

## National Hospital Ambulatory Medical Care Survey: 2003 Emergency Department Summary

by Linda F. McCaig, M.P.H., and Catharine W. Burt, Ed.D., Division of Health Care Statistics

### Abstract

**Objectives**—This report describes ambulatory care visits to hospital emergency departments (EDs) in the United States. Statistics are presented on selected hospital, patient, and visit characteristics. Selected trends in ED utilization from 1993 to 2003 are also presented.

**Methods**—The data presented in this report were collected in the 2003 National Hospital Ambulatory Medical Care Survey (NHAMCS). NHAMCS is part of the ambulatory care component of the National Health Care Survey that measures health care utilization across various types of providers. NHAMCS is a national probability sample survey of visits to emergency and outpatient departments of non-Federal, short-stay, and general hospitals in the United States. Sample data are weighted to produce annual national estimates.

**Results**—During 2003, an estimated 113.9 million visits were made to hospital EDs, about 38.9 visits per 100 persons. From 1993 to 2003, increasing trends in ED utilization rates were observed for people ages 22–49 years, 50–64 years, and 65 years and over. Over 16 million patients arrived by ambulance (14.2 percent). At approximately 3 percent of visits, the patient had been seen in the ED within the past 72 hours. In 2003, abdominal pain, chest pain, fever, and cough were the leading patient complaints, accounting for nearly one-fifth of all visits. Acute upper respiratory infection was the leading illness-related diagnosis at ED visits. There were an estimated 40.2 million injury-related visits during 2003, or 14.1 visits per 100 persons. Diagnostic and screening services, procedures, and medications were provided at 89.7 percent, 45.4 percent, and 77.3 percent of visits, respectively. In 2003, approximately 14 percent of ED visits resulted in hospital admission. On average, patients spent 3.2 hours in the ED, of which 46.5 minutes were spent waiting to see a physician.

**Keywords:** emergency department visits • diagnoses • injury • medications • ICD-9-CM

### Introduction

The National Hospital Ambulatory Medical Care Survey (NHAMCS) was inaugurated in 1992 to gather, analyze, and disseminate information about the health care provided by hospital emergency departments (EDs) and outpatient departments (OPDs). The NHAMCS is part of the ambulatory component of the National Health Care Survey, a family of surveys that measures health care utilization across various types of providers. More information about the National Health Care Survey can be found at the Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS) Internet address: [www.cdc.gov/nchs](http://www.cdc.gov/nchs).

Ambulatory medical care is the predominant method of providing health care services in the United States and occurs in a wide range of settings. The largest proportion of ambulatory care services occurs in physician offices (1). Since 1973, NCHS has collected data on patient visits to physicians' offices through the National Ambulatory

### Acknowledgments

This report was prepared in the Division of Health Care Statistics. Dale Sanders in the Technical Services Branch generated the tables. Sarah Gousen in the Technical Services Branch contributed to the description of the sampling procedure and to the "Technical Notes." The report was edited by Klaudia M. Cox, typeset by Annette F. Holman, and the figures were produced by Jarmila Ogburn of the Office of Information Services, Information Design and Publishing Staff.



Medical Care Survey (NAMCS). However, visits to hospital EDs and OPDs, which represent a significant segment of ambulatory care visits, are not included in the NAMCS. EDs account for approximately 10 percent of all ambulatory medical care visits in the United States (1). Furthermore, hospital ambulatory patients are known to differ from office patients in certain demographic and medical characteristics (1).

The primary role of the ED is the treatment of seriously ill and injured patients. However, the ED provides a significant amount of unscheduled urgent care, often because there is inadequate capacity for this care in other parts of the health care system. The ED also serves as a referral site for other providers to evaluate and stabilize patients and admit them if necessary (2). ED administrators have reported being under increasing pressure to provide care for more patients, which has resulted in crowding (2). A recent report by the Government Accountability Office found three indicators that crowding is occurring: the number of hours that an ED is on ambulance diversion, the proportion of patients and length of time that patients “board” in the ED, and the proportion of patients who leave the ED before receiving a medical evaluation, usually because they tire of waiting. Another key indicator contributing to crowding is the inability to move patients out of EDs and into inpatient beds (3).

To reduce crowding, it is important for policymakers to understand the characteristics of frequent users. Most people do not use an ED in any given year. In 2003, 20.9 percent of children under 18 years of age and 20.0 percent of adults made one or more ED visits in the past 12 months and 7.0 percent of both children and adults made two or more visits (4). A Massachusetts study using data from fiscal year 2002 found that frequent ED users, defined as persons who made five or more visits in a year, represented 3.9 percent of all ED patients and accounted for 17.8 percent of all ED visits (5). Data from the Urban Institute’s 1997 and 1999 National Surveys of America’s Families showed that frequent ED users were

more likely to be publicly insured, report worse health conditions, and have had more than three ambulatory care visits outside of the ED in the previous year. It appeared that frequent users did not substitute primary care visits for ED visits (6). To further examine the issues related to ED crowding and ambulance diversion in the United States, a supplement on this topic was added to the NHAMCS in 2003.

This report presents data from the 2003 NHAMCS on hospital, patient, and visit characteristics for EDs. New features in the 2003 report include data on selected ED utilization trends from 1993 to 2003, information on mode of arrival and waiting time (items absent from the survey since 2000), and more accurate estimates of proprietary hospitals as well as those not located in metropolitan statistical areas (MSAs). Finally, information on ED staffing and nursing triage levels is presented. Other *Advance Data* reports highlight visits to outpatient departments (7) and physician offices (8). More detailed information on the 1992–99 ED trend data has been published in a separate report (9).

## Data highlights

### ED utilization

- From 1993 to 2003, the number of ED visits increased from 90.3 million to 113.9 million visits annually (up 26 percent). This represents an average increase of more than 2 million visits per year. The number of hospital EDs in the United States decreased by about 12.3 percent during the same period.
- Approximately 58 percent of all hospital EDs were located in MSAs, but they represented 81.5 percent of the annual ED encounters.
- From 1993 to 2003, the overall ED utilization rate per population increased by 12 percent, from 35.5 percent to 39.9 percent.
- Infants under 12 months of age had a visit rate of 97.5 visits per 100 persons.
- Increasing trends in ED visit rates were found for persons ages 22–49 years (up by 19 percent), 50–64 years

(up by 15 percent), and 65 years and over (up by 26 percent).

- Utilization rates were highest for Medicaid enrollees (81.0 visits per 100 persons) and lowest for patients with private insurance (21.5 visits per 100 persons).
- At 14.2 percent of visits, patients arrived at the ED by ambulance, representing over 16 million ambulance transports.
- The mean waiting time to see a physician was 46.5 minutes.

### Conditions seen

- In nearly 1 out of 100 ED visits, the patient required immediate attention (e.g., unconscious or required resuscitation efforts).
- At about 3.3 million visits (2.8 percent), patients had been seen in the ED within the last 72 hours, and 5.5 percent of all visits were for followup of the same problem.
- Abdominal pain, chest pain, and fever were the most commonly recorded principal reasons for visit.
- The most frequently reported primary diagnoses were contusions, acute upper respiratory infections, abdominal pain, and chest pain. The leading diagnoses by age group were: infants and children (under 13 years of age)—acute respiratory infection, excluding pharyngitis; adolescents and young adults (13–21 years of age)—contusions; adults (22–49 years of age)—abdominal pain; middle-aged persons (50–64 years of age)—chest pain; and seniors (65 years of age and over)—heart disease, excluding ischemic.
- Injury, poisoning, and adverse effects of medical treatment accounted for 35.3 percent of ED visits. Falls, being struck by or striking against, and motor vehicle traffic incidents were the leading causes of injuries presenting to the ED, accounting for about 41 percent of such visits.
- 1.7 million visits were for adverse effects of medical treatment.

### Services provided

- Diagnostic and screening services and procedures were provided at 89.7 percent and 45.4 percent of visits,

respectively. Imaging was provided at 42.9 percent of visits.

- Medications were provided at 77.3 percent of visits, and narcotic analgesics were the leading therapeutic class prescribed, at 14.1 percent of the medications mentioned.
- The duration for four-fifths of ED visits was between 1–6 hours. On average, patients spent 3.2 hours in the ED.

### Outcomes

- About 15.8 million ED visits resulted in hospital admission, representing 13.9 percent of visits.
- After increasing for 10 years, the percentage of visits with no followup planned decreased to 6.3 percent.
- Over 2 million patients were transferred to other facilities (1.9 percent of visits), and 317,000 patients either were dead on arrival or died in the ED.

### ED-level estimates

- Board-certified emergency medicine attending physicians and pediatric emergency medicine attending physicians were available at 63.5 percent and 18.1 percent of EDs, respectively.

## Methods

The data presented in this report are from the 2003 NHAMCS, a national probability sample survey conducted by NCHS' Division of Health Care Statistics. The survey was conducted from December 30, 2002, through December 28, 2003.

The target universe of the NHAMCS is in-person visits made in the United States to EDs and OPDs of non-Federal, short-stay hospitals (hospitals with an average stay of less than 30 days) or those whose specialty is general (medical or surgical) or children's general. EDs that operate 24 hours a day are considered within the scope of the ED component; EDs that operate less than 24 hours are included in the OPD component of the NHAMCS. The hospital sampling frame

consisted of hospitals listed in the 1991 Verispan Hospital Database (VHD) updated using the 2000 VHD to allow the inclusion of hospitals that opened or changed their eligibility status since the previous sample in 1991. The VHD was formerly known as the SMG Hospital Database. An additional sample of 66 hospitals (identified as located in non-MSAs or proprietary) was selected from the 2002 VHD to provide more reliable hospital estimates for these categories.

In 2003, a multistage probability sample was used to collect information on visits to emergency departments. The design included four stages for the majority of hospitals and three stages for an additional sample of 66 hospitals primarily located in rural areas. The NHAMCS has a four-stage design that involves a) geographic primary sampling units (PSUs), b) hospitals that have EDs or OPDs within PSUs, c) emergency service areas (ESAs) within EDs and clinics within OPDs, and d) patient visits within ESAs and clinics (10). The PSU sample consists of 112 PSUs that comprise a probability subsample of the PSUs used in the 1985–94 National Health Interview Survey. See the “Technical Notes” for more detail on the supplemental three-stage sample. Together, a sample of 546 hospitals was selected for the 2003 NHAMCS, of which 443 were in scope and had eligible EDs. A total of 475 ESAs from 406 EDs participated in the study. The overall unweighted two-stage sampling response rate was 85.3 percent, adjusted to exclude ESAs and EDs that participated at a minimal level (see “Technical Notes” for details). Hospital staff were asked to complete Patient Record forms (see [figure I](#) in the “Technical Notes”) for a systematic random sample of patient visits occurring during a randomly assigned 4-week reporting period. The number of Patient Record forms completed for EDs was 40,253. Starting in 2001, sampling procedures were changed to target approximately 100 sample visits rather than 50 visits for each participating ED. The increased visit base led to increased precision for most visit estimates.

Because the estimates presented in this report are based on a sample rather than on the entire universe of ED visits, they are subject to sampling variability. The “Technical Notes” at the end of this report include an explanation of sampling errors with guidelines for judging the precision of the estimates. The standard errors reported here are calculated using Taylor approximations in SUDAAN, which take into account the complex sample design of the NHAMCS (11). Standard errors are provided in the text if the data are not presented in the tables. Data on selected ED utilization trends for 1993–2003 are presented. A weighted least-squares regression analysis was used to determine the significance of trends at the 0.05 level.

The U.S. Census Bureau was responsible for data collection. Data processing and medical coding were performed by Constella Group Inc., Durham, North Carolina. As part of the quality assurance procedure, a 10 percent quality control sample of survey records was independently keyed and coded. Coding error rates ranged between 0.0 and 0.8 percent for various survey items.

Several of the tables in this report present rates of ED visits per population. The population figures used in calculating these rates are based on Census Bureau monthly postcensal estimates of the civilian noninstitutional population of the United States as of July 1, 2003. These population estimates are based on postcensal estimates from Census 2000 and are available from the Census Bureau. For some rates, other denominators were used. See the “Technical Notes” for more detail on population figures and rate calculations. Estimates presented in the tables and figure for specific race categories reflect visits at which only a single race was reported. See the “Technical Notes” for more detail on race estimates.

In April 2003, the Privacy Rule of the Health Insurance Portability and Accountability Act (HIPAA) was implemented to establish minimum Federal standards for safeguarding the

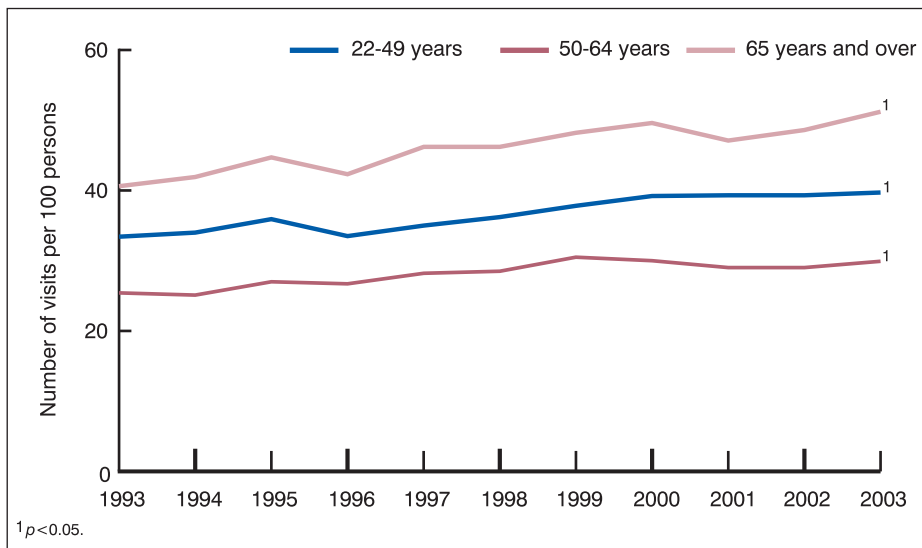
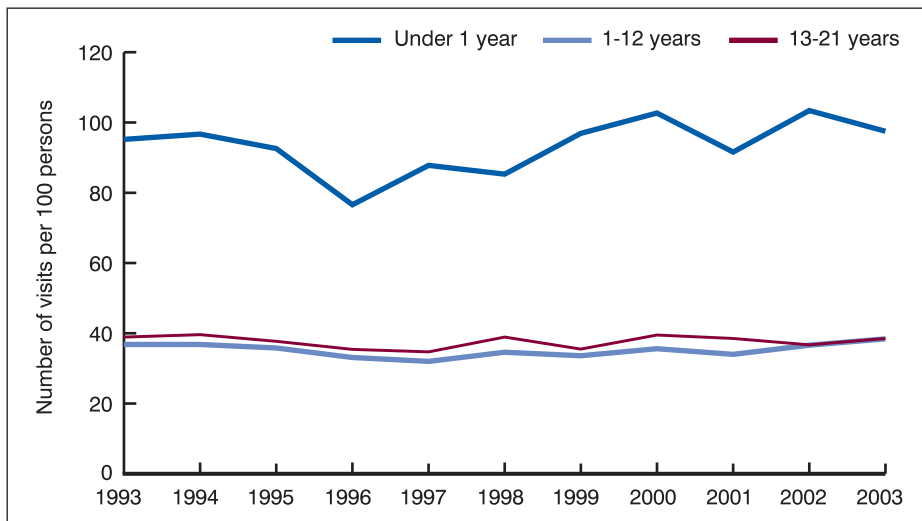


Figure 1. Trends in emergency department visit rates by age: United States, 1993–2003

privacy of individually identifiable health information. Therefore, the NHAMCS implemented additional data collection procedures to help providers assure patient confidentiality. See “Technical Notes” for more information.

## Results

The ED utilization rate rose from 35.5 visits per 100 persons (SE = 1.7) in 1993 to 39.9 visits per 100 persons in 2003 (up 12 percent) and was driven by increased use among adults (figure 1). The annual number of ED visits increased from 90.3 million to 113.9 million visits (up 26 percent). This represents an average increase of 2 million visits per year. On an average

day in 2003, there were more than 312,000 visits to the ED. Because of hospitals either closing their EDs or going out of business, the number of operating EDs decreased by about 12.3 percent between 1993 and 2003 (12), resulting in a larger volume of visits to EDs remaining open. Increases in ED visits can lead to longer waiting times for nonurgent visits (13) and increased occurrence of ambulance diversion (14).

### Patient characteristics

From 1993 to 2003, there was a 9-percent increase in the average age of patients seen in the ED, from 32.9 (SE = 0.5) to 35.9 (SE = 0.5). ED visits by patient’s age, sex, and race are shown in

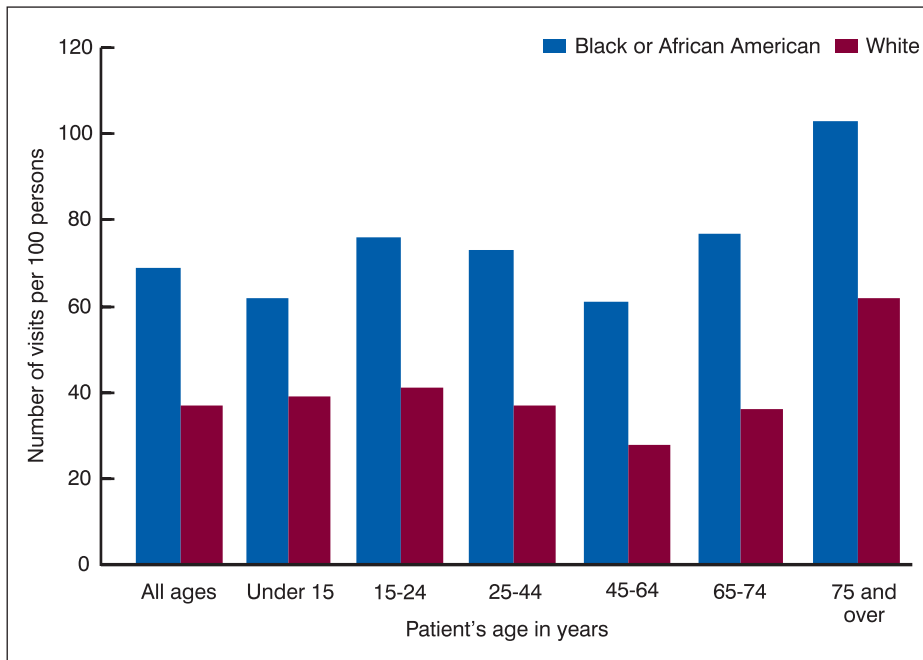
table 1. Visit rates are presented by standard age categories in table 1, showing variation across the age groups. In figure 1, trends in visit rates by more specific age groups are displayed. From 1993 to 2003, increasing trends in visit rates were found for the following age groups: 65 years and over (up by 26 percent); 22–49 years (up by 19 percent); and 50–64 years (up by 15 percent) (figure 1). There was no difference in the visit rate by sex. About 48 percent of the visits being made by females were in the 25–64-year-old age group. The ED utilization rate for black or African American persons was 86 percent higher than for white persons (figure 2). Significant differences were observed by race in all age groups. ED visit rates for Asians were lower than for white persons or black or African American persons. Eleven percent (SE = 1.0) of visits were made by patients whose ethnicity was identified as Hispanic or Latino. Ethnicity was missing for 16.6 percent of records.

*Patient residence*—A relatively small proportion of the ED caseload (2.6 percent [SE = 0.1]) includes

### Differences in emergency department visit rates per 100 civilian persons by age and residence (noninstitutionalized compared with institutionalized)

- Under 1 year (96.2 compared with estimate not reliable)
- 1–12 years (37.3 compared with estimate not reliable)
- 13–21 years (36.6 compared with 32.1)
- 22–49 years (37.5 compared with 24.8)
- 50–64 years (27.4 compared with 80.1)
- 65–74 years (33.6 compared with 164.0)
- 75–84 years (43.1 compared with 123.6)
- 85 years and over (55.4 compared with 124.0)





**Figure 2. Annual rate of emergency department visits by patient's age and race: United States, 2003**

persons living in institutions such as nursing homes or prisons; nevertheless, in 2003, they accounted for 2,913,000 ED visits. The average patient age for these visits was 71.1 years (SE = 1.0) (data not shown). The text box shows visit rates for specific age groups by residence. For community-dwelling (noninstitutionalized) persons, infants had the highest visit rate (96.2 visits per 100 persons). For persons living in nursing homes or other institutions, persons 65–74 years of age had the highest rate (164.0 visits per 100 persons). Patient residence was missing for 5.3 percent of records, implying that the rates presented may be slight underestimates.

**Hospital characteristics**

*Ownership*—About 72 percent of ED visits were made to voluntary nonprofit hospitals (table 1). The percentage of visits made to non-Federal government (i.e., State, county, city) and proprietary hospitals was 18.5 percent and 9.3 percent, respectively.

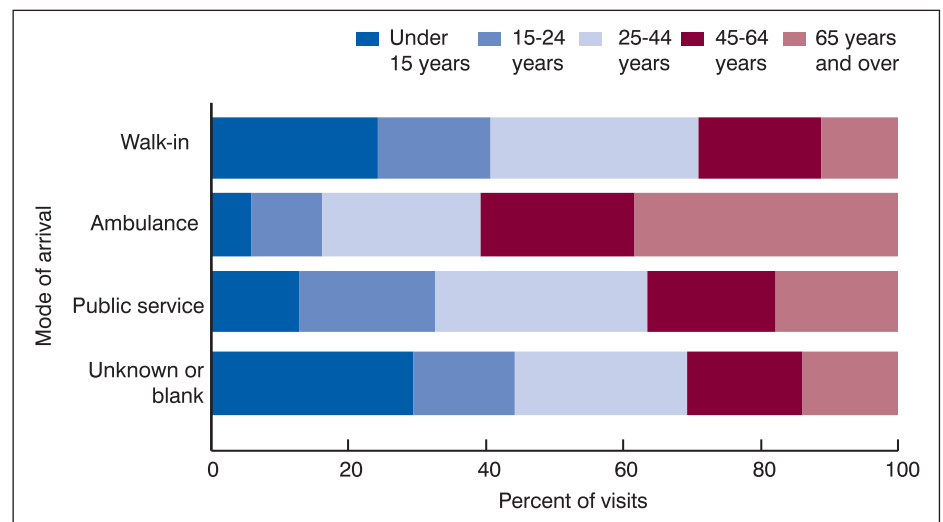
*Geographic location*—Visit rates were higher in the Northeast (44.4 visits per 100 persons) and South (44.0 visits per 100 persons) than in the West (30.5 visits per 100 persons) (table 1). A

higher proportion of ED visits occurred in the South (39.5 percent) than in the three other regions. The percentage of visits in the Midwest (22.1 percent) was greater than in the West (17.5 percent). About four out of five ED visits occurred in MSAs, but the population visit rates were not significantly different in MSAs and non-MSAs. See “Technical Notes” for more detail about MSA visit rates.

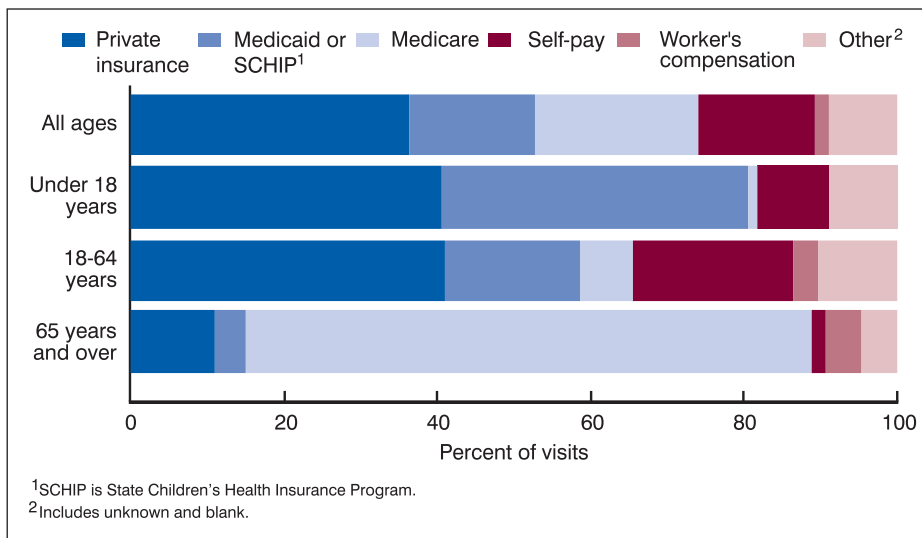
**Visit characteristics**

*Mode of arrival*—At approximately 16 million visits (14.2 percent), the patient arrived at the ED by ambulance (either ground or air) (table 2). Over three-fourths of ED visits were made by patients who arrived at the ED by walking in, and 1.3 percent of arrivals were by public service (e.g., police or social services). For 5.4 percent of visits, mode of arrival was either recorded as “unknown” or left blank. Among persons 75 years of age and over, 40.9 percent arrived by ambulance. About 38 percent of visits (SE = 1.2) with ambulance recorded as the mode of arrival were made by persons 65 years of age and over (figure 3).

*Primary expected source of payment*—Private insurance was the most frequently recorded expected source of payment, accounting for 36.4 percent of ED visits (table 3). Medicaid or State Children’s Health Insurance Program (SCHIP), Medicare, and self-payment (does not include patient copayments and deductibles) accounted for 21.4, 16.3, and 14.1 percent of visits, respectively. About 2 percent of ED visits cited Worker’s Compensation as the primary expected source of payment. Payment mechanism varied by patient age, as shown in figure 4. Private insurance was



**Figure 3. Percent distribution of emergency department visits by patient's age, according to mode of arrival: United States, 2003**

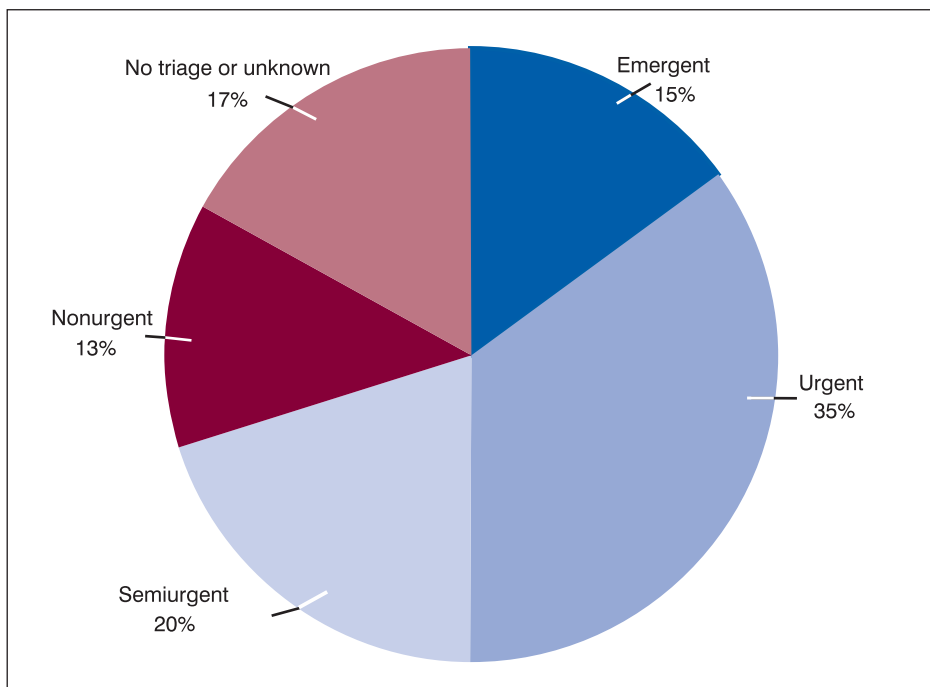


**Figure 4. Percent distribution of emergency department visits by primary expected source of payment, according to patient's age: United States, 2003**

the leading primary expected source of payment reported for persons under 65 years of age, and Medicare was most commonly recorded for persons aged 65 years and over. For 21.0 percent (SE = 1.0) of visits made by persons 18–64 years of age, patients paid for ED services out of pocket. The visit rate for Medicaid patients (81.0 per 100 persons with Medicaid, SE = 3.8) was higher than those with Medicare (52.4 per 100

persons with Medicare, SE = 2.5), no insurance (41.4 per 100 persons with no insurance, SE = 2.4), and private insurance (21.5 per 100 persons with private insurance, SE = 1.0) (data not shown).

*Immediacy with which patient should be seen*—The level of immediacy is assigned upon arrival at the ED by triage staff for EDs that conduct triage. The NHAMCS item

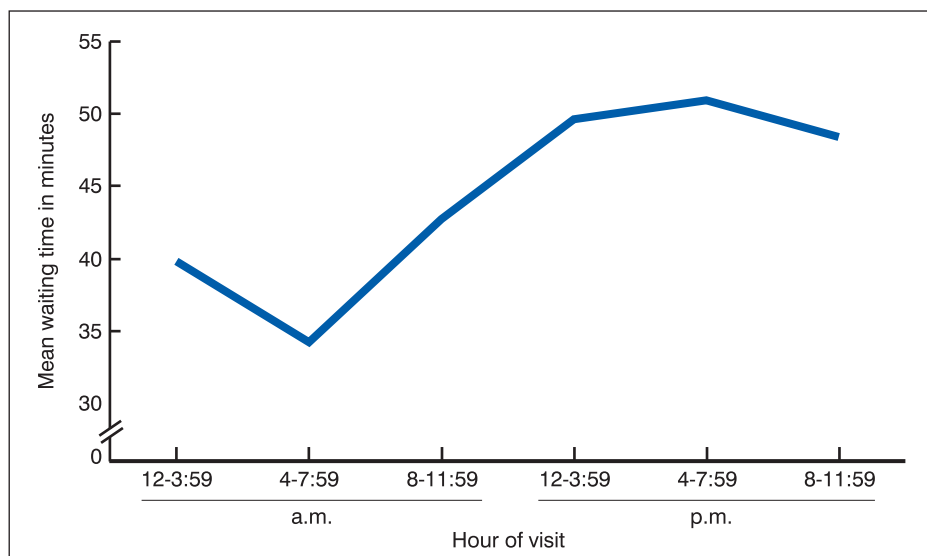


**Figure 5. Percent distribution of emergency department visits by immediacy with which the patient should be seen: United States, 2003**

categorized immediacy into five groups: emergent (less than 15 minutes), urgent (15–60 minutes), semiurgent (1–2 hours), nonurgent (2–24 hours), and “unknown or no triage.” As shown in figure 5, 15 percent of ED visits were classified as emergent, 35 percent were urgent, 20 percent were semiurgent, 13 percent were nonurgent, and for 17 percent, the hospital staff recorded this item as “unknown or no triage.” Data on urgency by patient and visit characteristics are presented in table 4. Persons 75 years of age and over had a higher proportion of emergent visits compared with all other age groups except persons 65–74 years of age. Together, emergent and urgent visits accounted for 50.4 percent of all ED visits. A higher proportion of Medicaid visits were triaged as nonurgent (15.5 percent) compared with Medicare visits (7.6 percent). There were 1,087,000 visits (1.0 percent [SE = 0.06]) made by patients who required immediate attention, defined as visits where the reason for visit was respiratory arrest, cardiac arrest, cardiopulmonary arrest, or unconsciousness; cardiopulmonary resuscitation or endotracheal intubation was performed; or the patient died in the ED (data not shown).

*Arrival and waiting times and duration in the emergency department*—Consistent with previous years, the majority of patients arrived at the ED between 8 a.m. and 10 p.m., although older patients tended to arrive in the late morning and children tended to present in the early evening (15). No differences in arrival time were found for visits triaged as emergent compared with those that were nonurgent, although a higher proportion of older patients was triaged as emergent and arrived in the morning. The similarity of distributions of arrival times for nonurgent and emergent conditions may dispel the belief that less severe cases tend to present to the ED at the convenience of the patient's work schedule.

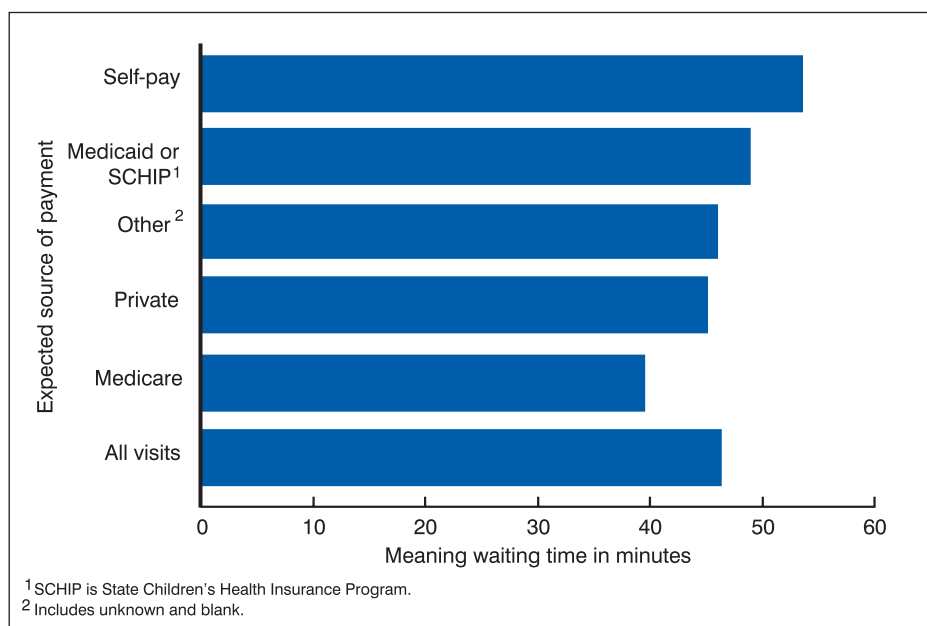
Waiting time to see the physician in the ED was determined by calculating the difference between time of arrival and time seen by the physician. Visits in which the patient did not see a physician were excluded from the



**Figure 6. Mean waiting time to see a physician at emergency department visits by hour of visit: United States, 2003**

analysis. About three-fifths of patients waited less than 1 hour to see a physician (table 5). On average, patients waited 46.5 minutes before seeing a physician (not significantly different from the observed average when last estimated in 2000 (45.1 minutes) (13). Figure 6 shows that mean waiting time varied by arrival time. Patients arriving between 4 a.m. and 8 a.m. waited the least amount of time, and patients arriving between noon and 8 p.m. waited the longest. Waiting time also varied by expected source of payment.

Visits by Medicare patients had a lower mean waiting time (39.7, SE = 1.6) than those that were to be paid out-of-pocket (53.6, SE = 4.3) or by Medicaid (49.0, SE = 2.0) (figure 7). Waiting time was unknown for 17.6 percent of visits. Because Medicare patients are predominantly older and present with more severe conditions, it is expected that waiting times would be shorter compared with other visits by patients with other expected sources of payment. There was no difference between the mean waiting times for patients who



<sup>1</sup> SCHIP is State Children's Health Insurance Program.  
<sup>2</sup> Includes unknown and blank.

**Figure 7. Mean waiting time to see a physician at emergency department visits by expected source of payment: United States, 2003**

paid out-of-pocket compared with those who had private insurance (45.2, SE = 1.7).

Duration in the ED was determined by calculating the difference between time of arrival and time of discharge. The duration for 67.5 percent of ED visits was between 1 and 6 hours (table 5). On average, patients spent 3.2 hours (SE = 0.1) in the emergency department.

*Initial vital signs and orientation*— Since 2001, the NHAMCS has collected the patient's initial vital signs (i.e., temperature, blood pressure, and pulse). The mean temperature for patients complaining of fever was 100.6°F (SE = 0.1) or 38.1°C. At 4.6 percent (SE = 0.3) of illness visits, the patient had a fever of 102°F/38.9°C or higher. When the patient's diagnosis was hypertension, the average measurements for systolic and diastolic blood pressures were 164.1 (SE = 1.8) and 89.5 mmHg (SE = 0.9), respectively. The mean pulse was 92.9 (SE = 0.4) beats per minute (data not shown).

In 2003, a checkbox was added to determine whether the patient was oriented to time, place, and person. The patient was not oriented at 3.7 million visits, or 3.3 percent (SE = 0.3) of all visits (data not shown). The patient was 85 years of age or over at 16.8 percent (SE = 1.7) and was triaged as emergent at 8.8 percent (SE = 0.8) of visits in which the patient was disoriented. Orientation was not indicated for 29.1 percent of all visits.

*Patient's principal reason for visit*—The principal reason for visit is the main complaint, symptom, or reason the patient came to the ED. Up to three reasons for visit were coded according to *A Reason for Visit Classification for Ambulatory Care* (RVC) (16). The RVC is a classification scheme developed by NCHS that has been used for over 20 years to code patients' complaints or reasons for seeking care. It is divided into eight modules or groups of reasons as shown in table 6 and includes all the reasons for which patients see their health care provider. This includes symptoms, followup for prior diagnoses, routine examinations and screening, treatment for conditions and operations, various therapies, and injuries. The

symptom module is further divided into symptoms that refer to specific body systems, such as respiratory or cardiovascular and lymphatic. Each reason is assigned a three- or four-digit classification code (e.g., S260- “Abnormal pulsations and palpitations,” is further detailed to S260.1- “Increased heartbeat,” S260.2- “Decreased heartbeat,” and S260.3- “Irregular heartbeat”).

In 2003, about 73 percent of ED visits were made for reasons classified in the symptom module. Within this module, general symptoms such as fever, fatigue, and pain accounted for 16.2 percent of the total (table 6). Digestive symptoms accounted for 13.3 percent of visits, and musculoskeletal and respiratory symptoms were recorded at 12.9 and 12.0 percent of visits, respectively. The 20 most frequently mentioned principal reasons for visit, representing almost one-half of all visits, are shown in table 7. Stomach and abdominal pain, cramps, and spasms were reported most frequently, accounting for 6.7 percent of all ED visits. Chest pain and fever accounted for 5.1 and 5.0 percent of visits, respectively. Laceration and cuts—upper extremity was the most frequently mentioned reason for visit in the injury module (1.9 percent). It should be noted that estimates differing in ranked order may not be significantly different from each other.

**Alcohol-related visits**—Although there is a separate item on the Patient Record form to indicate whether the visit was alcohol related, sometimes an alcohol-related reason for visit is specified or an alcohol-related diagnosis is rendered without the alcohol item being checked. Using the checkbox alone provides an estimate of about 2,535,000 visits (2.2 percent, SE = 0.1) related to the use of alcohol by the patient or another person or both (data not shown). The alcohol checkbox was marked “unknown” or left blank for 11.8 percent of visits. Using data from the checkbox, any alcohol-related reasons for visit, any alcohol-related external causes of injury, and any alcohol-related diagnoses produced an estimate of 4,003,000 visits (3.5 percent, SE = 0.2). This approach resulted in a

better indication that the visit involved alcohol than using the reason-for-visit module (16), external cause of injury code developed by NCHS, *International Classification of Diseases, 9th Revision Clinical Modification (ICD-9-CM)* (17) diagnosis, or the unedited alcohol item alone. All of the estimates presented below are based on both the alcohol checkbox and the alcohol-related reason for visit, external cause of injury, and diagnosis items. The percent distribution of alcohol-related ED visits by age is as follows: 11.4 percent (SE = 1.1) for adolescents and young adults under 21 years of age; 53.2 percent (SE = 1.8) for persons 21–44 years of age; 27.9 percent (SE = 1.9) for middle-aged persons 45–64 years of age; and 7.5 percent (SE = 1.1) for seniors 65 years of age and over. Among persons under 21 years of age, 1.3 percent (SE = 0.1) of visits were alcohol related compared with 5.2 percent (SE = 0.3) and 5.3 percent (SE = 0.4) of visits made by persons 21–44 years of age and middle-aged adults 45–64 years of age, respectively. Of all alcohol-related visits, 66.7 percent (SE = 1.7) were injury related.

**Work-related visits**—In 2003, the definition of a work-related ED visit was expanded to include illnesses as well as injuries that happened while the patient was engaged in work activities occurring on or off the employer’s premises. In previous reports, estimates of work-related ED visits have been presented for injury visits only. During 2003, there were 3,134,000 work-related ED visits, and 94.0 percent (SE = 1.0) of these were related to injury (data not shown). Persons 18–64 years of age made 96.2 percent (SE = 0.7) of the work-related visits, and 4.9 percent (SE = 0.2) of their ED visits were work related. The work checkbox was marked “unknown” or left blank for 6.7 percent of all visits.

**Prior ED visit**—The survey collected two items designed to measure prior use of the ED—whether the patient had been seen in the ED within the past 72 hours and the episode of care (i.e., whether the sampled visit was for followup versus an initial visit for a problem). At 2.8 percent of visits, the patient had been seen in the ED within the last 72 hours (table 8). This

percentage did not vary by age, race, sex, type of payment, injury or illness, or disposition. For about 89 percent of visits, this ED visit was the initial visit for the patient’s problem, and for 5.5 percent it was a followup visit.

**Primary diagnosis**—Hospital staff was asked to record the primary diagnosis or problem associated with the patient’s most important reason for the current visit and any other significant current diagnoses. Up to three diagnoses were coded according to the ICD-9-CM (17). Displayed in table 9 are ED visits by primary diagnosis, using the major disease categories specified by the ICD-9-CM. Injury and poisoning diagnoses accounted for 25.6 percent of all visits. Symptoms, signs, and ill-defined conditions and diseases of the respiratory system accounted for 18.7 percent and 12.3 percent, respectively. The most frequently reported primary diagnoses for 2003 are shown in table 10. Contusion leads the list (4.2 percent), followed by acute upper respiratory infection, excluding pharyngitis (4.0 percent); abdominal pain (3.9 percent); chest pain (3.7 percent); and open wound, excluding head (3.6 percent). The leading diagnosis by age group was as follows: infants and children (under 13 years of age)—acute respiratory infection, excluding pharyngitis; adolescents and young adults (13–21 years of age)—contusions; adults (22–49 years of age)—abdominal pain; middle-aged persons (50–64 years of age)—chest pain; and seniors (65 years of age and over)—heart disease, excluding ischemic (table 11).

**Injury- or poisoning-related visits**—EDs are the primary health care setting where acute medical problems and severe injuries are treated; therefore, it is helpful to understand the relative burden of illness versus injury cases on overall utilization. Although there is a separate item on the Patient Record form to indicate whether the visit was for an injury or poisoning or adverse effect of medical treatment, sometimes an injury reason for visit is specified or an injury diagnosis is rendered without the injury item being checked. Therefore, the visit is counted as an injury visit and the checkbox is coded to



“yes” if any of the three reasons for visit were in the injury module or any of the three diagnoses were in the injury or poisoning chapter of the ICD-9-CM (17). This provides a better indicator that the visit involves an injury than using the reason-for-visit module, ICD-9-CM injury diagnosis, or unedited injury item alone.

Approximately 40.2 million ED visits were made for injury or poisoning, which represented 35.3 percent of all ED visits. There were 14.1 injury- or poisoning-related visits per 100 persons (table 12). About 70 percent of all injury visits occurred among persons younger than 45 years of age. Persons 15–24 years of age had the highest injury-related visit rate. Males had a higher injury-related visit rate than females overall and for the age groups under 15 years and 25–44 years. The injury-related visit rate for black or African American persons was higher than for white persons, with the overall rate for the former being driven by visits among persons 15–64 years of age. Rates were higher in the Northeast than in the West.

About 6.6 percent (SE = 0.3) of all injury-related visits were alcohol related. Alcohol-related visits were assessed using the alcohol checkbox and alcohol-related reason for visit, cause of injury, and diagnosis items on the Patient Record form. For all injury visits, 7.3 percent (SE = 0.4) were work related.

Intentionality of injury was collected using a checkbox item that indicated that 75.2 percent (SE = 0.8) of injuries were unintentional; 7.9 percent (SE = 0.4) were intentional; and for 17.0 percent (SE = 0.8) of visits, intent was unknown (data not shown). Of the intentional injuries, 52.9 percent were the result of an assault, and 47.1 percent were self-inflicted.

Table 13 shows ED visits by the intent and mechanism of the first-listed external cause-of-injury codes (E-codes). Up to three external causes of injury were coded according to the *Supplementary Classification of External Causes of Injury and Poisoning* in the ICD-9-CM (17). External cause was not provided for 15.7 percent of injury visits. About 70 percent of injury-related visits were the result of an unintentional

injury. The reader should keep in mind that the results regarding intentionality of the injury in table 13 will vary from those obtained by using the checkbox. Intentionality of the injury, as described in the previous paragraph, is based on responses to the checkbox item on the Patient Record form, rather than on the ICD-9-CM groupings used in table 13. Discrepancies may arise in respondent interpretation of intent. For example, in some cases, hospital staff checked the “assault” category for dog bite injuries. However, dog bites are an unintentional injury based on the ICD-9-CM E-codes. Also, the exact cause of injury is missing more frequently than the checkbox entry.

Unintentional injuries due to falls (19.9 percent), striking against or being struck accidentally by objects or persons (10.5 percent), and motor vehicle traffic-related injuries (10.4 percent) accounted for the largest proportion of injury-related ED visits. Four percent of injury-related ED visits were the result of assaults. An unarmed fight or brawl was the leading reason for assault-related injuries (2.6 percent). Self-inflicted injuries resulted in 438,000 ED visits (1.1 percent), with poisoning being the most frequent cause (0.8 percent). Approximately 1.7 million ED visits were for adverse effects of medical treatment and represented 4.2 percent of injury- or poisoning-related ED visits. This included adverse drug reactions and complications from surgical and medical procedures.

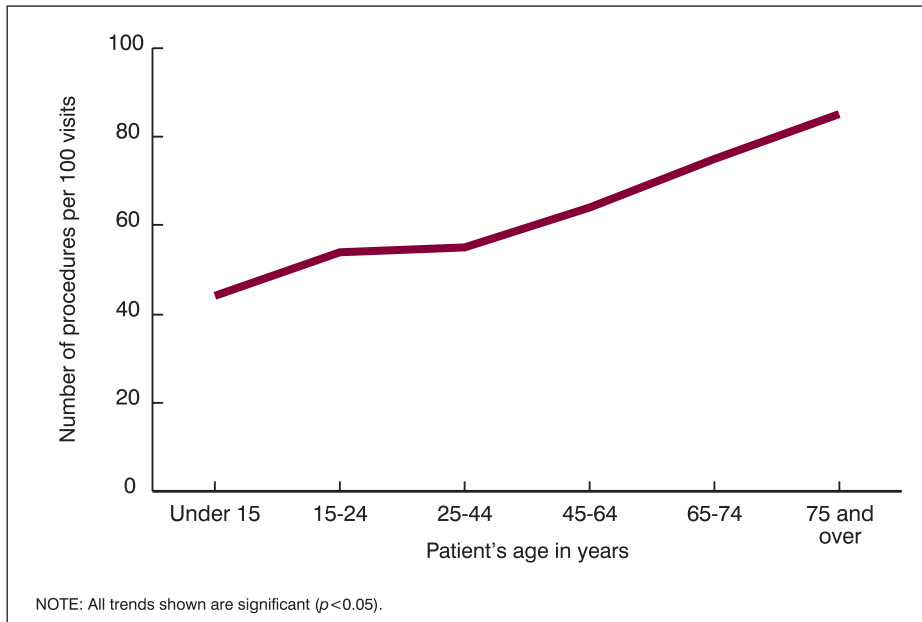
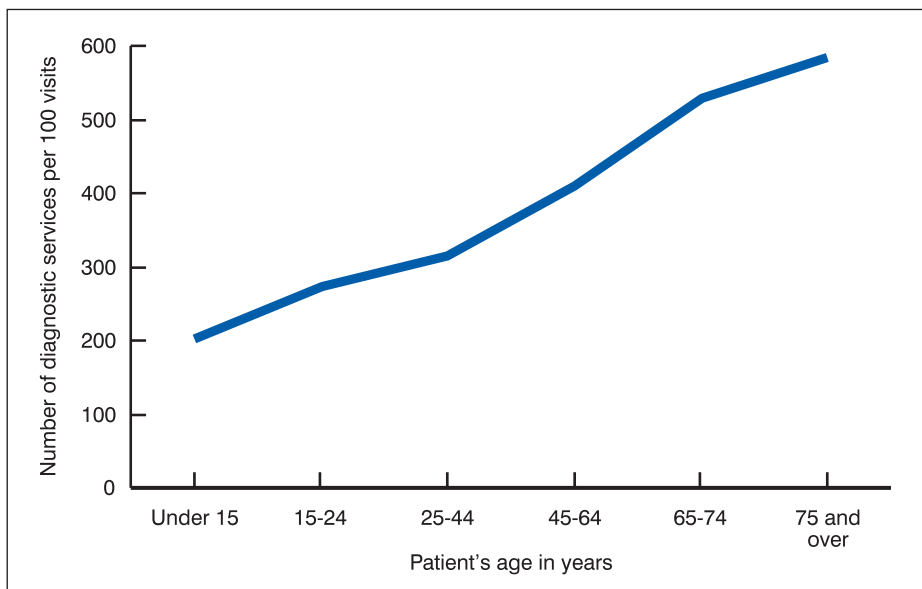
The Barell Injury Diagnosis Matrix: Classification of Region of Body and Nature of the Injury was used in table 14 to show the distribution of injury-related visits by body site of primary diagnosis (18). A detailed description of the ICD-9-CM codes used to create the body site of primary diagnosis reclassification coding is provided in the “Technical Notes.” The most commonly mentioned body site was hand, wrist, and fingers (11.7 percent), followed by lower leg and ankle (4.7 percent) and face (4.6 percent).

*Diagnostic and screening services*—Diagnostic and screening services were ordered or provided by hospital staff at 89.7 percent of ED

visits, up from 86.8 percent in 2002 (table 15). Frequently mentioned services included medical screening exam (68.5 percent), complete blood count (CBC) (33.0 percent), pulse oximetry (23.4 percent), chest x ray (19.3 percent), other blood tests (19.2 percent), and urinalysis (17.7 percent). Imaging was provided at 42.9 percent of visits. Blood tests and cultures were ordered at 36.2 percent and 9.7 percent of visits, respectively. Note that for items related to diagnostic and screening services, procedures, providers seen, and disposition, hospital staff was asked to check all of the applicable categories for each item. Therefore, multiple responses could be coded for each visit. About 9 percent of ED visits had no diagnostic or screening services. Figure 8 shows that the rate of diagnostic and screening services ordered or provided at ED visits increased with age.

*Procedures*—Procedures were provided at 45.4 percent of ED visits. For visits with procedures, 83.8 percent had only one procedure recorded. The most frequently mentioned procedures were the administration of intravenous fluids (21.8 percent), wound care (9.8 percent), and orthopedic care (5.4 percent) (table 16). Figure 8 shows that the rate of procedures provided at ED visits increased with age. Mentions of procedures were missing for 6.7 percent of visits.

*Medication therapy*—Hospital staff was instructed to record all new or continued medications ordered, supplied, or administered at the visit. This included prescription and nonprescription preparations, immunizations, desensitizing agents, and anesthetics. Starting in 2003, the NHAMCS collected up to eight medications (as opposed to six). In this survey, recorded medications are referred to as drug mentions and are coded according to a classification system developed at NCHS. A report describing the method and instruments used to collect and process drug information is available (19). As used in the NHAMCS, the term “drug” is interchangeable with the term “medication.” The term “prescribing” is used broadly to mean ordering or providing any medication, whether



**Figure 8. Diagnostic service and procedure rates at emergency department visits by age: United States, 2003**

prescription or over-the-counter. Visits with one or more drug mentions are termed “drug visits” in the NHAMCS.

Medications were used at 77.3 percent (SE = 0.8) of all ED visits, up by 4 percent since 1993 (table 17). There was an average of 1.9 drug mentions per ED visit. For visits where medications were mentioned, there was an average of 2.4 drugs provided per visit. About 2 percent of visits had as many as eight or more drugs prescribed. There were 212.2 million drug mentions at ED visits during 2003 (table 18 footnote).

Drug mentions are shown by therapeutic subclasses in table 18. This classification is based on the four-digit therapeutic categories used in the *National Drug Code Directory*, 1995 edition (20). Drugs may have more than one therapeutic application, and in the NHAMCS, up to three therapeutic drug classes are recorded for each drug. Prior to 2002, a drug was classified under its primary therapeutic use and data were presented for two-digit therapeutic classification codes. Beginning in 2002, drug data are being shown for up to three therapeutic subclassifications at the

four-digit level. The leading drug subclasses in 2003 were narcotic analgesics (14.1 percent) and nonsteroidal anti-inflammatory agents (12.1 percent). The 20 most frequently used generic substances for 2003 are shown in table 19. Drug products containing more than one ingredient (combination products) are included in the data for each ingredient. For example, acetaminophen with codeine is included in both the count for acetaminophen and the count for codeine. The most frequently occurring generic substances in drugs mentioned at ED visits were acetaminophen, ibuprofen, promethazine, and ketorolac tromethamine.

The 20 most frequently mentioned medications are shown in table 20 according to the name written on the ED Patient Record form by hospital staff. This could be a brand name, generic name, or therapeutic effect. Tylenol, which is classified as a nonnarcotic analgesic and antipyretic, was the drug most frequently mentioned, accounting for 5.2 percent of all ED drug mentions. Motrin, which is classified as an NSAID and anti-arthritic, was listed for 4.6 percent of ED drug mentions. Other frequent drug mentions were Phenergan (4.0 percent), Vicodin (3.3 percent), and Toradol (2.9 percent).

*Providers seen*—Staff was asked to check all of the providers seen during the visit. Multiple responses could be coded per visit. A physician was seen at 92.4 percent of visits, and a registered nurse attended the patient at 90.5 percent of ED visits (table 21). A resident and/or intern was seen at 8.4 percent of visits. For 8.7 percent of visits, a physician other than a staff physician or a resident and/or intern was seen. At 7.6 percent of visits, the patient was not attended by a physician. The provider item was not checked for 0.9 percent of visits.

*Visit disposition*—Staff was asked to record visit disposition and instructed that multiple responses could be coded for this item. Forty-seven percent of ED visits resulted in a referral to another physician or clinic for followup (table 22). For 41.3 percent of visits, patients were told to return to the ED if

needed or by appointment. Patients were told to return to the referring physician at 13.9 percent of visits. About 14 percent of ED visits resulted in hospital admission. This included direct admission to the intensive care unit, critical care unit, or coronary care unit, which occurred in about 1 out of 10 admissions. Patients were admitted to a 23-hour observation unit at less than 1 percent of visits. For 6.3 percent of visits, no followup was planned. An increasing trend in this visit disposition was previously reported from 1992 through 1999 (9), and it continued through 2001 (up by 60.0 percent), when it peaked. For the first time, in 2003 the proportion of visits with this disposition decreased to the 1992 level. The patient left before being seen by a physician and against medical advice at 1.7 and 1.0 percent of visits, respectively. At less than 1 percent of visits, the patient was referred to an alcohol or drug treatment program or advised to return to nonphysician treatment or a support service.

### Hospital ED-level estimates

In 2003, about 55 percent (SE = 2.3) of all hospital EDs had annual visit volumes less than 20,000 visits, and 11.7 percent (SE = 1.3) had volumes greater than 50,000 visits (data not shown). Hospital ED-level estimates for 24-hour EDs are shown in [table 23](#) by size of ED, as measured by annual visit volume (small, medium, and large). Approximately 58 percent of all hospital EDs were located in MSAs ([table 23](#)), but they represented 81.5 percent of the annual ED encounters ([table 1](#)). Although EDs in MSAs tended to have a larger volume of visits than in non-MSAs, the ED utilization rate per 100 persons did not vary by the MSA status of the hospital ([table 1](#)). About 31.5 percent of EDs, compared with 42.4 percent of visits, were in hospitals affiliated with medical schools. Approximately 47 percent of hospitals with 24-hour EDs had a three-level nursing triage system, and 19.6 percent had four or five levels each. Board-certified emergency medicine (EM) specialists were available 24 hours a day and 7 days a week in the majority of

EDs (63.5 percent), and pediatric EM specialists were only found in 18.1 percent of EDs. About 45 percent of all hospitals with 24-hour EDs also had OPD clinics offering physician services as opposed to OPDs that only offered ancillary services such as radiology, laboratory, and so on.

Forthcoming reports highlight findings from the special supplement surveys conducted during 2003 on topics ranging from ambulance diversions to preparedness of the hospitals to treat bioterrorism and mass casualty incidents and to treat pediatric emergencies. Additional information about ED utilization is available from the NCHS Ambulatory Health Care Web site: [www.cdc.gov/nchs/about/major/ahcd/ahcd1.htm](http://www.cdc.gov/nchs/about/major/ahcd/ahcd1.htm).

Individual-year reports and public-use data files are available for download from the Web site. Data from the 2003 NHAMCS will also be available on CD-ROM. These and other products can be obtained by contacting the NCHS Ambulatory Care Statistics Branch at (301) 458-4600. Queries regarding NHAMCS data may be sent to NCHS at [nchsquery@cdc.gov](mailto:nchsquery@cdc.gov).

### References

1. Burt CW, Schappert SM. Ambulatory care visits to physician offices, hospital outpatient departments, and emergency departments: United States: 1999–2000. National Center for Health Statistics. *Vital Health Stat* 13(157). 2004.
2. Asplin BR, Magid DJ, Rhodes KV, et al. A conceptual model of emergency department crowding. *Ann Emerg Med*. 42:173–80. 2003.
3. Yamane K. Hospital emergency departments—crowded conditions vary among hospitals and communities. GAO-03-460. Washington. U.S. General Accounting Office. 2003.
4. National Center for Health Statistics. Health, United States, 2005 With Chartbook on Trends in the Health of Americans. Hyattsville, MD. 2005. In preparation.
5. Fuda KK. Recent analysis of Massachusetts emergency department data. Presented at the National Association of Health Data

- Organizations Annual Meeting. Washington. 2004.
6. Zuckerman S, Shen Y. Characteristics of occasional and frequent emergency department users. *Medical Care*. 42:176–82. 2004.
7. Middleton KR, Hing ES. National Hospital Ambulatory Medical Care Survey: 2003 outpatient department summary. Advance data from vital and health statistics. Hyattsville, MD: National Center for Health Statistics. 2005. In preparation.
8. Hing ES, Cherry D, Woodwell DA. National Ambulatory Medical Care Survey: 2003 summary. Advance data from vital and health statistics. Hyattsville, MD: National Center for Health Statistics. 2005. In preparation.
9. Burt CW, McCaig LF. Trends in hospital emergency department utilization: United States, 1992–99. National Center for Health Statistics. *Vital Health Stat* 13(150). 2001.
10. McCaig LF, McLemore T. Plan and operation of the National Hospital Ambulatory Medical Care Survey. National Center for Health Statistics. *Vital Health Stat* 1(34). 1994.
11. Research Triangle Institute (2004). SUDAAN (Release 9.0) [Computer Software]. Research Triangle Park, NC: Research Triangle Institute.
12. American Hospital Association (personal communication—Scott Bates). 2003.
13. McCaig LF, Ly N. National Hospital Ambulatory Medical Care Survey: 2000 emergency department summary. Advance data from vital and health statistics; no 326. Hyattsville, MD: National Center for Health Statistics. 2002.
14. Schafermeyer RW, Asplin BR. Hospital and emergency department overcrowding in the United States. *Emerg Med*. 15:22–27. 2003.
15. McCaig LF, Burt CW. National Hospital Ambulatory Medical Care Survey: 2001 emergency department summary. Advance data from vital and health statistics; no 335. Hyattsville, Maryland: National Center for Health Statistics. 2003.
16. Schneider D, Appleton L, McLemore T. A reason for visit classification for ambulatory care. National Center for Health Statistics. *Vital and Health Stat* 2(78). 1979.
17. Public Health Service and Health Care Financing Administration. International Classification of

- Diseases, 9th Revision, Clinical Modification, 6th ed., Washington. Public Health Service. 1998.
18. [www.cdc.gov/nchs/about/otheract/ice/barellmatrix.htm](http://www.cdc.gov/nchs/about/otheract/ice/barellmatrix.htm).
  19. Koch H, Campbell W. The collection and processing of drug information: National Ambulatory Medical Care Survey, United States, 1980. National Center for Health Statistics. Vital Health Stat 2(90). 1982.
  20. Food and Drug Administration. National Drug Code Directory, 1995 edition. Washington. Public Health Service. 1995.
  21. National Center for Health Statistics. Public-Use Data File Documentation. 2003 National Hospital Ambulatory Medical Care Survey. Hyattsville, MD. 2005. In preparation.
  22. Office of Management and Budget (1997), Statistical Policy Directive no. 15, Race and Ethnic Standards for Federal Statistics and Administrative Reporting. Federal Register; Part II:36873–946, July 7, 1997.



**Table 1. Number, percent distribution, and annual rate of emergency department visits with corresponding standard errors, by selected patient and hospital characteristics: United States, 2003**

Selected patient and hospital characteristics	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent	Number of visits per 100 persons per year <sup>1,2</sup>	Standard error of rate
All visits . . . . .	113,903	4,094	100.0	...	39.9	1.4
Patient characteristics						
Age:						
Under 15 years . . . . .	24,733	1,521	21.7	0.9	40.8	2.5
15–24 years . . . . .	17,731	703	15.6	0.3	44.2	1.8
25–44 years . . . . .	32,906	1,274	28.9	0.5	40.0	1.5
45–64 years . . . . .	20,992	824	18.4	0.4	30.8	1.2
65–74 years . . . . .	7,153	344	6.3	0.2	39.5	1.9
75 years and over . . . . .	10,389	476	9.1	0.3	64.2	2.9
Sex and age:						
Female . . . . .	60,995	2,212	53.5	0.4	41.8	1.5
Under 15 years . . . . .	11,209	713	9.8	0.5	37.8	2.4
15–24 years . . . . .	10,558	447	9.3	0.2	53.1	2.2
25–44 years . . . . .	17,976	750	15.8	0.4	43.2	1.8
45–64 years . . . . .	11,220	466	9.9	0.2	31.9	1.3
65–74 years . . . . .	3,811	211	3.3	0.1	38.7	2.1
75 years and over . . . . .	6,220	285	5.5	0.2	62.7	2.9
Male . . . . .	52,908	1,961	46.5	0.4	37.9	1.4
Under 15 years . . . . .	13,524	845	11.9	0.5	43.6	2.7
15–24 years . . . . .	7,172	294	6.3	0.2	35.4	1.5
25–44 years . . . . .	14,929	625	13.1	0.3	36.8	1.5
45–64 years . . . . .	9,772	399	8.6	0.2	29.5	1.2
65–74 years . . . . .	3,342	177	2.9	0.1	40.6	2.2
75 years and over . . . . .	4,169	235	3.7	0.2	66.5	3.7
Race and age: <sup>3</sup>						
White . . . . .	85,833	3,642	75.4	1.3	37.2	1.6
Under 15 years . . . . .	17,977	1,226	15.8	0.8	38.8	2.6
15–24 years . . . . .	12,852	608	11.3	0.3	41.1	1.9
25–44 years . . . . .	24,312	1,087	21.3	0.5	37.0	1.7
45–64 years . . . . .	16,050	730	14.1	0.4	28.1	1.3
65–74 years . . . . .	5,692	292	5.0	0.2	36.4	1.9
75 years and over . . . . .	8,950	446	7.9	0.3	62.0	3.1
Black or African American . . . . .	24,740	1,578	21.7	1.3	69.3	4.4
Under 15 years . . . . .	5,855	600	5.1	0.5	62.0	6.3
15–24 years . . . . .	4,385	353	3.9	0.3	75.7	6.1
25–44 years . . . . .	7,576	487	6.7	0.4	73.4	4.7
45–64 years . . . . .	4,425	319	3.9	0.3	60.5	4.4
65–74 years . . . . .	1,265	143	1.1	0.1	76.7	8.7
75 years and over . . . . .	1,232	121	1.1	0.1	102.9	10.1
Asian . . . . .	2,030	246	1.8	0.2	17.1	2.1
Native Hawaiian or other Pacific Islander . . . . .	*457	146	*0.4	0.1	*94.0	30.1
American Indian or Alaska Native . . . . .	682	171	0.6	0.1	24.9	6.2
Multiple races . . . . .	162	41	0.1	0.0	3.8	1.0

See footnotes at end of table.

**Table 1. Number, percent distribution, and annual rate of emergency department visits with corresponding standard errors, by selected patient and hospital characteristics: United States, 2003—Con.**

Selected patient and hospital characteristics	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent	Number of visits per 100 persons per year <sup>1,2</sup>	Standard error of rate
Hospital characteristics						
Ownership:						
Voluntary . . . . .	82,170	4,419	72.1	2.5	28.8	1.5
Government . . . . .	21,116	2,541	18.5	2.2	7.4	0.9
Proprietary . . . . .	10,617	1,699	9.3	1.5	3.7	0.6
Geographic region:						
Northeast . . . . .	23,814	1,648	20.9	1.4	44.4	3.1
Midwest . . . . .	25,205	1,697	22.1	1.4	39.2	2.6
South . . . . .	44,958	2,717	39.5	1.8	44.0	2.7
West . . . . .	19,926	2,115	17.5	1.6	30.5	3.2
Metropolitan status:						
MSA <sup>4</sup> . . . . .	92,847	4,106	81.5	2.0	38.9	1.7
Non-MSA <sup>4</sup> . . . . .	21,056	2,370	18.5	2.0	44.7	5.0

. . . Category not applicable.

\* Figure does not meet standard of reliability or precision.

0.0 Quantity more than zero but less than 0.05.

<sup>1</sup>Visit rates for age, sex, race, and region are based on the July 1, 2003, set of estimates of the civilian noninstitutional population of the United States as developed by the Population Division, U.S. Census Bureau. These population estimates reflect Census 2000 data and are available from the Census Bureau. See "Technical Notes" for more details.

<sup>2</sup>Population estimates of metropolitan statistical area status are based on data from the 2003 National Health Interview Survey, National Center for Health Statistics, adjusted to the U.S. Census Bureau definition of core-based statistical areas as of December 2003. See [www.census.gov/population/www/estimates/metrodef.html](http://www.census.gov/population/www/estimates/metrodef.html) for more about metropolitan statistical area definitions.

<sup>3</sup>The race groups, white, black or African American, Asian, Native Hawaiian or other Pacific Islander, American Indian or Alaska Native, and multiple races, include persons of Hispanic and not Hispanic origin. Persons of Hispanic origin may be of any race. Starting with data year 1999, race-specific estimates have been tabulated according to 1997 Standards for Federal Data on Race and Ethnicity and are not strictly comparable with estimates for earlier years. However, the percent of visit records with multiple races indicated is small and lower than what is typically found for self-reported race. See "Technical Notes" for more details.

<sup>4</sup>MSA is metropolitan statistical area.

NOTE: Numbers may not add to totals because of rounding.

**Table 2. Percent distribution of emergency department visits with corresponding standard errors by patient's mode of arrival, according to patient's age: United States, 2003**

Patient's age	Number of visits in thousands	Total	Patient's mode of arrival			
			Walk-in	Ambulance	Public service	Unknown or blank
All visits . . . . .	113,903	100.0	79.1	14.2	1.3	5.4
Percent distribution						
Age						
Under 15 years . . . . .	24,733	100.0	88.2	3.8	*0.8	7.2
15–24 years . . . . .	17,731	100.0	83.8	9.5	1.7	5.1
25–44 years . . . . .	32,906	100.0	82.6	11.3	1.4	4.7
45–64 years . . . . .	20,992	100.0	76.5	17.3	1.3	4.9
65–74 years . . . . .	7,153	100.0	66.3	27.5	1.3	4.9
75 years and over . . . . .	10,389	100.0	52.8	40.9	*1.7	4.7
Standard error of percent						
All visits . . . . .	...	...	0.9	0.5	0.2	0.8
Age						
Under 15 years . . . . .	...	...	1.8	0.3	0.2	1.7
15–24 years . . . . .	...	...	1.1	0.6	0.2	0.9
25–44 years . . . . .	...	...	0.9	0.5	0.2	0.7
45–64 years . . . . .	...	...	0.9	0.7	0.3	0.7
65–74 years . . . . .	...	...	1.4	1.4	0.3	0.9
75 years and over . . . . .	...	...	1.4	1.4	0.5	0.6

... Category not applicable.

\* Figure does not meet standard of reliability or precision.

NOTE: Numbers may not add to totals because of rounding.

**Table 3. Number and percent distribution of emergency department visits with corresponding standard errors, by primary expected source of payment: United States, 2003**

Primary expected source of payment	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits . . . . .	113,903	4,094	100.0	...
Private insurance . . . . .	41,461	1,916	36.4	0.9
Medicaid or SCHIP <sup>1</sup> . . . . .	24,415	1,166	21.4	0.7
Medicare . . . . .	18,525	753	16.3	0.4
Self-pay . . . . .	16,066	849	14.1	0.6
Worker's compensation . . . . .	2,130	164	1.9	0.1
No charge . . . . .	*1,113	423	*1.0	0.4
Other . . . . .	2,800	367	2.5	0.3
Unknown or blank . . . . .	7,392	1,075	6.5	0.9

... Category not applicable.

\* Figure does not meet standard of reliability or precision.

<sup>1</sup>SCHIP is State Children's Health Insurance Program.

NOTE: Numbers may not add to totals because of rounding.

**Table 4. Percent distribution of emergency department visits with corresponding standard errors by immediacy with which patient should be seen, according to selected patient and visit characteristics: United States, 2003**

Patient and visit characteristics	Number of visits in thousands	Total	Percent distribution					Standard error of percent				
			Emergent <sup>1</sup>	Urgent <sup>2</sup>	Semiurgent <sup>3</sup>	Nonurgent <sup>4</sup>	Unknown/ no triage <sup>5</sup>	Emergent <sup>1</sup>	Urgent <sup>2</sup>	Semiurgent <sup>3</sup>	Nonurgent <sup>4</sup>	Unknown/ no triage <sup>5</sup>
All visits . . . . .	113,903	100.0	15.2	35.2	20.0	12.8	16.7	1.1	1.7	1.3	1.4	2.0
Age												
Under 15 years . . . . .	24,733	100.0	10.8	33.7	22.3	15.5	17.7	1.4	2.4	1.7	2.2	2.71
15–24 years . . . . .	17,731	100.0	11.9	34.6	22.0	15.1	16.5	1.1	1.9	1.7	1.6	2.12
25–44 years . . . . .	32,906	100.0	13.3	35.8	20.9	13.8	16.2	1.0	1.8	1.4	1.5	1.94
45–64 years . . . . .	20,992	100.0	17.7	35.7	18.3	11.5	16.9	1.2	1.8	1.4	1.3	2.06
65–74 years . . . . .	7,153	100.0	24.5	36.3	15.3	7.2	16.6	1.6	1.8	1.3	1.1	2.1
75 years and over . . . . .	10,389	100.0	25.5	36.5	15.5	5.9	16.7	1.7	1.7	1.3	1.1	1.9
Sex												
Female . . . . .	60,995	100.0	14.6	35.9	20.1	13.0	16.4	1.0	1.8	1.3	1.5	1.9
Male . . . . .	52,908	100.0	15.8	34.5	20.0	12.5	17.2	1.2	1.7	1.3	1.3	2.0
Race <sup>6</sup>												
White . . . . .	85,833	100.0	15.4	35.7	19.9	11.9	17.0	1.1	1.9	1.5	1.3	2.1
Black or African American . . . . .	24,740	100.0	13.8	33.7	21.0	16.5	15.0	1.6	2.2	1.9	2.4	2.2
Other . . . . .	3,331	100.0	18.6	34.8	17.1	7.6	22.0	3.1	2.8	2.9	1.2	4.9
Expected source of payment												
Private insurance . . . . .	41,461	100.0	14.7	35.9	21.4	12.2	15.8	1.2	1.7	1.5	1.3	2.3
Medicaid or SCHIP <sup>7</sup> . . . . .	24,415	100.0	12.1	34.7	21.8	15.5	15.9	1.2	2.3	1.8	2.1	2.2
Medicare . . . . .	18,525	100.0	23.7	36.7	16.1	7.6	15.8	1.5	1.7	1.3	1.0	1.9
Self-pay . . . . .	16,066	100.0	13.1	35.9	21.5	15.8	13.6	1.1	2.2	1.7	1.8	2.0
Worker's compensation . . . . .	2,130	100.0	11.0	30.8	25.7	15.6	17.0	2.0	2.8	3.2	2.8	3.2
No charge . . . . .	*1,113	100.0	*8.6	*20.7	16.1	48.5	...	3.5	7.4	4.2	14.3	...
Other . . . . .	2,800	100.0	20.8	36.1	16.5	11.7	14.8	4.4	3.7	2.3	2.2	4.2
Unknown or blank . . . . .	7,392	100.0	11.1	31.4	13.3	7.7	36.6	1.3	6.0	1.9	1.5	6.8

... Category not applicable.

\* Figure does not meet standard of reliability or precision.

<sup>1</sup>A visit in which the patient should be seen in less than 15 minutes.<sup>2</sup>A visit in which the patient should be seen within 15–60 minutes.<sup>3</sup>A visit in which the patient should be seen within 61–120 minutes.<sup>4</sup>A visit in which the patient should be seen within 121 minutes–24 hours.<sup>5</sup>A visit in which there is no mention of an immediacy rating or triage level in the medical record or the hospital did not perform triage or the patient was dead on arrival.<sup>6</sup>Other race includes visits by Asian, Native Hawaiian or other Pacific Islander, American Indian or Alaska Native, and multiple races. All race categories include visits by persons of Hispanic and not Hispanic origin. Persons of Hispanic origin may be of any race. Starting with data year 1999, race-specific estimates have been tabulated according to 1997 Standards for Federal Data on Race and Ethnicity and are not strictly comparable with estimates for earlier years. However, the percent of visit records with multiple races indicated is small and lower than what is typically found for self-reported race. See "Technical Notes" for more details.<sup>7</sup>SCHIP is State Children's Health Insurance Program.

NOTE: Numbers may not add to totals because of rounding.



**Table 5. Number and percent distribution of emergency department visits with corresponding standard errors, by time spent waiting to see a physician and time spent in the emergency department: United States, 2003**

Visit characteristic	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits . . . . .	106,633	3,811	100.0	...
Time spent waiting to see a physician <sup>1</sup>				
Less than 15 minutes . . . . .	22,311	1,486	20.9	1.2
15–59 minutes . . . . .	42,918	2,036	40.2	1.2
1–2 hours . . . . .	14,612	806	13.7	0.6
2–3 hours . . . . .	4,720	345	4.4	0.3
3–4 hours . . . . .	1,720	179	1.6	0.2
4–6 hours . . . . .	1,486	213	1.4	0.2
6 hours or more . . . . .	121	30	0.1	0.0
Blank . . . . .	18,745	2,113	17.6	1.9
Time spent in the emergency department				
Less than 1 hour . . . . .	15,978	939	14.0	0.7
1–2 hours . . . . .	28,656	1,203	25.2	0.5
2–4 hours . . . . .	35,171	1,518	30.9	0.6
4–6 hours . . . . .	13,039	735	11.4	0.4
6–10 hours . . . . .	6,456	413	5.7	0.3
10–14 hours . . . . .	1,565	119	1.4	0.1
14–23 hours . . . . .	1,433	137	1.3	0.1
23–24 hours . . . . .	138	31	0.1	0.0
24 hours or more . . . . .	729	147	0.6	0.1
Blank . . . . .	10,738	1,063	9.4	0.9

... Category not applicable.

0.0 Quantity more than zero but less than 0.05.

<sup>1</sup>Visits where a physician was not seen were excluded.

NOTE: Numbers may not add to totals because of rounding.

**Table 6. Number and percent distribution of emergency department visits with corresponding standard errors, by patient's principal reason for visit module: United States, 2003**

Principal reason for visit module and RVC code <sup>1</sup>	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits . . . . .	113,903	4,094	100.0	...
Symptom module. . . . . S001–S999	83,511	3,057	73.3	0.5
General symptoms . . . . . S001–S099	18,473	757	16.2	0.4
Symptoms referable to psychological or mental disorders . . . . . S100–S199	2,450	174	2.2	0.1
Symptoms referable to the nervous system (excluding sense organs) . . . . . S200–S259	6,857	302	6.0	0.2
Symptoms referable to the cardiovascular or lymphatic system . . . . . S260–S299	928	86	0.8	0.1
Symptoms referable to the eyes and ears . . . . . S300–S399	3,994	258	3.5	0.2
Symptoms referable to the respiratory system . . . . . S400–S499	13,665	597	12.0	0.3
Symptoms referable to the digestive system . . . . . S500–S639	15,195	669	13.3	0.3
Symptoms referable to the genitourinary system . . . . . S640–S829	4,093	242	3.6	0.2
Symptoms referable to the skin, hair, and nails . . . . . S830–S899	3,204	199	2.8	0.1
Symptoms referable to the musculoskeletal system . . . . . S900–S999	14,652	613	12.9	0.3
Disease module . . . . . D001–D999	4,258	235	3.7	0.2
Diagnostic, screening, and preventive module . . . . . X100–X599	781	72	0.7	0.1
Treatment module . . . . . T100–T899	2,722	201	2.4	0.2
Injuries and adverse effects module . . . . . J001–J999	21,530	919	18.9	0.4
Test results module . . . . . R100–R700	315	42	0.3	0.0
Administrative module . . . . . A100–A140	152	31	0.1	0.0
Other <sup>2</sup> . . . . . U990–U999	635	93	0.6	0.1

... Category not applicable.

0.0 Quantity more than zero but less than 0.05.

<sup>1</sup>Based on *A Reason for Visit Classification for Ambulatory Care (RVC)* (16).<sup>2</sup>Includes problems and complaints not elsewhere classified, entries of "none," blanks, and illegible entries.

NOTE: Numbers may not add to totals because of rounding.

**Table 7. Number and percent distribution of emergency department visits with corresponding standard errors, by the 20 leading principal reasons for visit by patient: United States, 2003**

Principal reason for visit and RVC code <sup>1</sup>	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits . . . . .	113,903	4,094	100.0	. . .
Stomach pain, cramps, and spasms . . . . . S545	7,583	376	6.7	0.2
Chest pain and related symptoms (not referable to body system) . . . . . S050	5,838	259	5.1	0.2
Fever . . . . . S010	5,732	441	5.0	0.3
Cough . . . . . S440	3,597	223	3.2	0.1
Headache, pain in head . . . . . S210	3,140	167	2.8	0.1
Shortness of breath . . . . . S415	2,984	210	2.6	0.2
Back symptoms . . . . . S905	2,696	146	2.4	0.1
Vomiting . . . . . S530	2,369	180	2.1	0.1
Symptoms referable to throat . . . . . S455	2,365	153	2.1	0.1
Accident, not otherwise specified . . . . . J810	2,239	197	2.0	0.2
Pain, site not referable to a specific body system . . . . . S055	2,234	117	2.0	0.1
Lacerations and cuts-upper extremity . . . . . J225	2,143	128	1.9	0.1
Earache or ear infection . . . . . S355	1,867	144	1.6	0.1
Motor vehicle accident, type of injury unspecified . . . . . J805	1,760	131	1.5	0.1
Skin rash . . . . . S860	1,688	137	1.5	0.1
Leg symptoms . . . . . S920	1,615	112	1.4	0.1
Labored or difficult breathing (dyspnea) . . . . . S420	1,584	132	1.4	0.1
Vertigo-dizziness . . . . . S225	1,503	101	1.3	0.1
Injury, other and unspecified type-head, neck, and face . . . . . J505	1,501	113	1.3	0.1
Nausea . . . . . S525	1,408	90	1.2	0.1
All other reasons . . . . .	58,056	2,110	51.0	0.4

. . . Category not applicable.

<sup>1</sup>Based on *A Reason for Visit Classification for Ambulatory Care (RVC)* (16).

NOTE: Numbers may not add to totals because of rounding.

**Table 8. Number and percent distribution of emergency department visits with corresponding standard errors, by prior emergency department visit: United States, 2003**

Visit characteristic	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits . . . . .	113,903	4,094	100.0	. . .
Patient seen in this ED <sup>1</sup> within the last 72 hours:				
Yes . . . . .	3,238	224	2.8	0.2
No . . . . .	101,552	3,701	89.2	1.1
Unknown or blank . . . . .	9,113	1,329	8.0	1.1
Episode of care:				
Initial visit for problem . . . . .	101,172	3,790	88.8	0.7
Followup for problem . . . . .	6,306	439	5.5	0.3
Unknown or blank . . . . .	6,425	743	5.6	0.7

. . . Category not applicable.

<sup>1</sup>ED is emergency department.

NOTE: Numbers may not add to totals because of rounding.

**Table 9. Number and percent distribution of emergency department visits with corresponding standard errors, by primary diagnosis: United States, 2003**

Major disease category and ICD-9-CM code range <sup>1</sup>	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits . . . . .	113,903	4,094	100.0	. . .
Infectious and parasitic diseases . . . . . 001–139	3,342	181	2.9	0.1
Neoplasms . . . . . 140–239	300	42	0.3	0.0
Endocrine, nutritional, metabolic diseases, and immunity disorders . . . . . 240–279	1,766	127	1.6	0.1
Mental disorders . . . . . 290–319	3,718	212	3.3	0.2
Diseases of the nervous system and sense organs . . . . . 320–389	6,191	361	5.4	0.2
Diseases of the circulatory system . . . . . 390–459	4,497	240	3.9	0.2
Diseases of the respiratory system . . . . . 460–519	14,012	643	12.3	0.3
Diseases of the digestive system . . . . . 520–579	6,611	333	5.8	0.2
Diseases of the genitourinary system . . . . . 580–629	5,048	227	4.4	0.1
Diseases of the skin and subcutaneous tissue . . . . . 680–709	3,769	241	3.3	0.2
Diseases of the musculoskeletal system and connective tissue . . . . . 710–739	6,110	292	5.4	0.2
Symptoms, signs, and ill-defined conditions . . . . . 780–799	21,324	909	18.7	0.5
Injury and poisoning . . . . . 800–999	29,181	1,171	25.6	0.4
Fractures . . . . . 800–829	3,701	214	3.2	0.1
Sprains and strains . . . . . 840–848	6,074	304	5.3	0.2
Intracranial injury . . . . . 850–854	291	37	0.3	0.0
Open wounds . . . . . 870–897	6,442	308	5.7	0.2
Superficial injury . . . . . 910–919	1,817	155	1.6	0.1
Contusion with intact skin surface . . . . . 920–924	4,831	239	4.2	0.2
Foreign bodies . . . . . 930–939	640	68	0.6	0.1
Burns . . . . . 940–949	511	52	0.4	0.0
Trauma complications and unspecified injuries . . . . . 958–959	1,737	143	1.5	0.1
Poisoning and toxic effects . . . . . 960–989	1,009	79	0.9	0.1
Surgical and medical complications . . . . . 996–999	511	57	0.4	0.0
Other injuries . . . . .	1,617	103	1.4	0.1
Supplementary classification . . . . . V01–V82	2,762	178	2.4	0.1
All other diagnoses <sup>2</sup> . . . . .	3,389	264	3.0	0.2
Unknown <sup>3</sup> . . . . .	1,884	184	1.7	0.2

. . . Category not applicable.

0.0 Quantity more than zero but less than 0.05.

<sup>1</sup>Based on the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM) (13).<sup>2</sup>Includes diseases of the blood and blood-forming organs (280–289); complications of pregnancy, childbirth, and the puerperium (630–677); congenital anomalies (740–759); certain conditions originating in the perinatal period (760–779), diagnoses that were uncodable or illegible, patient left before being seen, patient was transferred to another facility, health maintenance organization did not authorize treatment, and entries of "none," "no diagnosis," "no disease," or "healthy."<sup>3</sup>Includes blank diagnoses.

NOTE: Numbers may not add to totals because of rounding.

**Table 10. Number and percent distribution of emergency department visits with corresponding standard errors, by the 20 leading diagnosis groups: United States, 2003**

Primary diagnosis group and ICD-9-CM code(s) <sup>1</sup>	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits . . . . .	113,903	4,094	100.0	. . .
Contusion with intact skin surface . . . . . 920-924	4,831	239	4.2	0.2
Acute upper respiratory infections, excluding pharyngitis . . . . . 460-461,463-466	4,584	268	4.0	0.2
Abdominal pain . . . . . 789	4,498	249	3.9	0.2
Chest pain . . . . . 786.5	4,222	214	3.7	0.1
Open wound, excluding head . . . . . 874-897	4,145	214	3.6	0.1
Spinal disorders . . . . . 720-724	2,822	138	2.5	0.1
Otitis media and eustachian tube disorders . . . . . 381-382	2,603	211	2.3	0.1
Sprains and strains, excluding ankle and back . . . . . 840-844,845,1,848	2,553	165	2.2	0.1
Fractures, excluding lower limb . . . . . 800-819	2,387	146	2.1	0.1
Open wound of head . . . . . 870-873	2,298	136	2.0	0.1
Sprains and strains of neck and back . . . . . 846,847	2,275	140	2.0	0.1
Acute pharyngitis . . . . . 462	1,953	136	1.7	0.1
Urinary tract infection, site not specified . . . . . 599	1,860	132	1.6	0.1
Chronic and unspecified bronchitis . . . . . 490-491	1,835	143	1.6	0.1
Superficial injuries . . . . . 910-919	1,817	155	1.6	0.1
Cellulitis and abscess . . . . . 681-682	1,810	157	1.6	0.1
Pyrexia of unknown origin . . . . . 780.6	1,758	165	1.5	0.1
Asthma . . . . . 493	1,753	123	1.5	0.1
Heart disease, excluding ischemic . . . . . 391-392.0,393-398,402,404,415-416,420-429	1,743	116	1.5	0.1
Rheumatism, excluding back . . . . . 725-729	1,723	127	1.5	0.1
All other diagnoses . . . . .	60,434	2,116	53.1	0.4

. . . Category not applicable.

<sup>1</sup>Based on the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM) (17). However, certain codes have been combined in this table to describe the utilization of ambulatory care services.

NOTE: Numbers may not add to totals because of rounding.



**Table 11. Number and percent distribution of emergency department visits with corresponding standard errors by patient's age, according to the five leading primary diagnosis groups: United States, 2003**

Primary diagnosis group and ICD-9-CM code(s) <sup>1</sup>	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent	Number of visits per 100 persons per year <sup>2</sup>	Standard error of rate
All visits . . . . .	113,903	4,094	100.0	...	39.9	1.4
Under 1 year						
All visits . . . . .	3,899	315	100.0	...	97.5	7.9
Acute upper respiratory infections, excluding pharyngitis . . . . . 460-461,463-466	715	77	18.3	1.4	17.9	1.9
Otitis media and eustachian tube disorders . . . . . 381-382	415	62	10.6	1.3	10.4	1.6
Pyrexia of unknown origin . . . . . 780.6	289	41	7.4	0.8	7.2	1.0
Unspecified viral and chlamydial infections . . . . . 079.9	178	27	4.6	0.7	4.5	0.7
Noninfectious enteritis and colitis . . . . . 555-558	127	29	3.3	0.6	3.2	0.7
All other diagnoses . . . . .	2,174	190	55.8	1.9	54.3	4.7
1-12 years						
All visits . . . . .	18,517	1,141	100.0	...	38.4	2.4
Acute upper respiratory infection, excluding pharyngitis . . . . . 460-461,463-466	1,826	148	9.9	0.6	3.8	0.3
Otitis media and eustachian tube disorders . . . . . 381-382	1,583	153	8.5	0.5	3.3	0.3
Pyrexia of unknown origin . . . . . 780.6	960	118	5.2	0.5	2.0	0.2
Open wound of head . . . . . 870-873	882	83	4.8	0.4	1.8	0.2
Contusion with intact skin surface . . . . . 920-924	880	81	4.8	0.4	1.8	0.2
All other diagnoses . . . . .	12,385	799	66.8	1.0	25.7	1.7
13-21 years						
All visits . . . . .	14,098	584	100.0	...	38.5	1.6
Contusion with intact skin surface . . . . . 920-924	948	68	6.7	0.4	2.6	0.2
Abdominal pain . . . . . 789.0	615	67	4.4	0.4	1.7	0.2
Open wound, excluding head . . . . . 874-897	598	51	4.2	0.4	1.6	0.1
Sprains and strains, excluding ankles and back . . . . . 840-844,845.1,848	533	81	3.8	0.5	1.5	0.2
Complications of pregnancy, childbirth, and the puerperium . . . . . 630-677	500	67	3.5	0.4	2.8 <sup>3</sup>	0.4
All other diagnoses . . . . .	10,903	461	77.3	0.9	29.8	1.3
22-49 years						
All visits . . . . .	45,895	1,755	100.0	...	39.6	1.5
Abdominal pain . . . . . 789.0	2,331	155	5.1	0.3	2.0	0.1
Open wound, excluding head . . . . . 874-897	2,068	152	4.5	0.3	1.8	0.1
Chest pain . . . . . 786.5	1,908	117	4.2	0.2	1.7	0.1
Contusion with intact skin surface . . . . . 920-924	1,814	128	4.0	0.2	1.6	0.1
Spinal disorders . . . . . 720-724	1,683	104	3.7	0.2	1.5	0.1
All other diagnoses . . . . .	36,091	1,372	78.6	0.4	31.2	1.2
50-64 years						
All visits . . . . .	13,953	560	100.0	...	29.9	1.2
Chest pain . . . . . 786.5	951	79	6.8	0.5	2.0	0.2
Abdominal pain . . . . . 789.0	540	56	3.9	0.4	1.2	0.1
Contusion with intact skin surface . . . . . 920-924	532	56	3.8	0.4	1.1	0.1
Spinal disorders . . . . . 720-724	510	46	3.7	0.3	1.1	0.1
Open wound, excluding head . . . . . 874-897	430	38	3.1	0.3	0.9	0.1
All other diagnoses . . . . .	10,989	464	78.8	0.8	23.6	1.0
65 years and over						
All visits . . . . .	17,542	754	100.0	...	51.2	2.2
Heart disease, excluding ischemic . . . . . 391-392.0,393-398,402,404,415-416,420-429	1,035	78	5.9	0.4	3.0	0.2
Chest pain . . . . . 786.5	1,032	92	5.9	0.5	3.0	0.3
Pneumonia . . . . . 480-486	662	76	3.8	0.4	1.9	0.2
Abdominal pain . . . . . 789.0	614	60	3.5	0.3	1.8	0.2
Contusion with intact skin surface . . . . . 920-924	599	53	3.4	0.3	1.8	0.2
All other diagnoses . . . . .	13,599	605	77.5	0.8	39.7	1.8

... Category not applicable.

<sup>1</sup>Based on the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM) (17). However, certain codes have been combined in this table to describe the utilization of ambulatory care services.

<sup>2</sup>Visit rates by age are based on the July 1, 2003, set of estimates of the civilian noninstitutional population of the United States as developed by the Population Division, U.S. Census Bureau. These population estimates reflect Census 2000 data and are available from the U.S. Census Bureau. See "Technical Notes" for more details.

<sup>3</sup>The population used for the rate is based on visits by females 13-21 years of age.

NOTE: Numbers may not add to totals because of rounding.

**Table 12. Number, percent distribution, and annual rate of injury-related emergency department visits with corresponding standard errors, by patient's age, sex, and race: United States, 2003**

Patient's age, sex, and race	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent	Number of visits per 100 persons per year <sup>1,2</sup>	Standard error of rate
All injury-related visits . . . . .	40,194	1,534	100.0	...	14.1	0.5
Age						
Under 15 years . . . . .	8,276	493	20.6	0.9	13.6	0.8
15–24 years . . . . .	7,222	313	18.0	0.4	18.0	0.8
25–44 years . . . . .	12,771	552	31.8	0.6	15.5	0.7
45–64 years . . . . .	7,276	355	18.1	0.5	10.7	0.5
65–74 years . . . . .	1,966	127	4.9	0.3	10.9	0.7
75 years and over . . . . .	2,682	153	6.7	0.4	16.6	0.9
Sex and age						
Female . . . . .	18,533	706	46.1	0.4	12.7	0.5
Under 15 years . . . . .	3,483	233	8.7	0.4	11.8	0.8
15–24 years . . . . .	3,275	169	8.1	0.3	16.5	0.8
25–44 years . . . . .	5,629	268	14.0	0.4	13.5	0.6
45–64 years . . . . .	3,460	187	8.6	0.3	9.9	0.5
65–74 years . . . . .	1,045	80	2.6	0.2	10.6	0.8
75 years and over . . . . .	1,641	105	4.1	0.3	16.5	1.1
Male . . . . .	21,661	868	53.9	0.4	15.5	0.6
Under 15 years . . . . .	4,793	286	11.9	0.5	15.4	0.9
15–24 years . . . . .	3,948	185	9.8	0.3	19.5	0.9
25–44 years . . . . .	7,142	330	17.8	0.4	17.6	0.8
45–64 years . . . . .	3,816	215	9.5	0.3	11.5	0.6
65–74 years . . . . .	920	75	2.3	0.2	11.2	0.9
75 years and over . . . . .	1,042	86	2.6	0.2	16.6	1.4
Race and age <sup>3</sup>						
White . . . . .	31,570	1,414	78.5	1.3	13.7	0.6
Under 15 years . . . . .	6,416	424	16.0	0.8	13.8	0.9
15–24 years . . . . .	5,566	286	13.8	0.4	17.8	0.9
25–44 years . . . . .	9,794	495	24.4	0.6	14.9	0.8
45–64 years . . . . .	5,817	324	14.5	0.5	10.2	0.6
65–74 years . . . . .	1,604	107	4.0	0.2	10.3	0.7
75 years and over . . . . .	2,373	144	5.9	0.3	16.4	1.0
Black or African American . . . . .	7,487	502	18.6	1.2	21.0	1.4
Under 15 years . . . . .	1,579	161	3.9	0.4	16.7	1.7
15–24 years . . . . .	1,467	131	3.6	0.3	25.3	2.3
25–44 years . . . . .	2,597	193	6.5	0.5	25.1	1.9
45–64 years . . . . .	1,290	117	3.2	0.3	17.6	1.6
65–74 years . . . . .	306	47	0.8	0.1	18.5	2.8
75 years and over . . . . .	250	40	0.6	0.1	20.8	3.3
Other . . . . .	1,136	167	2.8	0.4	5.9	0.9
Hospital characteristics						
Ownership:						
Voluntary . . . . .	29,306	1,624	72.9	2.5	10.3	0.6
Government . . . . .	7,327	937	18.2	2.3	2.6	0.3
Proprietary . . . . .	3,560	540	8.9	1.4	1.3	0.2
Geographic region:						
Northeast . . . . .	8,874	691	22.1	1.6	16.6	1.9
Midwest . . . . .	8,937	591	22.2	1.4	13.9	1.3
South . . . . .	15,071	932	37.5	1.9	14.7	1.3
West . . . . .	7,312	858	18.2	1.8	11.2	1.2
Metropolitan status:						
MSA <sup>4</sup> . . . . .	32,145	1,445	80.0	2.3	13.5	0.6
Non-MSA <sup>4</sup> . . . . .	8,048	1,026	20.0	2.3	17.1	2.2

... Category not applicable.

<sup>1</sup>Visit rates for age, sex, race and region are based on the July 1, 2003, set of estimates of the civilian noninstitutional population of the United States as developed by the Population Division, U.S. Census Bureau. These population estimates reflect Census 2000 data and are available from the Census Bureau. See "Technical Notes" for more details.

<sup>2</sup>Population estimates of metropolitan statistical area status are based on data from the 2003 National Health Interview Survey, National Center for Health Statistics, adjusted to the U.S. Census Bureau definition of core-based statistical areas as of December 2003. See [www.census.gov/population/www/estimates/metrodef.html](http://www.census.gov/population/www/estimates/metrodef.html) for more about metropolitan statistical area definitions.

<sup>3</sup>Other race includes visits by Asians, Native Hawaiians or other Pacific Islanders, American Indians or Alaskan Natives, and multiple races. All race categories include visits by persons of Hispanic and not Hispanic origin. Persons of Hispanic origin may be of any race. Starting with data year 1999, race-specific estimates have been tabulated according to 1997 Standards for Federal Data on Race and Ethnicity and are not strictly comparable with estimates for earlier years. However, the percentage of visit records with multiple races indicated is small and lower than what is typically found for self-reported race. See "Technical Notes" for more details.

<sup>4</sup>MSA is metropolitan statistical area.

NOTE: Numbers may not add to totals because of rounding.

**Table 13. Number and percent distribution of injury-related emergency department visits with corresponding standard errors, by intent and mechanism of external cause: United States, 2003**

Intent and mechanism <sup>1</sup>	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All injury-related visits . . . . .	40,194	1,534	100.0	...
Unintentional injuries . . . . .	28,047	1,188	69.8	0.8
Falls . . . . .	7,989	375	19.9	0.6
Struck against or struck accidentally by objects or persons . . . . .	4,209	241	10.5	0.4
Motor vehicle traffic . . . . .	4,161	207	10.4	0.3
Cutting or piercing instruments or objects . . . . .	2,544	163	6.3	0.3
Natural and environmental factors . . . . .	2,023	162	5.0	0.3
Overexertion and strenuous movements . . . . .	1,686	100	4.2	0.2
Foreign body . . . . .	836	80	2.1	0.2
Poisoning . . . . .	750	60	1.9	0.1
Fire and flames, hot substances or object, caustic or corrosive material and steam . . . . .	516	47	1.3	0.1
Caught accidentally in or between objects . . . . .	480	62	1.2	0.1
Pedal cycle, nontraffic . . . . .	459	48	1.1	0.1
Motor vehicle, nontraffic and other . . . . .	421	73	1.0	0.2
Machinery . . . . .	328	54	0.8	0.1
Other transportation . . . . .	190	31	0.5	0.1
Suffocation . . . . .	122	32	0.3	0.1
Other mechanism <sup>2</sup> . . . . .	662	71	1.6	0.2
Mechanism unspecified . . . . .	672	70	1.7	0.2
Intentional injuries . . . . .	2,086	129	5.2	0.3
Assault . . . . .	1,608	107	4.0	0.2
Unarmed fight or brawl, striking by blunt or thrown object . . . . .	1,054	88	2.6	0.2
Cutting or piercing instrument . . . . .	91	16	0.2	0.0
Other and unspecified mechanism <sup>3</sup> . . . . .	462	47	1.2	0.1
Self-inflicted . . . . .	438	54	1.1	0.1
Poisoning by solid or liquid substances, gases, and vapors . . . . .	313	50	0.8	0.1
Other and unspecified mechanism <sup>4</sup> . . . . .	124	20	0.3	0.1
Other causes of violence . . . . .	*	...	*	...
Injuries of undetermined intent . . . . .	295	37	0.7	0.1
Adverse effects of medical treatment . . . . .	1,695	128	4.2	0.3
Alcohol and/or drug use/abuse <sup>5</sup> . . . . .	1,771	126	4.4	0.3
Blank cause <sup>6</sup> . . . . .	6,301	348	15.7	0.7

... Category not applicable.

\* Figure does not meet standard of reliability or precision.

0.0 Quantity more than zero but less than 0.05.

<sup>1</sup>Based on the "Supplementary Classification of External Causes of Injury and Poisoning," *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) (17)*. A detailed description of the ICD-9-CM E-codes used to create the groupings in this table is provided in the "Technical Notes."

<sup>2</sup>Includes drowning, firearms, and other mechanism.

<sup>3</sup>Includes assaults by firearms and explosives, and other mechanism.

<sup>4</sup>Includes injury by cutting and piercing instrument, and other and unspecified mechanism.

<sup>5</sup>Alcohol and drug abuse are not contained in the "Supplementary Classification of External Causes of Injury and Poisoning," but are frequently recorded as a cause of injury or poisoning.

<sup>6</sup>Includes illegible entries and blanks.

**Table 14. Number and percent of injury-related emergency department visits with corresponding standard errors, by body site of primary diagnosis: United States, 2003**

Body site <sup>1</sup>	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All injury visits . . . . .	40,194	1,534	100.0	. . .
Head and neck . . . . .	5,585	290	13.9	0.4
Traumatic brain injury . . . . .	323	45	0.8	0.1
Other head . . . . .	1,269	88	3.2	0.2
Face . . . . .	1,846	115	4.6	0.2
Eye . . . . .	754	76	1.9	0.2
Head, face, and neck unspecified . . . . .	1,393	117	3.5	0.2
Spinal cord . . . . .	*	*		
Vertebral column . . . . .	1,923	126	4.8	0.3
Cervical . . . . .	1,165	97	2.9	0.2
Thoracic and dorsal . . . . .	161	26	0.4	0.1
Lumbar . . . . .	575	61	1.4	0.1
Other vertebral column . . . . .	*	. . .	*	. . .
Torso . . . . .	1,855	117	4.6	0.3
Chest . . . . .	727	62	1.8	0.1
Abdomen . . . . .	191	39	0.5	0.1
Pelvis and urogenital . . . . .	325	44	0.8	0.1
Trunk . . . . .	149	28	0.4	0.1
Back and buttocks . . . . .	464	48	1.2	0.1
Upper extremity . . . . .	7,847	355	19.5	0.4
Shoulder and upper arm . . . . .	1,364	93	3.4	0.2
Forearm and elbow . . . . .	1,383	88	3.4	0.2
Wrist, hand, and fingers . . . . .	4,686	239	11.7	0.3
Other and unspecified upper extremity . . . . .	414	51	1.0	0.1
Lower extremity . . . . .	6,169	322	15.3	0.5
Hip . . . . .	525	87	1.3	0.2
Upper leg and thigh . . . . .	111	28	0.3	0.1
Knee . . . . .	481	52	1.2	0.1
Lower leg and ankle . . . . .	1,884	112	4.7	0.2
Foot and toes . . . . .	1,419	110	3.5	0.2
Other and unspecified lower extremity . . . . .	1,748	145	4.3	0.3
System-wide . . . . .	1,836	122	4.6	0.2
Other and unspecified body site injuries . . . . .	2,629	180	6.5	0.4
Adverse effects and medical complications . . . . .	1,331	90	3.3	0.2
All other diagnoses <sup>2</sup> . . . . .	10,326	429	25.7	0.6
Unknown <sup>3</sup> . . . . .	689	82	1.7	0.2

. . . Category not applicable.

\* Figure does not meet standard of reliability or precision.

<sup>1</sup>Based on the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM) (17). A detailed description of the Barel Injury Diagnosis Matrix: Classification by Region of Body and Nature of the Injury is provided in the "Technical Notes." Three additional categories were added that were not in the Barel Injury Diagnosis Matrix to account for all injury-related visits: illness diagnoses, supplementary classification, and other adverse effects and medical complications.

<sup>2</sup>All other diagnoses include musculoskeletal system (710–739), symptoms and ill-defined conditions (780–799), skin and subcutaneous tissue (680–709), mental disorders (290–319), nervous system and sense organs (320–389), other illnesses (001–289, 390–677, 740–779), and supplementary classification (V01–V82).

<sup>3</sup>Includes blank diagnoses, uncodable diagnoses, and illegible diagnoses.



**Table 15. Number and percent of emergency department visits with corresponding standard errors, by diagnostic and screening services ordered or provided: United States, 2003**

Diagnostic and screening services ordered or provided	Number of visits in thousands <sup>1</sup>	Standard error in thousands	Percent of visits	Standard error of percent
All visits . . . . .	113,903	4,094	...	...
One or more diagnostic or screening services listed . . . . .	102,185	3,870	89.7	0.9
None . . . . .	9,933	938	8.7	0.8
Blank . . . . .	1,786	422	1.6	0.4
Examinations and tests				
Medical screening . . . . .	77,978	3,982	68.5	2.4
Pulse oximetry . . . . .	26,675	2,233	23.4	1.7
Urinalysis . . . . .	20,173	1,073	17.7	0.7
EKG or ECG <sup>2</sup> . . . . .	18,570	848	16.3	0.5
Mental status exam . . . . .	11,009	1,489	9.7	1.3
Cardiac monitor . . . . .	8,479	627	7.4	0.5
Pregnancy test . . . . .	4,031	298	3.5	0.2
EEG <sup>3</sup> . . . . .	591	108	0.5	0.1
Imaging				
Chest x ray . . . . .	21,967	971	19.3	0.5
Extremity x ray . . . . .	11,473	566	10.1	0.3
Other x ray . . . . .	11,114	566	9.8	0.3
MRI or CAT scan <sup>4,5</sup> . . . . .	8,953	426	7.9	0.3
Ultrasound . . . . .	2,804	225	2.5	0.2
Other imaging . . . . .	2,470	233	2.2	0.2
Any imaging . . . . .	48,831	1,937	42.9	0.7
Blood tests				
CBC <sup>6</sup> . . . . .	37,554	1,602	33.0	0.7
BUN <sup>7</sup> . . . . .	18,835	1,400	16.5	1.1
Creatinine . . . . .	17,783	1,368	15.6	1.0
Glucose . . . . .	17,607	1,290	15.5	1.0
Electrolytes . . . . .	14,940	1,194	13.1	0.9
Lipids or cholesterol . . . . .	4,956	641	4.4	0.5
HgbA1C <sup>8</sup> . . . . .	2,386	452	2.1	0.4
BAC <sup>9</sup> . . . . .	1,768	166	1.6	0.1
HIV serology <sup>10</sup> . . . . .	239	37	0.2	0.0
Other blood test . . . . .	21,847	1,127	19.2	0.7
Any blood test listed . . . . .	41,272	1,675	36.2	0.7
Cultures				
Urine . . . . .	5,198	376	4.6	0.3
Blood . . . . .	3,642	320	3.2	0.2
Throat or rapid strep test . . . . .	2,376	189	2.1	0.1
Cervical or urethral . . . . .	915	131	0.8	0.1
Stool . . . . .	607	84	0.5	0.1
Any culture listed . . . . .	11,063	609	9.7	0.4
Other . . . . .	4,248	377	3.7	0.3

... Category not applicable.

0.0 Quantity more than zero but less than 0.05.

<sup>1</sup>Total exceeds "All visits" because more than one service may be reported per visit.

<sup>2</sup>EKG or ECG is electrocardiogram.

<sup>3</sup>EEG is electroencephalogram.

<sup>4</sup>MRI is magnetic resonance imaging.

<sup>5</sup>CAT is computerized axial tomography.

<sup>6</sup>CBC is complete blood count.

<sup>7</sup>BUN is blood urea nitrogen.

<sup>8</sup>HgbA1C is glycohemoglobin.

<sup>9</sup>BAC is blood alcohol concentration.

<sup>10</sup>HIV is human immunodeficiency virus.

**Table 16. Number and percent of emergency department visits with corresponding standard errors, by selected procedures: United States, 2003**

Procedures provided	Number of visits in thousands <sup>1</sup>	Standard error in thousands	Percent of visits	Standard error of percent
All visits . . . . .	113,903	4,094	...	...
One or more procedures listed . . . . .	51,691	2,310	45.4	1.2
None . . . . .	54,600	2,505	47.9	1.2
Blank . . . . .	7,612	1,088	6.7	1.0
IV fluids <sup>2</sup> . . . . .	24,886	1,279	21.8	0.8
Wound care . . . . .	11,146	532	9.8	0.3
Orthopedic care . . . . .	6,182	395	5.4	0.3
Eye or ENT care <sup>3</sup> . . . . .	3,747	628	3.3	0.5
Bladder catheter . . . . .	3,162	250	2.8	0.2
OB/GYN care <sup>4</sup> . . . . .	1,617	136	1.4	0.1
NG tube or gastric lavage <sup>5</sup> . . . . .	470	50	0.4	0.0
Endotracheal intubation . . . . .	379	48	0.3	0.0
Thrombolytic therapy . . . . .	*192	62	*0.2	0.1
CPR <sup>6</sup> . . . . .	181	30	0.2	0.0
Other . . . . .	9,687	1,103	8.5	0.9

... Category not applicable.

0.0 Quantity more than zero but less than 0.05.

<sup>1</sup>Total exceeds "All visits" because more than one procedure may be reported per visit.

<sup>2</sup>IV is intravenous.

<sup>3</sup>ENT is ear, nose, and throat.

<sup>4</sup>OB/GYN is obstetrics/gynecology.

<sup>5</sup>NG is nasogastric.

<sup>6</sup>CPR is cardiopulmonary resuscitation.

**Table 17. Number and percent distribution of emergency department visits with corresponding standard errors, by medication therapy and number of medications provided or prescribed: United States, 2003**

Medication therapy <sup>1</sup>	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits . . . . .	113,903	4,094	100.0	...
Drug visits <sup>2</sup> . . . . .	87,999	3,398	77.3	0.8
Visits without mention of medication . . . . .	25,904	1,169	22.7	0.8
Number of medications provided or prescribed				
All visits . . . . .	113,903	4,094	100.0	...
0 . . . . .	25,904	1,169	22.7	0.8
1 . . . . .	30,436	1,216	26.7	0.6
2 . . . . .	26,072	1,099	22.9	0.4
3 . . . . .	15,268	756	13.4	0.4
4 . . . . .	7,499	424	6.6	0.3
5 . . . . .	3,715	269	3.3	0.2
6 . . . . .	1,861	157	1.6	0.1
7 . . . . .	1,149	140	1.0	0.1
8 . . . . .	1,999	311	1.8	0.3

... Category not applicable.

0.0 Quantity more than zero but less than 0.05.

<sup>1</sup>Includes prescription drugs, over-the-counter preparations, immunizations, and desensitizing agents.

<sup>2</sup>Visits at which one or more drugs were provided or prescribed.

NOTE: Numbers may not add to totals because of rounding.

**Table 18. Number and percent of drug mentions for the 20 most frequently occurring therapeutic drug classes at emergency department visits with corresponding standard errors: United States, 2003**

Therapeutic class <sup>1</sup>	Number of occurrences in thousands	Standard error in thousands	Percent of drug mentions <sup>2</sup>	Standard error of percent
Narcotic analgesics . . . . .	29,854	1,401	14.1	0.7
NSAIDs <sup>3</sup> . . . . .	25,615	1,274	12.1	0.6
Nonnarcotic analgesics . . . . .	15,682	871	7.4	0.5
Antipyretics . . . . .	14,856	844	7.0	0.5
Antihistamines . . . . .	14,320	719	6.7	0.4
Vertigo, motion sickness, vomiting . . . . .	11,745	599	5.5	0.4
Sedatives and hypnotics . . . . .	10,679	553	5.0	0.3
Antiasthmatics, bronchodilators . . . . .	9,271	571	4.4	0.4
Cephalosporins . . . . .	8,670	526	4.1	0.3
Penicillins . . . . .	7,453	451	3.5	0.3
Acid or peptic disorders . . . . .	6,764	449	3.2	0.3
Replenishers, regulators of electrolytes, water balance . . . . .	5,455	461	2.6	0.4
Adrenal corticosteroids . . . . .	5,306	297	2.5	0.2
Erythromycins, lincosamides, macrolides . . . . .	5,169	330	2.4	0.2
Antianxiety agents . . . . .	4,364	241	2.1	0.2
Antiarthritics . . . . .	4,323	315	2.0	0.2
Quinolones . . . . .	4,118	243	1.9	0.2
Skeletal muscle hyperactivity . . . . .	4,029	241	1.9	0.2
Vaccines or antisera . . . . .	3,289	247	1.6	0.2
Diuretics . . . . .	3,089	280	1.5	0.2

<sup>1</sup>Based on the standard four-digit drug classification used in the *National Drug Code Directory, 1995 edition (20)*.

<sup>2</sup>Based on an estimated 212,156,000 drug mentions at emergency department visits in 2003. Total of all therapeutic classes will exceed total drug mentions because up to three classes may be coded for each drug.

<sup>3</sup>NSAIDs are nonsteroidal anti-inflammatory drugs.

**Table 19. Number and rate of generic substances for the 20 most frequently occurring generic substances in drug mentions at emergency department visits with corresponding standard errors: United States, 2003**

Generic substance	Number of occurrences in thousands <sup>1</sup>	Standard error in thousands	Number of generic substances per 100 drug mentions <sup>2</sup>	Standard error of rate
Acetaminophen . . . . .	30,080	1,372	14.2	0.6
Ibuprofen . . . . .	15,611	902	7.4	0.5
Hydrocodone . . . . .	11,332	664	5.3	0.4
Promethazine . . . . .	9,043	502	4.3	0.3
Ketorolac tromethamine . . . . .	6,207	356	2.9	0.2
Albuterol . . . . .	5,753	363	2.7	0.2
Amoxicillin . . . . .	5,627	395	2.7	0.3
Morphine . . . . .	4,290	293	2.0	0.2
Meperidine . . . . .	3,681	295	1.7	0.2
Azithromycin . . . . .	3,678	251	1.7	0.2
Aspirin . . . . .	3,571	281	1.7	0.2
Oxycodone . . . . .	3,539	317	1.7	0.3
Ceftriaxone . . . . .	3,333	290	1.6	0.2
Cephalexin . . . . .	3,310	222	1.6	0.2
Sodium chloride . . . . .	3,293	418	1.6	0.4
Diphenhydramine . . . . .	2,980	188	1.4	0.1
Tetanus toxoid . . . . .	2,924	238	1.4	0.2
Nitroglycerin . . . . .	2,772	254	1.3	0.2
Lorazepam . . . . .	2,479	155	1.2	0.1
Codeine . . . . .	2,465	188	1.2	0.1

<sup>1</sup>Frequency of mention combines single-ingredient agents with mentions of the agent as an ingredient in a combination drug.

**Table 20. Number, percent distribution, and therapeutic classification for the 20 drugs most frequently prescribed at emergency department visits with corresponding standard errors, by entry name of drug: United States, 2003**

Entry name of drug <sup>1</sup>	Number of drug mentions in thousands	Standard error in thousands	Percent distribution	Standard error of percent	Therapeutic class <sup>2</sup>
All drug mentions . . . . .	212,155	9,648	100.0	. . .	. . .
Tylenol . . . . .	11,096	675	5.2	0.2	Nonnarcotic analgesics; antipyretics
Motrin . . . . .	9,839	691	4.6	0.2	NSAIDs <sup>3</sup>
Phenergan . . . . .	8,558	496	4.0	0.2	Sedatives and hypnotics; vertigo, motion sickness, vomiting; antihistamines
Vicodin . . . . .	6,896	561	3.3	0.2	Narcotic analgesics
Toradol . . . . .	6,062	349	2.9	0.1	NSAIDs <sup>3</sup>
Albuterol . . . . .	4,748	317	2.2	0.1	Antiasthmatics, bronchodilators
Ibuprofen . . . . .	4,299	326	2.0	0.1	NSAIDs <sup>3</sup>
Demerol . . . . .	3,608	298	1.7	0.1	Narcotic analgesics
Lortab . . . . .	3,045	346	1.4	0.2	Narcotic analgesics
Rocephin . . . . .	3,023	282	1.4	0.1	Cephalosporins
Keflex . . . . .	2,979	212	1.4	0.1	Cephalosporins
Morphine . . . . .	2,979	236	1.4	0.1	Narcotic analgesics
Percocet-5 . . . . .	2,978	285	1.4	0.1	Narcotic analgesics
Benadryl . . . . .	2,824	171	1.3	0.1	Antihistamines
Normal saline . . . . .	2,750	380	1.3	0.2	Replenishers, regulators of electrolytes, water balance; pharmaceutical aids; surgical aids
Zithromax . . . . .	2,659	192	1.3	0.1	Erythromycins, lincosamides, macrolides
Amoxicillin . . . . .	2,566	189	1.2	0.1	Penicillins
Levaquin . . . . .	2,394	177	1.1	0.1	Quinolones
Prednisone . . . . .	2,393	153	1.1	0.1	Adrenal corticosteroids
Ativan . . . . .	2,324	146	1.1	0.1	Antianxiety agents
All other mentions . . . . .	124,133	6,385	58.5	0.8	. . .

. . . Category not applicable.

<sup>1</sup>The entry made by the hospital staff on the prescription or other medical records. This may be a trade name, generic name, or desired therapeutic effect.

<sup>2</sup>Therapeutic classification is based on the *National Drug Code Directory, 1995 edition (20)*. In cases where a drug had more than one therapeutic use, it was classified under each therapeutic class.

<sup>3</sup>NSAIDs are nonsteroidal anti-inflammatory drugs.

NOTE: Numbers may not add to totals because of rounding.

**Table 21. Number and percent of emergency department visits with corresponding standard errors, by providers seen: United States, 2003**

Type of provider	Number of visits in thousands <sup>1</sup>	Standard error in thousands	Percent of visits	Standard error of percent
All visits . . . . .	113,903	4,094	. . .	. . .
Any physician . . . . .	105,219	3,815	92.4	0.8
Staff physician . . . . .	100,017	3,810	87.8	1.3
Other physician . . . . .	9,929	1,210	8.7	1.0
Resident or intern . . . . .	9,571	1,296	8.4	1.1
R.N. <sup>2</sup> . . . . .	103,138	4,152	90.5	1.4
Other technician . . . . .	32,108	2,227	28.2	1.7
E.M.T. <sup>3</sup> . . . . .	9,881	1,351	8.7	1.1
Physician assistant . . . . .	7,459	1,077	6.5	0.9
L.P.N. <sup>4</sup> . . . . .	7,203	1,135	6.3	1.0
Nurse practitioner . . . . .	2,047	319	1.8	0.3
Other . . . . .	9,010	1,746	7.9	1.5
Blank . . . . .	1,047	132	0.9	0.1

. . . Category not applicable.

<sup>1</sup>Total exceeds "All visits" because more than one provider may be reported per visit.

<sup>2</sup>R.N. is registered nurse.

<sup>3</sup>E.M.T. is emergency medical technician.

<sup>4</sup>L.P.N. is licensed practical nurse.

**Table 22. Number and percent of emergency department visits with corresponding standard errors, by visit disposition: United States, 2003**

Disposition	Number of visits in thousands <sup>1</sup>	Standard error in thousands	Percent of visits	Standard error of percent
All visits . . . . .	113,903	4,094	...	...
Admitted or transferred or died				
Admit to hospital <sup>2</sup> . . . . .	15,809	844	13.9	0.5
Transfer to other facility . . . . .	2,219	148	1.9	0.1
Admit to ICU or CCU <sup>3</sup> . . . . .	1,511	146	1.3	0.1
Admit to ED for observation . . . . .	384	65	0.3	0.1
DOA/died in ED <sup>4,5</sup> . . . . .	317	42	0.3	0.0
Referred or returned to physician				
Refer to other physician or clinic for FU <sup>6</sup> . . . . .	53,560	2,827	47.0	1.6
Return to referring physician . . . . .	15,838	1,378	13.9	1.2
Left or referred out from triage				
Left before being seen . . . . .	1,918	176	1.7	0.1
Left AMA <sup>7</sup> . . . . .	1,175	103	1.0	0.1
Refer out from triage without treatment . . . . .	*188	68	*0.2	0.1
Returned or referred to other treatment				
Return to nonphysician treatment or support service . . . . .	601	73	0.5	0.1
Refer to alcohol or drug treatment program . . . . .	460	54	0.4	0.0
Other				
Return if needed, PRN or appointment <sup>8</sup> . . . . .	46,991	3,031	41.3	2.1
No followup planned . . . . .	7,145	1,070	6.3	0.9
Other . . . . .	849	127	0.7	0.1
Blank . . . . .	775	163	0.7	0.1

... Category not applicable.

\* Figure does not meet standard of reliability or precision.

0.0 Quantity more than zero but less than 0.05.

<sup>1</sup>Total exceeds "All visits" because more than one disposition may be reported per visit.

<sup>2</sup>Includes those admitted to ICU or CCU.

<sup>3</sup>ICU or CCU is intensive care unit or critical care unit or coronary care unit and is a subset of those admitted to hospital.

<sup>4</sup>DOA is dead on arrival.

<sup>5</sup>ED is emergency department.

<sup>6</sup>FU is followup.

<sup>7</sup>AMA is against medical advice.

<sup>8</sup>PRN is "as needed."

**Table 23. Percent distribution of emergency departments and corresponding standard errors by selected hospital or emergency department characteristics, according to size of annual visit volume: United States, 2003**

Hospital or emergency department characteristic	All 24-hour EDs		Small (less than 20,000)		Medium (20,000–50,000)		Large (more than 50,000)	
	Percent distribution	Standard error of percent	Percent distribution	Standard error of percent	Percent distribution	Standard error of percent	Percent distribution	Standard error of percent
All EDs <sup>1</sup> . . . . .	100.0	...	100.0	...	100.0	...	100.0	...
Geographic region								
Northeast . . . . .	16.0	1.3	*9.6	1.6	25.6	3.3	18.6	3.2
Midwest. . . . .	28.6	2.1	29.9	4.0	24.6	3.3	34.5	4.5
South . . . . .	38.5	2.4	44.5	4.5	33.4	3.9	24.7	4.5
West. . . . .	16.9	1.4	16.0	3.1	16.4	2.9	22.2	4.9
Metropolitan status								
MSA <sup>2</sup> . . . . .	57.7	3.2	30.5	5.1	87.8	3.5	100.0	...
Non-MSA <sup>2</sup> . . . . .	42.3	3.2	69.5	5.1	*12.2	3.5	*0.0	0.0
Ownership								
Voluntary . . . . .	61.9	4.2	51.6	7.3	72.3	4.1	80.6	3.6
Government . . . . .	26.6	4.2	36.2	7.5	15.2	2.9	13.9	2.8
Proprietary . . . . .	11.5	1.6	12.2	2.9	12.5	3.5	*5.5	3.0
Type of hospital								
General . . . . .	95.0	1.4	95.3	2.3	96.4	1.4	89.8	3.6
Specialty . . . . .	5.0	1.4	*4.7	2.3	*3.6	1.4	*10.2	3.6
Medical school affiliation								
Yes . . . . .	31.5	3.3	*17.9	5.3	40.7	4.4	70.8	5.8
No . . . . .	68.5	3.3	82.1	5.3	59.3	4.4	29.2	5.8
Outpatient department with physician-supervised clinics								
Yes . . . . .	45.3	4.0	39.0	6.7	47.7	4.3	68.7	7.4
No . . . . .	54.7	4.0	61.0	6.7	52.3	4.3	31.3	7.4
Number of emergency service areas								
One . . . . .	95.9	0.9	100.0	0.0	96.5	1.3	74.0	6.8
Multiple . . . . .	4.1	0.9	*0.0	0.0	*3.5	1.3	26.0	6.8
Number of levels in nursing triage system								
Three . . . . .	47.2	3.8	44.3	6.2	56.7	4.6	32.9	5.4
Four . . . . .	19.6	3.3	23.5	5.4	11.5	2.6	24.8	4.8
Five . . . . .	19.6	2.9	*13.3	4.4	23.8	4.1	38.0	5.3
No triage . . . . .	*6.6	2.0	*7.6	3.1	*5.9	2.5	*3.7	2.0
Unknown . . . . .	*7.0	2.1	*11.3	3.7	*2.1	1.2	*0.6	0.6
Board-certified emergency medicine physician <sup>3</sup>								
Yes . . . . .	63.5	3.5	47.3	5.4	81.6	3.2	87.9	2.6
No . . . . .	27.4	4.0	42.4	6.7	*10.6	2.7	*4.1	1.9
Unknown . . . . .	9.2	2.5	*10.2	4.4	*7.8	2.0	*7.9	1.8
Board-certified pediatric emergency medicine physician <sup>3</sup>								
Yes . . . . .	18.1	2.6	*10.2	3.8	23.5	3.9	40.5	4.8
No . . . . .	73.4	3.1	81.1	4.8	68.2	4.0	51.0	4.7
Unknown . . . . .	8.5	2.0	*8.7	3.3	*8.3	2.1	*8.5	1.9

... Category not applicable.

\* Figure does not meet standard of reliability or precision.

0.0 Quantity more than zero but less than 0.05.

<sup>1</sup>ED is emergency department.<sup>2</sup>MSA is metropolitan statistical area.<sup>3</sup>On duty or on-call 24 hours a day and 7 days a week.



## Technical notes

### Data collection

The NHAMCS data collection is authorized under section 306 of the Public Health Service Act (Title 42, U.S. Code), S242k. Participation is voluntary. In 2003, a sample of 546 general and short-stay hospitals was selected from a sampling frame constructed from products of Verispan, L.L.C., specifically “Healthcare Market Index” and “Hospital Market Profiling Solution.” These products were formerly known as the SMG Hospital Database.

A special supplement of 66 hospitals was added to the NHAMCS in 2003 in order to increase reliability of emergency department estimates for rural and proprietary hospitals. For the supplemental sample, a three-stage design was used where the first-stage was a selection of hospitals regardless of PSUs. The supplemental sample used a list-frame from the Verispan file of hospitals indicating the presence of an emergency department. Within sampled hospitals, selected ESAs within emergency departments and patient visits within ESAs were sampled. The design of the sample within hospitals for the additional sample was identical to the within-hospital sample for the four-stage design. Funding for the supplemental sample was given by the Office of the Assistant Secretary for Planning and Evaluation in the U.S. Department of Health and Human Services and the Bureau of Maternal and Child Health of the Health Resources and Services Administration.

Together, a sample of 546 hospitals was selected for the 2003 NHAMCS, of which 443 were in scope and had eligible EDs. Of the 443 in-scope hospitals with EDs, 406 participated, and 405 of them provided at least half of the PRFs expected based on the total number of visits seen, and hence were considered to be fully or adequately responding, for an unweighted ED response rate of 91.4 percent. A sample of 506 ESAs was selected from the EDs, and 475 of them provided 40,253 Patient Record forms (PRFs). Of these 506 ESAs, 472 of them responded fully or adequately, yielding an ESA sampling

response rate of 93.3 percent, and an overall unweighted two-stage sampling response rate of 85.3 percent. In Advance Data reports prior to 2001, only the ED and ESA participation rates were provided (i.e., information on completed Patient Record forms was not factored into the response rates); these varied between 94 and 97 percent. Starting with the 2001 survey, the response rate calculation has taken into account both the ED and ESA participation rates.

The U.S. Census Bureau, acting as the data collection agent for the survey, provided training to field representatives (FRs) throughout the nation who, in turn, oversaw data collection at the hospital and clinic level. FRs contacted the sampled hospitals for induction into the survey after an advance letter was mailed by NCHS notifying the hospitals of their selection for the survey. Hospital staff was instructed to complete the information requested on the Patient Record forms (figure I). However, for 45.5 percent of the sampled records, FRs abstracted the data from medical records or computer printouts.

### Health Insurance Portability and Accountability Act

In April 2003, the Privacy Rule of HIPAA was implemented to establish minimum Federal standards for safeguarding the privacy of individually identifiable health information. No personally identifying information, such as patient’s name, address, or Social Security number, is collected in the NHAMCS. Data collection is authorized by Section 306 of the Public Health Service Act (Title 42, U.S. Code, 242k). All information collected is held in the strictest confidence according to law [Section 308(d) of the Public Health Service Act (42, U.S. Code, 242m(d))] and the Confidential Information Protection and Statistical Efficiency Act (Title 5 of PL 107–347). The NHAMCS protocol was approved by the NCHS Research Ethics Review Board in February 2003. Waivers of the requirements to obtain informed consent of patients and patient authorization for release of patient medical record data by health care providers were granted.

In the spring of 2003, the NHAMCS implemented additional data collection procedures to help providers ensure patient confidentiality. Census Bureau field representatives were trained on how the Privacy Rule allows hospitals to make disclosures of protected health information without patient authorization for public health purposes and for research that has been approved by a Research Ethics Review Board. Hospitals were encouraged to accept a data use agreement between themselves and CDC’s NCHS because the Privacy Rule allows hospitals to disclose limited data sets (i.e., data sets with no direct patient identifiers) for research and public health purposes if such an agreement exists.

### Sampling errors

The standard error is primarily a measure of the sampling variability that occurs by chance when only a sample, rather than an entire universe, is surveyed. The standard error also reflects part of the measurement error but does not measure any systematic biases in the data. The chances are 95 out of 100 that an estimate from the sample differs from the value that would be obtained from a complete census by less than twice the standard error. The relative standard error (RSE) of an estimate is obtained by dividing the standard error by the estimate itself. The result is then expressed as a percent of the estimate.

The standard errors presented in the tables and used in tests of significance for this report were estimated using SUDAAN software. SUDAAN computes standard errors by using a first-order Taylor approximation of the deviation of estimates from their expected values. A description of the software and the approach it uses has been published (11). When it is not feasible to use statistical software such as SUDAAN or STATA for analyzing complex survey data, one may calculate approximate RSEs for aggregate estimates using generalized variance curve parameters that are described in *Public-Use File Documentation* (21).

## Published and flagged estimates

Estimates are not presented unless a reasonable assumption regarding their probability distributions is possible on the basis of the Central Limit Theorem. The Central Limit Theorem states that given a sufficiently large sample size, the sample estimate approximates the population estimate, and upon repeated sampling, its distribution would be approximately normal.

In this report, estimates are not presented if they are based on fewer than 30 cases in the sample data; only an asterisk (\*) appears in the tables. Estimates based on 30 or more cases include an asterisk if the RSE of the estimate exceeds 30 percent.

## Estimation

Statistics from the NHAMCS are derived by a multistage estimation procedure that produces essentially unbiased estimates. The estimation procedure has three basic components: inflation by reciprocals of the sampling selection probabilities, adjustment for nonresponse, and a population weighting ratio adjustment.

NHAMCS data were adjusted to account for two types of nonresponse. The first type occurred when a sample hospital refused to provide information about its ED that was publicly known to exist. In this case, the weights of visits to hospitals similar to the nonrespondent hospitals were inflated to account for visits represented by the nonrespondent hospitals. Hospitals were judged to be similar and grouped together for nonresponse purposes if they had the same ownership control group (voluntary nonprofit versus other) and region. Beginning with the 1998 data, formation of groups of similar hospitals also considered the MSA status of the hospital (in an MSA versus not in an MSA) with the following two exceptions: in the West, MSA status was not considered; and in non-MSA hospitals in the other three regions, ownership control group (voluntary nonprofit versus other) was not considered. This was done because the sample size was too small to use the finer breakdowns in the regions affected.

The second type of nonresponse occurred when a sample ESA within a responding hospital failed to provide completed Patient Record forms for a sample of patient visits. The weights of visits from responding ESAs were inflated to account for visits to similar nonresponding ESAs where ESAs were judged to be similar if they were in the same region. In the Northeast, Midwest, and South, ESA similarity also required having the same MSA status and in MSAs it also required being in the same ownership control group (voluntary nonprofit compared with other). In the West, ESA similarity required being in the same ownership control group (voluntary nonprofit compared with other). Starting in 2001, ESAs that responded minimally (i.e., provided substantially fewer Patient Record forms than expected) were considered nonrespondents for response rate calculations, but their records were included in the final data set. However, their total visit weights were set not to exceed 50 percent of the ESAs count of visits. The remaining weight for these minimally responding ESAs was accounted for by in-scope, responding ESAs of similar hospitals that were in the same PSU.

## Nonsampling errors

As in any survey, results are subject to both sampling and nonsampling errors. Nonsampling errors include reporting and processing errors, as well as biases resulting from nonresponse and incomplete response. The magnitude of the nonsampling errors cannot be computed. However, these errors were kept to a minimum by procedures built into the operation of the survey. To eliminate ambiguities and encourage uniform reporting, attention was given to the phrasing of questions, terms, and definitions. Also, pretesting of most data items and survey procedures was performed. Quality control procedures and consistency and edit checks reduced errors in data coding and processing. Coding error rates ranged between 0.0 and 0.8 percent for various survey items.

Item nonresponse rates in the NHAMCS are generally low (5 percent or less). However, levels of nonresponse

can vary considerably in the survey. Most nonresponse occurs when the needed information is not available in the medical record or is unknown to the person filling out the survey instrument. Nonresponse can also result when the information is available, but survey procedures are not followed and the item is left blank. In this report, the tables include a combined entry of "unknown or blank" to display missing data. For items where combined item nonresponse is between 30–50 percent, percent distributions are not discussed in the text. However, the information is shown in the tables. These data should be interpreted with caution. If nonresponse is random, the observed distribution for the reported item (i.e., excluding cases for which the information is unknown) would be close to the true distribution. However, if nonresponse is not random, the observed distribution could vary significantly from the actual distribution. Researchers need to decide how best to treat items with high levels of missing responses. For items with nonresponse greater than 50 percent, data are not presented.

Weighted item nonresponse rates (i.e., if the item was left blank or the unknown box was marked) were 5.0 percent or less for data items with the following exceptions: ethnicity (16.6 percent), reside in a nursing home or other institution (5.3 percent), mode of arrival (5.4 percent), primary expected source of payment (6.5 percent), waiting time (17.6 percent), duration (9.4 percent), temperature (7.8 percent), pulse (7.7 percent), systolic blood pressure (14.9 percent), diastolic blood pressure (15.1 percent), alcohol-related visits (11.8 percent), work-related visits (6.7 percent), seen in this ED within the last 72 hours (8.0 percent), episode of care (5.6 percent), intentionality of injury (17.0 percent of injury visits), cause of injury (15.7 percent of injury visits), and procedures (6.7 percent).

For some items, missing values were imputed by randomly assigning a value from Patient Record forms with similar characteristics. For the variable "immediacy with which patient should be seen" (2.7 percent with missing values, i.e., none of the categories were

checked), the grouping was based on ED volume, geographic region, and three-digit ICD-9-CM code for primary diagnosis. The other imputed items were: birth year (3.1 percent), sex (0.4 percent), and race (12.0 percent). Imputation for these items was based on ED volume, geographic region, immediacy with which patient should be seen, and three-digit ICD-9-CM code for primary diagnosis. This represents a change from previous survey years when imputations were also performed for the following variables—ethnicity, disposition, and providers seen. Beginning in 1997, these latter items were no longer imputed. Blank or otherwise missing responses are noted in the data.

### Tests of significance and rounding

In this report, the determination of statistical inference is based on the two-tailed *t*-test. The Bonferroni inequality was used to establish the critical value for statistically significant differences (0.05 level of significance) based on the number of possible comparisons within a particular variable (or combination of variables) of interest. Terms relating to differences such as “greater than” or “less than” indicate that the difference is statistically significant. A lack of comment regarding the difference between any two estimates does not mean that the difference was tested and found to be not significant.

In the tables, estimates of ED visits have been rounded to the nearest thousand. Consequently, estimates will not always add to totals. Rates and percents were calculated from original unrounded figures and do not necessarily agree with figures calculated from rounded data.

### Race and ethnicity

The instruction for the race item on the Patient Record form was changed in 1999 to be consistent with standards issued by the Office of Management and Budget to promote comparability of data among Federal data sources. Among the standards issued in 1997 is the reporting of more than one race per patient (22).

The new race item includes the following groups: white, black or African American, Asian, Native Hawaiian or other Pacific Islander, and American Indian or Alaska Native. Respondents could check multiple categories for each patient. Prior to 1999, only a single race category could be checked per person. Estimates for specific race categories reflect visits where only a single race was reported. See “Population figures and rate calculation” in the “Technical Notes” for more information.

According to the same standards, race and Hispanic or Latino origin were collected separately. Consequently, all race categories include visits by persons of Hispanic or Latino and not Hispanic or Latino origin. Persons of Hispanic or Latino origin may be of any race.

### Calculation of time waiting to see a physician

The NHAMCS collects data on the time the patient arrived in the ED and the time that the patient was seen by a physician. These two items were used to derive the amount of time spent waiting to see a physician. Waiting times longer than 12 hours were altered to assume that the a.m. or p.m. checkbox was completed incorrectly and that the patient did not actually wait that long. For visits where a physician was seen, 17.6 percent were missing the data needed to calculate waiting time.

### Calculation of time spent in the ED

The NHAMCS collects data on the time the patient arrived in the ED and the time that the patient was discharged. If the discharge time was more than 24 hours from the arrival time, the hospital staff was asked to mark a checkbox. These three items were used to derive the amount of time the patient spent in the ED. At 9.4 percent of visits, the data needed to calculate time spent in the ED were missing.

### Injury groupings

Table 13 presents data on the intent and mechanism producing the injuries that resulted in visits to EDs. Cause of

injury is collected for each sampled injury visit in the NHAMCS and is coded according to the ICD-9-CM’s “Supplementary Classification of External Causes of Injury and Poisoning.” However, for table 13, the first-listed cause-of-injury data were regrouped to highlight the interaction between intentionality of the injury and the mechanism that produced the injury. Table I shows the E-code groupings used to produce this table. For table 14, the Barell Injury Diagnosis Matrix: Classification by Region of Body and Nature of Injury was used to show the distribution of injury-related visits by body site of primary diagnosis (18). Table II shows the ICD-9-CM groupings used to produce this table.

### Population figures and rate calculation

The denominators used in calculating 2003 visit rates for age, sex, race, and geographic region are Census 2000–based postcensal estimates of the civilian noninstitutional population of the United States, with the exception of the text box, where the civilian institutionalized population was also used. The population estimates are special tabulations developed by the Population Division, U.S. Census Bureau, from the July 1, 2003, set of State population estimates by age, sex, and race. Population estimates of MSA status are based on data from the 2003 National Health Interview Survey (NHIS), National Center for Health Statistics, adjusted to the U.S. Census Bureau definition of core-based statistical areas as of December 2003. See [www.census.gov/population/www/estimates/metrodef.html](http://www.census.gov/population/www/estimates/metrodef.html) for more about MSA definitions.

Estimates of visit rates for MSAs and non-MSAs in 2003 may differ somewhat from those reported in 2002 and previous years because of methodological differences in how the denominators were calculated. In survey years 1992–2002, the NHIS used a 1992 definition of MSAs and non-MSAs. The NHIS also used 1990-based census estimates as controls for calculating population estimates through 2002. Because the NHAMCS used Census



Table I. Reclassification of cause-of-injury codes for use with National Hospital Ambulatory Medical Care Survey data

Intent and mechanism of injury	Cause-of-injury code <sup>1</sup>
Unintentional injuries . . . . .	E800–E848, E850–E869, E880–E929
Falls . . . . .	E880.0–E886.9, E888
Motor vehicle traffic . . . . .	E810–E819
Struck against or struck accidentally by objects or persons . . . . .	E916–E917
Overexertion and strenuous movements . . . . .	E927
Cutting or piercing instruments or objects . . . . .	E920
Natural and environmental factors . . . . .	E900–E909, E928.0–E928.2
Poisoning by drugs, medicinal substances, biologicals, other solid and liquid substances, gases, and vapors . . . . .	E850–E869
Fire and flames, hot substance or object, caustic or corrosive material, and steam . . . . .	E890–E899, E924
Machinery . . . . .	E919
Pedal cycle, nontraffic and other . . . . .	E800–E807(.3), E820–E825(.6), E826.1, E826.9
Motor vehicle, nontraffic . . . . .	E820–E825(.0–.5, .7–.9)
Other transportation . . . . .	E800–E807(.–.2, .8–.9), E826(.0, .2–.8), E827–E829, E831, E833–E845
Suffocation . . . . .	E911–E913
Firearm missile . . . . .	E922
Drowning or submersion . . . . .	E830, E832, E910
Foreign body . . . . .	E914–E915
Caught accidentally in or between objects . . . . .	E918
Other and not elsewhere classified . . . . .	E846–E848, E921, E923, E925–E926, E928.3, E928.8, E929.0–E929.5
Mechanism unspecified . . . . .	E887, E928.9, E929.8, E929.9
Intentional injuries . . . . .	E950–E959, E960–E969, E970–E978, E990–E999
Assault . . . . .	E960–E969
Unarmed fight or brawl, striking by blunt or thrown object . . . . .	E960.0, E968.2
Cutting or piercing instrument . . . . .	E966
Firearms . . . . .	E965.0–E965.4
Other and unspecified mechanism . . . . .	E960.1, E961–E964, E965.5–E965.9, E967–E968.1, E968.3–E969
Self-inflicted . . . . .	E950–E959
Poisoning by solid or liquid substances, gases, and vapors . . . . .	E950–E952
Cutting and piercing instrument . . . . .	E956
Suffocation . . . . .	E953
Other and unspecified mechanism . . . . .	E954–E955, E957–E959
Other causes of violence . . . . .	E970–E979, E990–E999
Injuries of undetermined intent . . . . .	E980–E989
Adverse effects of medical treatment . . . . .	E870–E879, E930–E949

<sup>1</sup>Based on the "Supplementary Classification of External Causes of Injury and Poisoning," *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)* (17).

2000–based estimates beginning in 2001, adjustments needed to be made to the MSA figures obtained from the NHIS in 2001 and 2002. For 2003, special tabulations were obtained from the Office of Analysis and Epidemiology, NCHS, where 2003 NHIS data were matched to the December 2003 U.S. Census Bureau definition of core-based statistical areas. The estimates were further adjusted based on the 2003 population estimates obtained from the Census Bureau.

Denominators used in computing estimates of visit rates by expected source of payment were obtained from the 2003 NHIS. Individuals reporting multiple insurance categories in the NHIS were counted in each category they reported with the exception of Medicaid and SCHIP, which were combined into a single category.

Population estimates for race groups in the 2003 NAMCS and NHAMCS are based on Census 2000, in which respondents were able to indicate more than one race category (as requested by the 1997 Standards for Federal Data on Race and Ethnicity) (22). Starting with 2001, the denominators used for calculating race-specific visit rates reflect the transition to multiple-race reporting. Specific race denominators reflect persons with a single race identification, and a separate denominator is available for persons of multiple races. In this report, a visit rate for white persons, for example, uses a denominator that reflects the "white only" population, and the numerator is the number of visits in which white and no other race category was reported as the patient's race by the health care provider.

Data indicate that multiple races are recorded less frequently in medical records than occur in the general population. The 2003 population estimates indicate that multiple-race persons account for 1.5 percent of the total population whereas multiple-race patients (as indicated by the provider) account for 0.1 percent of ED visits. This difference exists because hospital staff is less likely to know and record the multiple race preference of the patient and not because, after age-adjusting, persons with multiple races make fewer ED visits. This implies that the race population rates calculated in 2003 are probably slight "overestimates" for the single race categories and "underestimates" for the multiple race category.

**Table II. Reclassification of body site of primary diagnosis codes for use with the National Hospital Ambulatory Medical Care Survey emergency department data**

Body site	ICD-9-CM codes <sup>1</sup>
<b>Head and neck:</b>	
Traumatic brain injury . . . . .	800.1–800.4, 800.6–800.9, 800.03–800.05, 800.50–800.55, 801.1–801.4, 801.6–801.9, 801.03–801.05, 801.50–801.55, 803.1–803.4, 803.6–803.9, 803.03–803.05, 803.50–803.55, 804.1–804.4, 804.6–804.9, 804.03–804.05, 804.50–804.55, 850.2–850.4, 851–853, 854.03–854.05, 854.1, 950.1–950.3, 800.00–800.02, 800.06, 800.09, 801.00–801.02, 801.06, 801.09, 803.00–803.02, 803.06, 803.09, 804.00–804.02, 804.06, 804.09, 800.50–800.52, 800.56, 800.59, 801.50–801.52, 801.56, 801.59, 803.50–803.52, 803.56, 803.59, 804.50–804.52, 804.56, 804.59, 850.0, 850.1, 850.5, 850.9, 854.00–854.02, 854.06, 854.09, or 995.55
Other head . . . . .	951, 873.0, 873.1, 873.8, 873.9, 941.x6, or 959.01
Face . . . . .	802, 830, 848.0–848.1, 872, 873.2–873.7, 941.x1, 941.x3–941.x5, or 941.x7
Eye . . . . .	950.0, 950.9, 870–871, 921, 918, 940, or 941.x2
Head, face, neck, and unspecified . . . . .	807.5–807.6, 848.2, 925.2, 953.0, 954.0, 874, 941.x8, 925.1, 900, 957.0, 910, 920, 947.0, 959.09, 941.x0, or 941.x9
Spinal cord . . . . .	806.0–806.1, 952.0, 806.2–806.3, 952.1, 806.4–806.5, 952.2, 806.6–806.7, 952.3–952.4, 806.8–806.9, 952.8–952.9, 957.0, or 959.09
<b>Vertebral column . . . . .</b>	
Cervical . . . . .	805.0–805.1, 839.0–8391, or 847.0
Thoracic and dorsal . . . . .	805.2–805.3, 839.21, 839.31, or 847.1
Lumbar . . . . .	805.4–805.5, 839.20, 839.30, or 847.2
Other vertebral column . . . . .	805.6–805.7, 839.41, 839.42, 839.51–839.52, 847.3–847.4, 805.8–805.9, 839.40, 839.49, 839.50, or 839.59
<b>Torso:</b>	
Chest . . . . .	807.0–807.4, 839.61, 839.71, 848.3–848.4, 926.19, 860–862, 901, 953.1, 875, 879.0, 879.1, 922.0, 922.1, 922.33, or 942.x1–942.x2
Abdomen . . . . .	863–866, 868, 902.0–902.4, 953.2, 953.5, 879.2–879.5, 922.2, 942.x3, or 947.3
Pelvis and urogenital . . . . .	808, 839.69, 839.79, 846, 848.5, 926.0, 926.12, 867, 902.5, 902.81–902.82, 953.3, 877–878, 922.4, 942.x5, or 947.4
Trunk . . . . .	809, 926.8–926.9, 954.1, 954.8–954.9, 879.6–879.7, 922.8–922.9, 911, 942.0, 942.9, or 959.1
Back and buttocks . . . . .	847.9, 926.11, 876, 922.32, 922.31, or 942.x4
<b>Upper extremity:</b>	
Shoulder and upper arm . . . . .	810–812, 831, 840, 880, 887.2–887.3, 943.x3–943.x6, 912, 923.0, 927.0, or 959.2
Forearm and elbow . . . . .	813, 832, 841, 881.x0–881.x1, 887.0–887.1, 923.1, 927.1, or 943.x1–943.x2
Wrist, hand, and fingers . . . . .	814–817, 833–834, 842, 881.x2, 882–883, 885–886, 914–915, 923.2–923.3, 927.2–927.3, 944, or 959.4–959.5
Other and unspecified upper extremity . . . . .	818, 884, 887.4–887.7, 903, 913, 959.3, 923.8–923.9, 927.8–927.9, 953.4, 955, or 943.x0–943.x9
<b>Lower extremity:</b>	
Hip . . . . .	820, 835, 843, 924.01, 928.01
Upper leg and thigh . . . . .	821, 897.2–897.3, 924.00, 928.00, or 945.x6
Knee . . . . .	822, 836, 844.0–844.3, 924.11, 928.11, or 945.x5
Lower leg and ankle . . . . .	823–824, 897.0–897.1, 837, 845.0, 924.10, 924.21, 928.10, 928.21, or 945.x3–945.x4
Foot and toes . . . . .	825–826, 838, 845.1, 892–893, 895–896, 917, 924.20, 924.3, 928.20, 928.3, or 945.x1–945.x2
Other and unspecified lower extremity . . . . .	827, 844.8–844.9, 890–891, 894, 897.4–897.7, 904.0–904.8, 916, 924.4–924.5, 928.8, 928.9, 959.6–959.7, 945.x0, or 945.x9
System-wide . . . . .	930–939, 960–994, 905–908, 909.0, 909.1, 909.2, 909.4, 909.9, 958, 995.80–995.85, 995.50–995.54, 995.80, 995.85, 909.0, 909.1, 909.2, 909.4, 909.9
Other and unspecified body site injuries . . . . .	828, 819, 902.87, 902.89, 953.8, 947.1–947.2, 956, 829, 839.8–839.9, 848.8–848.9, 869, 879.8–879.9, 902.9, 904.9, 919, 924.8–924.9, 929, 946, 947.8–947.9, 948–949, 953.9, 957.1, 957.8–957.9 or 959.8–959.9
Adverse effects and medical complications . . . . .	909.3–909.5, 995.0–995.4, 995.6, 995.86–995.89, 996–999

<sup>1</sup>Based on the "Supplementary Classification of External Causes of Injury and Poisoning," *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM) (17).

## Definition of terms

**Drug mention**—A drug mention is the health care provider's entry on the Patient Record form of a pharmaceutical agent—by any route of administration—for prevention, diagnosis, or treatment. Generic as well as brand-name drugs are included as are nonprescription and prescription drugs. Along with all new drugs, the physician also records continued medications if the patient was specifically instructed during the visit to continue the

medication. Health care providers may report up to six medications per visit.

**Drug visit**—A drug visit is a visit at which medication was prescribed or provided by the physician.

**Emergency department**—An ED is a hospital facility for the provision of unscheduled outpatient services to patients whose conditions require immediate care and is staffed 24 hours a day. If an ED provided emergency services in different areas of the hospital, then all of these ESAs are selected with certainty into the sample.

Off-site EDs that are open less than 24 hours are included if staffed by the hospital's ED.

**Emergency service area**—An emergency service area is the smallest administrative unit of an ED where separate patient statistics are kept. It may be located on hospital grounds or operated off site by the hospital.

**Emergent visit**—An emergent visit is one at which the triage practitioner determines that the patient should receive care immediately to combat danger to life or limb and where any

delay would likely result in deterioration. If the visit was determined to be emergent, “less than 15 minutes” was to be checked in item 2b, “immediacy with which patient should be seen” on the Patient Record form.

*Episode of care*—This term describes the nature of the care provided at the visit; an initial visit versus a followup visit. An episode of care begins with the initial visit for care for a particular problem and ends when the patient is no longer continuing treatment. A problem may recur later, but that is considered a new episode of care. An initial visit may be diagnostic in nature whereas a followup visit may be to check progress or continue therapy.

*Followup visit*—Care was previously provided for this problem. This is the second or subsequent visit for this problem or complaint.

*Hospital*—To be in scope for the NHAMCS, a hospital must have an average length of stay for all patients of less than 30 days (short-stay) or be a hospital whose specialty is general (medical or surgical) or children’s general, except Federal hospitals, hospital units of institutions, and hospitals with fewer than six beds staffed for patient use.

*Illness-related visit*—A visit is considered illness related if it was not an injury visit, as in the definition for injury-related visit.

*Initial visit*—This is the first visit to this ED by this patient for care of this particular problem or complaint.

*Injury-related visit*—A visit is injury related if “Yes” was checked in response to item 5a, “Is visit related to injury, or poisoning, or adverse effect of medical treatment?;” if a cause of injury or a nature of injury diagnosis was provided; or if an injury-related reason for visit was reported.

*Outpatient department*—An outpatient department is a hospital facility where nonurgent ambulatory medical care is provided under the supervision of a physician.

*Ownership*—Hospitals are designated according to the primary owner of the hospital based on the Verispan Hospital Database.

*Voluntary nonprofit*—Hospitals are church-related, a nonprofit corporation, or have other nonprofit ownership.

*Government, non-Federal*—Hospitals are operated by a State, county, city, city-county, or hospital district or authority.

*Proprietary*—Hospitals are individually or privately owned or are partnerships or corporations.

*Patient*—A patient is an individual seeking personal health services who is not currently admitted to any health care institution on the premises. Patients arriving by ambulance are included.

*Visit*—A visit is a direct, personal exchange between an ambulatory patient seeking care and a physician or other hospital staff member working under the physician’s supervision for the purpose of rendering personal health services. Excluded from the NHAMCS are visits where medical care was not provided, such as visits made to drop off specimens, pay bills, and make appointments.

*Visit rate*—The visit rate is a basic measure of service utilization for event-based surveys. The numerator is the number of estimated visits and the denominator is the corresponding U.S. population estimate for those who possibly could have made the visits. The interpretation is that for every person in the population there are  $x$  visits made. It does not mean that  $x$  percent of the population made visits because some persons in the population make no visits and others make multiple visits within a given year. The only exception is when an event can occur just once for a person (e.g., if an appendectomy were performed during the visit). The visit rate is best used to compare amounts of utilization across various subgroups of interest such as age, race, or geographic region (e.g., the rate of U.S. emergency department visits in 2003 was 69.3 visits per 100 black or African American persons and 37.2 visits per 100 white persons).



Form Approved OMB No. 0920-0278 Exp. Date 04/30/2006 CDC 64-136

Form <b>NHAMCS-100(ED)</b> 9-18-2003	U.S. DEPARTMENT OF COMMERCE Economic and Statistics Administration U.S. CENSUS BUREAU ACTING AS DATA COLLECTION AGENT FOR THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES Centers for Disease Control and Prevention National Center for Health Statistics	
<b>NATIONAL HOSPITAL AMBULATORY MEDICAL CARE SURVEY                  2003 EMERGENCY DEPARTMENT PATIENT RECORD</b>		
Assurance of confidentiality - All information which would permit identification of an individual, a practice, or an establishment will be held confidential, will be used only by persons engaged in and for the purpose of the survey and will not be disclosed or released to other persons or used for any other purpose without consent of the individual or the establishment in accordance with section 3081(b) of the Public Health Service Act (42 USC 242m).		

<b>1. PATIENT INFORMATION</b>					
<b>a. Date of visit</b> Month Day Year		<b>b. ZIP code</b>		<b>c. Date of birth</b> Month Day Year	
<b>d. Time of day</b> (1) Arrival <input type="checkbox"/> AM <input type="checkbox"/> Military <input type="checkbox"/> PM (2) Time seen by physician <input type="checkbox"/> AM <input type="checkbox"/> Military <input type="checkbox"/> PM <input type="checkbox"/> Not seen by physician (3) Discharge <input type="checkbox"/> AM <input type="checkbox"/> Military <input type="checkbox"/> PM Mark (X) if discharge for more than 24 hours from arrival.		<b>e. Does patient reside in a nursing home or other institution?</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown		<b>f. Sex</b> 1 <input type="checkbox"/> Female 2 <input type="checkbox"/> Male	
<b>g. Ethnicity</b> 1 <input type="checkbox"/> Hispanic or Latino 2 <input type="checkbox"/> Not Hispanic or Latino		<b>h. Mode of arrival - Mark (X) one.</b> 1 <input type="checkbox"/> Ambulance (air/ground) 2 <input type="checkbox"/> Public service (nonambulance, e.g., police, social services) 3 <input type="checkbox"/> Walk-in 4 <input type="checkbox"/> Unknown		<b>i. Race - Mark (X) one or more.</b> 1 <input type="checkbox"/> White 2 <input type="checkbox"/> Black/African American 3 <input type="checkbox"/> Asian 4 <input type="checkbox"/> Native Hawaiian/ Other Pacific Islander 5 <input type="checkbox"/> American Indian/ Alaska Native	
<b>j. Primary expected source of payment for this visit - Mark (X) one.</b> 1 <input type="checkbox"/> Private insurance 2 <input type="checkbox"/> Medicare 3 <input type="checkbox"/> Medicaid/SCHIP 4 <input type="checkbox"/> Worker's Compensation 5 <input type="checkbox"/> Self-pay 6 <input type="checkbox"/> No charge/Charity 7 <input type="checkbox"/> Other 8 <input type="checkbox"/> Unknown					
<b>2. TRIAGE</b>					
<b>a. Initial vital signs</b> (1) Temperature (2) Pulse <input type="checkbox"/> last 4 minutes		<b>b. Blood pressure</b> (3) <input type="checkbox"/> Normal X 3 <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		<b>c. Presenting level of pain</b> 1 <input type="checkbox"/> Unknown 2 <input type="checkbox"/> None 3 <input type="checkbox"/> Mild 4 <input type="checkbox"/> Moderate 5 <input type="checkbox"/> Severe	
<b>d. Immediately with which patient should be seen</b> 1 <input type="checkbox"/> Unknown/No triage 2 <input type="checkbox"/> Less than 15 minutes 3 <input type="checkbox"/> 15-60 minutes 4 <input type="checkbox"/> >1 hour-2 hours 5 <input type="checkbox"/> >2 hours-24 hours					
<b>3. REASON FOR VISIT</b>					
<b>a. Patient's complaint(s), symptom(s), or other reason(s) for this visit</b> Use patient's own words. (1) _____ (2) _____ (3) _____			<b>b. Is this visit related to alcohol use?</b> 1 <input type="checkbox"/> Yes, patient's use 2 <input type="checkbox"/> Yes, other person's use 3 <input type="checkbox"/> No 4 <input type="checkbox"/> Unknown		<b>c. Is this visit work related?</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown
<b>d. Has patient been seen in this ED within the last 72 hours?</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown			<b>e. Episode of care</b> 1 <input type="checkbox"/> Initial visit for problem 2 <input type="checkbox"/> Follow-up visit for problem 3 <input type="checkbox"/> Unknown		
<b>5. INJURY/POISONING/ADVERSE EFFECT</b>					
<b>a. Is this visit related to an injury, or poisoning, or adverse effect of medical treatment?</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No - SKIP to item 6.		<b>b. Is this injury/poisoning intentional?</b> 1 <input type="checkbox"/> Yes, self-inflicted 2 <input type="checkbox"/> Yes, assault 3 <input type="checkbox"/> No, unintentional 4 <input type="checkbox"/> Unknown		<b>c. Cause of injury, poisoning, or adverse effect - Describe the place and events that preceded the injury, poisoning, or adverse event (e.g., allergy to penicillin, bee sting, pedestrian hit by car, driver by drunk driver, wife beaten with fists by husband, heroin overdose, electrical shock, etc.).</b> _____ _____ _____	
<b>6. PHYSICIAN'S DIAGNOSIS FOR THIS VISIT</b>					
As specifically as possible, list diagnoses related to this visit including chronic conditions. (1) Primary diagnosis: _____ (2) Other: _____ (3) Other: _____					
<b>7. DIAGNOSTIC/SCREENING SERVICES</b>		<b>8. PROCEDURES</b>		<b>9. MEDICATIONS &amp; INJECTIONS</b>	
Mark (X) all ordered or provided at this visit. 1 <input type="checkbox"/> NONE <b>Examinations/Tests:</b> 2 <input type="checkbox"/> Medical screening exam 3 <input type="checkbox"/> Mental status exam 4 <input type="checkbox"/> EKG/ECG (electrocardiogram) 5 <input type="checkbox"/> Cardiac monitor 6 <input type="checkbox"/> EEG (electroencephalogram) 7 <input type="checkbox"/> Pulse oximetry 8 <input type="checkbox"/> Pregnancy test 9 <input type="checkbox"/> Urinalysis (UA) <b>Imaging:</b> 10 <input type="checkbox"/> Chest X-ray 11 <input type="checkbox"/> Extremity X-ray 12 <input type="checkbox"/> Other X-ray 13 <input type="checkbox"/> Ultrasound 14 <input type="checkbox"/> MRI/CAT scan 15 <input type="checkbox"/> Other imaging		Mark (X) all provided at this visit. Exclude medications. 1 <input type="checkbox"/> NONE 2 <input type="checkbox"/> Bladder catheter 3 <input type="checkbox"/> CPR 4 <input type="checkbox"/> Endotracheal intubation 5 <input type="checkbox"/> Eye/ENT care 6 <input type="checkbox"/> IV fluids 7 <input type="checkbox"/> NG tube/gastric lavage 8 <input type="checkbox"/> OB/GYN care 9 <input type="checkbox"/> Orthopedic care 10 <input type="checkbox"/> Thrombolytic therapy 11 <input type="checkbox"/> Wound care 12 <input type="checkbox"/> Other		<b>a. What is the total number of drugs prescribed or provided at this visit?</b> → Include Rx and OTC medications, immunizations, allergy shots, anesthetics, and dietary supplements that were ordered, supplied, administered or continued during the visit. <b>b. List up to 8 medication/injection names below.</b> (1) _____ (2) _____ (3) _____ (4) _____ (5) _____ (6) _____ (7) _____ (8) _____	
<b>10. VISIT DISPOSITION</b>					
Mark (X) all that apply. 1 <input type="checkbox"/> No follow-up planned 2 <input type="checkbox"/> Return if needed, PRN/appointment 3 <input type="checkbox"/> Return to referring physician 4 <input type="checkbox"/> Refer to other physician(s) for FU 5 <input type="checkbox"/> Refer out from triage without treatment 6 <input type="checkbox"/> Refer to alcohol or drug treatment program 7 <input type="checkbox"/> Return to non-physician treatment or support 8 <input type="checkbox"/> Left before being seen 9 <input type="checkbox"/> Left AMA 10 <input type="checkbox"/> Admit to ED for observation 11 <input type="checkbox"/> Admit to hospital 12 <input type="checkbox"/> Admit to ICU/CCU service 13 <input type="checkbox"/> Transfer to other facility 14 <input type="checkbox"/> DOW/bed in ED 15 <input type="checkbox"/> Other					
<b>11. PROVIDERS SEEN</b>					
Mark (X) all that apply. 1 <input type="checkbox"/> Staff physician 2 <input type="checkbox"/> Resident/Intern 3 <input type="checkbox"/> Other physician 4 <input type="checkbox"/> RN 5 <input type="checkbox"/> LPN 6 <input type="checkbox"/> Nurse practitioner 7 <input type="checkbox"/> Physician assistant 8 <input type="checkbox"/> EMT 9 <input type="checkbox"/> Other technician 10 <input type="checkbox"/> Other					

NHAMCS-100(ED) 9-18-2003

Figure I. Patient Record form

---

**Suggested citation**

McCaig LF, Burt CW. National Hospital Ambulatory Medical Care Survey: 2003 emergency department summary. Advance data from vital and health statistics; no 358. Hyattsville, Maryland: National Center for Health Statistics. 2005.

---

**Copyright information**

All material appearing in this report is in the public domain and may be reproduced or copied without permission; citation as to source, however, is appreciated.

---

**National Center for Health Statistics**

Director  
Edward J. Sondik, Ph.D.  
Acting Co-Deputy Director  
Jennifer H. Madans, Ph.D.  
Acting Co-Deputy Director  
Michael H. Sadagursky

---

U.S. DEPARTMENT OF  
HEALTH & HUMAN SERVICES

Centers for Disease Control and Prevention  
National Center for Health Statistics  
3311 Toledo Road  
Hyattsville, Maryland 20782

FIRST CLASS POSTAGE & FEES PAID CDC/NCHS PERMIT NO. G-284
--

---

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE, \$300

---

To receive this publication regularly, contact the National Center for Health Statistics by calling 1-866-441-NCHS (6247)  
E-mail: [nchsquery@cdc.gov](mailto:nchsquery@cdc.gov)  
Internet: [www.cdc.gov/nchs](http://www.cdc.gov/nchs)

---

DHHS Publication No. (PHS) 2005-1250  
05-0280 (05/05)

---

**Trade name disclaimer**

The use of trade names is for identification only and does not imply endorsement by the Centers for Disease Control and Prevention, U.S. Department of Health and Human Services.