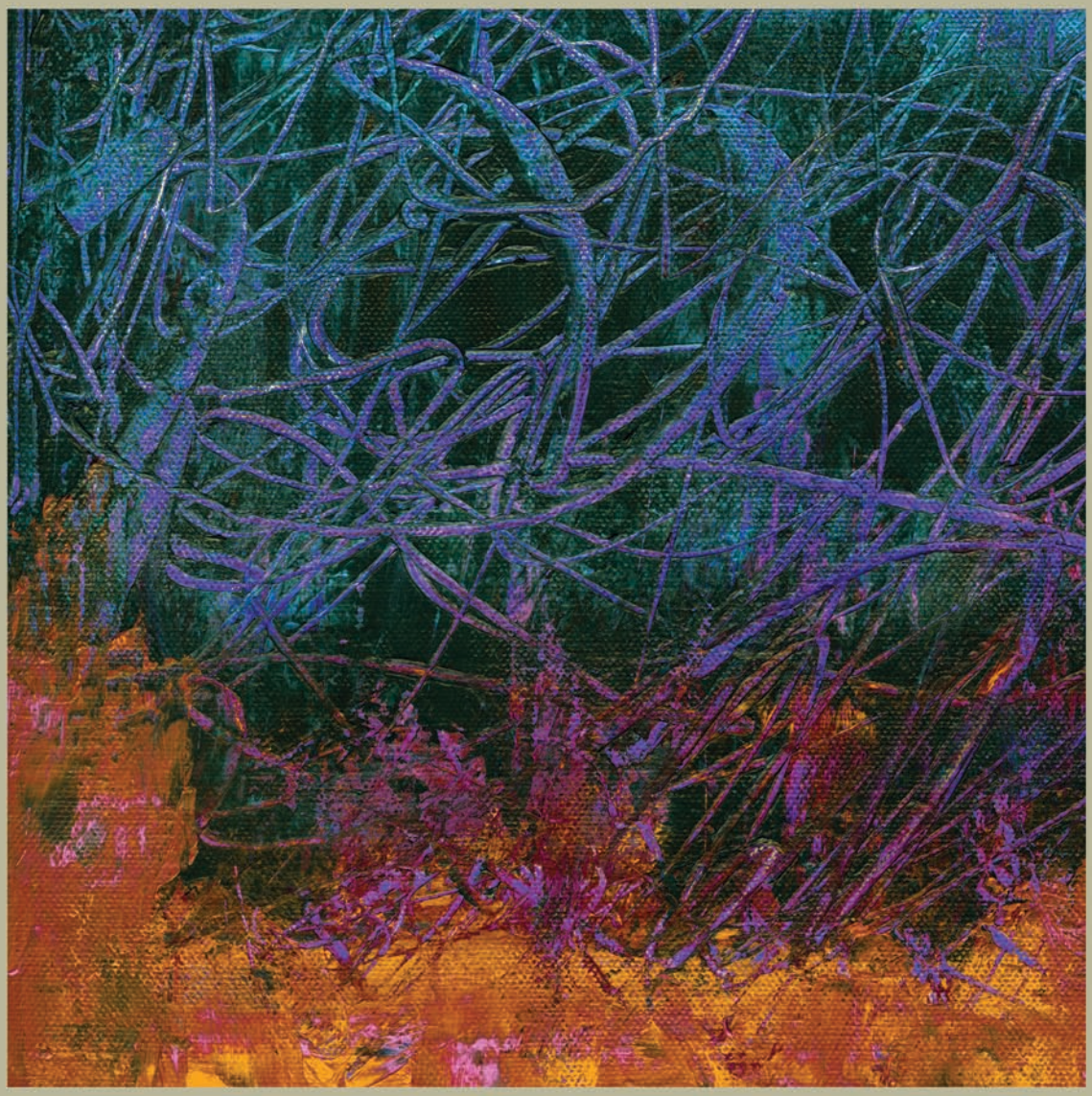

Injury in the United States: 2007 Chartbook

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics

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Contents

Acknowledgments....iii
List of Chartbook Figures....vii
Executive Summary....1
Introduction....5
Accident: Crash, Incident, or Event?....9

Injury Chartbook

1. Injuries in the United States....12
2. Injury Mortality and Morbidity: Age....14
3. Injury Mortality and Age....16
4. Mortality Trends: Intent of Injury....18
5. Mortality: Intent of Injury and Age....20
6. Mortality Trends: Mechanism of Injury....22
7. Mortality: Mechanism of Injury and Age....24
8. Mortality: Body Region and Nature of Injury....26
9. Mortality: Mechanism and Body Region of Injury....28
10. Mortality: Mechanism by Race, Hispanic Origin, and Age....30
11. Mortality: Intent and Mechanism of Injury and Level of Urbanization....32
12. Occupational Injury Mortality....34
13. Motor Vehicle Traffic Deaths: Driver Mortality and Alcohol....36
14. Mortality: International Injury Death Rates....38
15-1. Hospital Discharges for Injury: Trends by Age....40
15-2. Hospital Discharges: Trends by Injury Severity for Adults 25–64 Years of Age....42
16. Hospital Discharges for Injury: Sex and Age....44
17. Hospital Discharges: Nature and Body Region of Injury....46
18. Hospital Discharges: Fractures by Body Region of Injury and Age....48
19. Emergency Department Initial Injury Visits: Age and Sex....50
20. Emergency Department Initial Visits: Mechanism of Injury and Age....52
21. Emergency Department Initial Visits: Mechanism and Nature of Injury....54
22. Episodes of Injury: Sex, Age, and Mechanism of Injury....56
23. Episodes of Injury: Race, Hispanic Origin, Age, and Education....58
24. Episodes of Injury: Activity at Time of Injury and Place of Occurrence....60
25. Mortality and Morbidity: Mechanisms of Injury....62
26. Morbidity: Body Region and Nature of Injury....64

Data Tables for Figures 1–26....69

Appendixes.....135
Contents
I. Data Sources.....135
II. Appendix Tables I–VI.....148
II. Definitions and Methods.....163

List of Chartbook Figures

1. Injuries in the United States, 2004....12
2. Injury rates by age: United States, 2003–2005....14
3. Injury deaths as a percentage of total deaths and injury death rates, by age: United States, 2003–2004....16
4. Age-adjusted injury death rates by intent and year: United States, 1985–2004....18
5-1. Injury death rates by intent and age: United States, 2003–2004....20
5-2. Distribution of injury deaths by intent: United States, 2003–2004....21
6. Age-adjusted injury death rates for leading mechanisms of injury, by year: United States, 1985–2004....22
7. Injury death rates for leading mechanisms of injury, by age: United States, 2003–2004....24
7-1. Injury death rates for leading mechanisms of injury, for infants and children under 5 years of age: United States, 2003–2004....25
8-1. Percent distribution of injury deaths, by body region of injury: United States, 2003–2004....26
8-2. Percent distribution of injury deaths, by nature of injury: United States, 2003–2004....26
9. Percent distribution of deaths by body region of injury, for motor vehicle traffic accidents, firearm suicides, and firearm homicides: United States, 2003–2004....28
10-1. Injury death rates for leading mechanisms of injury for persons under 25 years of age, by race and Hispanic origin: United States, 2003–2004....30
10-2. Injury death rates for leading mechanisms of injury for persons 25–64 years of age, by race and Hispanic origin: United States, 2003–2004....30
10-3. Injury death rates for leading mechanisms of injury for persons 65 years of age and over, by race and Hispanic origin: United States, 2003–2004....30
11. Age-adjusted injury death rates by intent of injury and level of urbanization: United States, 2003–2004....32
11-1. Age-adjusted injury death rates for motor vehicle traffic accidents, firearm suicides, and firearm homicides, by level of urbanization: United States, 2003–2004....33
12. Selected occupational injury death rates for employed persons 16 years of age and over, by occupational group: United States, 2004–2005....34
12-1. Percent distribution of occupational injury fatalities, by type of event or exposure: United States, 2004–2005....35
13. Percentage of fatally injured drivers of passenger vehicles with blood alcohol concentration of 0.08 percent or greater, by driver age: United States, 1982–2004....36
14-1. Injury death rates for teens and young adults 15–24 years of age, by leading mechanisms of injury: Selected countries, most recent data years available....38
14-2. Injury death rates for persons 65 years of age and over, by leading mechanisms of injury: Selected countries, most recent data years available....38
15-1. Injury hospital discharge rates by age group and year: United States, 1988–2005....40
15-2. Injury hospital discharge rates for persons 25–64 years of age, by level of severity: United States, 1988–2005....42
16. Injury hospital discharge rates by sex and age group: United States, 2004–2005....44

17-1. Percent distribution of hospital discharges for injury, by nature of injury: United States, 2004–2005....46
17-2. Percent distribution of hospital discharges for injury, by body region of injury: United States, 2004–2005....46
18. Hospital discharge rates for fractures, by age and body region of injury: United States, 2004–2005....48
19. Initial emergency department injury visit rates by sex and age group: United States, 2004–2005....50
20. Initial emergency department injury visit rates by leading mechanisms of injury and age group: United States, 2004–2005....52
21. Percent distribution of initial emergency department injury visits, by nature of injury and leading mechanisms of injury: United States, 2004–2005....54
22-1. Injury episode rates by sex and age group: United States, 2004–2005....56
22-2. Injury episode rates by leading mechanisms of injury and age group: United States, 2004–2005....56
23-1. Injury episode rates by race and Hispanic origin and age: United States, 2004–2005....58
23-2. Injury episode rates by race and Hispanic origin and education, among people 25–64 years of age: United States, 2004–2005....58
24-1. Percent distribution of injury episodes, by activity at time of injury: United States, 2004–2005....60
24-2. Percent distribution of injury episodes, by place of occurence: United States, 2004–2005....60
25. Percent distributions by leading mechanisms of injury for deaths, hospital discharges, initial emergency department visits, and episodes of injury: United States, 2003–2005....62
26. Percent distributions of injuries by body region of injury, for hospital discharges, initial emergency department visits, and episodes of injury: United States, 2004–2005....64

Executive Summary

Overview

Injury imposes a heavy burden on society in terms of both mortality and morbidity.

In 2004, more than 167,000 deaths —7% of all deaths in the United States—resulted from injury. In addition, 1.9 million hospitalizations and 31 million initial visits to emergency departments were attributable to injury and accounted for 6% of all hospital discharges and almost one-third of all initial emergency department visits. Another 35 million initial visits to physicians' offices and outpatient clinics were for the treatment of injuries.

Injury imposes a large economic burden on society.

Injury death and disability that occurred in 2000 are estimated to cost $80 billion in lifetime medical care treatment costs for physical injuries and another $326 billion in lifetime lost productivity, totaling more than $400 billion for the combined economic burden of medical treatment and lost productivity.

Many fatal and nonfatal injuries are preventable.

Knowing the characteristics of people at high risk for injury is a key to developing prevention strategies. Also important is understanding how trends in external causes of injury, both mechanism and intent, are changing and identifying the factors that contribute to those changes.

The purpose of this chartbook is to enhance understanding of the factors contributing to injury mortality and morbidity.

Using data from national surveys and vital statistics, the *Injury in the United States: 2007 Chartbook* presents a comprehensive picture of injury to provide insights into potential prevention strategies for policymakers, researchers, and the general public. The chartbook also provides national benchmarking data for state injury prevention practitioners and epidemiologists. The data and charts focus on injury variation by age, mechanisms or external causes of injury, and comparisons of injury mortality and morbidity across data sources.

Current Patterns of Injury Mortality

Risks of injury death vary by age and sex.

Although unintentional injury, suicide, and homicide are the three leading causes of death for teenagers and young adults, elderly people have the highest rates of injury death. Males have higher rates of injury death than those for females, regardless of age group.

The majority of injury deaths are unintentional, with elderly people at particularly high risk of death from unintentional injuries.

Unintentional injuries continue to be the fifth leading cause of death in the United States and accounted for two-thirds of all injury deaths from 1999–2004. At every age, the majority of injury deaths are unintentional, but the risk of death from unintentional injury rises dramatically for those over 70 years of age. Persons living in rural counties also have higher risks of death caused by unintentional injuries.

Overall, suicides greatly exceed homicides, but rates vary by age, sex, and urban or rural residence.

Suicides, the 11th leading cause of death in the United States, outnumber homicides by 2 to 1. However, homicides exceed suicides among young adults. Homicide rates are highest in the most urban counties, and suicide rates are highest in the most rural counties.

The leading mechanisms of injury death also vary by age.

Falls are the leading mechanism of injury death for elderly people over 72 years of age. For midlife adults 35–53 years of age, poisoning is the leading mechanism of injury death. Motor vehicles in traffic are the leading mechanism of injury death for all other age groups, except for children under 2 years of age.

Risks of injury death on the job vary by occupation.

On average, more than 5,700 deaths per year were due to injuries at work in 2004 and 2005, resulting in a fatality rate for occupational injury of 4 deaths per 100,000 employed workers 16 years of age and over. Farming, fishing, and forestry occupations had the highest injury fatality rates, but the highest numbers of fatal work injuries occurred in construction, extraction, and transportation and material moving occupations.

The United States compares unfavorably with other countries in terms of fatal injuries.

Among 18 countries with detailed national injury death data available for analysis, the United States had the fifth highest injury death rate for teens and young adults 15–24 years of age. Only Colombia, South Africa, Brazil, and Puerto Rico had higher rates. For older adults 65 years of age and over, the U.S. rates were comparable with those of South Africa, Brazil, and Canada, but were lower than rates in Denmark, Mexico, Nicaragua, Austria, Colombia, and Chile.

Current Patterns of Injury Morbidity

Risks of hospitalization for injury vary by age and sex, with elderly women at particularly high risk.

Males have higher hospitalization rates for injury among all age groups except for those 65 years of age and over. Women 75 years of age and over have the highest hospitalization rates for injury of all age and sex groups, primarily because of hip fractures.

Teens and young adults have the highest rate of initial emergency department visits for injury.

The two leading injury mechanisms resulting in a high rate of initial emergency department visits by teens and young adults are motor vehicles and being struck by or against an object or person. Falls are the leading mechanism of injury for all other age groups.

Many injuries occur around the home.

About one-half of all injury episodes occur around the home, either inside or outside, with injuries inside the home predominate for all age groups except teens and young adults, who were equally likely to be injured inside the home, at school, on streets and highways, and at sports facilities. About one-quarter of injury episodes for all age groups resulted from leisure activities.

Recent Trends in Injury Mortality and Morbidity

Overall injury death rates declined slightly during the 1985–2004 period, with some variation by intent of injury.

Death rates from unintentional injury and suicide were relatively stable throughout the period; both were slightly lower in 2004 than in 1985. Homicide rates, by contrast, fluctuated more during the period, peaking in the early 1990s and then declining. The decline has leveled off in recent years.

Injury mortality trends vary considerably by mechanism of injury; some causes are on the rise, whereas others have declined and stabilized.

A notable trend over the past two decades is the dramatic growth in poisoning deaths; fatal poisoning rates doubled from 1985–2004. More recently, death rates from falls have also started to increase rapidly.

By contrast, motor vehicle traffic death rates declined from the mid-1980s to the mid-1990s before stabilizing. In a potentially related trend, the proportion of fatally injured drivers who were legally intoxicated decreased from one-half in 1982 to one-third in 2004, a decline of 37%. Firearm death rates increased from the mid-1980s to the mid-1990s, then declined steeply before leveling off in recent years.

Injury morbidity rates have demonstrated declining trends among all age groups except the elderly.

Hospital discharge rates for injury decreased for all age groups except for persons 75 years of age and over. These older adults also had much higher rates of hospitalization for injury than persons in other age groups throughout the 1988–2005 period. Rates for adults 65–74 years of age decreased less rapidly than the rates for younger age groups.

Data Sources

This chartbook presents data primarily from the Centers for Disease Control and Prevention's National Center for Health Statistics, including the National Vital Statistics System, the National Hospital Discharge Survey, the National Hospital Ambulatory Medical Care Survey, and the National Health Interview Survey. Other data sources include the National Highway Traffic Safety Administration's Fatality and Analysis Reporting System and the Bureau of Labor Statistics' Census of Fatal Occupational Injuries. In addition, many of the participants in the International Collaborative Effort on Injury Statistics provided international mortality data.

Introduction

Injuries caused 1 out of 14 deaths in the United States in 2004 (1), including 3 out of 4 deaths among adolescents and young adults. In 2005, one in nine people in the United States sought medical attention for an injury (2). Injury death and disability that occurred in 2000 are estimated to cost $80 billion in lifetime medical care treatment costs for physical injuries and another $326 billion in lifetime lost productivity, totaling more than $400 billion for the combined economic burden of medical treatment and lost productivity (3).

In order for injury prevention to be effective, both the kind of injury sustained as well as what caused the injury to occur must be known; that is, did a fractured arm result from a fall from playground equipment or a fall from a bicycle? Prevention has been particularly successful in reducing the traffic-related death toll in the past 40 years. Through a combination of surveillance, legislation, regulation, enforcement, and behavior change programs, a substantial decrease of about 70% in the rate of motor vehicle deaths per 100 million miles traveled occurred during the latter half of the 20th century (4). From the early 1990s through the end of that decade, the age-adjusted firearm death rate declined an average of 6% per year, a total decline of 33%. Those years of rapid declines are often attributed to a multitude of prevention measures that cross the fields of public health, criminal justice, and economics (5–7). Public attention to motor vehicles and firearms both mobilized and enhanced prevention efforts.

Objectives

The data presented in this book focus on three areas: 1) how fatal and nonfatal injury rates vary by age, 2) the importance of knowing the mechanism of injury for prevention purposes, and 3) the comparisons of injuries across demographic groups and health care settings using standard data categorization tools that include the injury diagnosis and external cause matrices. This information should provide practitioners and policymakers with insights into prevention and facilitate comparisons to state-level data. All data shown in this chartbook are national in scope.

The data in this chartbook can serve as a benchmark for states and other locales that desire comparable national data on injury. In addition, the frameworks for presenting the data in the following figures are important standard tools that can foster comparability of data.

Describing injuries

In this chartbook, an attempt has been made to highlight the most important aspects of injury in the United States. Multiple approaches using many data sources and classification tools have been used to address different aspects of the injury burden.

Injuries are described by two dimensions: the external cause (e.g., car crash) and the diagnosis (e.g., fracture). Each dimension has two axes—the external cause is categorized by the mechanism (e.g., firearm) and the intent (e.g., homicide), and the diagnosis is categorized by the nature of the injury (e.g., open wound) and the body region of the injury (e.g., chest).

In order to design effective prevention programs to reduce injuries or to lessen their severity, one must know the mechanism that caused the injury. Common examples of mechanisms include motor vehicles, firearms, and falls. The intent describes whether the mechanism was one of the following:

- Unintentional or accidental (see inset: "Accident Crash, Event, or Incident?").
- Suicide (if fatal) or a self-inflicted event with intent to harm oneself (if nonfatal).

- Homicide (if fatal) or assault (if nonfatal).
- Undetermined intent.
- Legal intervention or operations of war that occurred in the United States.

The development of two sets of matrices has standardized the presentation of injury data. One set is for external causes of injury, and the other set is for injury diagnoses. The set of external cause of injury matrices cross tabulate mechanism of injury by intent of injury, with the cells of the matrices being the individual *International Classification of Diseases* (ICD) codes for the intent and mechanism. Two external cause matrices are for fatal injuries and are based on the two most recent revisions of the ICD: ICD–9 (effective in the United States from 1979–1998) and ICD–10 (effective in the United States since 1999). The ICD–9 external cause of injury codes were referred to as E codes, but with the introduction of ICD–10 and its alphanumeric code structure, the external cause of injury codes begin with V, W, X and Y, and the term E codes could therefore be misleading and should be avoided. The third external cause matrix is based on the clinical modification of ICD–9 (known as ICD–9–CM) and is used for classifying nonfatal injury codes (8,9).

The second set of matrices is based on the cross tabulation of ICD diagnosis codes for the nature of the injury (e.g., fracture) by the body region of the injury (e.g., hip). The Barell Injury Diagnosis Matrix was developed for morbidity data and is based on ICD–9–CM codes from Chapter XIX (10). With the growing attention to injury diagnoses listed on death certificates (referred to as multiple causes of death), another matrix was developed for ICD–10 diagnosis S and T codes. This matrix is referred to as the Injury Mortality Diagnosis Matrix (11). Each of the five matrices is shown in Appendix Tables I–V.

A serious shortcoming of injury data in the United States is the paucity of state-level data on the external causes of nonfatal injuries. Because no financial incentive exists for states to collect the information and because there is a lack of understanding of how this information could be used to develop programs to prevent injuries, only 26 states and the District of Columbia have a mandate to require the routine collection of external cause codes in their hospital discharge data sets (12). Two national groups are working to expand the number of states that collect the data and to improve the quality of the data collected—the Public Health Data Standards Consortium (13) and the Workgroup of External Cause Codes for Injury, facilitated by the Council of State and Territorial Epidemiologists (14).

Data sources

This chartbook compiles data from national surveys and the vital statistics system to aid policymakers, researchers, and the general public in understanding and making policy decisions regarding programs aimed at preventing injury death and morbidity. The data are primarily from the National Center for Health Statistics (NCHS) and include the National Vital Statistics System (NVSS), National Hospital Discharge Survey (NHDS), National Hospital Ambulatory Medical Care Survey (NHAMCS), National Ambulatory Medical Care Survey (NAMCS), and the National Health Interview Survey (NHIS). Data were also obtained from the National Highway Traffic Safety Administration's (NHTSA) Fatality and Analysis Reporting System (FARS) as well as the Bureau of Labor Statistics' Census of Fatal Occupational Injuries (CFOI). Participants in the International Collaborative Effort (ICE) on Injury Statistics provided international injury mortality data.

Counting injuries

Injury deaths are annual counts of persons who died for whom the death certificate listed an external cause as the underlying cause of death. Injury deaths are described by both the external cause and the multiple causes or injury diagnoses that caused or contributed

to readily locate figures related to a specific risk, measure, or data source. Figures are available on the Web for use in presentations.

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to the death. Injury hospitalization estimates are based on a national survey of hospital discharges of persons whose first-listed diagnosis was an injury as defined by the Barell Injury Diagnosis Matrix (10). Emergency department (ED) utilization for injury is estimated by the annual number of initial visits for an injury to the ED for which the first-listed diagnosis was an injury or for which there was a valid first-listed external cause of injury (15). Episodes of injury are national estimates as reported in household interviews.

This chartbook does not include nonfatal, nonmedically attended injuries because these injuries are not captured in the medical records or population based surveys which are the source of most NCHS data. These, for the most part, are not serious injuries. As an example, a child who falls and sustains a bruised knee may be cared for at home by the parents; this injury is not captured in this chartbook.

The incidence of injuries (i.e., number of new cases of injury) occurring in the United States cannot be readily estimated from existing national data sources for several reasons. First, the same injury can appear multiple times in a single data system. As an example, an injured person may have multiple health care encounters for one injury. Each encounter would be recorded separately in different data systems without the ability to unduplicate them. An injured person may be seen in the ED and followed up as an outpatient either in a clinic or a private physician office. Each of these contacts would be recorded in the respective system but would not be identified as the same injury.

Race and Hispanic origin

Injury rates vary among racial and ethnic groups, and these differences are shown in several charts using mortality data from death certificates and injury episode data from NHIS. Charts showing mortality data by race and Hispanic origin must be interpreted with caution. First, the number of people in the population that is used as the denominator in the calculation of the death rate comes from U.S. Census Bureau estimates, and the characteristics of those who died used in the numerator comes from either the funeral director or the medical examiner. To the extent that race and Hispanic origin are reported inconsistently by the different data sources for the numerator and the denominator, rates will be biased. Second, bias in estimates by race and ethnicity also results from undercounts of specific populations in the census; this results in overestimation of death rates. See Appendix II, Race and Hispanic origin, for more information. The differences in health status by race and Hispanic origin documented in this chartbook may be explained by factors including socioeconomic status, health practices, psychosocial stress and resources, environmental exposures, discrimination, and access to health care (16). Because these factors are not routinely collected, analyses of injury mortality and morbidity by race and ethnicity may lead to incorrect inferences. With specific regard to data on violence, estimates may be misinterpreted because attention could have been directed to the victim rather than to the offender, for whom sufficient data are not routinely collected. The National Violent Death Reporting System (17) promises to improve this particular problem by collecting data, when possible, on the perpetrator as well as the victim.

Chartbook organization

This chartbook is organized by data source beginning with injury mortality and followed by hospitalization data, ED data, and household interview level data. The first two figures and the final two figures combine data across data sources. Each figure has accompanying text and one or more data tables which can be found in a separate section before the appendices. Many of the data tables contain more detail than what is shown in the figure as well as detailed figure notes. Appendix I includes a detailed description of each of the data sources used, and Appendix II contains definitions of terms and descriptions of methods used.

The Web version of this chartbook has an index

Accident: Crash, Incident, or Event?

Finding the appropriate language to define or categorize the circumstances leading to injuries has posed problems for many in the injury prevention and control field because *accident* may imply that an event could not be prevented (1,2,3). In fact, the first definition for accident in *Webster's New Collegiate Dictionary* is "an event occurring by chance or arising from unknown causes," but the second definition is "an unexpected happening causing loss or injury which is not due to any fault or misconduct on the part of the person injured" (4). In this chartbook, the word accident is used synonymously with *unintentional*; it does not mean not preventable.

The word accident is used in the *International Classification of Diseases and Related Health Problems*, which is the international standard for defining causes of mortality and morbidity (5). Accidents are the fifth leading cause of death according to the official ranking by the National Center for Health Statistics (NCHS); however, in deference to often preferred terminology, NCHS has added "unintentional injuries" as a parenthetical phrase following "accidents" in its standard mortality publications (6).

The National Highway Traffic Safety Administration (NHTSA) prefers to use the term *crash* instead of accident. A crash is defined by NHTSA as "an event that produces injury and/or property damage, involves a motor vehicle in transport, and occurs on a trafficway or while the vehicle is still in motion after running off the trafficway" (7). However, not all traffic-related events are crashes; some are rollovers or noncollisions (e.g., being thrown from a vehicle). The Bureau of Labor Statistics uses the word *incident*, as in "highway and nonhighway incidents" (8). In the *International Classification of External Causes of Injury*, the term *accidental* is an accepted synonym for unintentional (9).

The word accident is often used in this chartbook as a noun following "motor vehicle traffic" when other phrases are too cumbersome (e.g., motor vehicle traffic crashes and noncollisions), confusing (e.g., motor vehicle traffic incidents), or not quite appropriate (e.g., motor vehicle traffic related injuries).

References:

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7. National Center for Statistics and Analysis. Fatality analysis reporting system (FARS) Web-based encyclopedia. Washington, DC: National Highway Traffic Safety Administration. Available from: http://www-fars.nhtsa.dot.gov/Help/Terms.aspx.
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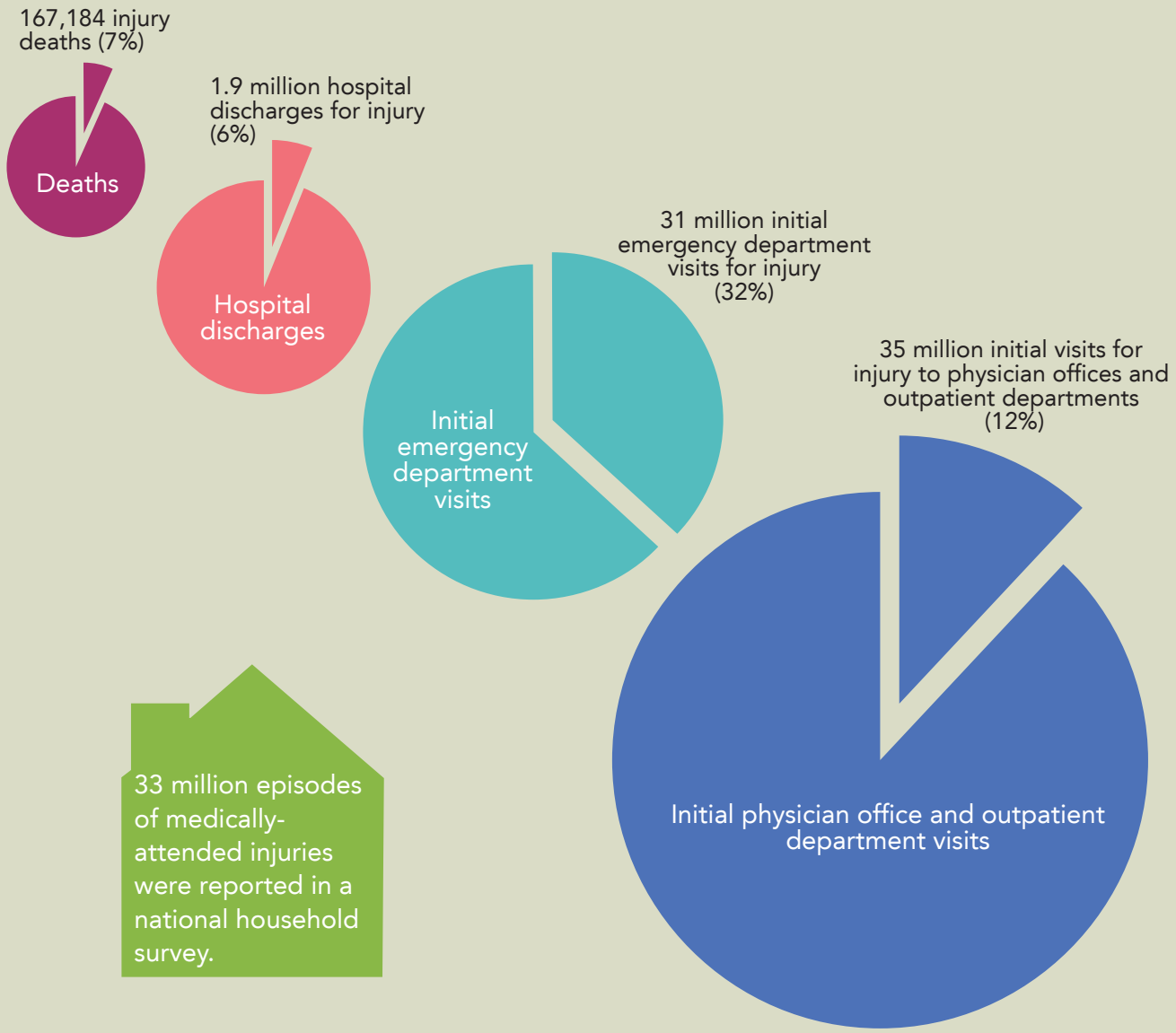
9. ICECI Coordination and Maintenance Group. International Classification of External Causes of Injuries (ICECI) version 1.2. Consumer Safety Institute, Amsterdam, and AIHW National Injury Surveillance Unit, Adelaide. 2004.

Injury Chartbook

Figure 1. Injuries in the United States, 2004



NOTE: The injuries reported by data sources are not mutually exclusive.

SOURCES: CDC/NCHS, National Vital Statistics System, National Hospital Discharge Survey, National Hospital Ambulatory Care Survey, National Ambulatory Medical Care Survey, National Health Interview Survey.

Injuries in the United States

Injury deaths and hospitalizations are a relatively small proportion of all deaths and hospitalizations in the United States, whereas emergency department (ED) visits for injuries account for a relatively high proportion of all ED visits. However, both pose a high cost to the health care system.

Two methods for assessing the public health impact of injuries are counting the annual numbers of fatal and nonfatal injuries observed in different health care settings and measuring the economic burden posed by injuries.

- In 2004, 167,184 people died as a result of injury, and injury deaths accounted for 7% of all deaths (Figure 1). Furthermore, 1.9 million hospitalizations were the result of an injury, accounting for 6% of all hospital discharges, and 31 million initial visits for injuries were made to the ED, accounting for 32% of all initial emergency department visits. Another 35 million initial visits for injuries were made to physician offices and hospital outpatient departments, which was 12% of all such visits in 2004.

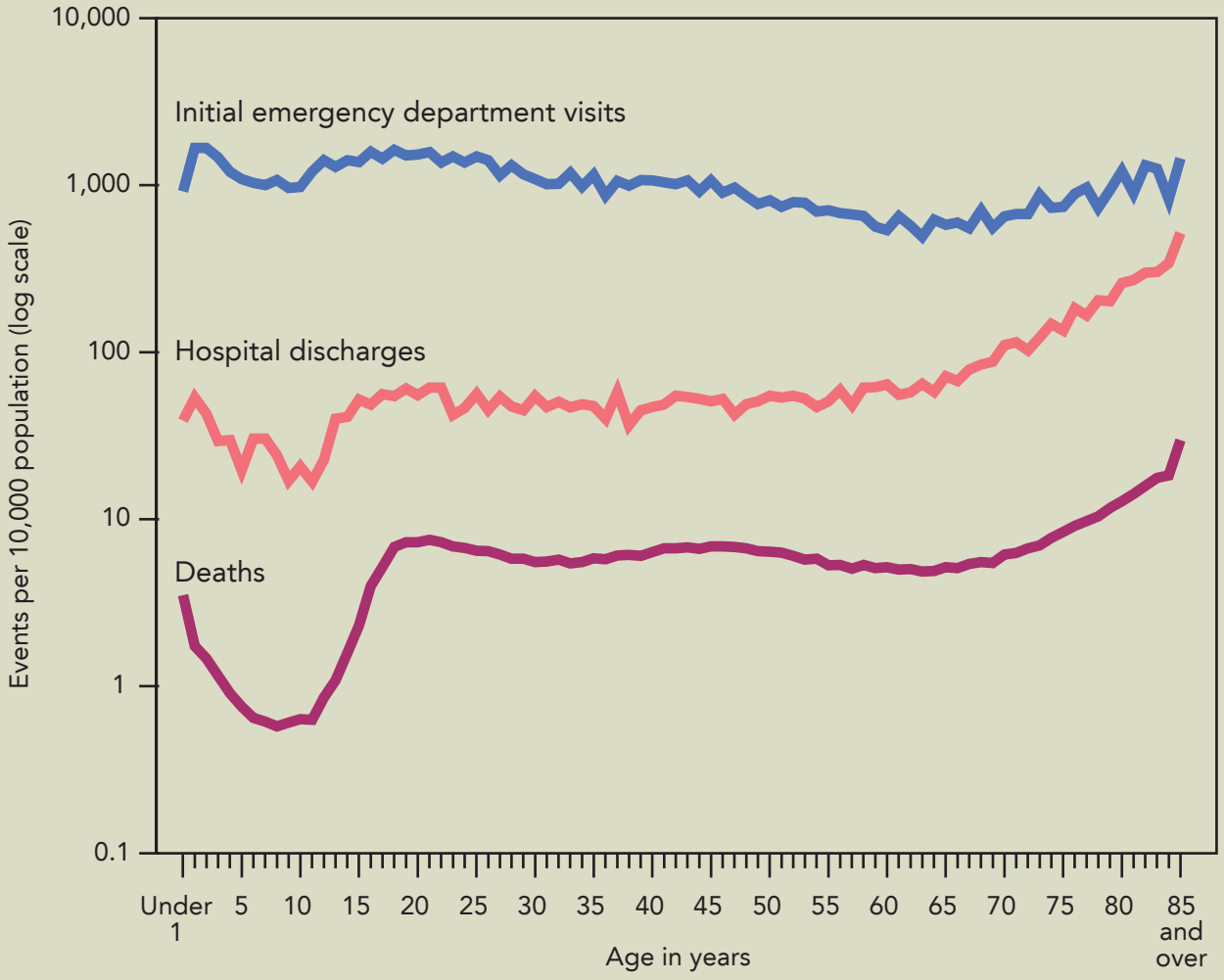
- One measure of the economic burden of injury is the lifetime medical treatment costs for injuries. Injuries that occurred in 2000 are estimated to cost the U.S. health care system $1.1 billion for fatal injuries, $33.7 billion for injury hospitalizations, $31.8 billion for injury emergency department visits, and $13.6 billion for other outpatient visits (1). These costs reflect treatment for physical injuries only; cost estimates for associated mental health and psychological treatment are not available.

- Lifetime productivity costs are another dimension of economic burden. In 2000, estimated lifetime productivity costs were $142 billion for injury deaths, $58.7 billion for injury hospitalizations, and $125.3 billion for nonhospitalized injuries. Lifetime productivity costs include lost wages and benefits as well as costs that are due to an inability to perform household activities for an injury sustained in 2000 (1).

Reference:

1. Finkelstein EA, Corso PS, Miller TR. The Incidence and Economic Burden of Injuries in the United States. New York (NY): Oxford University Press. 2006.

Figure 2. Injury rates by age: United States, 2003–2005



NOTE: See Appendix II, Hospital discharge for injury; Initial injury emergency department visit; Logarithmic scale.

SOURCES: CDC/NCHS, National Vital Statistics System, National Hospital Discharge Survey, and National Hospital Ambulatory Medical Care Survey.

Injury Mortality and Morbidity: Age

Elderly people, especially those aged 85 years and over, are at the greatest risk for both fatal and nonfatal injuries. Injury death rates, hospital discharge rates, and emergency department (ED) visit rates have secondary peaks among older teenagers and young adults.

Knowing how injury mortality and morbidity vary by age is useful in designing prevention programs and in allocating medical resources for treatment.

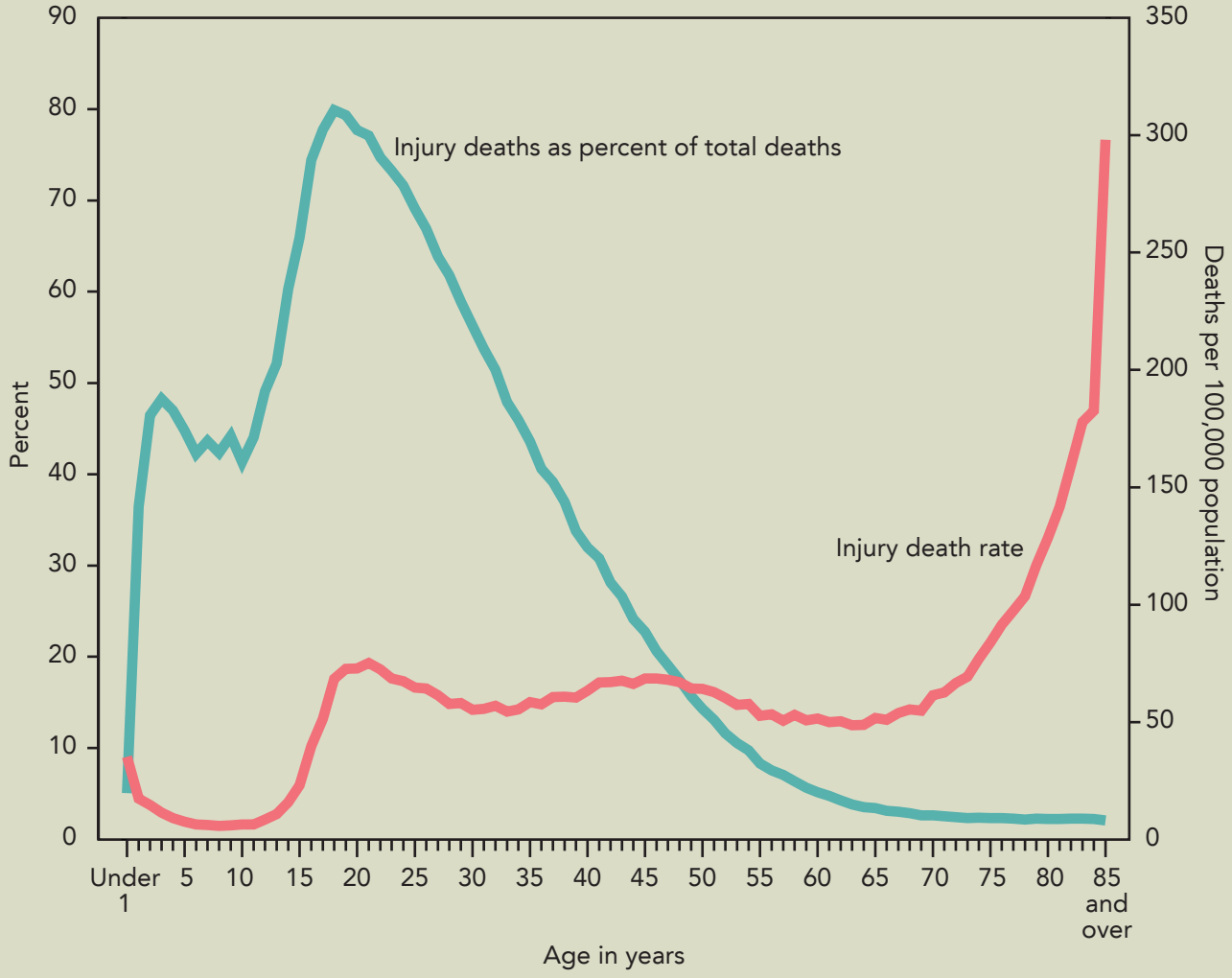
- Injury death rates by age were U-shaped for young people under 16 years of age, with the death rate for infants (3.5 deaths per 10,000 population) in 2003–2004 as high as the rate for 16-year-old teenagers (4.0 deaths per 10,000 population) (Figure 2). Children 6–11 years of age had the lowest injury death rate at 0.6 deaths per 10,000 population.

- For young adults 18–24 years of age as well as older adults 41–48 years of age, death rates averaged 6.9 deaths per 10,000 population in 2003–2004. Beginning with older people in their mid-70s, death rates increased steadily, and for those 85 years of age and over, the injury death rate reached 29.8 deaths per 10,000 population.

- Similar to injury mortality, injury hospital discharge rates were U-shaped for those younger than 16 years of age, with the discharge rate for those at 1 year of age (53.6 discharges per 10,000 population) in 2004–2005 similar to that for 15-year-old teenagers. Injury discharge rates fluctuated from 37 to 65 discharges per 10,000 population for those 16–64 years of age; the rates then increased for person 85 years of age and over, reaching just over 500 discharges per 10,000 population.

- Initial injury-related ED visit rates were U shaped for young people in 2004–2005, with peaks at about 1,400 to 1,700 visits per 10,000 population for young children 1–3 years of age, and rates ranging from 1,300 to 1,600 visits per 10,000 population for young people 12–28 years of age. ED visit rates declined through the middle adult years before rising once more for those at the oldest ages.

Figure 3. Injury deaths as a percentage of total deaths and injury death rates, by age: United States, 2003–2004



SOURCE: CDC/NCHS, National Vital Statistics System.

Injury Mortality and Age

In 2003–2004, injuries accounted for more than one-half of all deaths among teens and young adults; injury death rates were higher for people 75 years of age and over, but injury as a percentage of all deaths was low.

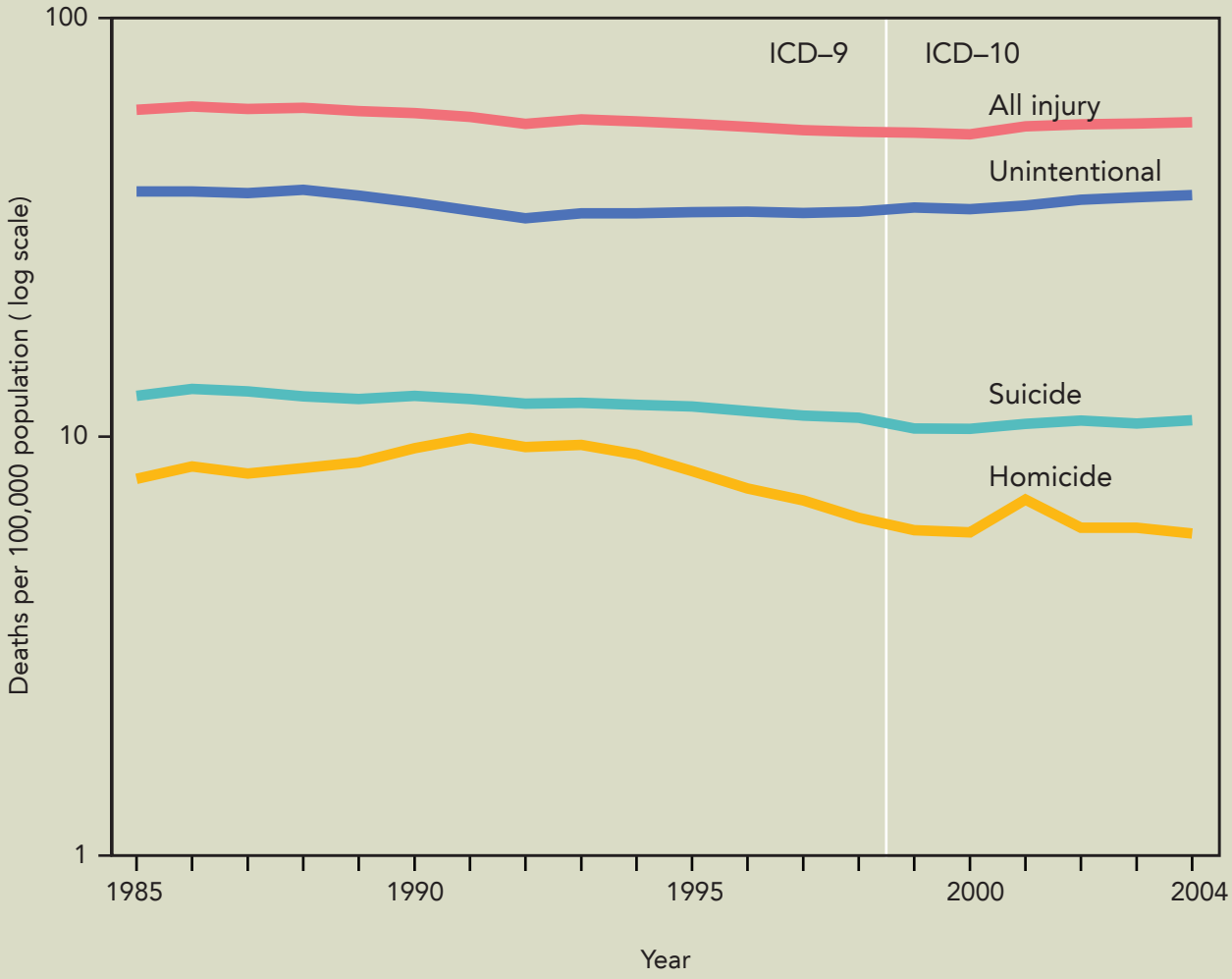
To understand the impact of injury on society, injury deaths by age should be examined both as a percentage of all deaths and as the number of deaths per 100,000 population. The former is an indicator of the relative burden of injury on particular ages, whereas the latter is considered an indicator of relative frequency of injury in the population.

- Injury deaths accounted for more than one-half of all deaths among people 13–32 years of age (Figure 3). Four out of five deaths among people 18 and 19 years of age were due to injury. For people over 60 years of age, less than 5% of deaths were due to injury.

- Age-specific injury death rates peak first among teenagers and young adults and then again among older people 65 years of age and over. Injury death rates for all ages are lowest for children 6–11 years of age (6 deaths per 100,000 population) and highest (at close to 300 deaths per 100,000 population) for people 85 years of age and over.

- At every age, injury death rates for males are higher than those for females. The mortality sex ratio (the ratio of death rates for males to females) is highest, at 4 to 1, for young people in their twenties and is lowest for children under 11 years of age (less than 2 to 1). For all other ages, injury death rates for males are two to three times the rates for females (see data table for Figure 3).

Figure 4. Age-adjusted injury death rates by intent and year: United States, 1985–2004



NOTES: ICD is International Classification of Diseases. Rates are age adjusted to the 2000 U.S. standard population. See Appendix II, Age adjustment; Logarithmic scale.

SOURCE: CDC/NCHS, National Vital Statistics System.

Mortality Trends: Intent of Injury

Injury death rates changed little from 1985 through 2004; homicide rates decreased more than unintentional injury or suicide rates, although declines for all three rates appear to have leveled off in recent years.

Examining injury death rates by intent over a period of years can aid in determining where prevention efforts have helped reduce injury-related deaths and where prevention efforts need to be directed (1). Intent indicates whether the act that caused the injury, according to the medical examiner or coroner, was purposeful or not.

- The age-adjusted injury death rate in 2004, 56.4 deaths per 100,000 population, was 6.5% lower than the rate in 1985. The rate declined an average of 1.1% per year from 1985 through 1999, and then it increased at an average annual rate of 1.3% through 2004[1] (Figure 4).

- Trends in the age-adjusted unintentional injury death rate were somewhat more episodic than the overall injury death rate pattern. The rate declined 3.5% annually from 1988 through 1992 and increased at an annual rate of 1.9% from 2000 through 2004. Overall, the rate was relatively unchanged, from 38.6 deaths per 100,000 population in 1985 to 37.7 deaths per 100,000 in 2004.

- The age-adjusted suicide rate was 12.7% lower in 2004 than in 1985. From 1985 through 1995, the rate fell by an average of 0.8% per year, followed immediately by a period of more rapid decline of 2.4% per year through 2000. The age-adjusted rate did not change through 2004.

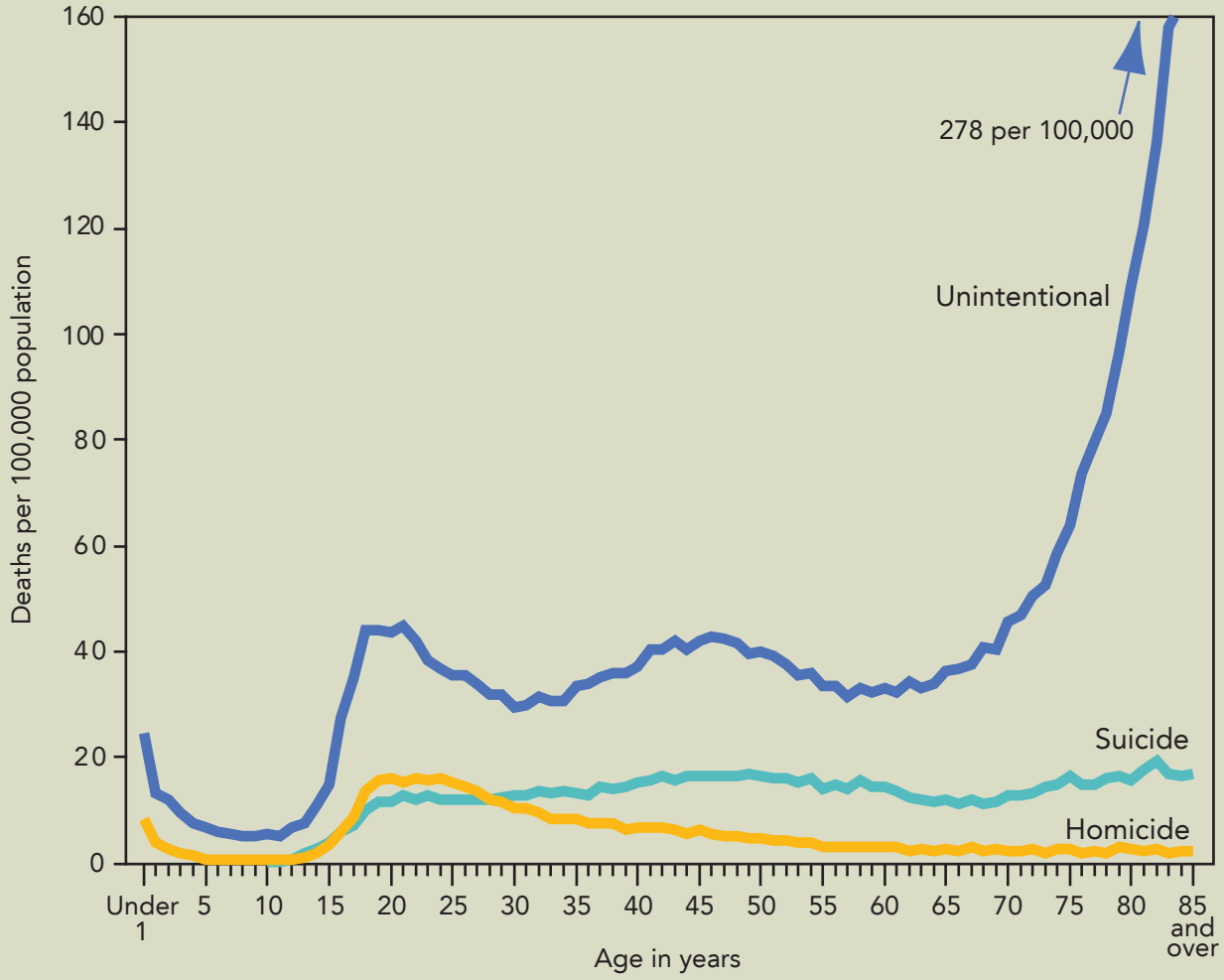
- Trends in age-adjusted homicide rates differ from trends in unintentional injury and suicide. The homicide rate in 2004 was 25.9% lower than that in 1985. From 1985 through 1993, the homicide rate increased an average of 2.7% per year, followed by rapid annual declines of 8.3% through 1998. Homicide rates during the last several years have not changed significantly. Preliminary 2005 data from NCHS show that the homicide rate remained unchanged (2). However, preliminary data for 2006 released by the Department of Justice show that the homicide trend has reversed and that rates are increasing (3).

References:

1. Fingerhut LA, Warner M. Injury Chartbook. Health, United States, 1996–1997. Hyattsville, MD: National Center for Health Statistics. 1997.
2. National Center for Health Statistics. Deaths: Preliminary Data for 2005 [online]. Available from: http://www.cdc.gov/nchs/products/pubs/pubd/hestats/prelimdeaths05/prelimdeaths05.htm. 2007.
3. Federal Bureau of Investigation. Crime in the United States, 2006. Washington DC: U.S. Department of Justice. Available from: http://www.fbi.gov/ucr/prelim06/t3datadec.htm. 2007.

[1] All average annual percent changes were calculated by fitting regression lines to the data points. See Appendix II, Average percent change and test of trends.

Figure 5-1. Injury death rates by intent and age: United States, 2003–2004



NOTES: Suicide rates are not calculated for children under 5 years of age. Rates are not shown when based on fewer than 20 deaths; they are considered unreliable. See Appendix II, Relative standard error.

SOURCE: CDC/NCHS, National Vital Statistics System.

Mortality: Intent of Injury and Age

At every age, the majority of injury deaths are unintentional. For people 28 years of age and over, suicide rates consistently exceed homicide rates.

In 2003–2004, unintentional injuries for all ages combined accounted for 67% of all injury deaths and were the 5th leading cause of death in the United States, suicides accounted for 19% of all injury deaths and were the 11th leading cause of death, and homicides accounted for 11% of all injury deaths and were the 15th leading cause of death. Injury deaths of undetermined intent accounted for 3% of all injury deaths, and deaths from legal intervention or operations of war accounted for less than 1% of all injury deaths (Figure 5-1).

- Unintentional injury deaths account for more injury deaths at each age than any other category of intent (Figure 5-2).

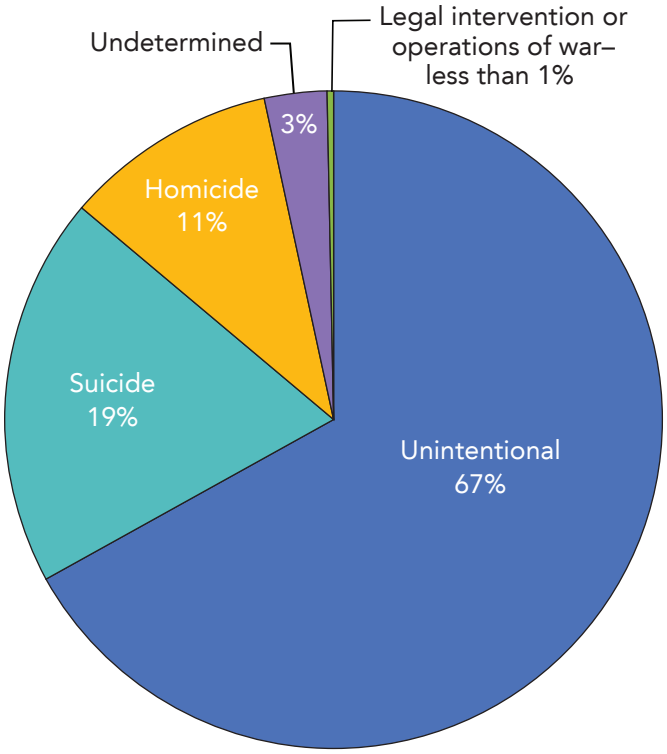
- For all ages combined, there continue to be nearly twice the number of suicides than homicides. Suicide is the second leading intent of injury death for people 28 years of age and over. For people 17–27 years of age, homicide rates exceed suicide rates. For people 28 years of age and over, the suicide rate stays relatively constant, whereas the homicide rate decreases as age increases. For children 11–12 years of age and for teenagers 15–16 years of age, suicide and homicide rates are similar; suicide rates exceed homicide rates for teens 13–14 years of age.[1]

- Unintentional injury death rates peak for young people 18–22 years of age, attain a secondary peak for adults in their 40s, and then rise continually with age among adults 70 years of age and over. Unintentional injury death rates are higher for males than for females; the disparity is greatest among people 19–36 years of age, with rates for males averaging three times those for females (see data table for Figure 5-2).

- Suicide rates first peak for adults in their 40s and early 50s and then begin to rise once more at 75 years of age. Suicide rates for young men 20–25 years of age are about six times those for women, with greater sex disparities for the oldest ages.

- Homicide rates are highest for young people 18–27 years of age. Homicide rates for males exceed those for females. For those at the oldest ages, rates for men and women are similar. The sex disparities are highest for young people 16–29 years of age, where rates for males are five to seven times those for females.

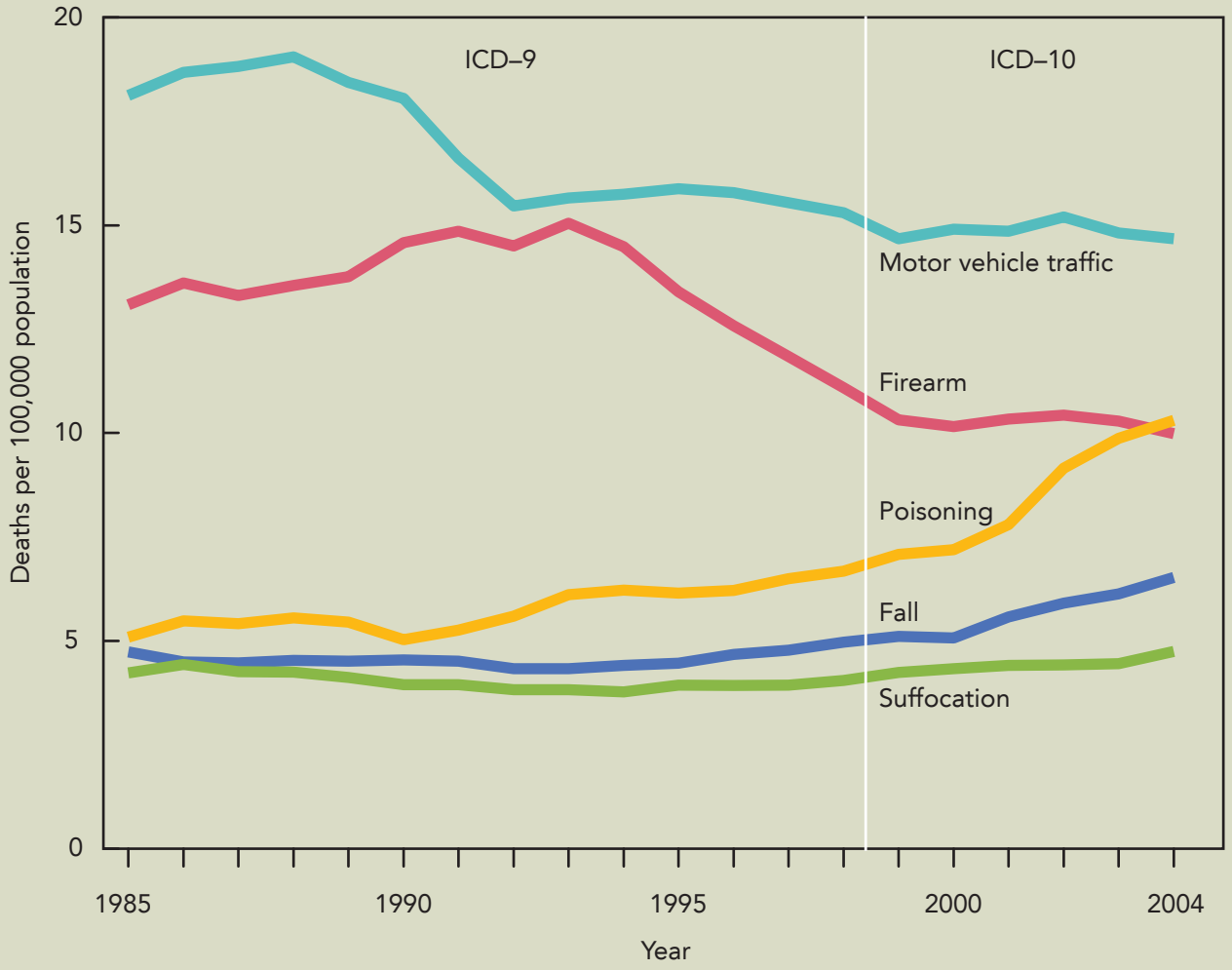
Figure 5-2. Distribution of injury deaths by intent: United States, 2003–2004



SOURCE: CDC/NCHS, National Vital Statistics System.

[1] Suicides are not reported for children younger than 5 years of age, and in some jurisdictions, medical examiners do not consider them for children up through 9 years.

Figure 6. Age-adjusted injury death rates for leading mechanisms of injury, by year: United States, 1985–2004



NOTES: ICD is International Classification of Diseases. Rates are age adjusted to the 2000 U.S. standard population. See Appendix II, Age adjustment.

SOURCE: CDC/NCHS, National Vital Statistics System.

Mortality Trends: Mechanism of Injury

Poisoning death rates are rising rapidly, even as motor vehicle traffic death rates remain flat and firearm death rates have leveled off after a rapid decline in the 1990s.

Trends[1] in the leading mechanisms of injury can provide insights concerning the impact of prevention efforts. The injury death rate trends in this chart are shown for the five leading mechanisms of injury death for all ages.

- Motor vehicle traffic accidents remain the leading cause of injury death in the United States (Figure 6). The age-adjusted motor vehicle traffic death rate in 2004 (14.7 per 100,000 population) was 19% lower than the rate in 1985. Most of the decline occurred from 1988 through 1992, when the rate decreased an average of 4.7% per year. Since then, the rate has fluctuated, with only modest declines of less than 1% per year.

- The age-adjusted death rate for poisoning, the second leading mechanism of injury death as of 2004, doubled from 1985 through 2004 to 10.3 deaths per 100,000 population. Most of the increase occurred from 1998 through 2004, when the rate increased an average of 8.2% per year. The 2004 rate is higher than the rate has been at any time since 1968, when data were first categorized by mechanism regardless of intent.[2]

- From 1985 through 2004, the age-adjusted firearm death rate declined 24% to 10.0 deaths per 100,000 population. From 1985 through 1993, the rate increased an average of 1.9% per year, followed by a steep decline of 6.1% per year from 1993 through 1999. Since then, the rate has remained flat.

- From 1985 through 2004, the age-adjusted death rate for falls increased 38%, reaching 6.5 deaths per 100,000 population in 2004. Most of the increase occurred after 1993. During the years 1985–2004, the proportion of older adults living with chronic diseases in the population increased. People in this group are at greater risk for falling and are less likely than younger people to survive the injuries resulting from a fall (2).

- Compared with the other leading mechanisms of injury, suffocation rates have two distinct periods of change from 1985 through 2004; from 1985 through 1994, the rate declined by an average of 1.7% per year, followed by a period of increase of 2.1% per year through 2004.

- Drowning rates declined at an average rate of 2.6% per year from 1985 through 2004 (see data table for Figure 6).

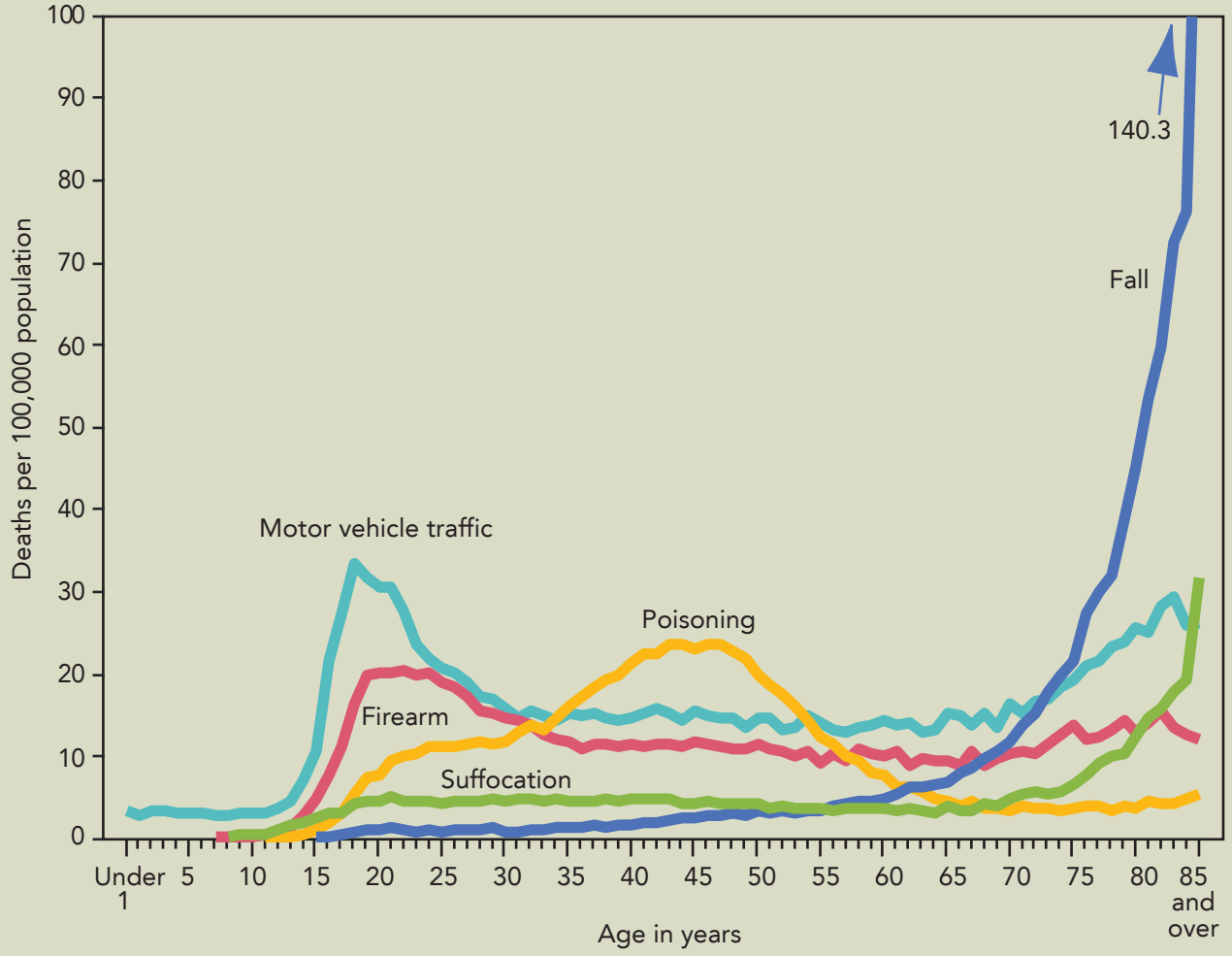
[1] All average annual percent changes were calculated by fitting regression lines to the data points. See Appendix II, Average percent change and test of trends.

[2] An unknown portion of the rate increase from 2001 to 2002 resulted from a change in follow-up procedures put in place by NCHS to speed up the process by which certificates are amended from "pending investigation" to a known cause (1).

References:

1. Miniño AM, Anderson RN, Fingerhut LA, Boudreault MA, Warner M. Deaths: Injuries, 2002. National vital statistics reports; vol 54 no 10. Hyattsville, MD: National Center for Health Statistics. 2006.
2. CDC. Fatalities and injuries from falls among older adults—United States, 1993–2003 and 2001–2005. MMWR 55(45):1221–4. 2006.

Figure 7. Injury death rates for leading mechanisms of injury, by age: United States, 2003–2004



NOTES: Death rates by single year of age are unreliable for many mechanisms of injury among children and young teens under 15 years of age. In this figure, firearm death rates are shown for those aged 7 years and over, poisoning death rates are shown for those aged 11 years and over, fall death rates are shown for those aged 15 years and over, and suffocation death rates are shown for those aged 8 years and over. See data table for specific rates that are reliable although not shown in this figure, and see Figure 7-1 for the leading mechanisms and age-specific rates for children under 5 years of age.

SOURCE: CDC/NCHS, National Vital Statistics System.

Mortality: Mechanism of Injury and Age

Injury death rates for the leading mechanisms of injury—motor vehicles, firearms, poisonings, falls, and suffocation—vary by age.

Determining the mechanism by which a death occurred is the first step toward preventing injury deaths because the mechanism provides information on the behaviors and events that preceded the injury death (1,2).

- Motor vehicle traffic fatalities were the leading mechanism of injury death for people 3–33 years of age as well as people 54–72 years of age. Motor vehicle traffic death rates were highest for young people 18–21 years of age with a somewhat lower secondary peak for older adults (Figure 7).

- Poisonings were the leading mechanism of injury death for people 34–53 years of age, and falls were the leading mechanism for older adults 73 years of age and over. Firearms were not the leading mechanism of injury death at any single year of age despite being the third leading mechanism of injury death across all ages combined.

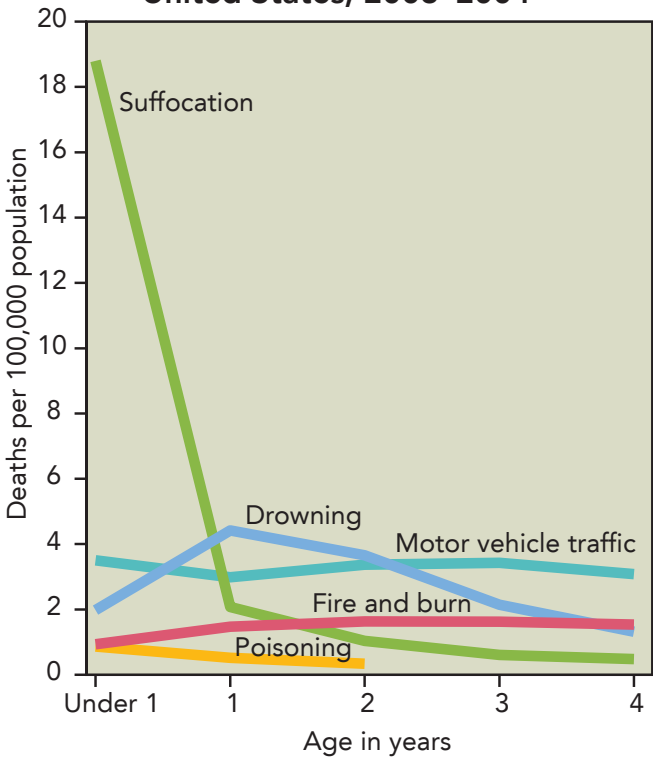
- Suffocation was the leading mechanism of injury death for infants less than 1 year of age, and drowning was the leading mechanism for 1-year-olds. For 2-year-olds, drowning and motor vehicle traffic fatalities were the two leading causes of death, followed by fires and burns. For children 3 and 4 years of age, the second leading mechanism of injury death following motor vehicles was drowning, and the third was fires and burns (Figure 7-1).

- The death rates for males were higher than those for females for every mechanism of injury death at nearly every single year of age (see data table for Figure 7).

References:

1. Christoffel T, Gallagher S. (2006). Injury Prevention and Public Health. 2d ed. Sudbury, MA: Jones and Bartlett Press. 2006.
2. Bonnie R, Fulco C, et al., editors. Reducing the Burden of Injury. Washington, DC: National Academies Press. 1999.

Figure 7-1. Injury death rates for leading mechanisms of injury, for infants and children under 5 years of age: United States, 2003–2004



NOTES: Poisoning death rates are unreliable for children 3 and 4 years of age. See Appendix II, Relative Standard Error.

SOURCE: CDC/NCHS, National Vital Statistics System.

Figure 8-1. Percent distribution of injury deaths, by body region of injury: United States, 2003–2004

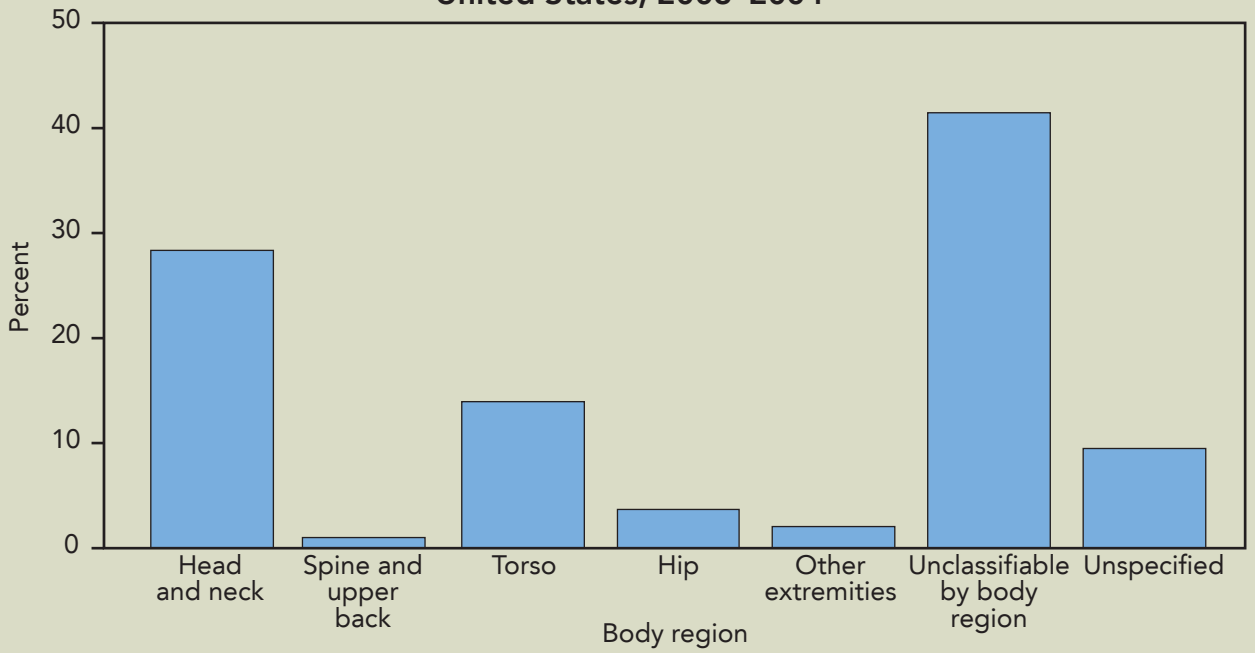
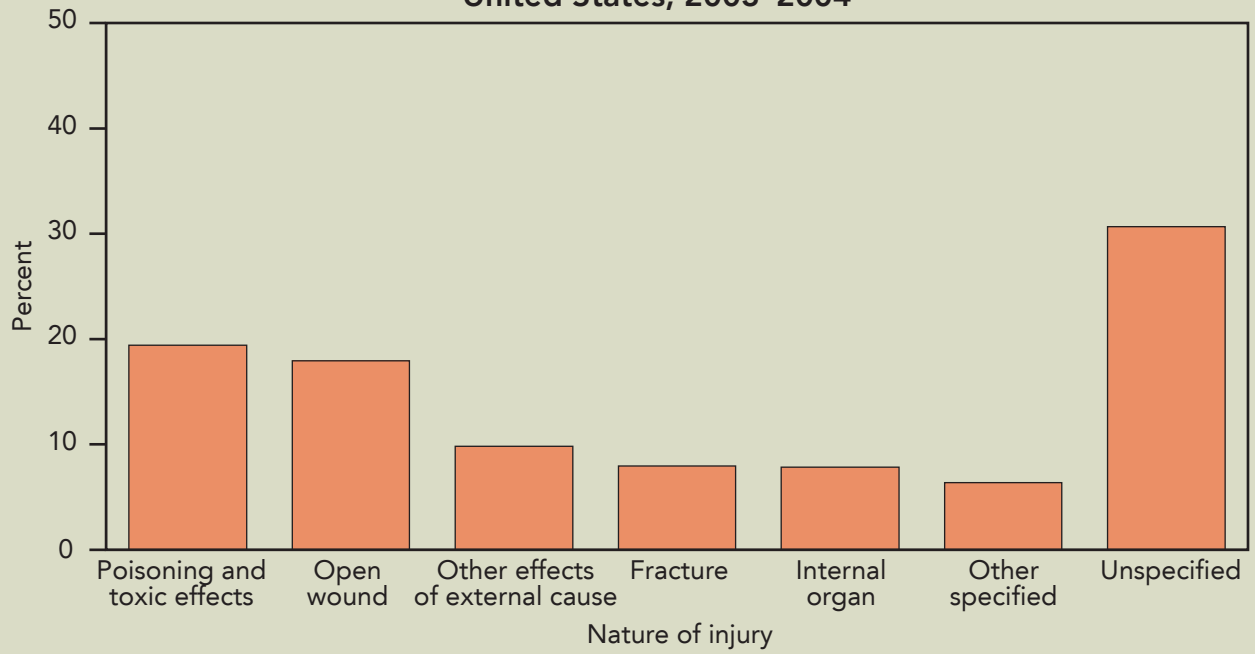


Figure 8-2. Percent distribution of injury deaths, by nature of injury: United States, 2003–2004



NOTE: See Table 8 on page 94 for the total mention of injury deaths for each cell of the Injury Mortality Dianosis Matrix.

SOURCE: CDC/NCHS, National Vital Statistics System.

Mortality: Body Region and Nature of Injury

The body region specified most often for injury deaths was the head and neck. Poisoning and open wounds were among the leading specified nature of injury categories.

In general, injury diagnoses (i.e., body region and nature of injury) from death certificates have not been given as much attention in the public health literature as have external causes of injury. Diagnosis is important for understanding the patterns of injury and for preventing injury. The Injury Mortality Diagnosis (IMD) Matrix is useful for this purpose and is described in Appendix II.

- In 2003–2004, injury deaths had an average of 1.5 injury conditions mentioned on the death certificate.[1]

- Over one-quarter of injury deaths involved injuries to the head and neck. Nine out of ten head and neck injuries were classified as traumatic brain injuries (see data table for Figure 8-1).

- About 4 in 10 injuries were not to a specific body region but involved either multiple body regions (12%) or were system-wide, affecting the entire body system (30%). Over 80% of injuries involving multiple body regions had no information about the nature of the injury and were categorized as unspecified injury. About one-half of those injuries involving the entire body system had a poison substance mentioned (Figure 8-1).

- Poisonings (including toxic effects) and open wounds each accounted for almost one-fifth of diagnoses in injury deaths (Figure 8-2). Narcotics and psychodysleptics were involved in about one-third of the poisonings, and psychotropic drugs and carbon monoxide were each involved in 7% of the poisonings.

- The category "other effects of external causes" includes primarily asphyxiation (60%) and drowning (30%).

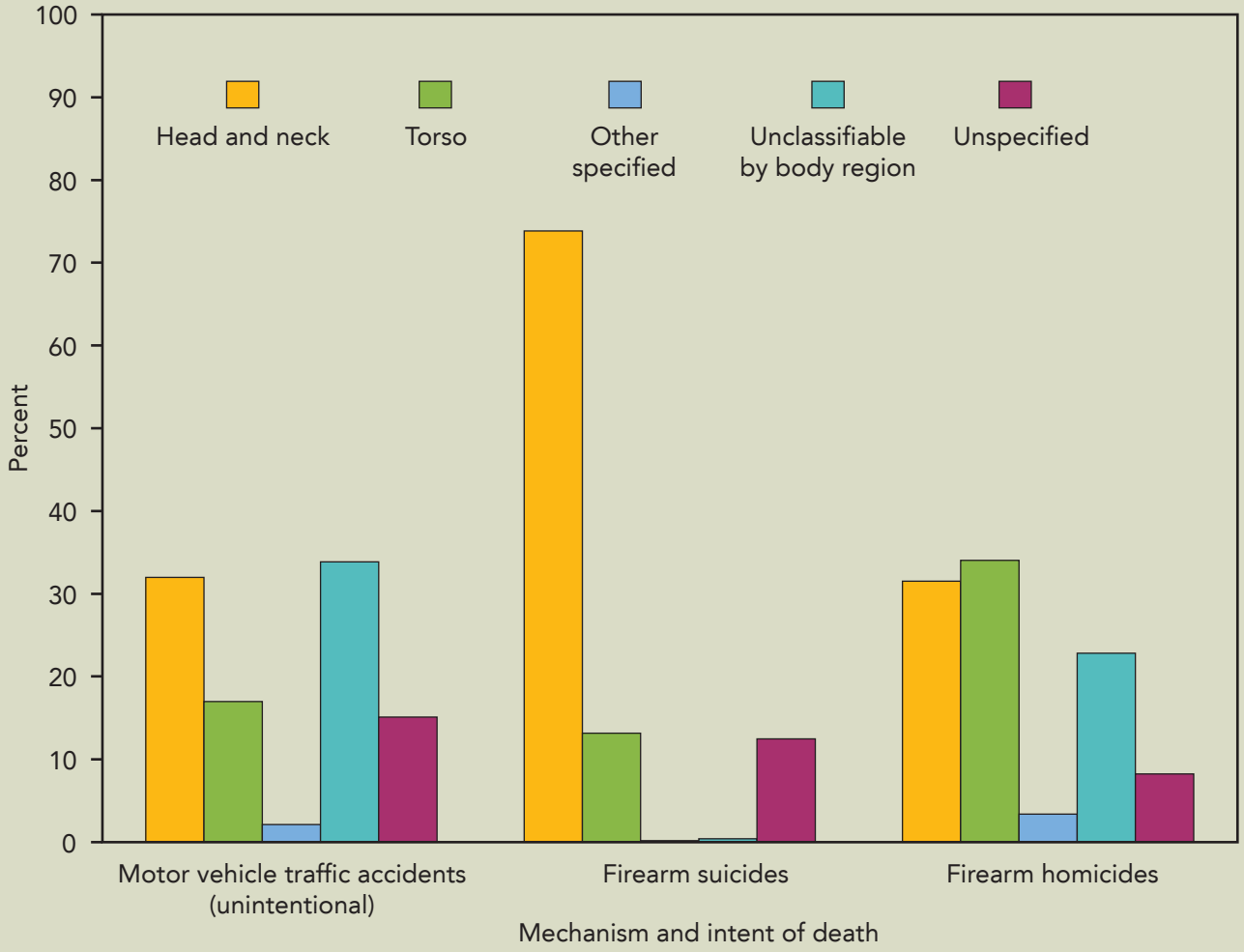
- About one-half of the open wounds were in the head and neck regions, and one-fifth were in the torso (see Table 8 on page 94).

- About one-half of the fractures leading to mortality were hip fractures. In total, about 4% of all injury deaths involved a hip fracture and nearly all were among adults 65 years of age and over (Table 8).

- The nature of injury was unspecified in about 30% of the deaths. However, the majority of injuries with an unspecified nature did have a specific body region mentioned. Of injuries with an unspecified nature of injury, over one-third were injuries to the head and neck, and one-third involved multiple body regions.

[1] Injury diagnosis data presented in Figures 8-1, 8-2, and 9 adjust for deaths mentioning more than one injury condition. See Appendix II, Multiple cause-of-death data and injury diagnoses.

Figure 9. Percent distribution of deaths by body region of injury, for motor vehicle traffic accidents, firearm suicides, and firearm homicides: United States, 2003–2004



SOURCE: CDC/NCHS, National Vital Statistics System.

Mortality: Mechanism and Body Region of Injury

Three-fourths of injuries from firearm suicides, compared with one-third of all injuries from firearm homicides and fatal motor vehicle traffic accidents, were injuries to the head and neck.

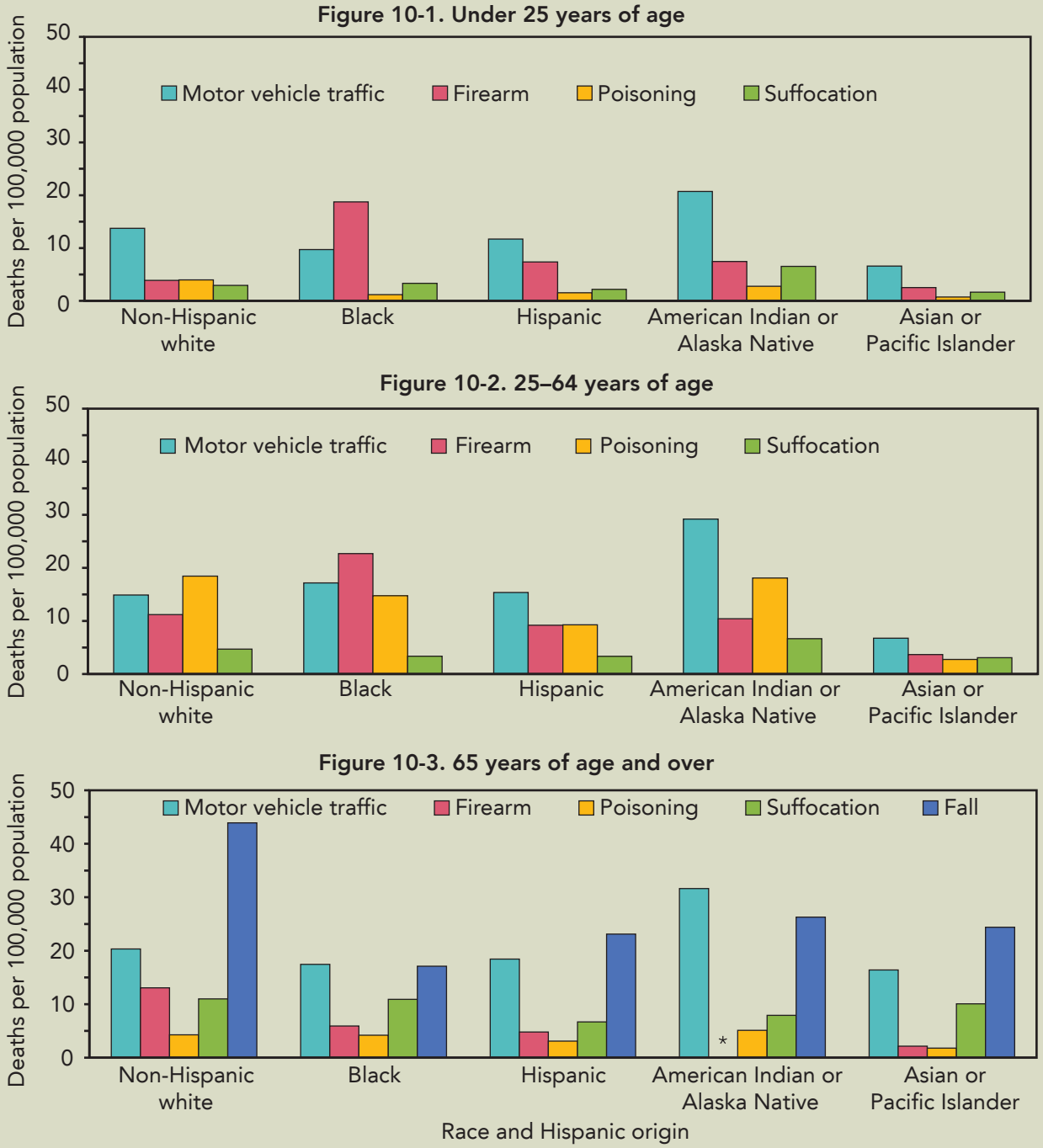
The body regions injured in motor vehicle traffic accidents, firearm homicides, and firearm suicides vary by mechanism and intent of injury.

- Injuries involving the head and neck and injuries that were not classifiable by body region each accounted for one-third of motor vehicle traffic-related fatal injuries (Figure 9). Many of the unclassifiable injuries were coded as multiple body regions.

- Firearm suicides were most likely to involve the head and neck, accounting for about three-fourths of the suicides, whereas firearm homicides were equally likely to involve either the head and neck or the torso, with each of these body regions accounting for about one-third of all fatal injuries.

- The majority of firearm suicides resulted from a single wound to the head (data not shown).

Figure 10. Injury death rates for leading mechanisms of injury, by race and Hispanic origin: United States, 2003–2004



NOTES: Race and Hispanic origin categories are not mutually exclusive. When an asterik (*) is shown in place of a bar, the rate is based on fewer than 20 deaths and is considered unreliable. See Appendix II, Relative standard error.

SOURCE: CDC/NCHS, National Vital Statistics System.

Mortality: Mechanism by Race, Hispanic Origin, and Age

For the population under the age of 65 years, the leading causes of injury death differ by race and Hispanic origin.

Cultural norms and practices are associated with race and Hispanic origin (or ethnicity); therefore, knowledge of how race and ethnicity relate to mechanism of injury death may help in addressing aspects of prevention programs. Race and ethnic disparities reflect factors including socioeconomic status, health practices, psychosocial stress and resources, environmental exposures, discrimination, and access to health care, all of which can influence levels of mortality (1). Inclusion of all of these factors would most likely alter the association between mechanism of death and race and Hispanic origin, but that is beyond the scope of this report. (See Appendix II, Race and Hispanic origin, for a discussion of issues regarding validity of race specific death rates.)

Under 25 years of age

- Among young people under 25 years of age, the American Indian or Alaska Native population had the highest injury death rate at 47.6 deaths per 100,000 population, followed by the young black population at a rate of 41.3 deaths per 100,000 population (see data table for Figure 10-1).

- Motor vehicle traffic accidents were the leading cause of injury death in this age group except for the black population, for whom firearms were the leading cause of injury death (Figure 10-1). Nearly 9 out of 10 of the firearm deaths among the young black population were homicides.

- Firearms were the second leading cause of death for each of the other race and ethnic groups, although for the non-Hispanic white population, the poisoning death rate was similar to the firearm death rate.

25–64 years of age

- Among adults 25–64 years of age, American Indian or Alaska Natives had the highest injury death rate at 86.4 deaths per 100,000 population, followed by the rate for the black population at 74.9 deaths per 100,000 population (see data table for Figure 10-2).

- For Hispanics, American Indian or Alaska Natives, and Asian or Pacific Islanders, motor vehicle traffic accidents were the leading cause of injury death (Figure 10-2). For the black population, firearms were the leading cause of injury death, and for the non-Hispanic white population, poisonings were the leading cause of injury death.

65 years of age and over

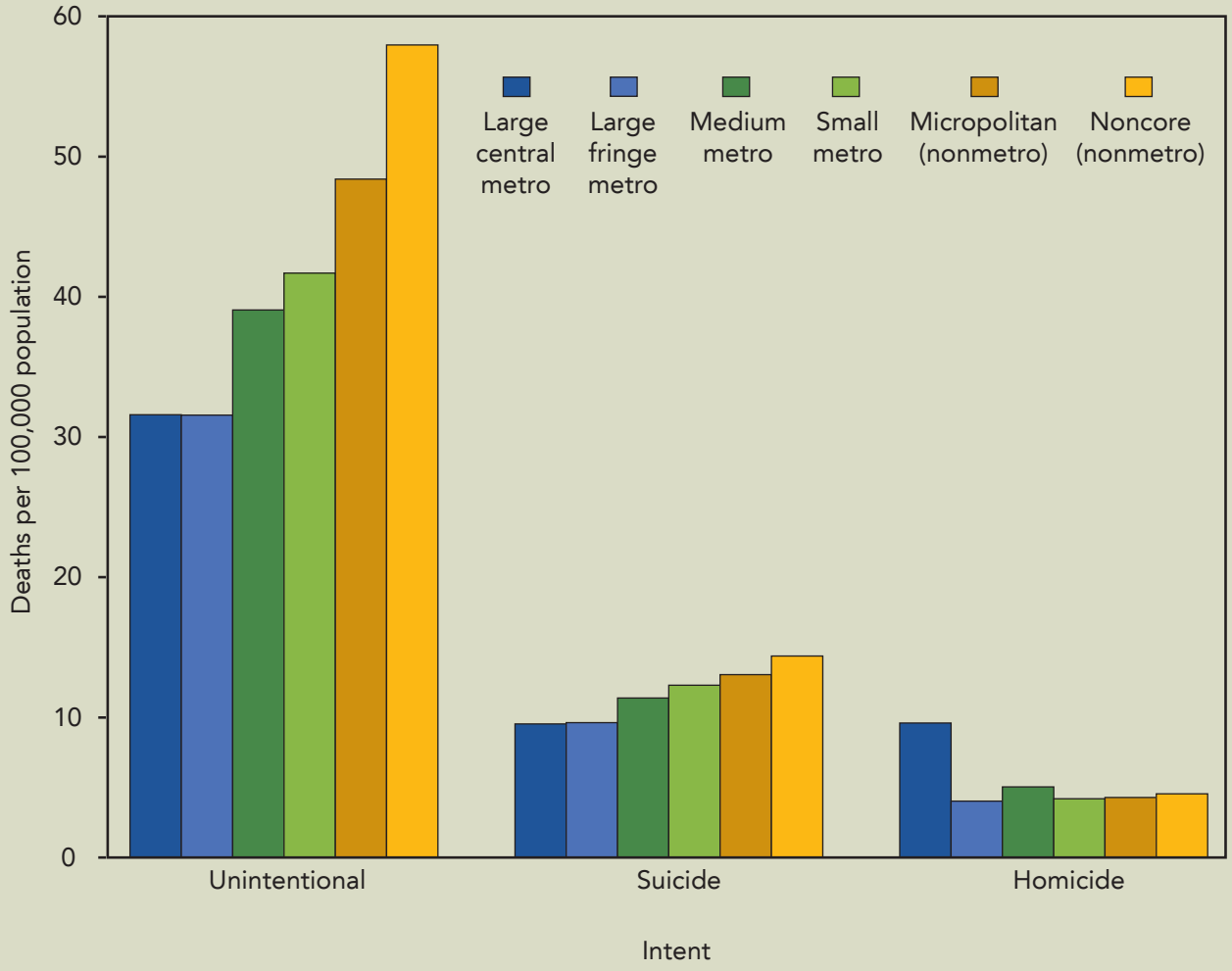
- Among older Americans, the injury death rate was highest for the non-Hispanic white population, at 120.8 deaths per 100,000 population, and the rate was lowest for both the Asian or Pacific Islander population and the Hispanic population, with both rates averaging about 70 deaths per 100,000 population (see data table for Figure 10-3).

- Falls and motor vehicle traffic accidents were the two leading causes of injury death for each of the race and ethnic groups (Figure 10-3). The death rate from falls was higher than the motor vehicle traffic death rate for the non-Hispanic white, Hispanic, and Asian or Pacific Islander populations, and the two rates were similar for the black population and the American Indian or Alaska Native population.

Reference:

1. Williams DR, Rucker TD. Understanding and addressing racial disparities in health care. Health Care Financ Rev 21(4):75–90. 2000.

Figure 11. Age-adjusted injury death rates by intent of injury and level of urbanization: United States, 2003–2004



NOTE: See Appendix II, Age adjustment; Urbanization.

SOURCE: CDC/NCHS, National Vital Statistics System, Compressed Mortality File.

Mortality: Intent and Mechanism of Injury and Level of Urbanization

Death rates from unintentional injuries and suicides are highest in the most rural counties, whereas homicide rates are highest in the most urban counties.

Injury death rates vary with the level of urbanization of the community (1,2). Communities at different levels of urbanization vary in demographic, environmental, economic, and social characteristics, factors which influence injury mortality rates. Additionally, rural communities generally have less access to health care than more urban communities, which may potentially result in less timely treatment of injuries (3).

- Unintentional injury death rates are similar for large central metro and large fringe metro counties, and these rates increase as a county becomes progressively more rural (Figure 11).

- Suicide rates, following the same pattern as unintentional injury death rates, also increase as a county becomes more rural.

- Homicide rates follow a different pattern. The average homicide rate in large central metro counties is significantly higher than rates in less urbanized counties.

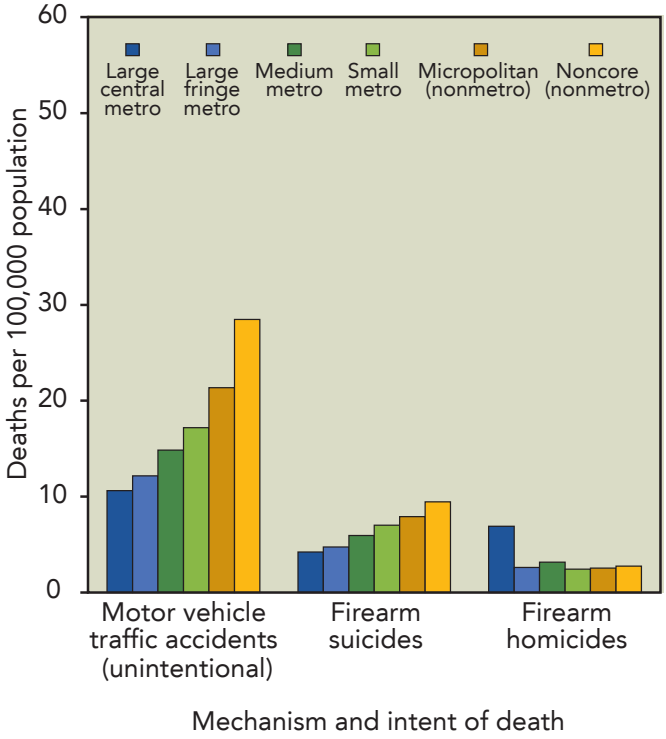
- The relationship between degree of urbanization and mechanism of injury must be understood in the context of intent. Motor vehicle traffic death rates, which are all classified as unintentional, follow the same general pattern of all unintentional injury death rates (Figure 11-1). That is, they increase as counties become more rural, as do firearm suicide rates. Large central metro areas, by contrast, have the highest average firearm homicide rate—more than twice the rate for any other level of urbanization.

- Motor vehicle traffic death rates ranged from 10.6 deaths per 100,000 population in the large central metro county group to 28.5 deaths per 100,000 population in the noncore, nonmetropolitan county group. The urbanization gradient for all other (not motor vehicle traffic) unintentional injuries was not nearly as steep, with rates ranging from 19 to 29 deaths per 100,000 population (data not shown).

References:

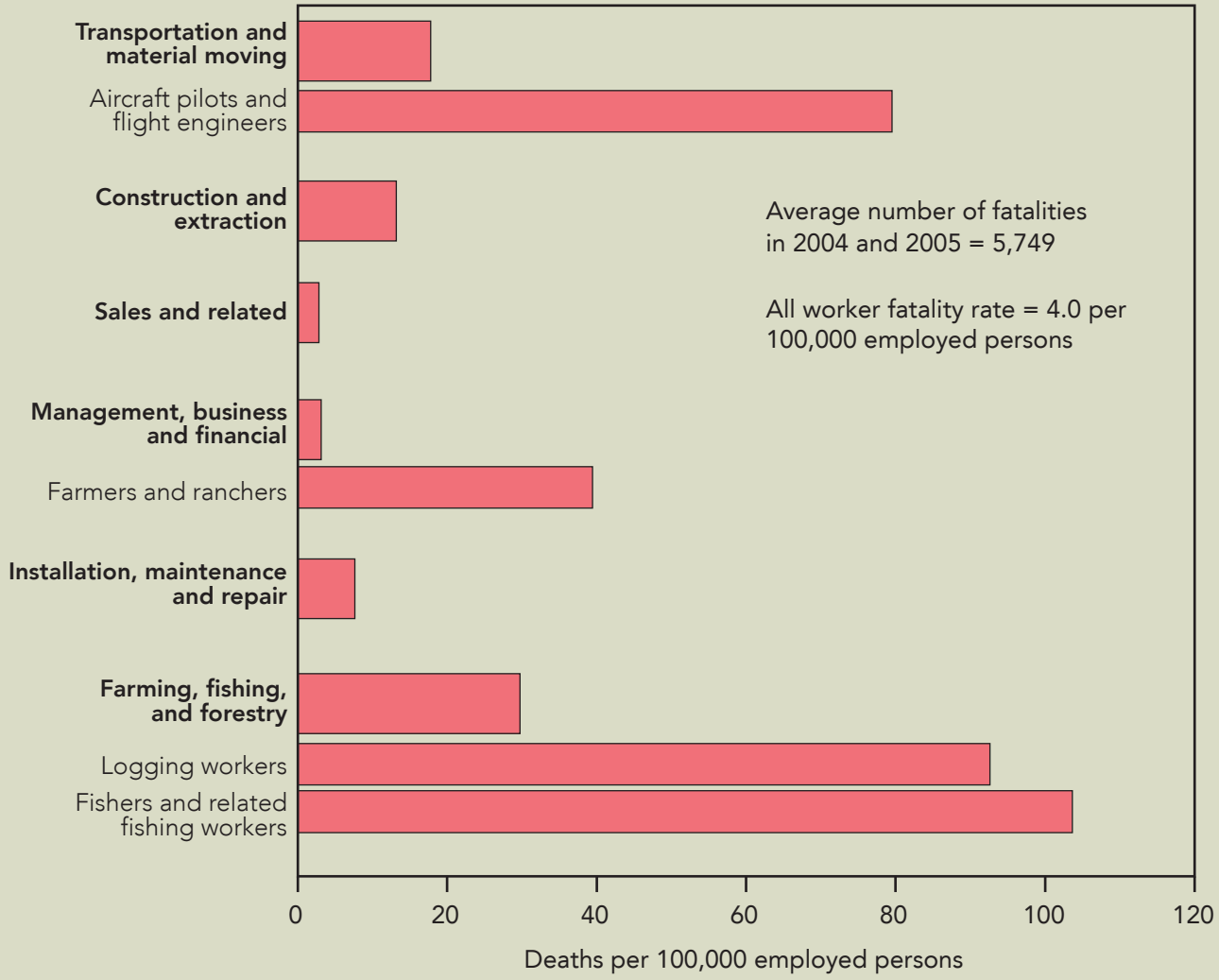
1. Eberhardt MS, Pamuk ER. The importance of place of residence: Examining health in rural and nonrural areas. Am J Public Health 94(10):1682–6. 2004.
2. Baker SP, O'Neill B, Ginsburg MJ, Li G. The Injury Fact Book. 2d ed. New York, NY: Oxford University Press. 1992.
3. Eberhardt MS, Ingram DD, Makuc DM, et al. Urban and Rural Health Chartbook. Health, United States, 2001. Hyattsville, MD: National Center for Health Statistics. 2001.

Figure 11-1. Age-adjusted injury death rates for motor vehicle traffic accidents, firearm suicides, and firearm homicides, by level of urbanization: United States, 2003–2004



SOURCE: CDC/NCHS, National Vital Statistics System, Compressed Mortality File.

Figure 12. Selected occupational injury death rates for employed persons 16 years of age and over, by occupational group: United States, 2004–2005



NOTES: Totals for major categories may include subcategories not shown separately. Categories not in bold are subsets of bolded categories above.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries.

Occupational Injury Mortality

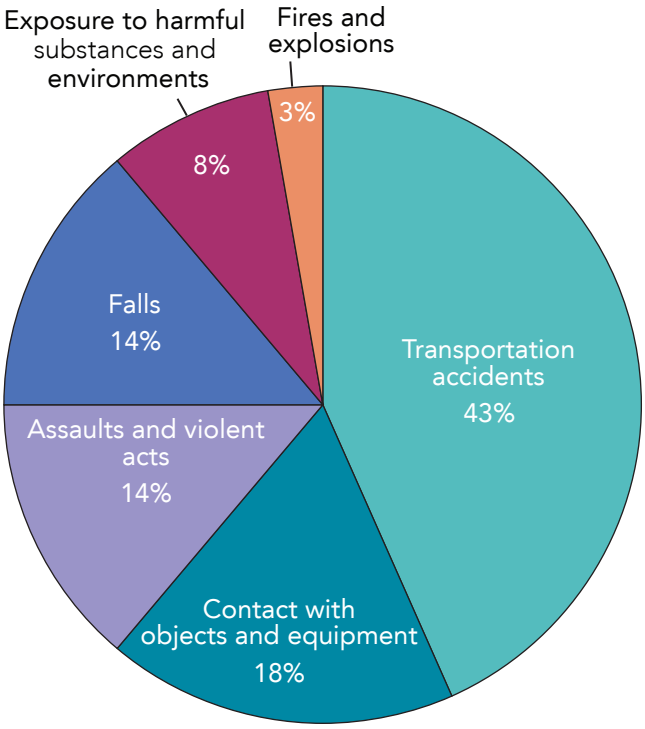
Farming, fishing, and forestry workers had the highest occupational injury fatality rates. However, transportation and material moving as well as construction and extraction occupations had the highest number of fatal work injuries.

Targeting injury prevention efforts in occupational groups with high fatality rates and with high numbers of fatalities can lead to a reduction of injuries in the workplace. Although the number of occupationally related fatalities is a small subset of overall injury fatalities, the injuries occur in a more controlled environment with a potentially better opportunity for targeted prevention programs.

- In 2004–2005, an average of 5,749 fatalities occurred at work, resulting in an occupational injury fatality rate of 4.0 deaths per 100,000 employed workers 16 years of age and over (see data table for Figure 12).[1]
- In 2004, approximately 4% of all injury deaths in the United States among people 16 years of age and over were work-related.
- Workplace deaths among people involved in transportation and material moving as well as construction and extraction occupations accounted for nearly one-half of the occupational injury fatalities (see data table for Figure 12).
- Farming, fishing, and forestry occupations, including loggers and fishers, had among the highest fatality rates of all occupations (Figure 12).
- Transportation accidents were the leading cause of death for occupational injuries, accounting for 43% of occupational injury fatalities in 2004–2005 (Figure 12-1).
- Contact with objects and equipment was the second leading cause of fatal occupational injury, accounting for 18% of the deaths, followed by assaults and other violent acts (including homicide and suicide), which accounted for 14% of the deaths. Falls also accounted for 14% of deaths.
- In 2004–2005, homicide accounted for 24% of fatal occupational injures for women, compared with 9% for men. The homicide rate, however, for employed men was four times that for employed women (data not shown in figure or table).

[1] An average of 23 occupational fatalities per year occurred for those younger than 16 years of age.

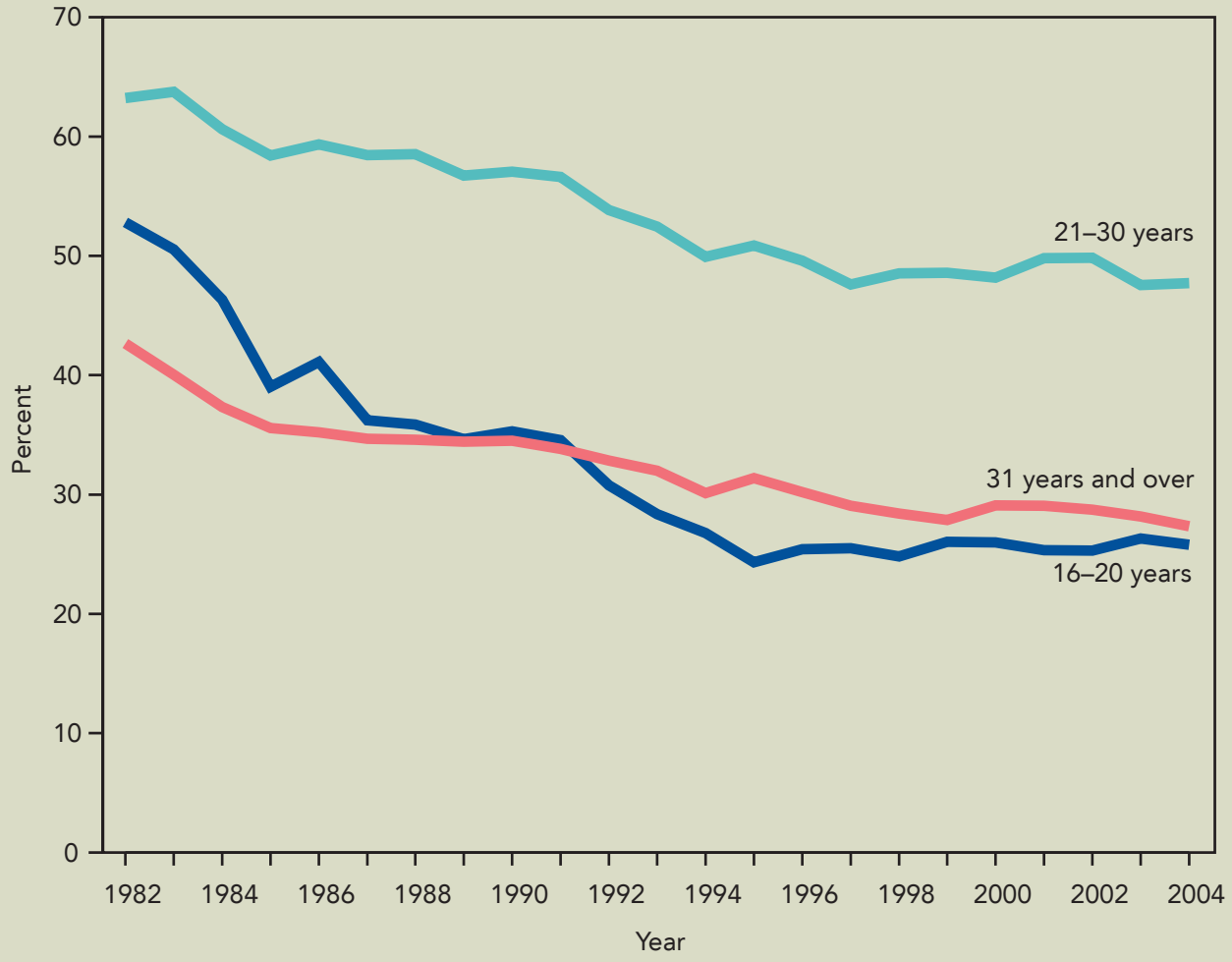
Figure 12-1. Percent distribution of occupational injury fatalities, by type of event or exposure: United States, 2004–2005



NOTE: Categories are based on the 1992 Bureau of Labor Statistics Occupational Injury and Illness Classification Manual.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries.

Figure 13. Percentage of fatally injured drivers of passenger vehicles with blood alcohol concentration of 0.08 percent or greater, by driver age: United States, 1982–2004



NOTE: See Appendix II, Blood alcohol concentration.

SOURCE: Insurance Institute for Highway Safety, based on data from the National Highway Traffic Safety Administration, Fatality Analysis Reporting System.

Motor Vehicle Traffic Deaths: Driver Mortality and Alcohol

The proportion of fatally injured drivers who were legally intoxicated has declined for all age groups since 1982; most of the decline occurred by the mid-1990s.

The decrease in motor vehicle traffic death rates over the past several decades has been attributed to several factors, including changes in vehicle and highway design as well as changes in driver and passenger behaviors (1). Alcohol-impaired driving is one of the major risk behaviors for motor vehicle traffic accidents. The proportion of fatally injured drivers who were legally intoxicated is used as an indicator to track trends in impaired driving (see Appendix II, Alcohol-impaired driving).

- For all ages combined, legally intoxicated drivers (those with a blood alcohol concentration equal to or greater than 0.08) accounted for one-half of all fatally injured drivers in 1982, compared with one-third in 2004, a decrease of 38%. Significant average annual percent declines occurred between 1982 and 1997, including a 5.2% decrease per year from 1982 through 1985, a 1.4% decrease per year from 1985 through 1990, and a 3.2% decrease per year from 1990 through 1997; since 1997, little progress has been made (2). Declines in the percentage of legally intoxicated drivers who were involved in fatal crashes were greater for young people 16–20 years of age (51% decline) than for those 21–30 years of age (25% decline) or 30 years of age and over (36% decline) (Figure 13).

- For young people 16–20 years of age, the decline in the percentage of fatally injured drivers who were legally intoxicated had occurred by 1995. Significant declines occurred during two periods, one from 1982 through 1987 (7.3% annual decline) and the other from 1991 through 1995 (7.6% annual decline). Most recently, from 1995 through 2004, there has been no change.

- In 2004, nearly one-half of fatally injured drivers 21–30 years of age were legally intoxicated and about one-quarter of fatally injured drivers 16–20 years of age and 30 years of age and over were legally intoxicated.

References:

1. CDC. Achievements in public health, 1900–1999 motor-vehicle safety: A 20th century public health achievement. MMWR 48(18):369–74. 1999.
2. Insurance Institute for Highway Safety. IIHS fatality facts 2005, alcohol. Available from: http://www.iihs.org/research/fatality_facts/alcohol.html. 2007.

Figure 14-1. Injury death rates for teens and young adults 15–24 years of age, by leading mechanisms of injury: Selected countries, most recent data years available

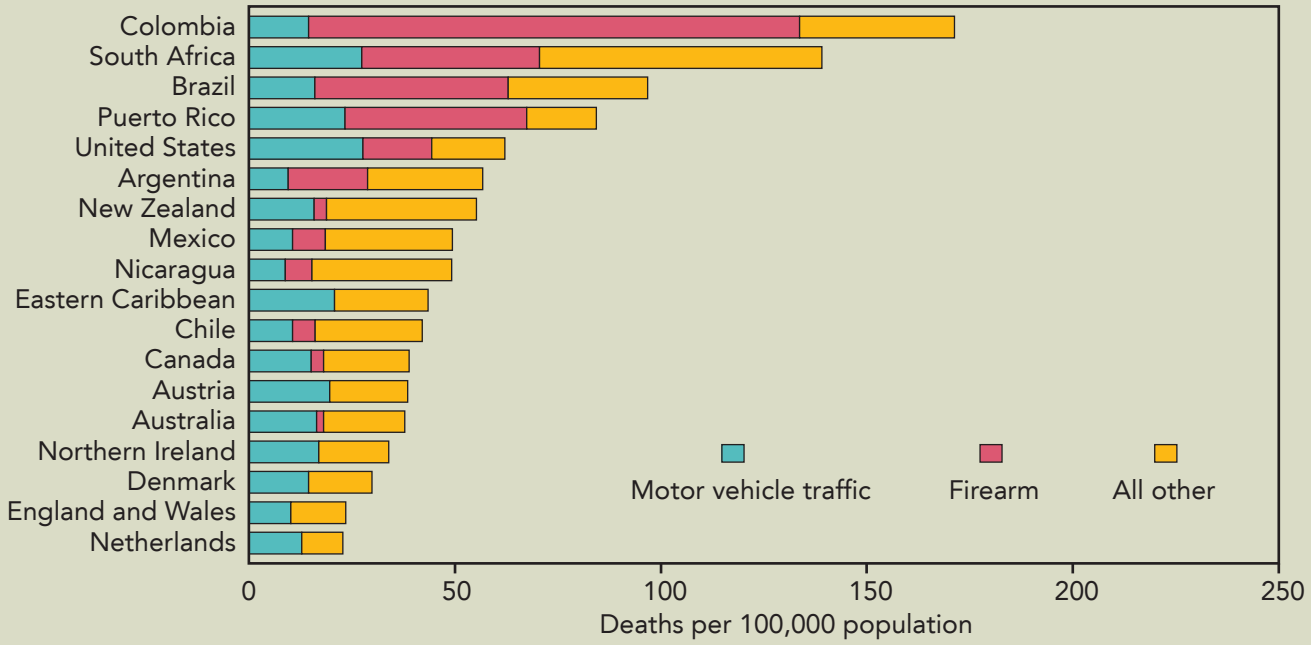
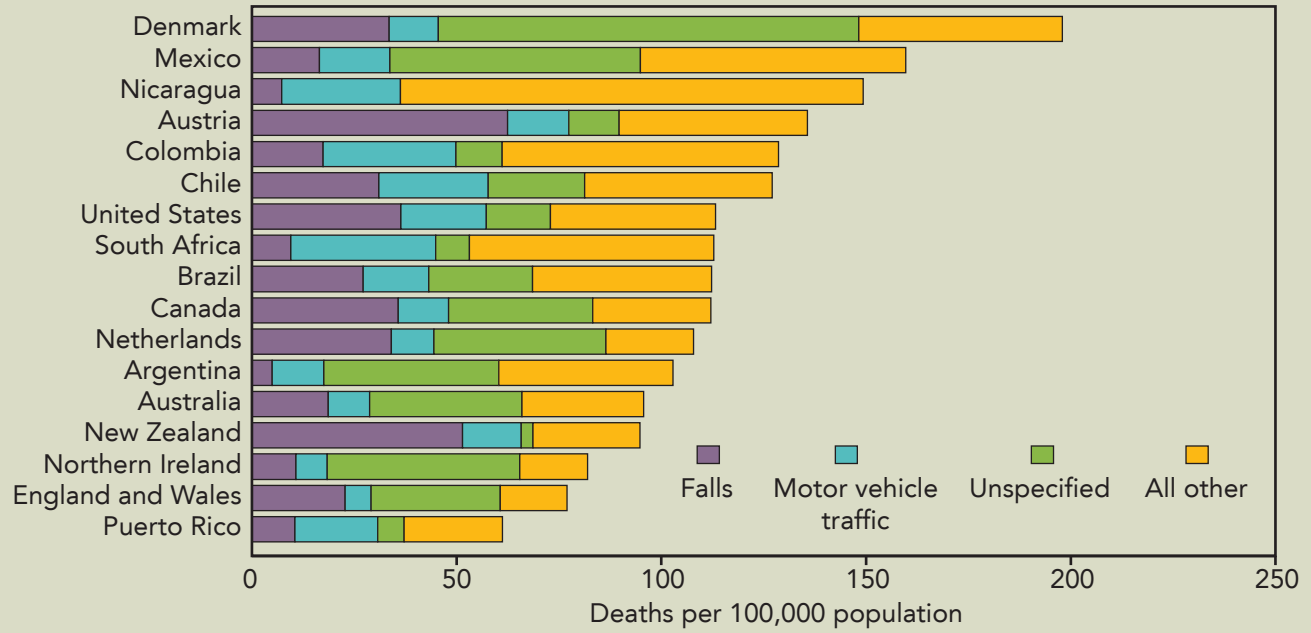


Figure 14-2. Injury death rates for persons 65 years of age and over, by leading mechanisms of injury: Selected countries, most recent data years available



SOURCE: Data provided by participants in the 2005 meeting of the International Collaborative Effort on Injury Statistics.

Mortality: International Injury Death Rates

In a group of both developed and less developed countries, motor vehicles and firearms were the leading mechanisms of injury death for teenagers and young adults, and falls and motor vehicles were the leading mechanisms of injury death for the elderly population.

Identifying large differences in injury death rates among countries can aid in gauging needed improvements in injury prevention programs across countries. Figures 14-1 and 14-2 include data from the countries that were represented at the June 2005 meeting of the International Collaborative Effort on Injury Statistics (see Appendix II, International Collaborative Effort on Injury Statistics).

Ages 15–24 years

- For the countries compared, the lowest injury death rates for those 15–24 years of age were generally in European countries as well as Australia and Canada, and the highest injury death rates were generally in Latin American countries as well as South Africa and the United States. The injury death rate in the United States, 62 deaths per 100,000 population, was 2.7 times the rate in the Netherlands and 0.4 times the rate in Colombia.

- When the data were averaged across all countries compared, injuries sustained in motor vehicle traffic accidents and by firearms accounted for three out of five injury deaths among teenagers and young adults 15–24 years of age. Motor vehicle traffic accidents were the leading mechanism of injury death in most countries, with the exceptions of Argentina, Puerto Rico, Brazil, South Africa, and Colombia, in which firearms were the leading mechanism of injury death followed by motor vehicle traffic deaths.

- In Colombia, 70% of injury deaths were caused by firearms—a proportion far higher than that in any other country. The Colombian firearm death rate was about 2.5 times the rates in Brazil, Puerto Rico and South Africa, and 6.2 times the rate in Argentina (the countries with the next highest firearm death rates).

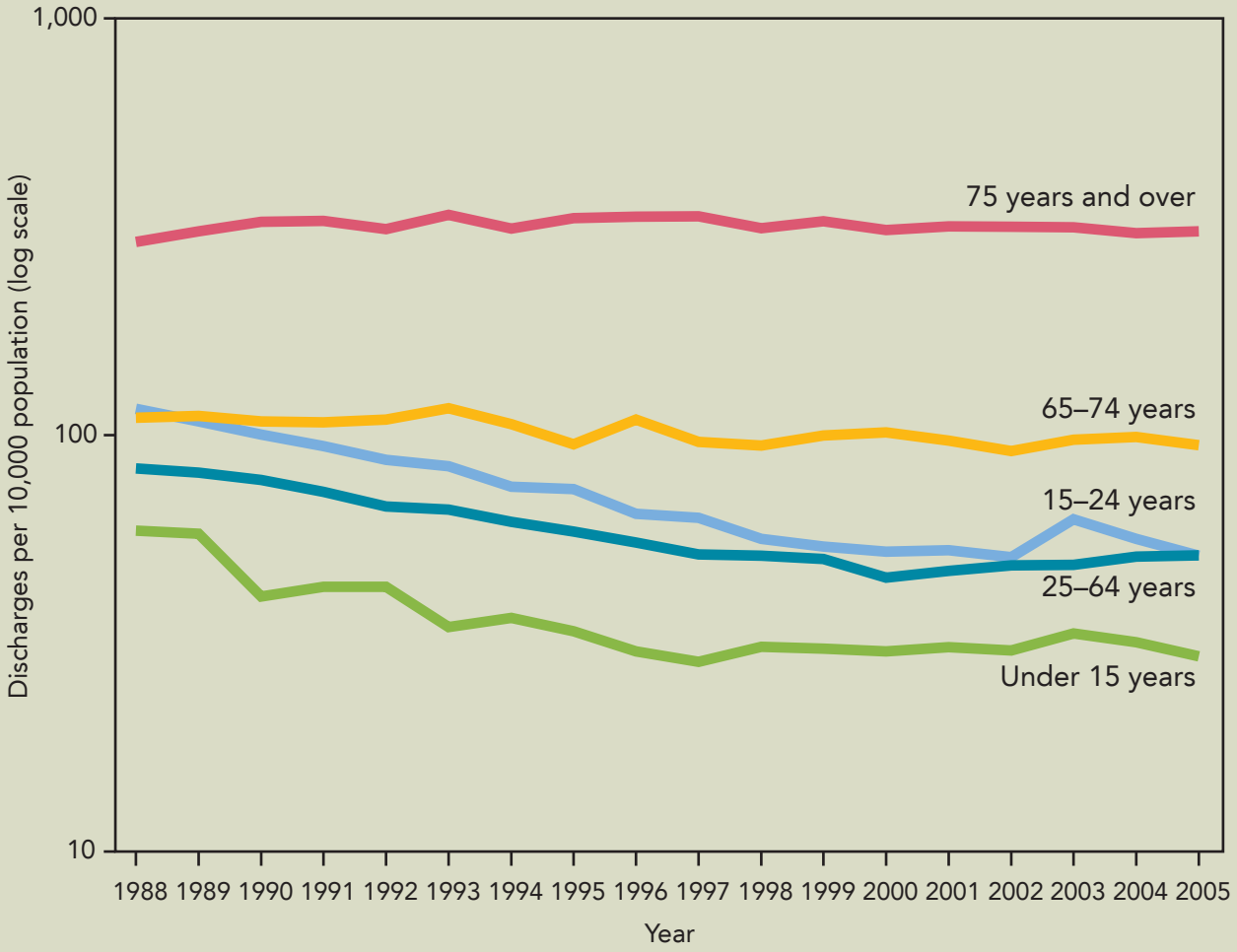
Ages 65 years and over

- Injury death rates among those 65 years of age and over ranged from a low of 61 deaths per 100,000 population in Puerto Rico to a high of nearly 200 deaths per 100,000 population in Denmark. The injury death rate for the U.S. population 65 years of age and over (113 deaths per 100,000 population) was 1.8 times the injury death rate in Puerto Rico and 0.6 times the injury death rate in Denmark.

- Among those 65 years of age and over, falls accounted for 26% of all injury deaths across all the countries compared. Falls were the leading specified mechanism of injury death except in Puerto Rico, Argentina, South Africa and Colombia, where motor vehicle traffic deaths ranked first among injury deaths, and in Mexico, where the average annual death rates for falls and for motor vehicle traffic accidents were similar.

- For reasons related to quality of death certification, injury deaths with an "unspecified" mechanism accounted for nearly as high a proportion (24%) of injury deaths across all the countries as did deaths with falls as the mechanism of injury (26%). In the United States, 14% of injury deaths had "unspecified" as the mechanism of injury, which was a lower percentage than that in most of the other countries. If "unspecified" were considered a rankable cause of death, it would have been the leading cause of injury death in seven of the comparison countries, with rates in Mexico and Denmark greatly exceeding rates in other countries (see data table for Figure 14-2).

Figure 15-1. Injury hospital discharge rates by age group and year: United States, 1988–2005



NOTES: Injury discharges are based on the first-listed injury diagnosis. See Appendix II, Hospital discharge for injury; Logarithmic scale.

SOURCE: CDC/NCHS, National Hospital Discharge Survey.

Hospital Discharges for Injury: Trends by Age

The rate of injury hospitalizations among adults 75 years of age and over far exceeds that of younger age groups. However, in all younger age groups, injury hospitalization rates declined from 1988 through 2005, whereas the rate for those 75 years of age and over did not change significantly during this same period.

Hospitalizations for injury represent a large burden on the health care system. For every injury death, there are about 11 to 12 injury hospitalizations. Hospitalized injuries that occurred in 2000 are estimated to have cost $34 billion (1). When examining trends[1] in hospital discharge rates for injury, age-specific rates are important for gaining a broad understanding of where prevention efforts should be targeted, and these rates also act as a tool for understanding how health care is utilized for injury by age.

- In 2005, injuries were the first-listed diagnosis for 6% of hospital discharges and accounted for 1.9 million hospital discharges at a rate of 65.3 discharges per 10,000 population. For an additional 753,000 hospital discharges, injury was not the first-listed diagnosis, but at least one injury diagnosis was included on the medical record for the discharge.

- For children under 15 years of age, hospital discharge rates for injury declined 7.8% per year on average from 1988 through 1996, but the rates did not change from 1996 through 2005 (Figure 15-1). The rate in 2005 was 50% lower than the rate in 1988.

- For teenagers and young adults 15–24 years of age, the injury hospital discharge rate declined from 1988 through 1999 by an average of 6.8% per year. Since then, the rate has fluctuated.

- For adults 25–64 years of age, injury discharge rates declined by an average of 5% per year from 1988 through 2000, followed by a 2.5% increase through 2005. The rate in 2005 was 38% lower than the rate in 1988.

- The injury hospital discharge rate for older adults 65–74 years of age declined more slowly than it did for younger people, at an average of 1.1% decrease per year from 1988 through 2005.

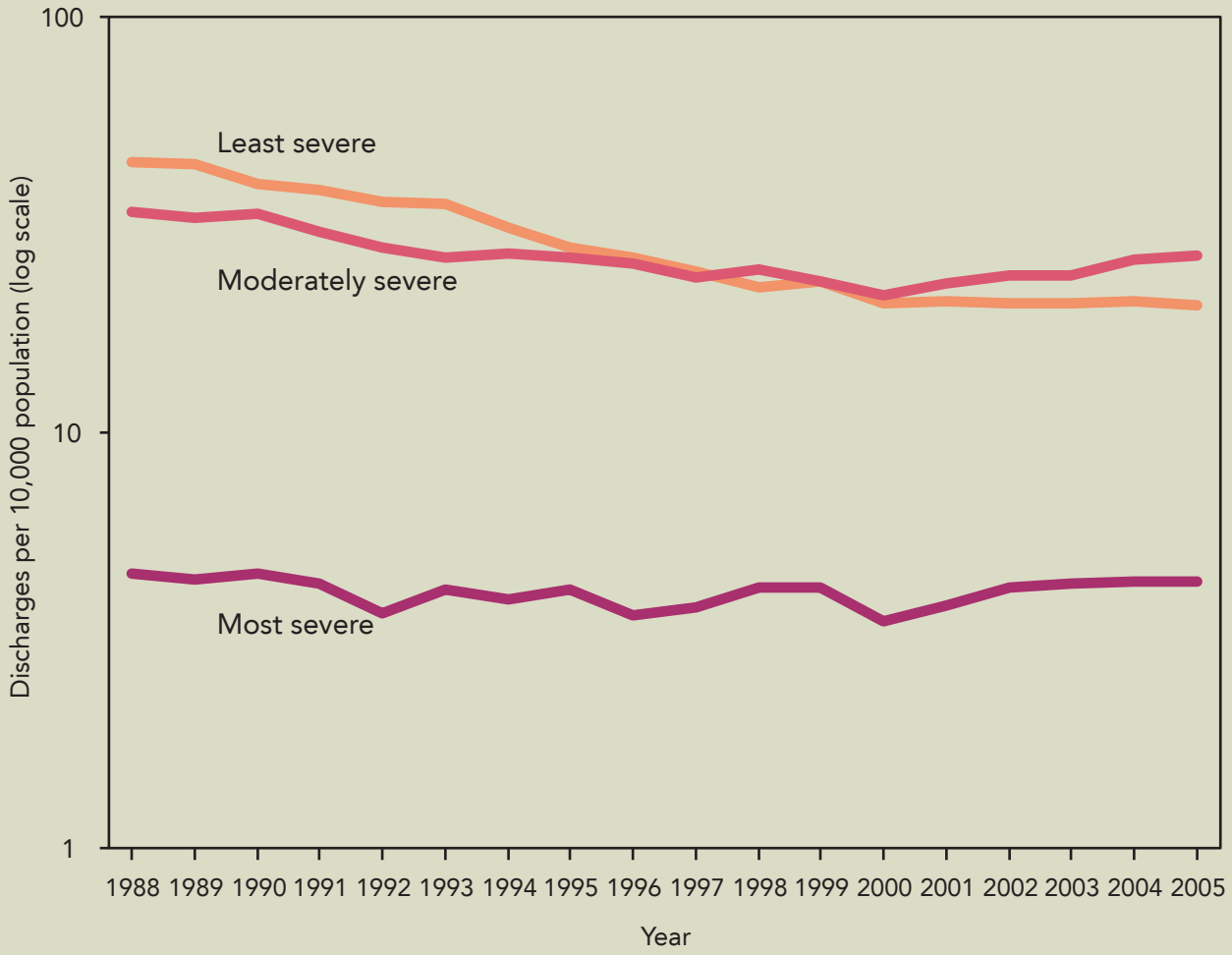
- The rate for older adults 75 years of age and over fluctuated during the years 1988 through 2005 from a low of 290 discharges per 10,000 population in 1988 to a high of 337 discharges per 10,000 population in 1993.

[1] Average annual percent changes for each age group were calculated by fitting regression lines to the data points. See Appendix II, Average percent change and test of trends.

Reference:

1. Finkelstein EA, Corso PS, Miller TR, et al. The Incidence and Economic Burden of Injuries in the United States. New York, NY: Oxford University Press. 2006.

Figure 15-2. Injury hospital discharge rates for persons 25–64 years of age, by level of severity: United States, 1988–2005



NOTES: Injury discharges are based on the first-listed injury diagnosis. See Appendix II, Hospital discharge for injury; Injury severity for hospital discharges; Logarithmic scale.

SOURCE: CDC/NCHS, National Hospital Discharge Survey.

Hospital Discharges: Trends by Injury Severity for Adults 25–64 Years of Age

When 2005 injury hospital discharge rates are compared with 1988 rates, the hospital discharge rates for the least severe injuries among adults 25–64 years of age decreased more than hospital discharge rates for more severe injuries.

Injury severity is an important factor to consider when examining trends[1] in injury hospital discharge rates. Prior to 2001, injury hospital discharge rates were declining for adults 25–64 years of age. Since then, the trend has reversed. Discharge rates can decline for many reasons, ones that may have more to do with health care practices than with the injury itself. The survival risk ratio (SRR), a measure of likelihood of survival, is used to assess injury severity (1–3) (see Appendix II, Injury severity for hospital discharges).

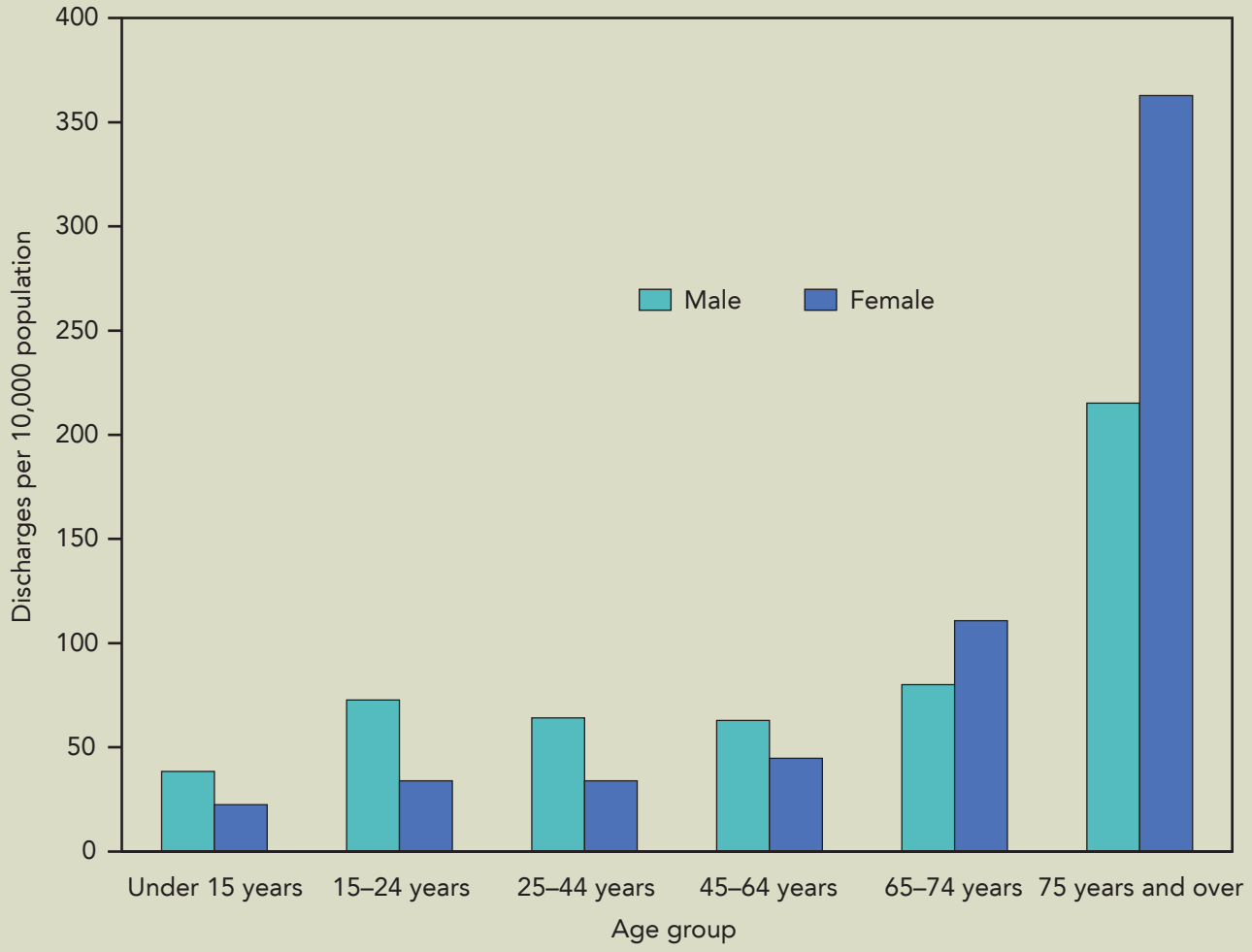
- Trends in injury hospital discharge rates among those 25–64 years of age varied by severity. The least severe injury discharge rate was 55% lower in 2005 than in 1988. The moderately severe injury discharge rate was 21% lower in 2005 than in 1988, and the most severe injury discharge rate was 3.5% lower.
- From 1988 through 2000, the injury discharge rates declined an average of 6.7% for the least severe injuries, whereas the rates declined an average of 3.7% per year for the moderately severe injuries and 1.4% per year for the most severe injuries.
- From 2000 through 2005, the injury discharge rates for the least severe injuries did not change, but the rates increased for the moderately severe injuries (4.4% per year) and most severe injuries (3.9% per year).
- The least severe injury discharges accounted for 54% of hospital discharges for injury in 1988 compared with 39% in 2005, whereas the percentage of discharges for moderately severe injuries increased from 41% in 1988 to 52% in 2005, and the percentage of discharges for the most severe injuries increased from 5% in 1988 to 9% in 2005.

[1] Average annual percent changes for each age group were calculated by fitting regression lines to the data points. See Appendix II, Average percent change and test of trends.

References:

1. Wayne MJ, Kilgo PD, Osler TM. Independently derived survival risk ratios yield better estimates of survival than traditional survival risk ratios when using the ICISS. J Trauma 55(5):933–8. 2003.
2. Kilgo PD, Osler TM, Meredith W. The worst injury predicts mortality outcome the best: Rethinking the role of multiple injuries in trauma outcome scoring. J Trauma 55(4):599–606. 2003.
3. Cryer C, Langley J, Stephenson S. Developing valid injury outcome indicators: A report for the New Zealand Injury Prevention Strategy. Dunedin, New Zealand: Injury Prevention Research Unit, Department of Preventive and Social Medicine. Available from: http://www.nzips.govt.nz/documents/serious-injury-indicators-2004-09.pdf. 2004.

Figure 16. Injury hospital discharge rates by sex and age group: United States, 2004–2005



NOTES: Injury discharges are based on the first-listed injury diagnosis. See Appendix II, Hospital discharge for injury.

SOURCE: CDC/NCHS, National Hospital Discharge Survey.

Hospital Discharges for Injury: Sex and Age

Hospital discharge rates are higher for males than for females for all age groups under 65 years of age.

Assessing age- and sex-specific hospital discharge rates for injury is necessary for identifying at-risk populations for injuries that require more than minimal medical attention. Prevention of nonfatal injuries is the goal; attaining the goal requires an understanding of who is likely to be injured seriously enough to be hospitalized.

- When all ages are combined, hospital discharge rates for injury for males and females were statistically similar at 67.6 hospital discharges per 10,000 population for men compared with 64.1 hospital discharges per 10,000 population for women (see data table for Figure 16). However, the discharge rates vary by sex and age.

- Men had higher injury hospital discharge rates than women did for all age groups up to 65 years of age and over. The disparity was most pronounced for young people 15–24 years of age, with the rate for young men 2.1 times the rate for young women (Figure 16).

- For those 65–74 years of age and 75 years of age and over, hospital discharge rates for injury among women were 1.4 and 1.7 times the rates for men. Compared with all other age-sex groups, women 75 years of age and over had the highest injury hospital discharge rate, at 363 discharges per 10,000 population.

- The higher discharge rate among women 75 years of age and over can be explained primarily by their higher rate of hip fractures compared with the rate for men—156.3 hip fractures for women compared with 82.9 for men per 10,000 population. (Additional data on hip fractures are also shown in Figure 18.)

Figure 17-1. Percent distribution of hospital discharges for injury, by nature of injury: United States, 2004–2005

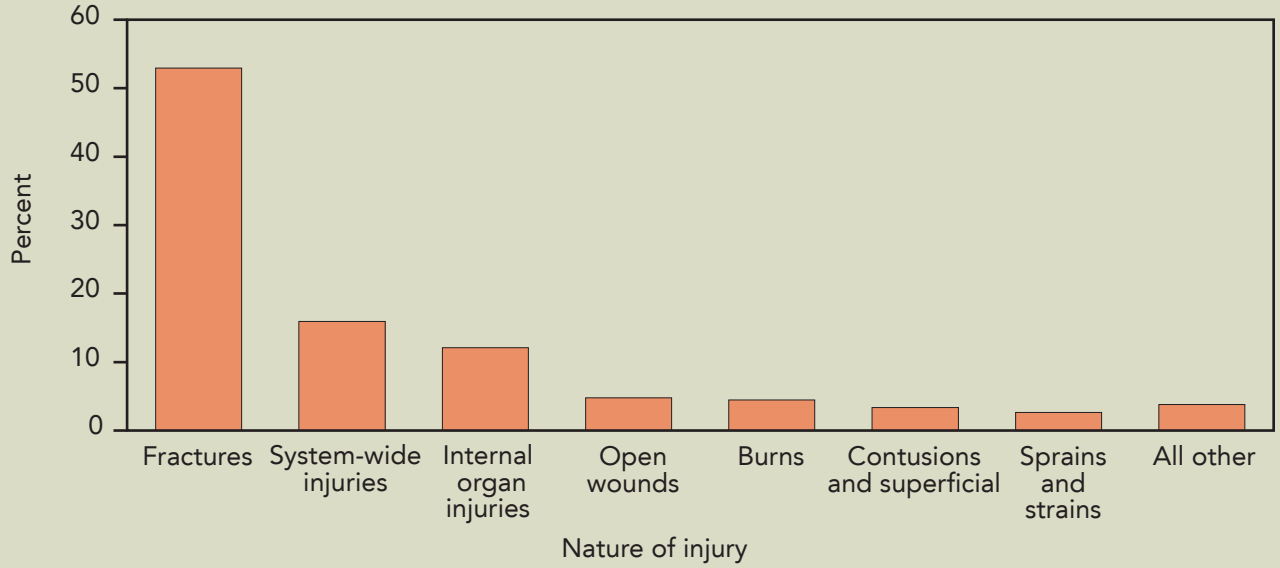
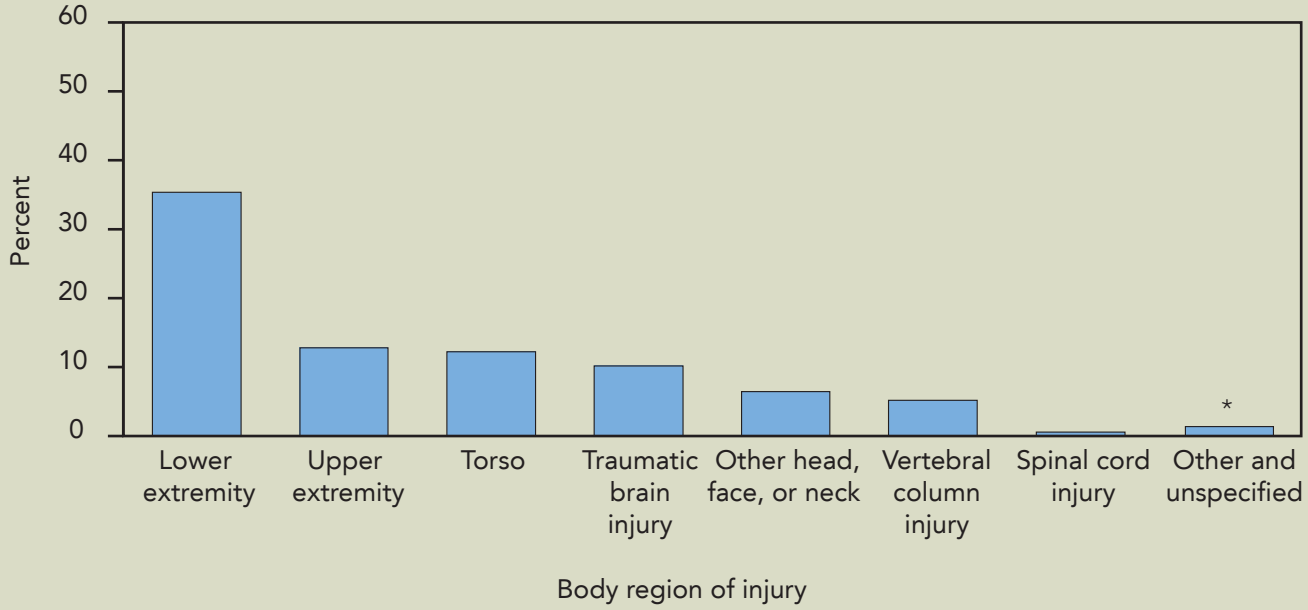


Figure 17-2. Percent distribution of hospital discharges for injury, by body region of injury: United States, 2004–2005



NOTES: When an asterisk (*) is shown with a bar, the relative standard error is between 20% and 30%. Injury discharges are based on the first-listed injury diagnosis. See Appendix II, Hospital discharge for injury; Relative standard error•

SOURCE: CDC/NCHS, National Hospital Discharge Survey.

Hospital Discharges: Nature and Body Region of Injury

Fractures accounted for more than one-half of all hospital discharges for injury in 2004 and 2005.

Knowing the nature of injury and the body region of injury are useful for injury prevention. In particular, knowledge of the body region or regions impacted by injury can lead to devices and engineering designs that can prevent injury.

- Fractures were the leading diagnosis for hospital discharges for injury, accounting for 53% of all injury discharges, and were followed by system-wide injuries (16%) and internal organ injuries (12%) (Figure 17-1).

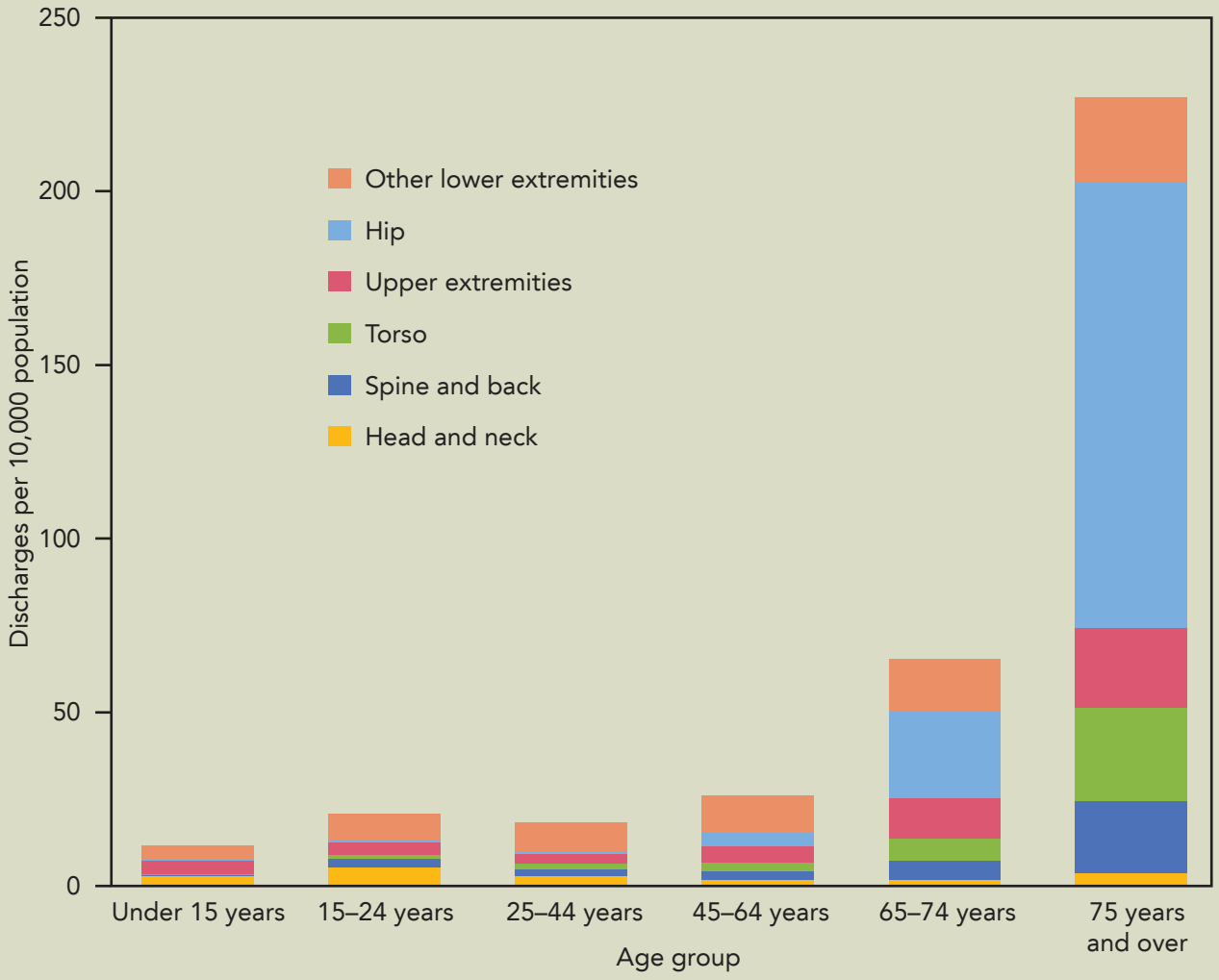
- Fractures were the leading diagnosis for injury for each age group. For people under 65 years of age, fractures accounted for 41% of all injury discharges, whereas fractures accounted for 72% of all hospital discharges for injury for adults 65 years of age and over (see data table for Figure 17-1).

- System-wide injuries are those that affect the entire body rather than a single region of the body. Poisoning and toxic effects accounted for the majority of system-wide injuries for all age groups, ranging from a high of 91% for young people 15–24 years of age to 62% for adults 75 years of age and over (data not shown).

- For all age groups combined, lower extremities were the primary body region injured, accounting for 35% of all injury discharges. Injuries to the upper extremities accounted for 13% of injury discharges, the torso for 12%, and traumatic brain injury for 10% (Figure 17-2).

- For children under 15 years of age, upper and lower extremity injuries accounted for nearly 40% of injury hospitalizations, and traumatic brain injury accounted for an additional 14%. Among young people 15–24 years of age, lower extremity injuries accounted for about one out of every five injury discharges (similar to system-wide injuries). As age increased, lower extremity injuries were responsible for a larger proportion of injury discharges, accounting for more than one-half of the injury discharges among adults 75 years of age and over (see data table for Figure 17-2).

Figure 18. Hospital discharge rates for fractures, by age and body region of injury: United States, 2004–2005



NOTES: Injury discharges are based on the first-listed injury diagnosis. See Appendix II, Hospital discharge for injury.

SOURCE: CDC/NCHS, National Hospital Discharge Survey.

Hospital Discharges: Fractures by Body Region of Injury and Age

Fractures to the hip account for nearly three out of every five fractures that require hospitalization for adults 75 years of age and over.

Fractures continue to be the leading cause of injury hospitalization in the United States, accounting for more than one-half of all injury hospitalizations in 2004–2005. For the older population 75 years of age and over, almost three-fourths of injury hospitalizations were for fractures. Measures to prevent fractures are often related to fall prevention initiatives, although programs will be different for children, for example, who may fall from playground equipment, as compared with programs for the elderly, who often fall in the home (1,2,3).

- Fracture discharge rates were highest for the elderly. For people younger than 65 years of age, rates for males exceeded those for females, whereas, for those 65 years of age and over, rates for females were higher than those for males (see data table for Figure 18).

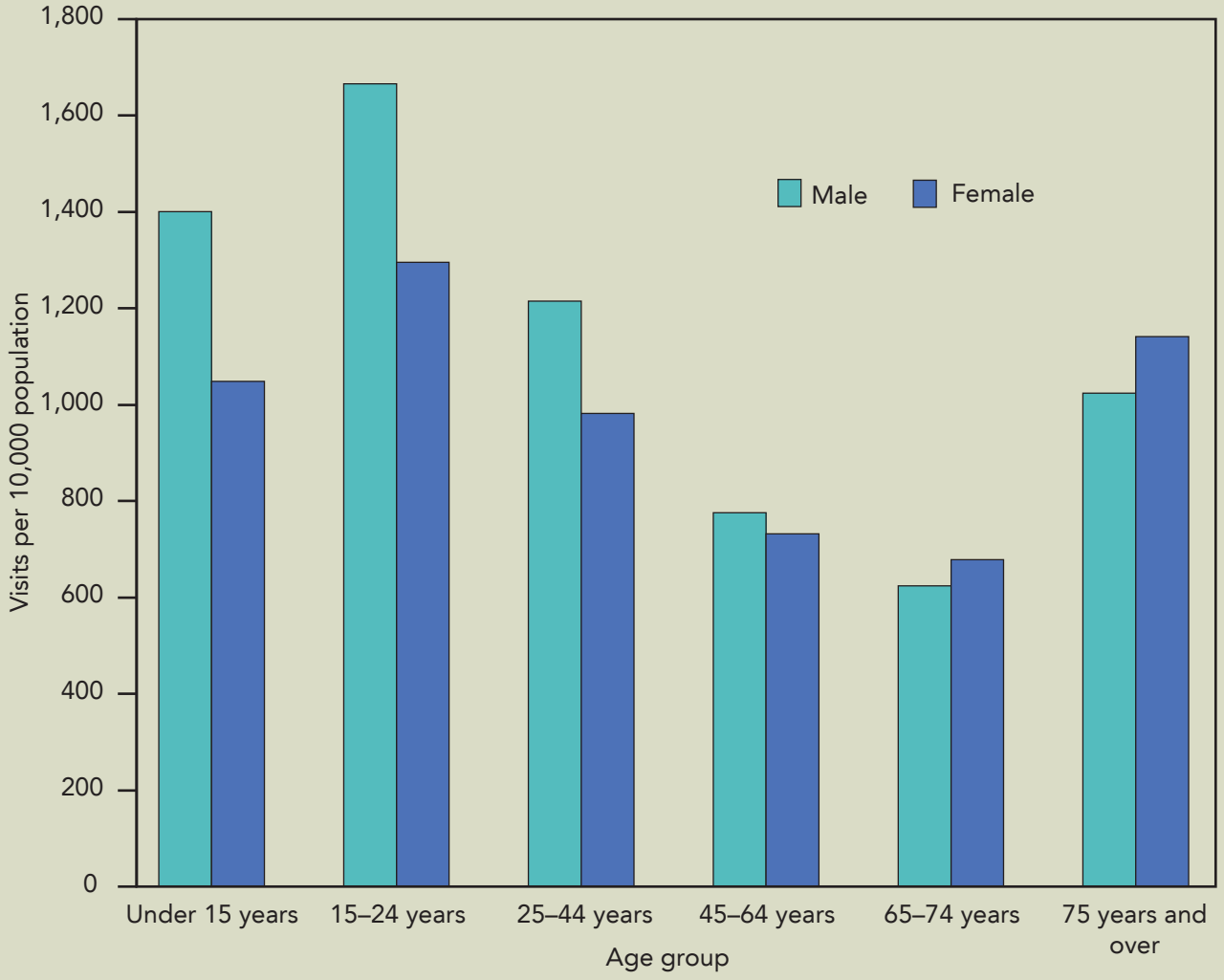
- For adults 75 years of age and over, 57% of fractures were hip fractures and 21% were other extremity fractures, whereas, for people under 75 years of age, other extremity fractures accounted for 56% of fractures. Nearly three out of four hip fractures were among the elderly; the discharge rate for those 75 years of age and over was 5.2 times the rate for adults 65–74 years of age and 31.4 times the rate for adults 45–64 years of age (Figure 18).

- Head and neck fracture rates were highest for teens and young adults 15–24 years of age, rates that were about two to three times those for other age groups. For those under 15 years of age and 15–24 years of age, head and neck fractures accounted for about one-quarter of all fractures. For those under 15 years of age, 83% of head and neck fractures were classified as traumatic brain injury, compared with about 50% in each of the other age groups (data not shown).

References:

1. Stevens JA, Ryan G, Kresnow MS. Fatalities and injuries from falls among older adults—United States, 1993–2003 and 2001–2005. MMWR 55(45):1221–4. 2006.
2. Stevens JA, Corso PS, Finkelstein EA, Miller TR. The costs of fatal and non-fatal falls among older adults. Inj Prev 12(5):290–5. 2006.
3. National Center for Injury Prevention and Control. Preventing falls among older adults [online]. Available from: http://www.cdc.gov/ncipc/duip/preventadultfalls.htm. 2006.

Figure 19. Initial emergency department injury visit rates by sex and age group: United States, 2004–2005



NOTE: See Appendix II, Initial injury emergency department visit.

SOURCE: CDC/NCHS, National Hospital Ambulatory Medical Care Survey.

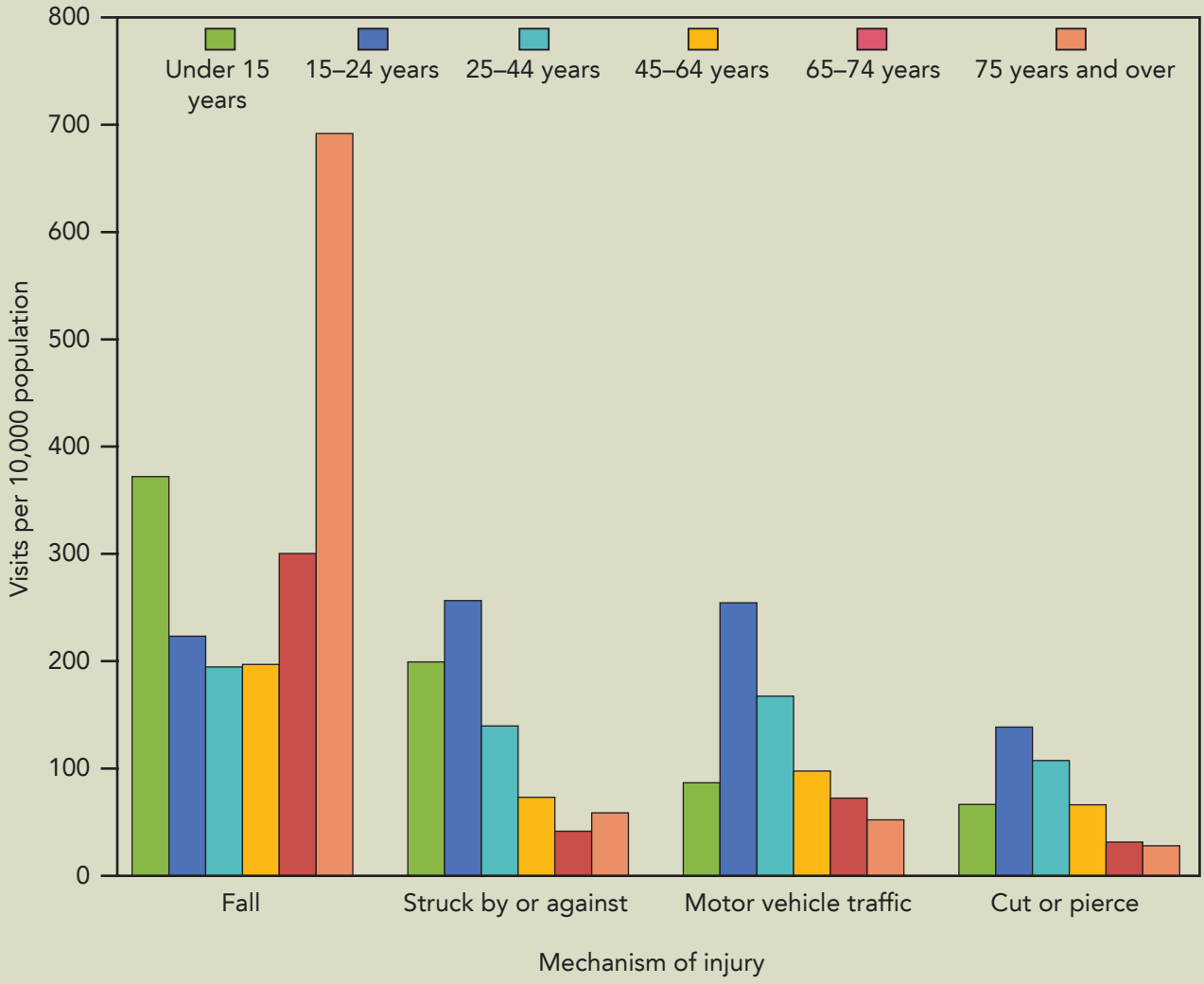
Emergency Department Initial Injury Visits: Age and Sex

Young people 15–24 years of age had the highest rate of initial emergency department (ED) visits for injury in 2004–2005.

ED utilization for initial visits for an injury varies by age and sex. Because injuries seen in the ED differ from those seen in the hospital inpatient setting, examining both types is important for determining where prevention and treatment programs can best be directed. In 2004–2005, EDs in the United States had an annual average of 31 million initial visits for injuries.

- In 2004–2005, initial visits accounted for 91% of all ED injury visits, with a slightly higher proportion for children under 15 years of age than the proportions for all other ages (data not shown).
- Young people 15–24 years of age had the highest initial ED visit rate for injury, at 1,484.8 visits per 10,000 population, which was more than twice the rate for adults 65–74 years of age, who had the lowest rate (see data table for Figure 19).
- Initial injury visit rates for males in age groups under 45 years were 1.2 to 1.3 times the rates for females (Figure 19). Beginning with ages 45–64 years, no statistically significant differences existed between the rates for men and women.

Figure 20. Initial emergency department injury visit rates by leading mechanisms of injury and age group: United States, 2004–2005



NOTE: See Appendix II, Initial injury emergency department visit.

SOURCE: CDC/NCHS, National Hospital Ambulatory Medical Care Survey.

Emergency Department Initial Visits: Mechanism of Injury and Age

Falls were the leading mechanism for initial emergency department (ED) visits for injury in 2004–2005.

Injury prevention depends largely on knowing the circumstances of injuries, most of which are nonfatal, that present in EDs. Knowledge of injury mortality patterns is not sufficient for prevention because the leading mechanisms of injury for ED visits differ from those for injury deaths.

- In 2004–2005, falls accounted for 26% of initial ED visits for injuries, whereas injuries resulting from being struck by or against an object or person accounted for 13% and motor vehicle traffic accidents accounted for 12% of initial ED visits for injury (see data table for Figure 25).

- Falls were the leading mechanism of initial ED visits for injuries among children under 15 years of age and among adults 45 years of age and over (Figure 20). For young people 15–24 years of age, the three leading mechanisms of injury were falls, being struck by or against, and motor vehicle traffic accidents. For adults 25–44 years of age, rates for falls and motor vehicle traffic accidents were similar.

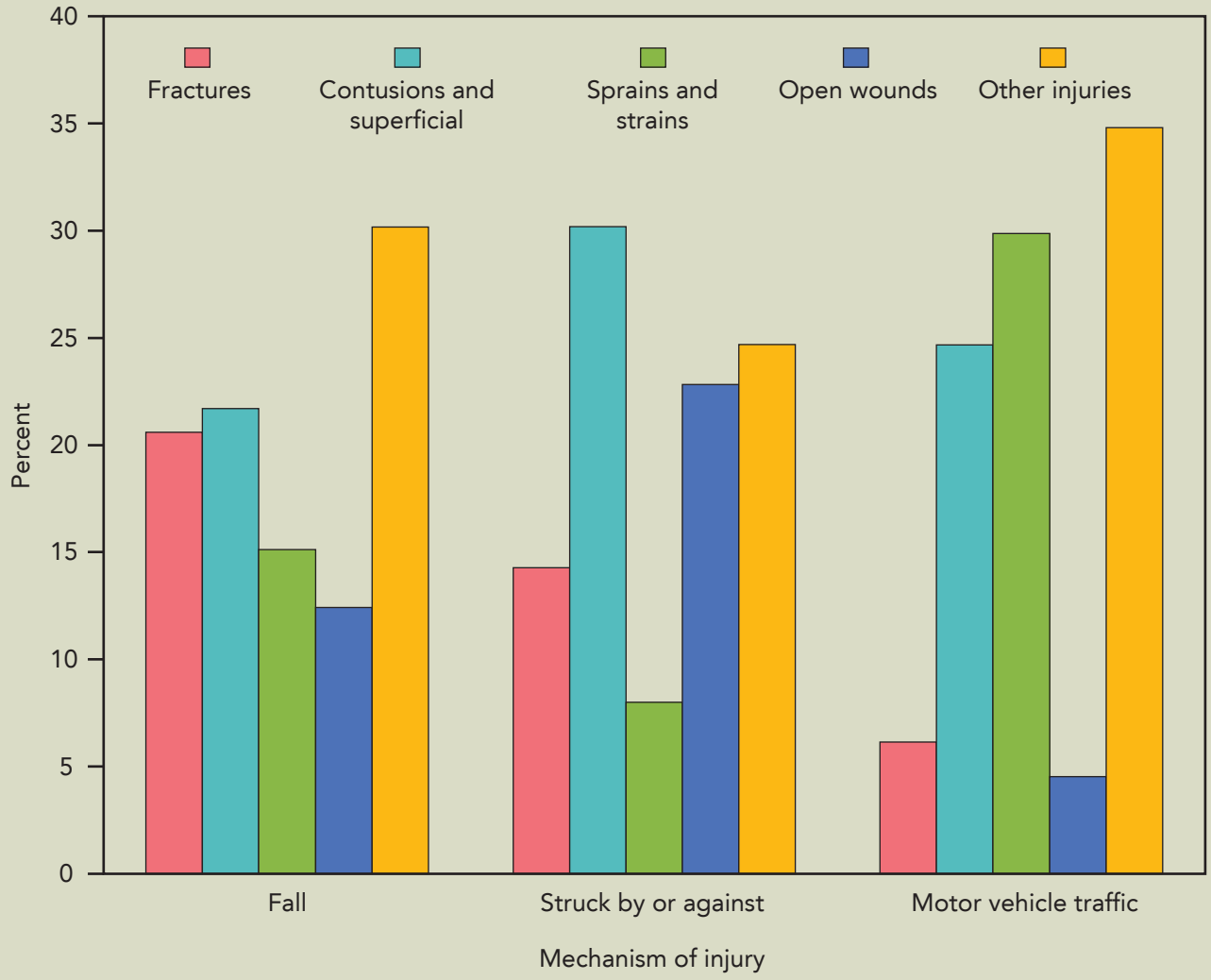
- Initial ED visit rates for falls for adults 75 years of age and over were, at a minimum, twice the rate for any other mechanism of injury and age combination.

- The age patterns for initial ED visit rates from motor vehicle traffic accidents and being struck by or against were somewhat similar, with rates generally higher for young people 15–24 years of age than rates for younger or older ages. However, for motor vehicle traffic accidents, visit rates were higher for adults 25–44 years of age than for children under the age of 15 years, whereas visit rates resulting from being struck by or against were higher for children under 15 years of age than for adults 25–44 years of age.

NOTE: Mechanism refers to the first-listed external cause of injury code on the patient record form.

- Among males under 45 years of age, initial ED visit rates for being struck by or against and for being cut or pierced were 1.6 to 2.0 times the respective rates for females. However, the visit rate for falls among women 75 years of age and over was 1.3 times the rate for men in that same age group (see data table for Figure 20).

Figure 21. Percent distribution of initial emergency department injury visits, by nature of injury and leading mechanisms of injury: United States, 2004–2005



NOTES: Other injuries include other injury diagnoses and include noninjury diagnoses if the initial visit has a first-listed external cause of injury code. See Appendix II, Initial injury emergency department visit.

SOURCE: CDC/NCHS, National Hospital Ambulatory Medical Care Survey.

Emergency Department Initial Visits: Mechanism and Nature of Injury

Contusions and superficial injuries, open wounds, sprains and strains, and fractures are the leading first-listed diagnoses for initial emergency department (ED) visits for the leading mechanisms of injury.

Knowledge of both the mechanism and nature of injuries can be used in designing protective equipment, developing interventions for prevention of injury, and planning for rehabilitation when a specific event (e.g., fall, motor vehicle traffic accident) occurs.

- For all initial ED visits for injury, regardless of mechanism, contusions and superficial injuries, open wounds, and sprains and strains each accounted for 18% to 19% of initial visits for injuries (see data table for Figure 21). Fractures were the fourth most common injury diagnosis, accounting for 11% of injury visits. An additional 19% of injury visits had an external cause, but an injury was not the fist-listed diagnosis.

- For initial ED visits for falls, the leading diagnoses were fractures and contusions and superficial injuries (Figure 21). Of the first-listed diagnoses for visits related to a fall, 19% were not injury diagnoses; 32% of these noninjury diagnoses were musculoskeletal conditions (e.g., pain in joint, backache, or lumbago), and another 24% were symptoms and ill-defined conditions (e.g., fainting).

- For initial ED visits for injury that were due to being struck by or against an object or person, superficial injuries accounted for 30% of first-listed diagnoses, followed by open wounds at 23%, whereas 13% of first-listed diagnoses for being struck by or against were not injuries.

- Motor vehicle traffic-related initial ED visits for injury were slightly more likely to be sprains and strains than contusions and superficial injuries. Also, 24% of first-listed diagnoses for these visits were not injuries—38% were musculoskeletal conditions and 17% were for observation following a motor vehicle accident.

Figure 22-1. Injury episode rates by sex and age group: United States, 2004–2005

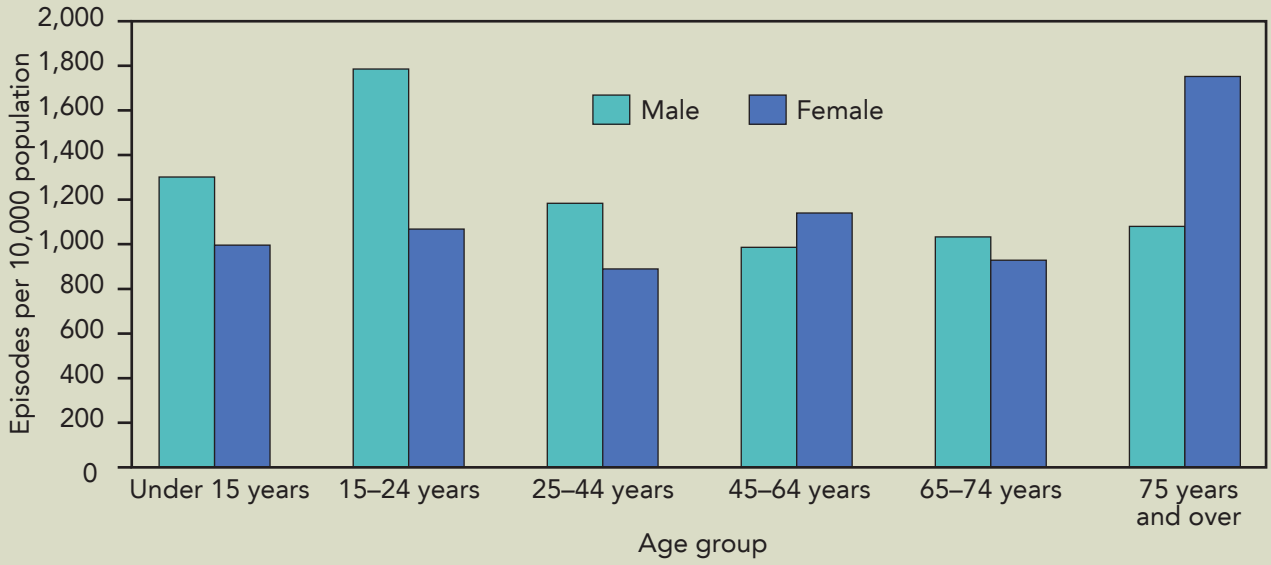
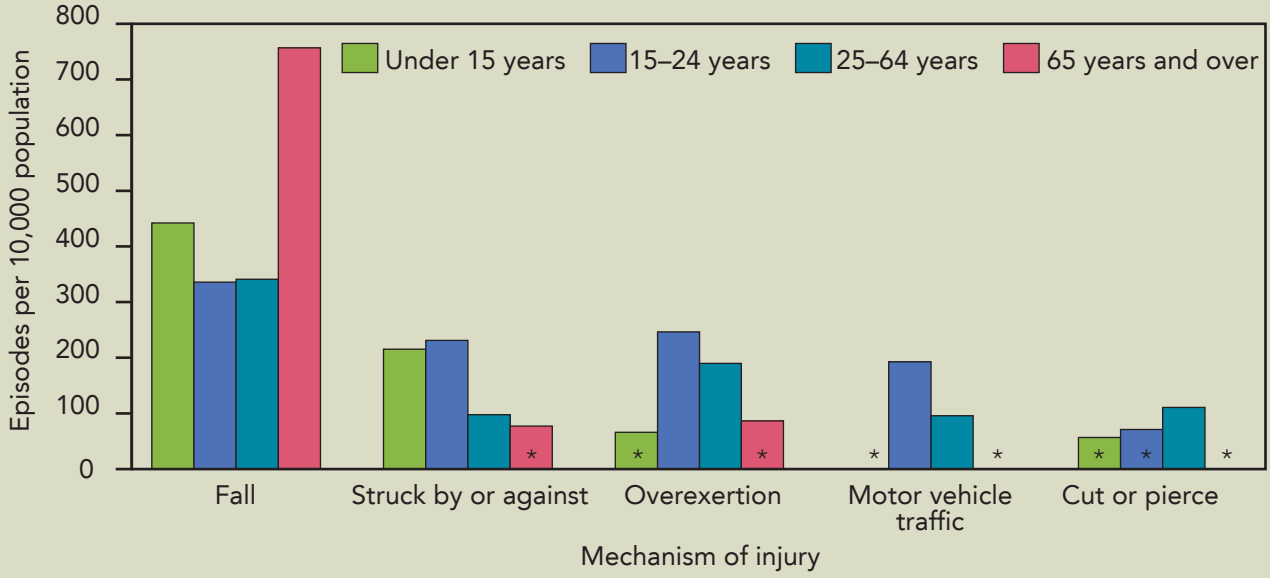


Figure 22-2. Injury episode rates by leading mechanisms of injury and age group: United States, 2004–2005



NOTES: When an asterisk (*) is shown with a bar, the relative standard error (RSE) is between 20% and 30%; when the asterisk is shown alone, the RSE is greater than 30% and does not meet the standards of reliability or precision. See Appendix II, Injury or poisoning episode; Relative standard error.

SOURCE: CDC/NCHS, National Health Interview Survey.

Episodes of Injury: Sex, Age, and Mechanism of Injury

In 2004–2005, injury episode rates were highest among young people 15–24 years of age and adults 75 years of age and over.

The National Health Interview Survey provides more detail on episodes of injury than any other NCHS survey. Data are available concerning the circumstances of the episode and the diagnosis. Detailed demographic data are also available and are considered more reliable than medical records because they are based on information from knowledgeable respondents. The ability to determine high risk groups for mechanisms of injury is an important step towards prevention.

- Injury episode rates varied by age and by sex, and the biggest differences by sex were for young people 15–24 years of age and adults 75 years of age and over (Figure 22-1). For people 15–24 years of age, the rate ratio of episodes for men to women was 1.7 to 1, and the rate ratio for women to men was 1.6 to 1 for those 75 years of age and over.

- Injury episode rates peaked for males at 15–24 years of age and for females at 75 years of age and over. Although the high injury rate for young men 15–24 years of age resulted from several different mechanisms of injury, the high injury rate for women 75 years of age and over primarily resulted from injuries caused by falls (data not shown).

- Falls were the leading cause of injury episodes for all age groups (Figure 22-2). Fall rates for adults 65 years of age and over were higher than rates for other age groups and were followed by fall rates for children under 15 years of age.

- Injuries caused by being struck by or against an object or a person, overexertion, and motor vehicle traffic accidents were more likely to be reported by younger people than older people.

Figure 23-1. Injury episode rates by race and Hispanic origin and age: United States, 2004–2005

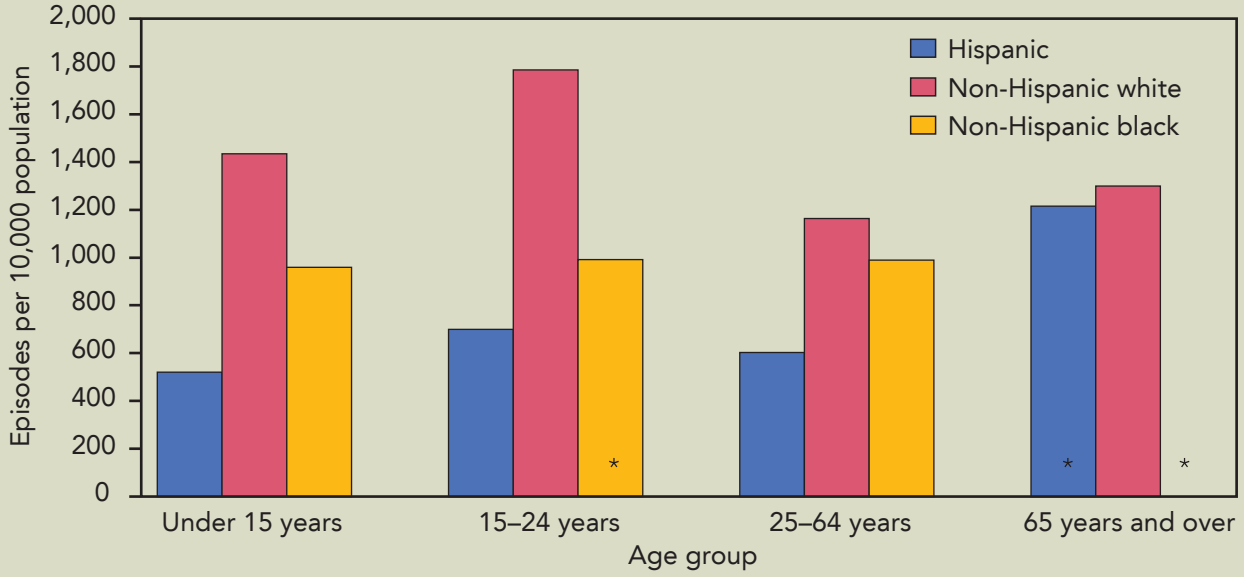
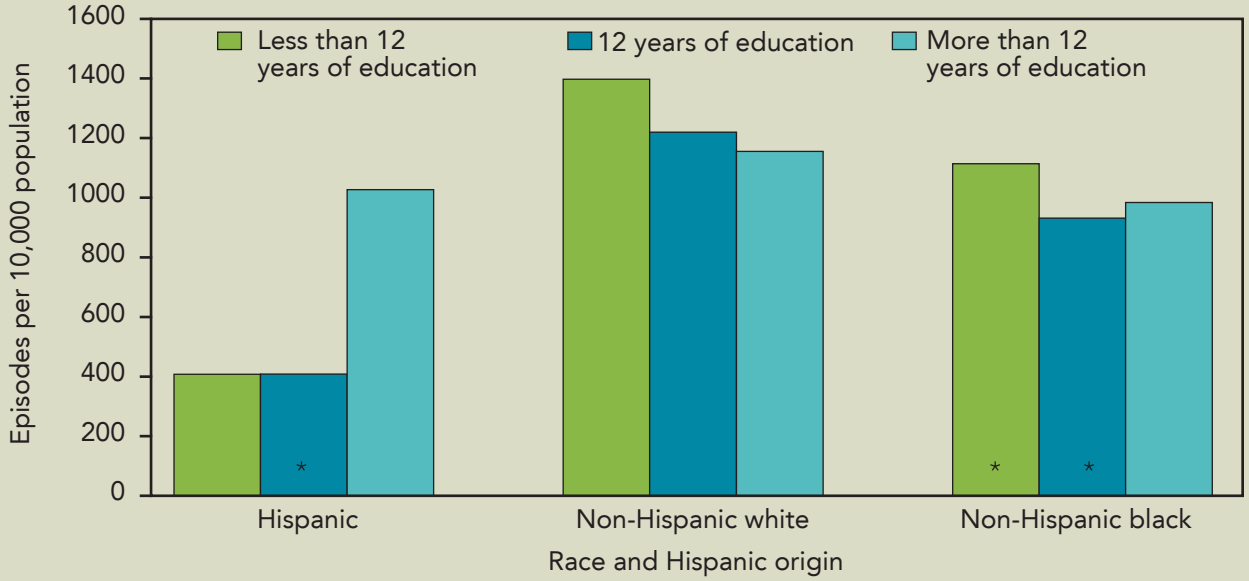


Figure 23-2. Injury episode rates by race and Hispanic origin and education, among people 25–64 years of age: United States, 2004–2005



NOTES: When an asterisk (*) is shown with a bar, the relative standard error (RSE) is between 20% and 30%; when the asterisk is shown alone, the RSE is greater than 30% and does not meet the standards of reliability or precision. See Appendix II, Injury or poisoning episode; Relative standard error.

SOURCE: CDC/NCHS, National Health Interview Survey.

Episodes of Injury: Race, Hispanic Origin, Age, and Education

Among those under 25 years of age, the non-Hispanic white population had higher injury episode rates than the Hispanic or non-Hispanic black population.

Injury data from the National Health Interview Survey (NHIS), by race and Hispanic origin, as well as by education, should have less bias resulting from misclassification than medical records-based national surveys because of the NHIS design (both the numerator and denominator of the rates are from the same source—the respondent, by either self or proxy). The information can be helpful for prevention planning because socioeconomic and cultural differences may exist among racial and ethnic groups that result in differences in injury rates.

- For children under 15 years of age, the non-Hispanic white population had the highest injury episode rate, followed by the non-Hispanic black and Hispanic population (Figure 23-1). For those 15–24 years of age, injury episode rates for the non-Hispanic white population were also higher than rates for either the non-Hispanic black or Hispanic population. Among adults aged 25–64 years, injury episode rates for non-Hispanic white and non-Hispanic black adults were similar and were higher than rates for Hispanic adults.

- When examining injury episode rates by sex, age-adjusted rates were higher for non-Hispanic white males and females than for the other groups (see data tables for Figures 23-1 and 23-2).

- Falls were the leading cause of injury episodes reported; the age-adjusted rate among the non-Hispanic white population was twice the rate for either the Hispanic or non-Hispanic black population, for whom the rates were similar.

- Injury episode rates were similar and did not vary by education for non-Hispanic white and non-Hispanic black adults 25–64 years of age, but the pattern for Hispanic adults was different (Figure 23-2). For Hispanic adults who had completed more than 12 years of education, injury episode rates were significantly higher than rates for those with less education. This might be due to Hispanic adults with fewer years of education being less likely to report medically attended injuries or less likely to seek medical attention for injury episodes than are those with more than 12 years of education.

Figure 24-1: Percent distribution of injury episodes, by activity at time of injury: United States, 2004–2005

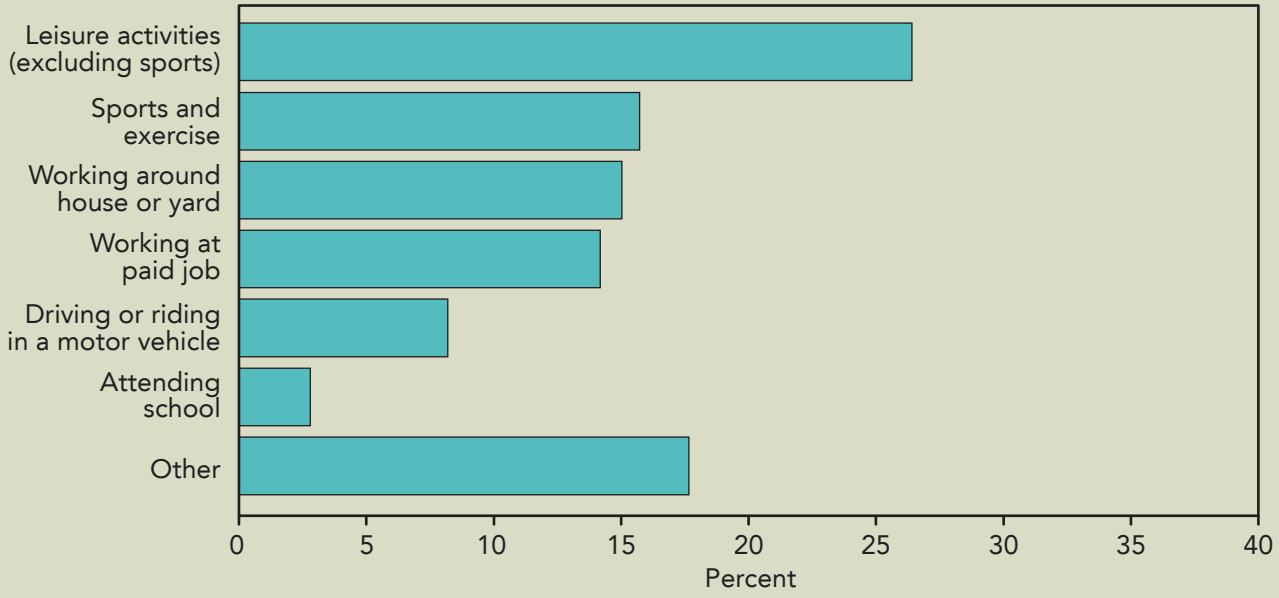
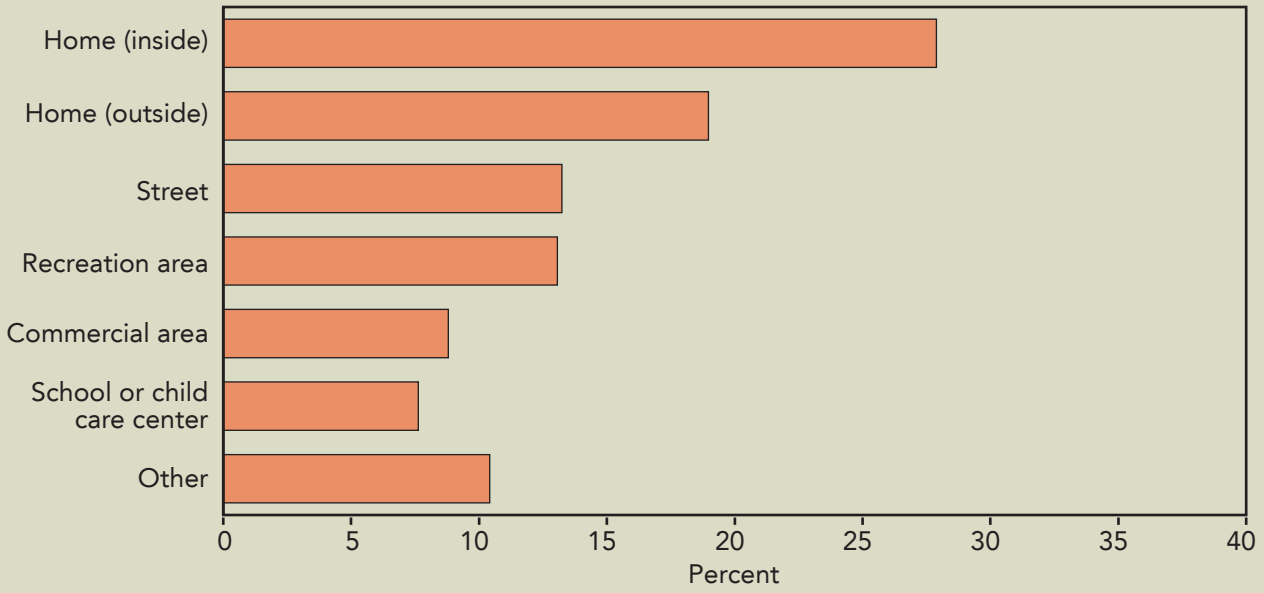


Figure 24-2. Percent distribution of injury episodes, by place of occurrence: United States, 2004–2005



NOTE: Other in Figure 24-2 includes hospital or residential institution, other public building, and other but not specified. See Appendix II, Injury or poisoning episode.

SOURCE: CDC/NCHS, National Health Interview Survey.

Episodes of Injury: Activity at Time of Injury and Place of Occurrence

About one-quarter of all injury episodes were reported as occurring during leisure activities (excluding sports), and one-half of all injury episodes were reported as occurring in or around the home.

Knowing what an injured person was doing and where his or her injuries occurred is important for designing prevention programs. The National Health Interview Survey is the only source of national injury morbidity data with this type of information.

- About one in four injury episodes occurred while a person was engaged in leisure (excluding sports) activities (Figure 24-1), whereas sports, working around the house or yard, and working at a paid job each accounted for about 15% of the activities people were doing when they were injured.

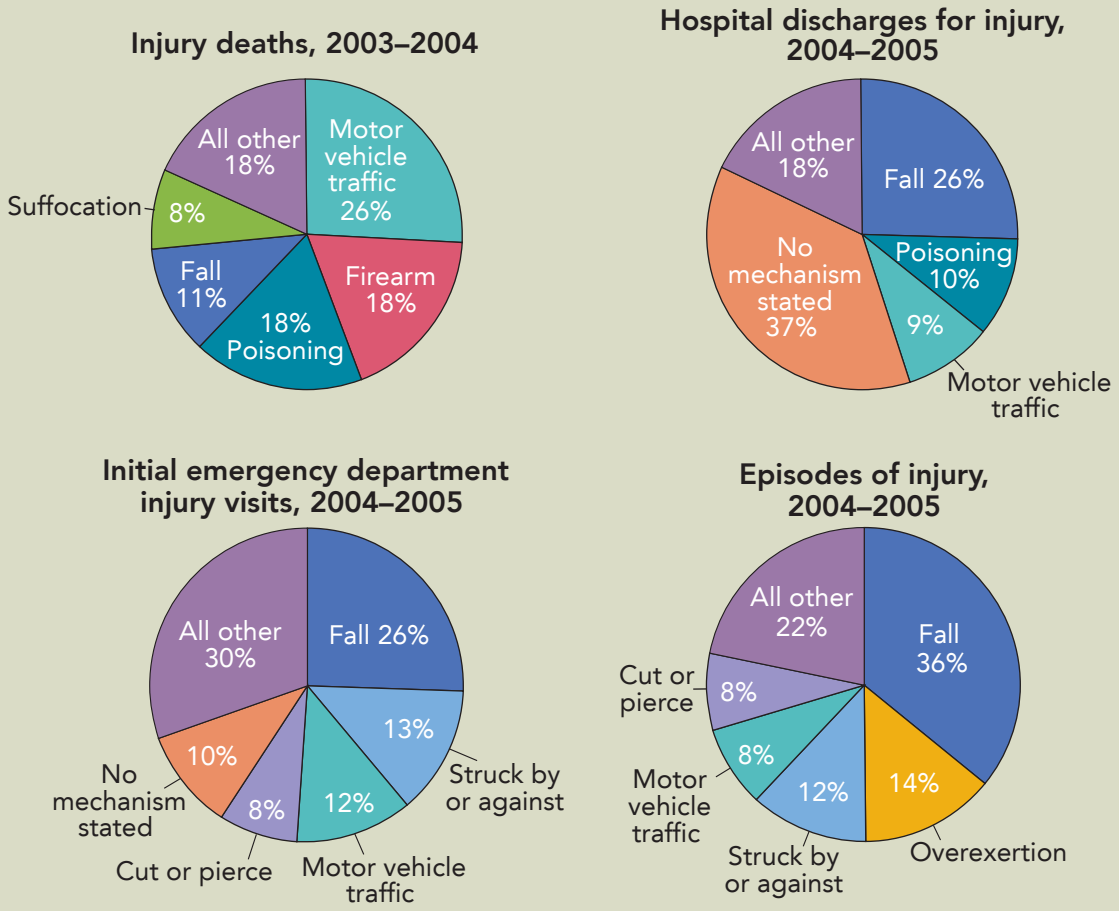
- The leading activity when injured varied by age. For children under 15 years of age, the leading activities were leisure-related (e.g., playing), excluding sports. However, sports were the leading activity when injured for young people 15–24 years of age. The leading activities when injured for adults 25–64 years of age were working at a paid job, working around the house or yard, and engagement in leisure activities (excluding sports). However, working around the house or yard and leisure activities (excluding sports) were what older adults aged 65 years and over reported doing when injured. (See data table for Figure 24-1.)

- The home, whether inside or outside, was the leading place of injury occurrence (Figure 24-2). One-half of the injury episodes occurred at home (either inside or outside) for all ages combined. Streets, highways, and parking lots (indicated as "Street" in Figure 24-2), as well as recreation areas, were each responsible for 13% of injury episodes.

- Inside the home was the leading place of injury for all age groups except for young people 15–24 years of age. For adults aged 65 years and over, more than one-half of all injury episodes occurred inside the home, and one-quarter of injury episodes occurred at home but were outside rather than inside (see data table for Figure 24-2).

- Young people 15–24 years of age were equally likely to be injured inside the home, at school, on streets, and at recreation areas.

Figure 25. Percent distributions by leading mechanisms of injury for deaths, hospital discharges, initial emergency department visits, and episodes of injury: United States, 2003–2005



NOTE: See Appendix II, Hospital discharge for injury; Initial injury emergency department visit; Injury or poisoning episode.

SOURCES: CDC/NCHS, National Vital Statistics System, National Hospital Discharge Survey, National Hospital Ambulatory Medical Care Survey, National Health Interview Survey.

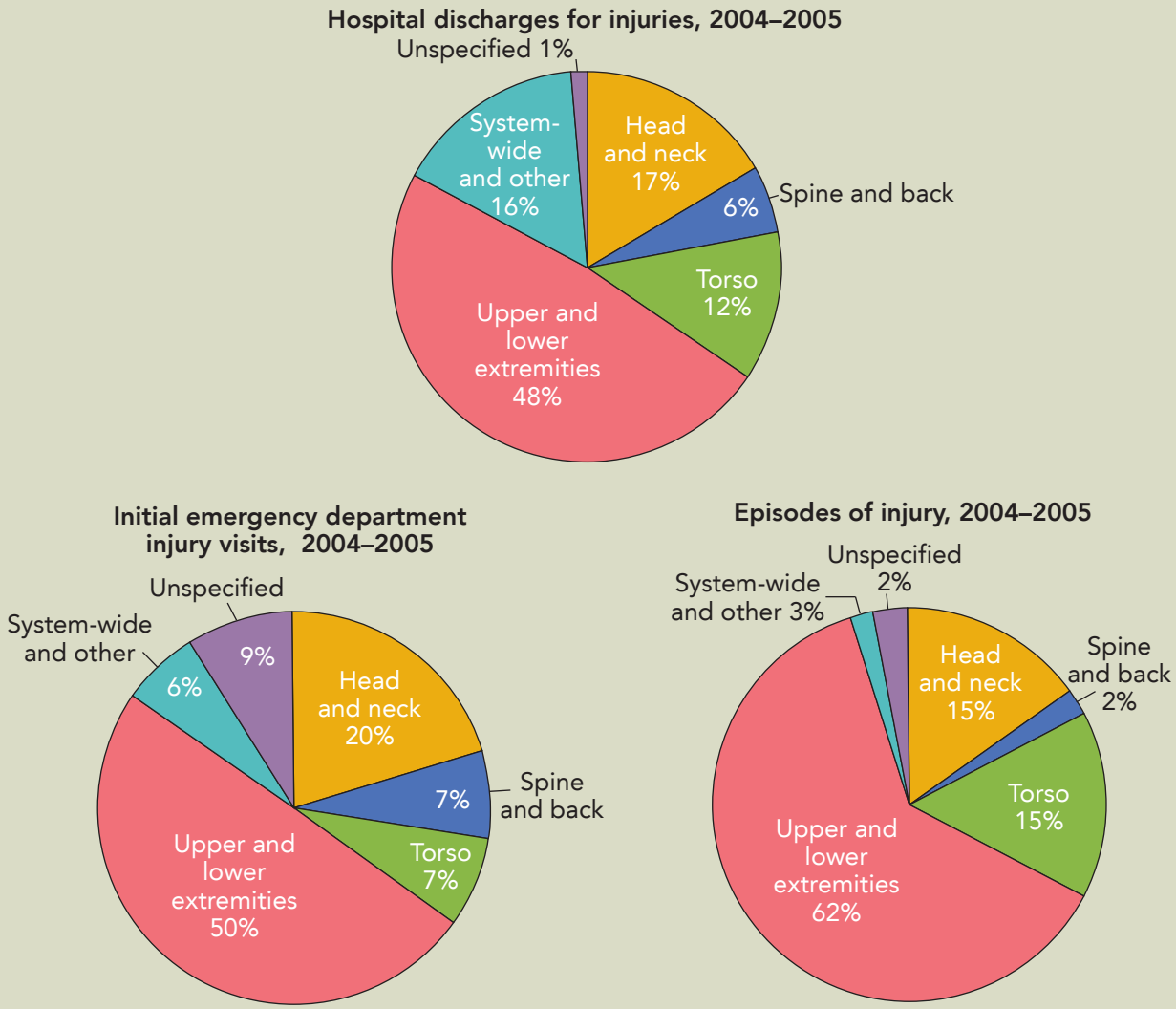
Mortality and Morbidity: Mechanisms of Injury

Motor vehicle traffic accidents are the leading mechanism of injury deaths, whereas falls are the leading mechanism of nonfatal injury.

Injuries cause relatively a small number of deaths compared with the number of injuries seen in hospitals and emergency departments (EDs). Knowing the leading mechanisms of injury death is not enough because the leading mechanisms differ depending on where medical care was sought, either as an inpatient in a hospital or during a visit to the ED, or whether an injury episode that required medical care was reported by a household respondent.

- Motor vehicle traffic accidents continue to be the leading mechanism of injury death, but this mechanism is only the third or fourth leading mechanism of nonfatal injury depending on whether hospitalizations, ED visits, or household survey data are examined (Figure 25).
- Falls, regardless of the setting, were the leading mechanism of nonfatal injury but were the fourth leading mechanism for mortality.
- Firearms were one of the leading mechanisms for injury death but were not among the leading mechanisms of nonfatal injury, likely because injuries from assaults by firearms and from self-inflicted firearm wounds are more likely to be lethal, and a patient may not reach a health care facility before dying.
- Overexertion was the second leading mechanism of injury reported in a household survey that asked about medically-attended injuries; however, overexertion was not a leading mechanism for deaths, hospitalizations, or ED visits.
- Hospital discharges for injuries are often missing a valid external cause of injury code; 37% were missing a code in 2004–2005, thus making it difficult to determine mechanism rankings for hospitalizations using the National Hospital Discharge Survey. Based on the current definition of an initial injury visit to an ED, 10% of visits did not have a valid first-listed external cause code.

Figure 26. Percent distributions of injuries by body region of injury, for hospital discharges, initial emergency department visits, and episodes of injury: United States, 2004–2005



NOTES: See Appendix II, Hospital discharge for injury; Initial injury emergency department visit; Injury or poisoning episode. See Table 26 on page 130 for the average annual counts and percent distributions of first-listed injury hospital discharges, initial emergency department visits for injury, and episodes of injury by nature of injury.

SOURCES: CDC/NCHS, National Hospital Discharge Survey, National Hospital Ambulatory Medical Care Survey, National Health Interview Survey.

Morbidity: Body Region and Nature of Injury

Extremity injuries account for the majority of nonfatal injuries that are classified by body region.

Injury diagnosis data provide important information on health care utilization as well as some indication as to where to target prevention strategies. The distributions of injuries according to body region across treatment settings are more similar to each other than are the distributions according to nature of injury.

- Extremity injuries accounted for the greatest proportion of injuries classified by body region, ranging from 48% in hospitals and 50% in emergency departments (EDs) to 62% reported in a household survey that asked about medically-attended injuries (Figure 26).

- Head and neck injuries accounted for 17% of hospitalized injuries, 20% of initial visits to EDs, and 15% of injuries reported in the household survey.

- Injuries to the torso were more likely to be reported in hospital data (12%) and in the household survey (15%) than in EDs (7%).

- The category "System-wide and other" is predominantly system-wide injuries, regardless of the setting. In hospitalization data, poisoning, including toxic effects, accounted for 83% of system-wide injuries, ranging from 91% among young people 15–24 years of age to 55% for children under 15 years of age.

- Fractures accounted for far more hospitalized injuries than for visits for injuries to the ED or for injuries reported in the household survey (see Table 26 on page 130). Conversely, open wounds and contusions and superficial injuries were more likely to be seen in the ED and reported in the household survey than to be seen in the hospital. Sprains and strains accounted for the largest proportion of injuries reported in a household survey (Table 26).

Tables

Data table for Figure 1. Injuries in the United States, 2004

Event	Injury events		Number of total events		Injury events as a percent of total events
	Number	SE[1]	Number	SE	
Deaths	167,184	409	2,397,615	1,548	7.0
Hospital discharges in thousands	1,939	93	34,864	1,187	5.6
Initial emergency department visits in thousands	31,314	1,594	98,166	4,798	31.9
Initial outpatient hospital department and physician office visits in thousands	34,848	2,153	295,735	11,649	11.8
Injury episodes from household interviews in thousands	33,149	1,216	...	...	...

...Category not applicable.
[1]SE is standard error.
NOTES: See Appendix I for description of data sources; NVSS, Mortality Statistics for identifying injury deaths. See Appendix II for definitions of injury in other settings: Hospital discharge for injury; Initial injury emergency department visit; Outpatient visit; Injury or poisoning episode; Standard error.
SOURCE: CDC/NCHS, National Vital Statistics System, National Hospital Discharge Survey, National Hospital Ambulatory Medical Care Survey, National Ambulatory Medical Care Survey, National Health Interview Survey.

Data table for Figure 2. Injury rates by age: United States, 2003–2005

Age in years	Injury deaths, 2003–2004		Hospital discharges, 2004–2005		Initial emergency department visits, 2004–2005	
	Average annual rate[1]	SE[2]	Average annual rate[3]	SE	Average annual rate[3]	SE
Under 1	3.5	0.1	38.8	7.7	918.4	103.1
1	1.7	0.0	53.6	12.0	1,672.6	133.4
2	1.5	0.0	43.1	8.3	1,676.9	140.7
3	1.2	0.0	29.5	5.7	1,463.6	134.4
4	0.9	0.0	29.7	5.2	1,196.8	102.3
5	0.8	0.0	19.7	3.3	1,089.2	105.7
6	0.6	0.0	30.4	5.0	1,035.5	97.6
7	0.6	0.0	30.4	5.5	1,001.4	110.1
8	0.6	0.0	24.1	3.6	1,076.5	88.4
9	0.6	0.0	17.1	2.9	963.9	84.9
10	0.6	0.0	20.7	3.6	973.3	87.4
11	0.6	0.0	16.8	3.1	1,208.5	97.8
12	0.9	0.0	22.7	3.3	1,414.9	123.1
13	1.1	0.0	39.9	5.1	1,288.2	108.2
14	1.6	0.0	41.1	5.4	1,407.8	107.1
15	2.3	0.1	52.3	6.3	1,377.4	94.6
16	4.0	0.1	48.6	5.7	1,590.2	122.1
17	5.1	0.1	56.2	5.4	1,439.4	113.8
18	6.8	0.1	54.6	5.3	1,626.9	115.2
19	7.3	0.1	60.4	5.6	1,507.0	121.5
20	7.3	0.1	55.2	6.0	1,526.1	113.7
21	7.5	0.1	61.4	6.0	1,574.7	114.7
22	7.3	0.1	61.3	5.2	1,363.8	89.0
23	6.8	0.1	42.0	4.1	1,484.0	111.4
24	6.7	0.1	46.4	5.9	1,367.3	98.7
25	6.5	0.1	56.6	5.7	1,490.8	103.5
26	6.4	0.1	45.2	6.9	1,410.3	110.0
27	6.1	0.1	54.3	5.6	1,143.4	92.6
28	5.8	0.1	47.4	5.2	1,313.7	112.4
29	5.8	0.1	45.0	5.8	1,159.8	95.7
30	5.5	0.1	54.7	5.7	1,091.7	88.2
31	5.6	0.1	46.9	4.8	1,014.0	89.0
32	5.7	0.1	50.6	5.8	1,019.1	80.1
33	5.4	0.1	46.8	5.0	1,181.8	96.3
34	5.5	0.1	49.1	5.3	982.0	94.4
35	5.8	0.1	47.6	4.6	1,152.5	94.4
36	5.7	0.1	40.1	3.4	868.3	72.3
37	6.1	0.1	57.9	7.2	1,061.2	89.0
38	6.1	0.1	36.5	3.9	994.0	79.6
39	6.0	0.1	44.8	5.4	1,071.3	89.1
40	6.3	0.1	47.0	4.8	1,065.9	80.0
41	6.7	0.1	48.7	5.2	1,042.4	75.3
42	6.7	0.1	55.0	7.0	1,012.4	87.9
43	6.8	0.1	53.9	5.7	1,066.3	93.2
44	6.6	0.1	52.6	4.7	917.1	88.1
45	6.9	0.1	50.7	5.2	1,064.4	91.0

See footnotes at end of table.

Data table for Figure 2. Injury rates by age: United States, 2003–2005—Con.

Age in years	Injury deaths, 2003–2004		Hospital discharges, 2004–2005		Initial emergency department visits, 2004–2005	
	Average annual rate[1]	SE[2]	Average annual rate[3]	SE	Average annual rate[3]	SE
46	6.9	0.1	52.5	5.3	899.1	75.3
47	6.8	0.1	42.4	4.4	970.8	82.6
48	6.7	0.1	49.0	5.0	861.2	72.2
49	6.4	0.1	50.8	5.4	768.4	68.2
50	6.4	0.1	54.8	6.9	811.7	77.2
51	6.3	0.1	53.6	5.3	741.4	70.1
52	6.0	0.1	55.1	5.0	790.5	81.4
53	5.7	0.1	52.7	5.5	784.3	76.2
54	5.8	0.1	46.9	5.1	692.8	69.4
55	5.3	0.1	50.8	5.2	707.9	74.6
56	5.3	0.1	59.6	5.2	681.8	73.8
57	5.1	0.1	48.2	5.6	667.4	67.9
58	5.3	0.1	61.3	5.8	654.1	85.3
59	5.1	0.1	61.9	7.0	563.3	68.2
60	5.2	0.1	64.5	7.1	538.3	65.1
61	5.0	0.1	55.8	6.8	648.9	76.9
62	5.0	0.1	57.5	5.9	570.5	69.9
63	4.9	0.1	64.5	8.8	492.5	64.0
64	4.9	0.1	57.9	7.3	620.8	95.7
65	5.2	0.1	71.6	9.3	579.7	75.1
66	5.1	0.1	67.0	7.0	597.1	91.2
67	5.4	0.1	78.5	10.2	554.8	82.8
68	5.5	0.1	84.5	10.8	707.7	100.1
69	5.5	0.1	87.7	8.6	556.0	86.8
70	6.1	0.1	110.6	10.2	649.8	87.9
71	6.3	0.1	114.8	12.7	674.2	108.5
72	6.7	0.1	102.7	10.2	673.3	110.9
73	6.9	0.1	122.5	14.9	878.6	123.8
74	7.7	0.2	147.3	19.4	730.3	95.4
75	8.4	0.2	134.8	14.1	741.9	116.9
76	9.1	0.2	182.8	15.5	888.5	134.7
77	9.8	0.2	166.3	16.2	968.1	132.5
78	10.4	0.2	204.2	20.5	732.8	101.3
79	11.7	0.2	201.7	18.0	936.1	122.5
80	12.8	0.2	260.1	20.6	1,214.1	165.7
81	14.1	0.2	271.3	25.1	896.4	125.2
82	15.9	0.3	300.5	23.8	1,313.4	173.2
83	17.8	0.3	303.1	24.9	1,257.9	169.8
84	18.3	0.3	341.0	33.4	824.6	137.6
85 and over	29.8	0.2	517.4	28.9	1,451.5	97.3

0.0 Quantity more than zero but less than 0.05.
[1]Rate per 10,000 resident population.
[2]SE is standard error.
[3]Rate per 10,000 civilian population.
NOTES: See Appendix I for description of data sources; NVSS, Mortality Statistics for identifying injury deaths. See Appendix II, Hospital discharge for injury; Initial injury emergency department visit; Standard error.
SOURCE: CDC/NCHS, National Vital Statistics System, National Hospital Discharge Survey, and National Hospital Ambulatory Medical Care Survey.

Data table for Figure 3. Injury deaths as a percentage of total deaths, injury death rates by age and sex, and ratio of male-to-female death rates: United States, average annual 2003–2004

	Both sexes				Male		Female		
Age in years	Percent of total deaths	SE[1]	Rate	SE	Rate	SE	Rate	SE	Male-female rate ratio
Under 1	5.1	0.1	35.2	0.7	39.5	1.0	30.7	0.9	1.3
1	36.4	0.8	17.3	0.5	19.6	0.7	15.0	0.6	1.3
2	46.5	1.0	14.6	0.4	16.8	0.6	12.4	0.6	1.4
3	48.3	1.1	11.5	0.4	13.9	0.6	9.0	0.5	1.5
4	47.0	1.3	9.1	0.3	10.2	0.5	7.9	0.5	1.3
5	44.8	1.4	7.6	0.3	8.9	0.5	6.1	0.4	1.5
6	42.2	1.4	6.5	0.3	7.8	0.4	5.1	0.4	1.5
7	43.6	1.5	6.1	0.3	6.9	0.4	5.3	0.4	1.3
8	42.4	1.5	5.7	0.3	6.9	0.4	4.5	0.3	1.5
9	44.2	1.5	6.1	0.3	6.7	0.4	5.4	0.4	1.2
10	41.3	1.4	6.3	0.3	7.7	0.4	5.0	0.4	1.5
11	44.0	1.4	6.3	0.3	7.7	0.4	4.9	0.3	1.6
12	49.1	1.3	8.6	0.3	11.6	0.5	5.4	0.4	2.1
13	52.1	1.2	10.8	0.4	14.0	0.6	7.5	0.4	1.9
14	60.3	1.0	15.8	0.4	21.2	0.7	10.2	0.5	2.1
15	65.9	0.9	23.1	0.5	30.3	0.8	15.6	0.6	1.9
16	74.4	0.7	39.7	0.7	54.0	1.1	24.7	0.8	2.2
17	77.7	0.6	51.4	0.8	73.1	1.3	28.5	0.8	2.6
18	79.9	0.5	68.3	0.9	100.4	1.5	34.4	0.9	2.9
19	79.4	0.5	72.7	0.9	111.4	1.6	31.6	0.9	3.5
20	77.7	0.5	72.9	0.9	113.2	1.6	29.7	0.9	3.8
21	77.1	0.5	75.1	0.9	116.9	1.6	30.3	0.9	3.9
22	74.7	0.5	72.5	0.9	114.2	1.6	28.3	0.8	4.0
23	73.3	0.5	68.5	0.9	109.1	1.6	25.7	0.8	4.2
24	71.6	0.5	67.4	0.9	106.7	1.6	26.1	0.8	4.1
25	69.1	0.5	64.7	0.9	103.3	1.6	24.0	0.8	4.3
26	66.9	0.5	64.4	0.9	100.5	1.6	26.5	0.8	3.8
27	63.8	0.6	61.4	0.9	96.4	1.6	24.9	0.8	3.9
28	61.8	0.6	57.8	0.9	89.5	1.5	24.8	0.8	3.6
29	58.9	0.6	58.1	0.9	90.4	1.5	24.8	0.8	3.6
30	56.3	0.6	55.2	0.8	85.1	1.5	24.6	0.8	3.5
31	53.8	0.5	55.6	0.8	85.8	1.5	24.9	0.8	3.4
32	51.4	0.5	57.0	0.8	87.9	1.4	25.7	0.8	3.4
33	47.9	0.5	54.4	0.8	82.5	1.4	25.8	0.8	3.2
34	46.0	0.5	55.4	0.8	81.8	1.4	28.5	0.8	2.9
35	43.6	0.5	58.4	0.8	87.3	1.5	29.2	0.8	3.0
36	40.6	0.5	57.5	0.8	85.7	1.4	29.0	0.8	3.0
37	39.1	0.4	60.6	0.9	88.8	1.5	32.2	0.9	2.8
38	37.0	0.4	60.9	0.8	89.0	1.4	32.7	0.9	2.7
39	33.8	0.4	60.4	0.8	87.5	1.4	33.3	0.9	2.6
40	32.0	0.3	63.3	0.8	90.2	1.4	36.7	0.9	2.5
41	30.8	0.3	66.7	0.9	96.2	1.5	37.5	0.9	2.6
42	28.1	0.3	67.0	0.9	97.1	1.5	37.2	0.9	2.6
43	26.6	0.3	67.6	0.9	97.7	1.5	37.9	0.9	2.6
44	24.2	0.3	66.3	0.8	96.3	1.4	36.8	0.9	2.6
45	22.8	0.3	68.5	0.9	99.3	1.5	38.5	0.9	2.6

See footnotes at end of table.

Data table for Figure 3. Injury deaths as a percentage of total deaths, injury death rates by age and sex, and ratio of male-to-female death rates: United States, average annual 2003–2004—Con.

	Both sexes				Male		Female		
Age in years	Percent of total deaths	SE[1]	Rate	SE	Rate	SE	Rate	SE	Male-female rate ratio
46	20.6	0.2	68.5	0.9	98.6	1.5	39.1	0.9	2.5
47	19.1	0.2	68.0	0.9	98.8	1.5	38.1	0.9	2.6
48	17.5	0.2	67.0	0.9	97.1	1.5	37.8	0.9	2.6
49	15.7	0.2	64.4	0.9	92.7	1.5	36.9	0.9	2.5
50	14.3	0.2	64.0	0.9	94.0	1.5	35.3	0.9	2.7
51	13.1	0.2	62.8	0.9	91.3	1.5	35.6	0.9	2.6
52	11.6	0.2	60.2	0.9	90.0	1.6	31.6	0.9	2.8
53	10.5	0.2	57.3	0.9	85.0	1.5	30.8	0.9	2.8
54	9.8	0.1	57.8	0.9	84.0	1.5	32.8	0.9	2.6
55	8.3	0.1	52.7	0.9	76.6	1.5	30.0	0.9	2.6
56	7.6	0.1	53.3	0.9	79.4	1.5	28.5	0.9	2.8
57	7.1	0.1	50.5	0.9	74.4	1.5	28.0	0.9	2.7
58	6.4	0.1	53.1	1.0	76.1	1.7	31.5	1.0	2.4
59	5.7	0.1	50.8	1.0	76.6	1.7	26.7	1.0	2.9
60	5.2	0.1	51.5	1.0	75.0	1.7	29.8	1.0	2.5
61	4.8	0.1	50.0	1.0	75.1	1.7	27.0	1.0	2.8
62	4.3	0.1	50.3	1.0	74.2	1.8	28.6	1.1	2.6
63	3.8	0.1	48.7	1.0	71.7	1.8	28.0	1.1	2.6
64	3.5	0.1	48.8	1.1	71.0	1.8	28.8	1.1	2.5
65	3.5	0.1	51.6	1.1	75.2	1.9	30.6	1.2	2.5
66	3.2	0.1	50.8	1.1	72.8	2.0	31.5	1.2	2.3
67	3.0	0.1	53.9	1.2	80.1	2.1	31.2	1.2	2.6
68	2.9	0.1	55.4	1.2	81.3	2.1	33.2	1.3	2.5
69	2.7	0.1	54.7	1.2	81.2	2.2	32.4	1.3	2.5
70	2.7	0.1	61.4	1.3	89.1	2.4	38.3	1.4	2.3
71	2.5	0.1	62.6	1.3	89.1	2.4	40.9	1.5	2.2
72	2.4	0.1	66.6	1.4	96.7	2.5	42.4	1.5	2.3
73	2.3	0.0	69.4	1.4	101.4	2.6	44.1	1.5	2.3
74	2.4	0.0	76.9	1.5	109.5	2.8	51.6	1.7	2.1
75	2.3	0.0	84.0	1.6	120.5	3.0	56.3	1.8	2.1
76	2.3	0.0	91.4	1.7	132.1	3.2	61.4	1.9	2.2
77	2.3	0.0	97.5	1.8	137.4	3.3	69.0	2.0	2.0
78	2.2	0.0	103.7	1.9	152.3	3.6	70.1	2.0	2.2
79	2.3	0.0	116.9	2.1	167.3	3.9	83.1	2.2	2.0
80	2.3	0.0	128.4	2.2	180.2	4.2	94.6	2.5	1.9
81	2.3	0.0	141.5	2.4	203.5	4.7	102.2	2.6	2.0
82	2.3	0.0	159.1	2.7	233.6	5.2	113.4	2.9	2.1
83	2.3	0.0	177.8	3.0	252.2	5.8	134.0	3.3	1.9
84	2.2	0.0	182.7	3.2	256.2	6.2	141.0	3.5	1.8
85 and over	2.1	0.0	298.0	1.8	399.9	3.7	252.6	2.0	1.6

0.0 Quantity more than zero but less than 0.05.

[1]SE is standard error.

NOTES: Rates are per 100,000 resident population. See Appendix I, NVSS, Mortality Statistics for description of data sources and for identifying injury deaths. See Appendix II, Standard error.

SOURCE: CDC/NCHS, National Vital Statistics System.

Data table for Figure 4. Age-adjusted injury death rates by intent of injury and year: United States, 1985–2004

Year	All		Unintentional		Suicide		Homicide		Undetermined		Legal or war[1]	
	Rate	SE[2]	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
1985	60.3	0.2	38.6	0.1	12.5	0.1	7.9	0.1	1.2	0.0	0.1	0.0
1986	61.5	0.2	38.6	0.1	13.0	0.1	8.5	0.1	1.3	0.0	0.1	0.0
1987	60.6	0.2	38.2	0.1	12.8	0.1	8.2	0.1	1.2	0.0	0.1	0.0
1988	61.1	0.2	38.9	0.1	12.5	0.1	8.4	0.1	1.2	0.0	0.1	0.0
1989	59.9	0.2	37.7	0.1	12.3	0.1	8.7	0.1	1.1	0.0	0.1	0.0
1990	59.2	0.2	36.3	0.1	12.5	0.1	9.4	0.1	0.9	0.0	0.1	0.0
1991	58.0	0.2	34.7	0.1	12.3	0.1	9.9	0.1	1.0	0.0	0.1	0.0
1992	55.9	0.1	33.2	0.1	12.0	0.1	9.4	0.1	1.1	0.0	0.1	0.0
1993	57.2	0.1	34.2	0.1	12.1	0.1	9.6	0.1	1.3	0.0	0.1	0.0
1994	56.6	0.1	34.2	0.1	11.9	0.1	9.1	0.1	1.3	0.0	0.1	0.0
1995	55.8	0.1	34.4	0.1	11.8	0.1	8.3	0.1	1.2	0.0	0.1	0.0
1996	54.9	0.1	34.5	0.1	11.5	0.1	7.5	0.1	1.3	0.0	0.1	0.0
1997	54.0	0.1	34.2	0.1	11.2	0.1	7.0	0.1	1.3	0.0	0.1	0.0
1998	53.5	0.1	34.5	0.1	11.1	0.1	6.4	0.0	1.3	0.0	0.1	0.0
1999	53.3	0.1	35.3	0.1	10.5	0.1	6.0	0.0	1.4	0.0	0.1	0.0
2000	52.8	0.1	34.9	0.1	10.4	0.1	5.9	0.0	1.4	0.0	0.1	0.0
2001	55.1	0.1	35.6	0.1	10.7	0.1	7.1	0.0	1.5	0.0	0.1	0.0
2002	55.7	0.1	36.9	0.1	10.9	0.1	6.1	0.0	1.7	0.0	0.1	0.0
2003	56.0	0.1	37.3	0.1	10.8	0.1	6.1	0.0	1.7	0.0	0.2	0.0
2004	56.4	0.1	37.7	0.1	10.9	0.1	5.9	0.0	1.7	0.0	0.1	0.0

0.0 Quantity more than zero but less than 0.05.
[1]Includes legal intervention and operations of war. The catgory was referred to as "Other" before 1998.
[2]SE is standard error.
NOTES: Rates are per 100,000 resident population. Rates are age adjusted to the 2000 U.S. standard population. Age-adjusted rates may not agree with rates published by the Division of Vital Statistics because of the methodology. See Appendix I, NVSS, Mortality Statistics for description of data source and for identifying injury deaths. See Appendix II, Age adjustment, for difference in methods; Standard error. See Table VI for classification codes for intent of injury.
SOURCE: CDC/NCHS, National Vital Statistics System.

Data table A for Figure 5-1. Average annual injury death rates for total population by intent of injury and age: United States, 2003–2004

Age in years	Intent of injury							
	Unintentional		Suicide		Homicide		Undetermined	
	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE
Under 1	24.7	0.6	...	...	8.2	0.3	2.2	0.2
1	13.2	0.4	...	...	3.7	0.2	0.5	0.1
2	11.8	0.4	...	...	2.6	0.2	0.3	0.1
3	9.5	0.3	...	...	1.9	0.2	*	*
4	7.7	0.3	...	...	1.3	0.1	*	*
5	6.7	0.3	*	*	0.7	0.1	*	*
6	5.8	0.3	*	*	0.6	0.1	*	*
7	5.4	0.3	*	*	0.6	0.1	*	*
8	5.0	0.3	*	*	0.7	0.1	*	*
9	5.3	0.3	*	*	0.6	0.1	*	*
10	5.4	0.3	0.3	0.1	0.6	0.1	*	*
11	5.3	0.3	0.4	0.1	0.5	0.1	*	*
12	6.8	0.3	0.9	0.1	0.8	0.1	*	*
13	7.7	0.3	1.8	0.1	1.1	0.1	0.2	0.1
14	10.9	0.4	2.8	0.2	1.9	0.1	0.3	0.1
15	15.0	0.4	4.1	0.2	3.6	0.2	0.4	0.1
16	27.4	0.6	6.1	0.3	5.7	0.3	0.4	0.1
17	34.9	0.7	7.0	0.3	8.8	0.3	0.6	0.1
18	43.8	0.7	9.8	0.3	13.5	0.4	1.0	0.1
19	43.9	0.7	11.7	0.4	15.5	0.4	1.4	0.1
20	43.6	0.7	11.4	0.4	16.2	0.4	1.4	0.1
21	44.8	0.7	13.0	0.4	15.2	0.4	1.6	0.1
22	42.2	0.7	12.2	0.4	16.0	0.4	1.8	0.1
23	38.2	0.7	12.6	0.4	15.5	0.4	2.0	0.2
24	36.8	0.7	12.1	0.4	16.1	0.4	2.0	0.2
25	35.6	0.7	12.0	0.4	15.0	0.4	1.8	0.1
26	35.5	0.7	12.1	0.4	14.6	0.4	1.7	0.1
27	34.0	0.7	11.9	0.4	13.5	0.4	1.7	0.1
28	31.7	0.6	12.1	0.4	11.8	0.4	1.9	0.2
29	31.7	0.6	12.4	0.4	11.6	0.4	2.2	0.2
30	29.5	0.6	12.6	0.4	10.5	0.4	2.3	0.2
31	29.7	0.6	13.0	0.4	10.5	0.4	2.3	0.2
32	31.4	0.6	13.7	0.4	9.5	0.3	2.1	0.2
33	30.5	0.6	13.2	0.4	8.3	0.3	2.1	0.2
34	30.8	0.6	13.7	0.4	8.2	0.3	2.5	0.2
35	33.6	0.6	13.4	0.4	8.4	0.3	2.7	0.2
36	33.9	0.6	12.9	0.4	7.4	0.3	3.0	0.2
37	35.2	0.7	14.5	0.4	7.6	0.3	3.0	0.2
38	35.8	0.6	14.1	0.4	7.5	0.3	3.2	0.2
39	35.7	0.6	14.5	0.4	6.5	0.3	3.4	0.2
40	37.3	0.6	15.4	0.4	6.9	0.3	3.5	0.2
41	40.3	0.7	15.8	0.4	6.6	0.3	3.8	0.2
42	40.4	0.7	16.2	0.4	6.6	0.3	3.6	0.2
43	42.0	0.7	15.8	0.4	6.2	0.3	3.5	0.2
44	40.2	0.7	16.4	0.4	5.5	0.2	3.9	0.2

See footnotes at end of table.

Data table A for Figure 5-1. Average annual injury death rates for total population by intent of injury and age: United States, 2003–2004—Con.

Age in years	Intent of injury							
	Unintentional		Suicide		Homicide		Undetermined	
	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE
45	42.1	0.7	16.3	0.4	6.5	0.3	3.5	0.2
46	42.9	0.7	16.3	0.4	5.7	0.3	3.4	0.2
47	42.3	0.7	16.6	0.4	5.3	0.2	3.8	0.2
48	41.4	0.7	16.4	0.4	5.2	0.2	3.8	0.2
49	39.5	0.7	16.8	0.4	4.6	0.2	3.3	0.2
50	39.8	0.7	16.7	0.5	4.5	0.2	2.9	0.2
51	39.2	0.7	16.2	0.5	4.5	0.2	2.8	0.2
52	37.3	0.7	15.9	0.5	4.4	0.2	2.3	0.2
53	35.5	0.7	15.3	0.5	3.8	0.2	2.7	0.2
54	35.8	0.7	15.8	0.5	3.9	0.2	2.2	0.2
55	33.3	0.7	14.0	0.4	3.3	0.2	2.1	0.2
56	33.5	0.7	14.7	0.5	3.2	0.2	1.8	0.2
57	31.6	0.7	13.9	0.5	3.2	0.2	1.8	0.2
58	33.1	0.8	15.5	0.5	3.1	0.2	1.2	0.1
59	32.4	0.8	14.4	0.5	2.9	0.2	1.0	0.1
60	33.3	0.8	14.3	0.5	2.9	0.2	1.1	0.1
61	32.3	0.8	13.7	0.5	2.9	0.2	1.1	0.1
62	34.2	0.8	12.4	0.5	2.4	0.2	1.1	0.2
63	33.1	0.9	12.2	0.5	2.5	0.2	0.9	0.1
64	33.9	0.9	11.6	0.5	2.5	0.2	0.8	0.1
65	36.1	0.9	12.0	0.5	2.6	0.2	0.9	0.1
66	36.5	0.9	11.4	0.5	2.2	0.2	0.7	0.1
67	37.7	1.0	12.1	0.6	2.9	0.3	1.2	0.2
68	41.0	1.0	11.2	0.5	2.1	0.2	0.9	0.2
69	40.2	1.0	11.6	0.6	2.5	0.3	*	*
70	45.6	1.1	12.6	0.6	2.3	0.3	0.9	0.2
71	46.9	1.2	13.0	0.6	2.2	0.3	*	*
72	50.3	1.2	13.1	0.6	2.6	0.3	0.6	0.1
73	52.4	1.2	14.3	0.6	1.9	0.2	0.8	0.1
74	58.6	1.3	14.8	0.7	2.5	0.3	0.9	0.2
75	64.0	1.4	16.7	0.7	2.6	0.3	0.7	0.1
76	73.7	1.5	15.0	0.7	2.0	0.3	0.7	0.1
77	79.8	1.6	14.9	0.7	2.2	0.3	*	*
78	84.8	1.7	16.1	0.8	2.0	0.3	*	*
79	96.7	1.9	16.4	0.8	3.1	0.3	*	*
80	108.8	2.1	15.8	0.8	2.7	0.3	0.9	0.2
81	120.4	2.2	17.6	0.9	2.3	0.3	1.0	0.2
82	136.3	2.5	19.3	0.9	2.5	0.3	1.0	0.2
83	157.9	2.8	16.9	0.9	1.8	0.3	1.1	0.2
84	162.4	3.0	16.4	0.9	2.3	0.4	1.6	0.3
85 years and over	277.8	1.7	16.7	0.4	2.2	0.2	1.4	0.1

...Category not applicable.
*Figure does not meet standards of reliability or precision; rates based on fewer than 20 deaths are considered unreliable.
[1]SE is standard error.
NOTES: Rates are per 100,000 resident population. Suicide rates are not calculated for children under 5 years of age. See Appendix I, NVSS, Mortality Statistics for description of data source. See Appendix II, Standard error. See Table III for classification codes for intent.
SOURCE: CDC/NCHS, National Vital Statistics System.

Data table B for Figure 5-1. Average annual injury death rates for males by intent of injury and age: United States, 2003–2004

	Intent of injury							
Age in years	Unintentional		Suicide		Homicide		Undetermined	
	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE
Under 1	27.7	0.8	...	...	9.0	0.5	2.8	0.3
1	14.9	0.6	...	...	4.1	0.3	0.6	0.1
2	13.9	0.6	...	...	2.6	0.3	*	*
3	11.9	0.5	...	...	1.9	0.2	*	*
4	8.8	0.5	...	...	1.4	0.2	*	*
5	8.1	0.5	*	*	0.7	0.1	*	*
6	7.0	0.4	*	*	0.7	0.1	*	*
7	6.3	0.4	*	*	*	*	*	*
8	6.0	0.4	*	*	0.7	0.1	*	*
9	5.7	0.4	*	*	0.7	0.1	*	*
10	6.3	0.4	*	*	0.6	0.1	*	*
11	6.5	0.4	0.6	0.1	0.5	0.1	*	*
12	9.0	0.5	1.3	0.2	1.1	0.2	*	*
13	9.7	0.5	2.4	0.2	1.5	0.2	*	*
14	14.1	0.6	3.7	0.3	2.9	0.3	*	*
15	18.5	0.7	5.6	0.4	5.5	0.4	0.7	0.1
16	35.1	0.9	8.9	0.5	9.4	0.5	0.7	0.1
17	46.3	1.0	11.1	0.5	14.6	0.6	1.0	0.2
18	60.2	1.2	15.8	0.6	22.6	0.7	1.5	0.2
19	63.6	1.2	19.4	0.7	26.1	0.8	1.8	0.2
20	64.1	1.2	19.3	0.7	27.3	0.8	1.9	0.2
21	67.1	1.2	21.9	0.7	24.8	0.8	2.3	0.2
22	63.9	1.2	20.2	0.7	26.9	0.8	2.7	0.2
23	58.2	1.2	21.0	0.7	26.4	0.8	3.1	0.3
24	55.6	1.1	20.3	0.7	27.3	0.8	2.8	0.3
25	54.5	1.2	20.0	0.7	25.7	0.8	2.5	0.2
26	53.1	1.2	20.0	0.7	24.3	0.8	2.4	0.2
27	51.2	1.1	19.4	0.7	22.8	0.8	2.6	0.3
28	47.4	1.1	19.5	0.7	19.6	0.7	2.5	0.3
29	47.7	1.1	20.1	0.7	19.1	0.7	3.0	0.3
30	44.5	1.1	19.7	0.7	16.9	0.7	3.3	0.3
31	44.5	1.1	20.8	0.7	16.9	0.6	3.1	0.3
32	47.2	1.1	22.2	0.7	15.2	0.6	2.7	0.3
33	44.7	1.0	21.0	0.7	13.4	0.6	2.8	0.3
34	44.1	1.0	21.7	0.7	12.3	0.5	3.2	0.3
35	48.7	1.1	21.2	0.7	13.1	0.6	3.6	0.3
36	49.3	1.1	20.1	0.7	11.9	0.5	3.8	0.3
37	50.2	1.1	23.0	0.7	11.2	0.5	3.8	0.3
38	51.0	1.1	22.3	0.7	10.9	0.5	4.1	0.3
39	50.6	1.1	22.1	0.7	9.7	0.5	4.5	0.3
40	52.2	1.1	23.5	0.7	9.5	0.5	4.5	0.3
41	56.9	1.1	24.3	0.7	9.9	0.5	4.6	0.3
42	57.7	1.1	24.7	0.7	9.7	0.5	4.6	0.3
43	59.9	1.1	24.5	0.7	9.0	0.4	4.0	0.3
44	58.1	1.1	24.6	0.7	8.3	0.4	4.9	0.3

See footnotes at end of table.

Data table B for Figure 5-1. Average annual injury death rates for males by intent of injury and age: United States, 2003–2004—Con.

Age in years	Intent of injury							
	Unintentional		Suicide		Homicide		Undetermined	
	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE
45	60.3	1.2	24.6	0.7	9.5	0.5	4.6	0.3
46	61.2	1.2	24.4	0.7	8.2	0.4	4.6	0.3
47	61.2	1.2	25.0	0.8	7.9	0.4	4.5	0.3
48	59.2	1.2	24.6	0.8	7.9	0.4	5.1	0.3
49	56.4	1.2	25.3	0.8	6.7	0.4	4.0	0.3
50	57.7	1.2	25.0	0.8	7.0	0.4	4.0	0.3
51	56.4	1.2	24.3	0.8	6.7	0.4	3.6	0.3
52	55.2	1.2	24.9	0.8	6.9	0.4	2.6	0.3
53	51.5	1.2	23.6	0.8	6.0	0.4	3.7	0.3
54	51.0	1.2	24.2	0.8	6.0	0.4	2.8	0.3
55	47.7	1.2	21.2	0.8	4.9	0.4	2.7	0.3
56	49.0	1.2	23.1	0.8	4.8	0.4	2.3	0.3
57	45.4	1.2	22.0	0.8	4.7	0.4	2.1	0.3
58	45.5	1.3	24.2	0.9	4.7	0.4	1.4	0.2
59	47.2	1.3	23.5	0.9	4.6	0.4	1.1	0.2
60	47.2	1.3	22.1	0.9	4.3	0.4	1.3	0.2
61	45.8	1.3	23.4	0.9	4.5	0.4	1.3	0.2
62	48.5	1.5	20.7	1.0	3.6	0.4	1.2	0.2
63	46.9	1.5	20.2	1.0	3.5	0.4	1.1	0.2
64	46.4	1.5	20.0	1.0	3.6	0.4	*	*
65	49.2	1.6	21.1	1.0	4.0	0.4	1.0	0.2
66	49.9	1.6	19.2	1.0	3.0	0.4	*	*
67	53.2	1.7	21.2	1.1	4.4	0.5	1.4	0.3
68	56.0	1.8	20.5	1.1	3.1	0.4	1.5	0.3
69	55.2	1.8	21.6	1.1	3.7	0.5	*	*
70	61.3	2.0	23.2	1.2	3.8	0.5	*	*
71	60.6	2.0	24.0	1.2	3.6	0.5	*	*
72	68.1	2.1	24.7	1.3	3.2	0.5	*	*
73	69.5	2.2	28.4	1.4	2.6	0.4	*	*
74	76.0	2.3	28.7	1.4	3.4	0.5	*	*
75	82.9	2.5	32.9	1.5	3.7	0.5	*	*
76	99.2	2.7	29.3	1.5	2.8	0.5	*	*
77	103.7	2.9	30.3	1.6	2.7	0.5	*	*
78	114.8	3.1	33.6	1.7	2.3	0.4	*	*
79	127.5	3.4	34.9	1.8	3.8	0.6	*	*
80	141.6	3.8	34.3	1.9	3.3	0.6	*	*
81	159.7	4.2	39.4	2.1	2.7	0.5	*	*
82	184.5	4.7	44.3	2.3	3.1	0.6	*	*
83	209.8	5.3	38.8	2.3	*	*	*	*
84	211.4	5.7	40.3	2.5	*	*	*	*
85 and over	348.9	3.4	46.4	1.3	2.9	0.3	1.7	0.2

...Category not applicable.
*Figure does not meet standards of reliability or precision; rates based on fewer than 20 deaths are considered unreliable.
[1]SE is standard error.
NOTES: Rates are per 100,000 resident population. Suicide rates are not calculated for children under 5 years of age. See Appendix I, NVSS, Mortality Statistics for description of data source. See Appendix II, Standard error. See Table III for classification codes for intent.
SOURCE: CDC/NCHS, National Vital Statistics System.

Data table C for Figure 5. Average annual injury death rates for females by intent of injury and age: United States, 2003–2004

	Intent of injury							
Age in years	Unintentional		Suicide		Homicide		Undetermined	
	Rate	SE	Rate	SE	Rate	SE	Rate	SE
Under 1	21.6	0.7	...	...	7.4	0.4	1.6	0.2
1	11.4	0.5	...	...	3.3	0.3	*	*
2	9.6	0.5	...	...	2.5	0.3	*	*
3	7.0	0.4	...	...	1.9	0.2	*	*
4	6.5	0.4	...	...	1.3	0.2	*	*
5	5.3	0.4		...	0.6	0.1	*	*
6	4.5	0.3	*	*	*	*	*	*
7	4.5	0.3	*	*	0.7	0.1	*	*
8	3.9	0.3	*	*	0.6	0.1	*	*
9	4.9	0.4	*	*	0.6	0.1	*	*
10	4.3	0.3	*	*	0.5	0.1	*	*
11	4.0	0.3	*	*	0.5	0.1	*	*
12	4.5	0.3	*	*	0.6	0.1	*	*
13	5.6	0.4	1.1	0.2	0.7	0.1	*	*
14	7.4	0.4	1.8	0.2	0.8	0.1	*	*
15	11.3	0.5	2.5	0.2	1.6	0.2	*	*
16	19.4	0.7	3.1	0.3	1.9	0.2	*	*
17	23.0	0.8	2.7	0.3	2.6	0.3	*	*
18	26.5	0.8	3.6	0.3	3.8	0.3	0.6	0.1
19	23.0	0.8	3.6	0.3	4.2	0.3	0.8	0.1
20	21.6	0.7	3.1	0.3	4.2	0.3	0.7	0.1
21	21.0	0.7	3.5	0.3	4.9	0.3	0.9	0.2
22	19.1	0.7	3.6	0.3	4.5	0.3	1.0	0.2
23	17.1	0.6	3.7	0.3	4.0	0.3	0.8	0.1
24	17.0	0.6	3.5	0.3	4.3	0.3	1.3	0.2
25	15.7	0.6	3.4	0.3	3.8	0.3	1.0	0.2
26	17.1	0.7	3.9	0.3	4.4	0.3	1.0	0.2
27	16.0	0.7	4.1	0.3	3.9	0.3	0.8	0.1
28	15.4	0.6	4.5	0.3	3.6	0.3	1.3	0.2
29	15.1	0.6	4.4	0.3	3.9	0.3	1.4	0.2
30	14.1	0.6	5.4	0.4	3.8	0.3	1.3	0.2
31	14.6	0.6	5.0	0.4	3.9	0.3	1.4	0.2
32	15.4	0.6	5.0	0.3	3.8	0.3	1.5	0.2
33	16.0	0.6	5.3	0.4	3.2	0.3	1.4	0.2
34	17.3	0.6	5.5	0.4	4.0	0.3	1.7	0.2
35	18.4	0.7	5.4	0.4	3.6	0.3	1.7	0.2
36	18.4	0.7	5.6	0.4	2.8	0.3	2.1	0.2
37	20.2	0.7	6.0	0.4	4.0	0.3	2.1	0.2
38	20.5	0.7	5.8	0.4	4.1	0.3	2.2	0.2
39	20.8	0.7	6.9	0.4	3.4	0.3	2.2	0.2
40	22.5	0.7	7.4	0.4	4.2	0.3	2.5	0.2
41	23.9	0.7	7.4	0.4	3.3	0.3	3.0	0.3
42	23.2	0.7	7.9	0.4	3.6	0.3	2.5	0.2
43	24.3	0.7	7.1	0.4	3.5	0.3	3.0	0.3
44	22.6	0.7	8.3	0.4	2.8	0.2	3.0	0.3

See footnotes at end of table.

Data table C for Figure 5. Average annual injury death rates for females by intent of injury and age: United States, 2003–2004—Con.

Age in single years	Intent of injury							
	Unintentional		Suicide		Homicide		Undetermined	
	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE
45	24.4	0.7	8.1	0.4	3.5	0.3	2.4	0.2
46	25.1	0.7	8.4	0.4	3.3	0.3	2.4	0.2
47	24.0	0.7	8.4	0.4	2.8	0.2	3.0	0.3
48	24.1	0.7	8.6	0.4	2.6	0.2	2.5	0.2
49	23.1	0.7	8.5	0.4	2.6	0.2	2.7	0.3
50	22.6	0.7	8.6	0.5	2.1	0.2	1.9	0.2
51	22.8	0.8	8.4	0.5	2.4	0.2	2.1	0.2
52	20.3	0.7	7.2	0.4	2.0	0.2	2.2	0.2
53	20.2	0.7	7.4	0.4	1.6	0.2	1.7	0.2
54	21.5	0.8	7.9	0.5	1.8	0.2	1.6	0.2
55	19.7	0.7	7.1	0.4	1.7	0.2	1.4	0.2
56	18.8	0.7	6.6	0.4	1.7	0.2	1.4	0.2
57	18.6	0.7	6.2	0.4	1.7	0.2	1.4	0.2
58	21.6	0.9	7.4	0.5	1.6	0.2	0.9	0.2
59	18.6	0.8	5.9	0.5	1.4	0.2	0.9	0.2
60	20.4	0.8	7.0	0.5	1.5	0.2	0.9	0.2
61	20.0	0.8	4.7	0.4	1.3	0.2	1.0	0.2
62	21.3	0.9	4.9	0.4	1.4	0.2	1.0	0.2
63	20.7	0.9	5.0	0.5	1.6	0.3	*	*
64	22.6	1.0	4.1	0.4	1.4	0.2	*	*
65	24.4	1.0	4.0	0.4	1.3	0.2	*	*
66	24.8	1.1	4.4	0.5	1.5	0.3	*	*
67	24.3	1.1	4.3	0.5	1.7	0.3	1.0	0.2
68	28.0	1.2	3.3	0.4	1.3	0.3	*	*
69	27.5	1.2	3.1	0.4	1.5	0.3	*	*
70	32.5	1.3	3.8	0.4	*	*	*	*
71	35.7	1.4	3.9	0.5	1.0	0.2	*	*
72	36.0	1.4	3.7	0.4	2.1	0.3	*	*
73	38.9	1.4	3.2	0.4	1.4	0.3	*	*
74	45.2	1.6	4.0	0.5	1.8	0.3	*	*
75	49.7	1.7	4.4	0.5	1.7	0.3	*	*
76	54.9	1.8	4.4	0.5	1.3	0.3	*	*
77	62.7	1.9	3.9	0.5	1.8	0.3	*	*
78	64.0	1.9	4.0	0.5	1.7	0.3	*	*
79	76.1	2.2	4.0	0.5	2.7	0.4	*	*
80	87.6	2.4	3.8	0.5	2.3	0.4	*	*
81	95.5	2.6	3.8	0.5	2.0	0.4	*	*
82	106.7	2.8	3.9	0.5	2.2	0.4	*	*
83	127.3	3.2	4.0	0.6	*	*	*	*
84	134.5	3.4	2.8	0.5	2.1	0.4	*	*
85 and over	246.1	1.9	3.4	0.2	1.8	0.2	1.3	0.1

...Category not applicable.
*Figure does not meet standards of reliability or precision; rates based on fewer than 20 deaths are considered unreliable.
[1]SE is standard error.
NOTES: Rates are per 100,000 resident population. Suicide rates are not calculated for children under 5 years of age. See Appendix I, NVSS, Mortality Statistics for description of data source. See Appendix II, Standard error. See Table III for classification codes for intent.
SOURCE: CDC/NCHS, National Vital Statistics System.

Data table for Figure 5-2. Injury deaths and percent distribution, by intent: United States, 2003–2004

Intent	Deaths	Percent distribution
Unintentional	221,289	66.8
Suicide	63,923	19.3
Homicide	35,089	10.6
Undetermined	10,048	3.0
Legal intervention or operations of war	837	0.3
All injury deaths	331,186	100.0

NOTE: Deaths are 2-year totals.
SOURCE: CDC/NCHS, National Vital Statistics System.

Data table for Figure 6. Age-adjusted injury death rates for leading mechanisms of injury, by year: United States, 1985–2004

Year	Motor vehicle traffic		Firearm		Poisoning		Fall		Suffocation		Drowning	
	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
1985	18.1	0.1	13.1	0.1	5.1	0.0	4.7	0.0	4.2	0.0	2.1	0.0
1986	18.7	0.1	13.6	0.1	5.5	0.0	4.5	0.0	4.4	0.0	2.3	0.0
1987	18.8	0.1	13.3	0.1	5.4	0.0	4.5	0.0	4.3	0.0	2.1	0.0
1988	19.0	0.1	13.5	0.1	5.5	0.0	4.5	0.0	4.2	0.0	2.0	0.0
1989	18.4	0.1	13.8	0.1	5.5	0.0	4.5	0.0	4.1	0.0	1.9	0.0
1990	18.1	0.1	14.6	0.1	5.0	0.0	4.5	0.0	3.9	0.0	1.8	0.0
1991	16.6	0.1	14.9	0.1	5.3	0.0	4.5	0.0	3.9	0.0	1.8	0.0
1992	15.5	0.1	14.5	0.1	5.6	0.0	4.3	0.0	3.8	0.0	1.6	0.0
1993	15.7	0.1	15.0	0.1	6.1	0.0	4.3	0.0	3.8	0.0	1.7	0.0
1994	15.7	0.1	14.5	0.1	6.2	0.0	4.4	0.0	3.8	0.0	1.5	0.0
1995	15.9	0.1	13.4	0.1	6.1	0.0	4.5	0.0	3.9	0.0	1.7	0.0
1996	15.8	0.1	12.6	0.1	6.2	0.0	4.7	0.0	3.9	0.0	1.5	0.0
1997	15.5	0.1	11.8	0.1	6.5	0.0	4.8	0.0	3.9	0.0	1.5	0.0
1998	15.3	0.1	11.1	0.1	6.7	0.0	5.0	0.0	4.0	0.0	1.7	0.0
1999	14.7	0.1	10.3	0.1	7.1	0.1	5.1	0.0	4.2	0.0	1.5	0.0
2000	14.9	0.1	10.2	0.1	7.2	0.1	5.1	0.0	4.3	0.0	1.4	0.0
2001	14.9	0.1	10.3	0.1	7.8	0.1	5.6	0.0	4.4	0.0	1.4	0.0
2002	15.2	0.1	10.4	0.1	9.2	0.1	5.9	0.0	4.4	0.0	1.4	0.0
2003	14.8	0.1	10.3	0.1	9.9	0.1	6.1	0.0	4.4	0.0	1.3	0.0
2004	14.7	0.1	10.0	0.1	10.3	0.1	6.5	0.0	4.7	0.0	1.3	0.0

0.0 Quantity more than zero but less than 0.05.
[1]SE is standard error.
NOTES: Rates are per 100,000 resident population. Rates are age adjusted to the 2000 U.S. standard population. See Appendix I, NVSS, Mortality Statistics for description of data source, and Appendix II, Age adjustment. Age-adjusted rates may not agree with rates published by the Division of Vital Statistics because of the methodology. See Appendix II, Age adjustment, for difference in methods. For years 1985–1998, when the *International Classification of Diseases, Ninth Revision* (ICD–9) was in effect in the United States, ICD–9 external cause of injury codes for motor vehicle traffic-related deaths and for drowning were modified from the external cause of injury mortality matrix to be comparable to the way the categories are coded using ICD–10. E958.5 and E988.5 were removed from motor vehicle traffic codes, and E830–E832 were removed from drowning codes for 1985–1998. This provides trend data comparable to data year 1999 and beyond. See Table VI for classification codes for mechanisms of injury. See Appendix II, Comparability ratio; Standard error.
SOURCE: CDC/NCHS, National Vital Statistics System.

Data table for Figures 7 and 7-1. Average annual injury death rates by leading mechanisms, age, and sex: United States, 2003–2004

	Motor vehicle traffic						Firearm					
Age in years	Both sexes		Male		Female		Both sexes		Male		Female	
	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
Under 1	3.5	0.2	3.8	0.3	3.2	0.3	*	*	*	*	*	*
1	3.0	0.2	3.8	0.3	2.7	0.3	*	*	*	*	*	*
2	3.4	0.2	3.4	0.3	3.3	0.3	0.3	0.1	*	*	*	*
3	3.4	0.2	3.4	0.3	3.3	0.3	0.4	0.1	*	*	*	*
4	3.1	0.2	3.4	0.3	2.9	0.3	0.4	0.1	*	*	*	*
5	3.2	0.2	3.4	0.3	2.7	0.3	0.3	0.1	*	*	*	*
6	3.2	0.2	3.7	0.3	2.6	0.3	*	*	*	*	*	*
7	2.9	0.2	3.1	0.3	2.7	0.3	0.4	0.1	*	*	*	*
8	2.7	0.2	3.1	0.3	2.4	0.2	0.3	0.1	*	*	*	*
9	3.0	0.2	3.1	0.3	3.0	0.3	0.3	0.1	*	*	*	*
10	3.1	0.2	3.1	0.3	3.1	0.3	0.4	0.1	0.5	0.1	*	*
11	3.1	0.2	3.4	0.3	2.7	0.3	0.4	0.1	0.6	0.1	*	*
12	3.6	0.2	4.7	0.3	2.5	0.2	0.8	0.1	1.4	0.2	*	*
13	4.7	0.2	5.5	0.4	3.8	0.3	1.4	0.1	2.3	0.2	0.6	0.1
14	7.1	0.3	8.5	0.4	5.5	0.4	2.8	0.2	4.7	0.3	0.9	0.1
15	10.7	0.4	12.3	0.5	9.0	0.5	4.9	0.2	8.0	0.4	1.6	0.2
16	21.5	0.5	25.8	0.8	17.1	0.7	7.8	0.3	13.3	0.6	2.0	0.2
17	27.4	0.6	34.6	0.9	19.8	0.7	11.2	0.4	19.2	0.7	2.8	0.3
18	33.5	0.6	43.7	1.0	22.7	0.8	16.6	0.4	29.1	0.8	3.3	0.3
19	31.9	0.6	44.2	1.0	18.8	0.7	19.9	0.5	35.3	0.9	3.6	0.3
20	30.6	0.6	43.0	1.0	17.3	0.7	20.1	0.5	35.6	0.9	3.6	0.3
21	30.6	0.6	44.7	1.0	15.5	0.6	20.1	0.5	35.0	0.9	4.1	0.3
22	27.7	0.6	40.6	1.0	13.9	0.6	20.6	0.5	36.2	0.9	4.0	0.3
23	23.7	0.5	35.4	0.9	11.4	0.5	19.9	0.5	35.3	0.9	3.6	0.3
24	21.9	0.5	32.8	0.9	10.5	0.5	20.3	0.5	36.1	0.9	3.8	0.3
25	20.7	0.5	31.0	0.9	9.9	0.5	18.9	0.5	33.8	0.9	3.3	0.3
26	20.2	0.5	29.8	0.9	10.2	0.5	18.5	0.5	32.4	0.9	3.9	0.3
27	18.9	0.5	28.2	0.8	9.3	0.5	17.4	0.5	30.7	0.9	3.5	0.3
28	17.3	0.5	25.3	0.8	9.0	0.5	15.5	0.5	27.3	0.8	3.3	0.3
29	17.1	0.5	25.2	0.8	8.7	0.5	15.3	0.4	26.7	0.8	3.5	0.3
30	15.8	0.5	23.6	0.8	7.7	0.5	14.8	0.4	25.0	0.8	4.3	0.3
31	14.7	0.4	21.1	0.7	8.3	0.5	14.3	0.4	24.8	0.8	3.7	0.3
32	15.5	0.4	22.9	0.7	8.1	0.4	13.9	0.4	23.7	0.8	3.9	0.3
33	14.9	0.4	22.1	0.7	7.6	0.4	12.8	0.4	22.1	0.7	3.3	0.3
34	14.4	0.4	20.5	0.7	8.2	0.4	12.0	0.4	20.2	0.7	3.7	0.3
35	15.2	0.4	21.8	0.7	8.4	0.5	11.9	0.4	20.3	0.7	3.4	0.3
36	15.0	0.4	21.4	0.7	8.4	0.5	10.9	0.4	18.9	0.7	2.9	0.3
37	15.2	0.4	21.3	0.7	9.1	0.5	11.7	0.4	19.5	0.7	3.8	0.3
38	14.7	0.4	21.3	0.7	8.0	0.4	11.4	0.4	19.1	0.7	3.6	0.3
39	14.3	0.4	20.6	0.7	8.1	0.4	11.2	0.4	18.0	0.6	4.3	0.3
40	14.6	0.4	20.3	0.7	8.9	0.4	11.6	0.4	18.6	0.6	4.6	0.3
41	15.3	0.4	22.1	0.7	8.5	0.4	11.3	0.4	18.6	0.6	4.2	0.3
42	15.7	0.4	22.7	0.7	8.8	0.4	11.6	0.4	19.0	0.6	4.3	0.3
43	15.2	0.4	21.9	0.7	8.6	0.4	11.4	0.3	18.7	0.6	4.3	0.3
44	14.5	0.4	21.3	0.7	7.7	0.4	11.2	0.3	18.5	0.6	4.0	0.3

See footnotes at end of table.

Data table for Figures 7 and 7-1. Average annual injury death rates by leading mechanisms, age, and sex: United States, 2003–2004—Con.

	Motor vehicle traffic						Firearm					
Age in years	Both sexes		Male		Female		Both sexes		Male		Female	
	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
45	15.6	0.4	22.6	0.7	8.7	0.4	11.9	0.4	19.4	0.7	4.5	0.3
46	15.1	0.4	21.7	0.7	8.7	0.4	11.5	0.4	18.6	0.6	4.6	0.3
47	14.8	0.4	21.3	0.7	8.5	0.4	11.3	0.4	18.6	0.7	4.2	0.3
48	14.7	0.4	21.0	0.7	8.7	0.4	11.0	0.4	18.4	0.7	3.8	0.3
49	13.6	0.4	20.0	0.7	7.5	0.4	11.0	0.4	18.2	0.7	4.0	0.3
50	14.6	0.4	21.6	0.7	7.8	0.4	11.6	0.4	19.4	0.7	4.1	0.3
51	14.8	0.4	21.1	0.7	8.7	0.5	10.9	0.4	18.1	0.7	4.0	0.3
52	13.2	0.4	19.4	0.7	7.3	0.4	10.6	0.4	18.6	0.7	2.9	0.3
53	13.5	0.4	18.9	0.7	8.4	0.5	10.2	0.4	17.5	0.7	3.2	0.3
54	14.9	0.5	21.3	0.8	8.9	0.5	10.6	0.4	17.9	0.7	3.7	0.3
55	14.0	0.4	20.2	0.8	8.2	0.5	9.2	0.4	15.2	0.7	3.6	0.3
56	13.3	0.4	19.5	0.8	7.6	0.5	10.4	0.4	18.3	0.7	2.9	0.3
57	13.0	0.4	18.6	0.7	7.7	0.5	9.4	0.4	16.1	0.7	3.0	0.3
58	13.6	0.5	18.2	0.8	9.4	0.6	11.1	0.4	19.0	0.8	3.6	0.4
59	13.7	0.5	19.8	0.9	8.0	0.5	10.4	0.4	18.6	0.8	2.7	0.3
60	14.4	0.5	20.2	0.9	9.1	0.6	10.0	0.4	16.9	0.8	3.6	0.4
61	13.7	0.5	18.0	0.8	9.8	0.6	10.7	0.4	19.4	0.9	2.8	0.3
62	14.2	0.5	19.4	0.9	9.4	0.6	9.0	0.4	16.5	0.8	2.2	0.3
63	12.9	0.5	18.1	0.9	8.2	0.6	9.8	0.5	17.1	0.9	3.2	0.4
64	13.3	0.6	17.3	0.9	9.8	0.6	9.4	0.5	17.4	0.9	2.2	0.3
65	15.4	0.6	20.1	1.0	11.1	0.7	9.4	0.5	17.6	0.9	2.0	0.3
66	15.0	0.6	20.1	1.0	10.5	0.7	9.0	0.5	16.2	0.9	2.7	0.4
67	13.8	0.6	19.2	1.0	9.1	0.7	10.8	0.5	20.1	1.1	2.7	0.4
68	15.3	0.6	19.3	1.0	11.8	0.8	9.1	0.5	17.7	1.0	1.7	0.3
69	13.5	0.6	18.2	1.0	9.5	0.7	9.9	0.5	19.4	1.1	2.0	0.3
70	16.4	0.7	20.3	1.1	13.1	0.8	10.4	0.5	20.1	1.1	2.3	0.3
71	15.3	0.7	20.3	1.1	11.2	0.8	10.5	0.6	21.1	1.2	1.9	0.3
72	16.6	0.7	21.0	1.2	13.1	0.8	10.5	0.6	20.6	1.2	2.3	0.3
73	17.1	0.7	22.3	1.2	13.0	0.8	11.6	0.6	24.0	1.3	1.9	0.3
74	18.5	0.7	23.8	1.3	14.4	0.9	12.7	0.6	25.8	1.3	2.5	0.4
75	19.3	0.8	25.3	1.4	14.7	0.9	13.8	0.7	28.8	1.4	2.4	0.4
76	21.2	0.8	28.8	1.5	15.6	0.9	12.0	0.6	25.1	1.4	2.4	0.4
77	21.6	0.9	27.8	1.5	17.1	1.0	12.3	0.6	26.4	1.5	2.3	0.4
78	23.4	0.9	32.3	1.7	17.3	1.0	13.2	0.7	29.4	1.6	2.0	0.3
79	23.9	0.9	33.5	1.7	17.5	1.0	14.3	0.7	31.1	1.7	3.0	0.4
80	25.6	1.0	35.5	1.9	19.1	1.1	13.0	0.7	29.1	1.7	2.6	0.4
81	25.0	1.0	35.1	1.9	18.5	1.1	14.1	0.8	33.1	1.9	2.1	0.4
82	28.4	1.1	40.9	2.2	20.7	1.2	15.4	0.8	36.9	2.1	2.2	0.4
83	29.5	1.2	44.0	2.4	21.0	1.3	13.5	0.8	33.3	2.1	1.8	0.4
84	26.1	1.2	41.6	2.5	17.3	1.2	12.7	0.8	32.8	2.2	*	*
85 and over	26.4	0.5	45.0	1.2	18.1	0.5	12.2	0.4	36.8	1.1	1.2	0.1

See footnotes at end of table.

Data table for Figures 7 and 7-1. Average annual injury death rates by leading mechanisms, age, and sex: United States, 2003–2004—Con.

	Poisoning						Fall					
Age in years	Both sexes		Male		Female		Both sexes		Male		Female	
	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
Under 1	0.9	0.1	0.8	0.1	0.9	0.2	0.5	0.1	0.6	0.1	*	*
1	0.5	0.1	0.6	0.1	*	*	0.5	0.1	0.7	0.1	*	*
2	0.3	0.1	*	*	*	*	0.4	0.1	0.5	0.1	*	*
3	*	*	*	*	*	*	*	*	*	*	*	*
4	*	*	*	*	*	*	*	*	*	*	*	*
5	*	*	*	*	*	*	*	*	*	*	*	*
6	*	*	*	*	*	*	*	*	*	*	*	*
7	*	*	*	*	*	*	*	*	*	*	*	*
8	*	*	*	*	*	*	*	*	*	*	*	*
9	*	*	*	*	*	*	*	*	*	*	*	*
10	*	*	*	*	*	*	*	*	*	*	*	*
11	0.3	0.1	*	*	*	*	*	*	*	*	*	*
12	0.3	0.1	*	*	*	*	*	*	*	*	*	*
13	0.3	0.1	*	*	*	*	*	*	*	*	*	*
14	0.6	0.1	0.5	0.1	0.8	0.1	*	*	*	*	*	*
15	1.2	0.1	1.6	0.2	0.9	0.1	0.2	0.1	*	*	*	*
16	1.9	0.2	2.6	0.2	1.3	0.2	0.4	0.1	0.5	0.1	*	*
17	3.2	0.2	4.6	0.3	1.8	0.2	0.7	0.1	1.1	0.2	*	*
18	5.6	0.3	7.9	0.4	3.1	0.3	0.8	0.1	1.3	0.2	*	*
19	7.3	0.3	10.9	0.5	3.5	0.3	1.0	0.1	1.5	0.2	0.5	0.1
20	7.7	0.3	11.7	0.5	3.3	0.3	1.2	0.1	2.0	0.2	*	*
21	9.5	0.3	13.7	0.6	5.0	0.4	1.3	0.1	2.1	0.2	*	*
22	10.1	0.3	15.3	0.6	4.7	0.3	1.1	0.1	1.8	0.2	*	*
23	10.4	0.4	15.7	0.6	4.9	0.3	0.8	0.1	1.2	0.2	*	*
24	11.3	0.4	16.1	0.6	6.2	0.4	1.0	0.1	1.7	0.2	*	*
25	11.2	0.4	16.6	0.6	5.4	0.4	0.9	0.1	1.6	0.2	*	*
26	11.1	0.4	16.1	0.6	5.9	0.4	1.1	0.1	1.7	0.2	*	*
27	11.7	0.4	16.6	0.7	6.6	0.4	1.0	0.1	1.7	0.2	*	*
28	11.8	0.4	16.3	0.6	7.1	0.4	1.1	0.1	1.8	0.2	*	*
29	11.7	0.4	16.4	0.6	6.8	0.4	1.3	0.1	2.1	0.2	0.5	0.1
30	11.8	0.4	16.5	0.7	7.0	0.4	0.9	0.1	1.3	0.2	*	*
31	13.1	0.4	18.4	0.7	7.6	0.4	1.0	0.1	1.6	0.2	*	*
32	13.8	0.4	18.9	0.7	8.6	0.5	1.2	0.1	2.0	0.2	*	*
33	13.4	0.4	17.6	0.6	9.1	0.5	1.2	0.1	1.9	0.2	0.5	0.1
34	14.8	0.4	19.5	0.7	10.0	0.5	1.4	0.1	2.0	0.2	0.7	0.1
35	16.2	0.4	21.7	0.7	10.7	0.5	1.5	0.1	2.4	0.2	0.7	0.1
36	17.2	0.5	22.4	0.7	11.9	0.5	1.3	0.1	2.2	0.2	0.5	0.1
37	18.5	0.5	24.4	0.8	12.5	0.5	1.6	0.1	2.6	0.3	0.6	0.1
38	19.2	0.5	24.7	0.8	13.7	0.6	1.6	0.1	2.5	0.2	0.6	0.1
39	20.0	0.5	25.6	0.8	14.4	0.6	1.7	0.1	2.6	0.2	0.8	0.1
40	21.2	0.5	26.6	0.8	15.9	0.6	1.6	0.1	2.6	0.2	0.6	0.1
41	22.5	0.5	28.1	0.8	17.0	0.6	2.0	0.1	3.2	0.3	0.9	0.1
42	22.6	0.5	29.2	0.8	16.1	0.6	2.0	0.1	3.2	0.3	0.8	0.1
43	23.6	0.5	29.9	0.8	17.4	0.6	2.3	0.2	3.7	0.3	0.9	0.1
44	23.5	0.5	29.6	0.8	17.5	0.6	2.7	0.2	4.2	0.3	1.3	0.2

See footnotes at end of table.

Data table for Figures 7 and 7-1. Average annual injury death rates by leading mechanisms, age, and sex: United States, 2003–2004—Con.

	Poisoning						Fall					
Age in years	Both sexes		Male		Female		Both sexes		Male		Female	
	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
45	23.1	0.5	29.3	0.8	17.0	0.6	2.4	0.2	3.5	0.3	1.3	0.2
46	23.6	0.5	29.7	0.8	17.7	0.6	2.7	0.2	4.3	0.3	1.2	0.2
47	23.5	0.5	30.0	0.8	17.2	0.6	2.9	0.2	4.7	0.3	1.2	0.2
48	22.8	0.5	29.7	0.8	16.1	0.6	3.0	0.2	4.6	0.3	1.5	0.2
49	22.0	0.5	27.0	0.8	17.2	0.6	2.9	0.2	4.7	0.3	1.1	0.2
50	19.8	0.5	24.9	0.8	14.8	0.6	3.3	0.2	5.1	0.4	1.6	0.2
51	18.7	0.5	23.5	0.8	14.0	0.6	3.2	0.2	4.8	0.4	1.8	0.2
52	17.5	0.5	22.5	0.8	12.8	0.6	3.6	0.2	5.7	0.4	1.5	0.2
53	16.2	0.5	21.0	0.8	11.7	0.6	3.1	0.2	5.0	0.4	1.3	0.2
54	14.5	0.4	18.2	0.7	10.9	0.5	3.4	0.2	5.0	0.4	2.0	0.2
55	12.5	0.4	15.3	0.7	9.8	0.5	3.6	0.2	5.5	0.4	1.9	0.2
56	11.7	0.4	14.5	0.6	9.1	0.5	4.1	0.2	6.0	0.4	2.3	0.3
57	10.2	0.4	11.3	0.6	9.1	0.5	4.2	0.2	6.4	0.4	2.1	0.2
58	9.6	0.4	10.8	0.6	8.5	0.5	4.8	0.3	7.0	0.5	2.6	0.3
59	8.0	0.4	9.5	0.6	6.7	0.5	4.5	0.3	6.7	0.5	2.4	0.3
60	7.8	0.4	8.6	0.6	7.0	0.5	4.8	0.3	7.2	0.5	2.6	0.3
61	6.4	0.3	7.6	0.5	5.2	0.4	5.5	0.3	8.0	0.6	3.2	0.3
62	6.2	0.4	7.5	0.6	5.1	0.4	6.3	0.4	8.3	0.6	4.4	0.4
63	5.8	0.4	6.8	0.6	4.9	0.5	6.2	0.4	8.5	0.6	4.2	0.4
64	5.0	0.3	6.0	0.5	4.1	0.4	6.5	0.4	8.8	0.6	4.5	0.4
65	4.4	0.3	4.8	0.5	4.1	0.4	6.9	0.4	9.7	0.7	4.4	0.4
66	4.0	0.3	4.1	0.5	3.9	0.4	8.1	0.4	10.9	0.8	5.7	0.5
67	4.6	0.3	5.2	0.5	4.0	0.4	8.7	0.5	12.0	0.8	5.8	0.5
68	3.7	0.3	4.6	0.5	3.0	0.4	9.7	0.5	13.3	0.9	6.7	0.6
69	3.8	0.3	4.3	0.5	3.3	0.4	10.5	0.5	14.3	0.9	7.3	0.6
70	3.5	0.3	4.1	0.5	3.1	0.4	11.9	0.6	16.8	1.0	7.8	0.6
71	3.9	0.3	4.3	0.5	3.5	0.4	13.9	0.6	16.8	1.0	11.6	0.8
72	3.6	0.3	4.2	0.5	3.2	0.4	15.2	0.7	21.6	1.2	10.0	0.7
73	3.8	0.3	4.8	0.6	3.0	0.4	17.8	0.7	23.7	1.3	13.1	0.8
74	3.6	0.3	3.9	0.5	3.4	0.4	20.0	0.8	25.4	1.3	15.8	0.9
75	3.8	0.3	4.0	0.5	3.6	0.4	21.7	0.8	27.3	1.4	17.5	1.0
76	4.1	0.4	4.5	0.6	3.8	0.5	27.4	0.9	36.5	1.7	20.6	1.1
77	4.0	0.4	4.5	0.6	3.7	0.5	30.1	1.0	38.6	1.8	24.0	1.2
78	3.4	0.3	3.5	0.5	3.4	0.4	32.2	1.1	41.3	1.9	25.8	1.2
79	4.0	0.4	5.2	0.7	3.2	0.4	38.8	1.2	49.0	2.1	32.0	1.4
80	3.7	0.4	4.9	0.7	2.9	0.4	45.0	1.3	58.0	2.4	36.2	1.5
81	4.6	0.4	5.9	0.8	3.7	0.5	53.4	1.5	68.7	2.7	43.7	1.7
82	4.2	0.4	5.1	0.8	3.7	0.5	59.7	1.6	77.9	3.0	48.5	1.9
83	4.2	0.5	4.1	0.7	4.3	0.6	72.6	1.9	94.2	3.6	59.9	2.1
84	4.8	0.5	7.4	1.1	3.3	0.5	76.4	2.0	96.4	3.8	65.1	2.4
85 and over	5.4	0.2	7.5	0.5	4.5	0.3	140.3	1.2	171.0	2.4	126.6	1.4

See footnotes at end of table.

Data table for Figures 7 and 7-1. Average annual injury death rates by leading mechanisms, age, and sex: United States, 2003–2004—Con.

	Suffocation						Drowning					
Age in years	Both sexes		Male		Female		Both sexes		Male		Female	
	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
Under 1	18.8	0.5	21.4	0.7	16.0	0.6	2.0	0.2	2.2	0.2	1.7	0.2
1	2.1	0.2	2.5	0.2	1.7	0.2	4.4	0.2	5.1	0.4	3.7	0.3
2	1.0	0.1	1.2	0.2	0.8	0.1	3.7	0.2	4.7	0.3	2.5	0.3
3	0.6	0.1	0.8	0.1	*	*	2.1	0.2	2.9	0.3	1.3	0.2
4	0.5	0.1	0.5	0.1	*	*	1.3	0.1	1.5	0.2	1.1	0.2
5	*	*	*	*	*	*	1.0	0.1	1.5	0.2	0.6	0.1
6	0.3	0.1	*	*	*	*	0.7	0.1	0.9	0.1	0.6	0.1
7	*	*	*	*	*	*	0.7	0.1	1.0	0.2	*	*
8	0.3	0.1	*	*	*	*	0.5	0.1	0.7	0.1	*	*
9	0.5	0.1	0.6	0.1	*	*	0.5	0.1	0.6	0.1	*	*
10	0.6	0.1	1.0	0.2	*	*	0.5	0.1	0.6	0.1	*	*
11	0.6	0.1	0.9	0.1	*	*	0.5	0.1	0.7	0.1	*	*
12	1.2	0.1	1.9	0.2	0.5	0.1	0.7	0.1	1.0	0.2	0.5	0.1
13	1.6	0.1	2.3	0.2	1.0	0.2	0.7	0.1	1.1	0.2	*	*
14	2.0	0.2	2.7	0.2	1.3	0.2	1.0	0.1	1.6	0.2	*	*
15	2.7	0.2	3.3	0.3	2.1	0.2	0.9	0.1	1.6	0.2	*	*
16	3.1	0.2	4.4	0.3	1.8	0.2	1.4	0.1	2.4	0.2	*	*
17	3.1	0.2	4.7	0.3	1.5	0.2	1.7	0.1	3.0	0.3	*	*
18	4.3	0.2	6.2	0.4	2.3	0.2	1.8	0.1	3.1	0.3	*	*
19	4.5	0.2	6.9	0.4	1.9	0.2	1.8	0.1	3.2	0.3	*	*
20	4.4	0.2	7.0	0.4	1.7	0.2	1.8	0.1	3.1	0.3	*	*
21	5.2	0.3	8.0	0.4	2.2	0.2	1.4	0.1	2.5	0.2	*	*
22	4.6	0.2	7.1	0.4	1.9	0.2	1.6	0.1	2.9	0.3	*	*
23	4.6	0.2	7.2	0.4	1.8	0.2	1.5	0.1	2.6	0.2	*	*
24	4.4	0.2	7.0	0.4	1.7	0.2	1.3	0.1	2.2	0.2	*	*
25	4.2	0.2	6.6	0.4	1.7	0.2	1.9	0.2	3.3	0.3	*	*
26	4.7	0.2	7.4	0.4	2.0	0.2	1.4	0.1	2.3	0.2	*	*
27	4.7	0.2	7.2	0.4	2.0	0.2	1.2	0.1	2.0	0.2	*	*
28	4.5	0.2	6.8	0.4	2.0	0.2	1.0	0.1	1.8	0.2	*	*
29	4.8	0.2	7.5	0.4	1.9	0.2	1.3	0.1	2.0	0.2	0.5	0.1
30	4.5	0.2	7.2	0.4	1.7	0.2	1.2	0.1	1.9	0.2	*	*
31	5.0	0.3	8.0	0.4	2.0	0.2	0.9	0.1	1.4	0.2	*	*
32	4.9	0.2	7.9	0.4	1.7	0.2	1.1	0.1	1.8	0.2	*	*
33	4.5	0.2	7.2	0.4	1.9	0.2	1.1	0.1	1.8	0.2	*	*
34	4.9	0.2	7.5	0.4	2.2	0.2	1.1	0.1	1.8	0.2	*	*
35	4.7	0.2	7.3	0.4	2.1	0.2	1.3	0.1	2.1	0.2	0.5	0.1
36	4.6	0.2	7.4	0.4	1.9	0.2	1.2	0.1	2.1	0.2	*	*
37	4.7	0.2	7.6	0.4	1.8	0.2	1.1	0.1	1.7	0.2	0.5	0.1
38	4.8	0.2	7.6	0.4	2.0	0.2	1.3	0.1	2.3	0.2	*	*
39	4.5	0.2	7.4	0.4	1.6	0.2	1.3	0.1	2.1	0.2	0.5	0.1
40	4.8	0.2	7.8	0.4	1.9	0.2	1.3	0.1	2.1	0.2	0.6	0.1
41	5.0	0.2	7.8	0.4	2.2	0.2	1.4	0.1	2.4	0.2	0.4	0.1
42	4.8	0.2	7.4	0.4	2.3	0.2	1.4	0.1	2.0	0.2	0.7	0.1
43	4.8	0.2	7.5	0.4	2.1	0.2	1.4	0.1	2.3	0.2	0.6	0.1
44	4.3	0.2	6.8	0.4	1.9	0.2	1.4	0.1	2.1	0.2	0.6	0.1

See footnotes at end of table.

Data table for Figures 7 and 7-1. Average annual injury death rates by leading mechanisms, age, and sex: United States, 2003–2004—Con.

	Suffocation						Drowning					
Age in years	Both sexes		Male		Female		Both sexes		Male		Female	
	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
45	4.4	0.2	6.7	0.4	2.1	0.2	1.6	0.1	2.6	0.2	0.6	0.1
46	4.5	0.2	7.0	0.4	2.1	0.2	1.3	0.1	2.1	0.2	0.6	0.1
47	4.3	0.2	6.6	0.4	2.0	0.2	1.2	0.1	1.9	0.2	0.5	0.1
48	4.2	0.2	6.3	0.4	2.2	0.2	1.4	0.1	1.9	0.2	0.8	0.1
49	4.3	0.2	6.7	0.4	2.1	0.2	1.1	0.1	1.8	0.2	*	*
50	4.2	0.2	6.2	0.4	2.3	0.2	1.5	0.1	2.4	0.2	0.6	0.1
51	3.7	0.2	5.2	0.4	2.2	0.2	1.3	0.1	2.1	0.2	0.5	0.1
52	4.1	0.2	6.3	0.4	2.0	0.2	1.2	0.1	1.8	0.2	0.6	0.1
53	3.7	0.2	5.6	0.4	2.0	0.2	1.2	0.1	1.9	0.2	0.6	0.1
54	3.8	0.2	5.3	0.4	2.3	0.2	1.3	0.1	1.9	0.2	0.7	0.1
55	3.8	0.2	5.7	0.4	2.0	0.2	1.1	0.1	1.8	0.2	0.6	0.1
56	3.4	0.2	5.2	0.4	1.7	0.2	1.2	0.1	1.9	0.2	0.6	0.1
57	3.7	0.2	5.6	0.4	1.8	0.2	1.3	0.1	2.1	0.3	0.6	0.1
58	3.8	0.3	5.4	0.4	2.2	0.3	1.3	0.2	2.1	0.3	*	*
59	3.8	0.3	5.5	0.5	2.3	0.3	0.8	0.1	1.3	0.2	*	*
60	3.7	0.3	5.0	0.4	2.4	0.3	1.3	0.2	1.7	0.3	0.9	0.2
61	3.3	0.2	5.3	0.5	1.5	0.2	1.1	0.1	1.7	0.3	*	*
62	3.9	0.3	5.8	0.5	2.1	0.3	1.2	0.2	1.9	0.3	*	*
63	3.5	0.3	5.0	0.5	2.2	0.3	1.2	0.2	1.8	0.3	*	*
64	3.1	0.3	4.0	0.4	2.2	0.3	1.1	0.2	1.6	0.3	*	*
65	4.1	0.3	5.7	0.5	2.6	0.3	1.3	0.2	1.8	0.3	0.9	0.2
66	3.6	0.3	4.7	0.5	2.6	0.3	1.1	0.2	1.8	0.3	*	*
67	3.4	0.3	4.7	0.5	2.3	0.3	1.2	0.2	1.7	0.3	*	*
68	4.3	0.3	6.0	0.6	2.8	0.4	1.5	0.2	2.5	0.4	*	*
69	4.0	0.3	5.4	0.6	2.9	0.4	1.3	0.2	2.1	0.3	*	*
70	5.0	0.4	6.9	0.7	3.4	0.4	1.4	0.2	1.8	0.3	1.1	0.2
71	5.6	0.4	6.6	0.7	4.8	0.5	1.2	0.2	1.7	0.3	*	*
72	5.8	0.4	8.1	0.7	3.9	0.5	1.4	0.2	2.4	0.4	*	*
73	5.6	0.4	7.8	0.7	3.9	0.5	1.2	0.2	2.0	0.4	*	*
74	5.8	0.4	7.3	0.7	4.6	0.5	1.5	0.2	2.3	0.4	*	*
75	6.6	0.5	9.0	0.8	4.7	0.5	1.4	0.2	1.7	0.4	1.1	0.2
76	7.8	0.5	10.7	0.9	5.6	0.6	1.3	0.2	1.7	0.4	*	*
77	9.3	0.6	13.2	1.0	6.6	0.6	1.2	0.2	2.1	0.4	*	*
78	10.0	0.6	15.6	1.2	6.2	0.6	1.3	0.2	2.2	0.4	*	*
79	10.5	0.6	14.0	1.1	8.1	0.7	1.4	0.2	2.2	0.4	*	*
80	12.4	0.7	16.6	1.3	9.7	0.8	1.5	0.2	2.5	0.5	*	*
81	14.7	0.8	21.6	1.5	10.4	0.8	1.6	0.3	2.8	0.6	*	*
82	15.8	0.8	22.5	1.6	11.7	0.9	1.9	0.3	4.0	0.7	*	*
83	17.7	0.9	23.9	1.8	14.1	1.1	1.7	0.3	3.1	0.6	*	*
84	19.3	1.0	26.3	2.0	15.3	1.1	1.8	0.3	2.9	0.7	*	*
85 and over	31.7	0.6	43.9	1.2	26.2	0.6	2.1	0.1	3.9	0.4	1.3	0.1

See footnotes at end of table.

Data table for Figures 7 and 7-1. Average annual injury death rates by leading mechanisms, age, and sex: United States, 2003–2004—Con.

	Fire and burn					
Age in years	Both sexes		Male		Female	
	Rate	SE[1]	Rate	SE	Rate	SE
Under 1	0.9	0.1	0.8	0.1	1.1	0.2
1	1.5	0.1	1.5	0.2	1.4	0.2
2	1.6	0.1	1.8	0.2	1.4	0.2
3	1.6	0.1	2.0	0.2	1.2	0.2
4	1.5	0.1	1.6	0.2	1.5	0.2
5	1.3	0.1	1.5	0.2	1.1	0.2
6	0.7	0.1	0.9	0.1	*	*
7	0.9	0.1	0.9	0.1	0.9	0.1
8	0.6	0.1	0.7	0.1	0.5	0.1
9	0.7	0.1	0.9	0.1	*	*
10	0.4	0.1	*	*	*	*
11	0.5	0.1	0.6	0.1	*	*
12	0.6	0.1	0.5	0.1	0.7	0.1
13	0.5	0.1	*	*	0.6	0.1
14	0.3	0.1	*	*	*	*
15	0.4	0.1	*	*	0.5	0.1
16	0.3	0.1	*	*	*	*
17	0.4	0.1	*	*	*	*
18	0.4	0.1	0.6	0.1	*	*
19	0.6	0.1	0.7	0.1	0.5	0.1
20	0.7	0.1	0.7	0.1	0.6	0.1
21	0.8	0.1	1.0	0.1	0.6	0.1
22	0.9	0.1	1.1	0.2	0.6	0.1
23	0.6	0.1	0.8	0.1	0.5	0.1
24	0.7	0.1	0.8	0.1	0.7	0.1
25	0.9	0.1	1.2	0.2	0.5	0.1
26	0.8	0.1	1.0	0.2	0.6	0.1
27	0.8	0.1	0.9	0.2	0.6	0.1
28	0.8	0.1	1.0	0.2	*	*
29	0.6	0.1	0.8	0.1	*	*
30	0.6	0.1	0.7	0.1	*	*
31	0.6	0.1	0.8	0.1	*	*
32	0.8	0.1	1.1	0.2	*	*
33	0.7	0.1	1.0	0.1	0.5	0.1
34	0.8	0.1	0.9	0.1	0.8	0.1
35	1.0	0.1	1.4	0.2	0.6	0.1
36	0.8	0.1	1.1	0.2	0.6	0.1
37	0.9	0.1	1.0	0.2	0.7	0.1
38	0.9	0.1	1.1	0.2	0.6	0.1
39	1.0	0.1	1.4	0.2	0.6	0.1
40	0.9	0.1	1.3	0.2	0.5	0.1
41	1.3	0.1	1.5	0.2	1.1	0.2
42	1.0	0.1	1.2	0.2	0.8	0.1
43	1.1	0.1	1.6	0.2	0.7	0.1
44	1.1	0.1	1.4	0.2	0.8	0.1

See footnotes at end of table.

Data table for Figures 7 and 7-1. Average annual injury death rates by leading mechanisms, age, and sex: United States, 2003–2004—Con.

	Fire and burn					
Age in years	Both sexes		Male		Female	
	Rate	SE[1]	Rate	SE	Rate	SE
45	1.4	0.1	1.8	0.2	1.0	0.1
46	1.5	0.1	2.0	0.2	0.9	0.1
47	1.6	0.1	2.1	0.2	1.0	0.2
48	1.3	0.1	1.7	0.2	1.0	0.1
49	1.4	0.1	1.8	0.2	1.0	0.2
50	1.6	0.1	2.0	0.2	1.2	0.2
51	1.7	0.1	2.2	0.2	1.3	0.2
52	1.5	0.1	2.0	0.2	1.1	0.2
53	1.3	0.1	2.0	0.2	0.7	0.1
54	1.5	0.1	2.0	0.2	1.1	0.2
55	1.3	0.1	1.9	0.2	0.6	0.1
56	1.5	0.1	2.1	0.2	0.9	0.2
57	1.5	0.1	2.0	0.2	1.0	0.2
58	1.4	0.2	1.6	0.2	1.3	0.2
59	1.8	0.2	2.5	0.3	1.2	0.2
60	1.5	0.2	1.9	0.3	1.1	0.2
61	1.7	0.2	2.3	0.3	1.1	0.2
62	2.0	0.2	2.5	0.3	1.5	0.2
63	1.9	0.2	2.4	0.3	1.5	0.2
64	2.0	0.2	2.4	0.3	1.7	0.3
65	1.7	0.2	2.2	0.3	1.3	0.2
66	2.2	0.2	2.8	0.4	1.6	0.3
67	1.9	0.2	2.9	0.4	1.0	0.2
68	2.5	0.3	3.1	0.4	1.9	0.3
69	2.3	0.3	3.0	0.4	1.8	0.3
70	2.5	0.3	3.2	0.4	1.9	0.3
71	2.0	0.2	2.8	0.4	1.3	0.3
72	2.5	0.3	3.1	0.5	2.1	0.3
73	2.7	0.3	3.6	0.5	2.0	0.3
74	2.6	0.3	3.1	0.5	2.2	0.3
75	3.1	0.3	3.9	0.5	2.5	0.4
76	3.4	0.3	4.2	0.6	2.9	0.4
77	3.3	0.3	4.0	0.6	2.8	0.4
78	3.2	0.3	4.4	0.6	2.4	0.4
79	2.9	0.3	3.7	0.6	2.3	0.4
80	4.7	0.4	5.9	0.8	4.0	0.5
81	4.2	0.4	5.2	0.7	3.5	0.5
82	4.7	0.5	6.1	0.8	3.9	0.5
83	4.7	0.5	6.6	0.9	3.6	0.5
84	5.3	0.5	6.4	1.0	4.7	0.6
85 and over	6.1	0.3	8.0	0.5	5.2	0.3

*Figure does not meet standards of reliability or precision. Rates based on fewer than 20 deaths are considered unreliable.
[1]SE is standard error.
NOTES: Rates are per 100,000 resident population. See Appendix I, NVSS, Mortality Statistics for description of data source. See Appendix II, Standard error. See Table III for classification codes for mechanisms of injury.
SOURCE: CDC/NCHS, National Vital Statistics System.

Data table for Figure 8-1. Average annual number of injury deaths and percent distribution of injury deaths, by body region: United States 2003–2004

Body region	Annual weighted number of deaths	Percent distribution	SE[1] (percent)
Total	165,593	100.0	-
Head and neck	46,970	28.4	0.1
Traumatic brain injury	42,755	25.8	0.1
Other head	126	0.1	0.0
Neck	4,065	2.5	0.0
Head and neck, other	24	0.0	0.0
Spine and upper back	1,691	1.0	0.0
Spinal cord	884	0.5	0.0
Verterbral column	807	0.5	0.0
Torso	23,110	14.0	0.1
Thorax	11,807	7.1	0.0
Abdomen	1,949	1.2	0.0
Pelvis and lower back	770	0.5	0.0
Abdomen, lower back, and pelvis	1,607	1.0	0.0
Trunk, other	6,977	4.2	0.0
Hip	6,091	3.7	0.0
Other extremities	3,404	2.1	0.0
Upper extremity	1,028	0.6	0.0
Other lower extremity	2,376	1.4	0.0
Unclassifiable by body region	68,623	41.4	0.1
Multiple body regions	19,700	11.9	0.1
System-wide	48,923	29.5	0.1
Unspecified region	15,704	9.5	0.1

- Quantity zero.
0.0 Quantity more than zero but less than 0.05.
[1]SE is standard error.
NOTE: See Appendix I, NVSS Mortality Statistics for description of data source and Appendix II, Multiple-cause-of-death data and injury diagnoses, for method to calculate annual weighted number of deaths; Standard error. See Table IV for classification codes for body region of injury.
SOURCE: CDC/NCHS, National Vital Statistics System.

Data table for Figure 8-2. Average annual number of injury deaths and percent distribution of injury deaths, by nature of injury: United States 2003–2004

Nature of injury	Average weighted number of deaths	Percent distribution	SE[1] (percent)
Total	165,593	100.0	-
Poisoning and toxic effects	32,149	19.4	0.1
Poisoning	25,995	15.7	0.1
Toxic effects	6,154	3.7	0.0
Open wounds	29,682	17.9	0.1
Other effects of external cause	16,253	9.8	0.1
Fracture	13,190	8.0	0.0
Internal organ	12,975	7.8	0.0
Other specified	10,532	6.4	0.0
Dislocation	214	0.1	0.0
Amputation	89	0.1	0.0
Blood vessel	927	0.6	0.0
Contusions or superficial	261	0.2	0.0
Crush	549	0.3	0.0
Burn	2,044	1.2	0.0
Effects of foreign body	4,526	2.7	0.0
Multiple injuries	975	0.6	0.0
Other specified injuries	948	0.6	0.0
Unspecified	50,812	30.7	0.1

- Quantity zero.
0.0 Quantity more than zero but less than 0.05.
[1]SE is standard error.
NOTE: See Appendix I, NVSS Mortality Statistics for description of data source and Appendix II, Multiple-cause-of-death data and injury diagnoses, for method to calculate annual weighted number of deaths; Standard error. See Table IV for classification codes for nature of injury.
SOURCE: CDC/NCHS, National Vital Statistics System.

Table 8. Average annual number of injury deaths and percentage of deaths classified by the ICD–10 Injury Mortality Diagnosis Matrix among all deaths with an underlying cause of injury: United States, 2003–2004

Body region of injury	All	Fracture	Dislocation	Internal organ injury	Open wounds	Amputation	Blood vessel	Contusion or superficial	Crush
	Annual weighted number of deaths								
All injuries mentioned	165,593	13,190	214	12,975	29,682	89	927	261	549
Head and neck	46,970	2,697	2	9,675	15,657	51	74	65	170
Traumatic brain injury	42,755	1,315	…	9,675	14,738	…	…	…	153
Other head	126	29	2	…	6	6	2	50	…
Neck	4,065	1,353	1	…	913	45	73	15	17
Head and neck, other	24	…	…	…	…	…	…	…	…
Spine and upper back	1,691	605	184	884	…	…	11	…	…
Spinal cord	884	…	…	884	…	…	…	…	…
Vertebral column	807	605	184	1	…	…	11	…	…
Torso	23,110	1,397	-	2,416	6,478	1	694	59	331
Thorax	11,807	762	-	961	4,754	-	600	32	261
Abdomen	1,949	…	…	917	959	…	65	3	…
Pelvis and lower back	770	609	-	60	74	-	23	1	-
Abdomen, lower back and pelvis	1,607	8	…	477	10	1	7	16	45
Other trunk	6,977	17	…	…	682	1	…	6	25
Extremities	9,495	8,085	27	…	692	32	71	41	17
Upper extremity	1,028	405	8	…	433	11	34	11	4
Hip	6,091	6,050	14	…	21	-	…	5	-
Other lower extremity	2,376	1,630	5	…	238	20	36	25	13
Unclassifiable by body region	68,623	190	…	…	3,209	5	3	16	32
Multiple body regions	19,700	190	…	…	3,209	5	3	16	32
System-wide	48,923	…	…	…	…	…	…	…	…
Unspecified	15,704	217	…	…	3,647	…	73	80	…

See footnotes at end of table.

Table 8. Average annual number of injury deaths and percentage of deaths classified by the ICD–10 Injury Mortality Diagnosis Matrix among all deaths with an underlying cause of injury: United States, 2003–2004—Con.

Body region of injury	Burn	Effect of foreign bodies entering orifice	Other effects of external causes	Poisoning	Toxic effects	Multiple injuries	Other specified injury	Unspecified injury
	Annual weighted number of deaths							
All injuries mentioned	2,044	4,526	16,253	25,995	6,154	975	948	50,812
Head and neck	24	37	-	…	…	482	55	17,980
Traumatic brain injury	…	…	…	…	…	434	22	16,417
Other head	-	7	-	…	…	…	10	16
Neck	1	30	-	…	…	48	24	1,547
Head and neck, other	23	…	-	…	…	…	…	…
Spine and upper back	…	…	…	…	…	…	6	…
Spinal cord	…	…	…	…	…	…	…	…
Vertebral column	…	…	…	…	…	…	6	…
Torso	206	4,488	-	…	…	193	248	6,599
Thorax	0	12	-	…	…	189	238	3,997
Abdomen	…	5	…	…	…	…	…	…
Pelvis and lower back	-	3	…	…	…	…	-	…
Abdomen, lower back and pelvis	…	…	-	…	…	-	9	1,034
Other trunk	206	4,468	…	…	…	4	1	1,568
Extremities	37	…	-	…	…	9	41	444
Upper extremity	13	…	-	…	…	2	5	103
Hip	…	…	…	…	…	…	1	…
Other lower extremity	24	…	-	…	…	7	36	342
Unclassifiable by body region	4	-	16,248	25,995	6,154	75	551	16,138
Multiple body regions	4	…	-	…	…	75	26	16,138
System-wide	…	…	16,248	25,995	6,154	…	526	…
Unspecified	1,772	1	4	…	…	215	47	9,650

See footnotes at end of table.

Table 8. Average annual number of injury deaths and percentage of deaths classified by the ICD–10 Injury Mortality Diagnosis Matrix among all deaths with an underlying cause of injury: United States, 2003–2004—Con.

Body region of injury	All	Fracture	Dislocation	Internal organ injury	Open wound	Amputation	Blood vessel	Contusion or superficial	Crushing
	Percent of all injuries mentioned								
All injuries mentioned	100.0	8.0	0.1	7.8	17.9	0.1	0.6	0.2	0.3
Head and neck	28.4	1.6	0.0	5.8	9.5	0.0	0.0	0.0	0.1
Traumatic brain injury	25.8	0.8	…	5.8	8.9	…	…	…	0.1
Other head	0.1	0.0	0.0	…	0.0	0.0	0.0	0.0	…
Neck	2.5	0.8	-	…	0.6	0.0	0.0	0.0	0.0
Head and neck, other	0.0	…	…	…	…	…	…	…	…
Spine and upper back	1.0	0.4	0.1	0.5	…	…	0.0	…	…
Spinal cord	0.5	…	…	0.5	…	…	…	…	…
Vertebral column	0.5	0.4	0.1	0.0	…	…	0.0	…	…
Torso	14.0	0.8	-	1.5	3.9	0.0	0.4	0.0	0.2
Thorax	7.1	0.5	-	0.6	2.9	-	0.4	0.0	0.2
Abdomen	1.2	…	…	0.6	0.6	…	0.0	0.0	…
Pelvis and lower back	0.5	0.4	-	0.0	0.0	-	0.0	0.0	-
Abdomen, lower back and pelvis	1.0	0.0	…	0.3	0.0	0.0	0.0	0.0	0.0
Other trunk	4.2	0.0	…	…	0.4	…	…	0.0	-
Extremities	5.7	4.9	0.0	…	0.4	0.0	0.0	0.0	0.0
Upper extremity	0.6	0.2	0.0	…	0.3	0.0	0.0	0.0	0.0
Hip	3.7	3.7	0.0	…	0.0	…	…	0.0	-
Other lower extremity	1.4	1.0	0.0	…	0.1	0.0	0.0	0.0	0.0
Unclassifiable by body region	41.4	0.1	…	…	1.9	0.0	0.0	0.0	0.0
Multiple body regions	11.9	0.1	…	…	1.9	0.0	0.0	0.0	0.0
System-wide	29.5	…	…	…	…	…	…	…	…
Unspecified	9.5	0.1	…	…	2.2	…	0.0	0.0	…

See footnotes at end of table.

Table 8. Average annual number of injury deaths and percentage of deaths classified by the ICD–10 Injury Mortality Diagnosis Matrix among all deaths with an underlying cause of injury: United States, 2003–2004—Con.

Body region of injury	Burn	Effect of foreign bodies entering orifice	Other effects of external causes	Poisoning	Toxic effects	Multiple injuries	Other specified injury	Unspecified injury
	Percent of all injuries mentioned							
All injuries mentioned	1.2	2.7	9.8	15.7	3.7	0.6	0.6	30.7
Head and neck	0.0	0.0	-	…	…	0.3	0.0	10.9
Traumatic brain injury	…	…	…	…	…	0.3	0.0	9.9
Other head	-	0.0	-	…	…	…	0.0	0.0
Neck	0.0	0.0	-	…	…	0.0	0.0	0.9
Head and neck, other	0.0	…	-	…	…	…	…	…
Spine and upper back	…	…	…	…	…	…	0.0	…
Spinal cord	…	…	…	…	…	…	…	…
Vertebral column	…	…	…	…	…	…	0.0	…
Torso	0.1	2.7	-	…	…	0.1	0.1	4.0
Thorax	-	0.0	-	…	…	0.1	0.1	2.4
Abdomen	…	0.0	…	…	…	…	…	…
Pelvis and lower back	-	0.0	…	…	…	…	-	…
Abdomen, lower back and pelvis	…	…	-	…	…	-	0.0	0.6
Other trunk	0.1	2.7	…	…	…	0.0	0.0	0.9
Extremities	0.0	…	-	…	…	0.0	0.0	0.3
Upper extremity	0.0	…	-	…	…	0.0	0.0	0.1
Hip	…	…	…	…	…	…	0.0	…
Other lower extremity	0.0	…	-	…	…	0.0	0.0	0.2
Unclassifiable by body region	0.0	…	9.8	15.7	3.7	0.0	0.3	9.7
Multiple body regions	0.0	…	-	…	…	0.0	0.0	9.7
System-wide	…	…	9.8	15.7	3.7	…	…	…
Unspecified	1.1	0.0	0.0	…	…	0.1	0.0	5.8

… Category not applicable (no codes in cell).
0.0 Quantity more than zero but less than 0.05.
- Quantity zero.
NOTES: Other specified includes injuries to nerves, muscles and tendons, sprains and strains, and early complications of trauma, as well as other specified injuries. Other head includes injuries to face, eye, and other head injuries. Numbers may not sum to totals because of rounding. See Appendix II, Multiple cause-of-death data and injury diagnoses for method to calculate weighted number of deaths.
SOURCE: CDC/NCHS, National Vital Statistics System.

Data table for Figure 9. Average annual weighted number of deaths and percent distribution of deaths by body region of injury, for motor vehicle traffic accidents, firearm suicides, and firearm homicides: United States 2003–2004

	Motor vehicle traffic			Firearm suicide			Firearm homicide		
Body region	Number of deaths	Percent distribution	SE[1] (percent)	Number of deaths	Percent distribution	SE (percent)	Number of deaths	Percent distribution	SE (percent)
Total	43,386	100.0	-	16,829	100.0	-	11,772	100.0	-
Head and neck	13,862	32.0	0.3	12,428	73.9	0.3	3,714	31.5	0.5
Torso	7,382	17.0	0.3	2,211	13.1	0.5	4,005	34.0	0.5
Other specified	911	2.1	0.3	28	0.2	0.5	397	3.4	0.6
Spine and upper back	492	1.1	0.3	13	0.1	0.5	33	0.3	0.7
Extremities	418	1.0	0.3	14	0.1	0.5	363	3.1	0.6
Unclassifiable by body region	14,691	33.9	0.3	67	0.4	0.5	2,685	22.8	0.6
Unspecified	6,540	15.1	0.3	2,094	12.4	0.5	972	8.3	0.6

- Quantity zero.
[1]SE is standard error.
NOTE: See Appendix I, NVSS, Mortality Statistics for description of data sources and Appendix II, Multiple-cause-of-death data and injury diagnoses, for method to calculate annual weighted number of deaths; Standard error. See Tables III and IV for classification codes.
SOURCE: CDC/NCHS, National Vital Statistics System.

Data table for Figure 10. Average annual injury death rates for leading mechanisms of injury, by race and Hispanic origin: United States, 2003–2004

10-1. Under 25 years of age

Race and Hispanic origin[1]	Motor vehicle traffic		Firearm		Poisoning		Suffocation		Fall		All injury deaths[2]	
	Rate	SE[3]	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
Non-Hispanic white	13.7	0.1	3.9	0.1	4.0	0.1	2.9	0.0	0.5	0.0	30.1	0.2
Black	9.7	0.2	18.7	0.2	1.2	0.1	3.3	0.1	0.3	0.0	41.3	0.4
Hispanic	11.7	0.2	7.4	0.1	1.5	0.1	2.2	0.1	0.4	0.0	28.5	0.3
American Indian or Alaska Native	20.7	0.9	7.5	0.5	2.8	0.3	6.5	0.5	*	*	47.6	1.3
Asian or Pacific Islander	6.6	0.3	2.5	0.2	0.7	0.1	1.7	0.1	0.6	0.1	15.7	0.4

10-2. 25–64 years of age

Race and Hispanic origin[1]	Motor vehicle traffic		Firearm		Poisoning		Suffocation		Fall		All injury deaths[2]	
	Rate	SE[3]	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
Non-Hispanic white	14.9	0.1	11.2	0.1	18.4	0.1	4.7	0.0	2.7	0.0	61.1	0.2
Black	17.2	0.2	22.7	0.2	14.8	0.2	3.3	0.1	2.5	0.1	74.9	0.4
Hispanic	15.4	0.2	9.2	0.2	9.3	0.2	3.3	0.1	2.2	0.1	47.5	0.3
American Indian or Alaska Native	29.2	1.0	10.4	0.6	18.1	0.8	6.7	0.5	4.2	0.4	86.4	1.7
Asian or Pacific Islander	6.8	0.2	3.7	0.2	2.7	0.1	3.1	0.1	1.2	0.1	21.7	0.4

10-3. 65 years of age and over

Race and Hispanic origin[1]	Motor vehicle traffic		Firearm		Poisoning		Suffocation		Fall		All injury deaths[2]	
	Rate	SE[3]	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
Non-Hispanic white	20.3	0.2	13.1	0.1	4.3	0.1	11.0	0.1	43.9	0.3	120.8	0.5
Black	17.4	0.5	5.9	0.3	4.2	0.3	10.9	0.4	17.1	0.5	84.8	1.2
Hispanic	18.4	0.7	4.8	0.3	3.1	0.3	6.7	0.4	23.1	0.7	71.3	1.3
American Indian or Alaska Native	31.6	2.8	*	*	5.1	1.1	7.9	1.4	26.3	2.6	109.0	5.3
Asian or Pacific Islander	16.4	0.9	2.2	0.3	1.8	0.3	10.1	0.7	24.4	1.1	68.7	1.8

0.0 Quantity more than zero but less than 0.05.
*Figure does not meet standards of reliability or precision. Rates are considered unreliable when based on fewer than 20 deaths.
[1]Categories are not mutually exclusive.
[2]Includes other mechanisms not shown.
[3]SE is standard error.
NOTES: Rate is per 100,000 resident population. See Appendix I, NVSS, Mortality Statistics for description of data source. See Appendix II, Race and Hispanic origin; Standard error. See Table III for classification codes for mechanisms of injury.
SOURCE: CDC/NCHS, National Vital Statistics System.

Data table for Figure 11. Average annual age-adjusted injury death rates by intent of injury and level of urbanization: United States, 2003–2004

Level of urbanization	All injury		Unintentional		Suicide		Homicide		Undetermined		Legal or war[1]	
	Rate	SE[2]	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
Large central metro	52.5	0.2	31.6	0.1	9.5	0.1	9.6	0.1	1.6	0.0	0.2	0.0
Large fringe metro	47.4	0.2	31.5	0.2	9.6	0.1	4.0	0.1	2.1	0.0	0.1	0.0
Medium metro	57.1	0.2	39.1	0.2	11.4	0.1	5.0	0.1	1.5	0.0	0.1	0.0
Small metro	60.2	0.3	41.7	0.3	12.3	0.1	4.2	0.1	1.8	0.1	0.1	0.0
Micropolitan (nonmetro)	67.2	0.3	48.4	0.3	13.0	0.1	4.3	0.1	1.4	0.0	0.1	0.0
Noncore (nonmetro)	78.7	0.4	58.0	0.4	14.4	0.2	4.6	0.1	1.5	0.1	0.3	0.0

0.0 Quantity more than zero but less than 0.05.
[1]Includes legal intervention and operations of war.
[2]SE is standard error.
NOTES: Rates are per 100,000 resident population and are age adjusted to the 2000 U.S. standard population. See Appendix I, NVSS, Mortality Statistics for description of data source. See Appendix II, Age adjustment; Standard error; Urbanization. See Table III for classification codes for intent of injury.
SOURCE: CDC/NCHS, National Vital Statistics System, Compressed Mortality File.

Data table for Figure 11-1. Average annual age-adjusted death rates for motor vehicle traffic accidents, firearm suicides, and firearm homicides, by level of urbanization: United States, 2003–2004

Level of urbanization	Motor vehicle traffic (unintentional)		Firearm suicide		Firearm homicide	
	Rate	SE[1]	Rate	SE	Rate	SE
Large central metro	10.6	0.1	4.2	0.0	6.9	0.1
Large fringe metro	12.2	0.1	4.8	0.1	2.6	0.0
Medium metro	14.9	0.1	6.0	0.1	3.2	0.1
Small metro	17.2	0.2	7.0	0.1	2.5	0.1
Micropolitan (nonmetro)	21.3	0.2	7.9	0.1	2.5	0.1
Noncore (nonmetro)	28.5	0.3	9.4	0.2	2.8	0.1

0.0 Quantity more than zero but less than 0.05.
[1]SE is standard error.
NOTES: Rates are per 100,000 resident population and are age adjusted to the 2000 U.S. standard population. See Appendix I, NVSS, Mortality Statistics for description of data source. See Appendix II, Age adjustment; Standard error; Urbanization. See Table III for classification codes for mechanism and intent of injury.
SOURCE: CDC/NCHS, National Vital Statistics System, Compressed Mortality File.

Data table for Figure 12. Average annual occupational injury death rates and deaths and percent distribution of deaths for selected occupations: United States, 2004–2005

			Average number 2004–2005		
	Death rate	SE[1]	Deaths	Employed population in thousands	Percent distribution of deaths
Total	4.0	0.0	5,749	141,653	100.0
Sales and related	2.1	0.1	340	16,208	5.9
Production	3.0	0.1	281	9,420	4.9
Professional and related	0.9	0.0	268	28,546	4.7
Office and administrative support	0.6	0.0	101	19,505	1.7
Farming, fishing and forestry	29.8	1.2	305	984	5.3
Fishers and related fishing workers	103.6	11.0	44	41	0.8
Logging workers	93.2	7.2	83	89	1.4
Installation, management and repair	7.6	0.3	391	5,148	6.8
Management, business and financial	3.1	0.1	635	20,343	11.0
Farmers and ranchers	39.5	1.5	326	822	5.7
Construction and extraction	13.1	0.3	1,161	8,834	20.2
Transportation and material moving	17.9	0.3	1,531	8,578	26.6
Aircraft pilots and flight engineers	80.4	5.8	96	120	1.7

0.0 Quantity more than zero but less than 0.05.
[1]SE is standard error.
NOTES: Totals for major categories include subcategories not shown separately. Figures may not add to totals because of rounding. For workers under the age of 16 years, there were 29 fatal injuries in 2005 and 17 in 2004 that were not included in the rate calculations to maintain consistency with the Current Population Survey (CPS). The employed population is an annual average estimate of employed civilians, 16 years of age and over, from the CPS, 2004 and 2005. See Appendix I for description of data source and Appendix II, Occupational injury fatality rates, for how rates were derived for persons 16 years of age and over. The rate is the number of fatal occupational injuries per 100,000 employed workers.
SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 2004 and 2005.

Data table for Figure 12-1. Percent distribution of occupational injury deaths, by type of event or exposure: United States, 2004–2005

Event or exposure[1]	Deaths[2]	SE[3]	Percent distribution	SE (percent)
All	11,498	107.2	100.0	-
Transportation accidents	4,983	70.6	43.3	0.5
Contact with objects and equipment	2,014	44.9	17.5	0.4
Assaults and violent acts	1,601	40.0	13.9	0.3
Falls	1,592	39.9	13.8	0.3
Exposure to harmful substances and environments	965	31.1	8.4	0.3
Fires and explosions	318	17.8	2.8	0.2
Other	25	5.0	0.2	0.0

- Quantity zero.
0.0 Quantity more than zero but less than 0.05.
[1]Based on the 1992 Bureau of Labor Statistics *Occupational Injury and Illness Classification Manual.*
[2]Deaths are 2-year totals.
[3]SE is standard error.
SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injures, 2004 and 2005.

Data table for Figure 13. Fatally injured drivers of passenger vehicles with blood alcohol concentration of 0.08 percent or greater as a percentage of total fatally injured drivers, by driver age and year: United States, 1982–2004

	16–20 years of age		21–30 years of age		31 years of age and over		All ages	
Year	Percent of fatally injured drivers with BAC ≥ 0.08	SE[1] (percent)	Percent of fatally injured drivers with BAC ≥ 0.08	SE (percent)	Percent of fatally injured drivers with BAC ≥ 0.08	SE (percent)	Percent of fatally injured drivers with BAC ≥ 0.08	SE (percent)
1982	52.8	0.6	63.2	0.5	42.7	0.3	51.0	0.3
1983	50.5	0.6	63.8	0.5	40.1	0.3	49.3	0.3
1984	46.4	0.6	60.6	0.5	37.3	0.3	46.3	0.2
1985	39.0	0.5	58.4	0.5	35.6	0.3	43.3	0.2
1986	41.1	0.5	59.4	0.5	35.2	0.3	43.8	0.2
1987	36.2	0.5	58.4	0.5	34.7	0.3	42.3	0.2
1988	35.9	0.5	58.5	0.5	34.6	0.3	42.0	0.2
1989	34.6	0.5	56.8	0.5	34.4	0.3	40.9	0.2
1990	35.3	0.5	57.1	0.5	34.5	0.3	41.0	0.2
1991	34.6	0.5	56.6	0.5	33.8	0.3	40.2	0.2
1992	30.7	0.5	53.9	0.5	32.8	0.2	38.1	0.2
1993	28.3	0.5	52.5	0.5	32.0	0.2	36.7	0.2
1994	26.8	0.4	49.9	0.5	30.1	0.2	34.4	0.2
1995	24.3	0.4	50.9	0.5	31.4	0.2	35.0	0.2
1996	25.4	0.4	49.6	0.5	30.2	0.2	34.0	0.2
1997	25.5	0.4	47.6	0.5	29.0	0.2	32.7	0.2
1998	24.8	0.4	48.5	0.5	28.4	0.2	32.2	0.2
1999	26.0	0.4	48.6	0.5	27.9	0.2	32.0	0.2
2000	26.0	0.4	48.2	0.5	29.1	0.2	32.8	0.2
2001	25.3	0.4	49.8	0.5	29.0	0.2	33.0	0.2
2002	25.3	0.4	49.9	0.5	28.7	0.2	32.8	0.2
2003	26.3	0.4	47.6	0.5	28.2	0.2	32.2	0.2
2004	25.8	0.4	47.7	0.5	27.3	0.2	31.8	0.2

[1]SE is standard error.
NOTES: BAC is blood alcohol concentration. Multiple imputation was used for estimating BACs for drivers with missing values using the U.S. Department of Transportation's multiple imputation model. See Appendix I for description of data source and Appendix II, Blood alcohol concentration; Standard error.
SOURCE: Insurance Institute for Highway Safety, based on data from the National Highway Traffic Safety Administration, Fatality Analysis Reporting System.

Data table for Figure 14-1. Average annual injury death rates for selected mechanisms of injury among teens and young adults 15–24 years of age: Selected countries, most recent data years available, 2000–2004

		All injury		Motor vehicle traffic		Firearm		Poisoning		Suffocation	
Country	Data years	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE	Rate	SE
Netherlands	2002	22.8	1.1	12.8	0.8	*	*	*	*	2.7	0.4
England and Wales	2002	23.5	0.6	10.2	0.4	*	*	3.2	0.2	4.1	0.3
Denmark	2001	29.9	2.2	14.5	1.6	*	*	3.7	0.8	3.3	0.7
Northern Ireland	2002–2003	33.9	2.6	17.0	1.9	*	*	*	*	8.2	1.3
Australia	2002	37.8	1.2	16.4	0.8	1.7	0.3	4.2	0.4	7.4	0.5
Austria	2004	38.5	2.0	19.6	1.4	*	*	2.6	0.5	5.0	0.7
Canada	2000–2002	38.9	0.6	15.1	0.3	3.0	0.2	3.4	0.2	7.9	0.3
Chile	2002	42.1	1.3	10.6	0.6	5.5	0.5	1.4	0.2	8.4	0.6
Eastern Caribbean	2000–2002	43.5	6.4	20.8	4.4	*	*	*	*	*	*
Nicaragua	2002	49.2	2.1	8.8	0.9	6.5	0.8	4.9	0.7	2.1	0.4
Mexico	2002	49.4	0.5	10.6	0.2	8.0	0.2	1.7	0.1	6.4	0.2
New Zealand	2000–2001	55.2	2.3	15.8	1.2	3.0	0.5	9.7	1.0	12.2	1.1
Argentina	2002–2003	56.7	0.7	9.5	0.3	19.3	0.4	0.9	0.1	7.5	0.2
United States	2002	62.1	0.4	27.7	0.3	16.7	0.2	5.7	0.1	3.9	0.1
Puerto Rico	2002	84.3	3.7	23.3	2.0	44.1	2.7	7.9	1.1	*	*
Brazil	2003	96.8	0.5	16.0	0.2	46.9	0.4	1.2	0.1	3.1	0.1
South Africa	2003	139.1	1.2	27.4	0.6	43.1	0.7	4.1	0.2	10.8	0.3
Colombia	2002	171.3	1.4	14.5	0.4	119.2	1.2	5.9	0.3	4.3	0.2

See footnotes at end of table.

Data table for Figure 14-1. Average annual injury death rates for selected mechanisms of injury among teens and young adults 15–24 years of age: Selected countries, most recent data years available, 2000–2004—Con.

		Drowning		Cut or pierce		Unspecified		All other causes of injury	
Country	Data years	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE
Netherlands	2002	*	*	*	*	*	*	4.3	0.5
England and Wales	2002	0.6	0.1	0.5	0.1	2.0	0.2	2.8	0.2
Denmark	2001	*	*	*	*	*	*	4.3	0.9
Northern Ireland	2002–2003	*	*	*	*	*	*	*	*
Australia	2002	1.0	0.2	0.9	0.2	*	*	5.9	0.5
Austria	2004	*	*	*	*	*	*	7.4	0.9
Canada	2000–2002	1.6	0.1	0.8	0.1	0.6	0.1	6.5	0.2
Chile	2002	4.1	0.4	4.3	0.4	4.2	0.4	3.5	0.4
Eastern Caribbean	2000–2002	*	*	*	*	*	*	*	*
Nicaragua	2002	6.0	0.7	6.8	0.8	*	*	13.6	1.1
Mexico	2002	3.7	0.1	2.4	0.1	7.6	0.2	8.9	0.2
New Zealand	2000–2001	2.2	0.5	*	*	*	*	10.7	1.0
Argentina	2002–2003	3.1	0.2	3.2	0.2	8.9	0.3	4.3	0.2
United States	2002	1.7	0.1	1.2	0.1	0.9	0.0	4.4	0.1
Puerto Rico	2002	*	*	*	*	*	*	*	*
Brazil	2003	5.0	0.1	6.1	0.1	8.5	0.2	10.1	0.2
South Africa	2003	2.4	0.2	27.6	0.6	3.8	0.2	19.8	0.5
Colombia	2002	4.0	0.2	11.1	0.4	2.3	0.2	10.2	0.4

*Figure does not meet standards of reliability or precision. Rates are considered unreliable when based on fewer than 20 deaths.
0.0 Quantity more than zero but less than 0.05.
[1]SE is standard error.
NOTES: Rates are per 100,000 resident population. See Appendix I, International Collaborative Effort on Injury Statistics. See Appendix II, Standard error. See Table III for classification codes for mechanism of injury.
SOURCE: Data provided by participants in the 2005 meeting of the International Collaborative Effort on Injury Statistics.

Data table for Figure 14-2. Average annual injury death rates for selected mechanisms of injury among persons 65 years of age and over: Selected countries, most recent data years available, 2000–2004

		All Injury		Falls		Motor vehicle traffic		Suffocation	
Country	Data years	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE
Puerto Rico	2002	61.2	3.7	10.5	1.5	20.3	2.1	9.6	1.5
England and Wales	2002	77.0	1.0	22.7	0.5	6.4	0.3	5.2	0.2
Northern Ireland	2002–2003	82.0	4.2	10.7	1.5	7.7	1.3	4.8	1.0
New Zealand	2000–01	94.7	3.2	51.4	2.4	14.3	1.3	5.4	0.8
Australia	2002	95.7	2.0	18.7	0.9	10.1	0.6	8.4	0.6
Argentina	2002–2003	102.8	1.2	4.9	0.3	12.6	0.4	12.8	0.4
Netherlands	2002	107.8	2.2	34.1	1.2	10.4	0.7	6.9	0.6
Canada	2000–2002	112.0	1.0	35.7	0.6	12.3	0.3	8.8	0.3
Brazil	2003	112.2	1.0	27.1	0.5	16.1	0.4	9.0	0.3
South Africa	2003	112.8	2.2	9.5	0.6	35.4	1.3	6.7	0.5
United States	2002	113.3	0.6	36.4	0.3	20.8	0.2	10.7	0.2
Chile	2002	127.1	3.3	31.0	1.6	26.7	1.5	14.9	1.1
Colombia	2002	128.6	2.5	17.4	0.9	32.4	1.2	12.3	0.8
Austria	2004	135.7	3.2	62.5	2.2	14.9	1.1	21.1	1.3
Nicaragua	2002	149.3	9.5	*	*	29.0	4.2	*	*
Mexico	2002	159.7	1.8	16.5	0.6	17.1	0.6	12.1	0.5
Denmark	2001	197.9	5.0	33.5	2.1	12.0	1.2	15.2	1.4

See footnotes at end of table.

Data table for Figure 14-2. Average annual injury death rates for selected mechanisms of injury among persons 65 years of age and over: Selected countries, most recent data years available, 2000–2004—Con.

		Firearm		Poisoning		Unspecified		All other causes of injury	
Country	Data years	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE
Puerto Rico	2002	*	*	*	*	6.5	1.2	7.6	1.3
England and Wales	2002	0.3	0.1	3.7	0.2	31.5	0.6	7.2	0.3
Northern Ireland	2002–2003	*	*	*	*	47.0	3.2	8.7	1.4
New Zealand	2000–01	*	*	5.4	0.8	2.8	0.6	14.3	1.3
Australia	2002	2.3	0.3	4.8	0.4	37.1	1.2	9.9	0.6
Argentina	2002–2003	12.2	0.4	2.7	0.2	42.8	0.8	14.9	0.4
Netherlands	2002	*	*	3.8	0.4	42.0	1.4	10.5	0.7
Canada	2000–2002	3.3	0.2	4.8	0.2	35.2	0.5	12.0	0.3
Brazil	2003	5.8	0.2	1.6	0.1	25.4	0.5	27.2	0.5
South Africa	2003	13.9	0.8	1.7	0.3	8.2	0.6	37.6	1.3
United States	2002	12.4	0.2	4.3	0.1	15.6	0.2	13.0	0.2
Chile	2002	1.9	0.4	3.3	0.5	23.5	1.4	25.8	1.5
Colombia	2002	22.8	1.0	2.6	0.4	11.3	0.7	29.8	1.2
Austria	2004	6.8	0.7	4.0	0.6	12.3	1.0	14.2	1.1
Nicaragua	2002	*	*	*	*	*	*	95.5	7.6
Mexico	2002	5.8	0.3	3.1	0.2	61.2	1.1	43.9	0.9
Denmark	2001	2.6	0.6	10.0	1.1	102.8	3.6	21.8	1.7

*Figure does not meet standards of reliability or precision. Rates are considered unreliable when based on fewer than 20 deaths.
[1]SE is standard error.
NOTES: Rates are per 100,000 resident population. See Appendix I, International Collaborative Effort on Injury Statistics. See Appendix II, Standard error. See Table III for classification codes for mechanism of injury.
SOURCE: Data provided by participants in the 2005 meeting of the International Collaborative Effort on Injury Statistics.

Data table for Figure 15-1. Injury hospital discharge rates by age group and year: United States, 1988–2005

Year	Under 15 years		15–24 years		25–64 years		65–74 years		75 years and over		Total	
	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
1988	58.9	4.5	115.8	6.5	83.1	4.0	110.0	5.9	290.5	16.6	95.5	4.0
1989	57.9	5.5	107.8	5.5	81.3	4.1	111.1	6.3	308.1	17.9	94.2	4.1
1990	41.0	3.7	100.2	4.7	78.0	3.3	107.7	6.0	324.9	17.5	87.9	3.4
1991	43.1	3.7	94.1	4.5	73.0	3.4	107.3	6.9	326.9	20.0	85.1	3.5
1992	43.2	3.9	87.2	4.1	67.4	2.9	108.8	7.5	312.0	17.8	80.7	3.2
1993	34.5	3.0	84.2	5.6	66.2	3.4	115.9	7.3	337.2	21.0	79.7	3.7
1994	36.3	3.3	75.0	4.6	61.8	2.8	106.1	6.4	313.2	18.5	74.7	3.1
1995	33.8	3.3	74.2	4.0	58.6	3.0	94.8	6.1	331.7	20.3	72.8	3.2
1996	30.2	3.0	64.7	4.5	55.2	2.8	108.9	7.1	334.0	16.7	70.4	3.1
1997	28.5	3.0	63.2	3.8	51.7	2.4	96.2	4.7	334.7	18.3	67.3	2.8
1998	31.0	4.0	56.3	3.7	51.2	2.6	94.2	4.8	313.6	15.3	65.6	2.8
1999	30.7	4.7	53.9	3.7	50.4	2.9	99.7	6.8	325.8	19.2	66.0	3.3
2000	30.2	4.3	52.4	3.6	45.4	2.4	101.5	7.6	310.4	18.6	62.5	3.1
2001	30.9	4.4	52.8	3.6	47.2	2.4	96.8	6.0	316.4	18.3	63.8	2.9
2002	30.4	4.6	50.9	3.4	48.6	2.5	91.3	6.0	315.9	17.9	63.9	3.0
2003	33.4	5.7	62.7	4.5	48.8	2.8	97.4	5.7	314.9	17.0	66.7	3.2
2004	31.8	5.0	56.4	4.1	51.1	2.7	98.9	6.6	305.3	16.9	66.3	3.2
2005	29.4	4.6	51.2	3.7	51.3	2.7	94.5	6.2	308.5	17.2	65.3	3.2

[1]SE is standard error.
NOTES: Rates are per 10,000 civilian population. See Appendix I for description of data source. See Appendix II, Hospital discharge for injury; Standard error.
SOURCE: CDC/NCHS, National Hospital Discharge Survey.

Data table for Figure 15-2. Injury hospital discharge rates for persons 25–64 years of age, by severity of injury measured by the survival risk ratio and as a percentage of all injury: United States, 1988–2005

Year	Least severe injury discharges			Moderately severe injury discharges			Most severe injury discharges		
	Rate	SE[1]	Percent of all injuries	Rate	SE	Percent of all injuries	Rate	SE	Percent of all injuries
1988	44.6	2.6	53.6	34.0	1.9	40.9	4.5	0.4	5.5
1989	44.0	2.4	54.2	32.8	1.8	40.3	4.4	0.5	5.5
1990	39.7	1.8	50.9	33.7	1.7	43.2	4.6	0.4	5.9
1991	38.4	1.9	52.6	30.3	1.7	41.5	4.3	0.4	5.9
1992	35.9	1.6	53.2	27.9	1.4	41.3	3.7	0.4	5.4
1993	35.6	2.1	53.8	26.4	1.4	39.9	4.2	0.4	6.3
1994	31.0	1.7	50.1	26.9	1.3	43.5	4.0	0.3	6.4
1995	27.9	1.5	47.6	26.5	1.6	45.2	4.2	0.5	7.1
1996	26.2	1.6	47.5	25.4	1.3	45.9	3.6	0.4	6.6
1997	24.3	1.2	47.0	23.6	1.3	45.7	3.8	0.3	7.3
1998	22.4	1.1	43.8	24.6	1.6	48.0	4.2	0.5	8.2
1999	23.2	1.5	46.0	23.0	1.4	45.6	4.3	0.5	8.4
2000	20.4	1.4	45.0	21.4	1.2	47.2	3.5	0.4	7.8
2001	20.6	1.2	43.7	22.7	1.3	48.2	3.8	0.3	8.1
2002	20.4	1.2	41.9	24.0	1.5	49.4	4.2	0.3	8.7
2003	20.5	1.2	42.0	23.9	1.5	49.1	4.3	0.5	8.9
2004	20.7	1.2	40.5	26.0	1.6	50.9	4.4	0.4	8.6
2005	20.2	1.3	39.3	26.8	1.4	52.2	4.4	0.4	8.6

[1]SE is standard error.
NOTES: Least severe includes injury discharges where all injury diagnoses have a survival risk ratio (SRR) of less than 0.995 (i.e., probability of survival of more than 99.5%). Moderately severe includes injury discharges where the lowest SRR among the injury diagnoses is between 0.995 and 0.95. Most severe includes injury discharges where the lowest SRR among the injury diagnoses is 0.95 or smaller. See Appendix II, Hospital discharge for injury; Injury severity for hospital discharges; Standard error.
SOURCE: CDC/NCHS, National Hospital Discharge Survey.

Data table for Figure 16. Average annual hospital discharge rates for injury, by sex and age group: United States, 2004–2005

Age group	Both sexes		Male		Female	
	Rate	SE[1]	Rate	SE	Rate	SE
All ages	65.8	2.9	67.6	3.3	64.1	2.8
Under 15 years	30.6	4.0	38.3	5.2	22.5	3.0
15–24 years	53.8	3.4	72.8	4.8	33.9	2.6
25–44 years	49.1	2.5	64.1	3.5	34.0	1.7
45–64 years	53.7	2.4	62.9	3.2	44.8	2.3
65–74 years	96.7	5.1	80.0	5.5	110.7	7.1
75 years and over	306.9	15.3	215.2	12.9	362.7	18.3

[1]SE is standard error.
NOTES: Rates are per 10,000 civilian population. See Appendix I for description of data source. See Appendix II, Hospital discharge for injury; Standard error.
SOURCE: CDC/NCHS, National Hospital Discharge Survey.

Data table for Figure 17-1. Number and percent distribution of hospital discharges for injury, by nature of injury and age group: United States, 2004–2005

	All ages				Under 15 years of age				15–24 years of age			
Nature of injury	Number in thousands	SE[1] (number)	Percent distribution	SE (percent)	Number in thousands	SE (number)	Percent distribution	SE (percent)	Number in thousands	SE (number)	Percent distribution	SE (percent)
Total	3,868	168	100.0	-	372	49	100.0	-	445	28	100.0	-
Fractures	2,048	96	52.9	1.3	140	17	37.7	3.3	172	12	38.6	1.8
Dislocation	33	3	0.8	0.1	*	*	*	*	*4	1	1.0	0.3
Sprains and strains	102	8	2.6	0.2	*	*	*	*	*5	1	1.1	0.3
Internal organ injuries	467	27	12.1	0.4	42	7	11.4	1.4	76	6	17.0	1.0
Open wounds	185	12	4.8	0.3	24	5	6.3	0.9	35	4	7.9	0.7
Amputations	19	3	0.5	0.1	*3	1	0.7	0.2	*	*	*	*
Blood vessel injuries	15	3	0.4	0.1	*	*	*	*	*6	2	1.2	0.3
Contusions or superficial injuries	130	11	3.4	0.2	14	2	3.8	0.6	*13	3	2.9	0.6
Crush injuries	*8	2	0.2	0.0	*	*	*	*	*	*	*	*
Burns	*	*	*	*	*	*	*	*	*	*	*	*
Nerve injuries	*5	1	0.1	0.0	*	*	*	*	*	*	*	*
Unspecified injuries	68	8	1.8	0.2	*8	2	2.3	0.5	*9	2	2.0	0.4
System-wide injuries	616	27	15.9	0.5	62	10	16.7	1.6	97	8	21.8	1.5

See footnotes at end of table.

Data table for Figure 17-1. Number and percent distribution of hospital discharges for injury, by nature of injury and age group: United States, 2004–2005—Con.

	25–64 years of age				65–74 years of age				75 years of age and over			
Nature of injury	Number in thousands	SE[1] (number)	Percent distribution	SE (percent)	Number in thousands	SE (number)	Percent distribution	SE (percent)	Number in thousands	SE (number)	Percent distribution	SE (percent)
Total	1,588	73	100.0	-	359	19	100.0	-	1,104	55	100.0	-
Fractures	677	37	42.6	1.5	242	14	67.5	1.5	817	44	74.0	0.9
Dislocation	18	2	1.2	0.1	*4	1	1.2	0.3	*	*	*	*
Sprains and strains	52	5	3.3	0.3	17	3	4.7	0.7	25	3	2.3	0.2
Internal organ injuries	203	14	12.8	0.6	37	4	10.4	1.0	109	8	9.9	0.6
Open wounds	98	7	6.2	0.4	*7	1	2.0	0.4	21	2	1.9	0.2
Amputations	12	2	0.7	0.1	*	*	*	*	*	*	*	*
Blood vessel injuries	*9	2	0.6	0.1	*	*	*	*	*	*	*	*
Contusions or superficial injuries	36	4	2.3	0.2	11	2	3.1	0.5	56	7	5.1	0.5
Crush injuries	*4	1	0.3	0.1	*	*	*	*	*	*	*	*
Burns	*	*	*	*	*	*	*	*	*	*	*	*
Nerve injuries	*	*	*	*	*	*	*	*	*	*	*	*
Unspecified injuries	28	4	1.7	0.3	*3	1	0.8	0.2	20	3	1.8	0.3
System-wide injuries	384	17	24.2	0.9	30	4	8.4	0.9	42	4	3.8	0.3

- Quantity zero.
*Figure does not meet standards of reliability or precision. Relative standard error (RSE) is greater than 30%. Numbers shown with an asterisk indicate that the RSE is between 20% and 30%.
0.0 Quantity more than zero but less than 0.05.
[1]SE is standard error.
NOTES: Numbers are 2-year totals. See Appendix I for description of data source; See Appendix II, Hospital discharge for injury; Relative Standard error; Standard error.
SOURCE: CDC/NCHS, National Hospital Discharge Survey.

Data table for Figure 17-2. Number and percent distribution of hospital discharges for injury, by body region of injury and age group: United States, 2004–2005

	All ages				Under 15 years of age				15–24 years of age			
	Number in thousands	SE[1] (number)	Percent distribution	SE (percent)	Number in thousands	SE (number)	Percent distribution	SE (percent)	Number in thousands	SE (number)	Percent distribution	SE (percent)
All	3,868	168	100.0	-	372	49	100.0	-	445	28	100.0	-
Traumatic brain injury	393	26	10.2	0.43	53	9	14.4	1.52	59	6	13.3	0.99
Other head, face and neck	249	20	6.4	0.38	44	9	11.9	1.25	47	7	10.7	1.25
Spinal cord	22	3	0.6	0.08	*	*	*	*	*	*	*	*
Vertebral column	200	16	5.2	0.29	*5	1	1.3	0.34	22	4	5.0	0.77
Torso	473	26	12.2	0.36	*40	9	10.7	1.47	60	6	13.6	0.95
Upper extremity	495	23	12.8	0.35	66	7	17.9	1.37	58	5	12.9	0.88
Lower extremity	1,368	65	35.4	0.81	77	9	20.8	1.39	91	8	20.5	1.11
Other and unspecified	*53	15	1.4	0.37	*	*	*	*	*	*	*	*
System-wide	616	27	15.9	0.49	62	10	16.7	1.62	97	8	21.8	1.49

See footnotes at end of table.

Data table for Figure 17-2. Number and percent distribution of hospital discharges for injury, by body region of injury and age group: United States, 2004–2005—Con

	25–64 years of age				65–74 years of age				75 years of age and over			
	Number in thousands	SE[1] (number)	Percent distribution	SE (percent)	Number in thousands	SE (number)	Percent distribution	SE (percent)	Number in thousands	SE (number)	Percent distribution	SE (percent)
All	1,588	73	100.0	-	359	19	100.0	-	1,104	55	100.0	-
Traumatic brain injury	151	12	9.5	0.54	29	3	8.0	0.84	101	8	9.1	0.62
Other head, face and neck	104	9	6.6	0.41	*10	2	2.8	0.51	43	4	3.9	0.36
Spinal cord	14	2	0.9	0.15	*	*	*	*	*2	-	0.2	0.04
Vertebral column	74	7	4.7	0.34	22	3	6.2	0.8	77	7	7.0	0.53
Torso	197	13	12.4	0.52	42	5	11.6	1.08	134	8	12.1	0.54
Upper extremity	212	13	13.4	0.62	58	6	16.2	1.35	100	8	9.1	0.53
Lower extremity	438	23	27.6	0.79	163	10	45.5	1.83	597	36	54.1	1.03
Other and unspecified	*13	3	0.8	0.15	*	*	*	*	*	*	*	*
System-wide	384	17	24.2	0.85	30	4	8.4	0.88	42	4	3.8	0.33

- Quantity zero.
*Figure does not meet standards of reliability or precision. Relative standard error (RSE) is greater than 30%. Numbers shown with an asterisk indicate that the RSE is between 20% and 30%.
[1]SE is standard error.
NOTES: Numbers are 2-year totals. See Appendix I for description of data source. See Appendix II, Hospital discharge for injury; Relative Standard Error; Standard error.
SOURCE: CDC/NCHS, National Hospital Discharge Survey.

Data table for Figure 18. Average annual hospital discharge rates for fractures by body region, age, and sex: United States, 2004–2005

Body region	Both sexes		Male		Female	
	Rate	SE[1]	Rate	SE	Rate	SE
All ages	34.9	1.6	31.0	1.6	38.6	1.9
Head and neck	2.9	0.2	4.5	0.3	1.4	0.2
Spine and back	3.2	0.3	2.9	0.3	3.6	0.3
Torso	3.3	0.2	2.8	0.2	3.7	0.2
Upper extremities	5.4	0.3	5.0	0.3	5.8	0.3
Hip	10.7	0.6	6.2	0.4	15.1	0.9
Other lower extremities	9.3	0.5	9.6	0.6	8.9	0.6
Under 15 years	11.5	1.4	14.8	1.9	8.1	1.1
Head and neck	2.8	0.5	*3.5	0.7	2.0	0.4
Spine and back	*	*	*	*	*	*
Torso	*	*	*	*	*	*
Upper extremities	3.9	0.4	4.8	0.6	3.1	0.5
Hip	*0.3	0.1	*	*	*	*
Other lower extremities	4.1	0.5	5.7	0.9	2.3	0.4
15–24 years	20.7	1.5	30.3	2.1	10.8	1.3
Head and neck	5.2	0.6	8.5	1.0	*1.8	0.4
Spine and back	2.8	0.5	*3.3	0.7	*2.2	0.5
Torso	*1.0	0.2	*1.4	0.3	*	0.2
Upper extremities	3.6	0.4	5.6	0.7	*1.4	0.3
Hip	*	*	*	*	*	*
Other lower extremities	7.7	0.6	10.6	1.0	4.7	0.7
25–44 years	18.3	1.2	25.8	1.8	10.6	0.9
Head and neck	2.9	0.3	4.8	0.5	*1.1	0.3
Spine and back	2.0	0.3	2.7	0.4	1.2	0.2
Torso	1.4	0.2	2.0	0.3	*0.9	0.2
Upper extremities	2.9	0.3	4.1	0.4	1.7	0.3
Hip	0.6	0.1	*0.9	0.2	*0.3	0.1
Other lower extremities	8.4	0.7	11.2	1.0	5.5	0.6
45–64 years	25.9	1.4	28.0	1.7	24.0	1.5
Head and neck	1.8	0.2	3.1	0.4	*0.6	0.1
Spine and back	2.5	0.3	2.6	0.4	2.3	0.3
Torso	2.6	0.3	3.5	0.5	1.7	0.2
Upper extremities	4.5	0.4	4.4	0.5	4.6	0.5
Hip	4.1	0.4	3.6	0.4	4.5	0.5
Other lower extremities	10.4	0.7	10.6	0.8	10.3	0.9

See footnotes at end of table.

Data table for Figure 18. Average annual hospital discharge rates for fractures by body region, age, and sex: United States, 2004–2005—Con.

Body region	Both sexes		Male		Female	
	Rate	SE[1]	Rate	SE	Rate	SE
65–74 years	65.3	3.9	43.3	4.0	83.8	5.9
Head and neck	*1.7	0.3	*2.2	0.5	*	*
Spine and back	5.6	0.8	*6.0	1.3	5.3	0.8
Torso	6.4	0.9	6.2	1.2	6.5	1.0
Upper extremities	11.6	1.3	*5.7	1.1	16.6	2.2
Hip	24.9	2.0	16.7	2.2	31.8	3.2
Other lower extremities	15.0	1.6	6.5	1.1	22.2	2.8
75 years and over	227.2	12.3	138.7	9.7	281.0	15.4
Head and neck	3.7	0.6	*4.4	1.0	*3.2	0.7
Spine and back	20.8	1.9	12.2	1.7	26.0	2.5
Torso	26.8	1.8	14.9	1.9	34.0	2.6
Upper extremities	23.1	1.9	10.7	1.8	30.6	2.5
Hip	128.6	7.9	82.9	6.7	156.3	10.0
Other lower extremities	24.3	1.8	13.5	2.2	30.9	2.3

*Figure does not meet standards of reliability or precision. Rates based on a relative standard error (RSE) between 20% and 30% are shown with an asterisk. If the RSE is greater than 30%, the rate is replaced with an asterisk.
[1]SE is standard error.
NOTES: Rates are per 10,000 civilian population. See Appendix I for description of data source. See Appendix II, Hospital discharge for injury; Relative standard error; Standard error.
SOURCE: CDC/NCHS, National Hospital Discharge Survey.

Data table for Figure 19. Average annual emergency department initial injury visit rates by sex and age group: United States, 2004–2005

	Both sexes		Male		Female	
Age group	Rate	SE[1]	Rate	SE	Rate	SE
All ages	1,067.6	36.5	1,171.0	42.2	967.9	34.8
Under 15 years	1,229.0	61.9	1,400.9	74.2	1,048.9	58.2
15–24 years	1,484.8	57.3	1,666.4	69.8	1,295.6	59.0
25–44 years	1,099.1	42.6	1,215.1	51.1	982.6	43.9
45–64 years	752.9	28.6	775.3	33.9	731.6	32.1
65–74 years	653.9	37.3	624.5	47.6	678.7	48.6
75 years and over	1,097.5	52.8	1,024.7	68.6	1,141.8	65.6

[1]SE is standard error.
NOTES: Rates are per 10,000 civilian population. See Appendix I for description of data source and Appendix II, Initial injury emergency department visit; Standard error.
SOURCE: CDC/NCHS, National Hospital Ambulatory Medical Care Survey.

Data table for Figure 20. Average annual emergency department initial visit rates for leading mechanisms of injury, by sex and age group: United States, 2004–2005

Both sexes														
Mechanism	All ages		Under 15 years		15–24 years		25–44 years		45–64 years		65–74 years		75 years and over	
	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
Fall	273.0	10.5	371.9	22.0	223.5	14.0	194.4	10.2	197.1	10.3	300.3	21.2	691.8	38.0
Struck by or against	141.0	6.6	199.1	13.1	256.4	16.3	139.5	9.0	73.3	5.9	*41.6	10.0	58.7	9.1
Motor vehicle traffic	132.8	6.1	86.6	8.3	254.3	17.8	167.1	10.4	97.8	6.7	72.5	10.0	52.1	7.7
Cut or pierce	83.6	3.9	66.5	6.1	138.6	11.0	107.3	6.3	66.3	5.4	*31.3	*6.5	27.8	5.6

Female														
Mechanism	All ages		Under 15 years		15–24 years		25–44 years		45–64 years		65–74 years		75 years and over	
	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
Fall	288.8	12.3	335.4	23.8	195.0	17.1	209.3	14.5	233.7	15.1	339.2	30.2	766.9	50.1
Struck by or against	103.2	6.3	139.9	13.6	168.6	16.0	107.9	9.4	59.4	7.1	*	*	61.1	11.2
Motor vehicle traffic	138.6	7.7	89.4	11.5	282.0	24.5	176.0	13.3	105.0	9.6	*67.5	13.3	*45.1	*9.0
Cut or pierce	57.9	3.7	47.7	7.1	99.3	13.1	75.3	7.0	44.0	5.7	*	*	*25.0	*6.8

Male														
Mechanism	All ages		Under 15 years		15–24 years		25–44 years		45–64 years		65–74 years		75 years and over	
	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE	Rate	SE
Fall	256.6	11.4	406.6	26.2	250.7	21.1	179.6	11.8	158.5	12.3	254.1	28.2	568.4	46.6
Struck by or against	180.2	9.1	255.5	19.2	340.7	24.6	171.0	13.1	87.9	8.4	*30.9	*8.1	*54.8	*13.2
Motor vehicle traffic	126.8	6.6	83.9	10.5	227.8	20.1	158.3	12.1	90.1	8.5	78.6	14.2	*63.6	*14.2
Cut or pierce	110.3	5.9	84.5	9.1	176.4	16.1	139.3	9.7	89.8	9.1	*45.0	*11.6	*32.5	*9.6

*Figure does not meet standards of reliability or precision. Rates based on a relative standard error (RSE) between 20% and 30% are shown with an asterisk. If the RSE is greater than 30%, the rate is replaced with an asterisk.
[1]SE is standard error.
NOTES: Rates are per 10,000 civilian population. See Appendix I for description of data source. See Appendix II, Initial injury emergency department visit; Relative standard error; Standard error.
SOURCE: CDC/NCHS, National Hospital Ambulatory Medical Care Survey.

Data table for Figure 21. Average annual number and percent distribution of initial injury emergency department visits by nature of injury for selected mechanisms of injury: United States, 2004–2005

	Fall				Struck by or against			
Nature of injury	Number in thousands	SE[1] (number)	Percent	SE (percent)	Number in thousands	SE (number)	Percent	SE (percent)
Fractures	1,652	85	20.6	0.7	592	49	14.3	0.9
Contusions or superficial	1,741	99	21.7	0.9	1,251	75	30.2	1.3
Sprains or strains	1,212	72	15.1	0.7	332	35	8.0	0.7
Open wounds	996	64	12.4	0.6	945	62	22.8	1.1
Other injuries	2,420	122	30.2	1.0	1,023	66	24.7	1.1
Other initial injuries	869	62	10.8	0.6	496	43	12.0	0.9
Other diagnoses[2]	1,551	86	19.3	0.8	526	46	12.7	0.9
Total	8,021	309	100.0	-	4,143	193	100.0	-

	Motor vehicle traffic				All initial visits			
Nature of injury	Number in thousands	SE (number)	Percent	SE (percent)	Number in thousands	SE (number)	Percent	SE (percent)
Fractures	240	26	6.2	0.6	3,420	152	10.9	0.3
Contusions or superficial	962	61	24.7	1.2	6,053	242	19.3	0.4
Sprains or strains	1,165	77	29.9	1.3	5,560	245	17.7	0.5
Open wounds	176	21	4.5	0.5	5,620	222	17.9	0.4
Other injuries	1,358	86	34.8	1.4	10,713	413	34.2	0.6
Other initial injuries	441	41	11.3	1.0	4,826	207	15.4	0.4
Other diagnoses[2]	917	65	23.5	1.2	5,886	258	18.8	0.5
Total	3,902	181	100.0	-	31,366	1,073	100.0	-

- Quantity zero.
[1]SE is standard error.
[2]These include first-listed diagnoses that were not injuries but that had a valid external cause of injury code.
NOTES: See Appendix I for description of data source. Other injuries include other initial injuries and other diagnoses that had an external cause of injury code. See Table V for classification codes for mechanisms of injury.
SOURCE: CDC/NCHS, National Hospital Ambulatory Medical Care Survey.

Data table for Figure 22-1. Average annual injury episode rates by sex and age: United States, 2004–2005

Age group	Both sexes		Male		Female	
	Rate	SE[1]	Rate	SE	Rate	SE
All, age adjusted	1,145.9	29.0	1,228.8	42.2	1,055.9	39.1
Under 15 years	1,152.0	63.2	1,301.4	93.7	995.7	77.6
15–24 years	1,430.6	95.2	1,786.3	145.9	1,067.8	112.4
25–64 years	1,049.7	37.1	1,092.9	52.9	1,008.1	50.8
25–44 years	1,035.4	50.6	1,183.6	76.6	890.4	64.8
45–64 years	1,066.1	54.8	986.4	70.0	1,141.3	79.2
65 years and over	1,219.2	84.5	1,053.2	115.1	1,341.9	118.0
65–74 years	975.8	105.1	1,033.0	163.9	927.5	133.0
75 years and over	1,490.3	137.3	1,079.5	170.8	1,752.2	193.1

[1]SE is standard error.
NOTES: Rate per 10,000 civilian noninstitutionalized population. Rates are age adjusted to the 2000 standard population. See Appendix I for description of data source. See Appendix II, Injury or poisoning episode; Standard error.
SOURCE: CDC/NCHS, National Health Interview Survey.

Data table for Figure 22-2. Average annual injury episode rates by age group and leading mechanisms of injury: United States, 2004–2005

Mechanism	All, age adjusted		Under 15 years		15–24 years		25–64 years		65 years and over	
	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE	Rate	SE
Fall	414.4	17.3	442.2	38.8	335.6	41.6	340.7	20.9	756.7	69.6
Struck by or against	138.9	9.4	215.3	26.3	231.0	33.2	97.9	11.0	*77.0	19.5
Overexertion	158.1	10.1	*66.2	14.9	246.3	33.5	189.9	15.5	*86.7	20.9
Motor vehicle traffic	95.1	9.6	*	*	192.7	33.8	95.8	11.3	*	*
Cut or pierce	87.9	7.9	*56.9	12.9	*71.0	19.8	110.8	12.3	*	*

*Figure does not meet standards of reliability or precision. Rates based on a relative standard error (RSE) between 20% and 30% are shown with an asterisk. If the RSE is greater than 30%, the rate is replaced with an asterisk.
[1]SE is standard error.
NOTES: Rates are per 10,000 civilian noninstitutionalized population. Rates are age adjusted to the 2000 standard population. See Appendix I for description of data source. See Appendix II, Injury or poisoning episode; Relative standard error; Standard error.
SOURCE: CDC/NCHS, National Health Interview Survey.

Data table for Figures 23-1 and 23-2. Average annual injury episode rates, by race and Hispanic origin, age, education, sex, and mechanism of injury: United States, 2004–2005

	All persons		Hispanic		Non-Hispanic, white		Non-Hispanic black	
Age group	Rate	SE[1]	Rate	SE	Rate	SE	Rate	SE
Under 15 years	1,152.0	63.2	520.5	66.3	1,434.7	96.5	959.0	157.2
15–24 years	1,430.6	95.2	699.2	106.8	1,785.0	131.7	*991.8	219.3
25–64 years	1,049.7	37.1	602.1	59.3	1,163.2	48.0	989.0	107.0
65 years and over	1,219.2	84.5	*1,215.3	285.7	1,299.1	96.2	*	*
Education (ages 25–64 years)								
Less than 12 years of education	927.3	91.5	407.9	73.4	1,397.5	186.0	*1,113.6	262.7
12 years of education	1,067.8	71.1	*408.5	87.4	1,220.0	89.8	*931.6	201.4
More than 12 years of education	1,109.7	50.7	1,027.2	150.4	1,155.5	61.2	983.9	142.9
Sex (age adjusted)								
Male	1,228.8	42.2	752.0	79.1	1,411.3	54.3	1,051.3	128.0
Female	1,055.9	39.1	602.0	67.6	1,229.8	53.3	808.5	86.0
Mechanism (age adjusted)								
Fall	414.4	17.3	275.1	36.7	493.7	23.6	225.6	31.0
Struck by or against	138.9	9.4	*50.8	12.8	168.6	13.3	123.8	24.5
Overexertion	158.1	10.1	*93.8	19.6	183.6	13.4	*134.1	27.6
Motor vehicle traffic	95.1	9.6	82.7	15.1	85.2	9.4	*180.9	51.2
Cut or pierce	87.9	7.9	*68.7	16.9	100.5	10.3	*48.0	13.9
Other	251.5	12.9	104.5	14.9	293.3	18.2	216.7	32.3

*Figure does not meet standards of reliability or precision. Rates based on a relative standard error (RSE) between 20% and 30% are shown with an asterisk. If the RSE is greater than 30%, the rate is replaced with an asterisk.

[1]SE is standard error.

NOTES: Rates are per 10,000 civilian noninstitutionalized population. Age-adjusted rates for sex and mechanism are calculated for all ages. See Appendix I for description of data source. See Appendix II, Age adjustment; Injury or poisoning episode; Relative standard error; Standard error.

SOURCE: CDC/NCHS, National Health Interview Survey.

Data table for Figure 24-1. Average annual number of injury episodes and percent distribution, by activity at time of injury by age group: United States, 2004–2005

	All ages			Under 15 years			15–24 years		
Activity	Number (in thousands)	Percent distribution	SE[1] (percent)	Number (in thousands)	Percent distribution	SE (percent)	Number (in thousands)	Percent distribution	SE (percent)
Driving or riding in a motor vehicle	2,668	8.2	0.8	*	*	*	790	13.8	2.1
Working at paid job	4,617	14.2	0.9	*	*	*	691	12.1	2.2
Working around house or yard	4,897	15.0	0.9	*	*	*	*255	*4.5	*1.1
Attending school	912	2.8	0.4	651	9.5	1.6	*239	*4.2	*1.2
Sports and exercise	5,120	15.7	1.0	1,981	29.0	2.6	1,756	30.7	2.8
Leisure activities (excluding sports)	8,603	26.4	1.1	2,887	42.3	2.7	1,375	24.0	2.4
Other[2]	5,750	17.7	1.0	968	14.2	1.8	617	10.8	1.9

	25–64 years			65 years and over		
Activity	Number (in thousands)	Percent distribution	SE (percent)	Number (in thousands)	Percent distribution	SE (percent)
Driving or riding in a motor vehicle	1,458	9.2	1.1	*	*	*
Working at paid job	3,808	24.0	1.6	*	*	*
Working around house or yard	3,312	20.8	1.5	1,274	30.8	3.5
Attending school	*	*	*	*	*	*
Sports and exercise	1,317	8.3	1.0	*	*	*
Leisure activities (excluding sports)	3,108	19.6	1.4	1,232	29.8	3.2
Other[2]	2,874	18.1	1.4	1,291	31.2	3.1

*Figure does not meet standards of reliability or precision. Numbers and percentages based on a relative standard error (RSE) between 20% and 30% are shown with an asterisk. If the RSE is greater than 30%, the number or percentage is replaced with an asterisk.

[1]SE is standard error.

[2]Other includes unpaid work such as housework, shopping, volunteer work, sleeping, resting, eating, drinking, cooking, hands-on care from another person, and unspecified activities.

NOTES: See Appendix I for description of data source. See Appendix II, Injury or poisoning episode; Relative standard error; Standard error.

SOURCE: CDC/NCHS, National Health Interview Survey.

Data table for Figure 24-2. Average annual number and percent distribution of injury episodes, by location at time of injury and age group: United States, 2004–2005

	Age group								
	All ages			Under 15 years			15–24 years		
Location	Number (in thousands)	Percent	SE[1] (percent)	Number (in thousands)	Percent	SE (percent)	Number (in thousands)	Percent	SE (percent)
Home (inside)	9,104	27.9	1.1	1,839	27.0	2.4	914	16.0	2.2
Home (outside)	6,192	19.0	1.0	1,319	19.3	2.1	638	11.2	1.8
School, child care center, or preschool	2,490	7.6	0.7	1,203	17.6	2.3	956	16.8	2.2
Hospital or residential institution	566	1.7	0.3	*	*	*	*	*	*
Street including highway, sidewalk, or parking lot	4,320	13.2	0.9	*540	*7.9	*1.7	1,154	20.2	2.6
Recreation—sport facility, recreation area, lake, river, or pool	4,263	13.1	0.9	1,257	18.4	2.1	1,269	22.2	2.4
Commercial area—industrial, construction area, or farm	1,531	4.7	0.5	*	*	*	*	*	*
Commercial—trade or service area	1,340	4.1	0.5	*	*	*	*	*	*
Other public building	689	2.1	0.4	*	*	*	*	*	*
Other places, not specified	2,143	6.6	0.6	*399	*5.9	*1.3	*221	*3.9	*1.1

See footnotes at end of table.

Data table for Figure 24-2. Average annual number and percent distribution of injury episodes, by location at time of injury and age group: United States, 2004–2005—Con.

	Age group					
	25–64 years			65 years and over		
Location	Number (in thousands)	Percent	SE[1] (percent)	Number (in thousands)	Percent	SE (percent)
Home (inside)	4,185	26.3	1.5	2,166	51.5	3.4
Home (outside)	3,170	19.9	1.5	1,066	25.3	3.3
School, child care center, or preschool	*279	*1.8	*0.4	*	*	*
Hospital or residential institution	*397	*2.5	*0.5	*	*	*
Street including highway, sidewalk, or parking lot	2,159	13.6	1.2	*467	*11.1	*2.1
Recreation—sport facility, recreation area, lake, river, or pool	1,639	10.3	1.2	*	*	*
Commercial area—industrial, construction area, or farm	1,273	8.0	1.0	*	*	*
Commercial—trade or service area	1,006	6.3	0.9	*	*	*
Other public building	*404	*2.5	*0.5	*	*	*
Other places, not specified	1,392	8.8	0.9	*	*	*

*Figure does not meet standards of reliability or precision. Numbers and percentages based on a RSE between 20% and 30% are shown with an asterisk. If the RSE is greater than 30%, the number or percentage is replaced with an asterisk.
[1]SE is standard error.
NOTES: See Appendix I for description of data source. See Appendix II, Injury or poisoning episode; Relative standard error; Standard error.
SOURCE: CDC/NCHS, National Health Interview Survey.

Data table for Figure 25. Average annual numbers of injury deaths, hospital discharges for injury, initial emergency department visits for injury, and episodes of injury, by mechanism of injury: United States, 2003–2005

Mechanism	Injury deaths, 2003–2004			Injury hospital discharges, 2004–2005		
	Number	Percent distribution	SE[1] (percent)	Number in thousands	Percent distribution	SE (percent)
Total, average annual	165,593	100.0	-	1,934	100.0	-
Cut or pierce	2,771	1.7	0.0	32	1.7	0.1
Drowning	3,936	2.4	0.0	*	*	*
Fall	18,808	11.4	0.1	493	25.5	1.0
Fire or hot object	3,802	2.3	0.0	*	*	*
Firearm	29,853	18.0	0.1	22	1.1	0.1
Machinery	718	0.4	0.0	11	0.6	0.1
Motor vehicle traffic	43,386	26.2	0.1	180	9.3	0.6
Other pedal cyclist	198	0.1	0.0	12	0.6	0.1
Other pedestrian	1,089	0.7	0.0	*2	0.1	0.0
Other land transport	1,627	1.0	0.0	37	1.9	0.2
Other transportation	1,285	0.8	0.0	4	0.2	0.0
Natural or environmental	1,390	0.8	0.0	25	1.3	0.2
Overexertion	13	0.0	0.0	23	1.2	0.1
Poisoning	29,504	17.8	0.1	197	10.2	0.4
Struck by or against	1,045	0.6	0.0	64	3.3	0.2
Suffocation	13,518	8.2	0.0	*5	0.3	0.1
Other specified	2,042	1.2	0.0	33	1.7	0.2
Other, not elsewhere classified	1,967	1.2	0.0	11	0.6	0.1
Not specified	8,647	5.2	0.0	24	1.2	0.1
Missing external cause code	…	…	…	713	36.9	1.7

See footnotes at end of table.

Data table for Figure 25. Average annual numbers of injury deaths, hospital discharges for injury, initial emergency department visits for injury, and episodes of injury, by mechanism of injury: United States, 2003–2005—Con.

Mechanism	Initial emergency department visits, 2004–2005			Injury episodes, 2004–2005		
	Number in thousands	Percent distribution	SE[1] (percent)	Number in thousands	Percent distribution	SE (percent)
Total, average annual	31,366	100.0	-	33,175	100.0	-
Cut or pierce	2,457	7.8	0.3	2,559	7.7	0.7
Drowning	*	*	*	*	*	*
Fall	8,021	25.6	0.6	11,914	35.9	1.2
Fire or hot object	503	1.6	0.1	442	1.3	0.3
Firearm	*79	0.3	*0.1	*	*	*
Machinery	281	0.9	0.1	*364	1.1	0.2
Motor vehicle traffic	3,900	12.4	0.4	2,775	8.4	0.8
Other pedal cyclist	398	1.3	0.1	553	1.7	0.3
Other pedestrian	*	*	*	*	*	*
Other land transport	395	1.3	0.1	*376	1.1	0.3
Other transportation	89	0.3	0.1	*	*	*
Natural or environmental	1,757	5.6	0.3	1,427	4.3	0.6
Overexertion	1,670	5.3	0.3	4,621	13.9	0.8
Poisoning	1,167	3.7	0.2	*456	1.4	0.3
Struck by or against	4,143	13.2	0.4	4,020	12.1	0.8
Suffocation	97	0.3	0.1	*	*	*
Other specified	1,541	4.9	0.2	901	2.7	0.4
Other, not elsewhere classified	1,132	3.6	0.2	887	2.7	0.5
Not specified	412	1.3	0.1	1,775	5.3	0.5
Missing external cause code	3,282	10.5	0.6	…	…	…

- Quantity zero.
0.0 Quantity more than zero but less than 0.05.
*Figure does not meet standards of reliability or precision. Numbers based on a relative standard error (RSE) between 20% and 30% are shown with an asterisk. If the RSE is greater than 30%, the rate is replaced with an asterisk.
… Category not applicable.
[1]SE is standard error.
NOTES: See Appendix I for description of data sources; NVSS, Mortality Statistics for identifying injury deaths. See Appendix II, Hospital discharge for injury; Initial injury emergency department visit; Injury or poisoning episode; Relative standard error; Standard error. External cause codes for hospital discharge data and emergency department data are compatible with *International Classification of Diseases, Tenth Revision* external cause matrix as shown in Table VI.
SOURCE: CDC/NCHS, National Vital Statistics System, National Hospital Discharge Survey, National Hospital Ambulatory Medical Care Survey, National Health Interview Survey.

Data table for Figure 26. Average annual estimates and percent distribution of injuries by body region of injury for injury hospital discharges, initial emergency department visits for injury, and episodes of injury: United States, 2004–2005

Body region	Hospital discharges, 2004–2005			
	Number in thousands	SE[1] (number)	Percent	SE (percent)
Total	1,934	84	100.0	-
Head and neck	321	21	16.6	0.6
Spine and back	111	9	5.7	0.3
Torso	236	13	12.2	0.4
Extremities	931	41	48.1	0.9
System-wide and other	309	13	16.0	0.5
Unspecified	*25	7	*1.3	0.4

Body region	Initial emergency department visits, 2004–2005			
	Number in thousands	SE[1] (number)	Percent	SE (percent)
Total[2]	25,479	876	100.0	-
Head and neck	5,210	211	20.5	0.5
Spine and back	1,834	99	7.2	0.3
Torso	1,858	107	7.3	0.3
Extremities	12,665	437	49.7	0.6
System-wide and other	1,622	86	6.4	0.3
Unspecified	2,289	166	9.0	0.5

Body region	Episodes of injury, 2004–2005			
	Number in thousands	SE[1] (number)	Percent	SE (percent)
Total	33,175	897	100.0	-
Head and neck	5,039	322	15.2	0.9
Spine and back	798	119	2.4	0.4
Torso	5,052	337	15.2	0.9
Extremities	20,718	690	62.5	1.2
System-wide and other	922	131	2.8	0.4
Unspecified	646	118	1.9	0.4

*Figure does not meet standards of reliability or precision. Numbers based on a relative standard error (RSE) between 20% and 30% are shown with an asterisk.
- Quantity zero.
[1]SE is standard error.
[2]An additional 5.9 million initial emergency department visits have an external cause of injury code but no valid injury diagnosis code.
NOTES: See Appendix I for description of data sources. See Appendix II, Hospital discharge for injury; Initial injury emergency department visit; Injury or poisoning episode; Relative standard error; Standard error. See Table I for classification codes for body region of injury.
SOURCE: CDC/NCHS, National Hospital Discharge Survey, National Hospital Ambulatory Medical Care Survey, National Health Interview Survey.

Table 26. Average annual estimates and percent distributions of injury hospital discharges, initial emergency department visits for injury, and episodes of injury by nature of injury: United States, 2004–2005

Nature of injury	Hospital discharges for injuries, 2004–2005				Emergency department initial visits for injuries, 2004–2005			
	Discharges in thousands	SE[1] (discharges)	Percent distribution	SE (percent)	Visits in thousands	SE (visits)	Percent distribution	SE (percent)
Total	1,934	84	100.0	-	31,366	1,073	100.0	-
Fractures	1,024	48	52.9	1.3	3,420	152	10.9	0.3
Dislocation	16	2	0.8	0.1	435	38	1.4	0.1
Sprains and strains	51	4	2.6	0.2	5,560	245	17.7	0.5
Internal organ injuries	234	13	12.1	0.4	353	38	1.1	0.1
Open wounds	93	6	4.8	0.3	5,620	222	17.9	0.4
Amputations	9	1	0.5	0.1	*52	11	*0.2	0.0
Blood vessel injuries	8	1	0.4	0.1	*	*	*	*
Contusions or superficial injuries	65	6	3.4	0.2	6,053	242	19.3	0.4
Crush injuries	*4	1	*0.2	*0.0	103	17	0.3	0.1
Burns	*	*	*	*	459	38	1.5	0.1
Nerve injuries	*	*	*	*	*	*	*	*
System-wide and late effects	308	13	15.9	0.5	1,621	86	5.2	0.2
Unspecified injuries	34	4	1.8	0.2	1,789	120	5.7	0.3
Diagnosis not an injury	…	…	…	…	5,886	258	18.8	0.5

See footnotes at end of table.

Table 26. Average annual estimates and percent distributions of injury hospital discharges, initial emergency department visits for injury, and episodes of injury by nature of injury: United States, 2004–2005—Con.

Nature of injury	Episodes of injury, 2004–2005			
	Episodes in thousands	SE (episodes)	Percent distribution	SE (percent)
Total	33,175	897	100.0	-
Fractures	5,721	328	17.2	0.9
Dislocation	*358	92	*1.1	0.3
Sprains and strains	10,802	470	32.6	1.1
Internal organ injuries	*305	82	0.9	0.2
Open wounds	6,041	348	18.2	0.9
Amputations	*	*	*	*
Blood vessel injuries	*	*	*	*
Contusions or superficial injuries	6,230	373	18.8	1.0
Crush injuries	*	*	*	*
Burns	*458	93	*1.4	0.3
Nerve injuries	*	*	*	*
System-wide and late effects	906	130	2.7	0.4
Unspecified injuries	2,143	225	6.5	0.7
Diagnosis not an injury	…	…	…	…

- Quantity zero.
*Figure does not meet standards of reliability or precision. Numbers based on a relative standard error (RSE) between 20% and 30% are shown with an asterisk. If the RSE is greater than 30%, the number is replaced with an asterisk.
... Category not applicable.
[1]SE is standard error.
NOTES: See Appendix I for description of data sources. See Appendix II, Hospital discharge for injury; Initial injury emergency department visit; Injury or poisoning episode; Relative standard error; Standard error. Mortality data were not included in this comparison because classification by body region and nature of injury for mortality is not comparable to classification for nonfatal data. See Table I for classification codes for each nature of injury category.
SOURCE: CDC/NCHS, National Hospital Discharge Survey, National Hospital Ambulatory Medical Care Survey, National Health Interview Survey.

Appendixes

Appendix I–Data Sources

This report consolidates current data on injury mortality and morbidity in the United States. Information was obtained from data systems and surveys from the Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS) as well as several other federal government agencies.

Much of the material in this section was taken from Appendix I, Data Sources, in *Health, United States, 2007*. For more detailed information than provided here, see http://www.cdc.gov/nchs/hus.htm.

Although a detailed description and comprehensive evaluation of each data source are beyond the scope of this appendix, users should be aware of the general strengths and weaknesses of the different data collection systems. For example, medical record-based surveys, which collect data from physician and hospital records, usually have precise diagnostic information but little or no information about the socioeconomic characteristics of individuals or the circumstances of the injury. In contrast, population-based surveys provide socioeconomic data and detailed data on what was happening at the time the person was injured, such as the place the injury occurred and the activity at the time of injury. These data are limited by the amount of information a respondent remembers or is willing to report. A respondent may not know detailed medical information, such as precise diagnoses, and therefore cannot report that level of detail.

All data collection systems are subject to error, and records may be incomplete or contain inaccurate information. Respondents may not remember essential information, a question may not mean the same thing to different respondents, and some institutions or individuals may not respond at all. Measuring the magnitude of these errors or their effect on the data is not always feasible. Where possible, this section, as well as Appendix II, Definitions and Methods, describes the universe and method of data collection to assist users in evaluating data quality.

To the extent possible, government data systems are described using a standard format. "Overview" is a brief, general statement about the purpose or objectives of the data system. "Selected content" lists only the components that are reflected in this chartbook. "Data years" gives the years that the survey or data system has existed or been fielded. "Coverage" describes the population that the data system represents; for example, residents of the United States, the noninstitutionalized population, persons in specific population groups, or other entities that comprise the survey. The "Methodology" section presents a short description of methods used to collect data. The "Identifying injury-related records" section describes how injury-related records were identified in this source. "Sample size and response rates" are given for surveys. For more information about the methodology, data files, and history of a data source, consult the references and websites at the end of each summary, as well as Appendix II, Definitions and Methods.

Census of Fatal Occupational Injuries (CFOI)

Bureau of Labor Statistics

Overview: The Census of Fatal Occupational Injuries (CFOI) compiles comprehensive and timely information on fatal work injuries occurring in the 50 states and the District of Columbia (D.C.) to monitor workplace safety and to inform private and public health efforts to improve workplace safety.

Selected content: Information is collected about each workplace fatality, including occupation and other worker characteristics, equipment involved, and circumstances of the event.

Coverage: The data cover all 50 states and D.C.

Methodology: CFOI is administered by the Bureau of Labor Statistics in conjunction with participating state agencies to compile counts that are as complete

as possible to identify, verify, and profile fatal work injuries. Key information about each workplace fatality (occupation and other worker characteristics, equipment or machinery involved, and circumstances of the event) is obtained by cross referencing source records. For a fatality to be included in the census, the decedent must have been employed (that is, working for pay, compensation, or profit) at the time of the event, engaged in a legal work activity, or present at the site of the incident as a requirement of his or her job. These criteria are generally broader than those used by federal and state agencies administering specific laws and regulations. Fatalities that occur during a person's commute to or from work are excluded from the census counts.

Data for the CFOI are compiled from various federal, state, and local administrative sources including death certificates, workers' compensation reports and claims, reports to various regulatory agencies, medical examiner reports, police reports, and news reports. Diverse sources are used because studies have shown that no single source captures all job-related fatalities. Source documents are matched so that each fatality is counted only once. To ensure that a fatality occurred while the decedent was at work, information is verified from two or more independent source documents or from a source document and a follow-up questionnaire.

Denominators of occupational injury fatality rates come from the Current Population Survey (CPS) from the U.S. Census Bureau (see Appendix I, Current Population Survey). One should remember that because it is a survey, the population estimates are subject to sampling error. For an explanation of CPS sampling and estimation methodology, as well as standard error computations, see the explanatory notes in the press release "The Employment Situation: February 2004" from the Bureau of Labor Statistics, available from http://www.bls.gov/news.release/archives/empsit_03052004.pdf. The relative standard errors of the CPS employment estimates can be used to approximate confidence ranges for the fatality rates.

Identifying injury records: For the purposes of the Census of Fatal Occupational Injuries, according to the Bureau of Labor Statistics Report 965, "an injury is defined as any intentional or unintentional wound or bodily damage resulting from acute exposure to kinetic energy, or the absence of such essentials as oxygen or heat caused by a specific event, incident, or series of events within a single workday or shift." For more information, see the CFOI website at http://www.bls.gov/iif/oshcfoi1.htm.

References:

Bureau of Labor Statistics. Fatal Occupational Injuries in the United States, 1995–1999: A Chartbook. Washington, DC: U.S. Department of Labor; Bureau of Labor Statistics Report 965. Available from: http://www.bls.gov/opub/cfoichartbook/pdf/entirereport.pdf. 2003.

Bureau of Labor Statistics. National census of fatal occupational injuries in 2005 [press release]. Washington, DC: U.S. Department of Labor. Available from: http://www.bls.gov/news.release/pdf/cfoi.pdf. 10 Aug 2006.

Revised and final 2005 data can be found at: http://www.bls.gov/iif/oshcfoi1.htm#2005.

Bureau of Labor Statistics. The employment situation: February 2004 [press release]. Washington, DC: United States Department of Labor. Available from: http://www.bls.gov/news.release/archives/empsit_03052004.pdf. March 2004.

Current Population Survey (CPS)

Bureau of Labor Statistics and U.S. Census Bureau

Overview: The Current Population Survey (CPS) is a monthly survey of about 50,000 households conducted by the U.S. Census Bureau for the Bureau of Labor Statistics. The survey has been conducted for more than 50 years.

The CPS is the primary source of information on the labor force characteristics of the U.S. population. The sample is scientifically selected to represent the

civilian noninstitutionalized population 15 years of age and over. Respondents are interviewed to obtain information about the employment status of each member of the household 15 years of age and over. However, published labor force data focus on those ages 16 and over. The sample provides estimates for the nation as a whole and serves as part of model-based estimates for individual states and other geographic areas.

For more information, visit the U.S. Census Bureau home page available from: http://www.census.gov/cps.

Fatality Analysis Reporting System (FARS)

National Highway Traffic Safety Administration

Overview: The Fatality Analysis Reporting System (FARS) contains data on motor vehicle traffic crashes that involved a motor vehicle traveling on a traffic way customarily open to the public and that resulted in the death of either a vehicle occupant or a nonmotorist within 30 days of the crash.

Selected content: Information is collected about each fatality including time and location of crash, first harmful event, number of vehicles, number of people, vehicle information, demographics of people involved, injury severity, restraint use, and blood alcohol estimates.

Coverage: The data cover all 50 states, the District of Columbia, and Puerto Rico.

Methodology: Trained state employees, called FARS analysts, extract information on fatal motor vehicle traffic crashes from source documents in the state. Typical source documents include police accident reports, state vehicle registration files, state driver licensing files, state highway department data, vital statistics, death certificates, coroner or medical examiner reports, hospital medical records, and emergency medical service reports. The analysts use these records to code more than 100 FARS data elements. These data are transmitted daily to the National Highway Traffic Safety Administration's central computer database, where the data are checked for consistency, completeness, and accuracy. For more information, see the FARS website at http://www-fars.nhtsa.dot.gov.

Reference:

National Highway Traffic Safety Administration. Traffic safety facts 2004: A compilation of motor vehicle crash data from the Fatality Analysis Reporting System and the General Estimates System. Washington, DC: National Center for Statistics and Analysis. 2006.

International Collaborative Effort on Injury Statistics

Centers for Disease Control and Prevention

National Center for Health Statistics

Overview: The International Collaborative Effort (ICE) on Injury Statistics is one of several international activities sponsored by NCHS. The goal is to provide a forum for international exchange and collaboration among injury researchers who develop and promote international standards in injury data collection and analysis. A secondary goal is to produce products of the highest quality to facilitate the comparability and improve the quality of injury data.

Coverage: Countries currently involved in the ICE on Injury Statistics include Argentina, Australia, Austria, Brazil, Canada, Chile, Colombia, Denmark, Dominica, England, Israel, Mexico, Netherlands, New Zealand, Nicaragua, Norway, Puerto Rico, St. Lucia, South Africa, Spain, Thailand, and the United States. Organizations involved include the Pan American Health Organization and the World Health Organization.

Methodology: Researchers from the different

countries provided data on injuries in their country by age group and by external cause of injury.

For more information, see the ICE on Injury Statistics website at http://www.cdc.gov/nchs/advice.htm.

National Health Interview Survey (NHIS)

Centers for Disease Control and Prevention

National Center for Health Statistics

Overview: The National Health Interview Survey (NHIS) monitors the health of the U.S. population through the collection and analysis of data on a broad range of health topics. A major strength of this survey is that it allows for the analysis of health measures by many demographic and socioeconomic characteristics, and its detailed questions allow for the description of episodes of injury and poisoning (referred to as injury).

Selected content: The NHIS obtains information during household interviews for all family members regarding household composition and sociodemographic characteristics, along with basic indicators of health status, limitation in activities, utilization of health care services, and injury. Demographic data including gender, age, education, and race and ethnicity (reported by respondent or proxy) were obtained.

Coverage: The NHIS samples the civilian noninstitutionalized population of the United States, and the numerator and denominator of estimated rates are based on that population (unlike in other surveys, where the numerator is from a survey of medical records and the denominator is from the U.S. Census Bureau). Excluded from the survey are patients in long-term care facilities, persons on active duty with the Armed Forces (although their dependents are included), and U.S. nationals living in foreign countries.

Methodology: The NHIS is a cross-sectional household interview survey. Sampling and interviewing are continuous throughout each year. The sampling plan follows a multistage area probability design that permits the representative sampling of households. Details on sample design can be found in "Design and Estimation for the National Health Interview Survey, 1995–2004." Trained interviewers from the U.S. Census Bureau visit each selected household and administer NHIS in person.

The Basic module of the NHIS is a core questionnaire that remains largely unchanged from year to year and allows for trend analysis and for data from more than 1 year to be pooled to increase sample size for analytic purposes. The Basic module consists of three main components: the Family Core, the Sample Adult Core, and the Sample Child Core. The Family Core, the source of data for this chartbook, collects information for all family members.

Identifying injury-related records: The injury section is in the Family Core; thus, the questions on medically attended or consulted injuries and poisonings that occurred within a three-month reference period were asked about each member of the family. Data on injuries and poisonings are collected at the episode or event level. Therefore, there may be more than one episode per person. These questions may be answered by a family respondent for all family members.

Injury and poisoning episodes are based on the questions "Of the [number] times that [person] was injured, how many of those times was the injury serious enough that a medical professional was consulted?" and "Of the [number] times that [person] was poisoned, how many of those times was the poisoning serious enough that a medical professional was consulted?" Examples of valid medically consulted episodes include a call to a poison control center, the use of an emergency vehicle or emergency room, a visit to a doctor's office or other health clinic, or a phone call to a doctor, nurse, or other health care

professional. Counts and rates of episodes have been annualized based only on episodes that occurred 5 weeks or less before the date the injury or poisoning questions were asked.

An injury episode refers to the traumatic event in which the person was injured one or more times from an external cause (e.g., a fall or a motor vehicle traffic accident). An injury condition is the acute condition or the physical harm caused by the traumatic event. The Verbatim Injury/Poisoning Episode File contains the respondent's description of what happened.

In 2004, to be considered an injury, each episode had to have at least one injury condition classified according to the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD–9–CM) diagnosis codes 800–909.2, 909.4, 909.9, 910–994.9, 995.5–995.59, and 995.80–995.85. Beginning with data year 2005, the episode was also required to have one external cause of injury code (E800–E848, E850–E869.9, E880–E929.9, or E950–E999).

Sample size and response rates: In both 2004 and 2005, more than 35,000 households completed the interview, and the response rates of households were more than 86%. In 2005, household interviews were completed for 98,649 persons living in 38,509 households.

Detailed interviewer instructions can be found in the *NHIS Field Representative's Manual,* available from ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Survey_Questionnaires/NHIS/2005/frmanual.pdf and ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Survey_Questionnaires/NHIS/2004/frmanual.pdf.

For more information, see the Survey Description Documents for 2004 and 2005 at the NHIS website at http://www.cdc.gov/nchs/nhis.htm and http://www.cdc.gov/nchs/about/otheract/injury/injury_interview.htm.

References:

NCHS. National Health Interview Survey: Research for the 1995–2004 redesign. National Center for Health Statistics. Vital Health Stat 2(126). 1999.

Botman SL, Moore TF, Moriarity CL, Parsons VL. Design and estimation for the National Health Interview Survey, 1995–2004. National Center for Health Statistics. Vital Health Stat 2(130). 2000.

Warner M, Barnes PM, Fingerhut LA. Injury and poisoning episodes and conditions; National Health Interview Survey, 1997. Vital Health Stat 10(202). 2000.

Warner M, Schenker N, Heinen MA, Fingerhut LA. The effects of recall on reporting injury and poisoning episodes in the National Health Interview Survey. Inj Prev 11(5):282–7. 2005.

National Hospital Ambulatory Medical Care Survey (NHAMCS)

Centers for Disease Control and Prevention

National Center for Health Statistics

Overview: The National Hospital Ambulatory Medical Care Survey (NHAMCS) collects data on the utilization and provision of medical care services provided in hospital emergency departments (EDs) and outpatient departments (OPDs).

Selected content: Data are collected from medical records on types of providers seen, reasons for visits, diagnoses, drugs ordered or provided, and selected procedures and tests performed during visits. Patient data include age, sex, race, and expected source of payment. Data are also collected on selected characteristics of the hospitals included in the survey.

Coverage: The survey is a representative sample of visits to EDs and OPDs of nonfederal, short-stay, or general hospitals. Telephone contacts are excluded. In this chartbook, analyses that present visit rates per population use the civilian population as the denominator because persons who visit nonfederal hospital EDs or OPDs can include civilians who reside

inside or outside institutional settings. See Appendix II, Population.

Methodology: A four-stage probability sample design is used in NHAMCS, involving samples of primary sampling units (PSUs), hospitals within PSUs, clinics within OPDs, and patient visits within clinics and EDs. Detail on the sampling methods can be found at http://www.cdc.gov/nchs/about/major/ahcd/sampham.htm.

Sample data are weighted to produce national estimates. The estimation procedure used in the NHAMCS has three basic components: inflation by the reciprocal of the probability of selection, adjustment for nonresponse, and ratio adjustment to fixed totals.

Identifying an injury-related record: An injury OPD or injury ED visit is defined as an initial visit that has either a first-listed injury diagnosis code or a first-listed valid external cause of injury code. Visits with a first-listed diagnosis or with a first-listed external cause code describing a complication or adverse effect of medical care are excluded. The relevant codes from the ICD–9–CM for injury diagnoses are the codes from the Barell Injury Diagnosis Matrix: 800–909.2, 909.4, 909.9–994.9, 995.50–995.59, and 995.80–995.85. The relevant codes from the ICD–9–CM for external causes of injury are E800–E869, E880–E929, and E950–E999. See Appendix II, Initial injury emergency department visit. This is not the same definition used in reports prepared by the Ambulatory Care Branch in the Division of Health Care Statistics, which has a definition that is much broader. See http://www.cdc.gov/nchs/data/ad/ad372.pdf.

Sample size and response rates: In any given year, the hospital sample consists of approximately 500 hospitals, of which 80% have EDs and about one-half have eligible OPDs. Typically, about 1,000 clinics are selected from participating hospital OPDs. In 2004, the number of patient record forms (PRFs) completed for EDs was 36,589 and for OPDs was 31,783. In 2005, the number of PRFs completed for EDs was 33,605 and for OPDs was 29,975. In 2004, the hospital response rate was 89% for EDs and 75% for OPDs. In 2005, the hospital response rate was 86% for EDs and 74% for OPDs.

For more information, see the NHCS websites, available from http://www.cdc.gov/nchs/nhcs.htm, and the injury data and resource websites, available from http://www.cdc.gov/nchs/about/otheract/injury/injury_emergency.htm and http://www.cdc.gov/nchs/about/otheract/injury/injury_outpatient.htm.

References:

McCaig LF, McLemore T. Plan and operation of the National Hospital Ambulatory Medical Care Survey. National Center for Health Statistics. Vital Health Stat 1(34). 1994.

Fingerhut L. Recommended definition of initial injury visits to EDs for use with the NHAMCS—ED Data. Health E-Stats. 2007. Available from: http://www.cdc.gov/nchs/products/pubs/pubd/hestats/injury/injury.htm.

National Hospital Discharge Survey (NHDS)

Centers for Disease Control and Prevention

National Center for Health Statistics

Overview: The National Hospital Discharge Survey (NHDS) collects and produces national estimates on characteristics of inpatient stays in nonfederal short-stay hospitals in the United States.

Selected content: Patient information collected includes demographics, length of stay, diagnoses, and procedures. Hospital characteristics collected include region, ownership, and bedsize.

Coverage: The survey design covers the 50 states and the District of Columbia. Included in the survey are general and children's general hospitals with an average length of stay of less than 30 days for all inpatients. Excluded are federal, military, and Department of Veterans Affairs hospitals, as well as

hospital units of institutions (such as prison hospitals) and hospitals with fewer than six beds staffed for patient use. All discharged patients from in-scope hospitals are included in the survey; however, newborns are not included in this chartbook. The civilian population is used as the denominator of hospital discharge rates. See Appendix II, Population.

Methodology:
Hospitals are selected using a modified three-stage stratified design. Units selected at the first stage consisted of either hospitals or geographic areas. The geographic areas were primary sample units (PSUs) used for the 1985–1994 National Health Interview Survey, which are geographic areas such as counties or townships. Hospitals within PSUs were then selected at the second stage. Strata at this stage were defined by geographic region, PSU size, abstracting service status, and hospital specialty-size groups. Within these strata, hospitals were selected with probabilities proportional to their annual number of discharges. At the third stage, a sample of discharges was selected by a systematic random sampling technique. The sampling rate was determined by the hospital's sampling stratum and the type of data collection system (manual or automated) used. Discharge records from hospitals submitting data via commercial abstracting services and selected state data systems (approximately 41% of sample hospitals) were stratified before sampling by primary diagnoses, patient sex and age group, and date of discharge.

The NHDS hospital sample is updated every 3 years by continuing the sampling process among hospitals that become eligible for the survey during the intervening years and by deleting hospitals that are no longer eligible.

The basic unit of estimation for NHDS is a sampled discharge. The basic estimation procedure involves inflation by the reciprocal of the probability of selection. There are adjustments for nonresponding hospitals and discharges; a postratio adjustment to fixed totals is employed.

Identifying injury-related records: There are up to seven diagnosis codes on each hospital record. The principal diagnosis is the diagnosis that was chiefly responsible for admission to the hospital. Some medical records do not have a principal diagnosis indicated. If a principal diagnosis is present on a record, then it is the first-listed diagnosis in NHDS; otherwise, the first diagnosis on the record is used as the first-listed NHDS diagnosis.

Injury hospital discharges are identified by examining the first-listed diagnosis on the record. If the first-listed diagnosis is identified by any of the codes in the Barell Injury Diagnosis Matrix (see Appendix II, Barell Injury Diagnosis Matrix), then the record is considered to be an injury hospital discharge; valid nature of injury codes, as defined in the ICD–9–CM are 800–909.2, 909.4, 909.9, 910–994.9, 995.50–995.59, or 995.80–995.85. Adverse effects of therapeutic use of drugs or medical or surgical care, as well as the late effects of those adverse effects, are not included in this definition of injury.

The external cause for an injury is determined by examining the codes entered in diagnosis fields 2 through 7. The first valid external cause code (E code) found is used to derive the external cause. Thirty-seven percent of injury-related hospital discharge records in 2004–2005 did not have a valid E code. Valid E codes include E800–E999, except E849, E967, E869.4, E870–E879, and E930–E949.

Sample size and response rate: In 2004, 501 hospitals were selected for NHDS: 476 of these hospitals were within scope and 439 participated (92%). From the hospitals that participated, data were collected from medical records for approximately 371,000 discharges. In 2005, 501 hospitals were selected, 473 of the hospitals were within scope, 444 participated (94%), and data were collected from medical records for approximately 375,000 discharges.

For more information, see http://www.cdc.gov/nchs/about/major/hdasd/nhds.htm and http://www.cdc.

gov/nchs/about/otheract/injury/injury_hospital.htm.

References:

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Dennison C, Pokras R. Design and operation of the National Hospital Discharge Survey: 1988 redesign. National Center for Health Statistics. Vital Health Stat 1(39). 2000.

Heinen M, Hall MJ, Boudreault MA, Fingerhut LA. National trends in injury hospitalizations, 1979–2001. Hyattsville, MD: National Center for Health Statistics. March 2005.

National Vital Statistics System (NVSS)

Centers for Disease Control and Prevention

National Center for Health Statistics

Mortality Statistics

Overview: Mortality statistics are collected through the National Vital Statistics System (NVSS) based on U.S. standard death certificates. Vital statistics mortality data are a fundamental source of demographic, geographic, and cause-of-death information. This is one of the few sources of comparable health-related data for small geographic areas over an extended time period. The data are used to present the characteristics of those dying in the United States and compare mortality trends with other countries.

Selected content: The mortality file includes medical information on cause of death and demographic information on age, sex, race, Hispanic origin, state of residence, and educational attainment.

Data years: The death registration area for all states and the District of Columbia (D.C.) has been in existence since 1932.

Coverage: NVSS collects and presents U.S. resident data for the aggregate of 50 states, New York City, and D.C., as well as for each individual state. Vital events occurring in the United States to non-U.S. residents and vital events occurring abroad to U.S. residents are excluded. Death rates for 2001 through 2004 were calculated using estimates of the resident population based on the 2000 census. See Appendix II, Table IX.

Methodology: The Division of Vital Statistics obtains information on deaths from the registration offices of each of the 50 states, New York City, D.C., Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Northern Mariana Islands. Data are sent to NCHS through the Vital Statistics Cooperative Program (VSCP).

By law, the registration of deaths is the responsibility of the funeral director. The funeral director obtains demographic data for the death certificate from an informant. The physician in attendance at the death is required to certify the cause of death. When a death is from other than natural causes, a coroner or medical examiner may be required to examine the body and certify the cause of death. Data for the entire United States refer to events occurring within the United States; data for geographic areas are by place of residence.

Identifying injury deaths: All NVSS mortality files have an underlying cause of death for each record. The underlying cause of death is defined as "(a) the disease or injury which initiated the train of morbid events leading directly to death, or (b) the circumstances of the accident or violence which produced the fatal injury." Beginning with data year 1999, if the underlying cause of death is coded to one of the following *International Classification of Diseases, Tenth Revision,* (ICD–10) codes, *U01–*U03, V01–Y36, Y85–Y87, or Y89, then the death is considered to be due to an injury. The U codes are preceded by an asterisk (*), which indicates that the codes were introduced in the United States, but are not officially part of the ICD. For data years 1979–1998, ICD–9 codes E800–E869, E880–E929, and E950–E999 identify an injury death. For an injury

record, the underlying cause of death is always an external cause.

In addition to the underlying cause of death, the mortality file has data on multiple causes of death that reflect all medical information reported on death certificates and complement traditional underlying cause-of-death data. See Appendix II, *International Classification of Diseases* (ICD) Multiple-cause-of-death data and injury diagnoses, and Injury Mortality Diagnosis (IMD) Matrix.

For more information, see the mortality data website, available from http://www.cdc.gov/nchs/deaths.htm, and the injury data and resources website, available from http://www.cdc.gov/nchs/about/otheract/injury/injury_mortality.htm. Injury deaths and rates can also be found at http://www.cdc.gov/NCIPC/wisqars/default.htm.

References:

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Compressed Mortality File

Overview: The Compressed Mortality File (CMF) is a county-level national mortality and population database.

Selected content: The compressed mortality database contains mortality data derived from the detailed mortality files of the NVSS and population estimates from the U.S. Census Bureau estimates of U.S. national, state, and county resident populations. Number of deaths, crude death rates, and age-adjusted death rates for all underlying causes of death can be obtained by place of residence (level of urbanization and total United States, state, and county), age group, race (white, black, and other), sex, year of death, and any individual or group of underlying cause(s) of death. The primary difference between the population data from the CMF compared with data from the U.S. Census Bureau is the population under 1 year of age. The CMF uses births, and the data from the U.S. Census Bureau uses the population. Although the differences are small and may make no difference to the resulting age-adjusted rates, the user should know that the rate denominators are different.

Data years: The CMF spans the years 1968–2004. On the CDC WONDER website at wonder.cdc.gov, data are available starting with 1979.

Methodology: In this chartbook, the CMF was used to compute injury death rates by urbanization level of decedent's county of residence. Counties are categorized according to level of urbanization based on an NCHS-modified version of the 1993 rural-urban continuum codes for metropolitan and nonmetropolitan counties, which was developed by the Economic Research Service, U.S. Department of Agriculture. See Appendix II, Urbanization.
For more information, see the CMF website at http://www.cdc.gov/nchs/products/elec_prods/subject/mcompres.htm, or see the CDC Wonder website at http://wonder.cdc.gov/mortSQL.html.

Population Census and Population Estimates

U.S. Census Bureau

Decennial Census

The census of population (decennial census) has been held in the United States every 10 years since 1790. The decennial census has enumerated the resident

population as of April 1 of the census year since 1930. Data on sex, race, age, and marital status are collected from 100% of the enumerated population. More detailed information such as income, education, housing, occupation, and industry have been collected from a representative sample of the population.

Intercensal Population Estimates

The further from the census year on which the postcensal estimates are based, the less accurate the estimates are. With the completion of the decennial census at the end of the decade, intercensal estimates for the preceding decade were prepared to replace the less accurate postcensal estimates. Intercensal population estimates take into account the census of population at the beginning and end of the decade. Thus, intercensal estimates are more accurate than postcensal estimates as they correct for the error of closure or difference between the estimated population at the end of the decade and the census count for that date. The error of closure at the national level was 1.5 million for the 1980s and 6 million for the 1990s. The error of closure differentially affects age, race, sex, and Hispanic origin subgroup populations as well as the rates based on these populations. Vital rates that were calculated using postcensal population estimates are routinely revised when intercensal estimates become available because the intercensal estimates correct for the error of closure.

Intercensal estimates for the 1990s with race data comparable to the 1977 standards have been derived so that vital rates for the 1990s could be revised to reflect the 2000 census. Calculation of the intercensal population estimates for the 1990s was complicated by the incomparability of the race data on the 1990 and 2000 censuses. The U.S. Census Bureau, in collaboration with the National Cancer Institute and NCHS, derived race-specific intercensal population estimates for the 1990s using the 1990 Modified Age Race Sex (MARS) file as the beginning population base and the bridged-race population estimates for April 1, 2000, as the ending population base. Bridged-race intercensal population estimates are available from http://www.cdc.gov/nchs/about/major/dvs/popbridge/popbridge.htm.

Postcensal Population Estimates

Postcensal population estimates are estimates made for the years following a census before the next census is taken. National postcensal population estimates are derived by updating the resident population enumerated in the decennial census using components of population change approach.

Bridged-Race Population Estimates for Census 2000

Race data on the 2000 census are not comparable with race data on other data systems that are continuing to collect data using the 1977 standards on race and ethnicity during the transition to full implementation of the 1997 standards. For example, most of the states in the Vital Statistics Cooperative Program revised their birth and death certificates to conform to the 1997 standards after 2000. Thus, population estimates for 2000 and beyond with race categories comparable to the 1977 categories are needed so that race-specific birth and death rates can be calculated. To meet this need, NCHS, in collaboration with the U.S. Census Bureau, developed methodology to bridge the 31 race groups in the 2000 census to the four single-race categories specified under the 1977 standards.

The bridging methodology was developed using information from the 1997–2000 National Health Interview Survey (NHIS). The NHIS provides a unique opportunity to investigate multiple-race groups because, since 1982, the NHIS has allowed respondents to choose more than one race but has also asked respondents reporting multiple races to choose a primary race. The bridging methodology developed by NCHS involved the application of regression models relating person-level and county-level covariates to the selection of a particular primary race by the multiple-race respondents. Bridging

proportions derived from these models were applied by the U.S. Census Bureau to the Census 2000 Modified Race Data Summary File. This application resulted in bridged counts of the April 1, 2000, resident single-race populations for four racial groups: American Indian or Alaska Native, Asian or Pacific Islander, black, and white. As bridged-race population estimates continue to be needed for the calculation of vital rates, the U.S. Census Bureau annually produces postcensal bridged-race estimates of the July 1 resident single-race populations.

For more information about bridged-race population estimates, see: Ingram DD, Parker JD, Schenker N, et al. United States Census 2000 population with bridged race categories. National Center for Health Statistics. Vital Health Stat 2(135). 2003. Also see the NCHS website, "U.S. Census Populations with Bridged Race Categories," at http://www.cdc.gov/nchs/about/major/dvs/popbridge/popbridge.htm. See Appendix II, Population for estimates used in this chartbook.

Appendix Tables I–VI

Table I. The Barell Injury Diagnosis Matrix based on ICD–9–CM codes for classification by body region and nature of the injury

Body region of injury			*International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD–9–CM) codes	Fracture 800–829	Dislocation 830–839	Sprains and strains 840–848
Head and neck	Traumatic brain injury	**Type 1 TBI**	[800,801,803,804](.1–.4,.6–.9,.03–.05,.53–.55), 850(.2–.4), 851–854, 950(.1–.3), 995.55	[800,801,803,804](.1–.4,.6–.9, .03–.05,.53–.55)	...	...
		Type 2 TBI	[800,801,803,804](.00,.02,.06,.09,.50,.52,.56,.59), 850(.0–.1,.5,.9)	[800,801,803,804](.00,.02,.06,.09, .50,.52,.56,.59)	...	...
		Type 3 TBI	[800,801,803,804](.01, .51)	[800,801,803,804](.01,.51)	...	...
	Other head, face, and neck	**Other head**	873(.0–.1,.8–.9), 941.x6, 951, 959.01	...	...	...
		Face	802, 830, 848(.0–.1), 872, 873(.2–.7), 941(.x1,.x3–.x5,.x7)	802	830	848(.0–.1)
		Eye	870–871, 918, 921, 940, 941.x2, 950(.0,.9)	...	...	...
		Neck	807(.5–.6), 848.2, 874, 925.2, 941.x8, 953.0, 954.0	807(.5–.6)	...	848.2
		Head, face, and neck unspecified	900, 910, 920, 925.1, 941(.x0, .x9), 947.0, 957.0, 959.09	...	...	...
Spine and back	Spinal cord (SCI)	**Cervical SCI**	806(.0–.1), 952.0	806(.0–.1)	...	...
		Thoracic or dorsal SCI	806(.2–.3), 952.1	806(.2–.3)	...	...
		Lumbar SCI	806(.4–.5), 952.2	806(.4–.5)	...	...
		Sacrum coccyx SCI	806(.6–.7), 952(.3–.4)	806(.6–.7)	...	...
		Spine and back unspecified SCI	806(.8–.9), 952(.8–.9)	806(.8–.9)	...	...
	Vertebral column (VCI)	**Cervical VCI**	805(.0–.1), 839(.0–.1), 847.0	805(.0–.1)	839(.0–.1)	847.0
		Thoracic or dorsal VCI	805(.2–.3), 839(.21,.31), 847.1	805(.2–.3)	839(.21,.31)	847.1
		Lumbar VCI	805(.4–.5), 839(.20,.30), 847.2	805(.4–.5)	839(.20,.30)	847.2
		Sacrum Coccyx VCI	805(.6–.7), 839(.41–.42,.51–.52), 847(.3–.4)	805(.6–.7)	839(.41–.42, .51–.52)	847(.3–.4)
		Spine and back unspecified VCI	805(.8–.9), 839(.40,.49,.50,.59)	805(.8–.9)	839(.40,.49,.50,.59)	...
Torso	Torso	**Chest (thorax)**	807(.0–.4), 839(.61,.71), 848(.3–.4), 860–862, 875, 879(.0–.1), 901, 922(.0–.1,.33), 926.19, 942(.x1–.x2), 953.1	807(.0–.4)	839(.61,.71)	848(.3–.4)
		Abdomen	863–866, 868, 879(.2–.5), 902(.0–.4), 922.2,942.x3, 947.3, 953(.2,.5)	...	...	...
		Pelvis and urogenital	808, 839(.69,.79), 846, 848.5, 867,877–878 902(.5,.81–.82), 922.4, 926(.0,.12), 942.x5,947.4, 953.3	808	839(.69,.79)	846, 848.5
		Trunk	809, 879(.6–.7), 911, 922(.8–.9), 926(.8–.9), 942(.x0,.x9), 954(.1,.8–.9), 959.1	809	...	...
		Back and buttock	847.9, 876, 922(.31–.32), 926.11, 942.x4	...	...	847.9
Extremities	Upper	**Shoulder and upper arm**	810–812, 831, 840, 880, 887(.2–.3), 912,923.0, 927.0, 943(.x3–.x6) ,959.2	810–812	831	840
		Forearm and elbow	813, 832, 841, 881(.x0–.x1), 887(.0–.1), 923.1, 927.1, 943(.x1–.x2)	813	832	841
		Wrist, hand, and fingers	814–817, 833–834, 842,881.x2, 882, 883, 885–886, 914–915, 923(.2–.3) ,927(.2–.3), 944 ,959(.4–.5)	814–817	833, 834	842
		Other and unspecified	818, 884, 887(.4–.7), 903, 913, 923(.8–.9), 927(.8–.9), 943(.x0,.x9), 953.4, 955, 959.3	818	...	...
	Lower	**Hip**	820, 835, 843, 924.01, 928.01	820	835	843
		Upper leg and thigh	821, 897(.2–.3), 924.00, 928.00, 945.x6	821	...	...
		Knee	822, 836, 844(.0–.3), 924.11, 928.11, 945.x5	822	836	844(.0–.3)
		Lower leg and ankle	823–824, 837, 845.0, 897(.0–.1), 924(.10,.21), 928(.10,.21), 945(.x3–.x4)	823–824	837	845.0
		Foot and toes	825–826, 838, 845.1, 892–893, 895–896, 917, 924(.3,.20), 928 (.3,.20), 945 (.x1–.x2)	825–826	838	845.1
		Other and unspecified	827,844(.8–.9), 890–891, 894, 897(.4–.7), 904(.0–.8), 916, 924(.4–.5), 928(.8–.9), 945(.x0,.x9), 959(.6–.7)	827	...	844(.8–.9)
Unclassifiable by site	Other and unspecified	**Other or multiple**	819, 828, 902(.87,.89), 947(.1–.2), 953.8, 956	819, 828	...	...
		Unspecified site	829, 839(.8–.9), 848(.8–.9), 869, 879(.8–.9), 902.9, 904.9, 919, 924(.8–.9), 929, 946, 947(.8–.9), 948, 949, 953.9, 957(.1,.8–.9), 959(.8–.9)	829	839(.8–.9)	848(.8–.9)
	System-wide	**System-wide and late effects**	905–908, 909 (.0–.2,.4,.9), 930–939,958, 960–994, 995(.50–.54,.59,.80–.85)			

See footnotes at end of table.

Table I. The Barell Injury Diagnosis Matrix based on ICD–9–CM codes for classification by body region and nature of the injury—Con.

Body region of injury			Internal 850–854,860–869, 952, 995.55	Open Wound 870–884, 890–894	Amputations 885–887, 895–897	Blood vessels 900–904	Contusion or superficial 910–924	Crush 925–929	Burns 940–949	Nerves 950–951, 953–957	Unspecified 959
Head and neck	Traumatic brain injury	Type 1 TBI	850(.2–.4), 851–854†, 995.55	…	…	…	…	…	…	950(.1–.3)	…
		Type 2 TBI	850(.0–.1,.5,.9)	…	…	…	…	…	…	…	…
		Type 3 TBI	…	…	…	…	…	…	…	…	…
	Other head, face, and neck	Other head	…	873(.0–.1,.8–.9)	…	…	…	…	941.x6	951	959.01†
		Face	…	872, 873(.2–.7)	…	…	…	…	941(.x1,.x3–.x5,.x7)	…	…
		Eye	…	870–871	…	…	918, 921	…	940, 941.x2	950(.0,.9)	…
		Neck	…	874	…	…	…	925.2	941.x8	953.0, 954.0	…
		Head, face, and neck unspecified	…	…	…	900	910, 920	925.1	941(.x0,.x9), 947.0	957.0	959.09
Spine and back	Spinal cord (SCI)	Cervical SCI	952.0	…	…	…	…	…	…	…	…
		Thoracic or dorsal SCI	952.1	…	…	…	…	…	…	…	…
		Lumbar SCI	952.2	…	…	…	…	…	…	…	…
		Sacrum coccyx SCI	952(.3–.4)	…	…	…	…	…	…	…	…
		Spine and back unspecified SCI	952(.8–.9)	…	…	…	…	…	…	…	…
	Vertebral column (VCI)	Cervical VCI	…	…	…	…	…	…	…	…	…
		Thoracic or dorsal VCI	…	…	…	…	…	…	…	…	…
		Lumbar VCI	…	…	…	…	…	…	…	…	…
		Sacrum Coccyx VCI	…	…	…	…	…	…	…	…	…
		Spine and back unspecified VCI	…	…	…	…	…	…	…	…	…
Torso	Torso	Chest (thorax)	860–862	875, 879(.0–.1)	…	901	922(.0–.1,.33)	926.19	942(.x1–.x2)	953.1	…
		Abdomen	863–866, 868	879(.2–.5)	…	902(.0–.4)	922.2	…	942.x3, 947.3	953(.2,.5)	…
		Pelvis and urogenital	867	877–878	…	902(.5, .81–.82)	922.4	926(.0, .12)	942.x5, 947.4	953.3	…
		Trunk	…	879(.6–.7)	…	…	911, 922(.8–.9)	926(.8–.9)	942.x0, 942.x9	954(.1, .8–.9)	959.1
		Back and buttock	…	876	…	…	922(.31–.32)	926.11	942.x4	…	…
Extremities	Upper	Shoulder and upper arm	…	880	887(.2–.3)	…	912, 923.0	927.0	943(.x3–.x6)	…	959.2
		Forearm and elbow	…	881(.x0–x1)	887(.0–.1)	…	923.1	927.1	943(.x1–.x2)	…	…
		Wrist, hand, and fingers	…	881.x2,882, 883	885–886	…	914–915, 923(.2–.3)	927(.2–.3)	944	…	959(.4–.5)
		Other and unspecified	…	884	887(.4–.7)	903	913,923(.8–.9)	927(.8–.9)	943(.x0,.x9)	953.4, 955	959.3
	Lower	Hip	…	…	…	…	924.01	928.01	…	…	…
		Upper leg and thigh	…	…	897(.2–.3)	…	924.00	928.00	945.x6	…	…
		Knee	…	…	…	…	924.11	928.11	945.x5	…	…
		Lower leg and ankle	…	…	897(.0–.1)	…	924(.10,.21)	928(.10,.21)	945(.x3–.x4)	…	…
		Foot and toes	…	892–893	895–896	…	917, 924(.3,.20)	928(.3,.20)	945(.x1–.x2)	…	…
		Other and unspecified	…	890–891,894	897(.4–.7)	904(.0–.8)	916, 924(.4–.5)	928(.8–.9)	945(.x0,.x9)	…	959(.6–.7)
Unclassifiable by site	Other and unspecified	Other or multiple	…	…	…	902(.87,.89)	…	…	947(.1–.2)	953.8, 956	…
		Unspecified site	869	879(.8–.9)	…	902.9, 904.9	919, 924(.8–.9)	929	946, 947(.8–.9) 948, 949	953.9, 957(.1,.8–.9)	959(.8–.9)
	System-wide	System-wide and late effects	Foreign body (930–939), Early complications of trauma (958), Poisoning (960–979), Toxic Effects (980–989), Other and unspecified effects of external cause (990–994), Child and adult maltreatment (995(.50–.54, .59, .80–.85)). Late effects of injuries, poisonings, toxic effects and other external causes (905–909) excluding 909(.3, .5)								

… Category not applicable (no code in cell).
†According to the CDC, 959.01 (added to ICD–9–CM in 1997) is not intended to be assigned to TBI cases; however, in the United States, it has been assigned incorrectly to a substantial proportion of cases previously coded 854.

NOTES: When a set of additional digits are required for *International Classification of Diseases* codes, the additional digits are in parentheses ( ) and apply to the preceding code or preceding range of codes in brackets [ ]. Special diagnostic codes for trauma are Flail Chest (807.4) and Pneumothorax (860). For purposes of classification, head injuries are labeled as "Type 1 TBI" if there is recorded evidence of an intracranial injury or a moderate or prolonged loss of consciousness (LOC), Shaken Infant Syndrome (SIS), or injuries to the optic nerve pathways. Type 2 TBI includes injuries with no recorded evidence of intracranial injury, and LOC of less than one hour, or LOC of unknown duration, or unspecified level of consciousness. Type 3 TBI includes patients with no evidence of intracranial injury and no LOC.
SOURCE: Barell V, Aharonson-Daniel L, Fingerhut LA, Mackenzie EJ, et al. An introduction to the Barell body region by nature of injury diagnosis matrix. Inj Prev 8(2):91–6. 2002.

Table II. External cause-of-injury mortality matrix based on ICD–9 external cause of injury codes

	Manner or intent	
Mechanism of death (based on ICD–9)	Unintentional	Suicide
All injury	E800–E869, E880–E929	E950–E959
Cut or pierce	E920(.0–.9)	E956
Drowning or submersion	E830(.0–.9), E832(.0–.9), E910(.0–.9)	E954
Fall	E880.0–E886.9, E888	E957(.0–.9)
Fire or burn	E890.0–E899, E924(.0–.9)	E958(.1–.2, .7)
Fire or flame	E890.0–E899	E958.1
Hot object or substance	E924(.0–.9)	E958(.2, .7)
Firearm	E922(.0–.9)	E955(.0–.4)
Machinery	E919(.0–.9)	…
MV traffic[1]	[E810–E819] (.0–.9)	E958.5
Occupant	[E810–E819] (.0–.1)	…
Motorcyclist	[E810–E819] (.2,.3)	…
Pedal cyclist	[E810–E819] (.6)	…
Pedestrian	[E810–E819] (.7)	…
Unspecified	[E810–E819] (.9)	…
Pedal cyclist, other	[E800–E807](.3),[E820–E825] (.6); E826(.1, .9); [E827–E829] (.1)	…
Pedestrian, other	[E800–E807](.2), [E820–E825] (.7), [E826–E829](.0)	…
Transport, other	[E800–E807](.0,.1,.8–.9), [E820–E825](.0–.5,.8–.9), E826(.2–.8), [E827–E829](.2–.9), E831(.0–.9), E833.0–E845.9	E958.6
Natural or environmental	E900.0–E909, E928(.0–.2)	E958.3
Bites and stings	E905(.0–.6,.9); E906(.0–.4,.9)	…
Overexertion	E927	…
Poisoning	E850.0–E869.9	E950.0–E952.9
Struck by or against	E916–E917.9	…
Suffocation	E911–E913.9	E953(.0–.9)
Other specified, classifiable	E846–E848, E914–E915, E918, E921(.0–.9), E923(.0–.9), E925.0–E926.9, E929(.0–.5)	E955(.5,.9) E958.(0,.4)
Other specified, not elsewhere classifiable	E928.8, E929.8	E958.8, E959
Unspecified	E887, E928.9, E929.9	E958.9

See footnotes at end of table.

Table II. External cause-of-injury mortality matrix based on ICD–9 external cause of injury codes—Con.

	Manner or intent		
Mechanism of death (based on ICD–9)	Homicide	Undetermined	Legal intervention or war
All injury	E960–E969	E980–E989	E970–E978, E990–E999
Cut or pierce	E966	E986	E974
Drowning or submersion	E964	E984	…
Fall	E968.1	E987(.0–.9)	…
Fire or burn	E961, E968(.0, .3)	E988(.1–.2, .7)	…
Fire or flame	E968.0	E988.1	…
Hot object or substance	E961, E968.3	E988(.2, .7)	…
Firearm	E965(.0–.4)	E985(.0–.4)	E970
Machinery	…	…	…
MV traffic[1]	…	E988.5	…
Occupant	…	…	…
Motorcyclist	…	…	…
Pedal cyclist	…	…	…
Pedestrian	…	…	…
Unspecified	…	…	…
Pedal cyclist, other	…	…	…
Pedestrian, other	…	…	…
Transport, other	…	E988.6	…
Natural or environmental	…	E988.3	…
Bites and stings	…	…	…
Overexertion	…	…	…
Poisoning	E962(.0–.9)	E980.0–E982.9	E972
Struck by or against	E960.0, E968.2	…	E973, E975
Suffocation	E963	E983(.0–.9)	…
Other specified, classifiable	E960.1, E965(.5–.9), E967(.0–.9), E968.4	E985.5, E988(.0,.4)	E971, E978, E990–E994, E996, E997(.0–.2)
Other specified, not elsewhere classifiable	E968.8, E969	E988.8, E989	E977, E995, E997.8, E998, E999
Unspecified	E968.9	E988.9	E976, E997.9

… Category not applicable (no code in cell).

[1]Three fourth-digit codes (.4 [occupant of streetcar], .5 [rider of animal], and .8 [other specified person]) are not separated because of the minimal number of deaths in these categories. However, because they are included in the overall motor vehicle traffic category, the sum of these categories can be derived by subtraction.

NOTES: ICD–9 is *International Classification of Diseases, Ninth Revision.* When a set of additional digits are required for ICD codes, the additional digits are in parentheses ( ) and apply to the preceding code or preceding range of codes in brackets [ ]. MV is motor vehicle.

SOURCE: CDC. Recommended framework for presenting injury mortality data. MMWR 46 (RR-14). Available from: http://www.cdc.gov/mmwr/PDF/rr/rr4614.pdf. 1997.

Table III. External cause-of-injury mortality matrix based on ICD–10 external cause-of-injury codes

		Manner or intent	
	Mechanism of death (based on ICD–10)	All injury	Unintentional
	All injury	*U01–*U03, V01–Y36, Y85–Y87, Y89	V01–X59, Y85–Y86
#	Cut or pierce	W25–W29, W45, X78, X99, Y28, Y35.4	W25–W29, W45
#	Drowning	W65–W74, X71, X92, Y21	W65–W74
#	Fall	W00–W19, X80, Y01, Y30	W00–W19
#	Fire or hot object or substance	*U01.3, X00–X19, X76–X77, X97–X98, Y26–Y27, Y36.3	X00–X19
	Fire or flame	X00–X09, X76, X97, Y26	X00–X09
	Hot object or substance	X10–X19, X77, X98, Y27	X10–X19
#	Firearm	*U01.4,W32–W34,X72–X74,X93–X95,Y22–Y24, Y35.0	W32–W34
#	Machinery	W24, W30–W31	W24, W30–W31
	All transport	*U01.1, V01–V99, X82, Y03, Y32, Y36.1	V01–V99
#	Motor vehicle traffic	[V02–V04](.1,.9), V09.2, [V12–V14](.3–.9), V19(.4–.6), [V20–V28](.3–.9),[V29–V79](.4–.9), V80(.3–.5), V81.1, V82.1, [V83–V86](.0–.3), V87(.0–.8), V89.2	[V02–V04](.1,.9), V09.2, [V12–V14](.3–.9), V19(.4–.6), [V20–V28](.3–.9), [V29–V79](.4–.9), V80(.3–.5), V81.1, V82.1, [V83–V86](.0–.3), V87(.0–.8), V89.2
	Occupant	[V30–V79](.4–.9), [V83–V86](.0–.3)	[V30–V79](.4–.9), [V83–V86](.0–.3)
	Motorcyclist	[V20–V28](.3–.9), V29(.4–.9)	[V20–V28](.3–.9), V29(.4–.9)
	Pedal cyclist	[V12–V14](.3–.9), V19(.4–.6)	[V12–V14](.3–.9), V19(.4–.6)
	Pedestrian	[V02–V04](.1,.9), V09.2	[V02–V04](.1,.9), V09.2
	Other	V80(.3–.5), V81.1, V82.1	V80(.3–.5), V81.1, V82.1
	Unspecified	V87(.0–.8), V89.2	V87(.0–.8), V89.2
#	Pedal cyclist, other	V10–V11, [V12–V14](.0–.2), V15–V18, V19(.0–.3,.8,.9)	V10–V11, [V12–V14](.0–.2), V15–V18, V19(.0–.3,.8,.9)
#	Pedestrian, other	V01, [V02–V04](.0), V05, V06, V09(.0–.1,.3,.9)	V01, [V02–V04](.0), V05, V06, V09(.0–.1,.3,.9)
	Other land transport	[V20–V28](.0–.2), [V29–V79](.0–.3), V80(.0–.2,.6–.9), [V81–V82](.0,.2–.9), [V83–V86](.4–.9), V87.9, V88(.0–.9), V89(.0,.1,.3,.9), X82, Y03, Y32	[V20–V28](.0–.2), [V29–V79](.0–.3), V80(.0–.2,.6–.9), [V81–V82](.0,.2–.9), [V83–V86](.4–.9), V87.9, V88(.0–.9), V89(.0,.1,.3,.9)
	Other transport	*U01.1,V90–V99,Y36.1	V90–V99
#	Natural or environmental	W42–W43, W53–W64, W92–W99, X20–X39, X51–X57	W42–W43, W53–W64, W92–W99, X20–X39, X51–X57
#	Overexertion	X50	X50
#	Poisoning	*U01(.6–.7), X40–X49, X60–X69, X85–X90, Y10–Y19, Y35.2	X40–X49
#	Struck by or against	W20–W22,W50–W52,X79,Y00,Y04,Y29,Y35.3	W20–W22, W50–W52
#	Suffocation	W75–W84,X70,X91,Y20	W75–W84
	Other specified, classifiable	*U01(.0,.2,.5), *U03.0, W23, W35–W41, W44, W49, W85–W91, X75, X81, X96, Y02, Y05–Y07, Y25, Y31, Y35(.1,.5), Y36(.0,.2,.4–.8), Y85	W23, W35–W41, W44, W49, W85–W91, Y85
	Other specified, not elsewhere classified	*U01.8,*U02,X58,X83,Y08,Y33,Y35.6,Y86–Y87,Y89(.0–.1)	X58,Y86
	Unspecified	*U01.9, *U03.9, X59, X84,Y09, Y34, Y35.7, Y36.9, Y89.9	X59

See footnotes at end of table.

Table III. External cause-of-injury mortality matrix based on ICD–10 external cause-of-injury codes—Con.

		Manner or intent			
	Mechanism of death (based on ICD–10)	Suicide	Homicide	Undetermined	Legal intervention or war
	All injury	*U03, X60–X84, Y87.0	*U01–*U02, X85–Y09, Y87.1	Y10–Y34, Y87.2, Y89.9	Y35–Y36, Y89(.0.–1)
#	Cut or pierce	X78	X99	Y28	Y35.4
#	Drowning	X71	X92	Y21	…
#	Fall	X80	Y01	Y30	…
#	Fire or hot object or substance	X76–X77	*U01.3, X97–X98	Y26–Y27	Y36.3
	Fire or flame	X76	X97	Y26	…
	Hot object or substance	X77	X98	Y27	…
#	Firearm	X72–X74	*U01.4, X93–X95	Y22–Y24	Y35.0
#	Machinery	…	…	…	…
	All transport	X82	*U01.1, Y03	Y32	Y36.1
#	Motor vehicle traffic	…	…	…	…
	Occupant	…	…	…	…
	Motorcyclist	…	…	…	…
	Pedal cyclist	…	…	…	…
	Pedestrian	…	…	…	…
	Other	…	…	…	…
	Unspecified	…	…	…	…
#	Pedal cyclist, other	…	…	…	…
#	Pedestrian, other	…	…	…	…
	Other land transport	X82	Y03	Y32	…
	Other transport	…	*U01.1	…	Y36.1
#	Natural or environmental	…	…	…	…
#	Overexertion	…	…	…	…
#	Poisoning	X60–X69	*U01(.6–.7), X85–X90	Y10–Y19	Y35.2
#	Struck by or against	X79	Y00,Y04	Y29	Y35.3
#	Suffocation	X70	X91	Y20	…
	Other specified, classifiable	*U03.0, X75, X81	*U01(.0,.2,.5), X96, Y02, Y05–Y07	Y25,Y31	Y35(.1,.5), Y36(.0,.2,.4–.8)
	Other specified, not elsewhere classified	X83, Y87.0	*U01.8, *U02, Y08, Y87.1	Y33, Y87.2	Y35.6, Y89(.0–.1)
	Unspecified	*U03.9, X84	*U01.9, Y09	Y34, Y89.9	Y35.7, Y36.9

... Category not applicable.
NOTES: ICD–10 is the *International Classification of Diseases, Tenth Revision*. The causes designated by # are ranked to determine leading mechanisms of injury. When a set of additional digits are required for *International Classification of Diseases* codes, the additional digits are in parentheses ( ) and apply to the preceding code or preceding range of codes in brackets [ ]. For explanation of asterisks (*) preceding cause-of-death codes, see Appendix I, Mortality, identifying injury deaths.
SOURCE: Fingerhut L. ICD Framework: External cause of injury mortality matrix [online]. Hyattsville, MD: National Center for Health Statistics. Available from: http://www.cdc.gov/nchs/about/otheract/ice/matrix10.htm.

Table IV. Injury Mortality Diagnosis Matrix based on ICD–10 codes used for multiple cause-of-death coding

Body region of injury		Nature of injury							
		Fracture	Dislocation	Internal organ injury	Open wound	Amputation	Blood vessel	Contusion or superficial	Crushing
Head and neck	Traumatic brain injury (TBI)	S02(.0–.1, .3, .7–.9), T90.2	...	S06, T90.5	S01, T90.1	...	...	...	S07
	Other head	S02(.2, .4–.6)	S03(.0–.3)	...	S05(.2–.7), S08.0, S09.2	S08(.1–.9)	S09.0	S00, S05(.0–.1), T90.0	...
	Neck	S12(.8–.9)	S13(.2–.3)	...	S11	S18	S15(.0, .2–.9)	S10	S17
	Head and neck, other	...	...	...	...	...	...	...	...
Spine and upper back	Spinal cord	...	...	S14(.0–.1), S24(.0–.1), S34(.0–.1, .3), T09.3, T91.3	...	...	...	...	...
	Vertebral column	S12(.0–.7), S22 (.0–.1), S32(.0–.2), T08, T91.1	S13(.0–.1), S23(.0–.1), S33(.0–.2)	S14.2	...	...	S15.1	...	...
Torso	Thorax	S22(.2–.9)	S23.2	S26.0, S27 (.0–.6, .8–.9), T91.4	S21	S28.1	S25	S20	S28.0
	Abdomen	...	...	S36	S31(.1,.8)	...	S35(.0–.4)	S30.1	...
	Pelvis and lower back	S32(.3–.8)	S33(.3–.4)	S37	S31(.0, .2–.5)	S38.2	S35.5	S30(.0, .2)	S38.0
	Abdomen, lower back & pelvis	T02.1	...	S39(.6–.7), T06.5, T91.5	S31.7	S38.3	S35(.7–.9)	S30(.7–.9)	S38.1
	Other trunk	T91.2	...	...	T09.1	T09.6	...	T09.0	T04.1
Extremities	Upper extremity	S42, S52, S62, T02(.2, .4), T10, T92(.1–.2)	S43(.0–.3), S53(.0–.1), S63(.0–.2)	...	S41, S51, S61, T01.2, T11.1, T92.0	S48, S58, S68, T05(.0, .2), T11.6	S45, S55, S65, T11.4	S40, S50, S60, T00.2, T11.0	S47, S57, S67, T04.2
	Hip	S72(.0–.2)	S73.0	...	S71.0	S78.0	...	S70.0	S77.0
	Other lower extremity	S72(.3–.9), S82, S92, T02(.3, .5), T12, T93(.1–.2)	S83(.0–.1), S93(.0–.1, .3)	...	S71(.1–.8), S81, S91, T01.3, T13.1, T93.0	S78(.1–.9), S88, S98, T05(.3, .5), T13.6	S75, S85, S95, T13.4	S70(.1–.9), S80, S90, T00.3, T13.0	S77(.1–.2), S87, S97, T04.3
Unclassifiable by body region	Multiple body regions	T02(.8–.9)	...	...	T01.9	T05(.8–.9)	T06.3	T00(.8–.9)	T04(.8–.9)
	System wide	...	...	...	...	...	...	...	...
Unspecified		T14.2	...	...	T14.1	...	T14.5	T14.0	...

See footnotes at end of table.

Table IV. Injury Mortality Diagnosis Matrix based on ICD–10 codes used for multiple cause-of-death coding—Con.

Body region of injury		Nature of injury							
		Burn	Effect of foreign bodies entering orifice	Other effects of external causes	Poisoning	Toxic effects	Multiple injuries	Other specified injury	Unspecified injury
Head and neck	Traumatic brain injury (TBI)	...	...	...	...	...	S09.7	S04.0, S09.8, T90(.4, .8)	S09.9, T90.9
	Other head	T26	T15–T16, T17(.0–.1), T18.0	T33.0, T34.0	...	...	...	S03(.4–.5), S04(.1–.9), S05.8, S09.1, T90.3	S05.9
	Neck	T27.0, T27.4	T17(.2–.4)	T33.1, T34.1	...	...	S19.7	S13(.5–.6), S14(.3–.6), S16, S19.8	S19.9
	Head and neck, other	T20, T28.0, T28.5, T95.0	...	T35.2	...	...	...	...	...
Spine and upper back	Spinal cord	...	...	...	...	...	...	...	...
	Vertebral column	...	...	...	...	...	...	S13.4, S23.3, S24.2, S33(.5–.7), S34(.2, .4), T09.4	...
Torso	Thorax	T28(.1, .6)	T17.5	T33.2, T34.2	...	...	S27.7, S29.7	S23(.4–.5), S24(.3–.6), S26.8, S29(.0, .8)	S26.9, S29.9
	Abdomen	...	T18(.2–.4)	...	...	...	...	...	...
	Pelvis and lower back	T28(.3, .8)	T18.5, T19	...	...	...	...	S34.5	...
	Abdomen, lower back & pelvis	...	...	T33.3, T34.3, T35.3	...	...	T03.1	S34(.6, .8), S39(.0, .8)	S39.9
	Other trunk	T21, T27(.2–.3, .6–.7), T28(.2, .7), T95.1	T17(.8–.9), T18(.1, .8–.9)	...	...	...	T09.2	T09(.5, .8)	T09.9
Extremities	Upper extremity	T22–T23, T95.2	...	T33(.4–.5), T34(.4–.5), T35.4	...	...	S49.7, S59.7, S69.7, T03.2, T11.2, T92(.3, .6)	S43(.4–.7), S44, S46, S49.8, S53(.2–.4), S54, S56, S59.8, S63(.3–.7), S64, S66, S69.8, T11(.3, .5, .8), T92(.4–.5, .8)	S49.9, S59.9, S69.9, T11.9, T92.9
	Hip	…	...	...	...	...	...	S73.1, S76.0	...
	Other lower extremity	T24–T25, T95.3	...	T33(.6–.8), T34(.6–.8), T35.5	...	...	S79.7, S89.7, S99.7, T03.3, T13.2, T93(.3, .6)	S74, S76(.1–.7), S79.8, S83(.2–.6), S84, S86, S89.8, S93(.2, .4–.6), S94, S96, S99.8, T13(.3, .5, .8), T93(.4–.5, .8)	S79.9, S83.7, S89.9, S99.9, T13.9, T93.9
Unclassifiable by body region	Multiple body regions	T27.1, T27.5, T28.9	...	T35(.0–.1, .6)	...	...	T03(.8–.9), T91.0	T06(.2, .4), T91.8	T07, T91.9, T94.0
	System wide	...	...	T66–T75	T36–T50, T96	T51–T65, T97	...	T79(.0–.9), T98.2	...
Unspecified		T28.4, T30–T32, T95(.4, .8–.9)	T98.0	T33.9, T34.9, T35.7	...	...	T14.3, T14.7	T14(.4, .6)	T14(.8–.9), T94.1, T98.1

… Category not applicable (no code in cell).

NOTES: ICD–10 is the *International Classification of Diseases, Tenth Revision*. When a set of additional digits are required for ICD codes, the additional digits are in parentheses ( ) and apply to the preceding code or preceding range of codes in brackets [ ]. The matrix excludes the following codes that are not valid in the United States: T00(.0–.1, .6), T01(.0–.1, .6, .8), T02(.0, .6–.7), T03(.0, .4), T04(.0, .4, .7), T05(.1, .4, .6), T06(.0–.1, .8), and T29. Also excluded are codes T78, T80–T88, T98.3 for adverse effects, not elsewhere classified and complications of surgical and medical, not elsewhere classified, and their sequelae.

SOURCE: Fingerhut LA, Warner M. The ICD–10 Injury Mortality Diagnosis Matrix. Inj Prev 12(1):24–9. 2006.

Table V. External cause-of-injury morbidity matrix based on ICD–9–CM external cause-of-injury codes

Mechanism or cause	Manner or intent	
	Unintentional	Self-inflicted
All injury	E800–E869, E880–E929	E950–E959
Cut or pierce	E920(.0–.9)	E956
Drowning or submersion	E830(.0–.9), E832(.0–.9), E910(.0–.9)	E954
Fall	E880.0–E886.9, E888	E957(.0–.9)
Fire or burn	E890.0–E899, E924(.0–.9)	E958(.1–.2,.7)
Fire or flame	E890.0–E899	E958.1
Hot object or substance	E924(.0–.9)	E958(.2,.7)
Firearm	E922(.0–.3,.8–.9)	E955(.0–.4)
Machinery	E919 (.0–.9)	...
Motor vehicle traffic[1]	[E810–E819](.0–.9)	E958.5
Occupant	[E810–E819](.0–.1)	...
Motorcyclist	[E810–E819](.2–.3)	...
Pedal cyclist	[E810–E819](.6)	...
Pedestrian	[E810–E819](.7)	...
Unspecified	[E810–E819](.9)	...
Pedal cyclist, other	[E800–E807](.3), [E820–E825](.6), E826(.1,.9), [E827–E829](.1)	...
Pedestrian, other	[E800–807](.2) [E820–E825](.7), [E826–E829](.0)	...
Transport, other	[E800–E807](.0–.1,.8–.9), [E820–E825](.0–.5,.8–.9), E826(.2–.8), [E827–E829](.2–.9), E831(.0–.9), [E833.0–E845](.9)	E958.6
Natural or environmental	E900.0–E909, E928(.0–.2)	E958.3
Bites and stings	E905(.0–.6,.9), E906(.0–.5,.9)	...
Overexertion	E927	...
Poisoning	E850.0–E869.9	E950.0–E952.9
Struck by or against	E916–E917.9	...
Suffocation	E911–E913.9	E953(.0–.9)
Other specified and classifiable	E846–E848, E914–E915, E918, E921(.0–.9), E922(.4–.5), E923(.0–.9), E925.0–E926.9	E955(.5–.7,.9), E958(.0,.4)
Other specified, not elsewhere classifiable	E928.8, E929.8	E958.8, E959
Unspecified	E887, E928.9, E929.9	E958.9

See footnotes at end of table.

Table V. External cause-of-injury morbidity matrix based on ICD–9–CM external cause-of-injury codes—Con.

Mechanism or cause	Manner or intent		
	Assault	Undetermined	Legal intervention or war
All injury	E960–E969, E979, E999.1	E980–E989	E970–E978, E990–E999.0
Cut or pierce	E966	E986	E974
Drowning or submersion	E964	E984	...
Fall	E968.1	E987(.0–.9)	...
Fire or burn	E961, E968(.0,.3), E979.3	E988(.1–.2,.7)	...
Fire or flame	E968.0, E979.3	E988.1	...
Hot object or substance	E961, E968.3	E988(.2,.7)	...
Firearm	E965(.0–4), E979.4	E985(.0–.4)	E970
Machinery	...	...	...
Motor vehicle traffic[1]	E968.5	E988.5	...
Occupant	...	...	...
Motorcyclist	...	...	...
Pedal cyclist	...	...	...
Pedestrian	...	...	...
Unspecified	...	...	...
Pedal cyclist, other	...	...	...
Pedestrian, other	...	...	...
Transport, other	...	E988.6	...
Natural or environmental	...	E988.3	...
Bites and stings	...	...	...
Overexertion	...	...	...
Poisoning	E962(.0–.9), E979(.6–.7)	E980.0–E982.9	E972
Struck by or against	E960.0, E968.2	...	E973, E975
Suffocation	E963	E983(.0–.9)	...
Other specified and classifiable	E960.1, E965(.5–.9), E967(.0–.9), E968(.4,.6–.7), E979(.0–.2, .5, .8–.9)	E985(.5–.7) E988(.0,.4)	E971, E978, E990–E994, E996, E997(.0–.2)
Other specified, not elsewhere classifiable	E968.8, E969, E999.1	E988.8, E989	E977, E995, E997.8, E998, E999.0
Unspecified	E968.9	E988.9	E976, E997.9

... Category not applicable (no code in cell).

[1]Three fourth-digit codes (.4 [occupant of streetcar], .5 [rider of animal], .8 [other specified person]) are not presented separately because of small numbers. However, because they are included in the overall motor vehicle traffic category, the sum of these categories can be derived by subtraction.

NOTES: ICD–9–CM is *International Classification of Diseases, Ninth Revision, Clinical Modification*. When a set of additional digits are required for ICD codes, the additional digits are in parentheses ( ) and apply to the preceding code or preceding range of codes in brackets [ ]. Codes were in effect as of February 2007.

SOURCE: Centers for Disease Control and Prevention's National Center for Health Statistics and National Center for Injury Prevention and Control. Available from: http://www.cdc.gov/ncipc/whatsnew/matrix2.htm.

Table VI. ICD–10 and ICD–9 comparability ratios according to mechanism of injury and intent of death

Mechanism and intent of death	ICD–10 codes	ICD–9 codes[1]	Comparability ratio
All injury	*U01–*U03,V01–Y36, Y85–Y87,Y89	E800–E869,E880–E929,E950–E999	1.0159
Unintentional	V01–X59,Y85–Y86	E800–E869,E880–E929	1.0251
Suicide	*U03,X60–X84,Y87.0	E950–E959	1.0022
Homicide	*U01–*U02,X85–Y09,Y87.1	E960–E969	1.0020
Undetermined	Y10–Y34,Y87.2,Y89.9	E980–E989	0.9867
Legal intervention or war	Y35–Y36,Y89(.0,.1)	E970–E978,E990–E999	0.9235
Cut or pierce	W25–W29,W45,X78,X99, Y28,Y35.4	E920,E956,E966,E974,E986	0.9428
Unintentional	W25–W29,W45	E920	0.8049
Suicide	X78	E956	0.8708
Homicide	X99	E966	0.9587
Undetermined	Y28	E986	*
Legal intervention or war	Y35.4	E974	*
Drowning	W65–W74,X71,X92,Y21	E910,E954,E964,E984	1.0269
Unintentional	W65–W74	E910	1.0297
Suicide	X71	E954	1.0149
Homicide	X92	E964	1.0159
Undetermined	Y21	E984	1.0047
Fall	W00–W19,X80,Y01,Y30	E880–E886,E888,E957,E968.1,E987	1.0015
Unintentional	W00–W19	E880–E886,E888	0.9991
Suicide	X80	E957	1.0409
Homicide	Y01	E968.1	1.0833
Undetermined	Y30	E987	0.9857
Fire or hot object or substance	*U01.3,X00–X19,X76–X77, X97–X98,Y26–Y27,Y36.3	E890–E899,E924,E958(.1–.2,.7), E961,E968(.0,.3), E988(.1–.2,.7),E990	0.9969
Unintentional	X00–X19	E890–E899,E924	0.9987
Suicide	X76–X77	E958(.1,.2,.7)	0.9675
Homicide	*U01.3,X97–X98	E961,E968(.0,.3)	1.0048
Undetermined	Y26–Y27	E988(.1,.2,.7)	0.9420
Legal intervention or war	Y36.3	E990	*
Fire or flame	X00–X09,X76,X97,Y26	E890–E899,E958.1,E968.0,E988.1	0.9975
Unintentional	X00–X09	E890–E899	0.9995
Suicide	X76	E958.1	0.9675
Homicide	X97	E968.0	0.9951
Undetermined	Y26	E988.1	0.9692
Hot object or substance	X10–X19,X77,X98,Y27	E924,E958(.2,.7),E961,E968.3, E988(.2,.7)	0.9720
Unintentional	X10–X19	E924	0.9694
Suicide	X77	E958(.2,.7)	*
Homicide	X98	E961,E968.3	*
Undetermined	Y27	E988(.2,.7)	*

See footnotes at end of table.

Table VI. ICD–10 and ICD–9 comparability ratios according to mechanism of injury and intent of death—Con.

Mechanism and intent of death	ICD–10 codes	ICD–9 codes[1]	Comparability ratio
Firearm	*U01.4,W32–W34,X72–X74,X93–X95, Y22–Y24,Y35.0	E922,E955(.0–.4), E965(.0–.4),E985(.0–.4),E970	1.0012
Unintentional	W32–W34	E922	1.0165
Suicide	X72–X74	E955(.0–.4)	1.0012
Homicide	*U01.4,X93–X95	E965(.0–.4)	1.0019
Undetermined	Y22–Y24	E985(.0–.4)	1.0000
Legal intervention or war	Y35.0	E970	0.9196
Machinery[2]	W24,W30–W31	E919	0.8813
All transport	*U01.1,V01–V99,X82,Y03,Y32,Y36.1	E800–848,E958.5,E988.5,E994	0.9930
Unintentional	V01–V99	E800–E848	0.9929
Suicide	X82	E958.5	0.9437
Homicide	*U01.1,Y03	...	*
Undetermined	Y32	E988.5	*
Legal intervention or war	Y36.1	E994	*
Motor vehicle traffic (MVT)[2]	[V02–V04](.1,.9),V09.2,[V12–V14](.3–.9), V19(.4–.6),[V20–V28](.3–.9),[V29–V79] (.4–.9),V80(.3–.5),V81.1,V82.1,[V83–V86] (.0–.3),V87(.0–.8),V89.2	E810–E819	0.9545
Occupant[2]	[V30–V79](.4–.9),[V83–V86](.0–.3)	[E810–E819](.0-.1)	0.6191
Motorcyclist[2]	[V20–V28](.3–.9),V29(.4–.9)	[E810–E819](.2-.3)	1.1520
Pedal cyclist[2]	[V12–V14](.3–.9),V19(.4–.6)	[E810–E819](.6)	0.8038
Pedestrian[2]	[V02–V04](.1,.9),V09.2	[E810–E819](.7)	0.9535
Other specified[2]	V80(.3–.5),V81.1,V82.1	[E810–E819](.4,.5,.8)	*
Unspecified[2]	V87(.0–.8),V89.2	[E810–E819](.9)	1.8753
Pedal cyclist, other[2]	V10–V11,[V12–V14](.0–.2),V15–V18,V19(.0–.3,.8–.9)	[E800–E807](.3),[E820–E825] (.6),E826(.1,.9)	1.7477
Pedestrian, other[2]	V01,[V02–V04](.0),V05,V06, V09(.0–.1,.3,.9)	[E800–E807](.2),[E820–E825] (.7),[E826–E829](.0)	1.2057
Other land transport	['V20–V28](.0–.2),[V29–V79](.0–.3), V80 (.0–.2,.6–.9),[V81–V82](.0,.2–.9), [V83–V86](.4–.9),V87.9,V88(.0–.9),V89 (.0–.1,.3,.9),X82,Y03,Y32	[E800–E807](.0–.1,.8–.9), [E820–E825](.0–.5,.8–.9),E826 (.2–.8),[E827–E829](.2–.9), E846,E958.5,E988.5	2.6292
Unintentional	[V20–V28](.0–.2),[V29–V79](.0–.3),V80 (.0–.2,.6–.9),[V81–V82](.0,.2–.9),[V83–V86] (.4–.9),V87.9,V88(.0–.9),V89(.0–.1,.3,.9)	[E800–E807](.0–.1,.8–.9), [E820–E825](.0–.5,.8–.9),E826 (.2–.8),[E827–E829](.2–.9),E846	2.7630
Suicide	X82	E958.5	0.9437
Homicide	Y03	...	*
Undetermined	Y32	E988.5	*
Other transport	*U01.1,V90–V99,Y36.1	E830–E845, E847–E848, E994	0.9098
Unintentional	V90–V99	E830–E845, E847–E848	0.9098
Homicide	*U01.1	...	*
Legal intervention or war	Y36.1	E994	*
Natural or environmental[2]	W42–W43,W53–W64,W92–W99, X20–X39,X51–X57	E900–E909,E928(.0–.2)	1.0390
Overexertion[2]	X50	E927	*

See footnotes at end of table.

Table VI. ICD–10 and ICD–9 comparability ratios according to mechanism of injury and intent of death—Con.

Mechanism and intent of death	ICD–10 codes	ICD–9 codes[1]	Comparability ratio
Poisoning	*U01(.6–.7),X40–X49, X60–X69, X85–X90,Y10–19,Y35.2	E850–E869,E950–952,E962,E972, E980–E982	1.0192
Unintentional	X40–X49	E850–E869	1.0365
Suicide	X60–X69	E950–E952	1.0013
Homicide	*U01(.6–.7),X85–X90	E962	1.0417
Undetermined	Y10–Y19	E980–E982	0.9870
Legal intervention or war	Y35.2	E972	*
Struck by or against	W20–W22,W50–W52,X79,Y00, Y04,Y29,Y35.3	E916–E917,E960.0,E968.2,E973,E975	1.0852
Unintentional	W20–W22,W50–W52	E916–E917	1.0549
Suicide	X79	...	*
Homicide	Y00,Y04	E960.0,E968.2	1.1765
Undetermined	Y29	...	*
Legal intervention or war	Y35.3	E973,E975	*
Suffocation	W75–W84,X70,X91,Y20	E911–E913,E953,E963,E983	1.0974
Unintentional	W75–W84	E911–E913	1.2320
Suicide	X70	E953	1.0025
Homicide	X91	E963	1.0840
Undetermined	Y20	E983	0.9016
Other specified, classifiable	*U01(.0,.2,.5),*U03.0,W23, W35–W41,W44,W49,W85–W91, X75,X81,X96,Y02,Y05–Y07,Y25, Y31,Y35(.1,.5),Y36(.0,.2,.4–.8), Y85	E914–E915,E918,E921,E923,E925–E926, E929(.0–.5),E955(.5,.9),E958(.0,.3–.4), E960.1, E965(.5–.9),E967,E968.4,E971, E978,E985.5, E988(.0,.3–.4),E991–E993, E996,E997(.0–.2)	0.8956
Unintentional	W23,W35–W41,W44,W49, W85–W91,Y85	E914–E915,E918,E921,E923,E925–E926, E929(.0–.5)	0.8789
Suicide	*U03.0,X75,X81	E955(.5,.9),E958(.0,.3–.4)	0.9010
Homicide	*U01(.0,.2,.5),X96,Y02,Y05–Y07	E960.1,E965(.5–.9),E967,E968.4	0.9730
Undetermined	Y25,Y31	E985.5,E988(.0,.3–.4)	*
Legal intervention or war	Y35(.1,.5),Y36(.0,.2,.4–.8)	E971,E978,E991–E993,E996,E997(.0–.2)	1.2000
Other specified, not elsewhere classified	*U01.8,*U02,X58,X83,Y08,Y33, Y35.6,Y86–Y87,Y89(.0–.1)	E928.8,E929.8,E958(.6,.8),E959,E968.8, E969,E977, E988(.6,.8),E989,E995,E997. 8,E998,E999	1.5667
Unintentional	X58,Y86	E928.8,E929.8	9.0920
Suicide	X83,Y87.0	E958(.6,.8),E959	1.1878
Homicide	*U01.8,*U02,Y08,Y87.1	E968.8,E969	0.9605
Undetermined	Y33,Y87.2	E988(.6,.8),E989	1.0800
Legal intervention or war	Y35.6,Y89(.0,.1)	E977,E995,E997.8,E998,E999	*

See footnotes at end of table.

Table VI. ICD–10 and ICD–9 comparability ratios according to mechanism of injury and intent of death—Con.

Mechanism and intent of death	ICD–10 codes	ICD–9 codes[1]	Comparability ratio
Unspecified	*U01.9,*U03.9,X59,X84,Y09, Y34,Y35.7,Y36.9,Y89.9	E887,E928.9,E929.9,E958.9,E968.9, E976,E988.9,E997.9	1.1124
Unintentional	X59	E887,E928.9,E929.9	1.1293
Suicide	*U03.9,X84	E958.9	1.7368
Homicide	*U01.9,Y09	E968.9	1.0177
Undetermined	Y34,Y89.9	E988.9	0.9960
Legal intervention or war	Y35.7,Y36.9	E976,E997.9	*

* Figure does not meet standards of reliability or precision.
… Category not applicable (no code in cell).
[1]ICD–9 categories in this table are not all consistent with the ICD–9 external cause of injury death matrix. The following ICD–9 codes have been allocated to different categories of the injury matrix so that the ICD–9 definition conforms more closely to that dictated by the ICD–10 version of this instrument. See list of codes below.

ICD–9 codes	In the ICD–9 external cause mortality matrix, codes came from the following categories:	To be made compatible with ICD–10 codes, codes were moved to the following categories:
E990	Other specified and classifiable, legal intervention	Fire or hot object or substance, legal intervention
[E800–E807](.0,–.1,.8,–.9),[E820–E825] (.0–.5,.8,.–9),E826(.2–.8),[E827–E829](.2–.9)	Transport, other, unintentional	Other land transport, unintentional
E846	Other specified and classifiable, unintentional	Other land transport, unintentional
E958.5	MVT, suicide	Other land transport, suicide
E988.5	MVT, undetermined	Other land transport, undetermined
E830–E832	Drowning, unintentional	Other transport, unintentional
E847–E848	Other specified and classifiable, unintentional	Other transport, unintentional
E994	Other specified and classifiable, legal intervention	Other transport, legal intervention
E958.3	Natural or environmental, suicide	Other specified classifiable, suicide
E958.6	Transport, other, suicide	Other specified, not elsewhere classified, suicide
E988.3	Natural or environmental, undetermined	Other specified classifiable, undetermined
E988.6	Transport, other, undetermined	Other specified, not elsewhere classified, undetermined

[2] Intent of death is unintentional.
NOTES: ICD is *International Classification of Diseases.* When a set of additional digits are required for ICD codes, the additional digits are in parentheses ( ) and apply to the preceding code or preceding range of codes in brackets [ ]. The notes for footnote 1 are an expanded version of what is in the report cited as the source. When a set of additional digits are required for ICD codes, the additional digits are in parentheses ( ) and apply to the preceding code or preceding range of codes in brackets [ ]. For explanation of asterisks (*) preceding cause-of-death codes, see Appendix I, Mortality Statistics.
SOURCE: Miniño AM, Anderson RN, Fingerhut LA, Boudreault MA, Warner M. Deaths: Injuries, 2002. National vital statistics reports; vol 54 no 10. Hyattsville, MD: National Center for Health Statistics. 2006.

Appendix II–Definitions and Methods

Following is an alphabetical listing of the definitions of key terms and methods used in this chartbook.

Accident—The term accident is used in this chartbook to mean an unintentional injury death or an unintentional nonfatal event. The word is used sparingly because of its history of being considered by some to be inappropriate to describe events that are preventable. See the introduction for the chartbook.

Activity—An activity is used to describe what the injured person was doing when the injury occurred. The data source is the National Health Interview Survey. Categories include driving, working at paid job, working around house or yard, attending school, sports, leisure activities (excluding sports), and other. More than one activity can be checked for the same episode (Figure 24).

Age—A person's age is reported as age at last birthday, that is, age in completed years. Presenting the data by single year of age rather than predetermined age groups provides a level of detail that traditional 5- or 10-year age groupings of fatal and nonfatal injuries can obscure. For example, the commonly used age group, 15–19 years, is a poor choice for motor vehicle traffic death rates and other causes of injury; the rate at 19 years of age is three times the rate at 15 years of age. Combining the ages makes this higher rate less obvious.

Age adjustment—Age adjustment is used to compare risks of two or more populations at one point in time or one population at two or more points in time. Age-adjusted rates are computed by the direct method of applying age-specific rates in a population of interest to a standardized age distribution to eliminate differences in observed rates that result from age differences in population composition. Age-adjusted rates should be viewed as relative indexes rather than actual measures of risk. Age-adjusted rates for two different outcome measures at the same point in time should not be compared (Figures 4, 6, and 11).

Age-adjusted rates (R′) are calculated by the direct method by applying unrounded age-specific rates (R_i) to the U.S. standard population (w_i).

$$R' = \sum_i w_i R_i$$

The application of unrounded age-specific rates to the standard population differs from the current method used to calculate death rates in other reports published by the National Center for Health Statistics. In very few instances do the final age-adjusted rates differ, but when they do, they differ by no more than 0.1 per 100,000. For example, in comparing homicide rates from 1984 through 2004 shown in Figure 4, only data year 2003 differs from what is published in *National Vital Statistics Reports* (6.1 compared with 6.0 per 100,000 population).

Mortality

Beginning with 2003 data, the traditional standard million population, along with corresponding standard weights to six decimal places based on the projected year 2000 population, were replaced by the unrounded projected year 2000 population age distribution (see Table VII). The effect of the change is negligible and does not significantly affect comparability with age-adjusted rates calculated using the previous method (Figures 4, 6, and 11).

Table VII. United States standard population and age groups used to age adjust mortality data

Age group	Population
Total	274,633,642
Under 1 year	3,794,901
1–4 years	15,191,619
5–14 years	39,976,619
15–24 years	38,076,743
25–34 years	37,233,437
35–44 years	44,659,185
45–54 years	37,030,152
55–64 years	23,961,506
65–74 years	18,135,514
75–84 years	12,314,793
85 years and over	4,259,173

SOURCE: National Institutes of Health, National Cancer Institute. Surveillance, Epidemiology, and End Results (SEER), Standard population in single year of age. Available from: http://seer.cancer.gov/stdpopulations/stdpop.singleages.html.

National Health Interview Survey—Estimates based on the National Health Interview Survey are age adjusted to the same 2000 U.S. standard population. Adjustment is based on 4 age groups as shown below with their corresponding standard population (see data tables for Figures 22 and 23). (See Table VIII.)

Table VIII. United States standard population and age groups used to age adjust National Health Interview Survey data

Age group	Population
Total	274,633,642
Under 15 years	58,963,139
15–24 years	38,076,743
25–64 years	142,884,280
65 years and over	34,709,480

SOURCE: National Institutes of Health, National Cancer Institute. Surveillance, Epidemiology, and End Results (SEER), Standard population in single year of age. Available from: http://seer.cancer.gov/stdpopulations/stdpop.singleages.html.

Alcohol-impaired driving—Alcohol-impaired driving is defined as operating a motor vehicle when legally intoxicated. Legally intoxicated drivers have a measurable or estimated blood alcohol concentration (BAC) of 0.08 grams per deciliter (g/dl) or above. Trends in alcohol impaired driving are tracked using the proportion of fatally injured drivers who were legally intoxicated among all fatally injured drivers. The Insurance Institute for Highway Safety calculates the proportion using the Fatality Analysis Reporting System (FARS), which captures the number of fatally injured drivers on public roads from all 50 states and the District of Columbia. Multiple imputation is used for estimating the BACs for those with missing values using the U.S. Department of Transportation's multiple imputation model.

References:

Insurance Institute for Highway Safety. IIHS fatality facts 2005, alcohol. Available from: http://www.iihs.org/research/fatality_facts/alcohol.html). 2007.

Subramanian, R. Transitioning to multiple imputation—A new method to impute missing blood alcohol concentration (BAC) values in FARS. Technical report no. DOT HS-809-403. Washington, DC: U.S. Department of Transportation. 2002.

Average percent change and test of trends—Joinpoint software, developed by the National Cancer Institute, was used to estimate the annual percent change in death rates and in hospital discharge rates. The software uses trend data and fits the simplest joinpoint model that the data allow. The user supplies the minimum and maximum number of joinpoints. The program starts with the minimum number of joinpoints (i.e., 0 joinpoints, which is a straight line) and tests whether more joinpoints are statistically significant and must be added to the model (up to the specified maximum number). This enables the user to test that an apparent change in trend is statistically significant. The tests of significance use a Monte Carlo Permutation method. The models used in these figures incorporate estimates of both the data points as well as the standard error of each point. Estimates were included and calculated using only one decimal place unless the standard error was greater than 0.0 but less than 0.5; in those cases, two decimal places were used

for the standard errors. In addition, the models are linear on the log of the response (i.e., for calculating annual percentage rate change). Models used for the figures were the ones determined by Joinpoint to best fit the data (Figures 4, 6, 13, 15-1, and 15-2).

For details see:
http://srab.cancer.gov/joinpoint/.

Reference:

Kim HJ, Fay MP, Feuer EJ, Midthune DN. Permutation tests for joinpoint regression with applications to cancer rates [published correction appeared in Stat Med 20(4):655. 2001]. Stat Med 19(3):335–51. 2000.

Barell Injury Diagnosis Matrix (Barell Matrix)—The matrix is a two-dimensional array of *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD–9–CM) diagnosis codes for injury (updated as of 2002) grouped by body region of the injury and the nature of the injury. This matrix provides a standard format for reporting injury data. This injury diagnosis matrix is a product of the participants in the International Collaborative Effort (ICE) on Injury Statistics. For more information about the Barell Matrix, refer to http://www.cdc.gov/nchs/about/otheract/ice/barellmatrix.htm. The matrix was adopted for use by the State and Territorial Injury Prevention Directors Association and recommended as the basis for defining injury hospitalizations. The matrix is included in Table I (see Figures 17-1, 17-2, 18, 21, and 26).

References:

Barell V, Aharonson-Daniel L, Fingerhut LA, MacKenzie EJ, et al. An introduction to the Barell body region by nature of injury diagnosis matrix. Inj Prev 8:91–6. 2002.

Injury Surveillance Workgroup. Consensus recommendations for using hospital discharge data for injury surveillance. Marietta, GA: State and Territorial Injury Prevention Directors Association. 2003.

Blood alcohol concentration (BAC)—A BAC describes the amount of alcohol in a person's blood, expressed as weight of alcohol per unit of volume of blood. For example, 0.08% BAC indicates 80 mg of alcohol per 100 ml of blood. For most legal purposes, however, a blood sample is not necessary to determine a person's BAC. It can be measured more simply by analyzing exhaled breath. All 50 states and the District of Columbia (D.C.) have laws defining it as a crime to drive with a BAC at or above the proscribed level of 0.08%. The data in Figure 13 are based on data from all 50 states and D.C. with imputations for missing BACs provided by the U.S. Department of Transportation's multiple imputation model.

Reference:

Subramanian R. Transitioning to multiple imputation—A new method to impute missing blood alcohol concentration (BAC) values in FARS. Technical report no. DOT HS-809-403. Washington, DC: U.S. Department of Transportation. 2002.

Body region—Body region refers to one of the two dimensions of the Barell Injury Diagnosis Matrix and the Injury Mortality Diagnosis matrix. This dimension classifies the part of the body that was injured and is based on ICD–9–CM codes in the Barell Matrix and ICD–10 codes in the Injury Mortality Diagnosis Matrix. For a detailed listing of the body regions see Table I.

Cause of death—For the purpose of national mortality statistics, every death is attributed to one underlying condition, based on information reported on the death certificate and using the international rules for selecting the underlying cause of death from the conditions stated on the death certificate. For injury deaths, the underlying cause is defined by the World Health Organization (WHO) as the circumstances of the accident or violence that produced the fatal injury. Generally more medical information is reported on death certificates than is directly reflected in the underlying cause of death. The conditions that are not selected as underlying cause of death constitute the nonunderlying cause(s) of death, also known as multiple causes of death.

Cause of death is coded according to the appropriate revision of the ICD. Effective with deaths occurring in 1999, the United States began using the Tenth Revision of the ICD (ICD–10) to code cause of death. During 1979–1998, causes of death were coded and

classified according to the Ninth Revision (ICD–9). Each of these ICD revisions has produced discontinuities in cause-of-death trends. These discontinuities are measured using comparability ratios. These ratios are essential to the interpretation of mortality trends.

For more information, see Comparability ratio. See also Multiple-cause-of death data and injury diagnoses.

Reference:

Miniño AM, Anderson RN, Fingerhut LA, Boudreault MA, Warner M. Deaths: Injuries, 2002. National vital statistics reports; vol 54 no 10. Hyattsville, MD: National Center for Health Statistics. 2006.

Cause-of-death ranking—Selected causes of death of public health and medical importance are ranked according to the number of deaths assigned to these causes. The top-ranking causes are the leading causes of death. For deaths from injuries in 2004, 3 causes ranked in the top 15 rankable causes based on ICD–10. They are accidents (unintentional injuries), intentional self-harm (suicide), and assault (homicide). Causes that are tied receive the same rank; the next cause is assigned the rank it would have received had the lower-ranked causes not been tied, that is, it skips a rank. See ICD.

References:

Heron MP, Smith BL. Deaths: Leading causes for 2003. National vital statistics reports; vol 55 no 10. Hyattsville, MD: National Center for Health Statistics. 2007.

NCHS. ICD–10 cause-of-death lists for tabulating mortality statistics (updated October 2002). NCHS instruction manual; part 9. Hyattsville, MD: National Center for Health Statistics; 2002.

Cause-of-death ranking for leading mechanisms of injury death—Leading mechanisms of injury death are ranked according to the number of deaths assigned to rankable mechanisms in the external cause of injury mortality matrix; rankable mechanisms are indicated by the number symbol (#) using a procedure consistent with that used to rank leading causes of death. Vaguely defined categories are summarily excluded from selection as rankable mechanisms. These include all categories beginning with the words "other" or "unspecified." Among the remaining mechanism categories, decisions were made to select as rankable the mechanism of injury considered most useful from a public health perspective with the following condition: the rankable mechanisms must be mutually exclusive. If a category representing a subtotal (such as motor vehicle traffic or fire or hot object or substance) is selected as a rankable mechanism, its component parts are not selected as rankable. The external cause of injury mortality matrices for ICD–9 and ICD–10 are shown in Tables II and III.

Civilian population, civilian noninstitutionalized population—See Population.

Comparability ratio—About every 10 to 20 years, the ICD is revised to stay abreast of advances in medical science and changes in medical terminology. Each of these revisions produces breaks in the continuity of cause-of-death statistics. Discontinuities across revisions are due to changes in classification and rules for selecting underlying cause of death. Classification and rule changes affect cause-of-death trend data by shifting deaths away from some cause-of-death categories and into others.

Comparability ratios are based on a comparability study in which the same deaths were coded by both the Ninth and Tenth Revisions. The comparability ratio was calculated by dividing the number of deaths classified by ICD–10 by the number of deaths classified by ICD–9. The resulting ratios represent the net effect of the Tenth Revision on cause-of-death statistics and can be used to adjust mortality statistics for causes of death classified by the Ninth Revision in 1998 to be comparable with cause-specific mortality statistics classified by the Tenth Revision in 1999.

The application of comparability ratios to mortality statistics helps make the analysis of change between 1998 and 1999 more accurate and complete. The 1998

comparability-modified death rate is calculated by multiplying the comparability ratio by the 1998 death rate. Comparability-modified rates should be used to estimate mortality change between 1998 and 1999.

Comparability ratios measure the effect of changes in classification and coding rules. For all external causes of injury based on the external cause of injury mortality matrix, comparability ratios are shown in Table VI.

For selected causes of death, the ICD–9 codes used to calculate death rates for 1985 through 1998 differ from the ICD–9 codes most nearly comparable with the corresponding ICD–10 cause-of-death category, which also affects the ability to compare death rates across ICD revisions. In this chartbook, rates for unintentional injuries and homicide in Figure 4 and motor vehicle traffic fatalities and drowning in Figure 6 for 1985–1998 were recalculated using ICD–9 codes that are more comparable with codes for corresponding ICD–10 categories. The codes used can be found in Table VI.

Final and preliminary comparability ratios for 113 selected causes of death are available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Datasets/Comparability/icd9_icd10/.

Reference:

Anderson RN, Miniño AM, Hoyert DL, Rosenberg HM. Comparability of cause of death between ICD–9 and ICD–10: Preliminary estimates. National vital statistics reports; vol 49 no 2. Hyattsville, MD: National Center for Health Statistics. Available from: http://www.cdc.gov/nchs/data/nvsr/nvsr49/nvsr49_02.pdf. 2001.

Death rate: See Rate: Death and related rates.

Diagnosis—Diagnosis is the act or process of identifying or determining the nature and cause of a disease or injury through evaluation of patient history, examination, and review of laboratory data. Diagnoses in the National Hospital Discharge Survey, and the National Hospital Ambulatory Medical Care Survey are abstracted from medical records and coded to the ICD–9–CM. For a given medical care encounter, the first-listed diagnosis can be used to categorize the hospital discharge, or if more than one diagnosis is recorded on the survey abstraction form, the discharge can be categorized based on all diagnoses recorded. The first-listed diagnosis is often, but not always, considered the most important or dominant condition among all comorbid conditions. For example, a hospital discharge would be considered a first-listed injury discharge if an ICD–9–CM diagnosis code for injury was recorded in the first diagnosis field on the NHDS abstract form. Other discharges may have an injury diagnosis in one or more of the remaining second through seventh diagnosis fields on this abstract form.

See related External cause of injury, Initial injury emergency department visit, and Multiple cause-of-death data and injury diagnoses.

Education—In survey data, educational categories are based on information about educational credentials, such as diplomas and degrees. In vital statistics, educational attainment is based on years of school completed. This chartbook does not include death rates by educational attainment because of a change in the way the data are collected in states that have implemented the 2003 revised death certificate. See http://www.cdc.gov/nchs/vital_certs_rev.htm.

National Health Interview Survey (NHIS)—Beginning in 1997, the NHIS questionnaire was changed to ask "What is the highest level of school _____ has completed or the highest degree received?" Responses were used to categorize adults according to educational credentials (i.e., no high school diploma or general educational development [GED] high school equivalency diploma; high school diploma or GED; some college, no bachelor's degree; or bachelor's degree or higher).

Emergency department—According to the National Hospital Ambulatory Medical Care Survey, an emergency department is a hospital facility that is

staffed 24 hours a day and provides unscheduled outpatient services to patients whose conditions require immediate care. Offsite emergency departments that are open less than 24 hours are included if staffed by the hospital's emergency department.

Emergency department visit—In the National Hospital Ambulatory Medical Care Survey, an emergency department visit is a direct personal exchange between a patient and a physician or other health care providers working under the physician's supervision, for the purpose of seeking care and receiving personal health services. See related Initial injury emergency department visit.

Episode of injury—See Injury or poisoning episode.

Ethnicity—See Race and Hispanic origin.

External cause of injury—The external cause of injury is used for classifying the circumstances in which injuries occur. The external cause is comprised of two axes, the mechanism or cause (e.g. firearm or motor vehicle) and the manner or intent (e.g. homicide or suicide).

External cause of injury matrix—The matrix is a two-dimensional array describing both the mechanism or external cause of the injury (e.g., fall, cut, or struck) and the manner or intent of the injury (e.g., unintentional or accidental, suicide or self inflicted, or homicide or assault). There are three versions of the external cause of injury matrix: two matrices for injury deaths—one that uses ICD–9 codes and one for ICD–10 codes—and one matrix for injury morbidity that uses ICD–9–CM codes. Each of the matrices can be found in Tables II, III, and V. For more information, see http://www.cdc.gov/nchs/about/otheract/injury/tools.htm.

The first matrix was developed for the ICD–9 external cause codes. It was jointly developed by the Injury Control and Emergency Health Services section of the American Public Health Association and the International Collaborative Effort (ICE) on Injury Statistics. The World Health Organization has reviewed the external cause matrix for international use and is now considering its inclusion as one of its standard cause-of-death lists.

The ICD–9 matrix was later modified to be consistent with ICD–10 codes. Table VI shows ICD–9 and ICD–10 codes and the comparability ratios for each cell of the external cause matrix.

The external cause matrix was developed as a standard framework specifically to facilitate national and international comparability in the presentation of injury mortality statistics. The mechanism describes the vector that transfers the energy to the body (e.g., fall, motor vehicle traffic accident, or poisoning). The intent of the injury describes whether or not the injury was inflicted purposefully (in some cases, intent cannot be determined) and, when purposefully, whether the injury was self-inflicted (suicide or self-harm) or inflicted upon another person (homicide or assault).

Classification of intent can be more difficult to assign than mechanism. That is, for mortality, whether or not a person was intentionally harming themselves or another is determined by the medical examiner or coroner. In the United States, there are instructions for classification of intent (http://www.cdc.gov/nchs/data/dvs/2a-Final.pdf); however, no centralized system exists for assuring that these instructions are followed uniformly. Guidlines also exist for the classification of ICD–9–CM (http://www.cdc.gov/nchs/datawh/ftpserv/ftpifcd9/icdguide07.pdf). The six categories of intent in ICD–9 and ICD–10 are unintentional (i.e., accident), homicide, suicide, undetermined, legal intervention and operations of war.

References:

CDC. Recommended framework for presenting injury mortality data. MMWR 46 (RR-14) Centers for Disease Control and Prevention. Available from: http://www.cdc.gov/mmwr/preview/mmwrhtml/00049162.htm. 1997.

Fingerhut LA, editor. Proceedings of the international collaborative effort on injury statistics: Volume I. DHHS Pub. No. 95–1252. Hyattsville, MD: National Center for Health Statistics. 1995.

Fingerhut L, Cox C, Warner M, et al. International comparative analysis of injury mortality: Findings from the ICE on injury statistics. Advance data from vital and health statistics; no 303. Hyattsville, MD: National Center for Health Statistics. 1998.

World Health Organization. Executive summary of the WHO Family of International Classifications Network Meeting; Reykjavik, Iceland. October 2004. Available from: http://www.who.int/classifications/network/en/icelandexecutifsummary.pdf. 2004.

NCHS. ICD–10 framework: External cause-of-injury mortality matrix [online]. Available from: http://www.cdc.gov/nchs/about/otheract/ice/matrix10.htm. 2002.

See reference under Cause of death, National Vital Statistics Reports, "Deaths: Injuries 2002" for additional references.

Extremity injury—An injury to one of the following body parts: shoulder, upper arm, forearm, elbow, wrist, hand, fingers, hip, upper leg, thigh, knees, lower leg, foot, ankle, or toes. See Barell Injury Diagnosis Matrix and Table I as well as the Injury Mortality Diagnosis Matrix and Table IV.

Hospital discharge for injury—The National Hospital Discharge Survey defines a discharge as a completed inpatient hospitalization. A hospitalization may be completed by death or by releasing the patient to the customary place of residence, a nursing home, another hospital, or other locations. Injury discharges are those for which the first-listed diagnosis is defined by the ICD–9–CM codes in the Barell Injury Diagnosis Matrix. See Table I for the codes; see related Barell Injury Diagnosis Matrix

ICD; ICD codes—See Cause of death; *International Classification of Diseases.*

Initial injury emergency department visit—In the 2001–2005 National Hospital Ambulatory Medical Care Surveys, an initial injury visit is the first visit to an emergency department for an injury that is characterized by either the first-listed diagnosis being a valid injury diagnosis or by a valid first-listed external cause of injury code regardless of the diagnosis code (see Tables I, V). There are visits, for example, that could have been associated with another condition, such as a mental health disorder or a musculoskeletal condition, or that could have been assigned a V code that would be included if there was a valid first-listed external cause of injury code. Visits for which the first-listed diagnosis or the first-listed external cause code was for a complication of medical care or for an adverse event are not counted as injury visits. For data years 2001–2004, the patient record form had a specific question on whether or not the visit was the initial one for that condition. In 2005 (and again in 2006), the variable was dropped, and in its place, an imputed variable indicating that the visit was or was not the initial visit was included on the public use file. For an explanation of the methodology used to create the initial visit variable, see http://www.cdc.gov/nchs/data/ahcd/initialvisit.pdf. Also, see http://www.cdc.gov/nchs/products/pubs/pubd/hestats/injury/injury.htm.

Advance Data from Vital and Health Statistics reports from the National Hospital Ambulatory Medical Care Survey—Emergency Department do not use the definition described above. For the definition used by the Ambulatory Care Statistics branch of NCHS, see http://www.cdc.gov/nchs/data/ad/ad386.pdf.

Injury—According to the Injury Surveillance Guidelines, an injury is the physical damage that results when a human body is suddenly or briefly subjected to intolerable levels of energy. Injury can be a bodily lesion resulting from acute exposure to energy in amounts that exceed the threshold of physiological tolerance, or it can be an impairment of function resulting from a lack of one or more vital elements (i.e., air, water, or warmth), as in strangulation, drowning, or freezing. The time between exposure to the energy and the appearance of an injury is short.

The energy causing an injury may be one of the following:

- Mechanical (e.g., an impact with a moving or stationary object, such as a surface, knife, or

vehicle)
- Radiant (e.g., a blinding light or a shock wave from an explosion)
- Thermal (e.g., air or water that is too hot or too cold)
- Electrical
- Chemical (e.g., a poison or an intoxicating or mind-altering substance such as alcohol or a drug)

In other words, injuries are the acute, physical conditions listed in Chapter XIX ("Injury, poisoning, and certain other consequences of external causes") and the circumstances under which they were caused as defined in Chapter XX ("External causes of morbidity and mortality") in ICD–10.

Whereas the above definition of an injury includes drowning (lack of oxygen), hypothermia (lack of heat), strangulation (lack of oxygen), decompression sickness or "the bends" (excess nitrogen compounds), and poisonings (by toxic substances), it does NOT include conditions that result from continual stress, such as carpal tunnel syndrome, chronic back pain, and poisoning due to infections. Mental disorders and chronic disability, although these may be eventual consequences of physical injury, are also excluded by the above definition. Also excluded from the definition of injury by international consensus are complications of medical or surgical care and adverse events.

Reference:

Holder Y, Peden M, Krug E, et al., editors. Injury surveillance guidelines. Geneva: World Health Organization. 2001.

Injury mortality classification changes from ICD–9 to ICD–10—Fundamental changes in the classification of injury occurred with the introduction of ICD–10, implemented beginning with 1999 mortality data. In ICD–9, codes were numeric with external causes of injury classified to a supplementary chapter in which codes were given the prefix E, hence the use of the term E codes to denote those used for external causes. Nature of injury codes were often referred to as N codes. In ICD–10, the terms E code and N code are no longer appropriate to describe injury mortality because all ICD–10 codes are alphanumeric, each beginning with a letter of the alphabet followed by numbers (E codes in ICD–10 would include endocrine, nutritional, and metabolic diseases found in Chapter IV of the ICD; N codes would refer to diseases of the genitourinary system found in Chapter XIV). External cause-of-death codes in ICD–10 begin with letters: *U, V, W, X or Y. Nature-of injury and poisoning codes begin with letters S or T.

Another important difference in the classification of injury mortality introduced with ICD–10 involves changes in the way the codes are organized. In ICD–10, transport accidents are grouped by the characteristics of the injured person (e.g., pedestrian [V01–V09], pedal cyclist [V10–V19], or car occupant [V40–V49]). In ICD–9, transport accidents were grouped by the type of vehicle involved in the accident (e.g., railway accidents [E800–E807], motor vehicle traffic [E810–E819], and water transport accidents [E830–E838]. Nature-of-injury codes are also organized differently in ICD–10 and are grouped according to the site of the injury (e.g., head [S00–S09], neck [S10–S19], and ankle and foot [S90–S99]). In ICD–9, nature-of-injury codes were grouped according to the type of injury, (e.g., fractures [800–829], intracranial injury [850–854], and open wound [870–897]).

Although ICD–10 is generally more detailed, some external cause categories have less specificity in ICD–10. ICD–10 codes for unintentional poisonings (X40–X49) are substantially less detailed than they were in ICD–9 (E850–E869). For example, ICD–10 code X41 (accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, anti-Parkinsonism, and psychotropic drugs) would be roughly comparable to ICD–9 codes E851 (barbiturates), E852.0–E852.9 (various other sedatives and hypnotics), E853.0–E853.9 (various tranquilizers), E854.0 (antidepressants), E854.2 (psychostimulants), E854.3 (central nervous

system stimulants), and E855.0 (anticonvulsant and anti-Parkinsonism drugs). In ICD–10, carbon monoxide cannot be uniquely identified using the assigned external cause code X47 (accidental poisoning by and exposure to other gases and vapors). In ICD–9, codes E868.0–E868.9 involve categories of carbon monoxide poisoning. Fortunately, much of the poisoning detail lost in the external cause codes in ICD–10 can be regained by using multiple-cause poisoning codes (in Chapter XIX, "Injury and Poisoning") in combination with the external cause codes. For example, an underlying cause coded to X47 with T58 in the multiple cause data would indicate poisoning by carbon monoxide. Unintentional firearm categories (W32–W34) are also somewhat less detailed in ICD–10 than in ICD–9 (E922.0–E922.9).

In some cases, comparable ICD–10 codes do not exist for categories in ICD–9. For example, E887 (fracture, cause unspecified) is assigned in ICD–9 when a fracture is specified on the death certificate without specificity regarding the external cause of the fracture. This category was often grouped in ICD–9 with unintentional falls, assuming that the unspecified external cause would be, in most instances, a fall. In ICD–10, no such category exists and these deaths would be classified to X59 (exposure to unspecified factor), a much less specific category and one not amenable to grouping with unintentional falls.

More detailed analysis of changes in injury mortality coding between ICD–9 and ICD–10 is possible using the comparability data file published by NCHS and available on the NCHS website. This data file contains individual 1996 mortality records coded by both ICD–9 and ICD–10.

References:

World Health Organization. Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death, Ninth Revision. Geneva: World Health Organization. 1977.

World Health Organization. International Statistical Classification of Diseases and Related Health Problems, Tenth Revision. Geneva: World Health Organization. 1992.

NCHS. Comparability of cause-of-death between ICD revisions. Data Warehouse. Hyattsville, MD: National Center for Health Statistics. Available from: http://www.cdc.gov/nchs/datawh/statab/unpubd/comp.htm#A%20guide%20 to20state%20implementation%20of%20ICD–10. 2007.

Injury Mortality Diagnosis (IMD) Matrix—The IMD matrix categorizes the nearly 1,200 injury diagnosis codes from ICD–10's Chapter XIX (S and T codes, excluding adverse effects and complications of medical and surgical care [T79, T80–T88, T98.3]) by body region and nature of the injury. At its most detailed level, the ICD–10 matrix has 19 nature-of-injury categories and 43 body-region categories. For most analyses of mortality data, similar categories can be aggregated to reduce the categories to those most meaningful for mortality. For purposes of this report, 16 nature-of-injury categories and 17 body-region categories are presented. The body regions can be further combined into five groups; this is often useful for analyses using additional dimensions, such as external cause or age (see Table IV).

The ICD–10 IMD Matrix is similar in structure to the Barell Injury Diagnosis Matrix that categorizes ICD–9–CM injury morbidity codes by body region and nature of injury. However, the ICD–10 matrix is adapted for use with mortality data, which tend to be less detailed than morbidity data, and also takes into account important changes related to the revision of the ICD classification scheme. See http://www.cdc.gov/nchs/about/otheract/ice/injury_matrix10.htm. See also Multiple-cause-of-death data and injury diagnoses.

Reference:

Fingerhut LA, Warner M. ICD–10 Injury Mortality Diagnosis Matrix. Inj Prev 2006 12(1):24–9.

Injury or poisoning episode—An injury episode in the National Health Interview Survey refers to the traumatic event in which a person was injured one or more times from an external cause (e.g., a fall or a motor vehicle traffic accident). A poisoning episode refers to the event resulting from ingestion of or contact with harmful substances, as well as overdoses or wrong use of any drug or medication.

Appendix II–Definitions and Methods

Injury severity for hospital discharges—The injury severity measure used in Figure 15-2 was empirically derived based on threat to life. Survival risk ratios (SRRs) were calculated for Figure 15-2 by dividing the number of alive discharges with a given ICD–9–CM injury diagnosis code by the number of discharges with that diagnosis code. Discharges from the National Hospital Discharge Survey for 1988–2005 with a first-listed diagnosis of injury and no other injury diagnoses (i.e., isolated injury diagnoses) were used in the calculations. The resulting SRRs are referred to as independent SRRs. The reason for using independent SRRs instead of traditional SRRs (i.e., both isolated and multiple injury diagnoses) is to avoid the problem that patients with multiple injuries could have more serious injuries contributing to the calculation of the SRRs of minor injuries. This would cause minor injuries to appear more serious than if they occurred alone. For diagnoses that were never isolated (i.e., only occurred with other diagnoses), SRRs could not be calculated.

For discharges with multiple injury diagnoses, the diagnosis with the lowest SRR (i.e., lowest probability of survival) was used to determine severity. The choice of the lowest SRR as the indicator of severity is based on the work of Kilgo et al., which compared summary measures of severity and found that the worst injury (i.e., lowest SRR) best predicted mortality.

The categorization of injury severity shown in Figure 15-2 was developed for this figure. Least severe include injury discharges where all injury diagnoses have a SRR of less than 0.995 (i.e. probability of survival of more than 99.5%). Moderately severe include injury discharges where the lowest SRR among the injury diagnoses is between 0.995 and 0.95. Most severe include injury discharges where the lowest SRR among the injury diagnoses is 0.95 or lower. In addition to the likelihood of survival, the proportions of hospitalized patients in each group were considered. Currently no standard set of SRRs for injury severity levels has been developed.

References:

Meredith JW, Kilgo PD, Osler TM. Independently derived survival risk ratios yield better estimates of survival than traditional survival risk ratios when using the ICISS. J Trauma. 55(5):933–8. 2003.

Kilgo PD, Osler TM, Meredith JW. The worst injury predicts mortality outcome the best: Rethinking the role of multiple injuries in trauma outcome scoring. J Trauma. 55(4):599–607. 2003.

Intent of injury—Intent refers to one of the two dimensions of the external cause of injury matrix. This dimension classifies manner of the injury (e.g., unintentional or accidental, suicide or self inflicted, homicide or assault, or undetermined) in three versions of the external cause of injury matrix: two for injury deaths—one that uses ICD–9 codes and one that uses ICD–10 codes—and one matrix for injury morbidity that uses ICD–9–CM codes. For a detailed listing of the intent ICD codes, see Tables II, III, and V.

***International Classification of Diseases* (ICD)—**The ICD provides the ground rules for coding and classifying cause-of-death data. The ICD is developed collaboratively by the World Health Organization and 10 international centers, one of which is housed at NCHS. The purpose of the ICD is to promote international comparability in the collection, classification, processing, and presentation of health statistics. Since 1900, the ICD has been modified about once every 10 years, except for the 20-year interval between ICD–9 and ICD–10. The purpose of the revisions is to stay abreast with advances in medical science. New revisions can introduce major disruptions in time series of mortality statistics, but in general, this has not been the case for injury deaths. For more information, see http://www.cdc.gov/nchs/about/major/dvs/icd10des.htm. See related Cause of death; Comparability ratio; ICD–9–CM.

ICD–9–CM—The ICD–9–CM is based on and is compatible with the World Health Organization's ICD–9. The United States currently uses ICD–9–CM to code morbidity diagnoses and inpatient procedures. ICD–9–CM consists of three volumes. Volumes 1 and 2 contain the diagnosis tabular list and index. Volume 3 contains the procedure classification (tabular and index combined).

ICD–9–CM is divided into 17 chapters and 2 supplemental classifications. The chapters are arranged primarily by body system. There is a chapter for injuries that is arranged by nature of injury rather than by body region of injury. One of the two supplemental classifications is external causes of injury and poisoning (E Codes).

ICD–9–CM is used for coding of patient diagnoses in the National Ambulatory Medical Care Survey, the National Hospital Ambulatory Medical Care Survey, the National Hospital Discharge Survey, and for coding the respondent's verbatim responses in the National Health Interview Survey.

International Collaborative Effort (ICE) on Injury Statistics—This is one of several international activities sponsored by NCHS. The goal is to provide a forum for international exchange and collaboration among injury researchers who develop and promote international standards in injury data collection and analysis. A secondary goal is to produce products of the highest quality to facilitate the comparability and improved quality of injury data. The mission of the Injury ICE is to improve international comparability and quality of injury data. The ultimate aim is to provide the data needed to better assess the causes and consequences of injury, differences in injury occurrence over time and place, and the most effective means of prevention and control. See http://www.cdc.gov/nchs/advice.htm.

Lifetime medical treatment costs— Medical treatment costs are calculated differently for fatalities, hospitalized injuries, and nonhospitalized injuries. Fatality costs take into account where the death occurred and can include costs for the coroner or medical examiner, transport of the victim, emergency department treatment, hospital treatment, and nursing home care. Hospitalized injury costs can include inpatient facility charges, nonfacility costs of an inpatient stay, hospital readmission costs, hospital rehabilitation costs, nursing home costs, short-to-medium term noninpatient costs, costs beyond 18 months, and transport costs. Nonhospitalized injury costs are based on primary treatment location and include medical and transport costs. Estimates for mental health and psychological treatment due to injury are not available and are therefore not included in this cost.

Reference:

Finkelstein E, Corso P, Miller T. The Incidence and Economic Burden of Injuries in the United States. New York, NY: Oxford University Press. 2006.

Lifetime productivity costs—These costs include lost wages, lost fringe benefits, and the lost ability to perform household responsibilities. Calculations differ for nonfatal and fatal injuries. For nonfatal injuries, there are two categories of productivity losses: short-term, which are losses during the first six months after injury, and long-term, which are the losses occurring after the first six months. Fatal productivity costs are estimated by calculating expected lifetime earnings by age and sex. This cost also includes an imputed value for lost household services.

Reference:

Finkelstein E, Corso P, Miller, T. The Incidence and Economic Burden of Injuries in the United States. New York, NY: Oxford University Press. 2006.

Logarithmic scale—A logarithmic scale is a scale used to emphasize relative changes in numbers. The choice of a linear or logarithmic (log) scale depends on what the analyst or author wants to emphasize about the graph for the audience—either the absolute or the relative changes in numbers. The absolute change is the arithmetic difference between two values. The relative change is the percent difference between two values. The linear scale is the scale most frequently used and recognized, and it emphasizes the absolute changes between data points over time. Logarithmic scales, on the other hand, emphasize the relative or percentage change between data points. Equal distances on a log scale represent an equal percentage change. This

feature makes a log graph particularly useful for showing rates of change in data. In addition, trends can be shown on a log scale to enable measures with large differences in magnitude to be shown on the same chart. One potential disadvantage to using the log scale is that the absolute magnitude of changes may appear less dramatic.

To properly interpret data on a log scale, the following points should be kept in mind:
1. A sloping straight line indicates a constant rate (not amount) of increase or decrease in the values.
2. A horizontal line indicates no change.
3. The slope of the line indicates the rate of increase or decrease.
4. Parallel lines, regardless of their magnitude, depict similar rates of change.

References:

Page RM, Cole GE, Timmreck TC. Basic Epidemiological Methods and Biostatistics: A Practical Guidebook. Sudbury, Massachusetts: Jones and Bartlett Publishers. 1995.

Jekel JF, Elmore JG, Katz DL. Epidemiology biostatistics and preventive medicine. Philadelphia, PA: W.B. Saunders Company. 1996.

Mechanism of injury—This refers to one of the two dimensions of the external cause of injury matrix. This dimension classifies external cause of the injury (e.g., fall, cut, or struck) in three versions of the external cause of injury matrix: two for injury deaths—one that uses ICD–9 codes and one that uses ICD–10 codes—and one matrix for injury morbidity that uses ICD–9–CM codes. For a detailed listing of the codes used to classify mechanism see Tables II, III, and V.

Multiple-cause-of-death data and injury diagnoses- Injury mortality diagnosis data that are found in the multiple-cause fields of each record are presented using the ICD–10 Injury Mortality Diagnosis Matrix. Multiple-cause-of-death data allow for more than one injury diagnosis code per death. Multiple-cause-of-death data can be summarized in several ways; in this report, multiple-cause-of-death data are shown as weighted total mentions. Using this method, each injury diagnosis is given equal weight within a death and each death is counted equally. For example, if the death includes mention of a superficial injury and a traumatic brain injury, each is given a weight of one-half.

References:

Miniño AM, Anderson RN, Fingerhut LA, Boudreault MA, Warner M. Deaths: Injuries, 2002. National vital statistics reports; vol 54 no 10. Hyattsville, MD: National Center for Health Statistics. 2006.

Fingerhut LA, Warner M. ICD–10 Injury Mortality Diagnosis Matrix. Inj Prev 12(1):24–9. 2006.

Finkelstein E, Corso P, Miller T. The Incidence and Economic Burden of Injuries in the United States. New York, NY: Oxford University Press. 2006.

Nature of injury—Nature of injury refers to one of the two dimensions of the Barell Injury Diagnosis Matrix and of the Injury Mortality Diagnosis (IMD) Matrix. This dimension classifies the nature of injury and is based on ICD–9–CM codes in the Barell matrix and ICD–10 codes in the IMD Matrix. For a detailed listing of the codes used in both matrices, see Tables I and IV.

Occupational injury fatality rates—The Census of Fatal Occupational Injuries (CFOI) publishes annual fatality rates for persons 16 years of age and over to be consistent with the employment data (the denominator of the rates) from the Current Population Survey. However, the number of deaths is published for all persons regardless of age because of CFOI disclosure rules. Thus, in order to calculate a 2-year average annual rate for the population 16 years of age and over (as shown in Figure 12), deaths for persons 16 years of age and over for the 2-year period had to be derived by weighting the published annual rates by the population of employed workers.

Outpatient visit—In the National Hospital Ambulatory Medical Care Survey (NHAMCS), an outpatient department visit is a direct personal exchange between a patient and a physician or other health care provider working under the physician's supervision for the purpose of seeking care and receiving personal health services. Beginning with data year 2005, the outpatient department component

of the NHAMCS no longer collects information on the external cause of injury. See related Emergency department visit.

Place of occurrence—In the National Health Interview Survey, place of occurrence refers to the place where the injury occurred. Categories include home (inside), home (outside), school/child care center/preschool, hospital/residential institution, street/highway/parking lot, sport facility/recreation area/lake/river/ocean, industrial/construction area, trade/service area, other public building, and other (Figure 24).

Population—The U.S. Census Bureau collects and publishes data on populations in the United States according to several different definitions. Various statistical systems then use the appropriate population for calculating rates.

Resident population—This population is used as the denominator for death rates. It includes persons whose usual place of residence (i.e., the place where one usually lives and sleeps) is in one of the 50 states or the District of Columbia. It includes members of the Armed Forces stationed in the United States and their families. It excludes international military, naval, and diplomatic personnel and their families located in this country and residing in embassies or similar quarters. Also excluded are international workers and international students in this country and U.S. citizens living abroad. Populations for 2003 and 2004, used for many of the figures, are shown in Table IX.

Civilian population—The civilian population is the resident population excluding members of the Armed Forces. However, families of members of the Armed Forces are included. This population is the denominator in rates calculated for the National Hospital Discharge Survey as used in this chartbook. Emergency department (ED) visit rates are also based on this population rather than the civilian noninstitutionalized population because institutionalized populations (such as those in nursing homes or in prisons) use EDs. Populations for 2004 and 2005, used for many of the figures, are shown in Table X.

Civilian noninstitutionalized population—This is the civilian population not residing in institutions such as correctional institutions, detention homes, and training schools for juvenile delinquents; homes for aged and dependent persons (e.g., nursing homes and convalescent homes); homes for dependent and neglected children; homes and schools for mentally or physically handicapped persons; homes for unwed mothers; psychiatric, tuberculosis, and chronic disease hospitals; and residential treatment centers. The National Health Interview Survey samples this population. Populations for 2004 and 2005, used for many of the figures, are shown in Table XI.

For additional detail on populations as denominators, see Appendix I, Population Census and Population Estimates and *Health, United States, Appendix* at http://www.cdc.gov/nchs/hus.htm.

Table IX. United States resident population by age group, 2003–2004

Age group	2003–2004 combined populations
Total	584,466,193
Under 1 year	8,080,793
1–4 years	31,759,754
5–14 years	81,719,365
15–24 years	82,907,268
25–34 years	79,904,535
35–44 years	88,479,246
45–54 years	82,423,404
55–64 years	56,978,659
65–74 years	36,800,517
75–84 years	25,839,554
85 years and over	9,573,098

SOURCE: National Center for Health Statistics. Bridged-race vintage 2004 postcensal population estimates of the resident population of the United States for July 1, 2000, through July 1, 2004, by year, county, single-year of age, bridged-race, Hispanic origin, and sex (pcen_v2004.txt), prepared under a collaborative agreement with the U.S. Census Bureau. Available from: http://www.cdc.gov/nchs/about/major/dvs/popbridge/popbridge.htm. 2005.

National Center for Health Statistics. Bridged-race vintage 2003 postcensal estimates of the resident population of the United States for July 1, 2000–July 1, 2003, by year, county, single year of age, bridged-race, Hispanic origin and sex (pcen_v2003.txt), prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: http://www.cdc.gov/nchs/about/major/dvs/popbridge/popbridge.htm. 2004.

Table X. United States civilian population by age group, 2004–2005

Age group	2004–2005 combined populations
Total	587,608,640
Less than 15 years	121,522,256
15–24 years	82,769,245
25–44 years	166,784,057
45–64 years	143,448,984
65–74 years	37,103,285
75 years and over	35,980,813

SOURCE: Population data are from unpublished tabulations of the U.S. Census Bureau, which can be found on CD-ROMs released by CDC/NCHS, National Hospital Discharge Survey.

Table XI. United States civilian, noninstitutionalized population by age group, 2004–2005

Age group	2004–2005 combined populations
Total	579,395,708
Less than 15 years	121,423,927
15–24 years	81,626,002
25–44 years	164,233,264
45–64 years	142,475,064
65–74 years	36,696,535
75 years and over	32,940,916

SOURCE: Population data are derived from the National Health Interview Survey. See Appendix I.

Race and Hispanic origin—Federal data systems have different methods for assigning race and Hispanic origin. In this chartbook, two figures include these variables, one from the National Vital Statistics System and one from the National Health Interview Survey.

National Vital Statistics System—Mortality data
Most states are in the process of revising their death certificates to conform to the most recent standards on race and ethnicity. These 1997 Office of Management and Budget (OMB) standards for classification of individuals by race within the federal government's data systems have five racial groups: American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, and White (Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. Federal Register 62:58781-90. 30 Oct 1997). During the transition to full implementation of the 1997 standards, vital statistics data will continue to be presented for the four major race groups—white, black or African American, American Indian or Alaska Native, and Asian or Pacific Islander—in accordance with the original 1977 standards.

Data in Figure 10 and the accompanying data table are reported as Hispanic, non-Hispanic white, black, American Indian or Alaska Native, and Asian or Pacific Islander. Hispanic or Latino origin includes persons of Mexican, Puerto Rican, Cuban, Central and South American, and other or unknown Latin American or Spanish origins. Persons of Hispanic origin may be of any race. Starting in 1997, Hispanic origin of decedent was reported by all 50 states and the District of Columbia.

Quality of race and Hispanic origin data in mortality statistics—Information about the race and Hispanic ethnicity of the decedent is reported by the funeral director as provided by an informant, often the surviving next of kin, or, in the absence of an informant, on the basis of observation. Death rates by race and Hispanic origin are based on information from death certificates (numerators of the rates) and on population estimates from the U.S. Census Bureau (denominators). Race and ethnicity information from the census is by self-report. To the extent that race and Hispanic origin are inconsistent between these two data sources, death rates will be biased. Studies have shown that persons self-reported as American Indian, Asian, or Hispanic on census and survey records may sometimes be reported as white or non-Hispanic on the death certificate, resulting in an underestimation of deaths and death rates for the

American Indian, Asian, and Hispanic groups. Bias also results from undercounts of some population groups in the census, particularly young black males, young white males, and elderly persons, resulting in an overestimation of death rates. The net effects of misclassification and undercover age result in overstated death rates for the white population and black population estimated at 1% and 5%, respectively; understated death rates for other population groups are estimated as follows: American Indians, 21%; Asian or Pacific Islanders, 11%; and Hispanics, 2%.

For more information, see Rosenberg HM, Maurer JD, Sorlie PD, et al. Quality of death rates by race and Hispanic origin: A summary of current research, 1999. National Center for Health Statistics. Vital Health Stat. 2(128) 1999.

For more information on coding race using vital statistics, see National Center for Health Statistics, Technical Appendix. Vital Statistics of the United States, Vol. I, Natality, and Vol. II, Mortaltity, Part A, available from http://www.cdc.gov/nchs/nvss.htm. See related Appendix I, Population Census and Population Estimates.

National Health Interview Survey—The categories for race are consistent with 1997 OMB federal standards as discussed above. Hispanic refers to all persons who are of Hispanic or Latino origin and may be of any race or combination of races. In the NHIS, questions on Hispanic origin precede questions on race. Figure 23 and its accompanying data table report Hispanic, non-Hispanic white, and non-Hispanic black. Non-Hispanic persons of a given race (in this instance, white or black) indicated that they were not of Hispanic or Latino origin and only indicated the single race group.

In addition, Appendix II of Health, United States, 2007 has more detailed information on the history of race and Hispanic origin classification in all NCHS data systems; see http://www.cdc.gov/nchs/data/hus/hus07.pdf#tocappii.

Rate—A rate is a measure of some event, disease, or condition in relation to a unit of population, along with some specification of time. See related Age adjustment; Population.

Death rate—This is calculated by dividing the number of deaths in a population in a year by the midyear resident population. For census years 1990 and 2000, death rates are based on the enumerated census counts of the resident population as of April 1. For the noncensus years 1985–1989 and 1991–1999, rates were based on national intercensal estimates of the resident population as of July 1. For the noncensus years 2001–2004, rates were based on national postcensal estimates of the resident population as of July 1. Death rates are expressed as the number of deaths per 100,000 population. Annual percent changes in death rates shown in Figures 4 and 6 are based on rounded rates as necessitated by the software used to calculate change. See related, Average percent change and test of trends.

Relative standard error—The relative standard error (RSE) is a measure of an estimate's reliability. The RSE of an estimate is obtained by dividing the standard error of the estimate (SE(r)) by the estimate itself (r). This quantity is expressed as a percentage of the estimate and is calculated as follows:

$$RSE = 100 \times (SE(r)/r)$$

Estimates with large RSEs are considered unreliable. In this chartbook, the following guidelines were followed.

For mortality data, the following rules were applied based on the number of deaths.

Number of deaths < 20	Show asterisk in place of number or rate.
Number of deaths ≥ 20	Show number or rate with no asterisk.

This criterion corresponds to an approximate RSE of 22%.

Appendix II–Definitions and Methods

For the National Health Interview Survey, National Hospital Discharge Survey, National Hospital Ambulatory Medical Care Survey, and National Ambulatory Medical Care Survey, the following rules were applied based on the RSE of estimates:

RSE > 30%	Show asterisk in place of number or rate.
20% ≤ RSE ≤ 30%	Show number or rate with an asterik.
RSE < 20%	Show number or rate with no asterisk.

Rounding of estimates—Data shown in text are sometimes rounded to the nearest whole number, whereas the data table shows numbers rounded to 1 decimal place. The whole number in the text is based on the unrounded estimate. For example, if the data table shows 10.5, that may be the result of an estimate of 10.476. The whole number in the text would be 10. The only exceptions to data tables showing more than 1 decimal place occur when the standard error (SE) is greater than 0.0 but less than 0.5; those SEs are shown to 2 decimal places.

Significance testing—When testing the difference between two rates, R_1 and R_2, the normal approximation may be used to calculate a test statistic, Z, such that

$$Z = (R_1 - R_2)/SQRT\ (SE(R_1)^2 + SE(R_2)^2)$$

If $|Z| \geq 1.96$, then the difference between the rates is considered statistically significant at the 0.05 level. If $|Z| < 1.96$, then the difference is not considered statistically significant.

Standard error—Standard error is a measure of an estimate's random variability. For each figure in this chartbook, the accompanying data table includes the data point graphed as well as the standard error (SE) of the data point. The SE associated with crude and age-specific death rates assumes that the population denominator is a constant. The SE of a death rate is calculated as

$$\frac{R}{\sqrt{D}}$$

where D is the number of deaths and R is the rate. In some figures, standard errors are shown for percents of deaths; these are calculated as $SQRT(p*(1-p)/n)$, where p is the percent and n is the number of deaths in the denominator. For age-adjusted death rates, the SE is calculated as

$$\sqrt{\sum_i \left\{ w_i^2 \left(\frac{R_i^2}{D_i} \right) \right\}}$$

See "Deaths: Injuries, 2002" reference below.
See Age adjustment and Table VII.

SEs from each of the sample surveys were calculated using SUDAAN software, which uses a first-order Taylor series approximation of the deviation of the estimates from their expected values.

References:

Miniño AM, Anderson RN, Fingerhut LA, Boudreault MA, Warner M. Deaths: Injuries, 2002. National vital statistics reports; vol 54 no 10. Hyattsville, MD: National Center for Health Statistics. http://www.cdc.gov/nchs/data/nvsr/nvsr54/nvsr54_10.pdf. 2006.

Research Triangle Institute. SUDAAN (Release 9.0.1) [computer software]. Research Triangle Park, NC: Research Triangle Institute. 2005

Urbanization—Urbanization is the degree of urban (city-like) character of a particular geographic area. This report uses the 2006 Urban-Rural Classification Scheme for Counties, which is a six-level classification scheme developed by NCHS to categorize the 3,141 U.S. counties and county-equivalents based on their urban and rural characteristics. The classification scheme includes four metropolitan (or urban) categories and two nonmetropolitan (or rural) categories. The county classifications are based on the following information: 1) the 2003 OMB definitions of metropolitan and nonmetropolitan counties (with revisions through 2005); 2) the 2003 Rural-Urban Continuum Codes developed by the Economic Research Service of the U.S. Department of Agriculture; 3) 2004 postcensal county population

estimates; and 4) county-level data on several settlement density, socioeconomic, and demographic variables from census 2000. The six categories of the 2006 NCHS Urban-Rural Classification Scheme for Counties are large central metro (central counties of metro areas of 1 million or more population), large fringe metro (outlying counties of metro areas of 1 million or more population), medium metro (metro areas of 250,000 to 999,999 population), small metro (metro areas of 50,000 to 249,999 population), nonmetropolitan micropolitan, and nonmetropolitan noncore. For more information on this classification scheme, see http://www.cdc.gov/nchs/r&d/rdc_urbanrural.htm.

Related References:

Injury data overview

Fingerhut LA, Warner M. Injury Chartbook. Health, United States, 1996–1997. Hyattsville, MD: National Center for Health Statistics. 1997.

Injury classification

Barell V, Aharonson-Daniel L, Fingerhut LA, Mackenzie EJ, et al. An introduction to the Barell body region by nature of injury diagnosis matrix. Inj Prev 8(2):91–6. 2002.

CDC. Recommended framework for presenting injury mortality data. MMWR Recommendations and Reports 46(RR–14):1–30. 1997.

Fingerhut LA, Warner M. The ICD–10 injury mortality diagnosis matrix. Inj Prev 12(1):24–9. 2006.

Links to all frameworks for classifying injury mortality and morbidity: http://www.cdc.gov/nchs/about/otheract/injury/tools.htm.

For a listing of all ICD–9, ICD–9 CM, and ICD–10 codes for each external cause category, see Tables II–V.

See Table VI for information on comparability ratios. Also, see the following websites: http://www.cdc.gov/nchs/datawh/statab/unpubd/comp.htm, http://www.cdc.gov/nchs/datawh/nchsdefs/comparabilityratio.htm, http://www.cdc.gov/nchs/ppt/duc2004/Fingerhut_Warner.ppt.

Urban-rural classification

Ingram DD, Franco S. 2006 NCHS urban-rural classification scheme for counties [online]. Available from: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/OAE/urbanrural/methodology.doc. 2006.

Injury severity

For a discussion of measuring injury severity: http://www.cdc.gov/nchs/data/injury/DicussionDocu.pdf.

International injury statistics

The website for the International Collaborative Effort on Injury Statistics. Available from: http://www.cdc.gov/nchs/advice.htm.

Deaths

Anderson RN, Miniño AM, Fingerhut LA, Warner M, Heinen MA. Deaths: Injuries, 2001. National vital statistics reports; vol 52 no 21. Hyattsville, MD: National Center for Health Statistics. 2004.

Miniño AM, Anderson RN, Fingerhut LA, Bourdreault MA, Warner M. Deaths: Injuries, 2002. National vital statistics reports; vol 54 no 10. Hyattsville, MD: National Center for Health Statistics. 2006.

The National Association of Medical Examiners has a tutorial online for classifying injury deaths. See http://www.thename.org and click on tutorials on the left hand side of the page.

Deaths, occupational injuries

http://www.bls.gov/iif/oshcfoi1.htm

Hospital discharges

Heinen M, Hall MJ, Boudreault MA, Fingerhut LA. National trends in injury hospitalizations, 1979–2001. National Center for Health Statistics.

http://www.cdc.gov/nchs/data/injury/InjuryChartbook79-01.pdf. March 2005.

Related References:

Emergency department visits

Fingerhut L. Recommended definition of initial injury visits to emergency departments
for use with the NHAMCS-ED data. Health E-Stat. Hyattsville, MD: National Center for Health Statistics. Available from: http://www.cdc.gov.nchs/products/pubs/pubd/hestats/injury/injury.htm. November 2006.

Injury episodes, data from the National Health Interview Survey

http://www.cdc.gov/nchs/nhis.htm

http://www.cdc.gov/nchs/about/otheract/injury/injury_interview.htm

Deaths and injuries: Falls

Injury Surveillance Workgroup on falls. Consensus recommendations for surveillance of falls and fall-related injuries. Atlanta (GA): State and Territorial Injury Prevention Directors Association, 2006.

Stevens JA, Ryan G, Kresnow MS. Fatalities and injuries from falls among older adults—United States, 1993–2003 and 2001–2005. MMWR 55(45):1221–4. 2006.

Stevens JA, Corso PS, Finkertein EA, Miller TR. The costs of fatal and non-fatal falls among older adults. Inj Prev 12(5):290–5. 2006.

For preventing falls among older adults, see http://www.cdc.gov/ncipc/duip/preventadultfalls.htm.

Deaths and injuries: Firearms

Beaman V, Annest JL, Mercy JA, Kresnow M, Pollock DA. Lethality of firearm-related injuries in the United States population. Ann Emerg Med 35(3):258–66. 2000.

Motor vehicle traffic accident prevention

Centers for Disease Control and Prevention: http://www.thecommunityguide.org/mvoi/default.htm.

Motor vehicle traffic accidents, alcohol-related

National Highway Traffic Safety Administration: http://www.nhtsa.dot.gov/people/outreach/safesobr/13qp/facts/factzero.html.

http://www.nhtsa.dot.gov/people/injury/alcohol/Community%20Guides%20HTML/PDFs/Public_App7.pdf.

National Center for Injury Prevention and Control website concerning impaired driving: http://www.cdc.gov/ncipc/duip/spotlite/3d.htm.

National Highway Traffic Safety Administration website concerning impaired driving: http://www.nhtsa.dot.gov/portal/site/nhtsa/menuitem.18e416bf1b09b6bbbf30811060008a0c/.

Mothers Against Drunk Driving (MADD)

http://www.madd.org

Insurance Institute for Highway Safety alcohol and drugs website

http://www.iihs.org/research/topics/alcohol_drugs.html