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National Hospital Ambulatory Medical Care Survey: 2001 Emergency Department Summary

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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 1992 through 2001 are also presented. The report highlights new items on the continuity of care provided at ED visits, initial vital sign measurements, whether the patient's residence was a nursing home or institution, and duration of the ED visit.

Methods—The data presented in this report were collected from the 2001 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 2001, an estimated 107.5 million visits were made to hospital EDs, about 38.4 visits per 100 persons. From 1992 through 2001, an increasing trend in the ED utilization rate was observed. Between 2 and 3 percent of ED visits were made by patients living in a nursing home or other institution. At approximately 3 percent of visits, the patient had been seen in the ED within the last 72 hours. In 2001, abdominal pain, chest pain, fever, and headache 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 39.4 million injury-related visits during 2001, or 14.1 visits per 100 persons. Diagnostic/screening services and procedures were provided at 85.4 percent and 40.9 percent of visits, respectively. Medications were provided at 74.2 percent of visits, and pain relief drugs accounted for 34.2 percent of the medications mentioned. In 2001, approximately 12 percent of ED visits resulted in hospital admission. On average, patients spent 3.0 hours in the ED.

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 National Center for Health Statistics (NCHS) Internet address: www.cdc.gov/nchs/nhcs.htm.

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 Medical Care Survey (NAMCS). However, visits to hospital EDs and OPDs, which represent a significant

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

There is a growing appreciation of the unique role of the ED within the U.S. health care system and of its expanding role as a safety net provider for vulnerable populations such as the uninsured, those on Medicaid, and minorities (2). Congress has passed several laws that impact the burden on EDs. The 1986 Emergency Medical Treatment and Labor Act (EMTALA) requires EDs to perform a screening examination and, if the patient requires emergency treatment, to treat or stabilize the patient for transfer to another facility. The Balanced Budget Act (BBA) of 1997 requires Medicaid and Medicare programs to reimburse hospitals for emergency care that a reasonable person would consider necessary. Several States also passed legislation that enacted the ''prudent layperson'' standard. The attacks on September 11, 2001, and the subsequent cases of anthrax spotlight the quintessential role of EDs in the immediate response to mass casualty incidents and in the detection and surveillance of bioterror-related diseases (3).

This report presents data from the 2001 National Hospital Ambulatory Medical Care Survey (NHAMCS), a nationally representative survey of hospital ED utilization. Hospital, patient, and visit characteristics are described. In addition, data on selected ED utilization trends from 1992 through 2001 are presented. Other *Advance Data* reports highlight visits to OPDs (4) and physician offices (5). More detailed information on 1992–99 ED trend data was published in a separate report (6).

The content of the 2001 Patient Record form (see the Technical Notes) was redesigned to incorporate several variables not previously collected. This includes whether the patient was a resident of a nursing home or other institution; initial measurements of temperature, pulse, and blood pressure; continuity of care, including whether the patient had been seen in this ED within the last 72 hours and whether it was an initial or followup visit; more detail on diagnostic/screening services such as blood tests and cultures; increased disposition categories including referral to alcohol or drug treatment program; admission for 23-hour observation; return to nonphysician treatment or support service; and total duration of time spent in the ED from registration to discharge.

Data highlights

- From 1992 through 2001, the number of ED visits increased from 89.8 million to 107.5 million visits annually (up 20 percent), and the number of hospital EDs in the United States decreased by about 15 percent.
- The overall ED utilization rate per population increased by 8 percent from 35.7 visits per 100 persons in 1992 to 38.4 visits per 100 persons in 2001.
- Between 2 to 3 percent of ED visits were made by patients residing in a nursing home or other institution. One-third of these visits were for injury and/or poisoning conditions.
- At about 3.2 million visits (3.0 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.
- At approximately 30 percent of visits, ED patients had a blood pressure greater than 140 mmHg/90 mmHg.
- Abdominal pain, chest pain, and fever were the most commonly recorded principal reasons for visit.
- About 2.5 million visits (2.3 percent) were related to either the patient's use of alcohol, another person's use of alcohol, or both.
- The most frequently reported primary diagnoses were contusions, acute upper respiratory infections, open wounds (excluding head), and abdominal pain.
- Injury, poisoning, and adverse medical events accounted for 36.6 percent of ED visits. Falls, being struck by or striking against, and motor vehicle incidents were the leading causes of injuries presenting to the ED, accounting for about 40 percent of such visits.
- Diagnostic and/or screening services and procedures were provided at 85.4 and 40.9 percent of visits, respectively. Imaging was provided at 40.8 percent of visits.
- Medications were provided at 74.2 percent of visits, and pain relief drugs accounted for 34.2 percent of the medications mentioned.
- The percent of visits with no followup planned (9.6 percent) increased by 60 percent from 1992 (6.0 percent). At 40.6 percent of visits, the patient was referred to another physician or clinic for followup; at 37.9 percent of visits, patients were told to return if needed or were given an ED appointment; and at 11.7 percent of visits, patients were admitted to the hospital.
- On average, patients spent 3.0 hours in the ED. At almost 400,000 visits (0.4 percent), the patient spent 24 hours or more in the ED.

Methods

The data presented in this report are from the 2001 NHAMCS, a national probability sample survey conducted by the Centers for Disease Control and Prevention's Division of Health Care Statistics of the National Center for Health Statistics. The survey was conducted from January 1, 2001, through December 30, 2001.

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. The hospital sampling frame consisted of hospitals listed in the 1991 SMG Hospital Database updated using the 2000 SMG Hospital Database to allow the inclusion of hospitals that opened or changed their eligibility status since the previous sample in 1991. Approximately 50 hospitals were added for the 2001 sample that had not previously been included.

A four-stage probability sample design is used in the NHAMCS (7). The design involves samples of primary sampling units (PSUs), hospitals within PSUs, EDs within hospitals and/or clinics within outpatient departments, and patient visits within EDs and/or clinics. The PSU sample consists of 112 PSUs that comprise a probability subsample of the PSUs used in the 1985–94 National Health Interview Survey. A sample of 479 hospitals was selected for the 2001 NHAMCS of which 395 had eligible EDs. Approximately 90 percent of eligible EDs participated with a total visit response rate of 85.3 percent (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 34,546. 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 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 (8). Standard errors are provided in the text if the data are not presented in the tables. Data on selected ED utilization trends for 1992 through 2001 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, and data processing operations and medical coding were performed by Analytical Sciences 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 U.S. Census Bureau estimates of the civilian noninstitutional population of the United States as of July 1, 2001. These population estimates are based on postcensal estimates from the Census 2000 and are available from the U.S. Census Bureau. See the Technical Notes for more information about the effects of the change from 1990-based to 2000-based denominators on trends in population rates.

Results

Trend data indicated that the ED utilization rate rose from 35.7 visits per 100 persons in 1992 to 38.4 visits per 100 persons in 2001 (up 8 percent) (figure 1), and the annual number of ED visits increased from 89.8 million to 107.5 million visits (up 20 percent). Because of hospitals either closing their EDs or going out of business, the number of operating EDs decreased by about 15 percent between 1992 and 2001 (9), resulting in those EDs still open taking on an increasingly larger volume of patient encounters. Increased volume of ED visits can lead to longer waiting times for nonurgent visits (10) and increased occurrence of ambulance diversion (11). To accommodate this increasing demand, some hospitals have expanded the square footage of their EDs (11).

Patient characteristics

The average age of patients seen in the ED was 35.7 (SE=0.4). There has been an 8 percent increase in mean age since 1992 (33.0, SE=0.6). ED visits by patient's age, sex, and race are shown in table 1. Persons 75 years of age and over had the highest ED visit rate (59.7 visits per 100 persons). There were no differences in rates by sex within the various age groups with the exception of the 15–24-year-old age category, where females had a higher rate. The ED utilization rate for black or African American persons was 76 percent higher than for white persons (figure 2). Significant differences were observed by race in all age groups. For the first time, ED visit rates by Asians and Native Hawaiian or other Pacific Islanders are presented separately because census estimates for these populations became available. ED visits rates for Asians were lower than for white persons or black or African American persons.

A new item was added to the Patient Record form in 2001 to capture

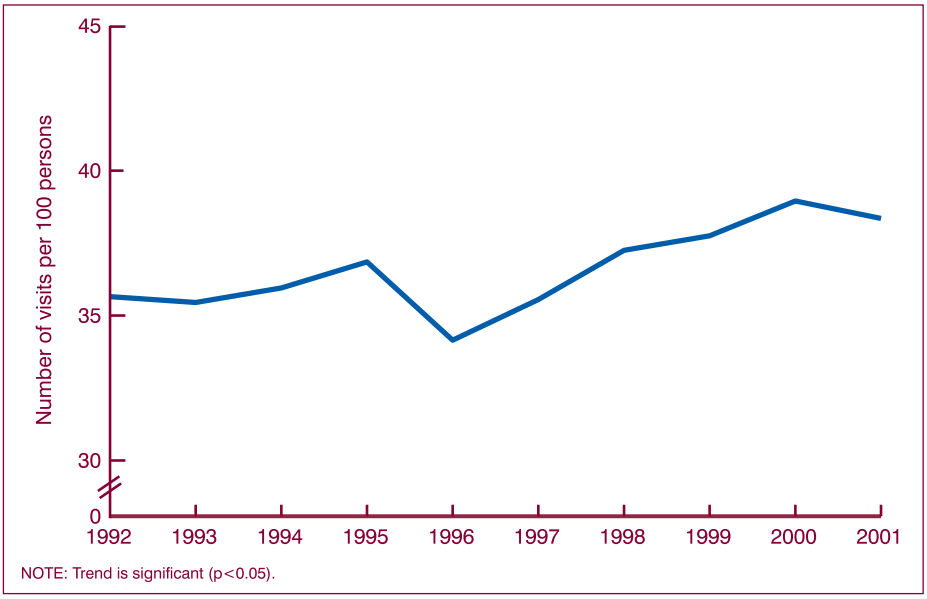


Figure 1. Trend in emergency department visit rates: United States, 1992–2001

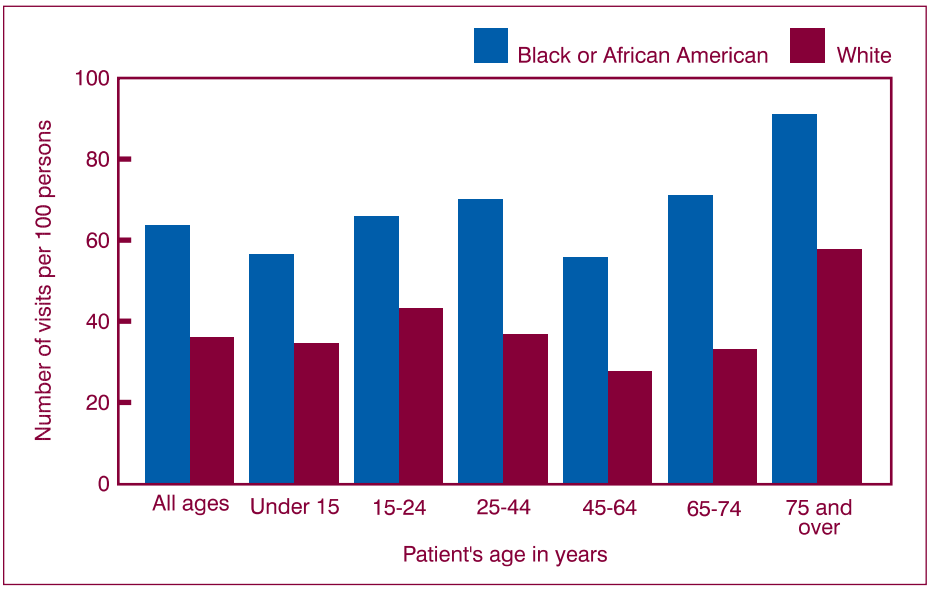


Figure 2. Annual rate of emergency department visits by patient's age and race: United States, 2001

whether the patient resided in a nursing home or other institution (e.g., prison, mental hospital, group home for the mentally retarded or physically disabled). For 2.8 million visits (2.6 percent, SE=0.2), nursing home or other institution was recorded as the patient's residence and the mean age for these visits was 70.5 years (SE=1.0). The majority of these visits were made by patients who were 75 years and over (58.0 percent). About 15.9 percent were between 65 and 74 years of age. About 82.5 percent of visits by institutionalized patients were made by white persons and 14.8 percent by black or African American persons. Residence information was missing for 7.1 percent of visits (data not shown).

Hospital characteristics

Ownership—About 73 percent of ED visits were made to voluntary nonprofit hospitals (table 1). The percent of visits made to non-Federal government (i.e., State, county, city) and proprietary hospitals were 17.4 percent and 9.6 percent, respectively.

Geographic region—The visit rate was higher in the South (40.7 visits per 100 persons) than in the West (30.7 visits per 100 persons). A higher proportion of ED visits occurred in the South (37.7 percent) than in the three other regions (table 1). The percent of visits in the Midwest (24.8 percent) was greater than in the West (18.1 percent).

Hospital ED size—Hospitals in metropolitan statistical areas (MSAs) tend to have a larger volume of ED visits than those in non-MSAs. About 62 percent of all hospital EDs were located in MSAs, but they represent 82.4 percent of the annual ED encounters. However, the ED utilization rate per 100 persons did not vary by the MSA status of the hospital (table 1). In 2001, about 53 percent of all hospital EDs had annual visit volumes less than 20,000 visits and 13.2 percent had volumes greater than 50,000 visits (data not shown). Approximately 28.3 percent of hospital EDs were affiliated with medical schools, but they accounted for 43.3 percent of all visits (data not shown).

Questions from the hospital induction interview were analyzed by ED size (small, medium, and large). ED size was found to be associated with increased likelihood of having an automated drug dispensing system in the ED (from 21 percent for small EDs to 65 percent for large EDs) with a national average of 39.5 percent (SE=4.2). The larger EDs were also more likely to have OPD clinics offering physician services. On average, about one-half of all hospitals with 24-hour EDs also had such OPD clinics as opposed to OPDs that only offer ancillary services like radiology, laboratory, etc. ED size was not associated with the likelihood of having electronic patient medical records in the ED, however, which averaged about 30.1 percent (SE=4.6).

Emergency service area characteristics

Emergency service areas (ESAs) are the smallest administrative units of an ED where separate patient statistics are kept. They may be located on hospital grounds or operated off-site by the hospital. In 2001, a new item was added to the emergency service area induction form to capture ESA type. Only 6.4 percent (SE=1.3) of 24-hour EDs had more than one ESA. These hospitals were more likely to be affiliated with a medical school, be located in a MSA, and have a large annual ED visit volume (i.e., ≥ 50,000) (data not shown). The majority of emergency departments with only one ESA had a general ESA. Of EDs with more than one emergency service area, 79.9 percent (SE=5.7) had a general ESA, 31.9 percent (SE=7.3) had a pediatric ESA, 28.3 percent (SE=7.6) had an adult ESA, 21.1 percent (SE=6.8) had an urgicenter, and 16.1 percent (SE=4.9) had a psychiatric ESA. The distribution of ED visits reveals that overall, 89.6 percent (SE=1.5) were to general ESAs and between 2.3 and 3.2 percent of visits were to ESAs specializing in pediatric, adult, or trauma emergencies.

Visit characteristics

Primary expected source of payment—Private insurance was listed as the dominant expected source of payment, accounting for 40.2 percent of ED visits (table 2). Medicaid/State Children's Health Insurance Program (SCHIP) (17.5 percent), Medicare (14.8 percent), and self-payment (which does not include patient copayments and deductibles) (14.7 percent) were also prominent. About 2.5 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 3. Private insurance was the leading primary

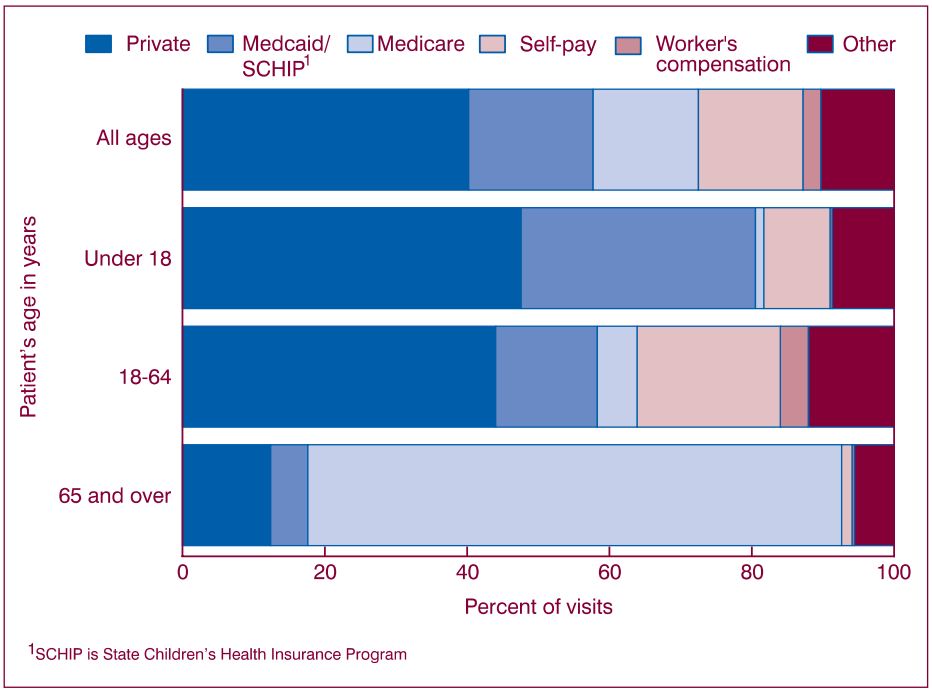


Figure 3. Percent distribution of emergency department visits by primary expected source of payment according to patient's age: United States, 2001

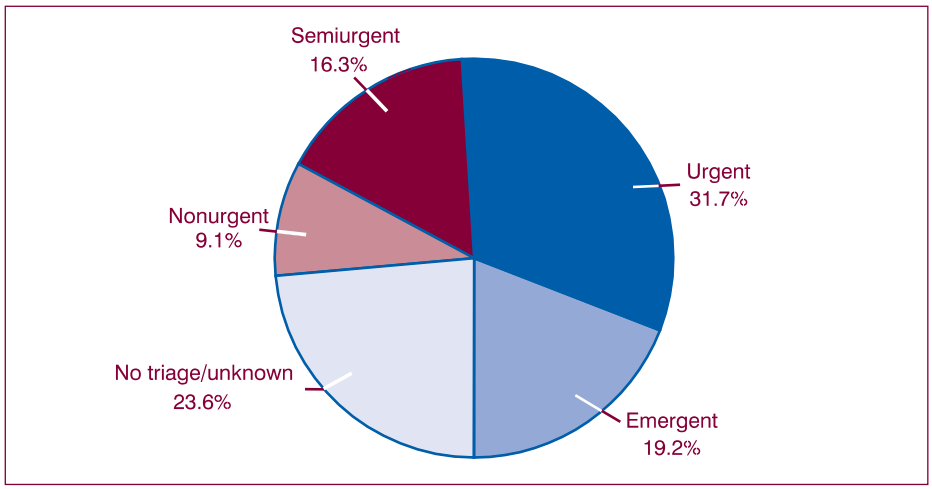


Figure 4. Percent distribution of emergency department visits by immediacy with which the patient should be seen: United States, 2001

expected source of payment reported for persons under 64 years of age, and Medicare was most commonly recorded for persons aged 65 years and over.

Immediacy with which patient should be seen—The level of immediacy is assigned upon arrival at the ED by triage staff for those EDs that conduct triage. The NHAMCS item categorized immediacy into four groups: emergent (less than 15 minutes), urgent (15–60 minutes), semiurgent (1–2 hours), and nonurgent (2–24 hours). For 23.6 percent of ED visits, the hospital staff recorded this item as "unknown or no triage."

As shown in figure 4, 19.2 percent of ED visits were classified as emergent, 31.7 percent were urgent, 16.3 percent were semiurgent, and 9.1 percent were nonurgent. Data on urgency by patient characteristics are presented in table 3. 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 50.9 percent of all ED visits. Among visits by institutionalized patients appearing at the ED, 28.6 percent (SE=2.1) were triaged as emergent and 32.1 percent (SE=2.6) as urgent. The triage distribution for institutionalized patients was the same as that shown for all patients aged 75 years and over.

Arrival time of visit—Figure 5 shows the distribution of ED arrival times. There are two peaks in the curve: one at 11:00 a.m. when most elderly persons arrive, and one at 7:00–8:00 p.m. when most children arrive.

Initial vital signs—In 2001, for the first time, the patient's initial vital signs were collected on the Patient Record form. Table 4 presents the mean for temperature, pulse, and systolic and diastolic blood pressures along with the 25th percentile, median, and 75th percentile to indicate variability in the estimates. Looking at all visits, mean temperature was 98.3°F/36.8°C. However, when the reason for the visit was fever, the mean temperature was 100.6°F/38.1°C (table 4). Approximately 1.9 percent (SE=0.1) of the patients had a temperature higher than 102.2°F/ 39.0°C. The mean pulse for all patients was 91 beats per minute, and for children under 18 years of age, the mean was about 108. Approximately 1.1 percent (SE=0.1) of patients had a pulse greater than 160. The overall means for systolic and diastolic blood pressures were 132.9 and 78.9 mmHg, respectively. When there was a diagnosis of hypertension, the mean systolic and diastolic blood pressures were 161.8 and 89.9 mmHg.

Table 5 shows the distribution of blood pressure measurements by selected patient and visit characteristics. Over all age groups, 43.7 percent of patients had blood pressures within normal limits (i.e., 100–140 mmHg systolic and 60–90 mmHg diastolic). Patients had high blood pressure measurements at approximately 30 percent of visits. The percent of visits where the patient had high blood pressure measurements varied significantly by patient's age, race, and expected source of payment ($p<0.01$). Measurements were missing for about half the visits by children under 15 years of age and 6.7 percent of visits for patients 15 years of age and over. Missing data for this item would be expected in the former group as it is often difficult to determine arterial

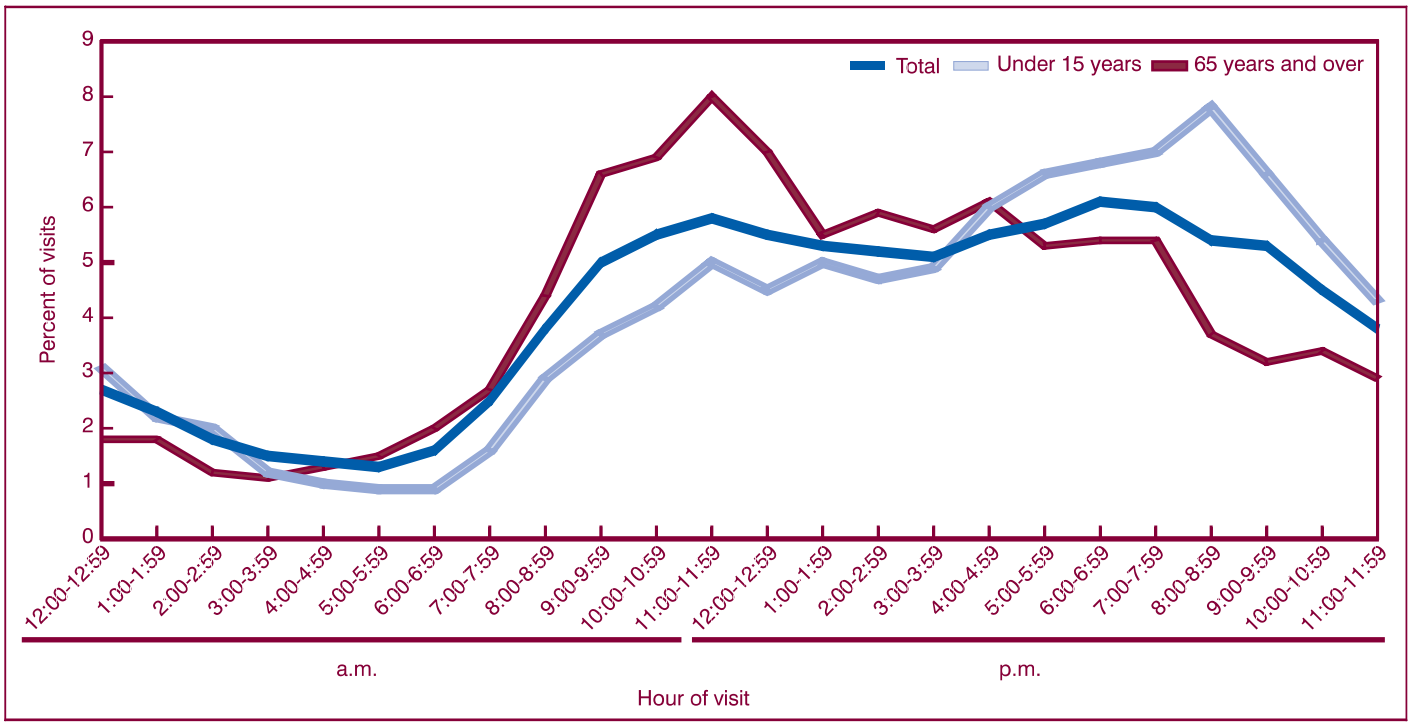
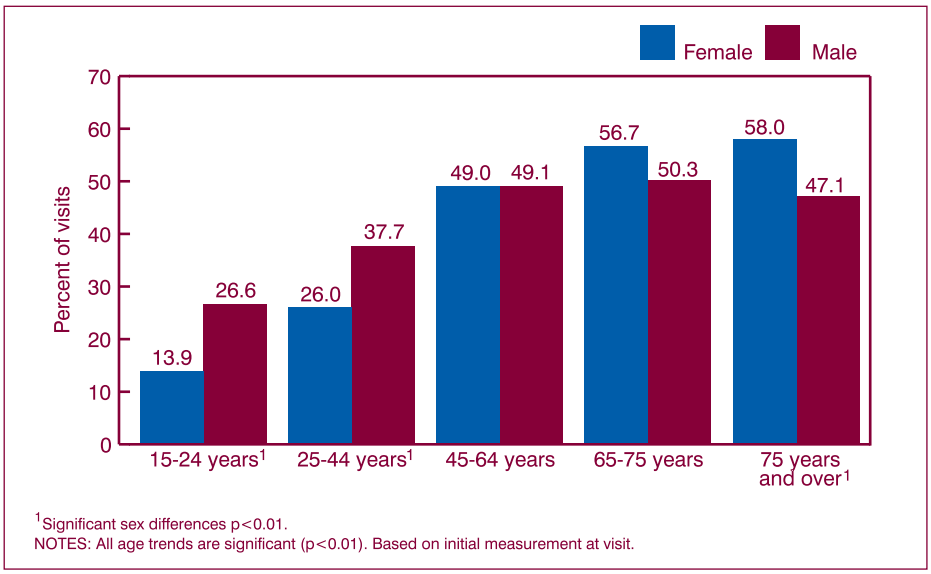


Figure 5. Percent distribution of emergency department visits by hour of visit: United States, 2001

blood pressure with accuracy for infants and young children. Figure 6 highlights the significant age by sex trends in the percent of ED visits with high blood pressure measurements for visits by persons 15 years of age and over. Males 15–44 years of age had high blood pressure more frequently than females, and females 75 years of age and over had high blood pressure more often than males. In the ED, high blood pressure measurements may be the result of pain and/or anxiety and are not necessarily indicative of the disease of chronic high blood pressure (i.e., hypertension).

Patient's principal reason for visit—-The principal reason 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) (12). The RVC is a classification scheme developed by NCHS that has been used for over 20 years to code patient's 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 symptoms module is further divided into symptoms that refer to specific body systems, such as respiratory or cardiovascular and lymphatic. Each reason is assigned a 3- or 4-digit classification code (for example, S260- "Abnormal pulsations and palpitations," is further detailed to S260.1- "Increased heartbeat," S260.2- "Decreased heartbeat," and S260.3- "Irregular heartbeat").

In 2001, 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 15.4 percent of the total (table 6). Musculoskeletal symptoms accounted for 13.8 percent of visits, and digestive and respiratory symptoms were recorded at 12.9 and 12.0 percent of visits, respectively. The 20 most frequently mentioned principal reasons for visit,



[1]Significant sex differences p<0.01.
NOTES: All age trends are significant (p<0.01). Based on initial measurement at visit.

Figure 6. Percent of emergency department visits where patients have high blood pressure measurements, by age and sex: United States, 2001

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 6.4 percent of all ED visits. Chest pain and fever accounted for 5.3 and 4.0 percent of visits, respectively. Laceration and cuts of the upper extremity was the most frequently mentioned reason for visit in the injury module (2.1 percent). It should be noted that estimates differing in ranked order may not be significantly different from each other. The most frequent chief complaints of institutionalized patients were shortness of breath, chest pain, and unspecified accident.

In 2001, an item indicating if the visit was alcohol-related was reintroduced to the Patient Record form. About 2.5 million visits (2.3 percent, SE=0.1) were related to either the patient's use of alcohol, another person's use of alcohol, or both (data not shown). This proportion was lower than that reported in 1992 (3.1 percent, SE=0.3). Persons in the age group 25–44 years made up 47.4 percent of the alcohol-related visits compared with 30.5 percent of all visits. This item was marked "unknown" or left blank for 11.3 percent of visits.

Continuity of care—Continuity of care is a goal of health care achieved through an interdisciplinary process involving patients, families, health care professionals, and providers in the management of a coordinated plan of care. Based on changing needs and available resources, the process optimizes quality outcomes in the health status of patients. It may involve professionals from many different disciplines within multiple systems. "Patient seen in this ED within the last 72 hours" and "Episode of care" were new items on the Patient Record form in 2001 that attempted to measure the continuity of care provided at the visit. Additionally, several new disposition categories, which are discussed later, help capture the continuity and coordination of care provided in the ED. At 3.0 percent of visits, the patient had been seen in the ED within the last 72 hours (table 8). This percent did not vary by age, race, sex, type of payment, injury or illness, or disposition. For about 88 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. Figure 7 shows "episode of care" by expected source of payment. Medicaid/SCHIP visits were more likely to be for followup compared with other payment sources.

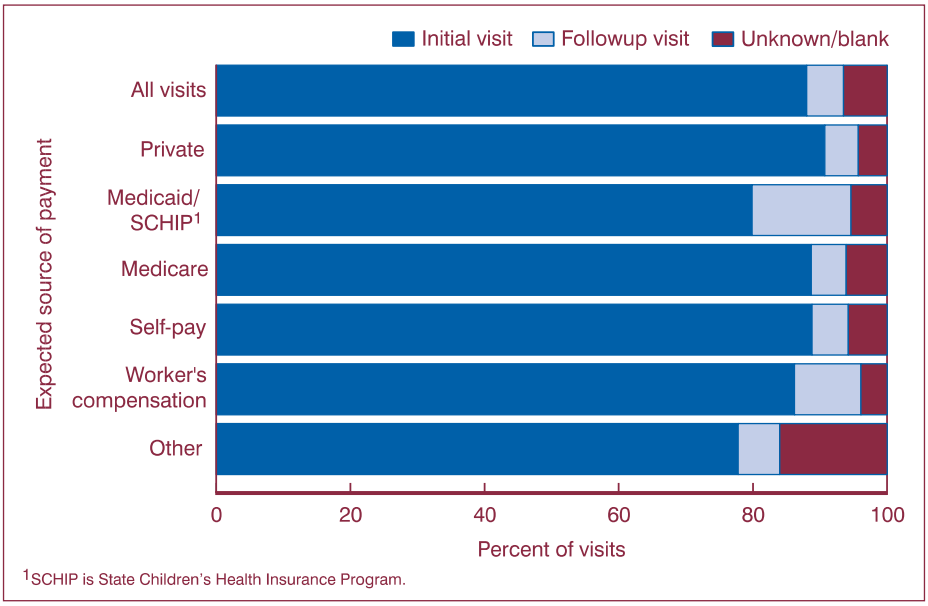


Figure 7. Percent distribution of emergency department visits by episode of care according to expected source of payment: United States, 2001

Primary diagnosis—Hospital staff were 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 *International Classification of Diseases, 9th Revision Clinical Modification* (ICD–9–CM) (13). 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 27.0 percent of all visits, and symptoms, signs, and ill-defined conditions and diseases of the respiratory system accounted for 17.4 percent and 11.9 percent, respectively. The most frequently reported primary diagnoses for 2001 are shown in table 10. Contusions lead the list (4.5 percent) followed by acute upper respiratory infections, excluding pharyngitis (3.9 percent); open wounds, excluding head (3.9 percent); abdominal pain (3.6 percent); and chest pain (3.5 percent). The leading diagnoses at visits by institutionalized patients were nonischemic heart disease, contusions, and urinary tract infection. For patients seen in the ED within the last 72 hours, the most common diagnoses were open wound (excluding head), abdominal pain, and spinal disorders.

Injury- or poisoning-related visits—Because EDs are used primarily to treat acute medical problems and severe injuries, it is helpful to determine whether cases are for illness or injury. Although there is a separate item on the Patient Record form to indicate whether the visit was for an injury or poisoning, 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 (13). This provides a better indicator that the visit involves an injury than using the reason-for-visit module, ICD–9–CM injury diagnosis, or the unedited injury item alone. A more detailed discussion is documented elsewhere (14).

Approximately 39.4 million ED visits were made for injury or poisoning, which represented 36.6 percent of all ED visits. There were 14.1 injury- or poisoning-related visits per 100 persons

(table 11). Seventy-two percent of all injury visits occurred among persons 44 years of age or younger. Persons 15–24 years of age had a higher injury-related visit rate (19.1 visits per 100 persons) than persons in the other age groups except for those 75 years and over. Males had a higher injury-related visit rate than females overall and for all age groups under 45 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 25–64 years of age. Approximately 5.2 percent of injury-related visits were for followup and 3.0 percent had been seen in the ED within the last 72 hours. About 5.3 percent (SE=0.4) of injury-related visits were alcohol related. Among alcohol-related visits, 34.3 percent (SE=2.3) were injury-related and among visits by institutionalized patients, 33.6 percent (SE=1.9) were injury-related; all these percents were similar to those for ED visits in general.

Table 12 displays data on injury-related ED visits by whether the injury was intentional, work related, or related to an adverse drug event. The latter was a new item on the Patient Record form in 2001. Hospital staff were instructed to mark ''Yes'' if a prescription, over-the-counter medication, or illegal drug was involved in an adverse drug event (e.g., allergy, overdose, medication error, drug interaction) for the patient. At least one adverse drug event was reported at 6.6 percent of visits and drug interactions occurred at 0.9 percent of visits. Adverse drug events were more frequent among persons 18–64 years of age than among any other age group. Approximately 6 percent of injuries were intentional; 58.7 percent of these were the result of an assault, and 41.3 percent were self-inflicted (data not shown). About 13 percent of injury-related ED visits made by persons 18–64 years were related to work. There were high levels of missing data (30.1 percent) regarding whether the injury was work related. A work-related injury is defined as an injury that happened while the patient was engaged in work activities occurring on or off the employer's premises.

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 (13). External cause was not provided for 19.2 percent of injury visits. However, at 4.0 percent of injury visits, alcohol or drug use was recorded as the first-listed cause of injury. Alcohol or drug use has no assigned E-code. About 72 percent of injury-related visits were due to an unintentional injury. The reader should keep in mind that the results regarding intentionality of the injury in table 13 will vary from those in table 12. In table 12, intentionality of the injury 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.

The unintentional injuries due to falls (19.7 percent), striking against or being struck accidentally by objects or persons (11.1 percent), and motor vehicle traffic-related injuries (11.1 percent) accounted for the largest proportion of injury-related ED visits. About 3.5 percent of injury-related ED visits were due to assaults. An unarmed fight or brawl was the leading reason for assault-related injuries (2.3 percent). Self-inflicted injuries resulted in 400,000 ED visits (1.0 percent) with poisoning being the most frequent cause (0.7 percent). Approximately 1.4 million ED visits were for adverse effects of medical treatment or surgical procedures and represented 3.7 percent of injury- or poisoning-related ED visits. This included adverse drug reactions and complications from surgical and medical procedures. There were 91,000 firearm-related ED visits (data not shown). However, estimates of whether these injury visits were intentional or unintentional were unreliable.

When examining the leading causes of injury recorded for visits where the patient presented with an adverse drug event based on item 4d, most were due to alcohol and/or drug use (42.3 percent, SE=1.9) followed by adverse effects of prescribed medications (21.0 percent, SE=1.5), self-inflicted overdose (7.9 percent, SE=0.9), and assault-related reasons (2.5 percent, SE=0.5).

Diagnostic and screening services—Diagnostic and screening services were ordered or provided by hospital staff at 85.4 percent of ED visits. Frequently mentioned services included medical screening exam (59.7 percent), complete blood count (CBC) (29.1 percent), pulse oximetry (18.3 percent), ''other blood chemistry'' (17.5 percent), chest x ray (17.2 percent), and urinalysis (15.2 percent) (table 14). Imaging was provided at 40.8 percent of visits. Use of magnetic resonance imaging (MRI) and computerized axial tomography (CAT) scan has increased by 163 percent, from 2.4 percent (SE=0.2) in 1992 to 6.3 percent (SE=0.3) in 2001. Note that for items related to diagnostic and screening services, procedures, providers seen, and disposition, hospital staff were asked to check all of the applicable categories for each item. Therefore, multiple responses could be coded for each visit. About 13 percent of ED visits had no diagnostic or screening services.

Procedures—Procedures were provided at 40.9 percent of ED visits. For visits with procedures, 86.4 percent had only one procedure recorded. The most frequently mentioned procedures were the administration of intravenous fluids (18.1 percent), wound care (10.0 percent), and orthopedic care (5.5 percent) (table 15).

Medication therapy—Hospital staff were 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. Up to six medications, referred to in this survey as drug mentions, were coded per visit according to a classification system developed at NCHS. A report describing the method and instruments used to collect and process drug information is available (15). As used in the

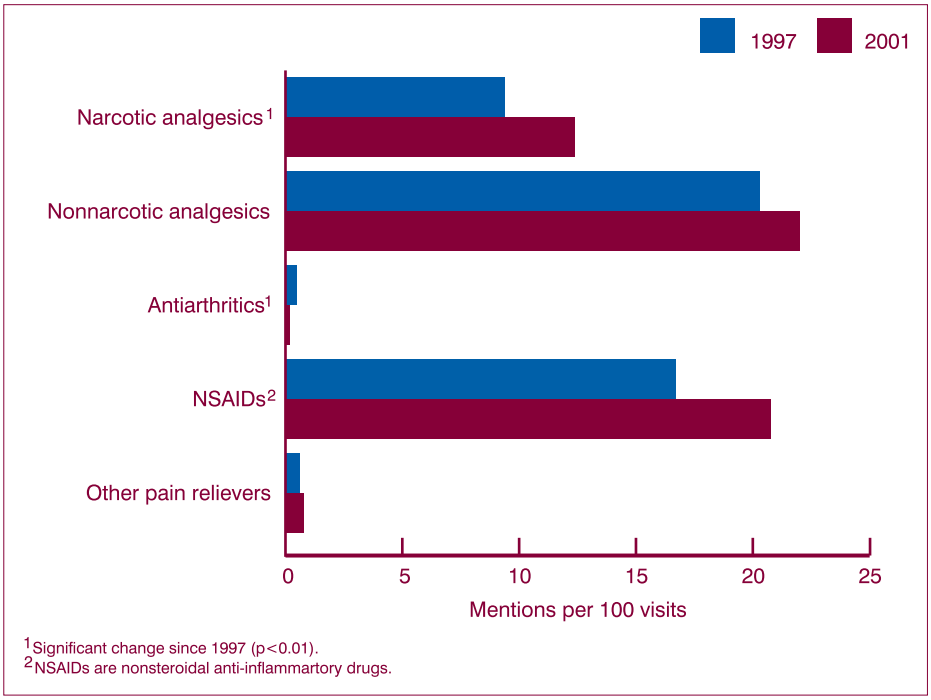


Figure 8. Drug mention rate by pain relieving therapeutic subclasses at emergency department visits: United States, 1997 and 2001

NHAMCS, the term "drug" is interchangeable with the term "medication." Visits with one or more drug mentions are termed "drug visits" in the NHAMCS.

There were 176.5 million drugs mentioned at ED visits during 2001. Medications were used at 74.2 percent of all ED visits (table 16). There was an average of 1.6 drug mentions per ED visit. For visits where medications were mentioned, there was an average of 2.2 drugs provided per visit.

Drug mentions are shown by therapeutic class in table 17. This classification is based on the major therapeutic categories used in the *National Drug Code Directory*, 1995 edition (16). It should be noted that some drugs have more than one therapeutic application. In these cases, the drug was classified under its primary therapeutic use. Drugs used for pain relief were listed most frequently, accounting for about one-third of all drug mentions (34.2 percent). The second and third most frequent drug classes were antimicrobial agents (15.5 percent) and respiratory tract drugs (12.3 percent). From 1997 through 2001, there was an 18 percent rise in the use of pain-relieving medications in EDs, from 47.5 to 56.2 mentions per 100 visits. Analysis of the therapeutic subclasses revealed that increases in nonsteroidal anti-inflammatory drugs (NSAIDs) and narcotic analgesics accounted for over 80 percent of the observed increase (figure 8).

The 20 most frequently used generic substances for 2001 are shown in table 18. 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, hydrocodone, and promethazine.

The 20 most frequently mentioned medications are shown in table 19 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, was the drug most frequently mentioned, accounting for 5.6 percent of all ED drug mentions. Motrin, which is classified as an NSAID, was listed for 4.7 percent of ED drug mentions. Other most frequent drug mentions were Phenergan (3.6 percent), Vicodin (3.5 percent), and Toradol (3.1 percent).

Providers seen—Staff were asked to check all of the providers seen during the visit. Multiple responses could be coded per visit. A physician was seen at 92.6 percent of visits, and a registered nurse attended the patient at 87.3 percent of ED visits (table 20). A resident and/or intern was seen at 9.5 percent of visits. For 8.5 percent of visits, a physician other than a staff physician or a resident and/or intern was seen. At 5.5 percent of visits, the patient was not attended by a physician. The provider item was not checked for 1.9 percent of visits.

Visit disposition—Staff were asked to record visit disposition and instructed that multiple responses could be coded for this item. About 41 percent of ED visits resulted in a referral to another physician or clinic for followup (table 21). For 37.9 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 18.5 percent of visits. About 12 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 13 admissions. For 9.6 percent of ED visits, no followup was planned, continuing an increasing trend observed since 1992 when it was 6.0 percent (up by 60 percent). At 1.5 percent of visits, the patient left before being seen by a physician. In 2001, four new answer categories (i.e., refer to alcohol or drug treatment program, return to nonphysician treatment or support service, left against medical advice, and admit for 23-hour observation) were added to the visit disposition item, and each of these dispositions represented less than 1 percent of visits. Only 11.4 percent (SE=1.6) of alcohol-related visits were referred to an alcohol treatment program. About 38.2 percent (SE=2.3) of visits where the patient was living in an institution resulted in hospital admission, which is about the same as that found for visits by all persons 75 years of age and over (38.8 percent, SE=1.4).

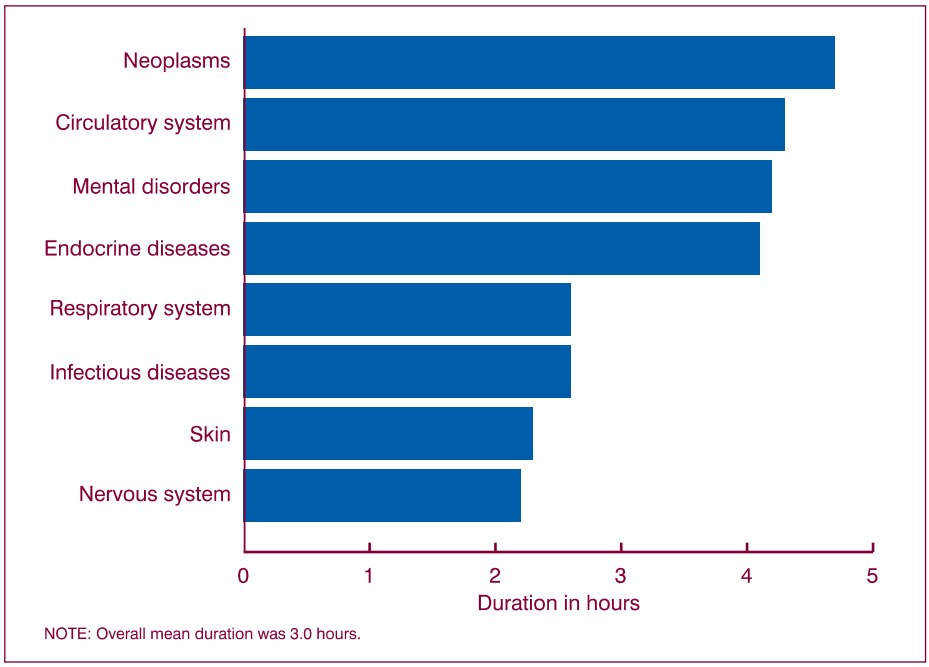


Figure 9. Mean duration of emergency department visits by selected major disease categories: United States, 2001

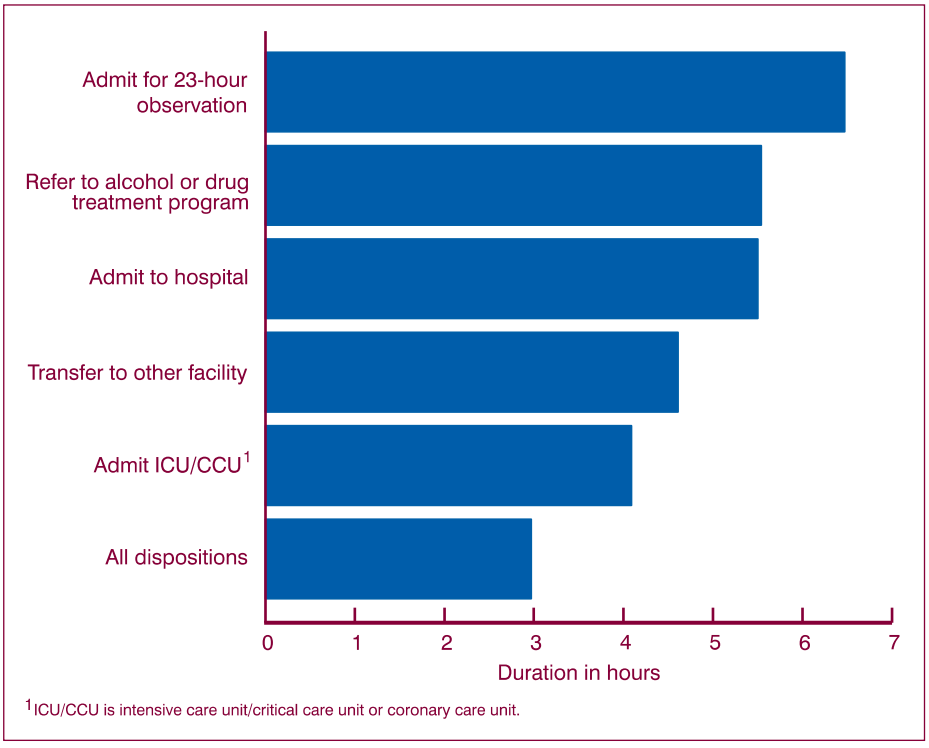


Figure 10. Mean duration of emergency department visits by disposition categories with greater than average duration: United States, 2001

Duration in emergency department—Duration in the ED was determined by calculating the difference between time of arrival and time of discharge. The duration for 53.6 percent of ED visits was between 2–6 hours. At almost 400,000 visits (0.4 percent), the patient spent 24 hours or more in the ED (table 22). On average, patients spent 3.0 hours in the emergency department. Mean durations were higher than average for visits by patients residing in an institution (4.1 hours, SE=0.2) and for alcohol-related visits (4.1 hours, SE=0.2) and for whom an MRI and/or CAT scan was ordered or performed (4.9 hours, SE=0.2). Figures 9 and 10 show mean duration by selected major disease categories and disposition, respectively. For visits where no followup was planned (2.4 hours, SE=0.1) or the patient died in the ED or was dead on arrival (1.8 hours, SE=0.3), the mean duration was less than the average for all visits. Table 23 shows that the mean duration of ED visits varied by the following hospital characteristics: ED visit volume, geographic region, MSA status, and medical school affiliation. Duration was missing for 13.4 percent of visits.

Additional information about ED utilization is available from the NCHS Ambulatory Health Care Web site: 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 2001 NHAMCS will also be available on a public use data tape and 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 via nchsquery@cdc.gov.

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Table 1. Number, percent distribution, and annual rate of emergency department visits with corresponding standard errors, by selected patient and hospital characteristics: United States, 2001

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[1,2]	Standard error of rate
All visits	107,490	3,969	100.0	. . .	38.4	1.4
Patient characteristics						
Age:						
Under 15 years	22,245	1,234	20.7	0.8	36.8	2.0
15–24 years	17,371	719	16.2	0.3	44.6	1.8
25–44 years	32,732	1,288	30.5	0.4	39.5	1.6
45–64 years	19,260	829	17.9	0.3	30.1	1.3
65–74 years	6,551	309	6.1	0.2	36.2	1.7
75 years and over	9,332	443	8.7	0.4	59.7	2.8
Sex and age:						
Female	57,169	2,118	53.2	0.4	39.8	1.5
Under 15 years	10,096	586	9.4	0.4	34.2	2.0
15–24 years	9,783	428	9.1	0.2	50.6	2.2
25–44 years	17,456	696	16.2	0.3	41.4	1.7
45–64 years	10,447	499	9.7	0.2	31.6	1.5
65–74 years	3,464	188	3.2	0.1	35.0	1.9
75 years and over	5,923	294	5.5	0.2	61.4	3.0
Male	50,321	1,937	46.8	0.4	36.9	1.4
Under 15 years	12,148	699	11.3	0.5	39.3	2.3
15–24 years	7,588	368	7.1	0.2	38.8	1.9
25–44 years	15,276	648	14.2	0.3	37.4	1.6
45–64 years	8,813	394	8.2	0.2	28.4	1.3
65–74 years	3,087	186	2.9	0.1	37.7	2.3
75 years and over	3,409	198	3.2	0.2	56.9	3.3
Race and age:[3]						
White	82,012	3,601	76.3	1.1	36.1	1.6
Under 15 years	16,071	942	15.0	0.6	34.7	2.0
15–24 years	13,166	659	12.2	0.3	43.2	2.2
25–44 years	24,526	1,156	22.8	0.5	36.8	1.7
45–64 years	14,942	718	13.9	0.3	27.8	1.3
65–74 years	5,216	268	4.9	0.2	33.2	1.7
75 years and over	8,092	406	7.5	0.3	57.8	2.9
Black or African American	22,238	1,179	20.7	1.0	63.7	3.4
Under 15 years	5,354	488	5.0	0.4	56.5	5.2
15–24 years	3,672	219	3.4	0.2	66.0	3.9
25–44 years	7,241	438	6.7	0.4	70.0	4.2
45–64 years	3,778	262	3.5	0.2	55.8	3.9
65–74 years	1,148	117	1.1	0.1	71.1	7.2
75 years and over	1,045	127	1.0	0.1	91.0	11.0
Asian	2,099	301	2.0	0.3	19.0	2.7
Native Hawaiian or other Pacific Islander	*391	144	*0.4	0.1	*84.0	30.8
American Indian or Alaska Native	*612	210	*0.6	0.2	*23.0	7.9
Multiple races	138	24	0.1	0.0	3.5	0.6
Hospital characteristics						
Ownership:						
Voluntary	78,458	4,160	73.0	2.8	28.0	1.5
Government	18,663	2,740	17.4	2.4	6.7	1.0
Proprietary	10,370	1,898	9.6	1.8	3.7	0.7
Geographic region:						
Northeast	20,802	1,527	19.4	1.3	39.2	2.9
Midwest	26,688	2,143	24.8	1.7	41.8	3.4
South	40,512	2,560	37.7	1.9	40.7	2.6
West	19,489	1,668	18.1	1.4	30.7	2.6
Metropolitan status:						
MSA[4]	88,605	3,807	82.4	1.8	39.5	1.7
Non-MSA[4]	18,885	2,001	17.6	1.8	33.7	3.6

. . . Category not applicable.

* Figure does not meet standard of reliability or precision.

0.0 Quantity more than zero but less than 0.05.

[1]Visit rates for age, sex, race, and geographic region are based on U.S. Census Bureau estimates of the civilian noninstitutional population of the United States as of July 1, 2001. These population estimates reflect Census 2000 data and are available from the U.S. Census Bureau. See Technical Notes for more details.

[2]2001 population estimates of MSA status are preliminary figures based on Census 2000 data and were obtained through the Office of Research and Methodology and Division of Health Interview Statistics, NCHS.

[3]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.

[4]MSA is metropolitan statistical area.

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

Table 2. Number and percent distribution of emergency department visits with corresponding standard errors, by primary expected source of payment: United States, 2001

Primary expected source of payment	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error in percent
All visits	107,490	3,969	100.0	. . .
Private insurance	43,213	2,076	40.2	1.0
Medicaid/SCHIP[1]	18,789	895	17.5	0.6
Medicare	15,879	739	14.8	0.5
Self-pay	15,854	835	14.7	0.5
Worker's compensation	2,665	166	2.5	0.1
No charge	*1,042	436	*1.0	0.4
Other	2,327	278	2.2	0.3
Unknown/blank	7,721	884	7.2	0.8

. . . Category not applicable.
* Figure does not meet standard of reliability or precision.
[1]SCHIP is State Children's Health Insurance Program.
NOTE: Numbers may not add to totals because of rounding.

Table 3. Percent distribution of emergency department visits with corresponding standard errors by immediacy with which patient should be seen, according to patient's age, sex, and race: United States, 2001

Patient's age, sex, and race	Number of visits in thousands	Immediacy with which patient should be seen					
		Total	Emergent[1]	Urgent[2]	Semiurgent[3]	Nonurgent[4]	Unknown/ no triage[5]
		Percent distribution					
All visits	107,490	100.0	19.2	31.7	16.3	9.1	23.6
Age							
Under 15 years	22,245	100.0	14.9	31.2	17.6	8.7	27.6
15–24 years	17,371	100.0	15.7	31.4	18.5	11.4	22.9
25–44 years	32,732	100.0	17.9	32.2	17.1	10.2	22.6
45–64 years	19,260	100.0	22.6	31.5	14.8	8.6	22.5
65–74 years	6,551	100.0	26.7	31.3	13.4	6.4	22.1
75 years and over	9,332	100.0	29.0	32.0	11.4	5.0	22.6
Sex and age							
Female	57,169	100.0	18.8	32.2	16.7	8.7	23.6
Under 15 years	10,096	100.0	14.8	31.0	17.7	8.0	28.5
15–24 years	9,783	100.0	15.0	31.8	18.9	11.2	23.0
25–44 years	17,456	100.0	16.4	33.0	17.6	9.9	23.2
45–64 years	10,447	100.0	21.5	32.9	15.9	8.0	21.6
65–74 years	3,464	100.0	27.2	31.9	12.7	5.6	22.6
75 years and over	5,923	100.0	29.2	31.1	12.4	5.2	22.1
Male	50,321	100.0	19.8	31.1	15.9	9.6	23.6
Under 15 years	12,148	100.0	14.9	31.3	17.4	9.4	27.0
15–24 years	7,588	100.0	16.6	31.0	18.0	11.5	22.9
25–44 years	15,276	100.0	19.6	31.4	16.6	10.5	21.9
45–64 years	8,813	100.0	23.9	29.8	13.6	9.2	23.5
65–74 years	3,087	100.0	26.2	30.7	14.2	7.2	21.7
75 years and over	3,409	100.0	28.6	33.6	9.7	4.7	23.4
Race and age[6]							
White	82,012	100.0	20.1	31.8	16.3	8.7	23.1
Under 15 years	16,071	100.0	15.6	31.5	17.5	8.8	26.6
15–24 years	13,166	100.0	16.6	30.9	18.5	10.6	23.4
25–44 years	24,526	100.0	18.7	32.0	17.1	10.0	22.1
45–64 years	14,942	100.0	23.1	31.6	15.1	8.1	22.1
65–74 years	5,216	100.0	27.4	32.0	13.5	5.6	21.4
75 years and over	8,092	100.0	29.0	33.1	11.6	4.8	21.4
Black or African American	22,238	100.0	16.6	31.8	16.8	11.1	23.7
Under 15 years	5,354	100.0	13.6	30.7	18.6	9.5	27.6
15–24 years	3,672	100.0	12.8	33.2	19.4	14.3	20.3
25–44 years	7,241	100.0	15.3	33.4	17.6	11.5	22.3
45–64 years	3,778	100.0	20.9	31.5	13.7	10.9	23.0
65–74 years	1,148	100.0	24.5	29.7	12.3	9.6	23.9
75 years and over	1,045	100.0	29.2	24.9	10.2	7.3	28.4
Other	3,239	100.0	15.1	28.7	13.8	5.5	*36.9
		Standard error of percent					
All visits	...	...	1.4	1.4	1.2	0.9	2.3
Age							
Under 15 years	...	...	1.7	1.9	1.7	1.1	3.3
15–24 years	...	...	1.7	1.6	1.5	1.5	2.2
25–44 years	...	...	1.4	1.5	1.2	1.1	2.2
45–64 years	...	...	1.6	1.5	1.2	0.9	2.4
65–74 years	...	...	2.0	1.8	1.2	0.9	2.7
75 years and over	...	...	1.8	1.6	1.1	0.8	2.5
Sex and age							
Female	...	...	1.3	1.4	1.2	1.0	2.3
Under 15 years	...	...	1.8	2.1	1.8	1.1	3.5
15–24 years	...	...	1.6	1.8	1.6	1.7	2.3
25–44 years	...	...	1.4	1.6	1.3	1.1	2.3
45–64 years	...	...	1.7	1.7	1.3	1.0	2.4
65–74 years	...	...	2.3	2.1	1.5	1.0	3.0
75 years and over	...	...	1.9	1.7	1.3	0.9	2.5

See footnotes at end of table.

Table 3. Percent distribution of emergency department visits with corresponding standard errors by immediacy with which patient should be seen, according to patient's age, sex, and race: United States, 2001—Con.

Patient's age, sex, and race	Number of visits in thousands	Immediacy with which patient should be seen					
		Total	Emergent[1]	Urgent[2]	Semiurgent[3]	Nonurgent[4]	Unknown/ no triage[5]
		Standard error of percent					
Male	...	...	1.5	1.4	1.2	1.0	2.3
Under 15 years	...	...	1.8	1.9	1.7	1.2	3.3
15–24 years	...	...	2.0	1.8	1.6	1.4	2.5
25–44 years	...	...	1.7	1.5	1.3	1.2	2.2
45–64 years	...	...	1.8	1.7	1.2	1.1	2.6
65–74 years	...	...	2.3	2.3	1.7	1.2	3.0
75 years and over	...	...	2.4	2.4	1.3	0.9	2.8
Race and age[6]							
White	...	...	1.5	1.5	1.2	0.9	2.3
Under 15 years	...	...	1.7	2.0	1.7	1.1	3.2
15–24 years	...	...	1.9	1.6	1.7	1.3	2.4
25–44 years	...	...	1.6	1.6	1.3	1.0	2.2
45–64 years	...	...	1.7	1.7	1.3	0.9	2.5
65–74 years	...	...	2.1	2.0	1.4	0.9	2.6
75 years and over	...	...	1.8	1.7	1.2	0.8	2.4
Black or African American	...	...	1.8	1.9	1.6	2.1	3.0
Under 15 years	...	...	2.8	2.4	2.6	1.9	4.5
15–24 years	...	...	1.6	3.2	2.3	3.5	2.5
25–44 years	...	...	1.6	2.2	1.6	2.3	3.0
45–64 years	...	...	2.3	2.2	2.0	2.0	3.3
65–74 years	...	...	3.8	3.1	2.7	2.0	5.4
75 years and over	...	...	4.9	2.9	2.5	1.9	5.7
Other	...	...	2.4	3.5	2.5	1.4	6.6

. . . Category not applicable.

* Figure does not meet standard of reliability or precision.

[1]A visit in which the patient should be seen in less than 15 minutes.

[2]A visit in which the patient should be seen within 15–60 minutes.

[3]A visit in which the patient should be seen within 61–120 minutes.

[4]A visit in which the patient should be seen within 121 miuntes–24 hours.

[5]A visit in which there was 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.

[6]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.

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

Table 4. Mean initial vital signs for patients seen at emergency department visits with corresponding standard errors by type of vital sign, according to patient's age: United States, 2001

Visit characteristic	Mean	Standard error	25th percentile	Median	75th percentile
Temperature in Fahrenheit					
All visits	98.3	0.2	7.4	98.1	98.8
Under 5 years	99.2	0.7	97.8	98.7	100.2
5 years and over	98.1	0.2	97.3	98.0	98.7
Reason for visit of fever	100.6	0.6	99.0	100.6	102.0
Pulse					
All visits	91.0	0.3	75.4	86.7	101.1
Under 18 years	107.7	0.7	85.4	103.5	126.6
18–44 years	86.4	0.2	75.1	84.1	95.7
45–64 years	85.2	0.3	72.6	83.4	95.2
65 years and over	84.2	0.4	71.0	81.3	95.1
Systolic blood pressure in mmHg[1]					
All visits	132.9	0.4	115.6	130.1	146.1
18–44 years	130.2	0.3	116.6	129.1	141.0
45–64 years	141.9	0.5	125.2	139.6	155.8
65 years and over	146.9	0.6	128.0	144.5	164.7
Diagnosis of hypertension	161.8	1.7	139.4	159.4	182.2
Diastolic blood pressure in mmHg[1]					
All visits	78.9	1.0	66.3	75.5	85.2
18–44 years	77.8	0.4	67.7	76.2	84.8
45–64 years	81.9	0.4	71.3	80.5	89.8
65 years and over	78.1	0.8	65.7	76.1	86.8
Diagnosis of hypertension	89.9	1.1	73.8	89.4	102.7

[1]mmHg is millimeters of mercury.

Table 5. Percent distribution of initial blood pressure measurements at emergency department visits with corresponding standard errors, by selected patient and visit characteristics: United States, 2001

Patient and visit characteristics	Total	Initial blood pressure measurement status							
		Normal[1]	High[2]	Low[3]	Missing[4]	Normal[1]	High[2]	Low[3]	Missing[4]
		Percent of visits				Standard error of percent			
All visits	100.0	43.7	30.4	10.3	15.6	0.7	0.6	0.4	0.8
Age									
Less than 15 years	100.0	29.0	4.8	16.7	49.6	1.2	0.5	1.2	2.0
15–24 years	100.0	62.4	19.4	11.4	6.8	1.2	0.9	0.8	1.1
25–44 years	100.0	54.1	31.4	7.6	6.9	0.8	0.9	0.4	0.8
45–64 years	100.0	38.9	49.0	5.8	6.3	1.0	1.1	0.4	0.9
65–75 years	100.0	29.2	53.7	10.4	6.7	1.4	1.6	0.9	1.2
75 years and over	100.0	27.4	54.0	11.7	6.9	1.2	1.2	0.8	1.3
Sex									
Female	100.0	44.8	29.5	11.4	14.3	0.8	0.7	0.4	0.9
Male	100.0	42.4	31.5	9.0	17.1	0.7	0.7	0.5	0.8
Race[5]									
White	100.0	44.1	30.8	9.9	15.2	0.7	0.7	0.4	0.8
Black or African American	100.0	41.8	30.1	11.7	16.4	1.1	1.0	0.9	1.2
Other	100.0	44.9	24.4	11.1	19.6	1.7	1.5	1.3	1.6
Expected source of payment									
Private insurance	100.0	46.2	29.0	9.9	14.9	0.9	0.8	0.5	0.9
Medicare	100.0	31.6	51.4	11.2	5.9	1.0	1.1	0.6	1.0
Medicaid/SCHIP[6]	100.0	41.4	20.0	12.8	25.8	1.0	0.9	0.8	1.2
Worker's compensation	100.0	57.1	31.4	4.2	7.3	2.4	2.4	0.8	1.2
Self-pay	100.0	49.9	29.3	9.3	11.5	1.3	1.1	0.6	1.5
No-charge/charity	100.0	54.0	29.2	*	10.1	2.1	4.0	1.5	2.4
Other	100.0	49.1	25.3	10.0	15.7	2.2	1.7	1.5	2.6
Unknown	100.0	39.4	24.8	9.3	26.5	2.6	2.0	1.2	4.5

* Figure does not meet standard of reliability or precision.

[1]Normal blood pressure is defined as 100–140 mmHg systolic and 60–90 mmHg diastolic.

[2]High blood pressure is defined as either measurment above normal.

[3]Low blood pressure is defined as either measurement below normal.

[4]Missing is defined as missing either or both systolic and diastolic measurement.

[5]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.

[6]SCHIP is State Children's Health Insurance Program.

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: United States, 2001

Principal reason for visit and RVC code[1]		Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits		107,490	3,969	100.0	. . .
Symptom module	S001–S999	78,014	2,997	72.6	0.5
General symptoms	S001–S099	16,502	698	15.4	0.3
Symptoms referable to psychological/mental disorders	S100–S199	2,202	122	2.0	0.1
Symptoms referable to the nervous system (excluding sense organs)	S200–S259	6,930	346	6.4	0.2
Symptoms referable to the cardiovascular/lymphatic system	S260–S299	625	63	0.6	0.1
Symptoms referable to the eyes and ears	S300–S399	3,712	210	3.5	0.1
Symptoms referable to the respiratory system	S400–S499	12,866	696	12.0	0.4
Symptoms referable to the digestive system	S500–S639	13,914	565	12.9	0.3
Symptoms referable to the genitourinary system	S640–S829	3,667	165	3.4	0.1
Symptoms referable to the skin, hair, and nails	S830–S899	2,719	163	2.5	0.1
Symptoms referable to the musculoskeletal system	S900–S999	14,877	665	13.8	0.3
Disease module	D001–D999	3,915	215	3.6	0.2
Diagnostic/screening and preventive module	X100–X599	792	90	0.7	0.1
Treatment module	T100–T899	2,398	155	2.2	0.1
Injuries and adverse effects module	J001–J999	20,963	831	19.5	0.4
Test results module	R100–R700	279	37	0.3	0.0
Administrative module	A100–A140	324	57	0.3	0.1
Other	U990–U999	805	193	0.7	0.2

. . . Category not applicable.
0.0 Quantity more than zero but less than 0.05.
Based on *A Reason for Visit Classification for Ambulatory Care* (RVC) (12).
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, 2001

Principal reason for visit and RVC code[1]		Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits		107,490	3,969	100.0	. . .
Stomach pain, cramps, and spasms	S545	6,828	316	6.4	0.2
Chest pain and related symptoms	S050	5,669	291	5.3	0.2
Fever	S010	4,265	294	4.0	0.2
Headache, pain in head	S210	3,172	185	3.0	0.1
Cough	S440	3,065	237	2.9	0.2
Back symptoms	S905	2,648	208	2.5	0.2
Shortness of breath	S415	2,535	178	2.4	0.1
Pain, site not referable to a specific body system	S055	2,389	167	2.2	0.1
Symptoms referable to throat	S455	2,354	194	2.2	0.1
Vomiting	S530	2,272	145	2.1	0.1
Lacerations and cuts—upper extremity	J225	2,238	145	2.1	0.1
Earache or ear infection	S355	1,885	158	1.8	0.1
Accident, not otherwise specified	J810	1,678	128	1.6	0.1
Motor vehicle accident, type of injury unspecified	J805	1,640	126	1.5	0.1
Labored or difficult breathing (dyspnea)	S420	1,551	124	1.4	0.1
Injury, other and unspecified type—head, neck, and face	J505	1,538	116	1.4	0.1
Vertigo—dizziness	S225	1,452	114	1.4	0.1
Leg symptoms	S920	1,423	114	1.3	0.1
Skin rash	S860	1,397	114	1.3	0.1
Neck symptoms	S900	1,392	104	1.3	0.1
All other reasons		56,101	2,019	52.2	0.4

. . . Category not applicable.
[1]Based on *A Reason for Visit Classification for Ambulatory Care* (RVC) (12).
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 continuity of care: United States, 2001

Visit characteristic	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits	107,490	3,969	100.0	. . .
Continuity of care				
Patient seen in this ED[1] within the last 72 hours:				
Yes	3,235	229	3.0	0.2
No	95,108	3,703	88.5	0.9
Unknown/blank	9,147	1,048	8.5	0.9
Episode of care:				
Initial visit for problem	94,590	3,701	88.0	0.8
Followup for problem	5,885	406	5.5	0.3
Unknown/blank	7,016	863	6.5	0.8

. . . Category not applicable.
[1]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, 2001

Major disease category and ICD–9–CM code range[1]	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits	107,490	3,969	100.0	. . .
Infectious and parasitic diseases 001–139	3,310	211	3.1	0.2
Neoplasms 140–239	248	40	0.2	0.0
Endocrine, nutritional, metabolic diseases, and immunity disorders 240–279	1,601	114	1.5	0.1
Mental disorders 290–319	3,579	211	3.3	0.2
Diseases of the nervous system and sense organs 320–389	5,856	310	5.4	0.2
Diseases of the circulatory system 390–459	4,214	258	3.9	0.2
Diseases of the respiratory system 460–519	12,816	762	11.9	0.4
Diseases of the digestive system 520–579	6,005	302	5.6	0.2
Diseases of the genitourinary system 580–629	4,873	235	4.5	0.2
Diseases of the skin and subcutanaous tissue 680–709	2,961	172	2.8	0.1
Diseases of the musculoskeletal and connective tissue 710–739	5,889	341	5.5	0.2
Symptoms, signs, and ill-defined conditions 780–799	18,740	838	17.4	0.5
Injury and poisoning 800–999	29,056	1,117	27.0	0.5
Fractures 800–829	4,163	251	3.9	0.2
Sprains 840–848	6,068	299	5.6	0.2
Intracranial 850–854	245	33	0.2	0.0
Open wounds 870–897	6,525	286	6.1	0.2
Superficial 910–919	1,572	93	1.5	0.1
Contusions 920–924	4,871	266	4.5	0.2
Foreign bodies 930–939	594	56	0.6	0.1
Burns 940–943	508	47	0.5	0.0
Complications 958–959	1,787	132	1.7	0.1
Poisoning and toxic effects 960–989	750	72	0.7	0.1
Other injuries	1,973	115	1.8	0.1
Supplementary classification V01–V82	2,735	171	2.5	0.1
All other diagnoses[2]	3,509	257	3.3	0.2
Unknown[3]	2,099	296	2.0	0.3

. . . Category not applicable.
0.0 Quantity more than zero but less than 0.05.
[1]Based on the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM) (13).
[2]Includes diseases of the blood and blood-forming organs (280–289); complications of pregnancy, childbirth, and the puerperium (630–677); congenital anomalies (740–759); and certain disorders originating in the perinatal period (760–779), and diagnoses that were uncodable, patient left before being seen, patient was transferred to another facility, health maintenance organization did not authorize treatment, or entries of "none," "no diagnosis," "no disease," or "healthy."
[3]Includes blank diagnoses, uncodable diagnoses, and illegible 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 primary diagnosis groups: United States, 2001

Primary diagnosis group and ICD–9–CM code(s)[1]	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits	107,490	3,969	100.0	. . .
Contusion with intact skin surface 920–924	4,871	266	4.5	0.2
Acute upper respiratory infection, excluding pharyngitis 460–461,463–466	4,226	310	3.9	0.2
Open wound, excluding head 874–897	4,222	206	3.9	0.1
Abdominal pain 789.0	3,838	213	3.6	0.1
Chest pain 786.5	3,753	208	3.5	0.2
Spinal disorders 720–724	2,718	203	2.5	0.1
Fractures, excluding lower limb 800–819	2,620	160	2.4	0.1
Sprains and strains of neck and back 846–847	2,590	188	2.4	0.1
Otitis media and eustachian tube disorders 381–382	2,443	180	2.3	0.1
Open wound of head 870–873	2,303	146	2.1	0.1
Sprains and strains, excluding ankle and back 840–844,845.1,848	2,279	128	2.1	0.1
Acute pharyngitis 462	1,876	150	1.7	0.1
Urinary tract infection, site not specified 599.0	1,702	108	1.6	0.1
Rheumatism, excluding back 725–729	1,678	121	1.6	0.1
Asthma 493	1,665	116	1.5	0.1
Chronic and unspecified bronchitis 490–491	1,607	156	1.5	0.1
Superficial injuries 910–919	1,572	93	1.5	0.1
Fracture of the lower limb 820–829	1,543	123	1.4	0.1
Unspecified viral and chlamydial infection 79.9	1,525	137	1.4	0.1
Pneumonia 480–486	1,481	116	1.4	0.1
All other diagnoses	56,978	2,030	53.0	0.5

. . . Category not applicable.

[1]Based on the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM) (13). 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, percent distribution, and annual rate of injury-related emergency department visits with corresponding standard errors, by patient's age, sex, and race: United States, 2001

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[1]	Standard error in rate
All injury-related visits	39,389	1,483	100.0	. . .	14.1	0.5
Age						
Under 15 years	8,137	420	20.7	0.7	13.5	0.7
15–24 years	7,436	354	18.9	0.5	19.1	0.9
25–44 years	12,918	538	32.8	0.6	15.6	0.6
45–64 years	6,629	310	16.8	0.4	10.3	0.5
65–74 years	1,607	101	4.1	0.2	8.9	0.6
75 years and over	2,661	168	6.8	0.4	17.0	1.1
Sex and age						
Female	17,821	685	45.2	0.6	12.4	0.5
Under 15 years	3,294	183	8.4	0.4	11.2	0.6
15–24 years	2,977	173	7.6	0.3	15.4	0.9
25–44 years	5,605	258	14.2	0.4	13.3	0.6
45–64 years	3,330	184	8.5	0.3	10.1	0.6
65–74 years	851	66	2.2	0.2	8.6	0.7
75 years and over	1,764	120	4.5	0.3	18.3	1.2
Male	21,568	876	54.8	0.6	15.8	0.6
Under 15 years	4,844	281	12.3	0.5	15.7	0.9
15–24 years	4,459	237	11.3	0.4	22.8	1.2
25–44 years	7,313	343	18.6	0.5	17.9	0.8
45–64 years	3,299	168	8.4	0.3	10.6	0.5
65–74 years	756	68	1.9	0.2	9.2	0.8
75 years and over	897	75	2.3	0.2	15.0	1.2
Race and age[2]						
White	31,552	1,393	80.1	1.1	13.9	0.6
Under 15 years	6,314	342	16.0	0.6	13.7	0.7
15–24 years	6,013	345	15.3	0.5	19.7	1.1
25–44 years	10,145	496	25.8	0.6	15.2	0.7
45–64 years	5,347	286	13.6	0.4	9.9	0.5
65–74 years	1,359	97	3.5	0.2	8.7	0.6
75 years and over	2,374	158	6.0	0.4	16.9	1.1
Black or African American	6,752	380	17.1	0.9	19.3	1.1
Under 15 years	1,587	163	4.0	0.4	16.8	1.7
15–24 years	1,219	89	3.1	0.2	21.9	1.6
25–44 years	2,390	157	6.1	0.4	23.1	1.5
45–64 years	1,121	88	2.8	0.2	16.6	1.3
65–74 years	206	28	0.5	0.1	12.8	1.7
75 years and over	228	39	0.6	0.1	19.8	3.4
Other	1,085	182	2.8	0.5	6.0	1.0

. . . Category not applicable.

[1]Visit rates for age, sex, race, and geographic region are based on U.S. Census Bureau estimates of the civilian noninstitutional population of the United States as of July 1, 2001. These population estimates reflect Census 2000 data and are available from the Census Bureau. See Technical Notes for more detail.

[2]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 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.

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

Table 12. Number and percent distribution of emergency department visits with corresponding standard errors by selected characteristics of the injury, according to patient's age: United States, 2001

Selected characteristics of the injury	All ages		Under 18 years		18–64 years		65 years and over	
	Number of visits in thousands	Percent distribution	Number of visits in thousands	Percent distribution	Number of visits in thousands	Percent distribution	Number of visits in thousands	Percent distribution
All injury-related visits	39,389	100.0	10,187	100.0	24,933	100.0	4,268	100.0
Number of adverse drug events								
None	36,789	93.4	9,826	96.5	22,885	91.8	4,077	95.5
Single drug	2,232	5.7	315	3.1	1,741	7.0	176	4.1
Multiple drugs	368	0.9	*	*	307	1.2	*	*
Intentionality								
Yes (self-inflicted)	978	2.5	156	1.5	796	3.2	*	*
Yes (assault)	1,392	3.5	312	3.1	1,051	4.2	*	*
No, unintentional	28,730	72.9	8,043	78.9	17,259	69.2	3,428	80.3
Unknown/blank	8,289	21.0	1,677	16.5	5,827	23.4	784	18.4
Work-related								
Yes	3,503	8.9	*	*	3,344	13.4	*	*
No	24,034	61.0	7,733	75.9	13,446	53.9	2,855	66.9
Unknown/blank	11,851	30.1	2,373	23.3	8,143	32.7	1,335	31.3
	Standard error in thousands	Standard error of percent	Standard error in thousands	Standard error in percent	Standard error in thousands	Standard error in percent	Standard error in thousands	Standard error in percent
All injury-related visits	1,483	. . .	497	. . .	1,002	. . .	220	. . .
Number of adverse drug events								
None	1,378	0.4	473	0.5	915	0.5	214	0.8
Single drug	169	0.3	58	0.5	136	0.4	34	0.8
Multiple drugs	50	0.1	. . .	. . .	42	0.2	. . .	. . .
Intentionality								
Yes (self-inflicted)	91	0.2	29	0.3	80	0.3	. . .	. . .
Yes (assault)	100	0.2	38	0.4	85	0.3	. . .	. . .
No, unintentional	1,161	0.9	419	1.1	764	1.0	179	1.6
Unknown/blank	440	0.8	133	1.1	316	0.9	82	1.5
Work-related								
Yes	190	0.4	. . .	. . .	185	0.6	. . .	. . .
No	1,020	1.0	421	1.4	635	1.1	162	2.1
Unknown/blank	598	1.1	176	1.4	427	1.2	119	2.1

. . . Category not applicable.

* Figure does not meet standard of reliability or precision.

NOTE: Numbers may not add to totals due to 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, 2001

Intent and mechanism[1]	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All injury-related visits	39,389	1,483	100.0	. . .
Unintentional injuries	28,342	1,123	71.9	0.7
Falls	7,762	360	19.7	0.5
Struck against or struck accidentally by objects or persons	4,382	261	11.1	0.5
Motor vehicle traffic	4,370	231	11.1	0.4
Cutting or piercing instruments or objects	2,974	179	7.6	0.3
Overexertion and strenuous movements	1,699	118	4.3	0.2
Natural and environmental factors	1,496	108	3.8	0.2
Poisoning by drugs, medicinal substances, biological, other solid and liquid substances, gases and vapors	720	71	1.8	0.2
Fire and flames, hot substances or object, caustic or corrosive material and steam	502	47	1.3	0.1
Pedal cycle, nontraffic and other	412	51	1.0	0.1
Motor vehicle, nontraffic	380	40	1.0	0.1
Machinery	321	34	0.8	0.1
Other transportation	128	25	0.3	0.1
Suffocation	124	27	0.1	0.0
Other mechanism[2]	2,260	123	5.5	0.3
Mechanism unspecified	937	97	2.4	0.2
Intentional injuries	1,837	125	4.7	0.3
Assault	1,387	101	3.5	0.2
Unarmed fight or brawl, striking by blunt or thrown object	925	77	2.3	0.2
Cutting or piercing instrument	96	25	0.2	0.1
Other and unspecified mechanism[3]	365	41	0.9	0.1
Self-inflicted	400	50	1.0	0.1
Poisoning by solid or liquid substances, gases, and vapors	283	37	0.7	0.1
Other and unspecified mechanism[4]	117	23	0.3	0.1
Other causes of violence	*	. . .	*	. . .
Injuries of undetermined intent	208	45	0.5	0.1
Adverse effects of medical treatment	1,445	105	3.7	0.2
Blank cause[5]	7,557	371	19.2	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.

[1]Based on the "Supplementary Classification of External Cause of Injury and Poisoning," *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM) (13). A detailed description of the ICD–9–CM E-codes used to create the groupings in this table is provided in the Technical Notes.

[2]Includes drowning, firearm, and other mechanism.

[3]Includes assault by firearms and explosives, and other mechanism.

[4]Includes injury by cutting and piercing instrument, and other and unspecified mechanism.

[5]Incudes illegible entries and blanks.

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

Table 14. Number and percent of emergency department visits with corresponding standard errors, by diagnostic and screening services ordered or provided: United States, 2001

Diagnostic and screening services ordered or provided	Number of visits in thousands[1]	Standard error in thousands	Percent of visits	Standard error of percent
All visits	107,490	3,969	. . .	. . .
None	13,549	1,039	12.6	0.9
Examinations and tests				
Medical screening	64,168	3,467	59.7	2.2
Pulse oximetry	19,625	1,863	18.3	1.5
Urinalysis	16,389	826	15.2	0.5
EKG/ECG[2]	15,344	673	14.3	0.4
Mental status exam	10,974	1,633	10.2	1.5
Cardiac monitor	6,015	390	5.6	0.4
Pregnancy test	3,185	268	3.0	0.2
EEG[3]	392	63	0.4	0.1
Imaging				
Chest x ray	18,495	825	17.2	0.4
Extremity x ray	11,819	531	11.0	0.3
Other x ray	10,418	474	9.7	0.3
MRI/CAT scan[4,5]	6,803	366	6.3	0.3
Ultrasound	2,388	185	2.2	0.1
Other imaging	2,077	251	1.9	0.2
Any imaging	43,885	171	40.8	0.7
Blood tests				
CBC[6]	31,251	1,274	29.1	0.6
Other blood chemistry	18,844	1,056	17.5	0.8
BUN[7]	12,839	875	11.9	0.7
Glucose	12,472	873	11.6	0.7
Creatinine	12,298	853	11.4	0.7
Cholesterol	3,126	439	2.9	0.4
BAC[8]	1,399	129	1.3	0.1
HgbA1C[9]	1,396	247	1.3	0.2
HIV serology[10]	201	33	0.2	0.0
Any blood test listed	34,287	1,390	31.9	0.6
Cultures				
Urine	3,960	277	3.7	0.2
Blood	2,656	200	2.5	0.2
Throat/rapid strep test	2,050	206	1.9	0.2
Cervical/urethral	674	67	0.6	0.1
Stool	651	73	0.6	0.1
Any culture listed	8,697	474	8.1	0.4
Other	8,506	613	7.9	0.5
Blank	2,167	463	2.0	0.4

. . . Category not applicable.
0.0 Quantity more than zero but less than 0.05.
[1]Total exceeds "All visits" because more than one service may be reported per visit.
[2]EKG/ECG is electrocardiogram.
[3]EEG is electroencephalogram.
[4]MRI is magnetic resonance imaging.
[5]CAT is computerized axial tomography.
[6]CBC is complete blood count.
[7]BUN is blood urea nitrogen.
[8]BAC is blood alcohol concentration.
[9]HgbA1C is glycohemoglobin.
[10]HIV is human immunodeficiency virus.

Table 15. Number and percent of emergency department visits with corresponding standard errors, by selected procedures: United States, 2001

Procedures provided	Number of visits in thousands[1]	Standard error in thousands	Percent of visits	Standard error of percent
All visits	107,490	3,969	. . .	. . .
None	57,131	2,649	53.1	1.2
IV fluids[2]	19,455	976	18.1	0.7
Wound care	10,782	498	10.0	0.3
Orthopedic care	5,960	448	5.5	0.4
Eye/ENT care[3]	3,370	704	3.1	0.7
Bladder catheter	2,231	160	2.1	0.1
OB/GYN care[4]	1,398	134	1.3	0.1
NG tube/gastic lavage[5]	399	42	0.4	0.0
Endotracheal intubation	254	36	0.2	0.0
Thrombolytic therapy	186	50	0.2	0.0
CPR[6]	160	31	0.1	0.0
Other	6,655	574	6.2	0.5
Blank	6,425	575	6.0	0.5

. . . Category not applicable.
0.0 Quantity more than zero but less than 0.05.
[1]Total exceeds "All visits" because more than one procedure may be reported per visit.
[2]IV is intravenous.
[3]ENT is ear, nose, and throat.
[4]OB/GYN is obstetrics/gynecology.
[5]NG is nasogastric.
[6]CPR is cardiopulmonary resuscitation.

Table 16. Number and percent distribution of emergency department visits with corresponding standard errors, by medication therapy and number of medications provided or prescribed: United States, 2001

Medication therapy[1]	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits	107,490	3,969	100.0	. . .
Drug visits[2]	79,712	3,221	74.2	1.0
Visits without mention of medication	27,778	1,403	25.8	1.0
Number of medications provided or prescribed				
All visits	107,490	3,969	100.0	0.0
0	27,778	1,403	25.8	1.0
1	30,381	1,197	28.3	0.5
2	23,963	1,083	22.3	0.4
3	13,049	642	12.1	0.3
4	6,012	346	5.6	0.2
5	2,835	192	2.6	0.2
6	3,473	353	3.2	0.3

. . . Category not applicable.
0.0 Quantity more than zero but less than 0.05.
[1]Includes prescription drugs, over-the-counter preparations, immunizations, and desensitizing agents.
[2]Visits at which one or more drugs were provided or prescribed.

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

Table 17. Number, percent distribution, and annual rate of drug mentions at emergency department visits with corresponding standard errors by therapeutic classification: United States, 2001

Therapeutic classification[1]	Number of drug mentions in thousands	Standard error in thousands	Percent distribution	Standard error of percent	Number of drug mentions per 100 visits[2]	Standard error of rate
All drug mentions	176,510	7,952	100.0	. . .	164.2	3.7
Drugs used for relief of pain	60,362	2,781	34.2	0.5	56.2	1.3
Antimicrobial agents	27,301	1,344	15.5	0.3	25.4	0.7
Respiratory tract drugs	21,781	1,170	12.3	0.3	20.3	0.6
Cardiovascular-renal drugs	10,699	762	6.1	0.3	10.0	0.6
Gastrointestinal agents	8,925	479	5.1	0.2	8.3	0.3
Central nervous system drugs	8,278	463	4.7	0.2	7.7	0.4
Hormones and agents affecting hormonal mechanisms	7,707	503	4.4	0.2	7.2	0.4
Metabolics/nutrients	6,114	411	3.5	0.2	5.7	0.3
Neurologic drugs	5,682	310	3.2	0.1	5.3	0.2
Anesthetics	3,753	250	2.1	0.1	3.5	0.2
Skin/mucous membrane drugs	3,182	225	1.8	0.1	3.0	0.2
Immunologics	2,970	170	1.7	0.1	2.8	0.1
Hematologic agents	2,281	181	1.3	0.1	2.1	0.2
Otologics	1,716	128	1.0	0.1	1.6	0.1
Ophthalmics	1,314	102	0.7	0.1	1.2	0.1
Antiparasitics	295	36	0.2	0.0	0.3	0.0
Antidotes	284	38	0.2	0.0	0.3	0.0
Oncolytics	135	31	0.1	0.0	0.1	0.0
Contrast media/radiopharmaceuticals	95	26	0.1	0.0	0.1	0.0
Other and unclassified[3]	3,634	291	2.1	0.1	3.4	0.2

. . . Category not applicable.
0.0 Quantity more than zero but less than 0.05.
[1]Based on the standard drug classification used in the *National Drug Code Directory*, 1995 edition (16).
[2]Number of drug mentions divided by the total number of visits multiplied by 100.
[3]Includes unclassified/miscellaneous drugs and homeopathic products.
NOTE: Numbers may not add to totals because of rounding.

Table 18. 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, 2001

Generic substance	Number of occurrences in thousands[1]	Standard error in thousands	Number of generic substances per 100 drug mentions[2]	Standard error of percent
Acetaminophen	26,215	1,327	14.9	0.3
Ibuprofen	13,797	745	7.8	0.2
Hydrocodone	9,571	692	5.4	0.3
Promethazine	6,849	458	3.9	0.2
Ketorolac tromethamine	5,519	326	3.1	0.1
Amoxicillin	5,134	367	2.9	0.1
Albuterol	4,992	325	2.8	0.1
Meperidine	4,183	275	2.4	0.1
Cephalexin	3,168	215	1.8	0.1
Azithromycin	2,814	252	1.6	0.1
Sodium chloride	2,709	264	1.5	0.1
Tetanus toxoid	2,666	156	1.5	0.1
Oxycodone	2,579	242	1.5	0.1
Codeine	2,457	194	1.4	0.1
Aspirin	2,456	175	1.4	0.1
Diphenhydramine	2,404	147	1.4	0.1
Ceftriaxone	2,369	167	1.3	0.1
Nitroglycerin	2,202	168	1.2	0.1
Propoxyphene napsylate	2,082	175	1.2	0.1
Prednisone	1,949	133	1.1	0.1

[1]Frequency of mention combines single-ingredient agents with mentions of the agent as an ingredient in a combination drug.
[2]Based on an estimated 176,510,000 drug mentions at emergency department visits in 2001.

Table 19. 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, 2001

Entry name of drug[1]	Number of drug mentions in thousands	Standard error in thousands	Percent distribution	Standard error of percent	Therapeutic classification[2]
All drug mentions	176,510	7,952	100.0	. . .	. . .
Tylenol	9,883	575	5.6	0.2	Nonnarcotic analgesics
Motrin	8,288	534	4.7	0.2	NSAIDs[3]
Phenergan	6,440	433	3.6	0.2	Antihistamines
Vicodin	6,157	512	3.5	0.2	Narcotic analgesics
Toradol	5,385	322	3.1	0.1	Nonnarcotic analgesics
Demerol	4,069	273	2.3	0.1	Narcotic analgesics
Albuterol	4,007	289	2.3	0.1	Antiasthmatics/bronchodilators
Ibuprofen	3,881	299	2.2	0.2	NSAIDs[3]
Keflex	2,823	204	1.6	0.1	Cephalosporins
Amoxicillin	2,605	222	1.5	0.1	Penicillins
Zithromax	2,507	245	1.4	0.1	Macrolides
Lortab	2,347	342	1.3	0.2	Narcotic analgesics
Benadryl	2,291	140	1.3	0.1	Antihistamines
Percocet-5	2,174	229	1.2	0.1	Narcotic analgesics
Rocephin	2,116	153	1.2	0.1	Cephalosporins
Darvocet-N	2,082	175	1.2	0.1	Narcotic analgesics
Normal saline	1,946	221	1.1	0.1	Replenishers/regulators of electrolytes
Prednisone	1,937	132	1.1	0.1	Adrenal corticosteroids
Levaquin	1,609	132	0.9	0.1	Quinolones
Flexeril	1,589	117	0.9	0.1	Skeletal muscle hyperactivity
All other mentions	102,372	4,789	58.0	0.7	. . .

. . . Category not applicable.
[1]The entry made by hospital staff on the prescription or other medical records. This may be a trade name, generic name, or desired therapeutic effect.
[2]Therapeutic classification is based on the *National Drug Code Directory*, 1995 edition (16). In cases where a drug had more than one therapeutic use, it was classified under its primary therapeutic use.
[3]NSAIDs are nonsteroidal anti-inflammatory drugs.

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

Table 20. Number and percent of emergency department visits with corresponding standard errors by providers seen: United States, 2001

Type of provider	Number of visits in thousands[1]	Standard error in thousands	Percent of visits	Standard error of percent
All visits	107,490	3,969	. . .	. . .
Any physician	99,521	3,628	92.6	0.8
Staff physician	92,516	3,606	86.1	1.5
Resident/intern	10,251	1,106	9.5	1.1
Other physician	9,119	1,299	8.5	1.2
R.N.[2]	93,797	3,667	87.3	1.6
Other technician	20,197	1,794	18.8	1.5
Physician assistant	7,362	1,234	6.8	1.1
E.M.T.[3]	7,144	1,054	6.6	0.9
L.P.N.[4]	6,655	1,236	6.2	1.1
Nurse practitioner	1,535	246	1.4	0.2
Other	2,548	437	2.4	0.4
Blank	2,068	499	1.9	0.5

. . . Category not applicable.
[1]Total exceeds "All visits" because more than one disposition may be reported per visit.
[2]R.N. is registered nurse.
[3]E.M.T. is emergency medical technician.
[4]L.P.N. is licensed practical nurse.

Table 21. Number and percent of emergency department visits with corresponding standard errors by visit disposition: United States, 2001

Disposition	Number of visits in thousands[1]	Standard error in thousands	Percent of visits	Standard error of percent
All visits	107,490	3,969	. . .	. . .
Refer to other physician/clinic for FU[2]	43,598	2,377	40.6	1.6
Return if needed, PRN/appointment[3]	40,759	2,467	37.9	1.7
Return to referring physician	19,842	1,743	18.5	1.5
Admit to hospital[4]	12,626	685	11.7	0.5
No followup planned	10,299	1,110	9.6	1.0
Transfer to other facility	1,967	161	1.8	0.1
Left before being seen	1,593	168	1.5	0.1
Admit to ICU/CCU[5]	992	92	0.9	0.1
Left AMA[6]	924	98	0.9	0.1
Return to nonphysician treatment or support service	814	136	0.8	0.1
Admit for 23-hour observation	642	97	0.6	0.1
Refer to alcohol or drug treatment program	414	52	0.4	0.0
Refer out from triage without treatment	*344	120	*0.3	0.1
DOA/died in ED[7,8]	254	38	0.2	0.0
Other	910	127	0.8	0.1
Blank	1,798	443	1.7	0.4

. . . Category not applicable.
* Figure does not meet standard of reliability or precision.
0.0 Quantity more than zero but less than 0.05
[1]Total exceeds "All visits" because more than one disposition may be reported per visit.
[2]FU is followup.
[3]PRN is "as needed."
[4]Includes those admitted to ICU/CCU.
[5]ICU/CCU is intensive care unit/critical care unit or coronary care unit and is a subset of those admitted to hospital.
[6]AMA is against medical advice.
[7]DOA is dead on arrival.
[8]ED is emergency department.

Table 22. Number and percent distribution of emergency department visits with corresponding standard errors, by time spent in emergency department: United States, 2001

Time spent in emergency department	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits	107,490	3,969	100.0	. . .
Less than 1 hour	17,805	1,015	16.6	0.7
1–2 hours	26,945	1,198	25.1	0.6
2–4 hours	30,611	1,399	28.5	0.7
4–6 hours	9,761	553	9.1	0.4
6–10 hours	4,468	301	4.2	0.2
10–14 hours	1,575	191	1.5	0.2
14–23 hours	1,439	139	1.3	0.1
23–24 hours	131	29	0.1	0.0
24 hours or more	391	89	0.4	0.1
Blank	14,363	1,656	13.4	1.5

. . . Category not applicable.
0.0 Quantity more than zero but less than 0.05.

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

Table 23. Variation in mean duration of emergency department visits by selected hospital characteristics: United States, 2001

Hospital characteristic	Mean duration in hours	Standard error of mean	25th percentile	Median	75th percentile
All visits	3.0	0.1	1.2	2.1	3.4
Emergency department visit volume[1]					
Small (less than 20,000)	2.2	0.1	0.8	1.5	2.4
Medium (20,000–50,000)	2.9	0.1	1.3	2.1	3.4
Large (more than 50,000)	3.6	0.1	1.4	2.5	4.2
Geographic region[1]					
Northeast	3.5	0.1	1.3	2.3	3.8
Midwest	2.6	0.1	1.0	1.8	3.0
South	2.9	0.1	1.2	2.1	3.4
West	3.1	0.2	1.3	2.2	3.7
MSA status[1,2]					
MSA[2]	3.1	0.1	1.3	2.2	3.7
Non-MSA[2]	2.2	0.1	0.9	1.6	2.5
Ownership					
Voluntary	3.0	0.1	1.2	2.1	3.4
Government	3.0	0.2	1.2	2.1	3.6
Proprietary	2.9	0.2	1.2	2.1	3.5
Medical school affiliation[1]					
Yes	3.5	0.1	1.4	2.4	4.0
No	2.6	0.1	1.0	1.9	3.1

[1]Distributions vary significantly ($p < 0.01$).
[2]MSA is metropolitan statistical area.

NOTE: Duration missing for 13.4% of emergency department visits.

Technical Notes

Data collection

The NHAMCS data collection is authorized under section 308d of the Public Health Service Act (Title 42 United States Code), Section 306[242k]. Participation is voluntary. In 2001, a sample of 479 hospitals was selected from the SMG Hospital Database. Of the 395 in-scope hospitals with EDs, 364 participated in the NHAMCS. Of the 364 participating EDs, 97.5 percent (N=355) responded fully or adequately, and 2.5 percent (N=9) responded minimally, for an unweighted ED participation rate of 89.9 percent. A total of 453 emergency service areas (ESAs) were selected from the 364 participating EDs. Of the 453 ESAs, 445 provided 34,546 Patient Record forms. Of the 445 ESAs that provided Patient Record forms, 96.6 percent (N=430) responded fully or adequately, and 3.4 percent responded minimally. The ESA response rate was 94.9 percent, producing an overall ED visit response rate of 85.3 percent. In past Advance Data reports, 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 in 2001, the response rate calculation has taken into account both the ED and ESA participation rates. This is the first year that an ED visit response rate has been presented.

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 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 were instructed to complete the information requested on the Patient Record forms (figure I). However, in 53.3 percent of the hospital EDs, FRs abstracted the data from medical records or computer printouts. No personally identifying information, such as patient name or address, is collected. Confidentiality of the data collected in the survey is protected under the Privacy Act, Public Health Service Act, Title 42 of the United States Code, Section 242m(d), and Title V of the E-Government Act of 2002.

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 in 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 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 (8). 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. When it is not feasible to use statistical software, such as SUDAAN, for analyzing complex survey data, one may calculate approximate RSEs for aggregate estimates using the following general formula, where x is the aggregate of interest in thousands, and A and B are the appropriate coefficients from table I.

$$\mathrm{RSE}(x) = 100 \cdot \sqrt{A + \frac{B}{x}}$$

Similarly, RSEs for an estimate of a percent may be calculated using the following general formula, where p is the percent of interest, expressed as a proportion, and x is the denominator of the percent in thousands, using the appropriate coefficients from table I.

$$\mathrm{RSE}(x) = 100 \cdot \sqrt{\frac{B \cdot (1-p)}{p \cdot x}}$$

The standard error for a rate may be obtained by multiplying the RSE of the total estimate by the rate.

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 Theorem states that given a sufficiently large sample size, the sample estimate approximates the population estimate and, upon repeating 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

Table I. Coefficients appropriate for determining approximate relative standard errors by type of emergency department estimate: National Hospital Ambulatory Medical Care Survey, 2001

Type of estimate	Coefficient for use with estimates in thousands		Lowest reliable estimate in thousands
	A	B	
Visits	0.001924	5.446	62
Drug mentions	0.002966	11.365	131

- a population weighting ratio adjustment

NHAMCS data were adjusted to account for two types of nonresponse. The first type of nonresponse 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 respondent 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. Except in the West, ESA similarity also required having the same MSA status and, in MSAs being in the same ownership control group (voluntary nonprofit versus 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 due to 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 from 0.0 to 0.8 percent for various data 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 and/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/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: reside in a nursing home or other institution (7.1 percent), ethnicity (18.6 percent), primary expected source of payment (7.2 percent), alcohol-related visits (11.3 percent), seen in this ED within the last 72 hours (8.5 percent), episode of care (6.5 percent), intentionality of injury (15.0 percent of injury visits), work-related status of injury (30.1 percent of injury visits), cause of injury (19.2 percent of injury visits), temperature (9.3 percent), pulse (7.3 percent), systolic blood pressure (15.4 percent), diastolic blood pressure (15.6 percent), and duration (13.4 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'' (3.5 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 (1.8 percent), sex (0.9 percent), and race (12.6 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 so 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.

Calculation of time spent in the ED

For the first time in 2001, the NHAMCS collected data on both the time the patient arrived at the ED and the time that the patient was discharged. If the discharge time was more than 24 hours from the arrival time, then the hospital staff were asked to mark a checkbox. These three items were used to derive the amount of time the patient spent in the ED.

Race

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 and so that more than one race could be recorded per person (17). 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. Because of the difference between single and multiple race reporting, race-specific estimates prior to 1999 are not strictly comparable with those from 1999 and subsequent years. From 1999 to the present, only a small proportion of records had multiple races indicated. Where reliable multiple race estimates can be obtained, they are presented in one category. Estimates for specific race categories reflect visits where only a single race was reported.

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

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 II shows the E-code groupings used to produce this table.

Population figures and rate calculation

The 2001 visit rates for age, sex, race, and geographic region use Census 2000-based post-censal estimates of the civilian noninstitutional population of the United States as of July 1, 2001, as prepared by the U.S. Census Bureau. Between 1992–2000, NAMCS and NHAMCS visit rates used 1990 census-based population estimates. The change in visit rates due to switching from the 1990 census-based population estimates to Census 2000-based population estimates presented in this report for age, sex, and race is minimal. For evaluating the effect of the change in the base year, the 2000 NAMCS and NHAMCS visit rates were calculated using both the 1990-based population estimates and the 2000-based population estimates. In no case were differences in the two rates statistically significant. It is, therefore, reasonable to conclude that the effect of the change in base year has little impact on observed trends that cross these survey years. For more information on rate comparisons, see http://www.cdc.gov/nchs/about/major/ahcd/ahcd1.htm.

The 2001 MSA population estimates based on Census 2000 were not available from the U.S. Census Bureau. Therefore, the 2002 MSA estimates, which were available, were used to calculate the proportions of population in MSA and non-MSA areas. The Census 2000-based 2001 total population estimate was then multiplied by those proportions to generate population estimates by MSA status for this report.

Population estimates for race groups in the 2001 NAMCS and NHAMCS are based on Census 2000 where respondents were able to indicate more than one race category (as requested by the 1997 Standards for Federal Data on Race and Ethnicity) (17). The multiple race indication was adopted by the 1999 NAMCS and NHAMCS, but the denominators that were available for calculating rates in 1999 and 2000 were based on estimates from the 1990 census, which indicated single response race categories. The NAMCS and NHAMCS had very few records for multiple race persons, so rates for single race groups were calculated by dividing estimates by denominators that included some unidentifiable multiple race persons. 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 where 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 2001 population estimates indicate that multiple race persons account for 1.4 percent of the total population whereas multiple race patients (as indicated by the provider) account for 0.1 percent of ED visits.

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

Intent and mechanism of injury	Cause-of-injury code[1]
Unintentional injuries	E800–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(. 0–. 2,. 8–. 9), E826(. 0,. 2–. 8), E827–E829, E831, E833–E845
Suffocation	E911–E913
Firearm missile	E922
Drowning/submersion	E830,E832,E910
Other and not elsewhere classified	E846–E848, E914–E915, E918, 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, E962–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–E978, E990–E999
Injuries of undetermined intent	E980–E989
Adverse effects of medical treatment	E870–E879, E930–E949

[1]Based on the "Supplementary Classification of External Causes of Injury and Poisoning," *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM) (13).

This difference exists because hospital staff are 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 2001 are probably slight "overestimates" for the single race categories and "underestimates" for the multiple race category.

Definition of terms

Continuity of care—Continuity of care is a goal of health care achieved through an interdisciplinary process involving patients, families, health care professionals, and providers in the management of a coordinated plan of care. Based on changing needs and available resources, the process optimizes quality outcomes in the health status of patients. It may involve professionals from many different disciplines within multiple systems.

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 emergency department (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 emergency service areas (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 3b, "Immediacy with which patient should be seen" on the Patient Record form.

Episode of care—This term attempts to measure 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 less 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.

Injury-related visit—A visit is injury-related if ''Yes'' was checked in response to item 4a, ''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.

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

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 SMG Hospital Database.

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

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

Proprietary—Hospitals that 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, or make appointments.

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FORM **NHAMCS-100(ED)** (10-6-2000)

U.S. DEPARTMENT OF COMMERCE
Economics 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

NATIONAL HOSPITAL AMBULATORY MEDICAL CARE SURVEY
2001/2002 EMERGENCY DEPARTMENT PATIENT RECORD

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 308(d) of the Public Health Service Act (42 USC 242m).

1. PATIENT INFORMATION

a. Date of visit — Month | Day | Year

b. ZIP code

c. Date of birth — Month | Day | Year

d. Time of day
(1) Arrival ___ ___ : ___ ___ ☐ Military ☐ AM ☐ PM
(2) Discharge ___ ___ : ___ ___ ☐ Military ☐ AM ☐ PM
Mark (X) if discharge is more than 24 hours from arrival. ☐

e. Does patient reside in a nursing home or other institution?
1 ☐ Yes
2 ☐ No
3 ☐ Unknown

f. Sex
1 ☐ Female
2 ☐ Male

g. Ethnicity
1 ☐ Hispanic or Latino
2 ☐ Not Hispanic or Latino

h. Race – *Mark (X) one or more.*
1 ☐ White
2 ☐ Black/African American
3 ☐ Asian
4 ☐ Native Hawaiian/Other Pacific Islander
5 ☐ American Indian/Alaska Native

i. Primary expected source of payment for this visit – *Mark (X) one.*
1 ☐ Private insurance
2 ☐ Medicare
3 ☐ Medicaid/SCHIP
4 ☐ Worker's Compensation
5 ☐ Self-pay
6 ☐ No charge/Charity
7 ☐ Other
8 ☐ Unknown

2. REASON FOR VISIT

a. Patient's complaint(s), symptom(s), or other reason(s) for this visit *Use patient's own words.*
(1) Most important:
(2) Other:
(3) Other:

b. Is this visit related to alcohol use?
1 ☐ Yes, patient's use
2 ☐ Yes, other person's use
3 ☐ No
4 ☐ Unknown

3. CONTINUITY OF CARE

a. Has patient been seen in this ED within the last 72 hours?
1 ☐ Yes
2 ☐ No
3 ☐ Unknown

b. Immediacy with which patient should be seen
1 ☐ Unknown/ no triage
2 ☐ Less than 15 minutes
3 ☐ 15–60 minutes
4 ☐ >1 hour-2 hours
5 ☐ >2 hours-24 hours

c. Episode of care
1 ☐ Initial visit for problem
2 ☐ Follow-up visit for problem
3 ☐ Unknown

4. INJURY/POISONING/ADVERSE EFFECT

a. Is this visit related to an injury, or poisoning, or adverse effect of medical treatment?
1 ☐ Yes
2 ☐ No – *SKIP to item 5.*

b. Is this injury/poisoning intentional?
1 ☐ Yes, self inflicted
2 ☐ Yes, assault
3 ☐ No, unintentional
4 ☐ Unknown

c. Is this injury/ poisoning work related?
1 ☐ Yes
2 ☐ No
3 ☐ Unknown

d. Is this visit related to an adverse drug event?
1 ☐ Yes – *List name(s) of drug(s)* →
2 ☐ No
3 ☐ Unknown

e. 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 driven by drunk driver, wife beaten with fists by husband, heroin overdose, infected shunt, etc.).*

5. INITIAL VITAL SIGNS

a. Temperature:
b. Pulse: ____ beats per minute
c. Blood pressure: ___ / ___

6. PHYSICIAN'S DIAGNOSIS FOR THIS VISIT

As specifically as possible, list diagnoses related to this visit including chronic conditions.
(1) Primary diagnosis:
(2) Other:
(3) Other:

7. DIAGNOSTIC/SCREENING SERVICES

*Mark (X) all **ordered** or **provided** at this visit.*
1 ☐ NONE

Examinations/Tests:
2 ☐ Medical screening exam
3 ☐ Mental status exam
4 ☐ EKG/ECG (electrocardiogram)
5 ☐ Cardiac monitor
6 ☐ EEG (electroencephalogram)
7 ☐ Pulse oximetry
8 ☐ Pregnancy test
9 ☐ Urinalysis (UA)

Imaging:
10 ☐ Chest X-ray
11 ☐ Extremity X-ray
12 ☐ Other X-ray
13 ☐ Ultrasound
14 ☐ MRI/CAT scan
15 ☐ Other imaging

Blood tests:
16 ☐ CBC (complete blood count)
17 ☐ BUN (blood urea nitrogen)
18 ☐ Creatinine
19 ☐ Cholesterol
20 ☐ Glucose
21 ☐ HgbA1C (glycohemoglobin)
22 ☐ Other blood chemistry
23 ☐ BAC (blood alcohol)
24 ☐ HIV serology

Cultures:
25 ☐ Blood
26 ☐ Cervical/Urethral
27 ☐ Stool
28 ☐ Throat/Rapid strep test
29 ☐ Urine
30 ☐ OTHER LAB TEST

8. PROCEDURES

*Mark (X) all **provided** at this visit. Exclude medications.*
1 ☐ NONE
2 ☐ Bladder catheter
3 ☐ CPR
4 ☐ Endotracheal intubation
5 ☐ Eye/ENT care
6 ☐ IV fluids
7 ☐ NG tube/ gastric lavage
8 ☐ OB/GYN care
9 ☐ Orthopedic care
10 ☐ Thrombolytic therapy
11 ☐ Wound care
12 ☐ Other

9. MEDICATIONS & INJECTIONS

a. What is the total number of drugs prescribed or provided at this visit? →
Include Rx and OTC medications, immunizations, allergy shots, anesthetics, and dietary supplements that were ordered, supplied, administered or continued during this visit.

b. List up to six medication/injection names below.
(1)
(2)
(3)
(4)
(5)
(6)

10. VISIT DISPOSITION

Mark (X) all that apply.
1 ☐ No follow-up planned
2 ☐ Return if needed, PRN/appointment
3 ☐ Return to referring physician
4 ☐ Refer to other physician/clinic for FU
5 ☐ Refer out from triage without treatment
6 ☐ Refer to alcohol or drug treatment program
7 ☐ Return to non-physician treatment or support service
8 ☐ Left before being seen
9 ☐ Left AMA
10 ☐ Admit for 23 hour observation
11 ☐ Admit to hospital
12 ☐ Admit to ICU/CCU
13 ☐ Transfer to other facility
14 ☐ DOA/died in ED
15 ☐ Other

11. PROVIDERS SEEN

Mark (X) all that apply.
1 ☐ Staff physician
2 ☐ Resident/Intern
3 ☐ Other physician
4 ☐ RN
5 ☐ LPN
6 ☐ Nurse practitioner
7 ☐ Physician assistant
8 ☐ EMT
9 ☐ Other technician
10 ☐ Other

NHAMCS-100(ED) (10-6-2000)

Figure I. Patient Record form

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.

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