one type then the case will only be counted once.

* "Total" refers to the total number of injury types.

** The denominator for the percentage calculations is the total number of cases for the year.