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Injury and Poisoning Episodes and Conditions: National Health Interview Survey, 1997

July 2000

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

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No. 202

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

Hyattsville, Maryland
July 2000
DHHS Publication No. (PHS) 2000-1530

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Cooperation of the U.S. Bureau of the Census

Under the legislation establishing the National Health Survey, the Public Health Service is authorized to use, insofar as possible, the services or facilities of other Federal, State, or private agencies.

In accordance with specifications established by the National Center for Health Statistics, the U.S. Bureau of the Census, under a contractual arrangement, participated in planning the survey and collecting the data.

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Abstract

Objective

This report provides a descriptive overview of the first year of data from the injury section of the redesigned National Health Interview Survey. It documents the Survey's design methodologies and presents detailed national estimates of nonfatal injury and poisoning episodes for 1997.

Methods

Data for the U.S. civilian noninstitutionalized population were collected using Computer Assisted Personal Interview (CAPI). The data on all medically attended injuries and poisonings occurring to any family member during the 3-month period prior to the interview were obtained from an adult member of the family.

Results

In 1997, 34.4 million medically-attended episodes of injury and poisoning were reported, resulting in an age-adjusted rate of 128.9 episodes per 1,000 persons. Injury episodes resulted in 40.9 million injury conditions for a rate of 153.7 conditions per 1,000 persons. Falls were the leading external cause of injury, followed by episodes resulting from being struck by or against a person or an object, transportation, overexertion, cutting and piercing instruments, and poisoning. Sprains and strains were the most frequently reported injury condition followed by open wounds, fractures, and contusions. Upper extremity and lower extremity injuries were the leading body regions for these conditions. Leisure activities and paid work were most often reported as the activities the person was engaged in when the injury episode occurred, and the home was the most likely place for the injury to have occurred.

Conclusion

The redesigned NHIS is a useful source of information about medically-attended nonfatal injuries and poisonings. A single year now provides enough data to produce stable national estimates on details of injury and poisoning episodes.

Keywords: *National Health Interview Survey • injury episodes • poisoning episodes • injury conditions*

Injury and Poisoning Episodes and Conditions: National Health Interview Survey, 1997

by Margaret Warner, Ph.D., Office of Analysis, Epidemiology, and Health Promotion; Patricia M. Barnes, M.A., Division of Health Interview Statistics; and Lois A. Fingerhut, M.A., Office of Analysis, Epidemiology, and Health Promotion

Highlights

- In 1997, there were 34.4 million medically-attended episodes of injury and poisoning reported among the U.S. civilian noninstitutionalized population at a rate of 129 episodes of injury and poisoning per 1,000 persons (similar for crude and adjusted rates). The injury and poisoning episodes resulted in 40.9 million conditions, at a rate of 154 conditions per 1,000 persons (similar for crude and adjusted rates).
- The age-adjusted injury and poisoning episode rate for males was 21% higher than the rate for females.
- The age-adjusted injury and poisoning episode rate was higher for non-Hispanic white persons than for either non-Hispanic black or Hispanic persons.
- In 1997, *falls* were the leading external cause of injury; 11.3 million episodes of falls were reported at an age-adjusted rate of 43.1 per 1,000 persons. *Falls* were followed by episodes resulting from *being struck by or against a person or an object, transportation, overexertion, cutting and piercing instruments,* and *poisoning.*
- In 1997, *sprains and strains* were the leading injury conditions reported followed by *open wounds, fractures* and *contusions*; the respective age-adjusted rates were 38.5, 29.0, 23.7, and 19.0 per 1,000 persons.
- The *home* was the most frequently reported place of injury, with 24% of injuries occurring *inside the home,* and another 18% *outside the home*. Females were located *inside the home* at the time of the injuries almost twice as often as males.
- *Leisure activities* and *paid work* were most often reported as the activities the person was engaged in when the injury episode occurred, accounting for 22% and 19%, respectively, of all episodes of injury. The percent of people engaged in *leisure activities* were similar for males and females, while males were engaged in *paid work* almost twice as often as females.
- Respondents reported that the injured was hospitalized in 2.5 million episodes or about 7% of the injury and poisoning episodes.
- After the injury, about 7% of the injured needed help in handling their *daily routine,* such as household chores and shopping, and about 6% needed help attending to their personal care such as eating and bathing. The percent of persons with limitations in both *personal care* and *daily routine* increased with age.

We would like to thank Nathaniel Schenker and Van Parsons of the Office of Research Methodology for their help with the technical aspects of this analysis and Jennifer Madans and Jane Gentleman for their constructive comments. This report was edited by Klaudia M. Cox, and typeset by Jacqueline M. Davis of the Publications Branch, Division of Data Services.

Introduction

The National Health Interview Survey (NHIS) has been used to make estimates of the frequency and rate of nonfatal injuries and poisonings in the civilian noninstitutionalized population since its inception in 1957. Prior to 1997, the injury and poisoning statistics extracted from the NHIS were limited because there was very little detail about the circumstances of the injuries and poisonings and because the annual sample sizes were, in general, too small to make reliable estimates with a single year of data (1). However, because the NHIS was potentially such a rich source of data about nonfatal injuries, and because there were no other comparable national data, the number of questions related to injuries and poisonings was expanded when the questionnaire was redesigned in 1997 in order to answer basic epidemiological questions about the injuries and the circumstances of the traumatic event causing the injuries.

National estimates of nonfatal injury rates in the United States are available from several data systems operated by the National Center for Health Statistics (NCHS). This includes the National Hospital Ambulatory Medical Care Survey and the National Ambulatory Medical Care Survey, which capture data from ambulatory care settings (2–4), and the National Hospital Discharge Survey, which captures data from inpatient settings (5,6). Data from these sample surveys are based on medical records, rather than personal interviews. The ambulatory care surveys obtain data on both the external cause and the diagnosis of injury-related visits to emergency departments, outpatient clinics, and physicians' offices. The inpatient hospital survey obtains detailed diagnostic information on injuries, but relatively poor information on the external causes. None of the surveys have detailed information on the circumstances of the injury or on other relevant variables, such as place or activity at the time of the injury.

The National Electronic Injury Surveillance System (NEISS) from the U.S. Consumer Product Safety Commission is another national source of nonfatal injury data (7,8). The estimates from NEISS are of consumer product-related injuries treated in a sample of emergency departments and are based on information abstracted from medical records. Consumer product injuries are those resulting from products such as toys, appliances, and lawn mowers. It also includes injuries where any kind of sports equipment is mentioned (8). Certain products, such as firearms and motor vehicles, are specifically excluded from the NEISS system. However, work is currently underway to expand the scope of NEISS to include all injuries treated in emergency departments (9).

The NHIS injury estimates for 1997 are not directly comparable to estimates of injury conditions or episodes from prior years of the NHIS. When the NHIS questionnaire was redesigned in 1997, extensive changes were made in the way injury and poisoning data were collected. Differences between 1997 and previous years include changes to: a) the questions that screen for injuries and poisonings; b) the inclusion criteria; c) the recall period; d) the severity threshold; and e) the phasing, placement, and number of questions. The changes were introduced to increase the level of detail available on injury episodes and to enable the user to make more reliable annual estimates by increasing the sample size.

This report presents detailed national estimates of nonfatal injury and poisoning episodes and injury conditions from the first year of the redesigned NHIS. In addition, detail is provided on the design, methodologies, and rationale used in making these estimates and a discussion of the strengths and weaknesses of the new design.

Methods

Source of Data

The NHIS, conducted by the National Center for Health Statistics, collects demographic and health data on a nationally representative sample of the civilian noninstitutionalized population residing in the United States. The NHIS has conducted face-to-face interviews continuously since its inception in 1957. In 1997, the NHIS was extensively redesigned, including the introduction of computer-assisted personal interviewing (CAPI).

The new Basic Module will remain largely unchanged from year to year and functions in a similar manner to the previous core questionnaire. The Basic Module contains three components: the Family Core, the Sample Adult Core, and the Sample Child Core (10).

The Family Core component collects information on all members of the family residing in the home at the time of the interview and will serve as a sampling frame for additional integrated national surveys. Information collected in the Family Core includes household composition and sociodemographic characteristics, tracking information, information for matches to administrative databases, and basic indicators of health status and utilization of health care services (10). The Injury Section, which contains questions pertaining to both injuries and poisonings, is in the Family Core; thus the questions on injuries and poisonings will be asked annually about every person in the family.

Capturing Episodes of Injury and Poisoning

Data are collected from an adult member (18 years or older) of the household about medically-attended injuries and medically-attended poisonings occurring in the previous 3-month period to any member of the family residing in the home at the time of the interview. If other adult members of the family are present during the interview, they can respond for themselves. The Injury Section of the Family Core of the NHIS survey questionnaire is included as appendix I.

The focus of the redesigned injury section is a medically-attended injury episode or poisoning episode rather than an acute condition resulting from the

episode, as was the case prior to 1997 (1). An injury episode refers to the traumatic event in which the person was injured one or more times from an external cause (e.g., fall downstairs, motor vehicle traffic crash). An injury condition is the acute condition or the physical harm caused by the traumatic event (e.g., a fracture or a sprain). An injury episode can result in multiple conditions to the same person. If two people from the same household are injured seriously enough to require medical attention in the same episode (e.g., a car crash), the episode will be counted for each person injured.

Poisoning episodes include ingestion or contact with harmful substances and overdoses or wrong use of any drug or medication. The instructions to the respondent specifically exclude illness such as food poisoning and poison ivy. Food poisoning is an intestinal infectious disease, and poison ivy is classified as a dermatological condition (11). The *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD–9–CM) was relied upon for the definitions of injury and poisoning conditions and for the classification of external causes of the injury conditions used in the questionnaire and during the editing process (11).

A medically-attended injury or poisoning is one for which a health care professional was contacted either in person or by telephone for advice or treatment. Calls to poison control centers are considered contact with a health care professional and are included in this definition of medical attendance.

The questions that screen for the injuries and poisonings (appendix I) are:

"During the past three-months, were you or anyone in your family injured seriously enough that you got medical advice or treatment?" and

"During the past three-months, were you or anyone in your family poisoned seriously enough that you got medical advice or treatment?"

The two important changes in the screening questions in the 1997 redesign to highlight are that the recall period was increased from 2 weeks to 3 months and that the severity threshold was changed from events resulting in at least half a day of restricted activity and/or medical attendance to only events resulting in medical advice or treatment.

The recall period was increased to capture more events on which to base national estimates. Increasing the recall period allows more episodes to be captured from the same number of people interviewed. With a longer recall period, the respondents may be more likely to forget events that happened further in the past (that is, memory decay), and the events more frequently forgotten are likely to be less severe events (12). Therefore, to counterbalance the increase in the recall period, the severity threshold was increased to include only episodes resulting in a visit or advice from a medical professional, as events of this severity may be better remembered.

During the editing process, injury episodes were limited to those including at least one health condition classified as an injury as defined by ICD–9–CM nature-of-injury codes 800–959 and 990–999 (11,13). Using CAPI to conduct the interview facilitated the collection of verbatim text information on how the injury happened, the body part injured, and the type of injury. This information, along with responses to questions about specific types of injury episodes, place of occurrence, and activity was used to assign ICD–9–CM diagnostic and external cause codes for all injury episodes.

For poisoning episodes in 1997, the cause of the poisoning was recorded in a precategorized list of causes rather than as a verbatim response. Therefore there are no external cause codes (E-codes) for the poisoning episodes. However, there was an option for the respondent to choose the open-ended category *"something else."* If that response was chosen, the interviewer entered the respondent's verbatim description of the cause. During the editing, the descriptions were reviewed and recategorized. Episodes involving illnesses such as food poisoning or poison ivy were sometimes reported and recorded, despite specific instruction to the interviewer not to include them. Therefore, episodes of this type were excluded during the editing process. In addition, the tables in this report showing poisoning episodes do not include the 47 cases (unweighted) coded as ''Allergic/adverse reaction to medical or other substance'' or ''Something else—NOT poisoning.'' For additional information, refer to the NHIS Survey Description that is on the NHIS Web site (10).

While editing the 1997 injury data, it was discovered that respondents and interviewers sometimes had a difficult time differentiating between injuries and poisonings even with the available ''help screens.'' Poisonings or toxic effects within ICD–9–CM, (i.e., diagnosis codes 960–989 and external cause codes E850.0–E869.9, E950.0–E952.9, E962.0–E962.9, E980.0–E982.9, and E972) were sometimes reported following the screening question focusing on injuries, and thus the respondents answered the questions pertinent to injuries. When these injury episodes were assigned ICD–9–CM codes, the coders gave these episodes ''flags'' to indicate they were poisonings. In addition, the question on cause of poisoning contained a response category ''a venomous animal or plant.'' Coders also flagged injury episodes that appeared to fit into this cause of poisoning category. All episodes flagged as poisonings in the injury file were moved to the poisoning file. After editing was completed, it was discovered that seven episodes coded as E905.0–E905.9 (venomous animals and plants as the cause of poisoning and toxic reactions) were not given flags to indicate they were poisonings and, therefore, were not moved from the injury file to the poisoning file.

Respondents were not asked about the health conditions resulting from poisoning episodes and, therefore, it is not possible to count the number of poisoning conditions. However, for this report, it was assumed that there was only a single condition per poisoning episode to estimate the total number of injury and poisoning conditions. This assumption may result in an underestimate of the number of poisoning conditions. Beginning with data year 2000, there will be one set of questions for injury and poisoning episodes. This will allow ICD external cause codes and diagnostic codes to be

assigned for both injury and poisoning episodes. From that point, the inclusion criteria will rely entirely on the ICD classification codes.

Analysis Fields

The injury-specific questions on the NHIS elicit information on the external cause of the injury episode, the injury diagnoses, what the person was doing at the time of the injury episode, place of occurrence, and whether the injury episode caused any limitation of activity. Edited verbatim response to the question on how the injury occurred (up to 336 characters) and the four responses to the question on the body part injured (up to 34 characters each) and four responses to the question on the kind of injury (up to 44 characters each) are available in the verbatim text file. The descriptions were edited to protect the injured person's confidentiality. Grammatical and/or spelling errors were not corrected. Poisoning-specific questions include the external cause of the poisoning and whether a poison control center was contacted.

Questions asked about both injuries and poisonings include the date of the episode, whether the person was hospitalized, and whether the person missed any days from work or school. The month and year of the date of episode are available for analysis. During the editing process, an elapsed time (i.e., recall period) variable was derived from the date of the episode and the date of the interview.

The NHIS collects detailed information on the four most recent injury episodes and the four most recent poisoning episodes. Up to four ICD–9–CM injury diagnosis codes and three E-codes were assigned for each injury episode and are available for analysis in the data files. Tables and figures include the first-listed external cause and include all conditions reported (11).

The external cause code categories in table 2 are based on the mechanism axis of the recommended framework for presenting injury data with the exception of the *transportation* category (13) (appendix II). The *transportation* category includes the external cause codes for most modes of transportation (i.e, ''Motor vehicle traffic;'' ''Pedal cyclist, other;'' ''Pedestrian, other;'' and ''Transport, other).'' These codes were selected because they correspond with several additional questions asked only for transportation episodes. The external causes are categorized by mechanism of injury regardless of intent.

There are no questions in the injury section that specifically address the question of intentionality because when the questionnaire was tested in the NCHS Cognitive Questionnaire Lab during the early phases of its design, it was determined that the setting of the interview was not conducive to identifying assaults and intentionally self-inflicted injuries.

The ICD–9–CM diagnosis codes used to categorize the injury conditions in tables 3 and 4 are based on a matrix of nature of injury by body region injured developed by Mackenzie and Champion (14). This matrix cross classifies the ICD–9–CM diagnosis codes 800–994 by nature of injury (e.g., fracture, sprain/strain) and by body region injured (e.g., upper extremity, abdomen). The diagnosis codes used are shown in appendix III.

Selection of the age groups used in this report—under 12 years, 12–21 years, 22–44 years, 45–64 years, 65–79 years, and 80 years and over—were based on a graphical analysis of the 1997 injury episode rate by single year of age. The groups were determined by compromise between the observed pattern of the data and standard age groups often used by NCHS (figure 1). The age groups will be reconsidered when more data are available.

Data by race and ethnicity are shown for non-Hispanic white, non-Hispanic black and for Hispanic persons, but not for persons of other races, because sample sizes were not large enough to make reliable estimates.

Sample Size and Response Rates

The interviewed sample in 1997 consisted of 39,832 households, which yielded 103,477 persons in 40,623 families. The total noninterview rate was approximately 8.2%: 5.0% due to respondent refusal and the remainder primarily due to failure to locate an eligible respondent at home after repeated calls or unacceptable partial interviews (10).

Injury and poisoning information was reported for 2,949 people having 3,114 episodes of injury or poisoning. These episodes resulted in 3,712 conditions including 3,533 injury conditions and 179 poisoning conditions (assuming one poisoning condition per poisoning episode). Ninety-five percent of the people had only one episode reported during the 3-month period.

Data Files

Data on injuries are in three public use data files—the Person file, Injury Episode file, and the Injury Verbatim file. Data on poisonings are found in two files—the Person file and the Poison Episode file. Each of these files can be linked so that information about the injury or the poisoning can be combined with any of the other variables from the NHIS.

Units of Analysis, Annual Estimates, and Rates

Weighted data are used to estimate the number of injury and poisoning episodes, the injury and poisoning conditions, and the size of the population. The Final Annual Weight available on the data tape is based on information from the sample design and sampling ratio and is adjusted for nonresponse and post-stratified based on census totals for sex, age, and race/ethnicity.

The injury and poisonings episodes are collected with a 3-month recall. To annualize the estimate, each 3-month estimate should be multiplied by 4. Estimates shown in the figures and tables are based on the number of episodes and conditions occurring in 1 year. Rates are calculated either as the annual number of injury and poisoning episodes per 1,000 population or as the annual number of injury conditions per 1,000 population.

It is not possible to estimate the number of people injured or poisoned

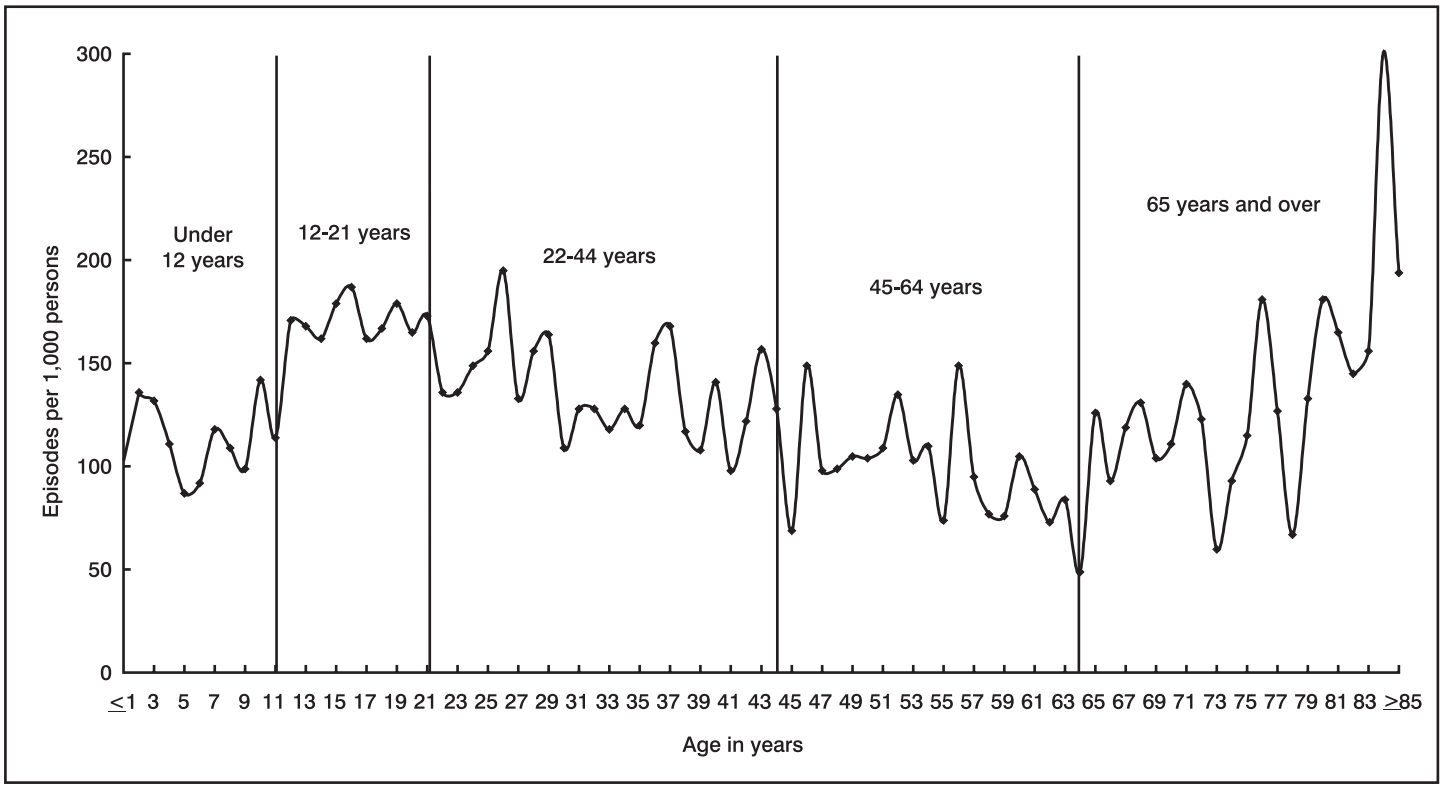

Figure 1. Injury and poisoning episode rates by age: United States, 1997

annually using the NHIS. Although the number of persons who were injured during the 3-month recall period is known, this number cannot be assumed to be uniform over a 12-month period. For example, if it is known that 100 people responded that they were injured during the 3-month recall period, one cannot assume that 400 different people were injured in a 12-month period because some people may be injured multiple times and some may be injured once. On the other hand, it is appropriate to estimate the number of injuries over the 12-month period (by multiplying the 3- month estimate by 4) because that figure is the same whether or not individuals had multiple injuries.

Variance Estimation and Significance Testing

Variance estimates were produced to indicate the reliability of point estimates. The NHIS data are obtained through a complex sample design involving stratification, clustering, and multistage sampling. The variance estimates were calculated using the SUDAAN software package and incorporated the design information available on the public use data tapes. The Taylor series linearization method was chosen for variance estimation in SUDAAN. Taylor series linearization is used to approximate the functions of linear statistics. SUDAAN then computes the design-specific variance for the linearized values (15).

Standard errors are shown for all rates and percents in tables. Rates or percents with relative standard errors greater than 30% are considered unreliable and are indicated with an asterisk. The relative standard errors are calculated as follows:

Relative standard error = (SE/EST)100

where SE is the standard error of the estimate and EST is the estimate.

Data points in the figures are shown with 95% confidence intervals (i.e., error bars) that were calculated as follows:

$PE \pm 1.96(SE)$

where PE is the point estimate, SE is the standard error of the estimate, and 1.96 is the reliability coefficient corresponding to a confidence level of 95%.

While statistical tests of differences among the point estimates were not used in this report, confidence intervals are given to graphically display the stability of the individual point estimates. The objective of the analysis is to identify patterns or trends in the data by investigating variation in specific injury rates or proportions by age, race, ethnicity, and sex as displayed in the figures. Variability in the rates is summarized by the standard errors and confidence intervals provided. Key results are highlighted in the text when large differences in rates were observed. See appendix IV for more specific information on issues of statistical testing.

Age-Adjusted Rates

Data were age-adjusted by the direct method to the 2000 projected population. The age groups used to adjust are the same ones used in the age-specific analyses in this report: under 12 years, 12–21 years, 22–44 years, 45–64 years, 65–79 years, and 80 years and over. Age adjustment is used to adjust for differences in the age distribution of populations being compared. Age adjustment is often done

when trends are being analyzed or when populations being compared are known to have different age distributions. The NCHS standard for age adjustment was recently changed from the 1940 standard to a 2000 standard (16). Age-adjusted and crude rates of injury and poisoning in 1997 are similar.

Results

In 1997, there were 34.4 million episodes of injury and poisoning reported among the U.S. civilian noninstitutionalized population at a rate of 129 episodes of injury and poisoning per 1,000 persons (similar for crude and adjusted rates) (table 1). The injury and poisoning episodes resulted in 40.9 million conditions, at a rate of 154 conditions per 1,000 persons (similar for crude and adjusted rates).

Age, Sex, and Race/Ethnicity

The age-adjusted injury and poisoning episode rate for males was 21% higher than the rate for females (140.5 and 115.7 per 1,000 persons, respectively). In general, age-specific episode rates for males were higher than for females among persons younger than age 45 years, but were lower at the older ages (figure 2). The age-adjusted injury and poisoning episode rate was higher for non-Hispanic white persons than for either non-Hispanic black or Hispanic persons (142.8 and 109.1 and 89.3 per 1,000 persons, respectively) (table 1). Rates for persons under 22 years of age were generally higher for non-Hispanic white persons than for others. For persons 22–64 years, it appears that Hispanic persons have lower episode rates than other persons (figure 3).

Leading External Causes of Injury

In 1997, *falls* were the leading external cause of injury; 11.3 million episodes of *falls* were reported at an age-adjusted rate of 43.1 per 1,000 persons (table 2). *Falls* were followed by episodes resulting from *being struck by or against a person or an object*, *transportation*, *overexertion*, *cutting and piercing instruments*, and *poisoning*. The external cause category *transportation* includes most modes of transportation (i.e., motor vehicles, pedal cyclist, pedestrian, and other transportation).

Falls is the only category of external causes for which the age-adjusted rate for females exceeded that for males (47.2 versus 37.6 per 1,000 persons, respectively) (figure 4). The higher episode rate for *falls* among females results from the higher rates for persons older than 45 years and especially for those 65 years and older where the rate for females was more than twice the rate for males (figure 5).

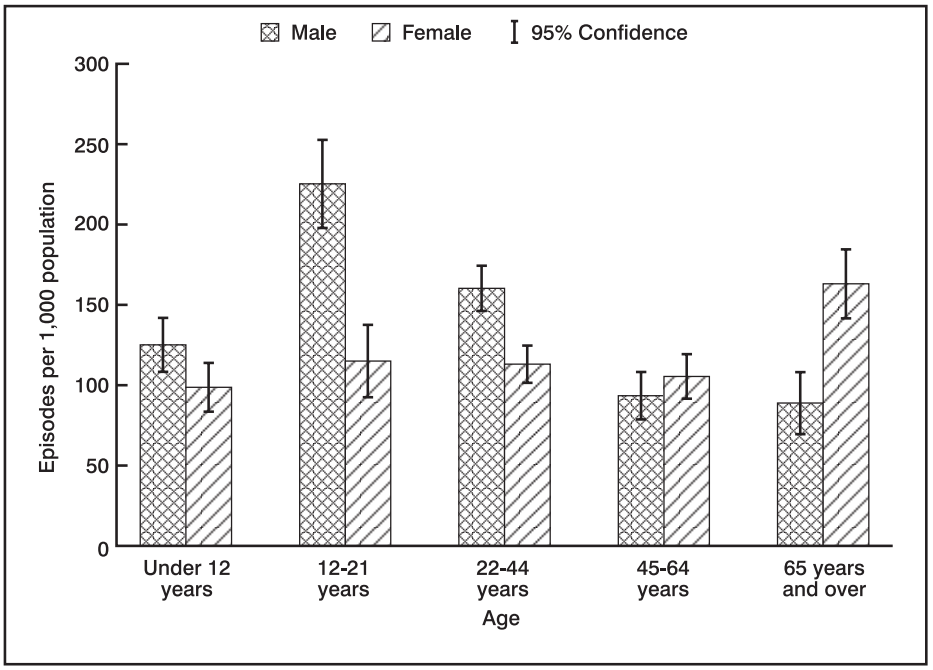

Figure 2. Injury and poisoning episode rates by age and sex: United States, 1997

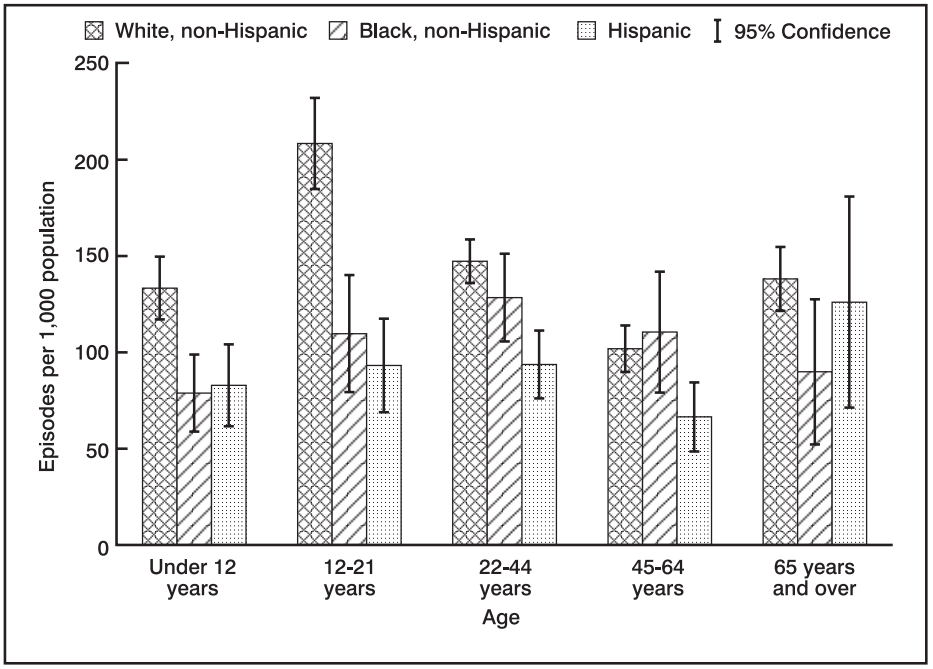

Figure 3. Injury and poisoning episode rates by age, race, and ethnicity: United States, 1997

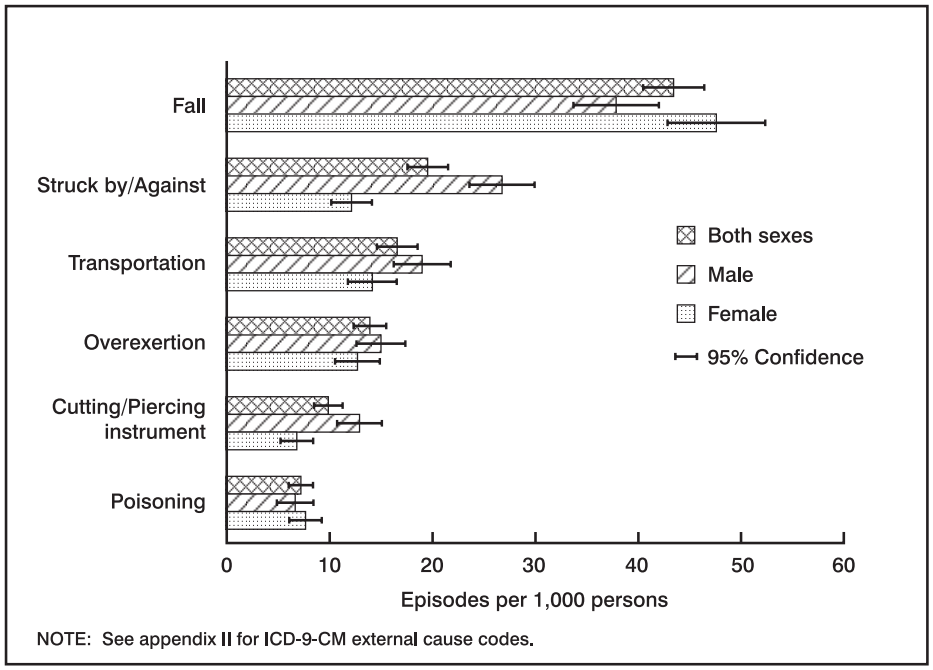

Figure 4. Age-adjusted external cause of injury and poisoning episode rates by mechanism of injury and sex: United States, 1997

The fall was on level ground in 35–40% of the episodes. In 25% of the falls, the type of fall did not fit into one of the predefined categories of falls (table 3).

Sex differences in the rate for being *struck by or against an object or person* are largest at ages 12–21 years; the rate for males at that age was 3.5 times the rate for females (figure 6). The rates for males 22–44 years old were considerably lower than for males 12–21 years old, but were still more than twice the rates for females at ages 22–44 years.

The *transportation*-related injury episode rates were higher for persons 12–21 and 22–44 years old than for younger or older persons (figure 7). Although *transportation*-related episodes include most modes of travel, 75% of these episodes could be classified as motor vehicle traffic-related (E810–E819). About 58% of *transportation*-related episodes involved *drivers* of vehicles, 27% involved *passengers*, 10% involved *bicycles*, and 3% involved *pedestrians* (table 4). Of those injured as *drivers* or *passengers*, nearly 70% were in *passenger cars*, 13% were in *light trucks*, and 6% were on *motorcycles*. Over three quarters (78%) of those injured as *drivers* or *passengers* in *passenger cars, light trucks*, or *large trucks*, were reported to be *restrained* at the time of the incident by wearing a seatbelt or by being buckled into a safety seat. Only about 40% of those injured while riding a *bicycle*, *motorcycle*, an *all-terrain vehicle*, or a *snowmobile* were reported to be *wearing a helmet* (table 4).

The rates of reported *overexertion* episodes were higher among persons ages 12–64 years than among the younger or older age groups (figure 8). Although the rates were much lower, patterns for injuries associated with *cutting and piercing instruments* were similar to those for *being struck by something* (figures 6 and 9).

Poisoning episode rates were higher for children under 12 years than for others with no other readily observable patterns by age or by sex (figure 10). For about 45% of all reported poisoning episodes, a call was made to a poison control center—about 877,000 calls in 1997 (table 5). This number is less than half the number of reported calls made as reported by the American Association of Poison Control Centers (17). However, there are differences in the reporting methods between the two surveillance systems. NHIS estimates are based on reporting by the patient or other family member with a 3-month recall and the other is based on direct reporting by the poison control centers. Nonetheless, both data systems show higher proportions of calls involving a young child compared with older persons. Based on NHIS data, about 3 out of 4 poisonings involving a child less than 6 years old results in a call to a poison control center regarding the incident.

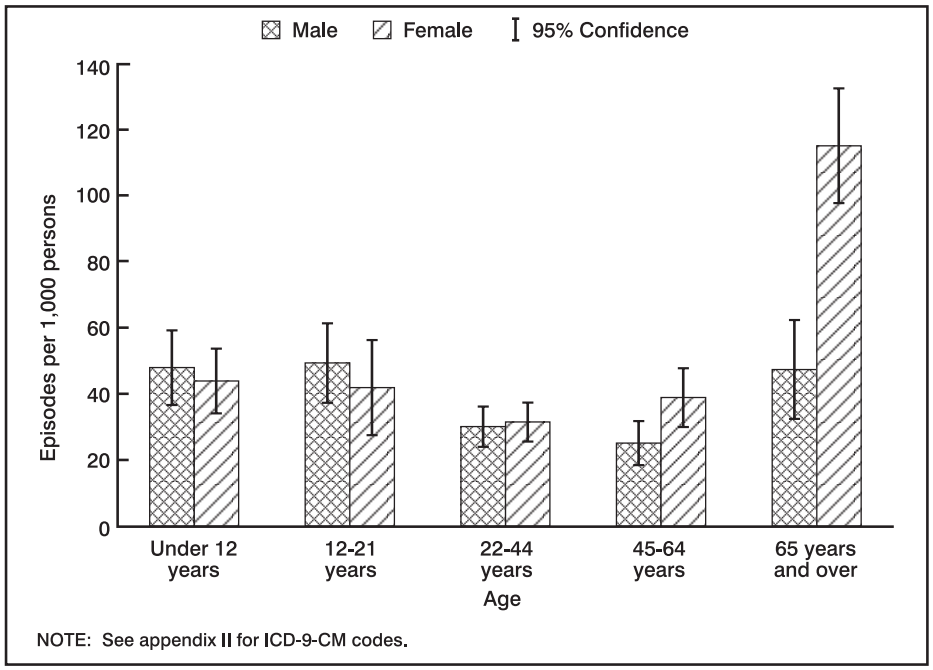

Figure 5. Injury episode rates for falls by age and sex: United States, 1997

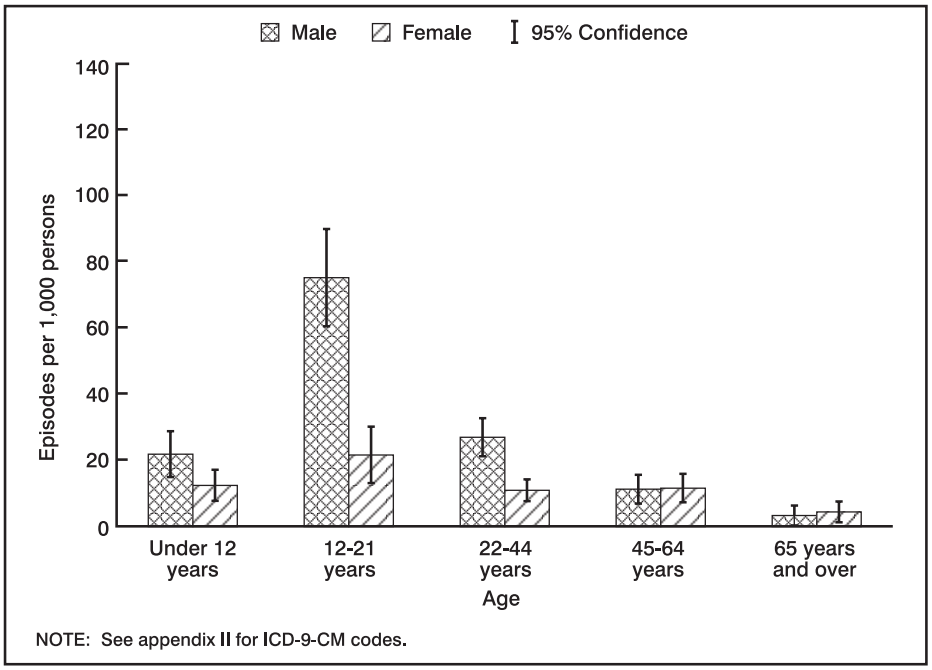

Figure 6. Injury episode rates for being struck by or against an object or person by age and sex: United States, 1997

Injury Conditions

In 1997, *sprains and strains* were the injury condition most frequently reported followed by *open wounds* and *fractures* and *contusions*. The age-adjusted rates were 38.5, 29.0, 23.7, and 19.0 per 1,000 persons, respectively (table 6). For each of these conditions, with the exception of *open wounds*, there were no rate differences by sex (figure 11). The age-adjusted *open wound* rate for males was about twice the rates for females.

The condition rate for *sprains and strains* were lower for children under 12 years than for others. Rates generally declined with age, starting at ages 12 and older (figure 12). Among elderly females, the rate was about twice that for elderly males.

Sex differences in *open wound* rates at ages 12–21 years were far higher than for almost any other condition (table 6). The rate for males was close to 6 times that for females. At ages under 12 years and 22–44 years, the rates for males were about twice those for females (figure 13).

The age distribution for *fracture* rates was bimodal with peaks at 12–21 years and at 65 years and over (figure 14). Finally, rates for *contusions* were higher for persons 65 years and over and for females, in particular, than for younger persons (figure 15).

In addition to the nature of the injury, the body region injured can also describe the condition. *Upper extremity* and *lower extremity* injuries were the most often reported sites of the conditions (with age-adjusted rates of 43.2 and 40.3 per 1,000 persons, respectively) followed by injuries to the *spine and back*, *face*, and *skull and brain* (table 7). Both *upper* and *lower extremity* injury condition rates were higher than those for other regions of the body (figure 16).

Upper extremity injury rates were higher for males 12–44 years old than for males of other ages or for females of any age (figure 17). The rate for *lower extremity* injuries for males 12–21 years old was 1.5 times higher than for females of the same age, but at ages 45 years and older, *lower extremity* injuries were more likely among females than males (figure 18). For females 65 and over, the rate was 3 times that for their male counterparts. The rate of *skull and brain* injuries among males under 12 years old was 3 times that for females, and for males 22–44 years, the rate was closer to 2 times that for females (table 7).

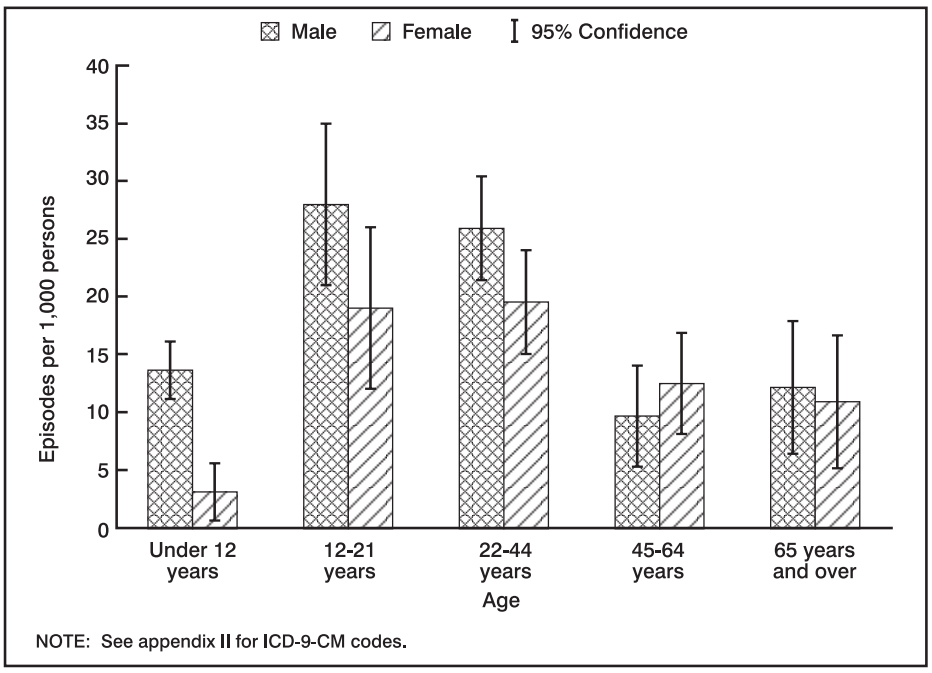

Figure 7. Injury episode rates for transportation-related injuries by age and sex: United States, 1997

Place of Injury

The *home* was the most frequently reported place of injury with 24% of injuries occurring *inside the home*, and another 18% *outside the home* (table 8). Females were located *inside the home* at the time of the injuries almost twice as often as males (32% vs. 18%). Injuries

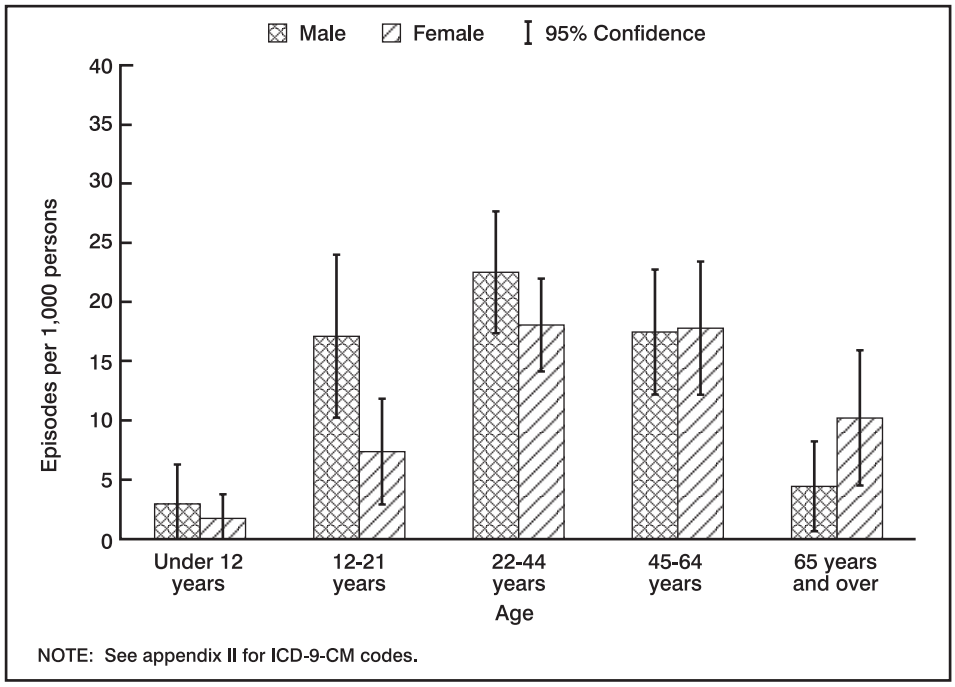

Figure 8. Injury episode rates for overexertion by age and sex: United States, 1997

occurring while on the *street and highway* accounted for a further 13% of the episodes with no difference between males and females (figure 19). Injuries occurring at *sport facilities, industrial and construction areas, schools,* and *trade/service areas* each accounted for 6–7% of the injuries. Males were reported as injured at *sports facilities* more often than females (10% vs. 4%). Male-female differences were greatest at *industrial/construction sites,* with 11% of male injury episodes occurring at these sites compared with 2% of their female counterparts. Eight percent of male injuries, compared with 5% of female injuries, occurred at *schools,* a location where equal exposure is expected.

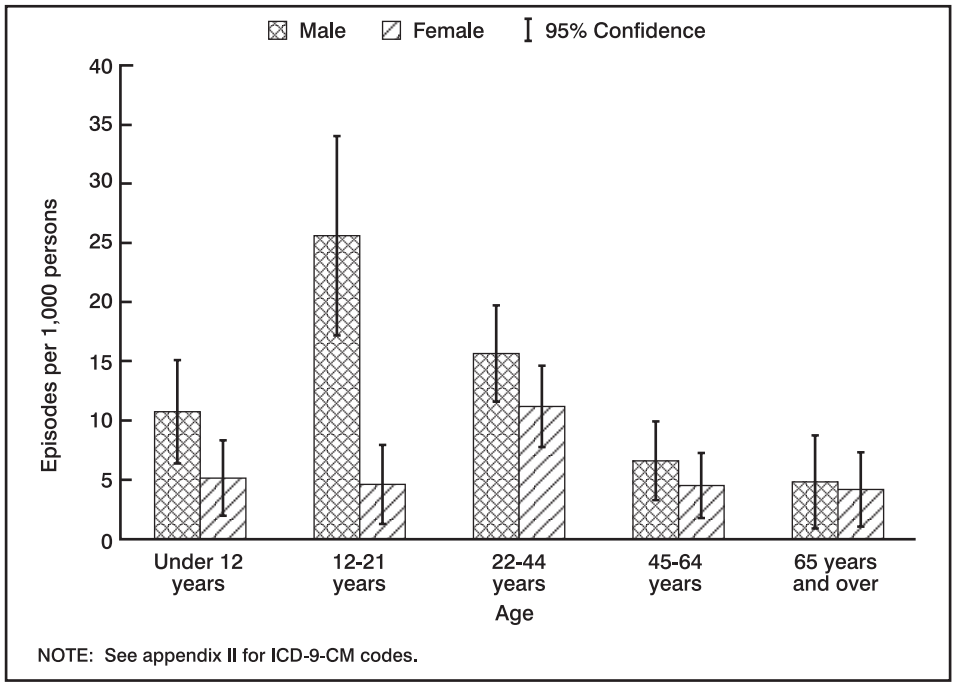

Figure 9. Injury episode rates for cutting and piercing instruments by age and sex: United States, 1997

Activity at Time of Injury

Leisure activities and *paid work* were most often reported as the activities the person was engaged in when the injury episode occurred, accounting for 22% and 19% respectively of all episodes of injury (table 8). The percent of persons engaged in *leisure activities* were similar for males and females (figure 20). Males were engaged in *paid work* at the time of injury almost twice as often as females (24% vs. 14%) Injuries resulting during *sport-related* activities were reported for 14% of the episodes, more than twice as often by males than by females (18% vs 8%). *Working around the house or the yard* was reported for about 10% of the injury episodes, somewhat more often for females than for males. For 8% of the episodes, *driving* was the reported activity and for 3%, *attending school* was reported.

Hospitalization

Respondents reported that the person was hospitalized in 2.5 million injury and poisoning episodes, or about 7% of the episodes (table 9). For those hospitalized, the number of days in a hospital ranged from 1–70 days. However, 62% of those hospitalized had a 1–3 day stay and 90% were in the hospital for 2 weeks or less. The percent of persons hospitalized increased with age with 4% of those under 22 years hospitalized after the episode compared with 15% of those ages 65 and over.

School- and Work-Loss Days

There were 3.3 million injury and poisoning episodes resulting in time lost from school. About 85% of the episodes with school loss occurred among 5–24 year olds at a rate of 36 episodes per 1,000 persons (table 10). For those ages 5–24 years, about 22% of the episodes with time lost from school resulted in less than 1 day lost, 65% resulted in 1–5 days lost, and 13% resulted in 6 days or more lost.

There were 10.1 million injury and poisoning episodes resulting in time lost from work. About 99% of the episodes with work loss occurred among 14–75 year olds at a rate of 51 episodes per

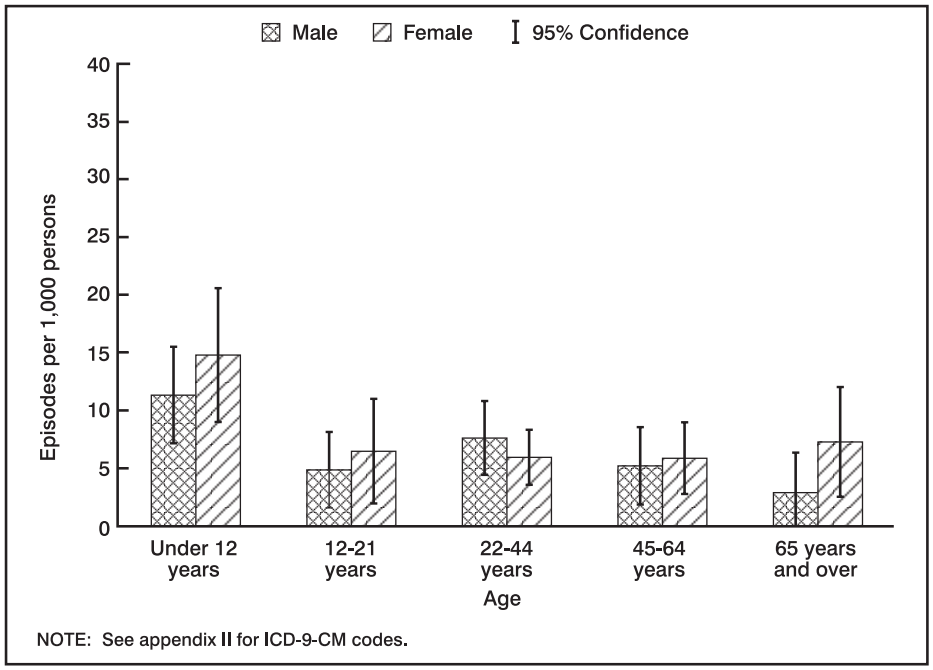

Figure 10. Poisoning episode rates by age and sex: United States, 1997

1,000 persons. For those ages 14–75 years, about 17% of the episodes with time lost from work resulted in less than 1 day lost, 46% in 1–5 days lost, and 37% in 6 days or more lost.

Limitations After injury

After the injury, about 7% of the injured people needed help in handling *daily routines* such as household chores and shopping, and about 6% of injured people needed help attending to *personal care* such as eating and bathing (table 11). The percent of persons with limitations in both *personal care* and *daily routine* increased with age. At ages 65 years and over, 21% of the injured persons needed help with *daily routine* compared with 2% at ages 5–21 years.

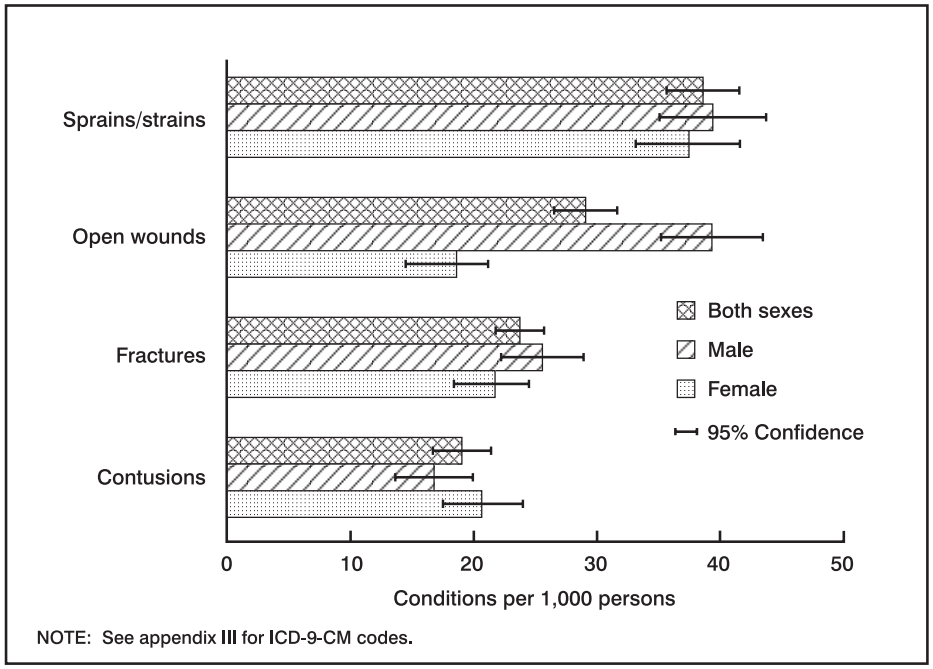

Figure 11. Age-adjusted injury condition rates by nature of injury and sex: United States, 1997

At these same ages, 19% needed help with *personal care* compared with 4% at the younger ages. A higher percent of females were limited after injuries than males were; 10% of females were limited in their *daily routine* versus 5% of males.

Discussion

This report provides national estimates of injury and poisoning episodes and conditions for the first year of the redesigned National Health Interview Survey. The first year of any ongoing survey is a time of learning for everyone, from the interviewers and data processors to the analysts. Analyses are for a single year, so it is possible that some of the findings presented will change in subsequent years as more data are accumulated. The following discussion presents the strengths and limitations of the redesign and some methodological issues for consideration.

Strengths of the Redesign

With only 1 year of data, reliable national estimates can be made for many age, sex, and cause-specific rates of injury and poisoning episodes and conditions. This is the result of increasing the recall period to 3 months because it increases the likelihood that a person will have had an injury or poisoning. Therefore, although the same numbers of people are interviewed, there are more episodes on which to make the national estimates.

An acknowledged limitation of the NHIS prior to 1997 was the limited information on the circumstances of the injury (18). In the redesigned survey, there are multiple questions on the circumstances of the injury episode, including cause, place, activity, and outcome of the injury. In addition, for certain cause-specific injuries, there are additional questions that address issues related to that cause. Work-related and sports-related injury episode rates can be estimated on the national level from the activity and place fields. Detail on transportation-related episodes is

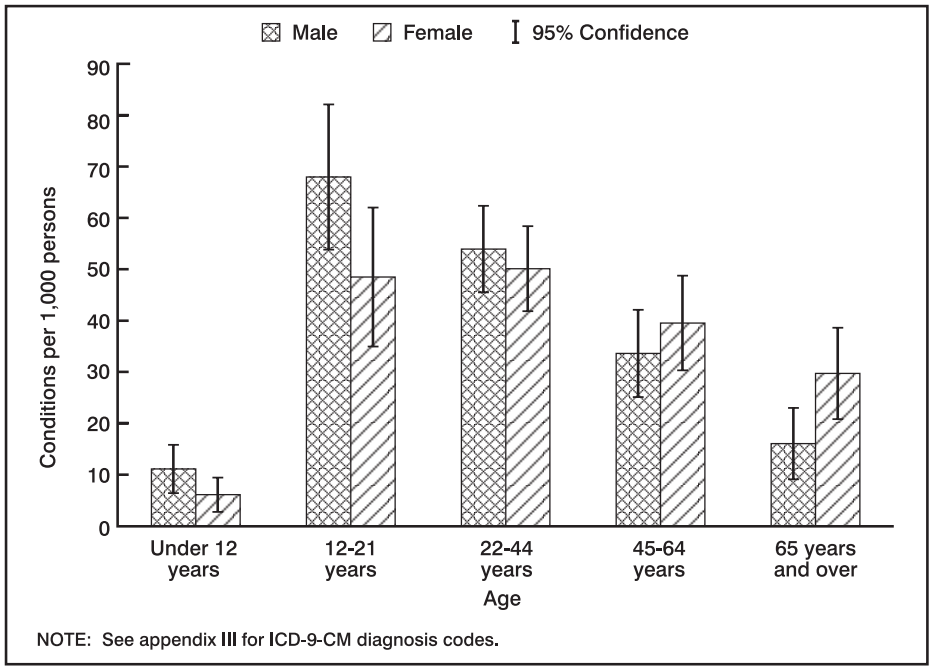

Figure 12. Injury condition rates for sprains and strains by age and sex: United States, 1997

available and will make the data compatible with the Tenth Revision of the ICD (19). For example, for persons injured in transportation-related incidents, questions on the type of vehicle, if the person was the driver or passenger and on the type of vehicle if the person was a pedestrian struck by it.

A narrative description of how the injury occurred, the part of the body injured, and the nature of the injury are available for analysis. These narratives are the verbatim responses to the interviewer's queries with minimal editing for confidentiality. The injury data were ICD coded for NCHS purposes, but researchers can code them according to other cause or diagnostic classification schemes. In addition, it is possible to search for text strings of words of interest (20, 21, 22). The analyst should be cautioned, however, against making estimates based on small numbers of observations.

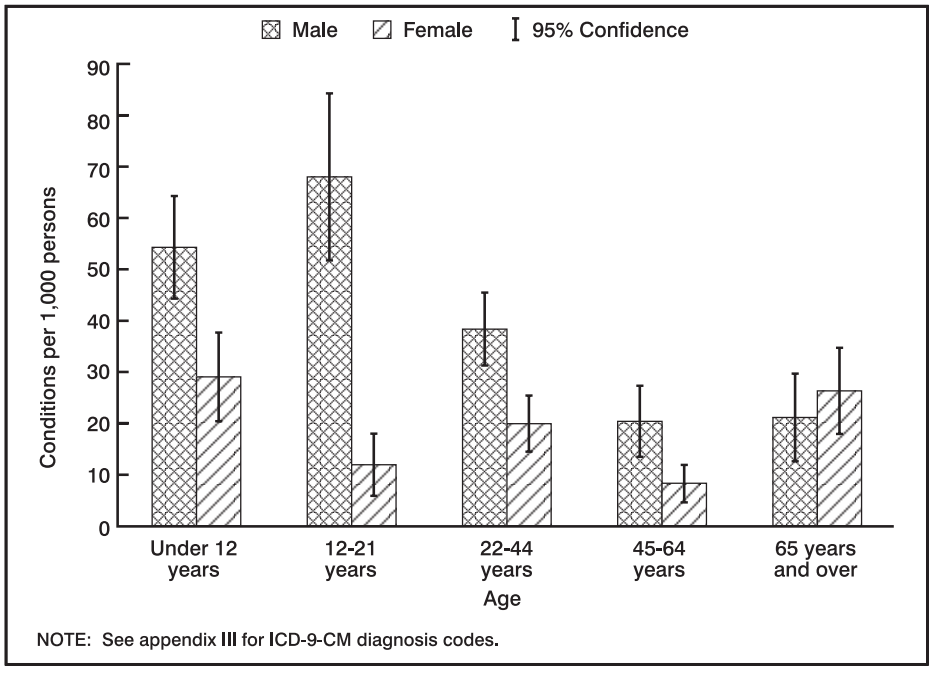

Figure 13. Injury condition rates for open wounds by age and sex: United States, 1997

Limitations and Lessons Learned

In 1997, there are separate sets of questions for injuries and poisonings, although some questions are common to both categories. In general, there is more detail for injuries than for poisonings. For example, the narrative field is available for injury episodes only. Not having all the questions asked of all respondents limits the completeness of the analysis. In addition, respondents did not always understand the subtle distinctions that separate an injury from a poisoning, so occasionally injuries were reported as poisonings and poisonings as injuries. These problems were addressed in the data editing process, but editing was limited by missing responses when injuries and poisonings were inappropriately reported. The confusion between an injury and a poisoning is understandable because there is often disagreement among injury researchers about appropriate categorization. For example, are venomous bites or stings poisonings? The ICD–9–CM does not include them in the section of codes for ''accidental poisonings'' although the text descriptions of the appropriate ICD–9–CM code includes the words ''as the cause of poisoning or toxic reaction.'' Because of these difficulties, the injury and poisoning questions were modified for the year 2000 survey so there is one set of questions for all persons injured or poisoned.

In 1997, respondents were asked if anyone in the family had any injuries. However, there was variability in what respondents considered to be an injury. For example, while repetitive motion injuries or carpal tunnel syndrome were reported in response to the screening question, these are not injuries according to ICD–9–CM and were not included in

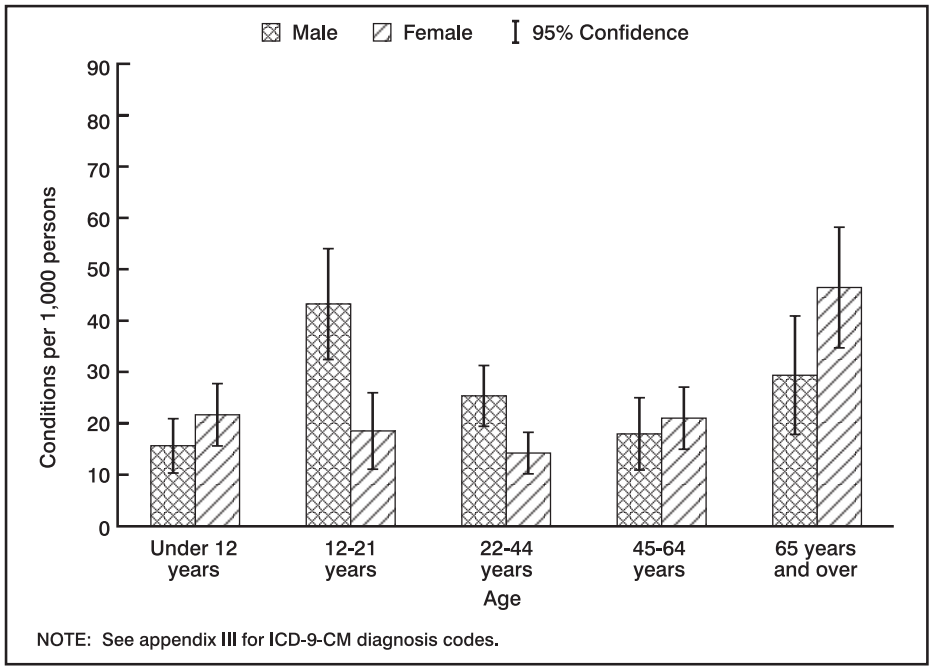

Figure 14. Injury condition rates for fractures by age and sex: United States, 1997

this data set. It is important to remember that the NHIS is not based on physician diagnoses, but on descriptions of injuries provided by the respondents. Thus, estimates should be made only on broad injury categories rather than specific diagnoses.

Respondents were prompted to choose an activity to best fit what they were doing at the time of injury. A review of the verbatim responses, however, indicated that some of the *"other"* responses fit into one of the predefined categories such as *"driving"* and *"leisure"* activities. Some of the categories in the activity were also difficult for the respondent to interpret. For example, if the injured person was doing housework at the time of the injury, two categories were suitable:

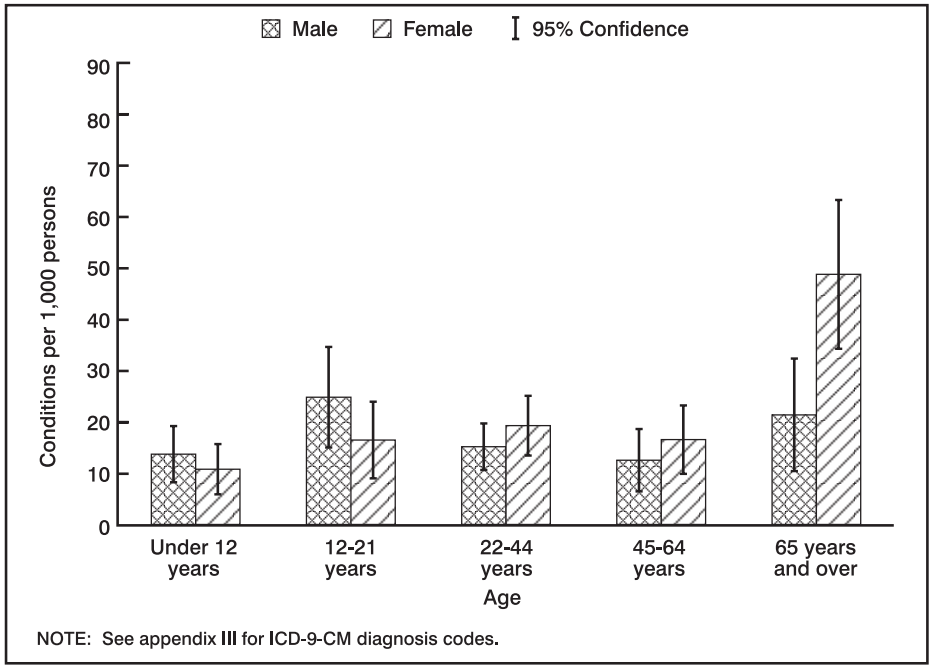

Figure 15. Injury condition rates for contusions by age and sex: United States, 1997

"Working around the house or yard" or *"Unpaid work (including housework, shopping, volunteer work)."* As a result, new guidelines were given to interviewers to select the first category if the response involved *"housework"* and the response categories are being evaluated for future years.

Comparability With Prior Years

Estimates of all injury conditions for 1997 are not directly comparable to estimates from prior years of the NHIS. As discussed in the Methods section of this report, differences between 1997 and previous years include changes to the screening questions; the inclusion criteria; the recall period; the severity threshold; and the phasing, placement, and number of questions. The following discussion is a brief introduction to comparisons between the redesign and previous years. A more detailed analysis will be provided in the near future.

An evaluation of changes in the 1995 and 1997 injury and poisoning condition rates requires that data from the two surveys be reanalyzed. To make the 1995 data more comparable to the 1997 data, injuries that were not medically attended and adverse effects and complications of medical care (ICD–9–CM 995.0–995.4, 995.6, 995.86, 995.89–999 and E870–E878, and E930–E949) were excluded from the 1995 estimates. Comparisons were made with 1995 because only a partial year of data is available for 1996.

In the redesigned 1997 survey, where respondents were asked directly about injury conditions, there were only four reported conditions (unweighted) that were coded to *"adverse effects"* or *"complications of surgical and medical care"* (ICD–9–CM 995.0–995.4, 995.6, 995.86, and 995.89–999), accounting for 0.1% of all injury conditions. In contrast, in 1995, 13% of all acute injury conditions (about 7.5 million conditions) in the NHIS were adverse effects or complications. This finding mirrors the many discussions among injury researchers and prevention specialists, including those participating in the International Collaborative Effort

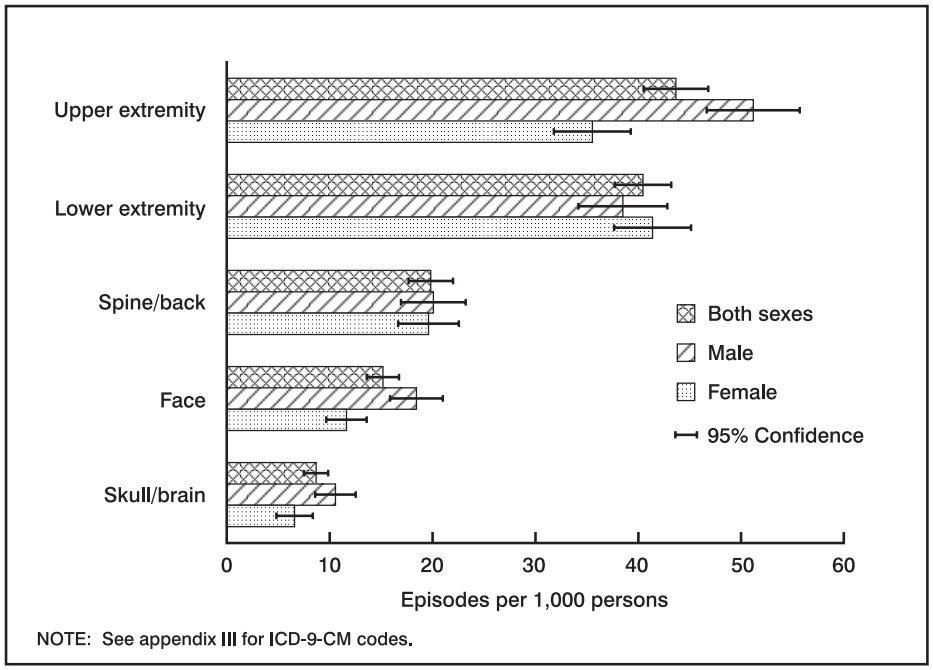

Figure 16. Age-adjusted injury condition rates by body region and sex: United States, 1997

on Injury Statistics (1996) and in the injury data committee of the Injury Section of the American Public Health Association (1996), in which it was agreed that these conditions and their comparable external causes (E870–E878 and E930–E949) were not injuries that could be prevented in the same manner as injuries resulting, for example, from motor vehicle crashes or falls (13, 23). Thus, they have been excluded from some recent counts of injuries and injury deaths published by the National Center for Health Statistics (24, 25).

When limited to the medically attended injuries and excluding the adverse effects and complications of surgical and medical care, the 1995 rate of 19.0 injury and poisoning conditions per 100 persons is 25% greater than the 1997 rate of 15.4 injury and poisoning conditions per 100 persons. However, the 1995 estimate does not address the increased recall period. Analysis of recall bias was complicated by missing values in the date of injury field, but will be addressed in a forthcoming report.

Preliminary analyses comparing specific injury conditions between 1995 and 1997 show similar numbers of fractures and sprains and strains, but differences in the numbers of "superficial injuries" as classified by the ICD (appendix III). This suggests that the recall of less severe injuries may be playing a role in the decrease in estimated number of injuries. However, the estimates were made more stable with the 3-month recall because of the greater number of observations on which the estimates are based.

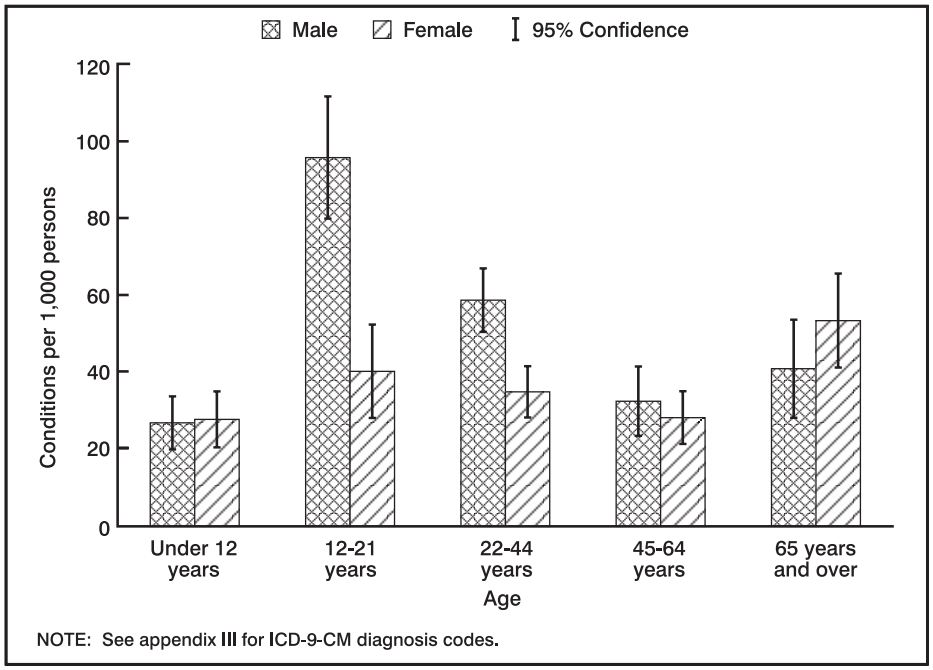

Figure 17. Upper extremity injury condition rates by age and sex: United States, 1997

Conclusion

The redesigned NHIS is a useful source of information about medically-attended nonfatal injuries and poisonings occurring in the United States. A single year of data provides enough data to produce stable national estimates on details of injury and poisoning episodes. With each successive year of data, the amount of information about the causes and diagnoses of nonfatal injuries will increase and thus so should the ability to expand and enhance prevention efforts.

For complete documentation and data tapes, see: http://www.cdc.gov/nchs/nhis.htm

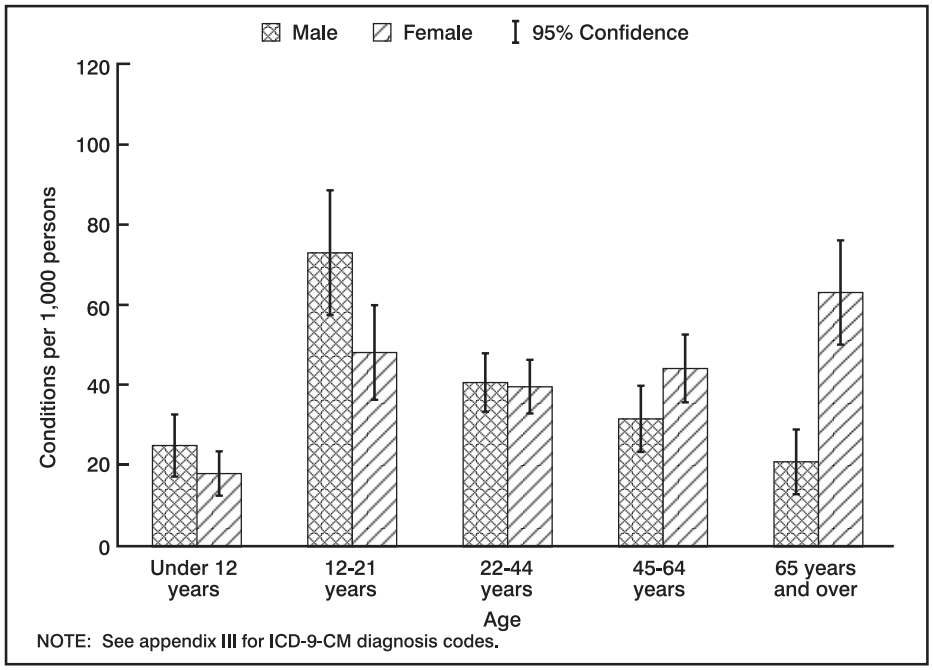

Figure 18. Lower extremity injury condition rates by age and sex: United States, 1997

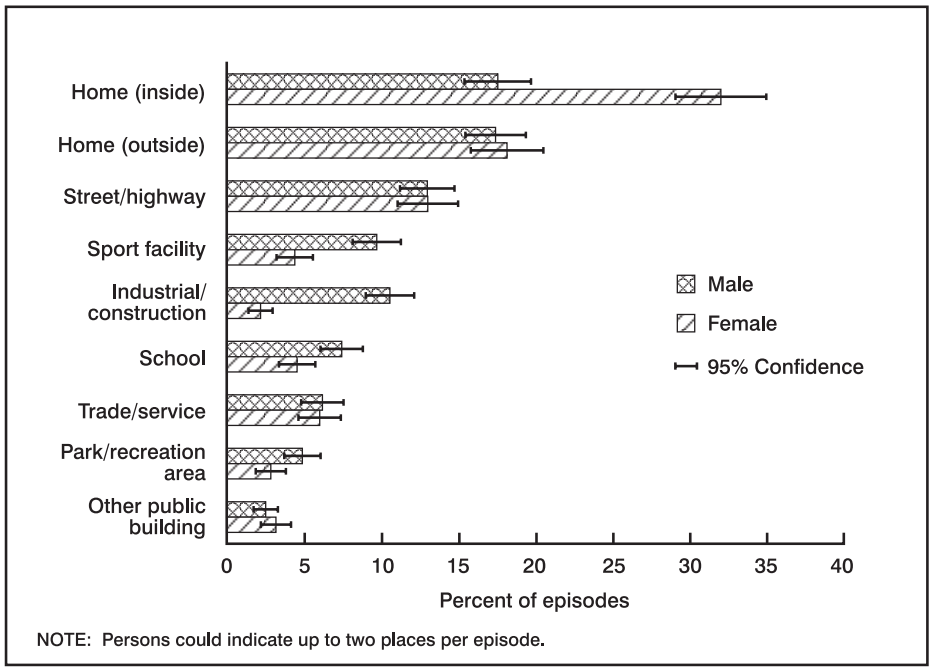

Figure 19. Percent of injury episodes by place of injury and sex: United States, 1997

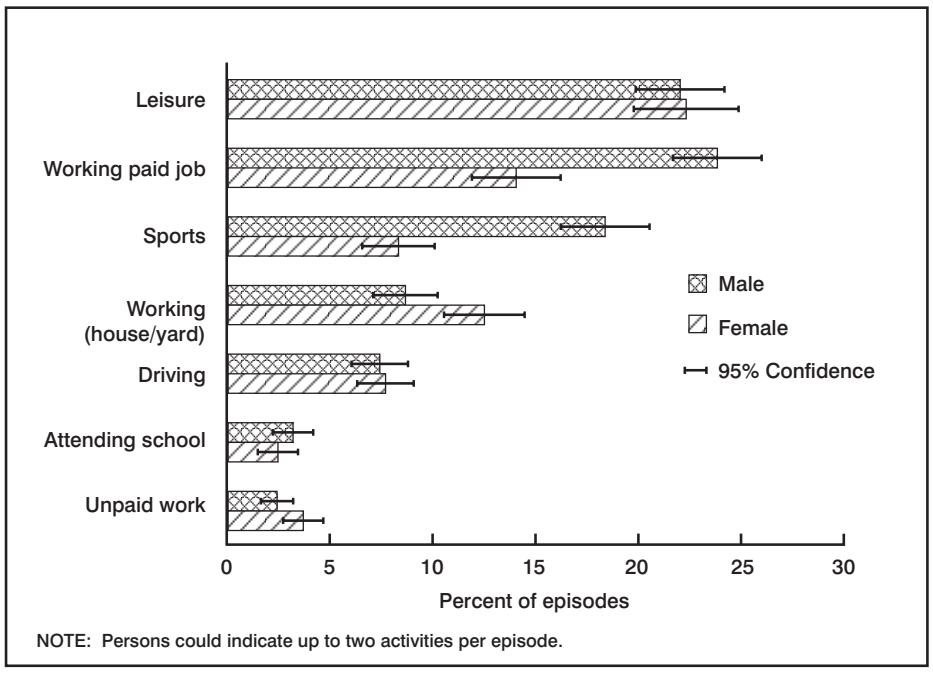

Figure 20. Percent of injury episodes by activity at the time of injury and sex: United States, 1997

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Table 1. Number, percent distribution, standard error, and annual rate of injury and poisoning episodes by selected demographic characteristics: United States, 1997

Selected demographic characteristic	Number of episodes in thousands	Percent distribution	Standard error (percent)	Rate per 1,000 population	Standard error (rate)
Sex and age					
Both sexes:					
All	34,383	100.0	. . .	129.0	2.6
All, age-adjusted	. . .	. . .	. . .	128.9	2.6
Under 12 years	5,384	15.7	0.7	112.2	5.9
12–21 years	6,542	19.0	0.9	171.4	8.4
22–44 years	12,766	37.1	1.1	136.4	4.5
45–64 years	5,470	15.9	0.8	99.7	5.1
65 years and over	4,221	12.3	0.7	131.9	7.0
65–79 years	2,850	8.3	0.6	114.9	7.7
80 years and over	1,371	4.0	0.4	190.5	19.4
Male:					
All	18,544	53.9	1.1	142.4	4.0
All, age-adjusted	. . .	. . .	. . .	140.5	4.1
Under 12 years	3,063	8.9	0.6	125.1	8.2
12–21 years	4,394	12.8	0.7	225.3	13.3
22–44 years	7,406	21.5	0.9	160.3	7.1
45–64 years	2,483	7.2	0.6	93.5	7.3
65 years and over	1,197	3.5	0.4	88.9	9.8
65–79 years	800	2.3	0.3	73.3	9.4
80 years and over	397	1.2	0.3	155.3	34.0
Female:					
All	15,840	46.1	1.1	116.1	3.4
All, age-adjusted	. . .	. . .	. . .	115.7	3.4
Under 12 years	2,320	6.7	0.5	98.7	7.7
12–21 years	2,149	6.2	0.6	115.1	11.1
22–44 years	5,360	15.6	0.8	113.1	5.8
45–64 years	2,988	8.7	0.5	105.5	6.9
65 years and over	3,023	8.8	0.6	163.1	10.4
65–79 years	2,050	6.0	0.5	147.5	11.7
80 years and over	973	2.8	0.3	209.9	24.3
Race/ethnicity and age					
White non-Hispanic:					
All	27,299	79.4	0.8	141.8	3.3
All, age-adjusted	. . .	. . .	. . .	142.8	3.3
Under 12 years	4,096	11.9	0.7	133.4	8.2
12–21 years	5,329	15.5	0.8	208.6	11.4
22–44 years	9,747	28.3	1.0	147.3	5.7
45–64 years	4,381	12.7	0.7	101.9	5.9
65 years and over	3,745	10.9	0.6	138.2	8.0
65–79 years	2,489	7.2	0.5	119.6	9.0
80 years and over	1,256	3.7	0.4	199.8	21.5
Black non-Hispanic:					
All	3,513	10.2	0.6	107.9	6.6
All, age-adjusted	. . .	. . .	. . .	109.1	6.7
Under 12 years	579	1.7	0.2	78.8	10.0
12–21 years	613	1.8	0.2	109.7	15.0
22–44 years	1,482	4.3	0.4	128.5	11.1
45–64 years	608	1.8	0.3	110.5	15.4
65 years and over	231	0.7	0.1	89.8	19.7
65–79 years	141	0.4	0.1	69.3	18.3
80 years and over	*90	*0.3	0.1	*168.1	54.2

See footnotes at end of table.

Table 1. Number, percent distribution, standard error, and annual rate of injury and poisoning episodes by selected demographic characteristics: United States, 1997—Con.

Selected demographic characteristic	Number of episodes in thousands	Percent distribution	Standard error (percent)	Rate per 1,000 population	Standard error (rate)
Hispanic:					
All	2,658	7.7	0.5	88.8	5.2
All, age-adjusted	. . .	. . .	. . .	89.3	5.3
Under 12 years	629	1.8	0.2	82.8	10.4
12–21 years	483	1.4	0.2	93.2	12.0
22–44 years	1,063	3.1	0.3	93.7	8.6
45–64 years	276	0.8	0.1	66.4	9.1
65 years and over	207	0.6	0.1	126.1	27.3
65–79 years	182	0.5	0.1	134.2	30.5
80 years and over	*25	0.1	0.0	*87.8	52.1
Geographic region					
Northeast	6,732	19.6	0.9	128.4	5.4
Midwest	8,723	25.4	0.9	132.7	5.5
South	12,214	35.5	1.0	128.3	4.2
West	6,715	19.5	0.9	126.0	6.2

. . . Category not applicable.
* Figure does not meet standard of reliability or precision.
0.0 Quantity more than zero but less than 0.05.

Table 2. Annual rate and standard error of leading external causes of injury and poisoning episodes by sex and age: United States, 1997

Sex and age	Fall		Struck by or against a person or an object		Transportation[1]		Overexertion		Cutting-piercing instruments		Poisoning	
	Rate per 1,000 population	Standard error	Rate per 1,000 population	Standard error	Rate per 1,000 population	Standard error	Rate per 1,000 population	Standard error	Rate per 1,000 population	Standard error	Rate per 1,000 population	Standard error
Both sexes												
All	42.4	1.5	19.6	1.0	16.7	1.0	13.9	0.9	10.0	0.7	7.3	0.6
All, age adjusted	43.1	1.5	19.4	1.0	16.5	1.0	13.9	0.8	9.9	0.7	7.2	0.6
Under 12 years	45.7	3.7	17.3	2.2	8.6	1.4	*2.4	1.0	8.0	1.3	13.0	1.8
12–21 years	45.5	4.6	49.1	4.4	23.8	3.0	12.3	2.1	15.4	2.2	5.6	1.4
22–44 years	30.6	2.0	18.9	1.7	22.9	1.9	20.3	1.8	13.4	1.4	6.7	1.0
45–64 years	32.1	2.9	11.5	1.5	11.2	1.6	17.6	1.9	5.5	1.1	5.5	1.3
65 years and over	86.2	5.8	4.0	1.2	11.5	2.2	7.8	1.9	4.4	1.3	5.4	1.6
Male												
All	36.9	2.1	27.6	1.7	19.3	1.4	15.1	1.3	13.3	1.2	6.9	0.9
All, age adjusted	37.6	2.1	26.6	1.6	18.9	1.4	14.9	1.2	12.9	1.1	6.7	0.9
Under 12 years	47.7	5.7	21.9	3.5	13.8	2.5	*3.0	1.7	10.7	2.2	11.3	2.1
12–21 years	49.1	6.1	75.3	7.5	28.2	4.5	17.1	3.5	25.7	4.3	*4.8	1.7
22–44 years	29.9	3.1	27.0	2.9	26.1	2.7	22.5	2.6	15.7	2.1	7.6	1.6
45–64 years	25.0	3.4	11.3	2.2	9.8	2.1	17.5	2.7	6.6	1.7	*5.2	1.7
65 years and over	47.2	7.6	*3.4	1.5	12.3	3.4	*4.4	1.9	*4.8	2.0	*2.9	1.8
Female												
All	47.7	2.4	11.9	1.0	14.1	1.2	12.7	1.1	6.9	0.8	7.7	0.8
All, age adjusted	47.2	2.4	12.1	1.0	14.1	1.2	12.7	1.1	6.8	0.8	7.7	0.8
Under 12 years	43.7	5.0	12.5	2.4	*3.2	1.3	*1.7	1.0	*5.1	1.6	14.7	2.9
12–21 years	41.7	7.3	21.7	4.4	19.2	3.6	*7.4	2.3	*4.6	1.7	*6.4	2.3
22–44 years	31.3	3.0	11.0	1.7	19.7	2.3	18.1	2.0	11.2	1.8	5.9	1.2
45–64 years	38.7	4.5	11.6	2.2	12.6	2.2	17.8	2.9	*4.5	1.4	5.8	1.6
65 years and over	114.5	8.8	*4.4	1.6	11.0	2.9	10.2	2.9	*4.2	1.6	*7.2	2.4

* Figure does not meet standard of reliability or precision.

[1]Transportation includes the categories ''Motor vehicle traffic;'' ''Pedal cycle, other;'' ''Pedestrian, other;'' and ''Transport, other'' (appendix II).

NOTE: External cause of injury was derived from the verbatim responses to questions FIJ.050 to FIJ.220 of the questionnaire (appendix I). See appendix II for a list of the ICD–9–CM codes in each cause category.

Table 3. Number, percent, and standard error of fall-related episodes by type of fall and sex: United States, 1997

	Both sexes			Male			Female		
	Number in thousands	Percent of all fall episodes	Standard error	Number in thousands	Percent of all fall episodes	Standard error	Number in thousands	Percent of all fall episodes	Standard error
All fall episodes	11,306	100.0	. . .	5,015	100.0	. . .	6,291	100.0	. . .
Type of fall									
All types of falls mentioned[1]	12,285	108.7	. . .	5,493	109.5	. . .	6,792	108.0	. . .
Floor/level ground	4,158	36.8	1.7	1,729	34.5	2.7	2,430	38.6	2.2
Stairs/step	1,296	11.5	1.0	428	8.5	1.4	869	13.8	1.5
Curb/sidewalk	1,162	10.3	1.0	415	8.3	1.4	747	11.9	1.4
Furniture	807	7.1	0.9	294	5.9	1.3	513	8.2	1.2
Playground equipment	493	4.4	0.7	246	4.9	1.1	247	3.9	0.8
Ladder/scaffolding	447	4.0	0.7	327	6.5	1.3	*121	*1.9	0.6
Hole/opening	382	3.4	0.6	172	3.4	0.9	210	3.3	0.9
Other (specified)[2]	610	5.4	0.8	386	7.7	1.5	224	3.6	0.8
Other	2,793	24.7	1.4	1,439	28.7	2.1	1,354	21.5	1.8
Refused/don't know	*135	*1.2	0.5	*57	*1.1	0.7	*78	*1.2	0.6

. . . Category not applicable.
* Figure does not meet standard of reliability or precision.
[1]"All types of falls mentioned" is greater than the total number of fall episodes because respondents could indicate up to two types of falls.
[2]"Other (specified)" type of fall includes escalator, building, tree, toilet, bathtub, and pool.

NOTES: Only when fall was selected as the cause of the injury were respondents asked how the injured person fell. Therefore, the total number of fall episodes as shown in this table will not match the total number of fall episodes based on the ICD–9–CM external cause codes. Percents are based on unrounded numbers.

Table 4. Number, percent, and standard error of transportation-related episodes by selected characteristics and sex: United States, 1997

	Both sexes			Male			Female		
Selected characteristic	Number of episodes in thousands	Percent	Standard error	Number of episodes in thousands	Percent	Standard error	Number of episodes in thousands	Percent	Standard error
Injured person[1]									
Driver	2,530	58.0	2.2	1,414	57.2	3.2	1,116	59.0	3.6
Passenger	1,195	27.4	2.2	552	22.3	2.9	643	34.0	3.5
Bicycle	439	10.1	1.5	422	17.1	2.6	*17	*0.9	0.7
Pedestrian	123	2.8	0.8	*45	*1.8	0.7	*78	*4.1	1.5
Refused/don't know	*76	*1.8	0.7	*39	*1.6	0.9	*37	*2.0	1.0
Type of vehicle[2]									
Passenger car	2,559	68.7	2.9	1,174	59.7	4.1	1,385	78.8	3.3
Light truck	494	13.3	2.2	249	12.7	2.6	245	13.9	3.0
Motorcycle	231	6.2	1.5	211	10.7	2.7	20	1.1	0.8
Large truck	*146	*3.9	1.2	*134	*6.8	2.0	*13	*0.7	0.7
Other (specified)[3]	192	5.2	1.3	130	6.6	1.9	*62	*3.5	1.6
Other	*102	*2.8	0.9	*69	*3.5	1.4	*34	*1.9	1.0
Refused/don't know	–	. . .	. . .	–	. . .	. . .	–	. . .	. . .
Seat belt/child restraint[4]									
Yes	2,506	78.3	2.7	1,154	74.1	3.9	1,353	82.4	3.4
No	663	20.7	2.7	387	24.8	3.9	276	16.8	3.3
Refused/don't know	*30	*1.0	0.6	*17	*1.1	0.8	*14	*0.8	0.6
Helmet use[5]									
Yes	303	40.7	7.1	286	41.2	7.4	*17	*33.4	21.4
No	432	58.0	7.2	399	57.4	7.5	*33	*66.7	21.4
Refused/don't know	*10	*1.4	1.4	*10	*1.5	1.5	–	. . .	. . .

* Figure does not meet standard of reliability or precision.
– Quantity zero.
. . . Category not applicable.
[1]Only persons providing information about injury episodes caused by a vehicle as transportation were asked if the person involved was injured as a driver, passenger, bicycle rider, or pedestrian.
[2]Only persons providing information about injury episodes in which a person was injured as a driver or passenger of a vehicle were asked about the type of vehicle involved.
[3]Other types of vehicle included vehicles such as buses, all terrain vehicles, farm equipment, airplanes, and boats.
[4]Only persons providing information about injury episodes in which a person was injured as a driver or a passenger in a passenger car, light truck, or large truck were asked if the injured person was wearing a seat belt or buckled in a safety seat.
[5]Only persons providing information about injury episodes in which a person was injured while riding a bicycle or motorcycle or all-terrain vehicle or ski/snowmobile were asked if the injured person was wearing a helmet.

Table 5. Number of poisoning episodes, number and percent of poisoning episodes involving a call to a poison control center, and standard error by sex and age: United States, 1997

Sex and age	Poisonings	Poison control center called		
	Number of episodes in thousands	Number of episodes in thousands	Percent	Standard error
Both sexes				
All ages	1,945	877	45.1	4.3
Under 6 years	551	415	75.5	6.0
6 years and over	1,394	461	33.1	4.9
Male				
All ages	898	346	38.6	6.7
Under 6 years	212	155	72.9	9.9
6 years and over	685	*191	*27.9	7.4
Female				
All ages	1,047	531	50.7	5.5
Under 6 years	338	261	77.1	7.5
6 years and over	709	270	38.1	6.4

* Figure does not meet standard of reliability or precision.

Table 6. Annual rate and standard error of conditions by the nature of the injury and sex and age : United States, 1997

Sex and age	All conditions[1]		Sprains/strains		Open wounds		Fractures		Contusions	
	Rate per 1,000 population	Standard error	Rate per 1,000 population	Standard error	Rate per 1,000 population	Standard error	Rate per 1,000 population	Standard error	Rate per 1,000 population	Standard error
Both sexes										
All	153.6	3.4	38.6	1.5	29.3	1.3	23.4	1.0	18.7	1.1
All, age adjusted	153.7	3.4	38.5	1.5	29.0	1.3	23.7	1.0	19.0	1.2
Under 12 years	118.9	6.4	8.7	1.5	41.9	3.5	18.5	2.1	12.3	1.9
12–21 years	197.3	10.7	58.4	4.8	40.5	4.4	31.1	3.3	20.7	3.3
22–44 years	167.5	6.3	52.0	3.0	29.0	2.3	19.7	1.7	17.2	2.0
45–64 years	120.7	7.0	36.7	3.1	14.1	2.0	19.5	2.3	14.6	2.3
65 years and over	169.1	9.8	24.0	3.0	24.1	3.2	39.2	4.3	37.2	4.9
Male										
All	168.5	5.3	39.9	2.2	40.3	2.2	25.1	1.6	16.4	1.5
All, age adjusted	167.0	5.4	39.3	2.2	39.2	2.1	25.5	1.7	16.7	1.6
Under 12 years	134.8	9.3	11.1	2.4	54.2	5.1	15.6	2.7	13.7	2.8
12–21 years	260.4	17.0	67.9	7.2	67.9	8.3	43.2	5.5	24.8	5.0
22–44 years	192.8	9.2	53.9	4.3	38.3	3.6	25.3	3.0	15.2	2.3
45–64 years	115.2	10.4	33.6	4.3	20.3	3.5	17.9	3.6	12.5	3.1
65 years and over	118.7	14.6	16.1	3.5	21.1	4.4	29.3	5.9	21.4	5.6
Female										
All	139.3	4.5	37.3	2.1	18.8	1.3	21.8	1.4	20.9	1.7
All, age adjusted	138.5	4.5	37.4	2.1	18.6	1.3	21.7	1.4	20.6	1.7
Under 12 years	102.4	8.1	6.1	1.7	29.0	4.4	21.6	3.1	10.8	2.5
12–21 years	131.4	13.9	48.5	6.9	11.9	3.1	18.5	3.8	16.5	3.8
22–44 years	142.8	8.5	50.1	4.2	19.9	2.8	14.2	2.1	19.3	3.0
45–64 years	125.8	9.0	39.5	4.7	8.3	1.8	21.0	3.1	16.5	3.4
65 years and over	205.7	14.5	29.7	4.5	26.3	4.3	46.4	6.0	48.8	7.4

* Figure does not meet standard of reliability or precision.
[1]Poisoning episodes are assumed to have a single condition resulting from the episode.

NOTES: There may be more than one condition per episode. See appendix III for ICD–9–CM diagnosis codes in category.

Table 7. Annual rate and standard error of injury conditions by body region injured and sex and age: United States, 1997

Sex and age	Upper extremity		Lower extremity		Spine/back		Face		Skull/brain	
	Rate per 1,000 population	Standard error	Rate per 1,000 population	Standard error	Rate per 1,000 population	Standard error	Rate per 1,000 population	Standard error	Rate per 1,000 population	Standard error
Both sexes										
All	43.2	1.6	40.1	1.4	19.8	1.1	15.3	0.8	8.7	0.6
All, age adjusted	43.2	1.6	40.3	1.4	19.8	1.1	15.1	0.8	8.6	0.6
Under 12 years	27.4	2.6	21.7	2.3	2.8	0.8	30.2	3.0	14.4	1.9
12–21 years	68.7	5.0	60.9	5.0	17.0	2.5	16.6	2.7	12.9	2.7
22–44 years	46.7	2.8	40.3	2.3	31.6	2.5	12.0	1.4	6.4	1.0
45–64 years	30.3	3.0	38.2	3.2	19.7	2.2	5.7	1.1	3.9	0.9
65 years and over	48.2	4.3	45.4	4.1	14.0	2.5	17.2	2.8	9.7	1.9
Male										
All	51.2	2.3	38.8	2.2	20.0	1.5	18.9	1.3	10.8	1.0
All, age adjusted	51.0	2.3	38.4	2.2	20.0	1.6	18.4	1.3	10.5	1.0
Under 12 years	26.9	3.5	25.1	3.9	*4.2	1.4	34.1	4.1	21.4	3.2
12–21 years	95.9	8.1	73.0	7.9	18.4	3.5	27.9	5.0	16.5	3.3
22–44 years	58.8	4.2	40.8	3.7	32.7	3.3	15.9	2.4	8.1	1.5
45–64 years	32.6	4.6	31.8	4.2	17.6	2.8	7.5	2.0	*3.9	1.3
65 years and over	41.0	6.5	21.1	4.1	*11.9	3.9	*11.1	4.1	*6.3	2.4
Female										
All	35.6	1.9	41.3	1.9	19.6	1.5	11.8	1.0	6.6	0.9
All, age adjusted	35.4	1.9	41.2	1.9	19.5	1.5	11.6	1.0	6.6	0.9
Under 12 years	27.8	3.7	18.2	2.8	*1.3	0.8	26.1	4.1	7.1	1.9
12–21 years	40.3	6.2	48.2	6.0	15.6	3.7	*4.7	1.6	*9.0	4.3
22–44 years	35.0	3.4	39.7	3.4	30.6	3.2	8.2	1.4	4.7	1.2
45–64 years	28.3	3.5	44.3	4.3	21.7	3.2	4.1	1.2	*4.0	1.3
65 years and over	53.5	6.2	63.1	6.6	15.5	3.4	21.6	3.8	12.2	2.7

* Figure does not meet standard of reliability or precision.

NOTES: There may be more than one body part injured per episode. See appendix III for ICD–9–CM diagnosis codes in category.

Table 8. Number, percent, and standard error of injury episodes by place of occurrence, activity engaged in, and sex: United States, 1997

Activity and place	Both sexes			Male			Female		
	Number of episodes in thousands	Percent	Standard error	Number of episodes in thousands	Percent	Standard error	Number of episodes in thousands	Percent	Standard error
All injury episodes	32,438	100.0	. . .	17,646	100.0	. . .	14,792	100.0	. . .
Place									
All places mentioned[1]	32,900	101.4	. . .	17,911	101.5	. . .	14,989	101.3	. . .
Home (inside)	7,832	24.1	0.9	3,098	17.6	1.1	4,734	32.0	1.5
Home (outside)	5,760	17.8	0.7	3,074	17.4	1.0	2,686	18.2	1.2
Street/highway	4,220	13.0	0.7	2,293	13.0	0.9	1,927	13.0	1.0
Sport facility	2,369	7.3	0.5	1,716	9.7	0.8	653	4.4	0.6
Industrial/construction	2,191	6.8	0.5	1,866	10.6	0.8	325	2.2	0.4
School	1,991	6.1	0.5	1,315	7.5	0.7	676	4.6	0.6
Trade/service	1,986	6.1	0.5	1,095	6.2	0.7	892	6.0	0.7
Park/recreation area	1,289	4.0	0.4	866	4.9	0.6	423	2.9	0.5
Other public building	920	2.8	0.3	447	2.5	0.4	473	3.2	0.5
Other (specified)[2]	2,414	7.4	0.5	999	5.7	0.6	1,415	9.6	1.0
Other	1,603	4.9	0.4	981	5.6	0.6	622	4.2	0.6
Refused/don't know	324	1.0	0.2	161	0.9	0.3	163	1.1	0.3
Activity									
All activities mentioned[1]	33,060	101.9	. . .	18,069	102.4	. . .	14,991	101.3	. . .
Leisure	7,169	22.1	0.9	3,876	22.0	1.1	3,293	22.3	1.3
Working paid job	6,266	19.3	0.8	4,195	23.8	1.1	2,071	14.0	1.1
Sports	4,458	13.7	0.7	3,233	18.3	1.1	1,225	8.3	0.9
Working (house/yard)	3,363	10.4	0.6	1,521	8.6	0.8	1,842	12.5	1.0
Driving	2,432	7.5	0.5	1,301	7.4	0.7	1,131	7.7	0.7
Attending school	915	2.8	0.3	557	3.2	0.5	358	2.4	0.5
Unpaid work	960	3.0	0.3	420	2.4	0.4	540	3.7	0.5
Other (specified)[3]	1,611	5.0	0.4	564	3.2	0.5	1,047	7.1	0.7
Other	5,542	17.1	0.8	2,242	12.7	0.9	3,301	22.3	1.3
Refused/don't know	343	1.1	0.2	160	0.9	0.3	183	1.2	0.3

. . . Category not applicable.

[1]"All places mentioned" and "All activities mentioned" are greater than the total number of injury episodes because respondents could indicate up to two places or activities.

[2]"Other (specified)" place includes child care center or preschool, residential institution, health care facility, parking lot, farm, river, lake, stream, ocean, swimming pool, and mine or quarry.

[3]"Other (specified)" activity includes sleeping, resting, eating, drinking, cooking, and being cared for.

NOTES: Percents are calculated based on the sex-specific total number of injury episodes and are also based on unrounded numbers.

Table 9. Number, percent, and standard error of injury and poisoning episodes involving hospitalization by sex and age: United States, 1997

Sex and age	Hospitalized		
	Number of episodes in thousands	Percent hospitalized	Standard error
Both sexes			
All ages	2,466	7.2	0.5
Under 22 years	506	4.2	0.7
22–64 years	1,335	7.3	0.7
65 years and over	625	14.8	2.1
Male			
All ages	1,395	7.5	0.7
Under 22 years	350	4.7	0.8
22–64 years	837	8.5	1.1
65 years and over	209	17.4	4.1
Female			
All ages	1,071	6.8	0.8
Under 22 years	156	3.5	1.0
22–64 years	498	6.0	0.9
65 years and over	417	13.8	2.3

Table 10. Number, annual rate, and standard error of injury and poisoning episodes resulting in time lost from work or school: United States, 1997

Time lost	Number of episodes in thousands	Rate per 1,000 population	Standard error
Time lost from school[1]			
Any time lost	2,777	36.2	2.5
Less than 1 day	616	8.0	1.1
1–5 days	1,807	23.6	2.2
6 days or more	354	4.6	0.8
Time lost from work[2]			
Any time lost	10,054	50.6	1.8
Less than 1 day	1,669	8.4	0.7
1–5 days	4,635	23.3	1.2
6 days or more	3,750	18.9	1.2

[1]For persons ages 5–24 years.
[2]For persons 14–75 years.

Table 11. Number, percent, and standard error of injury episodes by whether persons required help with daily routine activities or personal care and sex and age: United States, 1997

Sex and age	Needs help with daily routine activities[1]			Needs help with personal care[2]		
	Number of episodes in thousands	Percent	Standard error	Number of episodes in thousands	Percent	Standard error
Both sexes						
All injury episodes, ages 5 years and over	2,232	7.3	0.5	1,785	5.8	0.5
5–21 years	217	2.3	0.6	361	3.9	0.7
22–64 years	1,158	6.7	0.7	673	3.9	0.5
65 years and over	856	21.2	2.3	751	18.5	2.3
Male						
All injury episodes, ages 5 years and over	780	4.7	0.6	732	4.4	0.6
5–21 years	*136	*2.2	0.7	200	3.3	0.8
22–64 years	397	4.2	0.8	278	3.0	0.6
65 years and over	247	21.3	4.8	254	21.9	4.7
Female						
All injury episodes, ages 5 years and over	1,452	10.4	0.9	1,052	7.5	0.8
5–21 years	*81	*2.5	1.0	161	5.0	1.3
22–64 years	761	9.6	1.2	394	5.0	0.9
65 years and over	609	21.1	2.6	496	17.2	2.5

* Figure does not meet standard of reliability or precision.
[1]Daily routine activities includes such things as household chores, doing necessary business, shopping, or getting around for other purposes.
[2]Personal care needs includes such things as eating, bathing, dressing, or getting around the house.

NOTE: The limitation questions were not asked for persons less than 5 years old.

Appendix I

NHIS questionnaire, Family Core: Section II—Injuries

Section II—INJURIES

Injuries are a major health problem. In order to develop new ways to help prevent both accidental and intentional injuries, we need to know more about them. In this next set of questions, I will ask about injuries that happened in the past 3 months; Note here that we are only interested in injuries that required medical advice or treatment.

FIJ.010 DURING THE PAST THREE MONTHS, that is since {91 days before today date}, {were/was} {you/anyone in the family} injured seriously enough that {you/they} got medical advice or treatment?

>FINJ3M<
(1) Yes (FIJ.020)
(2) No (FIJ.300)
(7) Refused (FIJ.300)
(9) DK (FIJ.300)

FIJ.020 Who was this? (Anyone else?)

>**PINJ3MR<**	**[ ]**	**[ ]**	**[ ]**
	[ ]	[ ]	[ ]

FIJ.030 How many different times in the past three months {were/was} {you/subject's name} injured seriously enough to seek medical advice?

>IJNO3M< Times Injured (01–94): _____

FIJ.040 **[If FIJ.030 equals 1, ask:]**

When did {subject's name} injury happen?

>IJDATE_M< MONTH: _____
>IJDATE_D< DAY: _____
>IJDATE_Y< YEAR: _____

[If FIJ.030 greater than 1, ask:]

Now I' m going to ask a few question about{subject's name} most recent injury. When did that injury happen?

>IJDATE_M< MONTH: _____
>IJDATE_D< DAY: _____
>IJDATE_Y< YEAR: _____

[If FIJ.030 equals 2 or more, ask:]

We just talked about {subject's name} injury on {recent injury date}. When did {subject's name} injury BEFORE THAT happen?

>IJDATE_M< MONTH: _____
>IJDATE_D< DAY: _____
>IJDATE_Y< YEAR: _____

[FIJ.051 to FIJ.295 are asked for each injury episode]

FIJ.050 At the time of the injury, what part(s) of {subject's name} body was hurt? What kind of injury was it? Anything else?

	BODY PART		KIND OF INJURY
>IJBODY1<	_____	**>IJKIND1<**	_____
>IJBODY2<	_____	**>IJKIND2<**	_____
>IJBODY3<	_____	**>IJKIND3<**	_____
>IJBODY4<	_____	**>IJKIND4<**	_____

FIJ.070 How did {subject's name} injury(s) happen? Please describe fully the circumstances or events leading to the injury(s), and any object, substance, or other person involved.

FR: ENTER THE VERBATIM RESPONSE, PROBING FOR AS MUCH DETAIL AS POSSIBLE, INCLUDING SPECIFICALLY WHAT THE INJURED PERSON WAS DOING AT THE TIME AND ALL CIRCUMSTANCES SURROUNDING THE EVENT. RECORD ALL VOLUNTEERED INFORMATION.

>IJHOW1< _____
>IJHOW2< _____
>IJHOW3< _____
>IJHOW4< _____

FIJ.080

FR: ENTER THE FIRST APPROPRIATE BOX WHICH DESCRIBES THE CAUSE OF THE PERSON'S INJURY FROM THE LIST BELOW.

>**CAUS<**
(1) Vehicle as transportation, including Motor Vehicle/ bicycle/motorcycle/pedestrian/train/boat/airplane(FIJ.090)
(2) Gun/being shot (FIJ.190)
(3) Fire/burn/scald related (FIJ.150)
(4) Near drowning/water in lungs (FIJ.160)
(5) Fall (FIJ.170)
(6) Other (FIJ.200)
(7) Refused (FIJ.200)
(9) DK (FIJ.200)

FR: THE NEXT SET OF QUESTIONS ARE ASKED TO VERIFY DETAILS OF THE CIRCUMSTANCES SURROUNDING THE INJURY(S). IF YOU ALREADY KNOW THE ANSWER BECAUSE OF THE VERBATIM RESPONSE FOR HOW THE INJURY(S) OCCURRED, VERIFY THE ANSWER WITH THE RESPONDENT. OTHERWISE, ASK THE QUESTION.

FIJ.090 {Were/Was} {you/subject's name} injured as the driver of a vehicle, a passenger in a vehicle, a bicycle rider, or as a pedestrian?

>MVWHO<
(1) Driver of a vehicle (FIJ.100)
(2) Passenger of a vehicle (FIJ.100)
(3) Bicycle rider (FIJ.130)
(4) Pedestrian (FIJ.140)
(7) Refused (FIJ.200)
(9) DK (FIJ.200)

FIJ.100 What type of vehicle {were/was} {you/subject's name} in?

>MVTYP<
(01) Passenger car (FIJ.120)
(02) Light truck (including pickups, vans and utility vehicles) (FIJ.120)
(03) Bus (FIJ.200)
(04) Large truck (FIJ.120)
(05) Motorcycles (including mopeds, minibikes) (FIJ.130)
(06) All terrain vehicle or ski/snow-mobile
(07) Farm equipment (tractor) (FIJ.200)
(08) Airplane (FIJ.200)
(09) Boat (FIJ.200)
(10) Train (FIJ.200)
(11) Other (FIJ.200)
(97) Refused (FIJ.200)
(99) DK (FIJ.200)

FIJ.120 **[If AGE is greater than or equal to 5, ask:]**

{Were/Was} {you/subject's name} wearing a safety belt at the time of the accident?

[Else, ask:]

{Were/Was} {you/subject's name} buckled in a car safety seat at the time of the accident?

>SBELT<
(1) Yes
(2) No
(7) Refused
(9) DK

(Goto FIJ.200)

(FIJ.130) {Were/Was}{you/subject's name} wearing a helmet at the time of the accident?

>HELMT<
(1) Yes
(2) No
(7) Refused
(9) DK

(Goto FIJ.200)

FIJ.140 What type of vehicle {were/was} {you/subject's name} struck by?

>MVHIT<

(01) Passenger car
(02) Light truck (including pickups, vans and utility vehicles)
(03) Bus
(04) Large truck
(05) Motorcycle (including mopeds and minibikes)
(06) All terrain vehicle or ski or snow-mobile
(07) Farm equipment (tractor)
(08) Bicycle
(09) Train
(10) Boat (includes all on) water vehicles
(11) Other
(97) Refused
(99) DK

(Goto FIJ.200)

FIJ.150 What was it that burned/scalded {you/subject's name}?

FR: IF RESPONSE IS FIRE OR SMOKE ASK:

What caused the fire/smoke?

>BURN<

(01) Cigarette, cigar, pipe
(02) Cooking unit
(03) Heater
(04) Wiring
(05) Motor vehicle battery caps, radiator caps
(06) Fireworks
(07) Other explosive
(08) Water or steam
(09) Food
(10) Chemicals
(11) Other
(97) Refused
(99) DK

(Goto FIJ.200)

FIJ.160 What body of water was involved?

>WATER<

(1) Bathtub
(2) Swimming pool
(3) Lake, pond
(4) Bay, ocean, sea
(5) River, creek
(6) Other
(7) Refused
(9) DK

(Goto FIJ.200)

FIJ.170 How did {you/subject's name} fall? Anything else?

FR: HAND CARD F4. RECORD UP TO 2 RESPONSES. ENTER 'N' FOR NO MORE.

On or down or from:

>FALL<

(1) Escalator
(2) Stairs or steps
(3) Floor/level ground
(4) Curb, including sidewalk
(5) Ladder or scaffolding
(6) Playground equipment
(7) Building or other structure
(8) Chair, bed, sofa or other furniture
(9) Tree
(10) Toilet, commode
(11) Bathtub, shower

Into:

(12) Swimming pool
(13) Hole or other opening
(14) Other
[ ]
(97) Refused
(99) DK
[ ]

FIJ.180 What caused {you/subject's name} to fall? Was it due to:

>FWHY<

(1) Slipping, tripping or stumbling
(2) Jumping or diving
(3) Collision with/pushing, shoving by another person
(4) Loss of balance/dizziness/becoming faint/seizure
(5) Or something else
(7) Refused
(9) DK

(Goto FIJ.200)

FIJ.190 What kind of gun was it?

<GUNTP>
(1) Firearm (handgun, shotgun, rifle)
(2) BB or pellet gun
(3) Dart gun
(4) Other
(7) Refused
(9) DK

FIJ.200 What {were/was} {you/subject's name} doing when the injury(s) happened?

FR: HAND CARD F5. RECORD UP TO 2 RESPONSES. ENTER 'N' FOR NO MORE.

>WHAT<
(1) Driving
(2) Working at paid job
(3) Working around the house or yard
(4) Attending school
(5) Unpaid work (incl. housework, shopping, volunteer work)
(6) Sports (organized team or individual such as running, biking, skating)
[ ]
(7) Leisure activity (excluding sports)
(8) Sleeping, resting, eating, drinking
(9) Cooking
(10) Being cared for (hands on care from other person)
(11) Other
(97) Refused sport
(99) DK
[ ]

FIJ.220 Where {were/was} {you/subject's name} when the injury(s) happened?

FR: HAND CARD F6. RECORD UP TO 2 RESPONSES. ENTER 'N' FOR NO MORE.

>WHER<
(1) Home (inside)
(2) Home (outside)
(3) School (not residential)
(4) Child care center or Preschool
(5) Residential institution (excl. hosp.)
(6) Health care facility (incl. hospital)
(7) Street/highway
(8) Parking lot
(9) Sport facility, ath. field or playground
(10) Trade and service areas (restaurant, store, bank, gas station)
[ ]
(11) Farm
(12) Park/recreation area (fields, bike or jog path),
(13) River/lake/stream/ocean
(14) Swimming pool
(15) Industrial or construction area
(16) Mine/quarry
(17) Other public building
(18) Other
(97) Refused
(99) DK
[ ]

(Goto FIJ.250)

FIJ.240 {Were/Was} {you/subject's name} hospitalized for at least one night as a result of this injury/these injuries?

>IHOSP<
(1) Yes (FIJ.250)
(2) No (FIJ.260)
(7) Refused (FIJ.260)
(9) DK (FIJ.260)

FIJ.250 How many nights {were/was} {you/subject's name} in the hospital?

FR: IF "STILL IN HOSPITAL," ASK HOW MANY NIGHTS UP TO TODAY.

>IHNO<
(01–94) 1–94 nights
(95) 95+ nights
(97) Refused
(99) DK

Check item FIJCCI1: If AGE is greater than 13 then go to FIJ.260; Else
If AGE is greater than 4 and less than 14 then go to FIJ.270; Else
If AGE is less than 5 then return to FIJ.040 for next injury event or next person.
If there are no more persons and no more injuries-events, go to FIJ.300.

FIJ.260 As a result of this injury/these injuries, how much work did {you/subject's name} miss?

FR: HAND CARD F7.

>WKLS<
(0) None
(1) Less than 1 day
(2) 1 to 5 days
(3) Six or more days
(6) Not employed at the time of the injury
(7) Refused
(9) DK

FIJ.270 As a result of this injury/these injuries, how much school did {you/subject's name} miss?

FR: HAND CARD F8.

>SCLS<
(0) None
(1) Less than 1 day
(2) One to five days
(3) Six or more days
(6) Not in school at the time of the injury
(7) Refused
(9) DK

FIJ.280 As a result of this injury/theses injuries {do/does} {you/subject's name} now need the help of other persons with {your/his/her} personal care needs, such as eating, bathing, dressing or getting around this home?

>IJADL<
(1) Yes (FIJ.285)
(2) No (FIJ.290)
(7) Refused (FIJ.290
(9) DK (FIJ.290)

FIJ.285 Do you expect {you/subject's name} will need this help for a total of 6 months or longer?

>LIMTM<
(1) Yes
(2) No
(7) Refused
(9) DK

FIJ.290 As a result of this injury/these injuries {do/does} {you/subject's name} now need the help of other persons in handling routine needs such as everyday household chores, doing necessary business, shopping or getting around for other purposes?

>IJIAD<
(1) Yes (FIJ.295)
(2) No (FIJ.040/FIJ.300)
(7) Refused (FIJ.040/FIJ.300)
(9) DK (FIJ.040/FIJ.300)

FIJ.295 Do you expect {you/subject's name} will need this help for a total of 6 months or longer?

>**HLIMT<**
(1) Yes (FIJ.040/FIJ.300)
(2) No (FIJ.040/FIJ.300)
(7) Refused (FIJ.040/FIJ.300
(9) DK (FIJ.040/FIJ.300)

FIJ.300 The next questions are about POISONING, which includes coming into contact with harmful substances, and overdose or wrong use of any drug or medication. Do not include any illnesses such as poison ivy or food poisoning.

FR: HAND CALENDAR CARD.

DURING THE PAST THREE MONTHS, that is since {91 days before today's date}, did {you/anyone in the family} have a poisoning that caused someone to seek medical advice or treatment, including calls to a poison control center?

>FPOIS3M<
(1) Yes (FIJ.310
(2) No (FAU.010)
(7) Refused (FAU.010)
(9) DK (FAU.010)

FIJ.310 Who was this? (Anyone else?)

>PPOIS3MR< **[ ]** **[ ]** **[ ]**

[ ] [ ] [ ]

FIJ.320 How many different times in the PAST THREE MONTHS {were/was} {you/subject's name} poisoned?

(01–94) 1–94 times
(95) 95+ times
(97) Refused
(99) DK

FIJ.330 **[If FIJ.320 equals 1, ask:]**

When did {subject's name} poisoning happen?

>POIDTEM< MONTH: _____
>POIDTED< DAY: _____
>POIDTEY< YEAR: _____

[If FIJ.320 is greater than 1, ask:]

Now I' m going to ask a few question about {subject's name} most recent poisoning. When did that happen?

>POIDTEM< MONTH: _____
>POIDTED< DAY: _____
>POIDTEY< YEAR: _____

[IF FIJ.320 is greater than or equal to 2, ask:]

We just talked about {subject's name} poisoning on {recent poisoning}. When did {subject's name} poisoning BEFORE THAT happen?

>POIDTEM< MONTH: _____
>POIDTED< DAY: _____
>POIDTEY< YEAR: _____

[FIJ.340 to FIJ.410 are repeated for each poisoning episode.]

FIJ.340 Did {you/subject's name} poisoning result from:

>POITPR2<
(1) a drug or medical substance used mistakenly or in overdose (FIJ.360)
(2) a harmful or toxic solid or liquid substance (FIJ.360)
(3) inhaling gases or vapors (FIJ.360)
(4) eating a poisonous plant or other substance mistaken for food (FIJ.360)
(5) a venomous animal or plant (FIJ.360)
(6) something else (FIJ.350)
(7) Refused (FIJ.360)
(9) DK (FIJ.360)

FIJ.350

FR: ENTER THE VERBATIM RESPONSE.

>PSPEC_1< _____
>PSPEC_2< _____
>PSPEC_3< _____
>PSPEC_4< _____

FIJ.360 Did you or did someone else call a poison control center for advice in treating {subject's name} poisoning?

>POICC<
(1) Yes
(2) No
(7) Refused
(9) DK

FIJ.370 {Were/Was} {you/subject's name} hospitalized for at least one night as a result of this poisoning?

>PHOSP<
(1) Yes (FIJ.380)
(2) No (FIJ.390)
(7) Refused (FIJ.390)
(9) DK (FIJ.390)

FIJ.380 How many nights {were/was} {you/subject's name} in the hospital?

FR: IF "STILL IN HOSPITAL," ASK HOW MANY NIGHTS UP TO TODAY.

>PHNO<
(01–94) 1–94 nights
(95) 95+ nights
(97) Refused
(99) DK

Check item FIJCCI2: If AGE greater than 13 then go to FIJ.400; Else
If AGE greater than 4 and less than 14 then go to FIJ.410; Else
If AGE less than 5 then return to FIJ.330 for the next poisoning event or the next person.
If there are no more persons and no more poisoning events, go to FAU.010.

FIJ.400 As a result of this poisoning, how much work did {you/subject's name} miss?

FR: HAND CARD F7.

>PWKLS<
(0) None
(1) Less than 1 day
(2) One to five days
(3) Six or more days
(6) Not employed at the time of poisoning
(7) Refused
(9) DK

FIJ.410 As a result of this poisoning, how many days of school did {you/subject's name} miss?

FR: HAND CARD F8.

>PSCLS<

(0) None
(1) Less than 1 day
(2) One to five days
(3) Six or more days
(6) Not in school at the time of poisoning
(7) Refused
(9) DK

(Goto next section—Health Care Access and Utilization)

Appendix II

Matrix for External Cause of Injury Mortality and Morbidity Data

Mechanism or cause	Manner or intent				
	Unintentional	Suicide/ self-inflicted	Homicide/ Assault	Undetermined	Other
Cut/pierce	E920.0–.9	E956	E966	E986	E974
Drowning/submersion	E830.0–.9, 832.0–.9, 910.0–.9	E954	E964	E984	. . .
Fall	E880.0–886.9, 888	E957.0–.9	E968.1	E987.0–.9	. . .
Fire/hot object or substance	E890.0–899, 924.0–.9	E958.1,.2,.7	E961, 968.0, .3	E988.1,.2,.7	. . .
Fire/flame	E890.0–899	E958.1	E968.0	E988.1	. . .
Hot object/scald	E924.0–.9	E958.2,.7	E961, 968.3	E988.2,.7	. . .
Firearm	E922.0–.9	E955.0–.4	E965.0–.4	E985.0–.4	E970
Machinery	E919.0–.9	. . .	. . .	. . .	. . .
Motor vehicle traffic	E810–819 (.0–.9)	E958.5	**E968.5**	E988.5	. . .
Occupant	E810–819 (.0,.1)	. . .	. . .	. . .	. . .
Motorcyclist	E810–819 (.2,.3)	. . .	. . .	. . .	. . .
Pedal cyclist	E810–819 (.6)	. . .	. . .	. . .	. . .
Pedestrian	E810–819 (.7)	. . .	. . .	. . .	. . .
Unspecified	E810–819 (.9)	. . .	. . .	. . .	. . .
Pedal cyclist, other	E800–807 (.3), E820–825 (.6), E826 (1,.9), 827–829 (.1)	. . .	. . .	. . .	. . .
Pedestrian, other	E800–807 (.2), 820–825 (.7), E826–829 (.0)	. . .	. . .	. . .	. . .
Transport, other	E800–807 (.0–.1,.8–.9), E820–825 (.0–5,.8–9), E826 (.2–8), 827–829, (.2–.9) E831.0–9, 833.0–845.9	E958.6	. . .	E988.6	. . .
Natural/environmental factors	E900.0–909, 928.0–.2	E958.3	. . .	E988.3	. . .
Bites and stings	E905.0–.6,.9, 906.0–.4, **.5**, .9	. . .	. . .	. . .	
Overexertion	E927	. . .	. . .	. . .	. . .
Poisoning	E850.0–869.9	E950.0–952.9	E962.0–.9	E980.0–982.9	E972
Struck by, against	E916–917.9	. . .	E960.0, 968.2	. . .	E973, 975
Suffocation	E911–913.9	E953.0–.9	E963	E983.0–.9	. . .
Other specified and classifiable	E846–848, 914–915, 918, E921.0–.9, 923.0–.9, E925.0–926.9, 929.0–.5	E955.5,.9, 958.0,.4	E960.1, 965.5–.9, E967.0–.9, 968.4	E985.5, 988.0,.4	E971, 978 E990–994, 996, E997.0–.2
Other specified, NEC[1]	E928.8, 929.8	E958.8, 959	E968.8, 969	E988.8, 989	E995, 997.8, 977, E998–999
Unspecified	E887, 928.9, 929.9	E958.9	E968.9	E988.9	E976, 997.9
All injury[2]	E800–869, 880–929	E950–959	E960–969	E980–989	E970–978 E990–999

[1]Not elsewhere classifiable.
[2]Excludes fatal and nonfatal events caused by adverse events (E-codes E870–E879 and E930–E949).

NOTE: E968.5 and E906.5 are the only codes that are singled out that are in ICD–9–CM but not in ICD-9. All of the other codes that are in CM only are folded into larger groupings in the matrix.

Appendix III

Injury Morbidity Matrix

Codes for Body Region of Injury

Please note: the following list can be used if ICD is coded to the 4th digit; if only 3-digit codes are available follow instructions next to **.

1.	Skull and Brain: excl. face[1,2] (incl. scalp)	800–801, 803–804	
		850–854	
		873.0–873.1	** Code 873 under Other
		873.8–873.9	** Code 873 under Other
		951	
2.	Face	802	
		830	
		848.0–848.1	** Code 848 under Other
		870–872	
		873.2–873.7	** Code 873 under Other
		910	
		918	
		920–921	
		925.1	** Code 925 under Other
		940	
		947.0	** Code 947 under Other
		950	
	Head [1,2] (Skull & Brain & Face)	800–804	
		850–854	
		870–73	
		830	
		848.0–848.1	** Code 848 under Other
		910	
		918	
		920–921	
		925.1	** Code 925 under Other
		940	
		947.0	** Code 947 under Other
		950–951	
3.	Neck [2,3,5,8]	807.5–807.6	**Code 807 under Thorax
		848.2	**Code 848 under Other
		874	
		900	
		925.2	**Code 925 under Other
			**Code 947 under Other
		947.1	
4.	Thorax [4,5]	807.0–807.4	**Code 807 under Thorax
		848.3–848.4	**Code 848 under Other
		860–862	
		875	
		879.0–879.1	**Code 879 under Other
		901	
		922.0–922.1	**Code 922 under Other
		947.2	**Code 947 under Other
5.	Abdomen, pelvic contents, genital organs	863–868	
		878	
		879.2–879.5	**Code 879 under Other
		902	
		922.2	**Code 922 under Other
		922.4	**Code 922 under Other
		926.0	**Code 926 under Other
		947.3–947.4	**Code 947 under Other

See footnotes at end of table.

Please note: the following list can be used if ICD is coded to the 4th digit; if only 3-digit codes are available follow instructions next to **.

6.	Spine and Back [6,7,8]	805	
		806	
		876–877	
		922.3	**Code 922 under Other
		839.0–839.5	**Code 839 under Other
		847	
		952–953	
7.	Upper Extremity	810–818	
		831–834	
		840–42	
		880–887	
		903	
		912–915	
		923	
		927	
		943–944	
		955	
		959.2–959.5	**Code 959 under Other
8.	Lower Extremity and Bony Pelvis[6]	808	
		821–27	
		835–838	
		843–845	
		846	
		848.5	**Code 848 under Other
		890–897	
		904	
		916–917	
		924	
		928	
		945	
		956	
		959.6–959.7	**Code 959 under Other
17.	(**Neck of femur fracture**)[9]	**820**	
9.	Other and Ill-Defined Body Region	809	
		819	
		828	
		829	
		839.6–839.9	** Code 839 under Other
		848.8–848.9	** Code 848 under Other
		869	
		879.6–879.9	**Code 879 under Other
		911	
		919	
		922.8–922.9	**Code 922 under Other
		926.1	**Code 926 under Other
		926.8–926.9	**Code 926 under Other
		929	
		941–42	
		946	
		947.8–947.9	**Code 947 under Other
		948–949	
		954	
		957	
		959.0–959.1	**Code 959 under Other
		959.8–959.9	**Code 959 under Other
10.	Foreign Bodies	930–939	
11.	Poisonings	960–979	

See footnotes at end of table.

Please note: the following list can be used if ICD is coded to the 4th digit; if only 3-digit codes are available follow instructions next to **.

12.	Toxic Effects	980–989
13.	Other and Unspec Effects of External Causes	990–995
	Effects of reduced temperature	**991**
	Effects of heat and light	**992**
	Drowning	**994.1**
	Asphyxiation and strangulation	**994.7**
	Electrocution	**994.8**
	All other Effects of External Causes	**990, 993, 994.0, 994.2–994.6, 994.9, 995**
14.	Late Effects	905–909
15.	Early Traumatic Complications	958
16.	Complications of Surgical and Medical Care	996–999
18.	No Injury	No diagnosis codes above 799

[1]Include 804 under **Head** (instead of **Multiple Body Regions**) even though it reads: Multiple fractures involving skull or face with other bones: assume that principal fracture is to the skull or face.
[2]Code all injuries to blood vessels of Head or Neck (900) under **Neck**; it is not easy to distinguish whether blood vessel is part of head or neck based only on third or fourth digit of ICD
[3]Injuries to trachea (typically categorized at 4th or 5th digit which is not available for mortality data) is classified under **Neck** (instead of **Thorax**)
[4]Injuries to the trunk unless otherwise specified are coded under **Other** since these injuries could be to the region of the thorax, abdomen or back
[5]Fx to larynx and trachea (807.5–807.6) are coded under **Neck** unless 3rd digit code only, then code under **thorax** and assume injury (fx) is more likely to be to ribs and /or sternum.
[6]Injuries to sacrum and coccyx are coded under **Spine** as they are typically only distinguishable form other injuries to the spine at the 4th or 5th digits.
[7]Injuries to buttock region (eg. 877) are coded under **Spine and Back**
[8]Injuries classified under Neck include only those injuries to the front of the neck or soft tissue; injuries to the neck portion of the spine are classified under **Spine and Back**
[9]Neck of femur fractures have been classified separately.

Codes for Nature of Injury

1.	Fractures[1,2]	800–805; 807–829
2.	Dislocations	830–839
3.	Sprains and Strains	840–848
4.	Crushing Injury	925–929
5.	Amputation of Limbs	885–887; 895–897
6.	Injury to Internal Organs[2,3,4,5] incl. CNS injuries	860–869 850–854 952–953 806
7.	Nerves[4]	950–951; 954–957
8.	Blood Vessels	900–904
9.	Open Wounds[3,5]	870–884, 888–894
10.	Superficial Injuries	910–919
11.	Contusions	920–924
12.	Burns	940–949
13.	Effects of Foreign Bodies	930–939
14.	Other Injury- (other and unspecified) **Multiple sites** **All other sites** **Unspecified sites**	959 **959.8** **959.0–959.7** **959.9**
15.	Poisonings	960–979
16.	Toxic Effects	980–989
17.	Other and Unspec. Effects of External Causes **Effects of reduced temperature** **Effects of heat and light** **Drowning** **Asphyxiation and strangulation** **Electrocution** **All other Effects of External Causes**	990–995 **991** **992** **994.1** **994.7** **994.8** **990, 993, 994.0, 994.2–994.6, 994.9, 995**
18.	Late Effects of Injuries etc.	905–909
19.	Early Complications of trauma	958
20.	Complications of Surgical and Medical Care	996–999
21.	No Injury	No diagnosis codes above 799

[1]***Fractures*** include skull fractures with intracranial injury; **HOWEVER**, if data are coded to the fourth digit; include the following codes (i.e. intracranial injuries with skull fx) under Injury to Internal Organs:

800.1– 800.4	801.1–801.4
800.6–800.9	801.6–801.9
803.1–803.4	804.1–804.4
803.6–803.9	804.6–804.9

[2]***Fractures*** exclude spine fxs with SCI; they are classified under ***Injuries to Internal Organs***; (3) Injuries to Internal Organs include CNS injuries (injuries to the brain and spinal cord); they also include injuries to larynx, trachea, pharynx and thyroid; they do NOT include injuries to internal structures of the eye, ear, and nose (these are included under Open Wounds);
[4]Injuries to Nerves exclude injuries to nerve roots to spine and spinal plexus (953)—these are included under Injury to Internal Organs;
[5]***Open Wounds*** includes injuries to the larynx, trachea, pharynx and thyroid; ***HOWEVER***, if data are only coded to the fourth digit, include codes 874.0–874.5 (i.e. injuries to larynx, trachea, pharynx and thyroid) under ***Injury to Internal Organs***.
[6]The United States Multiple Cause of Death does not include 4th digit classification for intracranial injuries with skull fx (800–804) or injuries to larynx, trachea, pharynx and thyroid (874.0–874.5).

Appendix IV

Technical Notes

The Methods section of this report mentioned that tests of significance for differences between rates or percents would not be conducted. However, for individual rates and percents, confidence intervals and standard errors are provided to indicate the stability of the point estimates. The confidence intervals are displayed in the figures in a way that graphically portrays the sizes of differences in the point estimates relative to their individual stabilities. Examination of the amount of overlap between intervals is not equivalent to standard significance testing for differences.

If tests of significance for differences were to be performed, there would be several technical considerations. Suppose that it were desired to test whether two population percents, say p_1 and p_2, are different. The standard error of $\hat{p}_1 - \hat{p}_2$ can be written as

$$SE_{12} = \sqrt{SE_1^2 + SE_2^2 - 2\ \mathrm{Cov}\ (\hat{p}_1\ ,\ \hat{p}_2)}, \qquad (1)$$

where SE_1 and SE_2 are the standard errors of $\hat{p}_1$ and $\hat{p}_2$, respectively, ''Cov'' denotes covariance, and ''hats'' are used to label estimates. If an estimate $\hat{SE}_{12}$ of equation (1) were computed, either via separate estimation of the components on the right-hand side of equation (1) or via another technique, then an approximate significance test at the 5% level for whether p_1 and p_2 are different could be performed by checking whether the confidence interval

$$\hat{p}_1 - \hat{p}_2 \pm 1.96\ \hat{SE}_{12} \qquad (2)$$

contains 0.

A nonzero value for Cov $(\hat{p}_1\ ,\ \hat{p}_2)$ in equation (1) could occur as a result of the design of the National Health Interview Survey. For example, point estimates for any two groups might be correlated due to the clustering of subjects by household or primary sampling unit. A nonzero covariance could also occur if the groups being compared have subjects in common. This is possible, for example, when external causes of injury are being compared because a person could have more than one episode and each episode could have a different external cause.

If the covariance between $\hat{p}_1$ and $\hat{p}_2$ were assumed to be equal to 0, then by equations (1) and (2), a test of significance for whether p_1 and p_2 are different could be performed by checking whether the interval

$$\hat{p}_1 - \hat{p}_2 \pm 1.96 \sqrt{\hat{SE}_1^2 + \hat{SE}_2^2} \qquad (3)$$

contains 0.

In addition to the above considerations, the issue of adjusting for multiple comparisons arises when more than one test of significance is to be carried out.

Errata

The following changes, made after the original report was published. All the equations on page 38 (Appendix IV) were changed. A comma and/or a hat was added to each equation. The following change was made in the third sentence of the first paragraph on page 38: "The confidence intervals are displayed in the figures to graphically portray the sizes..." was changed to "The confidence intervals are displayed in the figures in a way that graphically portrays the sizes..."

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