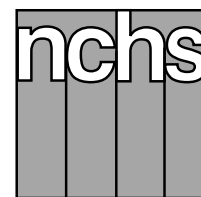


Advance Data



From Vital and Health Statistics of the CENTERS FOR DISEASE CONTROL AND PREVENTION/National Center for Health Statistics

National Hospital Ambulatory Medical Care Survey: 1998 Outpatient Department Summary

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Abstract

Objective—This report describes ambulatory care visits to hospital outpatient departments in the United States. Statistics are presented on selected hospital, clinic, patient, and visit characteristics.

Methods—The data presented in this report were collected from the 1998 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 hospital outpatient and emergency departments of non-Federal, short-stay, and general hospitals in the United States. Sample data are weighted to produce annual estimates.

Results—During 1998, an estimated 75.4 million visits were made to hospital outpatient departments in the United States, an overall rate of 28.0 per 100 persons. Visit rates did not vary by age except in a comparison of the 15–24 year old group with the 75 years and over age group. Black persons had higher rates of visits than white persons as did women compared with men. Of all visits made to hospital outpatient departments in 1998, 33.8 percent and 25.9 percent, respectively, listed private insurance and Medicaid as the primary expected source of payment, and 21.9 percent were made by patients belonging to a health maintenance organization. There were an estimated 7.1 million injury-related outpatient department visits during 1998.

Keywords: outpatient department visits • diagnoses • injury • NHAMCS

Introduction

The National Hospital Ambulatory Medical Care Survey (NHAMCS) was inaugurated in 1992 to gather and disseminate information about the health care provided by hospital outpatient

departments (OPD's) and emergency departments (ED's) to the population of the United States. NHAMCS is part of the ambulatory component of the National Health Care Survey that measures health care utilization across various types of providers.

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, the National Center for Health Statistics (NCHS) has collected data on patient visits to physicians' offices through the National Ambulatory Medical Care Survey (NAMCS). However, visits to hospital OPD's and ED's, which represent a significant segment of ambulatory care visits, are not included in NAMCS. Furthermore, hospital ambulatory patients are known to differ from office patients in their demographic characteristics and in medical aspects (1). Together, the NAMCS and NHAMCS data provide an important tool for tracking ambulatory care utilization. A third survey, the National Survey of Ambulatory Surgery, was conducted from 1994 through 1996 to provide data on the use of ambulatory surgery centers that are not covered in NAMCS or NHAMCS.

This report presents national annual estimates of hospital outpatient department visits for 1998. Hospital, clinic, patient, and visit characteristics are described. Other *Advance Data* reports highlight visits to ED's (2) and physician offices (3).



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



Methods

The data presented in this report are from the 1998 NHAMCS, a national probability sample survey conducted by the Division of Health Care Statistics of the National Center for Health Statistics, Centers for Disease Control and Prevention. The survey was conducted from December 22, 1997, through December 20, 1998.

The target universe of NHAMCS is in-person visits made in the United States to OPD's and ED's of non-Federal, short-stay hospitals (hospitals with an average length of stay of less than 30 days) or those whose specialty is general (medical or surgical) or children's general. The sampling frame consisted of hospitals listed in the April 1991 SMG Hospital Database. The data presented in this report are representative of 1998 utilization statistics for hospitals existing in 1991.

NHAMCS uses a four-stage probability design involving samples of primary sampling units (PSU's), hospitals within PSU's, clinics within outpatient departments and/or ED's within hospitals, and patient visits within clinics and/or ED's (4). The first stage sample consists of the 112 PSU's used in the 1985-94 National Health Interview Survey. The sample for 1998 consisted of 488 hospitals. Of this group, 266 had OPD's, and 239 of these participated in the survey, resulting in a hospital outpatient department participation rate of almost 90 percent.

If an OPD had five or fewer clinics, then all were included in the sample. For OPD's with more than five clinics, a systematic sample of clinics proportional to size was included in the survey. A clinic was defined as an administrative unit of the outpatient department where ambulatory medical care is provided under the supervision of a physician. Clinics where only ancillary services, such as radiology, laboratory services, physical rehabilitation, renal dialysis, and pharmacy, were provided, or other settings in which physician services were not typically provided, were out of scope for the survey. A total of 891 clinics was selected from the 239 participating OPD's. Of this group of clinics, 828 provided data to the survey.

Hospital staff were asked to complete Patient Record forms (PRF) (figure 1) for a systematic random sample of patient visits occurring during a randomly assigned 4-week reporting period. Each participating OPD received its own randomly assigned 4-week reporting period to account for seasonal effects in health care utilization. The number of Patient Record forms completed for OPD's was 29,402.

Because the estimates presented in this report are based on a sample rather than on the entire universe of OPD visits, they are subject to sampling variability. The Technical notes at the end of this report include an explanation of sampling errors and guidelines for judging the precision of the estimates.

Several medical classification systems were used to code data from NHAMCS. Each Patient Record form contains an item on the patient's expressed reason for the visit. In this item, the hospital staff were asked to record the patient's "complaint(s), symptom(s), or other reason(s) for this visit in the patient's (or patient surrogate's) own words." Up to three reasons for visit were coded according to *A Reason for Visit Classification for Ambulatory Care* (RVC) (5). The RVC is an NCHS-developed classification scheme that has been used for over 20 years to code the patient's complaints or reason for seeking care. It includes all the reasons for which patients see their physicians. This includes symptoms, followup for prior diagnoses, routine examinations and screening, treatment for conditions and operations, various therapies, and injuries. It also encompasses visits to receive test results and to fulfill third party requirements for a physical examination, such as for employment or a driver's license. All of these are classified into eight modules in the RVC. The symptoms module is further divided into symptoms that refer to specific body systems, such as digestive or respiratory. Each reason is assigned a 3- or 4-digit classification code (for example, S845- "Symptoms of skin mole," is further detailed to S845.1- "Change in size and color" and S845.2- "Bleeding mole").

The Patient Record form contains an item on the cause of injury for

injury-related visits. Up to three external causes of injury were coded according to the "Supplementary Classification of External Causes of Injury and Poisoning" found in the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM) (6). In addition, the form contains an item on diagnosis. The hospital staff were asked to record the principal diagnosis or problem associated with the patient's most important reason for the current visit as well as any other significant current diagnoses. Up to three diagnoses were coded according to the ICD-9-CM (6).

The Patient Record form includes items on ambulatory surgical procedures and diagnostic/screening services. Hospital staff were asked to record up to two surgical procedures that were performed at the visit and to record additional services in the open-ended "other" categories. These procedures and services were coded according to the ICD-9-CM, volume 3 (6).

In the medication item, hospital staff were instructed to record all new or continued medications ordered, supplied, or administered at the visit, including 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 (7). Therapeutic classification of the drugs mentioned on the Patient Record forms was determined using the *National Drug Code Directory*, 1995 edition (8).

Item nonresponse rates in NHAMCS are generally low (5 percent or less). However, levels of nonresponse can vary considerably in the survey, with one item in 1998 (place of occurrence of injury) having a nonresponse rate above 60 percent. Most nonresponse occurs when the needed information is not available in the medical record. 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

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).				Department of Health and Human Services Public Health Service Centers for Disease Control and Prevention National Center for Health Statistics		OMB No. 0920-0278 Expires: 07/31/99 CDC 64.132		PATIENT'S RECORD NO.:											
NATIONAL HOSPITAL AMBULATORY MEDICAL CARE SURVEY 1997-98 OUTPATIENT DEPARTMENT RECORD						PATIENT'S NAME:													
1. DATE OF VISIT ____ / ____ / ____ Month Day Year		3. SEX 1 <input type="checkbox"/> Female 2 <input type="checkbox"/> Male ↓ Is patient pregnant? 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown		4. RACE 1 <input type="checkbox"/> White 2 <input type="checkbox"/> Black 3 <input type="checkbox"/> Asian/Pacific Islander 4 <input type="checkbox"/> American Indian/Eskimo/Aleut 5. ETHNICITY 1 <input type="checkbox"/> Hispanic origin 2 <input type="checkbox"/> Not Hispanic		6. WAS PATIENT REFERRED BY ANOTHER PHYSICIAN OR BY A HEALTH PLAN FOR THIS VISIT? 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown		7. WAS AUTHORIZATION REQUIRED FOR CARE? 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown		8. ARE YOU THE PATIENT'S PRIMARY CARE PHYSICIAN? 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown		9. PRIMARY EXPECTED SOURCE OF PAYMENT FOR THIS VISIT <i>Check one.</i> 1 <input type="checkbox"/> Private insurance 2 <input type="checkbox"/> Medicare 3 <input type="checkbox"/> Medicaid 4 <input type="checkbox"/> Worker's Compensation 5 <input type="checkbox"/> Self-pay 6 <input type="checkbox"/> No charge 7 <input type="checkbox"/> Other 8 <input type="checkbox"/> Unknown		10. DOES PATIENT BELONG TO AN HMO? 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown		11. IS THIS A CAPITATED VISIT? 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown		12. HAS PATIENT BEEN SEEN IN THIS CLINIC BEFORE? 1 <input type="checkbox"/> Yes, established patient 2 <input type="checkbox"/> No, new patient	
13. PATIENT'S COMPLAINT(S), SYMPTOM(S), OR OTHER REASON(S) FOR THIS VISIT <i>Use patient's own words</i> 1. Most important: _____ _____ 2. Other: _____ _____ 3. Other: _____ _____				14. MAJOR REASON FOR THIS VISIT <i>Check one</i> 1 <input type="checkbox"/> Acute problem 2 <input type="checkbox"/> Chronic problem, routine 3 <input type="checkbox"/> Chronic problem, flareup 4 <input type="checkbox"/> Pre- or post-surgery/ injury followup 5 <input type="checkbox"/> Non-illness care (e.g., routine prenatal, general exam., well baby)		15. IS THIS VISIT RELATED TO INJURY OR POISONING? <i>Refers to all types of injury or poisoning, including adverse drug experiences, medical misadventures, etc.</i> 1 <input type="checkbox"/> Yes (Answer a, b, c, and d.) 2 <input type="checkbox"/> No (Skip to item 16.) a. Place of occurrence <i>Check one</i> 1 <input type="checkbox"/> Residence 5 <input type="checkbox"/> Other public building 2 <input type="checkbox"/> Recreation/sports area 6 <input type="checkbox"/> Industrial places 3 <input type="checkbox"/> Street or highway 7 <input type="checkbox"/> Other 4 <input type="checkbox"/> School 8 <input type="checkbox"/> Unknown c. Is this injury work related? 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown d. Cause of injury <i>Describe events that preceded injury (e.g. reaction to penicillin, wasp sting, driver in motor vehicle traffic accident involving collision with parked vehicle, shot with a handgun during a brawl, etc.)</i> _____ _____				16. PHYSICIAN'S DIAGNOSES FOR THIS VISIT <i>As specifically as possible, list diagnoses related to this visit including chronic conditions (e.g. depression, obesity, asthma, etc.)</i> 1. Primary diagnosis: _____ _____ 2. Other: _____ _____ 3. Other: _____ _____									
17. DIAGNOSTIC/SCREENING SERVICES <i>Check all ordered or provided at this visit.</i> 1 <input type="checkbox"/> None EXAMINATIONS: 2 <input type="checkbox"/> Breast 9 <input type="checkbox"/> Blood pressure 16 <input type="checkbox"/> Cholesterol measure 3 <input type="checkbox"/> Pelvic 10 <input type="checkbox"/> Strep test 17 <input type="checkbox"/> HIV serology 4 <input type="checkbox"/> Rectal 11 <input type="checkbox"/> Pap test 18 <input type="checkbox"/> Other STD test 5 <input type="checkbox"/> Skin 12 <input type="checkbox"/> Urinalysis 19 <input type="checkbox"/> Hematocrit/hemoglobin 6 <input type="checkbox"/> Visual acuity 13 <input type="checkbox"/> Pregnancy test 20 <input type="checkbox"/> Other blood test 7 <input type="checkbox"/> Glaucoma 14 <input type="checkbox"/> PSA 21 <input type="checkbox"/> EKG 8 <input type="checkbox"/> Hearing 15 <input type="checkbox"/> Blood lead level										18. THERAPEUTIC AND PREVENTIVE SERVICES <i>Check all ordered or provided at this visit. Exclude medications.</i> 1 <input type="checkbox"/> None COUNSELING/EDUCATION: 2 <input type="checkbox"/> Diet/nutrition 8 <input type="checkbox"/> Tobacco use/exposure 3 <input type="checkbox"/> Exercise 9 <input type="checkbox"/> Growth/development 4 <input type="checkbox"/> HIV/STD transmission 10 <input type="checkbox"/> Mental health 5 <input type="checkbox"/> Family planning/contraception 11 <input type="checkbox"/> Stress management 6 <input type="checkbox"/> Prenatal instructions 12 <input type="checkbox"/> Skin cancer prevention 7 <input type="checkbox"/> Breast self-exam 13 <input type="checkbox"/> Injury prevention OTHER THERAPY: 14 <input type="checkbox"/> Psychotherapy 15 <input type="checkbox"/> Psycho-pharmacotherapy 16 <input type="checkbox"/> Physiotherapy ALL OTHER: Specify ↗ 17 <input type="checkbox"/> _____									
19. AMBULATORY SURGICAL PROCEDURES <input type="checkbox"/> None <i>List up to 2 surgical procedures actually performed at this visit. Include biopsy.</i> 1. _____ 2. _____				20. MEDICATIONS/INJECTIONS <i>List names of up to 6 medications that were ordered, supplied, administered or continued during this visit. Include R, and OTC medications, immunizations, allergy shots, and anesthetics.</i> <input type="checkbox"/> None 1. _____ 4. _____ 2. _____ 5. _____ 3. _____ 6. _____				21. PROVIDERS SEEN THIS VISIT <i>Check all that apply.</i> 1 <input type="checkbox"/> Staff physician 7 <input type="checkbox"/> R.N. 2 <input type="checkbox"/> Resident/intern 8 <input type="checkbox"/> L.P.N. 3 <input type="checkbox"/> Other physician 9 <input type="checkbox"/> Medical/nursing assistant 4 <input type="checkbox"/> Physician assistant 10 <input type="checkbox"/> Other 5 <input type="checkbox"/> Nurse practitioner 6 <input type="checkbox"/> Nurse midwife				22. TIME SPENT WITH PHYSICIAN <i>If not seen by physician, enter zero</i> _____ Minutes							

Figure 1. Patient Record form

unknown/blank to display missing data. For items where combined item nonresponse is between 30 and 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 items 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 the one item with nonresponse greater than 50 percent (place of occurrence of injury), the data are not presented. The Technical notes provide nonresponse rates for items with more than 5 percent missing data.

The U.S. Bureau of the Census, Housing Surveys Branch, was responsible for data collection. Analytic Sciences, Inc., of Durham, North Carolina, performed data processing operations and medical coding. 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 0.1 and 1.9 percent for various survey items.

Several of the tables in this report present data on rates of outpatient department visits. The population figures used in calculating these rates are U.S. Bureau of the Census estimates of the civilian noninstitutionalized population of the United States as of July 1, 1998, and have been adjusted for net underenumeration using the 1990 National Population Adjustment Matrix. Additional information is available at the U.S. Bureau of the Census Internet site: http://ftp.census.gov/population/www/estimates/nat_90s_4.html.

Results

There were an estimated 75.4 million OPD visits in 1998, representing a rate of 28.0 visits per 100 persons. This rate did not differ significantly from the visit rate in 1997 (28.9 visits per 100 persons). The following text describes selected hospital, clinic,

patient, and visit characteristics for these encounters.

Patient characteristics

OPD visits by patient's age, sex, and race are shown in table 1 and figures 2 and 3. Visit rates for persons in the oldest age group were almost twice that of those in a younger age

group (41.6 visits per 100 persons age 75 years and older versus 21.8 per 100 persons for those aged 15–24 years). Females made 60.2 percent of all OPD visits during 1998. Visit rates were higher for females than for males in the age groups between 15 and 44 years old. This is consistent with the findings reported last year. There was a linear

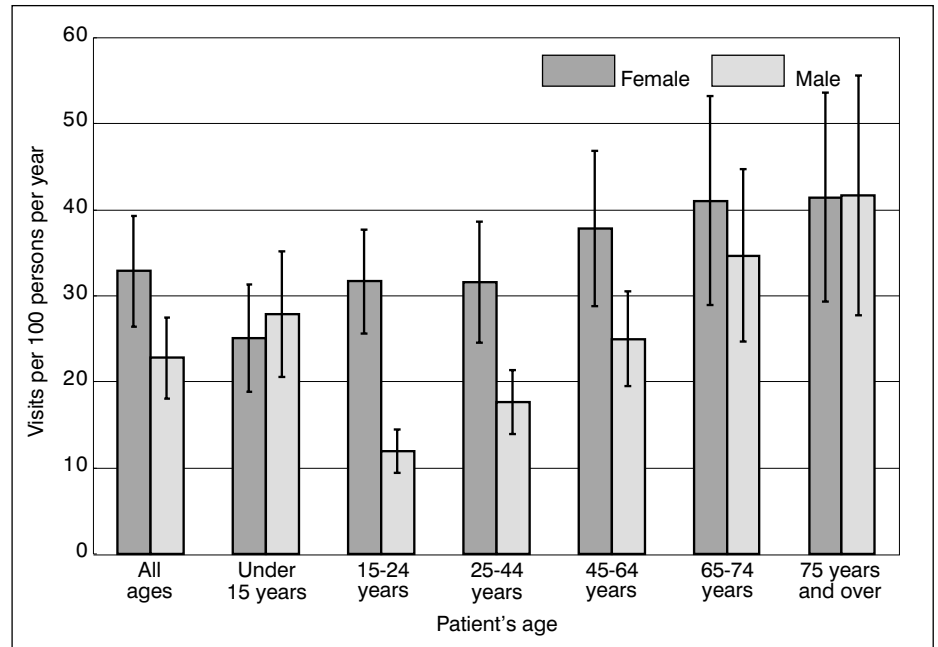


Figure 2. Annual outpatient visit rate by patient's age and sex: United States, 1998

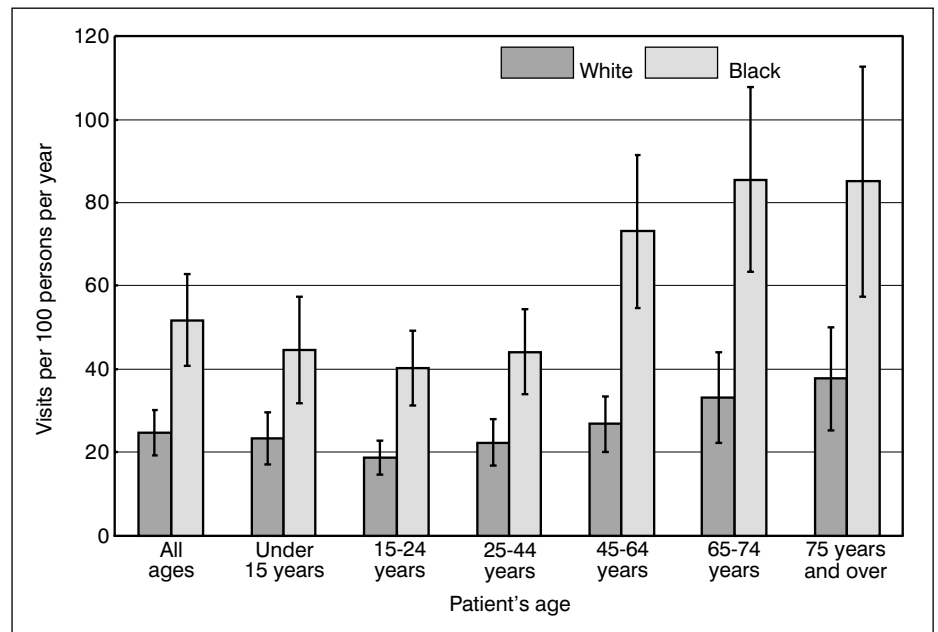


Figure 3. Annual rate of outpatient department visits by patient's age and race: United States, 1998

Table 1. Number, percent distribution, and annual rate of outpatient department visits with corresponding standard errors by selected patient and hospital characteristics: United States, 1998

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	75,412	7,609	100.0	...	28.0	2.8
Patient characteristics						
Age:						
Under 15 years	15,894	2,029	21.1	1.8	26.5	3.4
15–24 years	8,141	774	10.8	0.6	21.8	2.1
25–44 years	20,548	2,278	27.2	1.3	24.7	2.7
45–64 years	17,980	2,043	23.8	1.0	31.7	3.6
65–74 years	6,869	995	9.1	0.8	38.2	5.5
75 years and over	5,979	895	7.9	0.8	41.6	6.2
Sex and age:						
Female	45,424	4,600	60.2	0.8	32.9	3.3
Under 15 years	7,349	933	9.7	0.8	25.1	3.2
15–24 years	5,889	581	7.8	0.5	31.7	3.1
25–44 years	13,355	1,542	17.7	1.0	31.6	3.6
45–64 years	11,112	1,334	14.7	0.8	37.9	4.6
65–74 years	4,062	611	5.4	0.5	41.1	6.2
75 years and over	3,656	547	4.8	0.5	41.5	6.2
Male	29,988	3,118	39.8	0.8	22.8	2.4
Under 15 years	8,544	1,120	11.3	1.0	27.9	3.7
15–24 years	2,252	252	3.0	0.2	12.0	1.3
25–44 years	7,193	791	9.5	0.5	17.7	1.9
45–64 years	6,868	765	9.1	0.4	25.0	2.8
65–74 years	2,807	412	3.7	0.3	34.7	5.1
75 years and over	2,324	395	3.1	0.3	41.7	7.1
Race and age:						
White	54,895	6,239	72.8	2.0	24.8	2.8
Under 15 years	11,001	1,486	14.6	1.3	23.4	3.2
15–24 years	5,581	622	7.4	0.5	18.8	2.1
25–44 years	15,182	1,948	20.1	1.4	22.4	2.9
45–64 years	13,003	1,657	17.2	0.9	26.9	3.4
65–74 years	5,243	879	7.0	0.7	33.2	5.6
75 years and over	4,886	811	6.5	0.8	37.7	6.3
Black	17,974	1,927	23.8	1.9	51.8	5.6
Under 15 years	4,281	636	5.7	0.7	44.6	6.6
15–24 years	2,269	260	3.0	0.3	40.3	4.6
25–44 years	4,751	556	6.3	0.6	44.1	5.2
45–64 years	4,360	559	5.8	0.6	73.1	9.4
65–74 years	1,387	182	1.8	0.2	85.6	11.3
75 years and over	925	153	1.2	0.2	85.1	14.1
Asian/Pacific Islander	2,352	415	3.1	0.5	22.1	3.9
American Indian/Eskimo/Aleut	*191	83	*0.3	0.1	*7.9	3.5
Hospital characteristics						
Ownership:						
Voluntary	52,601	6,000	69.8	4.4	19.5	2.2
Government	20,904	3,968	27.7	4.2	7.8	1.5
Proprietary	*1,908	721	*2.5	0.9	*0.7	0.3
Geographic region:						
Northeast	21,758	3,011	28.9	3.9	41.9	5.8
Midwest	20,286	3,524	26.9	4.2	30.4	5.3
South	23,917	5,500	31.7	5.4	25.0	5.8
West	9,452	2,484	12.5	3.1	17.2	4.5
Metropolitan status:						
MSA ³	64,535	7,032	85.6	3.6	30.3	3.3
Non-MSA ³	10,877	2,968	14.4	3.6	19.3	5.3

... Category not applicable.

* Figure does not meet standard of reliability or precision.

¹Based on U.S. Bureau of the Census monthly postcensal estimates of the civilian noninstitutionalized population of the United States as of July 1, 1998. Figures are consistent with the downloadable series, *U.S. Population Estimates by Age, Sex, Race, and Hispanic Origin: 1980–98*. It is available at the U.S. Bureau of the Census Internet site: http://ftp.census.gov/population/www/estimates/nat_90s_4.html. Figures have been adjusted for net underenumeration using the 1990 National Population Adjustment Matrix.

²Regional and metropolitan area estimates have been provided by the Division of Health Interview Statistics (DHIS), NCHS, and are based on U.S. Bureau of the Census estimates of the civilian noninstitutionalized population as of July 1, 1998. DHIS estimates may differ slightly from monthly postcensal estimates because of differences in the adjustment process.

³MSA is metropolitan statistical area.

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

trend in visit rates by age for both males and females starting with those 15 years of age and older. In figures 2 and 3, 95 percent confidence intervals are given to graphically display the stability of the individual point estimates and to permit the reader to assess general patterns in the data.

White persons made 72.8 percent of all OPD visits, while black persons and Asians/Pacific Islanders accounted for 23.8 percent and 3.1 percent, respectively. American Indians, Eskimos, and Aleuts accounted for 0.3 percent of the visits. Visit rates for black persons were significantly higher than rates for white persons overall and in all age category comparisons.

“Is patient pregnant?” is a new item on the 1997–98 NHAMCS Patient Record form. Results are discussed in terms of women of childbearing age (15–44 years). For 26.2 percent of visits made by women 15–44 years of age, pregnancy status was unknown. This high level of missing data must be kept in mind when interpreting this item. At another 54.2 percent of visits, patients were not pregnant. The remainder, 19.6 percent of visits, were made by women who were pregnant.

Hospital characteristics

Ownership—Almost 7 out of 10 OPD visits occurred in hospitals where the ownership was voluntary nonprofit, while 27.7 percent of visits occurred in non-Federal government hospitals.

Geographic region—The visit rates in the Northeast (41.9 visits per 100 persons) and Midwest (30.4 per 100 persons) were higher than in the West (17.2 visits per 100 persons). The proportions of OPD visits in the Northeast (28.9 percent), Midwest (26.9 percent), and South (31.7 percent) were higher than the proportion in the West (12.5 percent).

Metropolitan status—About 86 percent of OPD visits occurred in metropolitan statistical areas (MSA's). The visit rate for these areas (30.3 visits per 100 persons) was not significantly different from the non-MSA rate (19.3 visits per 100 persons).

Table 2. Number and percent distribution of outpatient department visits with corresponding standard errors by clinic type: United States, 1998

Clinic type ¹	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits	75,412	7,609	100.0	...
General medicine	46,123	5,755	61.2	3.1
Pediatrics	9,955	1,631	13.2	1.8
Surgery	7,174	1,199	9.5	1.4
Obstetrics and gynecology	6,131	1,058	8.1	1.2
Other	6,028	1,150	8.0	1.5

... Category not applicable.

¹Only clinics under the supervision of a physician were included. Clinics specializing in radiology, laboratory services, physical rehabilitation, or other ancillary services were excluded.

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

Clinic characteristics

Clinic type—Visits to hospital OPD's were classified into five types of clinics (table 2). General medicine clinics included internal medicine and primary care clinics and represented 61.2 percent of all OPD visits. Surgery, pediatrics, and obstetrics and gynecology accounted for 9.5 percent, 13.2 percent, and 8.1 percent of visits, respectively. The “other” clinic category, which included such clinics as psychiatry and neurology, accounted for 8.0 percent of visits.

Visit characteristics

Referral status and prior-visit status—Table 3 shows data on OPD visits categorized by patient's referral status and by prior-visit status. About 19 percent of OPD visits were referred by another physician. Eight out of ten OPD

visits (81.9 percent) were made by patients who had been seen in the clinic on a previous occasion. Overall, 15.8 percent of visits were made by new patients. A significantly higher proportion of new patients were referred by another physician or health plan (38.0 percent) compared with old patients (15.2 percent).

Impact of managed care—Because of increased interest in the impact of managed care on the health care delivery system, NCHS added items on the NHAMCS Patient Record form to try to measure the degree to which a patient's care is being managed. Because it is difficult to determine whether the patient is a managed care enrollee, there are several different aspects of managed care measured in the 1998 NHAMCS. These include whether the visit was made to the patient's primary care physician,

Table 3. Number and percent distribution of outpatient department visits with corresponding standard errors by patient's referral status and prior-visit status: United States, 1998

Referral status	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits	75,412	7,609	100.0	...
Referral status				
Not referred by another physician or health plan for this visit	51,678	5,541	68.5	2.4
Referred by another physician or health plan for this visit	14,101	2,146	18.7	2.0
Unknown/blank	9,634	1,393	12.8	1.5
Prior visit status				
New patient	11,899	1,318	15.8	1.0
Old patient	61,800	6,348	81.9	0.9
Unknown/blank	*1,712	521	*2.3	0.7

... Category not applicable.

*Figure does not meet standard of reliability or precision.

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

Table 4. Number and percent distribution of outpatient department visits with corresponding standard errors by selected visit characteristics, according to primary care physician status: United States, 1998

Visit characteristic	Are you the patient's primary care physician?			
	All visits	Yes	No	Unknown
	Number of visits in thousands			
All visits	75,412	26,693	40,616	8,103
Percent distribution	100.0	35.4	53.9	10.7
Was authorization required for care?				
Yes	9,494	1,867	7,156	470
No	50,876	22,168	25,772	2,936
Unknown/blank	15,043	*2,659	7,688	4,697
Is this a capitated visit?				
Yes	8,233	4,492	3,418	*323
No	41,057	15,116	22,654	3,286
Unknown/blank	26,122	7,085	14,544	4,494
HMO ¹ status				
Yes	16,547	6,277	9,112	1,158
No	41,375	14,929	23,375	3,070
Unknown/blank	17,490	5,487	8,128	3,874
	Standard error in thousands			
All visits	7,609	1,721	5,027	3,071
Was authorization required for care?				
Yes	1,638	433	1,460	130
No	5,848	3,214	3,331	676
Unknown/blank	2,061	819	1,275	921
Is this a capitated visit?				
Yes	1,721	1,019	861	191
No	5,027	2,418	3,449	711
Unknown/blank	3,071	1,237	2,005	850
HMO ¹ status				
Yes	2,377	1,011	1,727	271
No	4,779	2,254	3,083	656
Unknown/blank	2,426	1,383	1,239	805
	Percent distribution			
All visits	100.0	100.0	100.0	100.0
Was authorization required for care?				
Yes	12.6	7.0	17.6	5.8
No	67.5	83.1	63.5	36.2
Unknown/blank	19.9	10.0	18.9	58.0
Is this a capitated visit?				
Yes	10.9	16.8	8.4	*4.0
No	54.4	56.6	55.8	40.6
Unknown/blank	34.6	26.5	35.8	55.5
HMO ¹ status				
Yes	21.9	23.5	22.4	14.3
No	54.9	55.9	57.6	37.9
Unknown/blank	23.2	20.6	20.0	47.8
	Standard error of percent			
All visits . . . . .	...	...	...	...
Was authorization required for care?				
Yes	1.8	1.6	2.6	1.5
No	2.7	3.2	3.4	6.4
Unknown/blank	2.3	2.8	2.6	6.6
Is this a capitated visit?				
Yes	1.9	2.9	1.9	2.3
No	2.9	4.3	3.8	6.1
Unknown/blank	3.1	3.8	3.9	6.3
HMO ¹ status				
Yes	2.3	2.9	2.9	2.9
No	2.6	4.2	3.3	5.5
Unknown/blank	2.4	4.0	2.6	6.2

* Figure does not meet standard of reliability or precision.

¹HMO is health maintenance organization.

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

whether the patient belonged to a health maintenance organization (HMO), whether authorization was required for the visit, and whether the visit was capitated.

A key concept of managed care is the ability of the primary care physician to manage the patient's care, to use tests, and to refer patients to specialists. Overall, one-third (35.4 percent) of all OPD visits were to the patient's primary care physician (table 4).

An HMO is defined as a health care delivery system that offers comprehensive health services provided by an established panel or network of providers to a voluntarily enrolled population for a prepaid fixed fee and whose members are required to utilize services within the panel of contracted providers. This item permits estimation of the volume of visits by patients who are members of an HMO and should, by definition, be receiving managed care. As shown in table 4, 21.9 percent of all visits were made by patients who belong to an HMO. Visits by HMO patients and by patients who were not members of HMO's were equally likely to be to the patient's primary care physician (37.9 percent versus 36.1 percent.)

Authorization was required to see the physician at 12.6 percent of OPD visits (table 4). However, visits to physicians other than the patient's primary care physician were more likely to require authorization (17.6 percent versus 7.0 percent for visits to the patient's primary care physician).

Capitated visits accounted for 10.9 percent of all OPD visits in 1998. Visits where patients saw their primary care physician were more likely to be capitated compared with visits where patients saw a physician other than their primary care physician (16.8 percent versus 8.4 percent). It should be noted that there are fairly high levels of missing data for the capitation item (34.6 percent), so the results should be interpreted with caution.

Primary expected source of payment—Data for this item are shown in table 5 and figure 4. Private insurance was cited most frequently (33.8 percent of visits). The distribution of expected payment sources in 1998 did not differ significantly from the corresponding 1997 figures.

The expected source of payment distribution of OPD visits for HMO members was different from the distribution of visits by patients who were not members of an HMO. The majority of visits by HMO members had private insurance checked (61.4 percent), 25.2 percent had Medicaid, and 4.2 percent had Medicare. In contrast, the most frequently reported category for visits by non-HMO members was Medicaid (28.3 percent), followed by private insurance (25.4 percent), and Medicare (20.1 percent). The percent of self-pay visits was 13.8 percent for non-HMO members compared with less than 1 percent for HMO members (data not shown). It should be kept in mind that HMO status was not known for

23.2 percent of visits. More complete reporting could change the distributions.

Examining those visits with private insurance as the expected source of payment and with a known HMO status, 49.1 percent were by patients who were HMO members. Among Medicaid and Medicare visits, 26.2 percent and 7.7 percent, respectively, were by HMO members (data not shown).

Patient's principal reason for visit—As described earlier, up to three reasons for visit were coded and classified according to *A Reason for Visit Classification for Ambulatory Care* (RVC) (5). The principal reason for visit is the problem, complaint, or reason provided in the patient's own words. The RVC is divided into eight modules or groups of reasons, which are displayed in table 6. Reasons classified in the symptom module represented 42.2 percent of all OPD visits with symptoms referable to the respiratory system accounting for 8.5 percent. The diagnostic/screening and preventive module (18.2 percent) and the treatment module (18.4 percent) were also prominent.

The 20 most frequently mentioned principal reasons for visit, representing 43.7 percent of all visits, are shown in table 7. Progress visit, classified in the treatment module and generally denoting routine followup of an unspecified problem, was the most frequently mentioned principal reason for visit (9.1 percent). This was followed by general medical examination (6.1 percent) and routine prenatal examination (3.3 percent). The most frequently mentioned reasons related to a symptomatic problem were cough (2.8 percent), throat symptoms (2.0 percent), stomach and abdominal pain (1.6 percent), and fever (1.6 percent). Seventeen of the top 20 reasons for OPD visits in 1998 were also listed among the most frequently mentioned reasons in 1997, albeit in a different order. It should be noted that estimates differing in ranked order may not be significantly different from each other.

Major reason for this visit—The intent of this new item on the 1997–98 NHAMCS Patient Record form was to provide a better picture of the general nature of the OPD visit—whether for an acute problem; routine chronic problem; flareup of a chronic problem; pre- or

Table 5. Number and percent distribution of outpatient department visits with corresponding standard errors by primary expected source of payment: United States, 1998

Primary expected source of payment	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits	75,412	7,609	100.0	. . .
Private insurance	25,469	3,680	33.8	2.7
Medicaid	19,543	2,208	25.9	2.4
Medicare	12,237	1,710	16.2	1.3
Self-pay	7,030	1,008	9.3	0.9
No charge	*2,363	942	*3.1	1.2
Worker's compensation	567	99	0.8	0.1
Other	4,489	824	6.0	1.0
Unknown/blank	3,715	635	4.9	0.7

. . . Category not applicable.

*Figure does not meet standard of reliability or precision.

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

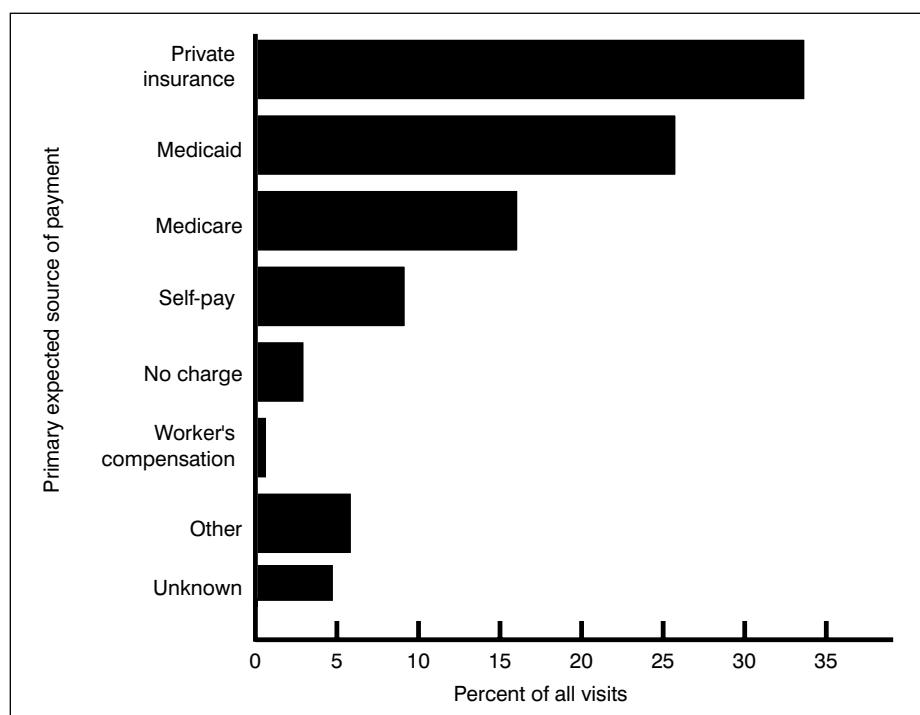


Figure 4. Percent of outpatient department visits by primary expected source of payment: United States, 1998

post-surgery visit or injury followup; or for nonillness care, including routine medical examinations. The major reason for visit item differs from the principal reason for visit item in that the former presents the physician's rather than the

patient's perspective of the major reason that the patient sought care. Results from this item are displayed in table 8. Acute problems were seen at 35.4 percent of visits. Among visits by children under 15 years of age, 44.4

percent were for acute problems. About 32 percent of all visits were for a routine chronic problem. This percent was 45.6 percent for persons 65–74 years of age. Approximately 18 percent of visits were for nonillness care. Females had a significantly higher proportion of visits for nonillness care compared with males. This pattern was also true for visits by black persons compared with white persons.

Injury-related visits—Data on injury-related visits are presented in tables 9–11. Visits were considered to be injury related if “yes” was checked in response to item 15 on the Patient Record form, if an injury reason for visit or injury diagnosis was recorded, or if a cause of injury was specified. Using the results from any one of those items alone would underestimate the number of injury-related visits. Each of these items measures a unique aspect of injury. Using this definition, the number of injury-related visits was 37.2 percent greater compared with using the injury check box alone.

There were an estimated 7.1 million injury-related OPD visits in 1998, representing 9.4 percent of all OPD visits and yielding a rate of 2.6 visits

Table 6. Number and percent distribution of outpatient department visits with corresponding standard errors by patient's principal reason for visit: United States, 1998

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	75,412	7,609	100.0	...
Symptom module. S001–S999	31,827	3,618	42.2	1.8
General symptoms S001–S099	4,287	616	5.7	0.4
Symptoms referable to psychological/mental disorders S100–S199	2,867	558	3.8	0.7
Symptoms referable to the nervous system (excluding sense organs) S200–S259	1,905	297	2.5	0.3
Symptoms referable to the cardiovascular/lymphatic system S260–S299	261	53	0.3	0.1
Symptoms referable to the eyes and ears S300–S399	2,947	522	3.9	0.5
Symptoms referable to the respiratory system S400–S499	6,388	969	8.5	0.9
Symptoms referable to the digestive system. S500–S639	3,163	412	4.2	0.3
Symptoms referable to the genitourinary system S640–S829	2,371	317	3.1	0.2
Symptoms referable to the skin, hair, and nails S830–S899	2,678	366	3.6	0.4
Symptoms referable to the musculoskeletal system S900–S999	4,961	606	6.6	0.5
Disease module D001–D999	8,742	1,119	11.6	0.8
Diagnostic/screening and preventive module. X100–X599	13,743	1,546	18.2	1.2
Treatment module T100–T899	13,891	1,857	18.4	1.7
Injuries and adverse effects module J001–J999	2,554	309	3.4	0.4
Test results module R100–R700	1,293	178	1.7	0.1
Administrative module. A100–A140	674	150	0.9	0.2
Other ² U990–U999	*2,688	937	*3.6	1.2

... Category not applicable.

* Figure does not meet standard of reliability or precision.

¹Based on *A Reason for Classification for Ambulatory Care (RVC)* (5).

²Includes 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 outpatient department visits with corresponding standard errors by the 20 principal reasons for visit most frequently mentioned by patients: United States, 1998

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	75,412	7,609	100.0	...
Progress visit T800	6,848	1,214	9.1	1.4
General medical examination X100	4,628	641	6.1	0.6
Routine prenatal examination X205	2,478	512	3.3	0.6
Cough S440	2,136	353	2.8	0.3
Throat symptoms. S455	1,521	286	2.0	0.3
Medication, other and unspecified T115	1,422	373	1.9	0.5
Well-baby examinations. X105	1,264	202	1.7	0.2
Postoperative visit T205	1,231	298	1.6	0.3
Stomach and abdominal pain, cramps, and spasms S545	1,226	162	1.6	0.1
Fever S010	1,189	231	1.6	0.2
Counseling, not otherwise stated T605	1,101	206	1.5	0.2
Earache or ear infection S355	1,072	195	1.4	0.2
Skin rash. S860	1,061	170	1.4	0.2
Hypertension D510	949	152	1.3	0.2
Depression S110	911	201	1.2	0.3
Headache D210	908	155	1.2	0.2
Diabetes mellitus. D205	836	139	1.1	0.2
Back symptoms. S905	763	110	1.0	0.1
Chest pain and related symptoms S050	745	153	1.0	0.2
Nasal congestion. S400	700	136	0.9	0.1
All other reasons.	42,421	4,530	56.3	1.5

... Category not applicable

¹Based on A Reason for Visit Classification for Ambulatory Care (RVC) (5).

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

per 100 persons. About half of the injury visits (52.2 percent) were made by males, and 34.3 percent were made by persons 25–44 years old. The injury visit rate for females was not significantly different from the rate for males, nor were there differences between males and females by age. There were no significant differences in injury visit rates for males by age groups. Among females, injury visit rates were also not significantly different for any of the age groups, which is similar to the finding of last year. The overall injury visit rate for black persons (3.7 per 100 persons) was significantly higher than the rate for white persons (2.5 per 100 persons). Small sample sizes preclude analyses by age within some racial groups.

Item 15 on the Patient Record form captures data on the place of occurrence, intentionality of the injury, and whether the injury was work related. Unfortunately, these items all had high levels of missing data (60.0 percent, 30.7 percent, and 52.9 percent, respectively). The available data for intentionality indicated that about 67 percent of the injury visits were due to unintentional injuries. More complete

reporting could change the distribution (table 10).

Intentionality of the injury is measured in two separate ways in NHAMCS. One is a checkbox format in item 15b as reported above, and the other is derived from the cause of injury code assigned to the verbatim text in item 15c, which indicates the events surrounding the injury or poisoning. Both items attempt to measure whether the injury was purposely inflicted by the patient or by another person; whether the injury was unintentional or resulted from a legal or military intervention; or whether the injury was of undetermined intent. Intentionality measured from the cause of injury code has the advantage of having a set of codes indicating injury or poisoning resulting from medical treatment. Discrepancies may arise between the two measures because of respondent interpretation of intent. For example, in some cases, the physician or office staff may have checked the “assault” category for dog bite injuries. However, dog bites are an unintentional injury based on the ICD–9–CM E-codes. Another factor that contributes to inconsistency in measuring intent is that cause of injury

is sometimes missing although the checkbox was completed.

Table 11 shows OPD visits by the intent and mechanism of the first-listed external cause of injury as categorized by the ICD–9–CM groupings detailed in the Technical notes. Fifty-seven percent were due to unintentional injuries. Falls were cited most often, accounting for 12.1 percent of all injury visits. Approximately 8 percent of injury visits were due to adverse effects of medical treatment. Cause of injury was not recorded for 31.8 percent of the injury visits.

Primary diagnosis—Item 16 of the Patient Record form asks the hospital staff to record the primary diagnosis or problem associated with the patient’s most important reason for the current visit as well as any other significant current diagnoses. Displayed in table 12 are OPD visits by primary diagnosis using the major disease categories specified by the ICD–9–CM (6). The supplementary classification, used for diagnoses not classifiable to injury or illness (for example, general medical examination, routine prenatal examination, and health supervision of an infant or child) accounted for 19.6 percent of all OPD visits. Diseases of

Table 8. Number and percent distribution of outpatient department visits by major reason for visit with corresponding standard errors, according to patient's age, sex, and race: United States, 1998

Patient characteristic	Total	Major reason for this visit					
		Acute problem	Chronic problem, routine	Chronic problem, flare-up	Pre- or post-surgery/injury followup	Nonillness care	Blank/unknown
Number visits in thousands							
All visits	75,412	26,711	23,856	4,565	4,689	13,334	2,256
Age							
Under 15 years	15,894	7,060	3,303	637	770	3,770	355
15–24 years	8,141	3,136	1,486	312	397	2,645	165
25–44 years	20,548	7,556	5,854	1,219	1,333	4,013	573
45–64 years	17,980	5,318	7,436	1,409	1,376	1,858	582
65–74 years	6,869	1,807	3,131	491	482	634	*324
75 years and over	5,979	1,835	2,646	497	332	413	*256
Sex							
Female	45,424	15,660	13,551	2,652	2,390	9,891	1,281
Male	29,988	11,052	10,306	1,913	2,299	3,444	975
Race							
White	54,895	21,258	16,885	3,337	3,396	8,363	1,657
Black	17,974	4,614	6,211	1,099	*1,206	4,324	520
Other	2,543	840	760	*129	87	648	*79
Standard error in thousands							
All visits	7,609	3,372	2,455	593	1,020	1,500	583
Age							
Under 15 years	2,029	1,057	622	154	201	550	103
15–24 years	774	410	212	52	84	319	39
25–44 years	2,278	1,084	583	186	366	665	145
45–64 years	2,043	722	821	214	353	317	170
65–74 years	995	313	464	89	133	137	110
75 years and over	895	365	409	107	76	79	104
Sex							
Female	4,600	1,969	1,414	339	574	1,191	331
Male	3,118	1,434	1,110	281	476	415	267
Race							
White	6,239	2,922	1,976	474	664	1,176	470
Black	1,927	656	661	185	458	532	123
Other	434	186	161	46	22	120	32
Percent distribution							
All visits	100.0	35.4	31.6	6.1	6.2	17.7	3.0
Age							
Under 15 years	100.0	44.4	20.8	4.0	4.8	23.7	2.2
15–24 years	100.0	38.5	18.3	3.8	4.9	32.5	2.0
25–44 years	100.0	36.8	28.5	5.9	6.5	19.5	2.8
45–64 years	100.0	29.6	41.4	7.8	7.7	10.3	3.2
65–74 years	100.0	26.3	45.6	7.1	7.0	9.2	*4.7
75 years and over	100.0	30.7	44.3	8.3	5.6	6.9	*4.3
Sex							
Female	100.0	34.5	29.8	5.8	5.3	21.8	2.8
Male	100.0	36.9	34.4	6.4	7.7	11.5	3.3
Race							
White	100.0	38.7	30.8	6.1	6.2	15.2	3.0
Black	100.0	25.7	34.6	6.1	*6.7	24.1	2.9
Other	100.0	33.0	29.9	*5.1	3.4	25.5	*3.1

See footnotes at end of table.

Table 8. Number and percent distribution of outpatient department visits by major reason for visit with corresponding standard errors, according to patient's age, sex, and race: United States, 1998—Con.

Patient characteristic	Total	Major reason for this visit					
		Acute problem	Chronic problem, routine	Chronic problem, flare-up	Pre- or post-surgery/injury followup	Nonillness care	Blank/unknown
		Standard error of percent					
All visits	2.1	1.7	0.4	1.0	1.3	0.7
Age							
Under 15 years	3.2	2.5	0.8	1.0	2.7	0.6
15–24 years	2.8	2.2	0.5	0.9	2.6	0.5
25–44 years	2.5	2.2	0.7	1.5	1.9	0.7
45–64 years	2.2	2.3	0.6	1.5	1.0	0.9
65–74 years	2.4	2.6	0.9	1.5	1.3	1.5
75 years and over	3.5	2.8	1.4	1.0	1.1	1.5
Sex							
Female	2.1	1.7	0.4	1.0	1.6	0.7
Male	2.4	2.0	0.6	1.2	1.0	0.8
Race							
White	2.4	2.0	0.5	0.9	1.3	0.8
Black	2.3	1.8	0.7	2.2	2.0	0.7
Other	3.5	3.1	1.3	0.9	3.5	1.3

... Category not applicable.

* Figure does not meet standard of reliability or precision.

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

the respiratory system (11.0 percent) and mental disorders (8.0 percent) were also prominent on the list.

A selection of the most frequently reported primary diagnoses for 1998 are featured in [table 13](#). The categories shown in this table are based on the ICD-9-CM. The diagnosis groupings in [table 13](#) accounted for 42.9 percent of all OPD visits during the year. The four most frequent illness diagnoses were essential hypertension; malignant neoplasms; acute upper respiratory infections, excluding pharyngitis; and diabetes mellitus.

Diagnostic and screening services—The most frequently cited examinations at OPD visits were skin (8.1 percent), pelvic (6.6 percent), and breast examinations (5.2 percent), respectively. Blood pressure (56.5 percent) was the leading test. Imaging was ordered or provided at 12.7 percent of all visits. It was most often in the form of an x ray (7.2 percent of the visits). Imaging was recorded at 28.4 percent of all injury visits, which is over twice the percent done at noninjury visits. About one-fifth of the visits had no diagnostic or screening services ordered or provided ([table 14](#)).

Therapeutic and preventive services—Data on therapeutic and

preventive services ordered or provided at OPD visits (except for medication therapy, which is reported separately in [table 16](#)) were collected in item 18 of the Patient Record form. As shown in [table 15](#), one or more of these services were recorded at 40.5 percent of all OPD visits during 1998. Counseling or education related to diet (13.9 percent) and exercise (7.7 percent) were mentioned most frequently. Physiotherapy, psychotherapy, and psycho-pharmacotherapy accounted for 1.8 percent, 5.2 percent, and 1.7 percent of visits, respectively.

Medication therapy—Data on medication therapy are shown in [tables 16–19](#). Medication therapy was the most commonly mentioned therapeutic service in 1998, reported at 48.2 million OPD visits or 63.9 percent of the total ([table 16](#)). Visits with one or more drugs listed on the Patient Record form are termed “drug visits” in NHAMCS. Up to six medications, called drug mentions, were coded per drug visit. As used in NHAMCS, the term “drug” is interchangeable with the term “medication,” and the term “prescribing” is used both broadly to mean ordering and providing any medication, whether prescription or over the counter.

Drug mentions are displayed by therapeutic class in [table 17](#). This classification is based on the therapeutic categories used in the *National Drug Code Directory*, 1995 edition (NDC) (7). 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. There were 113.8 million drugs mentioned at OPD visits during 1998. This yields an average of 1.5 drug mentions per OPD visit or 2.4 drug mentions per drug visit. Cardiovascular-renal drugs (14.0 percent), drugs used for relief of pain (13.0 percent), antimicrobial agents (11.3 percent), and respiratory drugs (10.8 percent) were listed most frequently.

The 20 most frequently used generic substances for 1998 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. Acetaminophen and amoxicillin were the two generic substances most frequently used in drugs ordered or provided by hospital staff at OPD visits in 1998, occurring at 4.7 percent and 2.6 percent of drug mentions, respectively.

Table 9. Number, percent distribution, and annual rate of injury-related outpatient department visits with corresponding standard errors by patient's age, sex, and race: United States, 1998

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 of rate
All injury-related visits	7,098	764	100.0	. . .	2.6	0.3
Age						
Under 15 years	1,487	217	21.0	2.2	2.5	0.4
15–24 years	884	122	12.5	1.0	2.4	0.3
25–44 years	2,432	300	34.3	1.8	2.9	0.4
45–64 years	1,420	197	20.0	1.7	2.5	0.3
65–74 years	479	76	6.7	0.8	2.7	0.4
75 years and over	396	80	5.6	1.0	2.8	0.6
Sex and age						
Female	3,391	374	47.8	1.4	2.5	0.3
Under 15 years	581	90	17.1	2.1	2.0	0.3
15–24 years	372	58	11.0	1.2	2.0	0.3
25–44 years	1,164	159	34.3	2.2	2.8	0.4
45–64 years	698	94	20.6	1.9	2.4	0.3
65–74 years	287	58	8.5	1.4	2.9	0.6
75 years and over	289	61	8.5	1.5	3.3	0.7
Male	3,707	417	52.2	1.4	2.8	0.3
Under 15 years	906	141	24.4	2.6	3.0	0.5
15–24 years	512	79	13.8	1.4	2.7	0.4
25–44 years	1,268	164	34.2	2.2	3.1	0.4
45–64 years	722	125	19.5	2.5	2.6	0.5
65–74 years	192	39	5.2	1.0	2.4	0.5
75 years and over	107	29	2.9	0.7	1.9	0.5
Race						
White	5,590	664	78.8	2.0	2.5	0.3
Black	1,286	158	18.1	1.9	3.7	0.5
Other	222	48	3.1	0.6	1.7	0.4

. . . Category not applicable.

¹Based on U.S. Bureau of the Census monthly postcensal estimates of the civilian noninstitutionalized population of the United States as of July 1, 1998. Figures are consistent with the downloadable series, *U.S. Population Estimates by Age, Sex, Race, and Hispanic Origin: 1980–98*. It is available at the U.S. Bureau of the Census Internet site: http://ftp.census.gov/population/www/estimates/nat_90s_4.html. Figures have been adjusted for net underenumeration using the 1990 National Population Adjustment Matrix.

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

Table 10. Number and percent distribution of injury-related outpatient department visits with corresponding standard errors by intentionality of the injury: United States, 1998

Intentionality of injury	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All injury-related visits	7,098	764	100.0	. . .
Yes (self-inflicted)	*	. . .	*	. . .
Yes (assault)	149	32	2.1	0.5
No, unintentional	4,725	542	66.6	2.1
Unknown/blank	2,177	272	30.7	2.1

. . . Category not applicable.

* Figure does not meet standard of reliability or precision.

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

Table 11. Number and percent distribution of injury-related outpatient department visits with corresponding standard errors by intent and mechanism of external cause: United States, 1998

Intent and mechanism ¹	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All injury-related visits	7,098	764	100.0	...
Unintentional injuries	4,071	463	57.3	2.3
Falls	860	123	12.1	1.2
Striking against or struck accidentally by objects or persons	504	72	7.1	0.7
Motor vehicle traffic	416	65	5.9	0.6
Natural and environmental factors	306	64	4.3	0.7
Cutting or piercing instruments or objects	281	51	4.0	0.6
Overexertion and strenuous movements	247	44	3.5	0.5
Other and not elsewhere classified	780	117	11.0	1.0
Mechanism unspecified	676	105	9.5	1.1
Intentional injuries	134	27	1.9	0.4
Injuries of undetermined intent	*	...	*	...
Adverse effects of medical treatment	560	122	7.9	1.4
Blank cause ²	2,256	283	31.8	2.1

... Category not applicable.

* Figure does not meet standard of reliability or precision.

¹Based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*. "Supplementary Classification of External Causes of Injury and Poisoning" (6). A detailed description of the E-codes from the ICD-9-CM that were used to create the groupings in this table is provided in the Technical notes.

²Includes illegible entries and blanks.

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

Table 12. Number and percent distribution of outpatient department visits with corresponding standard errors by primary diagnosis: United States, 1998

Major disease category and ICD-9-CM code ¹	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits	75,412	7,609	100.0	...
Infectious and parasitic diseases 001-139	2,594	399	3.4	0.4
Neoplasms 140-239	3,587	757	4.8	0.8
Endocrine, nutritional, metabolic diseases, and immunity disorders 240-279	4,014	490	5.3	0.4
Mental disorders 290-319	6,068	1,071	8.0	1.3
Diseases of the nervous system and sense organs 320-389	5,032	834	6.7	0.7
Diseases of the circulatory system 390-459	5,255	688	7.0	0.6
Diseases of the respiratory system 460-519	8,294	1,219	11.0	1.0
Diseases of the digestive system 520-579	2,386	334	3.2	0.3
Diseases of the genitourinary system 580-629	3,377	499	4.5	0.4
Diseases of the skin and subcutaneous tissue 680-709	2,702	359	3.6	0.4
Diseases of the musculoskeletal system and connective tissue 710-739	4,379	594	5.8	0.6
Symptoms, signs, and ill-defined conditions 780-799	4,658	556	6.2	0.4
Injury and poisoning 800-999	4,238	503	5.6	0.5
Supplementary classification V01-V82	14,780	1,641	19.6	1.2
All other diagnoses ²	3,072	395	4.1	0.4
Unknown ³	977	212	1.3	0.3

... Category not applicable.

¹Based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)* (6).

²Includes diseases of the blood and blood-forming organs (280-289); complications of pregnancy, childbirth, and the puerperium (630-676); congenital anomalies (740-759); and certain conditions originating in perinatal period (760-779).

³Includes blanks, uncodable diagnoses, and illegible diagnoses.

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

Table 19 presents the 20 medications most frequently mentioned by outpatient department staff in NHAMCS according to the entry name of drug. Entry name refers to the actual designation used by the hospital staff on the Patient Record form and may be a trade name, generic name, or simply a desired therapeutic effect. Tylenol accounted for 2.7 million mentions (2.4

percent of the total) and was followed by amoxicillin, Lasix, albuterol sulfate, Motrin, and Claritin. The top 10 drug entry names mentioned in 1998 were the same as those reported in 1997 with the exception of Claritin, Bactrim, and Premarin.

Providers seen—A staff physician and resident/intern were seen at 69.0 percent and 14.0 percent of OPD visits,

respectively (table 20). A registered nurse, medical assistant, and licensed practical nurse were seen at 42.7 percent, 14.0 percent, and 13.7 percent of visits, respectively. At 14.2 million OPD visits (18.4 percent), a physician was not seen and patients received care from other health care providers.

Time spent with physician—This item refers to the amount of time spent

Table 13. Number and percent distribution of outpatient department visits with corresponding standard errors by selected primary diagnosis groups: United States, 1998

Primary diagnosis group and ICD-9-CM code ¹	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits	75,412	7,609	100.0	...
Essential hypertension 401	3,149	379	4.2	0.4
Malignant neoplasms 140-208, 230-234	3,087	702	4.1	0.8
Routine infant or child health check V20.2	2,891	468	3.8	0.6
Normal pregnancy V22	2,609	525	3.5	0.6
Acute upper respiratory infections, excluding pharyngitis 460-461, 463-466	2,528	441	3.4	0.4
Diabetes mellitus 250	2,175	311	2.9	0.3
Otitis media and eustachian tube disorders 381-382	1,559	275	2.1	0.3
Dorsopathies 720-724	1,469	310	1.9	0.4
General medical examination V70	1,432	243	1.9	0.2
Arthropathies and related disorders 710-719	1,417	211	1.9	0.2
Potential health hazards related to personal and family history V10-V19	1,277	240	1.7	0.2
Chronic sinusitis 473	1,240	245	1.6	0.2
Chronic and unspecified bronchitis 490-491	1,034	203	1.4	0.2
Rheumatism, excluding back 725-729	1,033	139	1.4	0.1
Asthma 493	984	143	1.3	0.2
Psychoses, excluding major depressive disorder 290-296.1, 296.4-299	916	164	1.2	0.2
Acute pharyngitis 462	911	182	1.2	0.2
Heart disease excluding ischemic 427, 428.0, 391-392.0, 393-398, 402, 404, 415-416, 420-426, 428.1-429.9	887	199	1.2	0.2
Gynecological examination V72.3	869	251	1.2	0.3
Drug dependence and nondependent abuse of drugs 304-305	*864	364	*1.1	0.5
All other diagnoses	43,079	4,478	57.1	1.2

... Category not applicable.

* Figure does not meet standard of reliability or precision.

¹Based on the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM) (6). 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.

in face-to-face contact between the physician and patient. This time is estimated and recorded by the hospital staff and does not include time spent waiting to see the physician, time spent receiving care from someone other than the physician without the presence of the physician, or time spent by the physician in reviewing patient records and/or test results. In cases where the patient received care from a nonphysician member of the hospital staff but did not actually see the physician during the visit, duration was recorded as "0" minutes. At 21.6 percent of visits, there was no face-to-face contact between patient and physician.

The average time spent with the physician was 23.4 minutes. The majority (83.4 percent) of OPD visits reported 6-30 minutes spent between the physician and patient. The largest category was 16-30 minutes, accounting for 41.5 percent of visits. For 32.6 percent of visits, duration was imputed. This occurred only in visits where a physician was seen but no duration was indicated.

Additional reports that utilize 1998 NHAMCS data are in the *Advance Data* from Vital and Health Statistics series. Data from the 1998 NHAMCS will be available in a variety of formats including public-use data tape, CD-ROM, and as downloadable data files accessed through the new Ambulatory Health Care home page on the Internet (www.cdc.gov/nchs/about/major/ahcd/ahcd1.htm). The data are currently available. Verbatim text that describes the cause of injury may be analyzed from the 1997-98 NHAMCS. Questions regarding this report, future reports, or NHAMCS may be directed to the Ambulatory Care Statistics Branch at (301) 458-4600.

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Table 14. Number and percent of outpatient department visits with corresponding standard errors by diagnostic and screening services most frequently ordered or provided: United States, 1998

Diagnostic and screening services ordered or provided	Number of visits in thousands ¹	Standard error in thousands	Percent distribution	Standard error of percent
All visits	75,412	7,609	...	...
None	17,055	1,977	22.6	1.6
Examinations				
Skin	6,132	880	8.1	0.9
Pelvic	4,989	784	6.6	0.7
Breast	3,959	642	5.2	0.6
Visual	3,109	715	4.1	0.7
Rectal	2,009	378	2.7	0.4
Glaucoma	*1,041	476	*1.4	0.6
Hearing	1,021	178	1.4	0.2
Tests				
Blood pressure	42,581	4,599	56.5	2.2
Urinalysis	7,452	885	9.9	0.8
Hematocrit/hemoglobin	3,902	602	5.2	0.7
Pap test	2,810	453	3.7	0.4
Cholesterol	2,039	376	2.7	0.4
EKG ²	1,862	323	2.5	0.3
Strep test	949	233	1.3	0.3
Pregnancy test	889	155	1.2	0.2
HIV serology ³	*790	249	*1.0	0.3
Blood lead level	*694	225	*0.9	0.3
PSA ⁴	378	80	0.5	0.1
Other STD test ⁵	897	168	1.2	0.2
Other blood test	12,781	1,551	16.9	1.1
Imaging				
x ray	5,398	714	7.2	0.6
Ultrasound	2,088	332	2.8	0.3
Mammography	1,543	357	2.0	0.3
CAT scan/MRI ^{6,7}	1,106	222	1.5	0.2
All examinations, tests, and imaging	11,275	1,797	15.0	2.0

... Category not applicable.

* Figure does not meet standard of reliability or precision.

¹Total exceeds total number of visits because more than one service may be reported per visit.

²EKG is electrocardiogram.

³HIV is human immunodeficiency virus.

⁴PSA is prostate-specific antigen.

⁵STD is sexually transmitted diseases.

⁶CAT is computerized axial tomography.

⁷MRI is magnetic resonance imaging.

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Table 15. Number and percent of outpatient department visits with corresponding standard errors by therapeutic and preventive services ordered or provided: United States, 1998

Therapeutic and preventive services ordered or provided	Number of visits in thousands ¹	Standard error in thousands	Percent distribution	Standard error of percent
All visits	75,412	7,609	. . .	. . .
None	44,898	5,210	59.5	2.4
Counseling/education				
Diet/nutrition	10,519	1,203	13.9	1.1
Exercise	5,793	799	7.7	0.9
Growth/development	2,087	331	2.8	0.4
Prenatal instructions	1,957	405	2.6	0.5
Tobacco use/exposure	1,931	332	2.6	0.4
Injury prevention	1,871	316	2.5	0.4
Mental health	1,847	319	2.4	0.4
Family planning/contraception	1,768	388	2.3	0.5
Stress management	1,433	266	1.9	0.4
Breast self-exam	1,404	368	1.9	0.4
HIV/STD transmission ^{2,3}	1,254	243	1.7	0.3
Skin cancer prevention	*415	167	*0.5	0.2
Other therapy				
Psychotherapy	3,897	927	5.2	1.2
Physiotherapy	1,317	201	1.7	0.2
Psycho-pharmacotherapy	1,322	374	1.8	0.5
Other	8,564	1,281	11.4	1.3

. . . Category not applicable.

* Figure does not meet standard of reliability or precision.

¹Total exceeds total number of visits because more than one service may be reported per visit.²HIV is human immunodeficiency virus.³STD is sexually transmitted diseases.**Table 16. Number and percent distribution of outpatient department visits with corresponding standard errors by medication therapy and number of medications provided or prescribed: United States, 1998**

Medication therapy ¹	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits	75,412	7,609	100.0	. . .
Drug visits ²	48,171	5,124	63.9	1.8
Visits without mention of medication	27,241	2,999	36.1	1.8
Number of medications provided or prescribed				
All visits	75,412	7,609	100.0	0.0
0	27,241	2,999	36.1	1.8
1	19,114	2,011	25.3	0.9
2	11,884	1,307	15.8	0.7
3	7,360	875	9.8	0.5
4	3,891	461	5.2	0.3
5	2,290	317	3.0	0.3
6	3,632	584	4.8	0.6

. . . Category not applicable.

0.0 Quantity more than zero but less than 0.05.

¹Includes prescription drugs, over-the-counter preparations, immunizing agents, and desensitizing agents.²Visits 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 outpatient department visits with corresponding standard errors by therapeutic classification: United States, 1998

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	113,768	12,829	100.0	...	150.9	17.0
Cardiovascular-renal drugs	15,896	2,332	14.0	1.0	21.1	3.1
Drugs used for relief of pain	14,749	1,691	13.0	0.6	19.6	2.2
Antimicrobial agents	12,857	1,849	11.3	0.9	17.0	2.5
Respiratory tract drugs	12,230	1,696	10.8	0.8	16.2	2.2
Hormones and agents affecting hormonal mechanisms	10,860	1,420	9.5	0.4	14.4	1.9
Central nervous system	9,077	1,057	8.0	0.7	12.0	1.4
Metabolic and nutrient agents	6,902	837	6.1	0.4	9.2	1.1
Immunologic agents	5,335	656	4.7	0.5	7.1	0.9
Gastrointestinal agents	5,328	746	4.7	0.3	7.1	1.0
Skin/mucous membrane	4,756	566	4.2	0.3	6.3	0.8
Neurologic drugs	2,879	355	2.5	0.2	3.8	0.5
Hematologic agents	2,832	391	2.5	0.2	3.8	0.5
Ophthalmic drugs	*1,907	701	*1.7	0.5	*2.5	0.9
Oncolytic agents	1,461	358	1.3	0.3	1.9	0.5
Other and unclassified ³	6,698	813	5.9	0.4	8.9	1.1

... Category not applicable.

* Figure does not meet standard of reliability or precision.

¹Based on the standard drug classification used in the *National Drug Code Directory*, 1995 edition (NDC) (8).

²Number of drug mentions divided by total number of visits multiplied by 100.

³Includes anesthetics, antidotes, contrast media/radiopharmaceuticals, otologics, antiparasitics, unclassified/miscellaneous drugs, and homeopathic products.

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

Table 18. Number of generic substances and percent of all drug mentions for the 20 most frequently occurring generic substances in drug mentions at outpatient department visits with corresponding standard errors: United States, 1998

Generic substance	Number of occurrences in thousands ¹	Standard error in thousands	Percent of drug mentions ²	Standard error of percent
All generic substances	143,868	16,102	...	...
Acetaminophen	5,302	620	4.7	0.3
Amoxicillin	3,013	521	2.6	0.4
Ibuprofen	2,791	382	2.5	0.2
Albuterol	2,441	305	2.1	0.2
Aspirin	1,928	412	1.7	0.3
Hydrochlorothiazide	1,898	280	1.7	0.1
Guaifenesin	1,850	402	1.6	0.3
Multivitamins, general	1,800	297	1.6	0.3
Furosemide	1,737	303	1.5	0.2
Estrogen	1,596	301	1.4	0.2
Trimethoprim	1,591	298	1.4	0.2
Sulfamethoxazole	1,529	287	1.3	0.2
Levothyroxine	1,249	215	1.1	0.1
Loratadine	1,231	221	1.1	0.1
Insulin	1,227	182	1.1	0.1
Phenylpropanolamine	1,163	249	1.0	0.2
Iron preparations	1,142	198	1.0	0.2
Prednisone	1,105	163	1.0	0.1
Medroxyprogesterone	1,094	192	1.0	0.1
Phenylephrine	1,051	290	0.9	0.2

... Category not applicable.

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

²Based on an estimated 113,768,000 drug mentions at outpatient visits in 1998.

Table 19. Number, percent distribution, and therapeutic classification for the 20 drugs most frequently provided or prescribed at outpatient department visits with corresponding standard errors by entry name of drug: United States, 1998

Entry name of drug ¹	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent	Therapeutic classification ²
All drug mentions	113,768	12,829	100.0	. . .	. . .
Tylenol	2,717	370	2.4	0.2	Nonnarcotic analgesics
Amoxicillin	1,740	314	1.5	0.2	Penicillins
Lasix	1,626	292	1.4	0.2	Diuretics
Albuterol sulfate	1,403	187	1.2	0.1	Antiasthmatics and bronchodilators
Motrin	1,332	215	1.2	0.2	NSAID ³
Claritin	1,217	219	1.1	0.1	Antihistamines
Bactrim	1,114	203	1.0	0.1	Sulfonamides and trimethoprim
Premarin	1,099	213	1.0	0.1	Estrogens and progestins
Synthroid	1,088	192	1.0	0.1	Agents used to treat thyroid disease
Prednisone	1,085	160	1.0	0.1	Adrenal corticosteroids
HCTZ ⁴	1,021	175	0.9	0.1	Diuretics
Prilosec	1,017	201	0.9	0.1	Acid and peptic disorders
Ibuprofen	1,014	176	0.9	0.1	NSAID ⁵
Prozac	830	136	0.7	0.1	Antidepressants
Hepatitis B vaccine	830	127	0.7	0.1	Vaccines and antisera
Procardia	808	153	0.7	0.1	Calcium channel blockers
ASA ⁵	779	160	0.7	0.1	Nonnarcotic analgesics
Atenolol	724	174	0.6	0.1	Beta blockers
Insulin	722	122	0.6	0.1	Blood glucose regulators
Coumadin	713	166	0.6	0.1	Anticoagulants and thrombolytics
All other mentions	90,889	10,223	79.9	0.6	. . .

. . . Category not applicable.

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

²Therapeutic classification is based on the *National Drug Code Directory*, 1995 Edition (8). In cases where a drug had more than one therapeutic use, it was classified under its primary therapeutic use.

³NSAID is nonsteroidal anti-inflammatory drug.

⁴HCTZ is hydrochlorothiazide.

⁵ASA is acetylsalicylic acid.

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

Table 20. Number and percent of outpatient department visits with corresponding standard errors by providers seen: United States, 1998

Type of provider	Number of visits in thousands ¹	Standard error in thousands	Percent of visits	Standard error of percent
All visits	75,412	7,609	100.0	. . .
Staff physician	52,028	5,710	69.0	2.4
R.N. ²	32,190	3,851	42.7	3.4
Resident/intern	10,547	1,680	14.0	1.8
Medical/ nursing assistant	10,523	2,252	14.0	2.4
L.P.N. ³	10,355	1,971	13.7	2.0
Nurse practitioner	4,751	996	6.3	1.2
Physician assistant	3,825	1,099	5.1	1.4
Other physician	1,808	521	2.4	0.6
Nurse midwife	422	108	0.6	0.1
Other	10,401	1,868	13.8	2.0

. . . Category not applicable.

¹Total exceeds total number of visits because more than one provider may be reported per visit.

²R.N. is registered nurse.

³L.P.N. is licensed practical nurse.

Table 21. Number and percent distribution of outpatient department visits with corresponding standard errors by time spent with physician: United States, 1998

Time spent with physician	Number of visits in thousands	Standard error in thousands	Percent distribution	Standard error of percent
All visits	75,412	7,609	100.0	. . .
Visits at which no physician was seen	16,255	2,348	21.6	2.4
Visits at which a physician was seen	59,157	6,376	78.4	2.1
Total	59,157	6,376	100.0	. . .
1–5 minutes	1,886	398	3.2	0.6
6–10 minutes	9,371	1,209	15.8	1.0
11–15 minutes	15,442	1,974	26.1	1.2
16–30 minutes	24,570	2,516	41.5	1.1
31–60 minutes	6,792	799	11.5	0.7
61 minutes and over	1,096	174	1.9	0.2

. . . Category not applicable.

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

Technical notes

Sampling errors

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

The standard errors presented in the tables and used in tests of significance for this report were approximated 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 (9). Generalized linear models for predicting the relative standard error were not used for OPD data because of lack of fit of the linear models. The relative standard error (RSE) of an estimate is obtained by dividing the standard error by the estimate itself. The result is then expressed as a percent of the estimate.

The reader should be cautious about using generalized linear models for predicting the relative standard error. However, approximate relative standard errors for aggregate estimates may be calculated 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](#).

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

Similarly, relative standard errors for percents 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 coefficient from [table I](#).

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

The standard error for a rate may be obtained by multiplying the relative

Table I. Coefficients appropriate for determining approximate relative standard errors by type of estimate: National Hospital Ambulatory Medical Care Survey, 1998: Outpatient Departments

Type of estimate	Coefficient for use with estimates in thousands		Lowest reliable estimates in thousands
	A	B	
Visits	0.016474	7.126	97
Drug mentions	0.019165	17.657	249

NOTE: Estimates based on less than 30 cases are unreliable regardless of the relative standard error.

standard error 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 Central Limit Theorem states that, given a sufficiently large sample size, the sample estimate approximates the population estimate and, upon repeated sampling, its distribution would be approximately normal.

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

Estimation

Statistics from NHAMCS are derived by a multistage estimation procedure that produces essentially unbiased estimates. The estimation procedure has three basic components: (a) inflation by reciprocals of the sampling selection probabilities, (b) adjustment for nonresponse, and (c) a population weighting ratio adjustment. Beginning with 1997, the population weighting ratio adjustment for OPD estimates was replaced by an adjustment that controls for effects of rotating hospital sample panels into and out of the sample each year. (The full NHAMCS hospital sample is partitioned into 16 panels that are rotated into the sample over 16 periods of 4 weeks each so that only 13 panels are used in any one year.) Also, beginning with 1997 data, the sampling weights of some

OPD's were permanently trimmed to prevent single OPD's from contributing more than 15 percent of their region's total to OPD visit estimates.

NHAMCS data were adjusted to account for nonresponse at the hospital level and at the ED and clinic level. The weights of visits from hospitals similar to the nonrespondent hospitals were inflated to account for visits represented by nonrespondents. Hospitals were judged to be similar if they were in the same region and ownership control group, and had the same metropolitan statistical area status (in a metropolitan statistical area versus not in a metropolitan statistical area). The weights of visits from responding ED's and OPD clinics were inflated to account for visits to similar nonrespondent ED's/clinics where ED's/clinics were judged to be similar if they were in the same region and ED/clinic group. For this purpose, there were six OPD clinic groups: (a) general medicine, (b) pediatrics, (c) surgery, (d) OB/GYN, (e) alcohol and/or substance abuse, and (f) other OPD clinic.

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 errors ranged from 0.1 to 1.9 percent for various data items.

Adjustments for item nonresponse—Weighted item nonresponse rates were 5.0 percent or less for all data items with the following exceptions: pregnancy status of patient (26.2 percent of visits for women 15–44 years of age), race (12.2 percent), ethnicity (21.5 percent), referral status (12.8 percent), authorization required for care (19.9 percent), primary care physician (10.7 percent), HMO status of patient (23.2 percent), capitated visit (34.6 percent), place of occurrence of injury (60.0 percent of injury visits), intentionality of injury (30.7 percent of injury visits), work-related status of injury (52.9 percent of injury visits), and time spent with physician (32.6 percent). Some missing data items were imputed by randomly assigning a value from a Patient Record form with similar characteristics. Imputations were based on geographic region, OPD size by clinic type, and primary diagnosis using 3-digit ICD–9–CM codes. Imputations were performed for the following variables—visit date, birth year, sex, race, and time spent with physician. This represents a change from previous survey years when imputations were also performed for the following variables—ethnicity, providers seen, referral status, and disposition. Beginning in 1997, these latter items are no longer imputed. Blank or otherwise missing responses are so noted in the data.

Tests of significance and rounding

Some figures in this report present 95% confidence intervals to indicate the stability of the point estimates relative to their individual stabilities. This permits the reader to assess substantive patterns in the data. However, it should be noted that examination of the amount of overlap between intervals is not equivalent to standard significance testing for differences.

In addition, the issue of adjusting for multiple comparisons arises when more than one test of significance is to be done. For this, the Bonferroni estimates are used where 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 OPD 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.

Injury groupings

Table 10 presents data on the intent and mechanism producing the injuries that resulted in visits to OPD’s. Cause of injury is collected for each sampled visit in NHAMCS and is coded according to the ICD–9–CM’s “Supplementary Classification of External Causes of Injury and Poisoning.” For table 10, however, 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 groupings used to produce this table.

Population figures and rate calculation

The figures represent U.S. Bureau of the Census estimates of the civilian noninstitutionalized population of the United States as of July 1, 1998. Figures are based on monthly postcensal estimates of this population. Figures are consistent with the downloadable series, *U.S. Population Estimates by Age, Sex, Race, and Hispanic Origin: 1980–98*. It is available at the U.S. Bureau of the Census Internet site: http://ftp.census.gov/population/www/estimates/nat_90s_4.html. Figures have been adjusted for net underenumeration using the 1990 National Population Adjustment Matrix. Regional estimates have been provided by the Division of

Table II. Reclassification of external cause-of-injury codes for use with National Hospital Ambulatory Medical Care Survey 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
Striking 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
Other and not elsewhere classified	E830, E832, E846–E848, E890–E899, E910, E911–E915, E918, E921, E923–E926, E929.0–E929.5, E928.8
Mechanism unspecified	E887, E928.9, E929.8, E929.9
Intentional injuries	E950–E959, E960–E969, E970–E978, E990–E999
Injuries of undetermined intent	E980–E989
Adverse effects of medical treatment	E870–E879, E930–E949

¹Based on the “Supplementary Classification of External Causes of Injury and Poisoning,” *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM) (6).

Health Interview Statistics (DHIS), NCHS, and are based on U.S. Bureau of the Census estimates of the civilian noninstitutionalized population as of July 1, 1998. DHIS estimates may differ slightly from monthly postcensal estimates because of differences in the adjustment process.

Definition of terms

Ambulatory patient—An ambulatory patient is an individual seeking personal health services who is not currently admitted to any health care institution on the premises.

Clinic—A clinic is an administrative unit of the outpatient department where ambulatory medical care is provided under the supervision of a physician. The following are examples of the types of clinics excluded from NHAMCS: ambulatory surgery centers, chemotherapy, employee health service, renal dialysis, methadone maintenance, and radiology.

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 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 areas were selected with certainty into the sample. Off-site emergency departments that are open less than 24 hours are included if staffed by the hospital's emergency department.

Hospital—To be in scope for 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 defined below.

Injury-related visit—A visit is injury-related if "yes" was checked in response to question 15, "Is this visit related to injury or poisoning?" or if a cause of injury or a nature of injury diagnosis was provided, or if an injury-related reason for visit was reported.

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

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

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

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

Proprietary—Hospitals that are individually owned, are partnerships, or are corporations.

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

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.

Suggested citation

Slusarcick AL, McCaig LF. National Hospital Ambulatory Medical Care Survey: 1998 outpatient department summary. Advance data from vital and health statistics; no. 317. Hyattsville, Maryland: National Center for Health Statistics. 2000.

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DHHS Publication No. (PHS) 2000-1250
0-0520 (7/00)