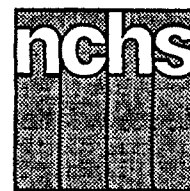


Advance Data



From Vital and Health Statistics of the National Center for Health Statistics

National Ambulatory Medical Care Survey: 1990 Summary

by Susan M. Schappert, M.A., Division of Health Care Statistics

During the 12-month period from January 1990 through December 1990, an estimated 704.6 million visits were made to nonfederally employed, office-based physicians in the United States, or about 2.9 visits per person. This rate is not statistically different from office visit rates observed since 1975 (1,2).

This report presents data highlights from the 1990 National Ambulatory Medical Care Survey (NAMCS), a national probability sample survey conducted by the Division of Health Care Statistics of the National Center for Health Statistics, Centers for Disease Control. The data summarized here should be considered provisional because final editing may result in minor changes in the estimates. Statistics are presented on patient, physician, and visit characteristics.

Because the estimates presented in this report are based on a sample rather than on the entire universe of office visits, they are subject to sampling variability. The technical notes found at the end of this report give a brief overview of the sample design used in the 1990 NAMCS, an

explanation of sampling errors, and guidelines for judging the precision of the estimates.

The Patient Record is used by physicians participating in the NAMCS to record information about their patients' office visits. This form is reproduced in figure 1 and is intended to serve as a reference for readers as they review the survey findings presented in this document.

The physician sample for the NAMCS was selected with the cooperation of the American Medical Association and the American Osteopathic Association. Their contribution to this effort is gratefully acknowledged.

Data highlights

Patient characteristics

Office visits by patient's age, sex, and race are shown in table 1. Females made about 60.6 percent of all office visits during 1990, and accounted for a higher percentage of visits than males in all age categories except the youngest (under 15 years). Females also had significantly

higher visit rates than males did in each age category with the exception of the youngest group (under 15 years) and the two oldest groups (65–74 years and 75 years and over).

Visit rates tended to increase with age after the age of 24. Persons aged 65–74 years and 75 years and over had the highest visit rates of all age categories; rates for these two groups did not differ significantly from each other. The pattern, however, was found to be slightly different for males and females. Among males, rates increased with each age group after the age of 44, with males aged 75 years and over having the highest rate of 5.4 visits per person.

Females, despite a general trend toward increasing visit rates with age after the age of 24, showed no statistical difference in the rates for females aged 25–44 years compared with those aged 45–64 years, or in the rates for females aged 65–74 years compared with those aged 75 years and over.

White persons made approximately 84.8 percent of all



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
National Center for Health Statistics
Manning Feinleib, M.D., Dr. P.H., Director



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 purposes of the survey and will not be disclosed or released to other persons or used for any other purpose.		Department of Health and Human Services Centers for Disease Control Public Health Service National Center for Health Statistics		A																						
PATIENT RECORD NATIONAL AMBULATORY MEDICAL CARE SURVEY																										
OMB No. 0920-0234 Expires 8-31-89 (PHS) 6105A																										
1. DATE OF VISIT _____ Month Day Year		2. ZIP CODE _____		3. DATE OF BIRTH _____ Month Day Year																						
4. SEX 1 ☐ FEMALE 2 ☐ MALE		5. COLOR OR RACE 1 ☐ WHITE 2 ☐ BLACK 3 ☐ ASIAN/PACIFIC ISLANDER 4 ☐ AMERICAN INDIAN/ESKIMO/ALEUT		6. ETHNICITY 1 ☐ HISPANIC ORIGIN 2 ☐ NOT HISPANIC																						
7. EXPECTED SOURCE(S) OF PAYMENT <i>[Check all that apply]</i> 1 ☐ SELF-PAY 4 ☐ BLUE CROSS/BLUE SHIELD 7 ☐ NO CHARGE 2 ☐ MEDICARE 5 ☐ OTHER COMMERCIAL INSURANCE 8 ☐ OTHER <i>[Specify]</i> 3 ☐ MEDICAID 6 ☐ PRE-PAID PLAN HMO/PA/PPO																										
8. WAS PATIENT REFERRED FOR THIS VISIT BY ANOTHER PHYSICIAN? 1 ☐ YES 2 ☐ NO		9. PATIENT'S COMPLAINT(S), SYMPTOM(S), OR OTHER REASON(S) FOR THIS VISIT <i>[In patient's own words]</i> a. MOST IMPORTANT _____ b. OTHER _____																								
10. PHYSICIAN'S DIAGNOSES a. PRINCIPAL DIAGNOSIS/PROBLEM ASSOCIATED WITH ITEM 9a. _____ b. OTHER SIGNIFICANT CURRENT DIAGNOSES _____				11. HAVE YOU SEEN PATIENT BEFORE? 1 ☐ YES 2 ☐ NO IF YES, FOR THE CONDITION IN ITEM 10a? 1 ☐ YES 2 ☐ NO																						
12. DIAGNOSTIC/SCREENING SERVICES THIS VISIT <i>[Check all ordered or provided]</i> 1 ☐ NONE 7 ☐ BLOOD PRESSURE CHECK 13 ☐ ORAL GLUCOSE TOL. 2 ☐ PAP TEST 8 ☐ URINALYSIS 14 ☐ CHOLESTEROL MEASURE 3 ☐ PELVIC EXAM 9 ☐ CHEST X-RAY 15 ☐ HIV SEROLOGY 4 ☐ BREAST PALPATION 10 ☐ DIGITAL RECTAL EXAM 16 ☐ OTHER BLOOD TEST 5 ☐ MAMMOGRAM 11 ☐ PROCT/SIGMOIDOSCOPY 17 ☐ OTHER <i>[Specify]</i> 6 ☐ VISUAL ACUITY 12 ☐ STOOL BLOOD EXAM			13. COUNSELING/ADVICE <i>[Check all ordered or provided]</i> 1 ☐ NONE 2 ☐ WEIGHT REDUCTION 3 ☐ CHOLESTEROL REDUCTION 4 ☐ SMOKING CESSATION 5 ☐ HIV TRANSMISSION 6 ☐ BREAST SELF-EXAM 7 ☐ OTHER																							
14. NON-MEDICATION THERAPY <i>[Check all ordered or provided]</i> 1 ☐ NONE 2 ☐ PSYCHOTHERAPY 3 ☐ CORRECTIVE LENSES 4 ☐ AMBULATORY SURGERY 5 ☐ PHYSIOTHERAPY 6 ☐ OTHER <i>[Specify]</i>			15. MEDICATION THERAPY <i>[Record all new or continued medications ordered or provided at this visit. Use the same brand name or generic name entered on any Rx or office medical record. Include immunizing and desensitizing agents.]</i> IF NONE, CHECK HERE ☐ <table style="width: 100%; border: none;"> <tr> <td></td> <td style="text-align: center; font-size: small;">a. NEW MEDICATION?</td> <td style="text-align: center; font-size: small;">b. FOR DX IN ITEM 10a?</td> </tr> <tr> <td></td> <td style="text-align: center; font-size: small;">YES NO</td> <td style="text-align: center; font-size: small;">YES NO</td> </tr> <tr> <td>1. _____</td> <td style="text-align: center;">1 ☐ 2 ☐</td> <td style="text-align: center;">1 ☐ 2 ☐</td> </tr> <tr> <td>2. _____</td> <td style="text-align: center;">1 ☐ 2 ☐</td> <td style="text-align: center;">1 ☐ 2 ☐</td> </tr> <tr> <td>3. _____</td> <td style="text-align: center;">1 ☐ 2 ☐</td> <td style="text-align: center;">1 ☐ 2 ☐</td> </tr> <tr> <td>4. _____</td> <td style="text-align: center;">1 ☐ 2 ☐</td> <td style="text-align: center;">1 ☐ 2 ☐</td> </tr> <tr> <td>5. _____</td> <td style="text-align: center;">1 ☐ 2 ☐</td> <td style="text-align: center;">1 ☐ 2 ☐</td> </tr> </table>				a. NEW MEDICATION?	b. FOR DX IN ITEM 10a?		YES NO	YES NO	1. _____	1 ☐ 2 ☐	1 ☐ 2 ☐	2. _____	1 ☐ 2 ☐	1 ☐ 2 ☐	3. _____	1 ☐ 2 ☐	1 ☐ 2 ☐	4. _____	1 ☐ 2 ☐	1 ☐ 2 ☐	5. _____	1 ☐ 2 ☐	1 ☐ 2 ☐
	a. NEW MEDICATION?	b. FOR DX IN ITEM 10a?																								
	YES NO	YES NO																								
1. _____	1 ☐ 2 ☐	1 ☐ 2 ☐																								
2. _____	1 ☐ 2 ☐	1 ☐ 2 ☐																								
3. _____	1 ☐ 2 ☐	1 ☐ 2 ☐																								
4. _____	1 ☐ 2 ☐	1 ☐ 2 ☐																								
5. _____	1 ☐ 2 ☐	1 ☐ 2 ☐																								
16. DISPOSITION THIS VISIT <i>[Check all that apply]</i> 1 ☐ NO FOLLOW-UP PLANNED 2 ☐ RETURN AT SPECIFIED TIME 3 ☐ RETURN IF NEEDED, P.R.N. 4 ☐ TELEPHONE FOLLOW-UP PLANNED 5 ☐ REFERRED TO OTHER PHYSICIAN 6 ☐ RETURNED TO REFERRING PHYSICIAN 7 ☐ ADMIT TO HOSPITAL 8 ☐ OTHER <i>[Specify]</i>			17. DURATION OF THIS VISIT <i>[Time actually spent with physician]</i> _____ Minutes																							

Figure 1. Patient record

office visits during 1990, with black persons and Asian/Pacific Islanders accounting for about 8.8 percent and 3.0 percent, respectively. These percentages were not statistically different from those reported in 1989. While visit rates were found to be significantly higher for white persons than for black persons overall, these differences were noted only among the younger age groups (less than 15 years, 15–24 years, and 25–44 years). No significant differences were found between the white population and the

black population in the 45–64 years, 65–74 years, and 75 years and over age groups. Visit rates by age, sex, and race were not statistically different from rates observed in the 1989 NAMCS.

Physician characteristics

Table 2 shows the distribution of office visits according to physician specialty for the 13 most visited specialties. The largest share of visits (29.8 percent) was made to physicians specializing in general and

family practice (GFP); this percentage is not significantly different from the percentage of GFP visits in 1989. Provisional data concerning other physician specialties for 1990 indicates slight increases in the proportion of visits made to internists, psychiatrists, and ophthalmologists compared with 1989 figures, as well as slight decreases in the proportion of visits made to pediatricians, dermatologists, and general surgeons. However, 1990 visit rates to each of the 13 specialties

Table 1. Number, percent distribution, and annual rate of office visits by patient's age, sex, race, and geographic region: United States, 1990

Patient characteristic	Number of visits in thousands	Percent distribution	Number of visits per person per year
All patients	704,604	100.0	2.9
Age			
Under 15 years	138,427	19.6	2.5
15-24 years	68,918	9.8	2.0
25-44 years	194,195	27.6	2.4
45-64 years	149,786	21.3	3.2
65-74 years	86,422	12.3	4.8
75 years and over	66,856	9.5	5.7
Sex and age			
Female	427,151	60.6	3.4
Under 15 years	65,229	9.3	2.4
15-24 years	45,165	6.4	2.6
25-44 years	132,183	18.8	3.2
45-64 years	89,697	12.7	3.7
65-74 years	51,529	7.3	5.1
75 years and over	43,349	6.2	5.9
Male	277,452	39.4	2.3
Under 15 years	73,198	10.4	2.6
15-24 years	23,753	3.4	1.4
25-44 years	62,012	8.8	1.6
45-64 years	60,089	8.5	2.7
65-74 years	34,893	5.0	4.3
75 years and over	23,507	3.3	5.4
Race and age			
White	597,306	84.8	2.9
Under 15 years	115,421	16.4	2.6
15-24 years	56,297	8.0	2.0
25-44 years	163,020	23.1	2.4
45-64 years	126,970	18.0	3.1
65-74 years	76,045	10.8	4.7
75 years and over	59,552	8.5	5.6
Black	62,317	8.8	2.1
Under 15 years	12,401	1.8	1.5
15-24 years	7,063	1.0	1.4
25-44 years	18,350	2.6	1.9
45-64 years	13,664	1.9	2.9
65-74 years	6,264	0.9	4.0
75 years and over	4,575	0.6	4.9
All other races			
Asian or Pacific Islander	21,312	3.0	---
American Indian or Alaskan Native	2,382	0.3	---
Unspecified	21,287	3.0	---
Geographic region			
Northeast	127,805	18.1	2.6
Midwest	180,276	25.6	3.0
South	235,303	33.4	2.8
West	161,220	22.9	3.1

¹Based on U.S. Bureau of the Census estimates of the civilian, noninstitutionalized population of the United States as of July 1, 1990.

were not found to differ significantly from 1989 visit rates (3).

Visit characteristics

Referral status and prior-visit status

Only 5.5 percent of office visits in 1990 were made as the result of a referral from another physician. The

overwhelming majority of office visits (83.8 percent) were made by patients who had seen the physician on a previous occasion, and more than half (61.2 percent) of all visits were made by persons who were returning to the physician for care of a previously treated problem (table 3). Only 16.2 percent of visits were made by new patients. These percentages are not significantly different from those reported in 1989.

Expected source of payment

Expected sources of payment were most often commercial insurance (36.1 percent of visits) and "self-pay" (30.4 percent of visits) (figure 2). (The self-pay category includes the patient's contribution towards "co-payments" and "deductibles.") The percentage of visits at which commercial insurance was expected as a source of payment was up slightly from the 1989 level, while the percentage of self-pay visits showed a slight decrease. Medicare was an expected payment source at 19.8 percent of visits overall, up slightly from the 1989 level, but was an expected source of payment at 80.0 percent of visits by persons aged 65 years and over. "HMO/pre-paid plan" was mentioned at 14.5 percent of visits, not significantly different from the 1989 level. It should be noted that physicians were asked to check all of the applicable payment categories for this survey item, with the result that multiple payment sources could be coded for each visit.

Reason for visit

Item 9 of the Patient Record asks the physician to record the patient's (or patient surrogate's) "complaint(s), symptom(s), or other reason(s) for this visit in the patient's own words." Up to three reasons for visit are classified and coded from the survey according to *A Reason for Visit Classification for Ambulatory Care* (RVC) (4). The principal reason for visit is the problem, complaint, or reason listed in item 9a.

The RVC is divided into the eight modules or groups of reasons displayed in table 4. More than half of all visits were made for reasons classified as symptoms (56.8 percent). Respiratory symptoms accounted for 11.3 percent of all visits while musculoskeletal symptoms accounted for 10.3 percent.

The twenty most frequently mentioned principal reasons for visit, representing 39.5 percent of all visits, are shown in table 5. General medical examination was the most

Table 2. Number, percent distribution, and annual rate of office visits by physician specialty and professional identity: United States, 1990

Physician specialty	Number of visits in thousands	Percent distribution	Number of visits per 100 persons per year ¹
All visits	704,604	100.0	286.3
General and family practice	209,788	29.8	85.2
Internal medicine	96,622	13.7	39.3
Pediatrics	81,148	11.5	33.0
Obstetrics and gynecology	61,243	8.7	² 48.3
Ophthalmology	43,842	6.2	17.8
Orthopedic surgery	32,917	4.7	13.4
Dermatology	24,009	3.4	9.8
General surgery	22,402	3.2	9.1
Psychiatry	20,963	3.0	8.5
Otolaryngology	17,959	2.5	7.3
Cardiovascular disease	11,240	1.6	4.6
Urological surgery	9,546	1.4	3.9
Neurology	6,228	0.9	2.5
All other specialties	66,696	9.5	27.1
Professional identity			
Doctor of osteopathy	39,287	5.6	16.0
Doctor of medicine	665,317	94.4	270.3

¹Based on U.S. Bureau of the Census estimates of the civilian, noninstitutionalized population of the United States as of July 1, 1990.

²Based on the female population only.

Table 3. Number and percent distribution of office visits by referral status and prior-visit status: United States, 1990

Visit characteristic	Number of visits in thousands	Percent distribution
All visits	704,604	100.0
Referral status		
Referred by another physician	38,806	5.5
Not referred by another physician	665,797	94.5
Prior visit status		
New patient	113,962	16.2
Old patient	590,641	83.8
New problem	159,635	22.5
Old problem	431,006	61.2

frequently mentioned reason for visit overall (4.3 percent of the total), while cough was the most frequently mentioned reason having to do with illness or injury (3.7 percent). The top twenty reasons for 1990 were also listed as the twenty most frequently mentioned reasons for 1989, although in slightly different order.

Diagnostic and screening services

Table 6 displays statistics on diagnostic or screening services ordered or provided by the physician during the office visit. All diagnostic and screening categories included on the 1990 survey were also found on the 1989 survey. However, this list is changed periodically to reflect the changing needs of data users, recommendations of advisors, and anticipated future health data needs. The most frequently mentioned diagnostic service was blood pressure check, recorded at 38.5 percent of visits. This percentage was significantly higher than the 34.5 percent of visits with a check of blood pressure in 1989. Also, blood pressure checks were ordered or provided at a higher percentage of female visits (42.9 percent) than male visits (31.8 percent) in 1990, as was also the case in 1989.

Other frequently mentioned diagnostic or screening services included "other" blood test (13.3 percent of visits), urinalysis (12.8 percent), and pelvic exam (performed at 12.0 percent of female office visits). With the exception of blood pressure check, none of the diagnostic or screening categories showed significant changes from 1989 levels.

Principal diagnosis

Item 10 of the Patient Record asks the physician 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 are coded and classified according to the *International*

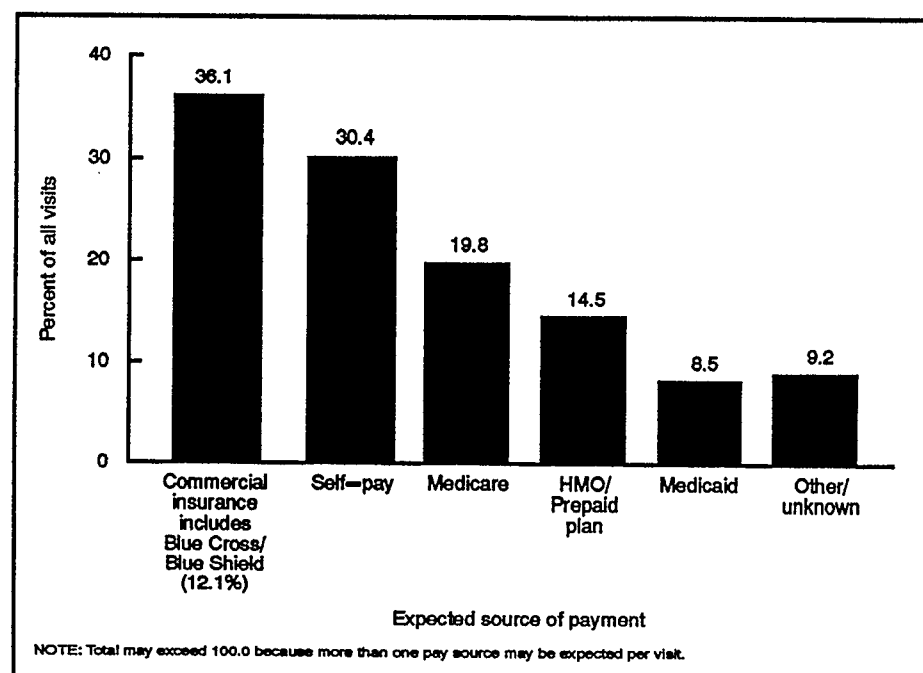
**Figure 2. Office visits by expected source of payment: United States, 1990**

Table 4. Number and percent distribution of office visits by patient's principal reason for visit: United States, 1990

Principal reason for visit and RVC code ¹	Number of visits in thousands	Percent distribution
All visits	704,604	100.0
Symptom moduleS001-S999	400,323	56.8
General symptomsS001-S099	48,395	6.9
Symptoms referable to psychological/mental disordersS100-S199	19,831	2.8
Symptoms referable to the nervous system (excluding sense organs)S200-S259	20,537	2.9
Symptoms referable to the cardiovascular/lymphatic systemS260-S299	4,351	0.6
Symptoms referable to the eyes and earsS300-S399	51,327	7.3
Symptoms referable to the respiratory systemS400-S499	79,665	11.3
Symptoms referable to the digestive systemS500-S599	31,887	4.5
Symptoms referable to the genitourinary systemS600-S699	30,714	4.4
Symptoms referable to the skin, hair, and nailsS700-S799	40,928	5.8
Symptoms referable to the musculoskeletal systemS800-S899	72,687	10.3
Disease moduleD001-D999	66,121	9.4
Diagnostic/screening, and preventive moduleX100-X599	110,059	15.6
Treatment moduleT001-T899	69,045	9.8
Injuries and adverse effects moduleJ001-J999	22,426	3.2
Test results moduleR100-R700	9,021	1.3
Administrative moduleA100-A140	8,341	1.2
Other ²U990-U999	19,267	2.7

¹Based on "A Reason for Visit Classification for Ambulatory Care" (RVC), Vital Health Stat 2(78) 1979.²Includes problems and complaints not elsewhere classified, entries of "none", blanks, and illegible entries.**Table 5. Number and percent distribution of office visits by the 20 principal reasons for visit most frequently mentioned by patients: United States, 1990**

Rank	Reason for visit and RVC code ¹	Number of visits in thousands	Percent of all visits	Percent of female visits	Percent of male visits
	All visits	704,604	100.0	100.0	100.0
1	General medical examinationX100	30,341	4.3	4.8	3.6
2	CoughS440	25,740	3.7	3.2	4.3
3	Routine prenatal examinationX205	25,296	3.6	5.9	...
4	Symptoms referable to throatS455	18,866	2.7	2.5	2.9
5	Postoperative visitT205	17,523	2.5	2.6	2.4
6	Earache or ear infectionS355	14,633	2.1	1.8	2.5
7	Well baby examinationX105	14,534	2.1	1.6	2.8
8	Back symptomsS905	12,497	1.8	1.6	2.0
9	Stomach pain, cramps, and spasmsS545	12,054	1.7	1.8	1.5
10	Skin rashS860	11,562	1.6	1.4	1.9
11	FeverS010	11,500	1.6	1.3	2.1
12	Vision dysfunctionsS305	11,397	1.6	1.6	1.7
13	HypertensionD510	10,391	1.5	1.5	1.4
14	Headache, pain in headS210	10,203	1.4	1.6	1.2
15	Knee symptomsS925	9,755	1.4	1.2	1.7
16	Chest pain and related symptoms (not referable to body system)S050	9,684	1.4	1.2	1.6
17	Head cold, upper respiratory infection (coryza)S445	8,557	1.2	1.2	1.3
18	Nasal congestionS400	8,546	1.2	1.1	1.4
19	Blood pressure testX320	7,922	1.1	1.1	1.1
20	Neck symptomsS900	7,006	1.0	1.0	1.0
	All other reasons	426,597	60.5	60.0	61.6

¹Based on "A Reason for Visit Classification for Ambulatory Care" (RVC), Vital Health Stat 2(78) 1979.

Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) (5).

Table 7 displays office visits by principal diagnosis using the major disease categories specified by the ICD-9-CM. The supplementary classification, used for diagnoses that are not classifiable to injury or illness (for example, general medical

examination, routine prenatal examination, and health supervision of an infant or child), accounted for 14.8 percent of all office visits. Diseases of the respiratory system (14.2 percent) and diseases of the nervous system and sense organs (11.4 percent) were also prominent on the list.

Table 8 displays the 20 most frequently reported principal diagnoses for 1990, categorized at the three-digit coding level of the ICD-9-CM, and accounting for 36.2 percent of all office visits made during the year. Of these 20, 19 also appeared on the list of the 20 most frequent diagnoses for 1989.

The most common diagnosis rendered by physicians at office visits in 1990 was essential hypertension, occurring at 3.9 percent of all visits. Essential hypertension has been the most frequently reported morbidity-related diagnosis in every survey year since the NAMCS began in 1973. (Morbidity-related diagnoses are those classifiable to illness or injury. Nonmorbidity related diagnoses include routine prenatal examination, health supervision of an infant or child, and general medical examination, among others.)

Therapeutic services

Table 9 presents data summarized from items 13, 14, and 15 of the Patient Record which pertain to therapeutic services ordered or provided by the physician at the office visit.

Medication therapy was the most commonly mentioned therapeutic service, reported at 60.3 percent of office visits in 1990. Physicians were instructed to record all new or continued medications ordered or provided at the visit, including prescription and nonprescription preparations, and immunizing and desensitizing agents. As used in the NAMCS, the term "drug" is interchangeable with the term "medication," and the term "prescribing" is used broadly to mean ordering or providing any medication, whether prescription or over-the-counter. Additional drug data are presented in tables 10, 11, and 12, and are discussed in the next section.

Counseling/advice (defined to include formal and informal counseling, advice, and patient education) was offered at about 37.2 percent of office visits, and weight reduction was the most frequently specified category

Table 6. Number and percent distribution of office visits by selected diagnostic service and sex: United States, 1990

<i>Diagnostic and screening services¹</i>	<i>Number of visits in thousands</i>	<i>Percent of all visits</i>	<i>Percent of female visits</i>	<i>Percent of male visits</i>
All visits	704,604	100.0	100.0	100.0
None	254,305	36.1	32.5	41.6
Pap test	33,898	4.8	7.9	0.0
Pelvic exam	51,422	7.3	12.0	...
Breast palpation	39,509	5.6	9.2	0.0
Mammogram	11,773	1.7	2.8	...
Visual acuity	45,291	6.4	6.2	6.8
Blood pressure	271,390	38.5	42.9	31.8
Urinalysis	89,904	12.8	15.2	9.0
Chest x-ray	20,293	2.9	2.7	3.2
Digital rectal examination	25,823	3.7	3.9	3.4
Proctoscopy or sigmoidoscopy	3,057	0.4	0.4	0.5
Stool blood exam	17,480	2.5	2.6	2.3
Oral glucose tolerance	3,421	0.5	0.6	0.3
Cholesterol measure	26,155	3.7	3.8	3.5
HIV serology	1,280	0.2	0.2	0.2
Other blood test	94,009	13.3	13.7	12.9
Other	176,390	25.0	24.6	25.6

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

Table 7. Number and percent distribution of office visits by principal diagnosis: United States, 1990

<i>Principal diagnosis and ICD-9-CM code¹</i>	<i>Number of visits in thousands</i>	<i>Percent distribution</i>
All visits	704,604	100.0
Infectious and parasitic diseases 001-139	27,075	3.8
Neoplasms 140-239	21,941	3.1
Endocrine, nutritional and metabolic diseases and immunity disorders 240-279	29,456	4.2
Mental disorders 290-319	29,929	4.2
Diseases of the nervous system and sense organs 320-389	80,128	11.4
Diseases of the circulatory system 390-459	55,989	7.9
Diseases of the respiratory system 460-519	100,294	14.2
Diseases of the digestive system 520-579	26,154	3.7
Diseases of the genitourinary system 580-629	41,067	5.8
Diseases of the skin and subcutaneous tissue 680-709	36,836	5.2
Diseases of the musculoskeletal system and connective tissue 710-739	47,101	6.7
Symptoms, signs, and ill-defined conditions 780-799	27,221	3.9
Injury and poisoning 800-999	51,134	7.3
Supplementary classification V01-V82	104,418	14.8
All other diagnoses ²	10,722	1.5
Unknown/blank ³	15,139	2.1

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

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 the perinatal period (760-799).

³Includes blank diagnoses, uncodable diagnoses, and illegible diagnoses.

(6.3 percent of visits). More common counseling topics, such as medical, social, and family counseling, were included in the "other" category (28.2 percent of visits). More detailed data on counseling and advice have been collected in the 1991 NAMCS.

Approximately 19.7 percent of visits included a mention of nonmedication therapy ordered or provided by the physician, with the most commonly listed category being psychotherapy (3.8 percent of visits). Ambulatory surgery was ordered or provided at about 2.0 percent of

visits, not significantly different from the 1989 level. More detailed data on ambulatory surgery, collected in the 1991 NAMCS, will be forthcoming later this year.

Medication therapy

As noted above, 60.3 percent or about 424.6 million office visits included a new or continuing medication ordered or provided by the physician during 1990. Visits with one or more drug mentions are termed "drug visits" in the NAMCS. As many as five medications, or drug

mentions, could be coded per drug visit, resulting in a total of 759.4 million drug mentions during 1990. This yields an average of about 1.1 drug mentions per office visit, or 1.8 drug mentions per drug visit.

Table 10 displays data on number of drug visits and drug mentions by physician specialty. Cardiovascular disease specialists and internists had the highest percentage of drug visits, at 78.5 percent and 74.5 percent, respectively.

Drug mentions are displayed by therapeutic class in table 11. This classification is based on the therapeutic categories used in the National Drug Code Directory (6). It should be noted that some drugs have more than one therapeutic application. In cases of this type, each drug was assigned to the category for which it is most frequently prescribed. Antimicrobial drugs accounted for 16.5 percent of all drug mentions, while cardiovascular-renal drugs (14.4 percent), respiratory tract drugs (11.4 percent), and pain relief drugs (10.2 percent) were also frequently mentioned.

Table 12 shows the 20 most frequently used generic substances for 1990. In this table, 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. Amoxicillin was the generic ingredient most frequently used in drugs ordered or provided by the physician at office visits in 1990, occurring in 4.9 percent of drug mentions.

Fifteen of the 20 most used generic ingredients for 1990 were also on the list of the top 20 for 1989. Albuterol and pseudoephedrine, new on the list for 1990, showed substantial gains of roughly 2.5 million mentions and 3.4 million mentions, respectively, over 1989 levels.

The NAMCS drug data base permits classification by a wide range of variables, including specific product name, generic class, entry form

Table 8. Number and percent distribution of office visits by the 20 principal diagnoses most frequently rendered by physicians: United States, 1990

Rank	Principal diagnosis and ICD-9-CM code ¹	Number of visits in thousands	Percent of all visits	Percent of female visits	Percent of male visits
	All visits	704,604	100.0	100.0	100.0
1	Essential hypertension401	27,310	3.9	3.9	3.8
2	Normal pregnancyV22	23,561	3.3	5.5	...
3	Suppurative and unspecified otitis media382	21,043	3.0	2.3	4.0
4	General medical examinationV70	20,555	2.9	2.9	3.0
5	Acute upper respiratory infections of multiple or unspecified sites465	18,676	2.7	2.4	3.0
6	Health supervision of infant or childV20	15,676	2.2	1.7	3.0
7	Diabetes mellitus250	15,303	2.2	1.9	2.6
8	Allergic rhinitis477	12,123	1.7	1.7	1.8
9	Bronchitis, not specified as acute or chronic490	12,098	1.7	1.6	1.9
10	Acute pharyngitis462	11,536	1.6	1.6	1.8
11	Chronic sinusitis473	11,141	1.6	1.6	1.5
12	Neurotic disorders300	9,531	1.4	1.5	1.1
13	Diseases of sebaceous glands706	8,346	1.2	1.1	1.3
14	Disorders of refraction and accommodation367	7,288	1.0	1.0	1.0
15	Cataract366	7,282	1.0	1.2	0.8
16	Glaucoma365	7,234	1.0	1.1	1.0
17	Asthma493	7,137	1.0	1.1	0.9
18	Sprains and strains of other and unspecified parts of back847	6,951	1.0	0.9	1.1
19	Other forms of chronic ischemic heart disease414	6,429	0.9	0.5	1.5
20	Osteoarthritis and allied disorders715	6,358	0.9	1.0	0.8

¹Based on the *International Classification of Diseases, 9th Revision, Clinical Modification*, ICD-9-CM.**Table 9. Number and percent distribution of office visits by selected therapeutic services ordered or provided by the physician: United States, 1990**

Therapeutic services ¹	Number of visits in thousands	Percent distribution
All visits	704,604	100.0
Medication therapy ²		
Drug visits ³	424,587	60.3
Number of medications ordered or provided by the physician		
None	280,017	39.7
1	230,716	32.7
2	110,865	15.7
3-5	83,007	11.8
Counseling and advice ¹		
None	442,833	62.8
Weight reduction	44,378	6.3
Cholesterol reduction	22,566	3.2
Breast self-exam	16,174	2.3
Smoking cessation	14,937	2.1
HIV transmission	1,740	0.2
Other	198,607	28.2
Other nonmedication therapy ¹		
None	566,077	80.3
Psychotherapy	26,922	3.8
Physiotherapy	16,572	2.4
Ambulatory surgery	14,203	2.0
Corrective lenses	9,580	1.4
Other	75,338	10.7

¹Total may exceed total number of visits because more than one category may be reported per visit.²Medications include prescription drugs, over-the-counter preparations, immunizing agents, desensitizing agents, etc.³Drug visits are visits at which one or more medication is ordered or supplied by the physician.

chosen by the physician (that is, brand name, generic name, or the desired therapeutic effect), prescription status (that is, whether the product is prescription or nonprescription), federally controlled substance status, composition status (that is, single or multiple ingredient product), and therapeutic category. A report describing the method and instruments used to collect and process drug information for the NAMCS is available (7).

Disposition of visit

Nearly two-thirds (66.0 percent) of all office visits included a scheduled follow-up visit or telephone call, while another 22.6 percent included instructions to return if needed. Only about 1.0 percent of visits resulted in a hospital admission. Table 13 displays data on office visit disposition.

Duration of visit

Table 14 presents data on the duration of office visits. Duration of visit refers to the amount of time spent in face-to-face contact between the physician and the patient. This time is estimated and recorded by the physician 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 member of the physician's staff but did not actually see the physician during the visit, duration was recorded as "zero" minutes.

About 69.3 percent of office visits had a duration of 15 minutes or less in 1990. The mean duration time for all visits was 16.7 minutes, significantly higher than the 15.9 minutes reported for 1989.

Additional reports which utilize 1990 NAMCS data are forthcoming in the Advance Data From Vital and Health Statistics series. In addition, survey data will be available on computer tape from the National

Table 10. Number and percent distribution of drug visits and drug mentions by physician specialty: United States, 1990

Physician specialty	Number of drug visits ¹ in thousands	Percent distribution	Number of drug mentions in thousands	Percent distribution	Percent drug visits ²
All drug visits	424,587	100.0	759,406	100.0	60.3
General and family practice	144,052	33.9	251,960	33.2	68.7
Internal medicine	71,967	17.0	149,370	19.7	74.5
Pediatrics	54,250	12.8	76,370	10.1	66.9
Obstetrics and gynecology	26,814	6.3	35,687	4.7	43.8
Ophthalmology	19,193	4.5	30,808	4.1	43.8
Orthopedic surgery	8,586	2.0	11,035	1.5	26.1
Dermatology	15,364	3.6	29,572	3.9	64.0
General surgery	6,961	1.6	12,597	1.7	31.1
Psychiatry	10,756	2.5	18,516	2.4	51.3
Otolaryngology	8,017	1.9	12,341	1.6	44.6
Cardiovascular disease	8,827	2.1	25,153	3.3	78.5
Urological surgery	3,854	0.9	5,145	0.7	40.4
Neurology	4,127	1.0	7,586	1.0	66.3
All other specialties	41,819	9.8	93,265	12.3	62.7

¹Drug visits are visits at which one or more drugs are ordered or supplied by the physician.²Number of drug visits divided by number of office visits multiplied by 100.**Table 11. Number and percent distribution of drug mentions by therapeutic classification: United States, 1990**

Therapeutic classification ¹	Number of drug mentions in thousands	Percent distribution
All drug mentions	759,406	100.0
Antimicrobial	125,275	16.5
Cardiovascular-renal	109,171	14.4
Respiratory tract	86,562	11.4
Pain relief	77,355	10.2
Hormones and related agents	67,544	8.9
Dermatologic	43,558	5.7
Psychopharmacological	46,188	6.1
Metabolic and nutrient	29,238	3.9
Gastrointestinal	31,139	4.1
Ophthalmic	30,375	4.0
Immunologic	19,337	2.5
Neurologic	14,111	1.9
Hematologic	9,914	1.3
Other and unclassified	69,639	9.2

¹Therapeutic class based on the standard drug classification used in the National Drug Code Directory, 1982 Edition.**Table 12. Number and percent distribution of drug mentions for the 20 most frequently used generic substances: United States, 1990**

Rank	Generic substance	Number of drug mentions in thousands ¹	Percent distribution
	All drug mentions	759,406	100.0
1	Amoxicillin	37,011	4.9
2	Acetaminophen	23,416	3.1
3	Erythromycin	19,474	2.6
4	Hydrochlorothiazide	15,011	2.0
5	Codeine	14,435	1.9
6	Phenylephrine	12,297	1.6
7	Ibuprofen	11,964	1.6
8	Phenylpropanolamine	11,489	1.5
9	Aspirin	10,823	1.4
10	Albuterol	10,505	1.4
11	Pseudoephedrine	10,474	1.4
12	Naproxen	10,354	1.4
13	Furosemide	9,570	1.3
14	Chlorpheniramine	9,197	1.2
15	Alcohol	9,015	1.2
16	Digoxin	8,924	1.2
17	Cefaclor	8,910	1.2
18	Guaifenesin	8,890	1.2
19	Trimethoprim	8,649	1.1
20	Sulfamethoxazole	8,282	1.1

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

Technical Information Service at a nominal cost beginning about April 1992. Questions regarding this report, future reports, or the NAMCS may be directed to the Ambulatory Care Statistics Branch by calling (301) 436-7132.

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**Table 13. Number and percent distribution of office visits by disposition of visit:
United States, 1990**

<i>Disposition¹</i>	<i>Number of visits in thousands</i>	<i>Percent distribution</i>
All visits	704,604	100.0
No followup planned	68,310	9.7
Return at specified time	437,530	62.1
Return if needed	159,101	22.6
Telephone followup planned	27,207	3.9
Referred to other physician	22,939	3.3
Returned to referring physician	7,210	1.0
Admit to hospital	6,802	1.0
Other	11,513	1.6

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

**Table 14. Number and percent distribution of office visits by duration of visit:
United States, 1990**

<i>Duration</i>	<i>Number of visits in thousands</i>	<i>Percent distribution</i>
All visits	704,604	100.0
0 minutes ¹	8,262	1.2
1-5 minutes	63,383	9.0
6-10 minutes	199,086	28.3
11-15 minutes	217,608	30.9
16-30 minutes	167,690	23.8
31 minutes and over	48,575	6.9

¹Visits of zero minutes duration are those in which there was no face-to-face contact between the patient and the physician.

Symbols

- - - Data not available
- . . . Category not applicable
- Quantity zero
- 0.0 Quantity more than zero but less than 0.05
- Z Quantity more than zero but less than 500 where numbers are rounded to thousands
- * Figure does not meet standard of reliability or precision

Technical notes

Source of data and sample design

The information presented in this report is based on data collected by means of the National Ambulatory Medical Care Survey (NAMCS) from January 1990 through December 1990. The target universe of NAMCS includes office visits made in the United States by ambulatory patients to nonfederally employed physicians who are principally engaged in office practice, but not in the specialties of anesthesiology, pathology, or radiology. Telephone contacts and nonoffice visits are excluded.

A multistage probability sample design is used in NAMCS, involving samples of primary sampling units (PSU's), physician practices within PSU's, and patient visits within physician practices. For 1990, a sample of 3,063 nonfederal, office-based physicians was selected from master files maintained by the American Medical Association and American Osteopathic Association. The physician response rate for the 1990 NAMCS was 74 percent. Sample physicians were asked to complete Patient Records (see figure 1) for a systematic random sample of office visits occurring during a randomly assigned 1-week reporting period. Responding physicians completed 43,469 patient records.

Characteristics of the physician's practice, such as primary specialty and type of practice, were obtained from the physicians during an induction interview. The U.S. Bureau of the Census, Housing Surveys Branch, was responsible for the survey's data collection. Processing operations and medical coding were performed by the National Center for Health Statistics, Hospital Discharge and Ambulatory Care Survey Section, Research Triangle Park, North Carolina.

Sampling errors

The standard error is primarily a measure of the sampling variability

Table I. Provisional relative standard errors for estimated number of office visits: National Ambulatory Medical Care Survey, 1990

Estimated number of office visits in thousands	Relative standard error in percent
200	49.4
400	35.0
547	30.0
600	28.7
800	24.9
1,000	22.4
2,000	16.1
5,000	10.6
10,000	8.0
13,000	7.3
20,000	6.4
50,000	5.1
100,000	4.6
600,000	4.1

Example of use of table: An aggregate estimate of 10 million visits has a relative standard error of 8.0 percent or a standard error of 800,000 visits (8.0 percent of 10 million).

Table II. Provisional relative standard errors for estimated number of drug mentions: National Ambulatory Medical Care Survey, 1990

Estimated number of drug mentions in thousands	Relative standard error in percent
200	63.4
400	45.0
500	40.3
600	36.9
800	32.0
912	30.0
1,000	28.7
2,000	20.6
5,000	13.6
10,000	10.3
20,000	8.1
50,000	6.5
100,000	5.8
600,000	5.2

Example of use of table: An aggregate estimate of 10 million drug mentions has a relative standard error of 10.3 percent or a standard error of 1.03 million visits (10.3 percent of 10 million).

Table III. Provisional standard errors for percents of estimated numbers of office visits: National Ambulatory Medical Care Survey, 1990

Base of percent visits in thousands	Estimated percent					
	1 or 99	5 or 95	10 or 90	20 or 80	30 or 70	50
Standard error in percentage points						
200	4.9	10.7	14.8	19.7	22.6	24.6
500	3.1	6.8	9.3	12.5	14.3	15.6
1,000	2.2	4.8	6.6	8.8	10.1	11.0
2,000	1.6	3.4	4.7	6.2	7.1	7.8
5,000	1.0	2.2	3.0	3.9	4.5	4.9
10,000	0.7	1.5	2.1	2.8	3.2	3.5
13,000	0.6	1.3	1.8	2.4	2.8	3.1
20,000	0.5	1.1	1.5	2.0	2.3	2.5
50,000	0.3	0.7	0.9	1.3	1.4	1.6
100,000	0.2	0.5	0.7	0.9	1.0	1.1
600,000	0.1	0.2	0.3	0.4	0.4	0.5

Example of use of table: An estimate of 30 percent based on an aggregate estimate of 13 million visits has a standard error of 2.8 percent or a relative standard error of 9.3 percent (2.8 percent divided by 30 percent).

that occurs by chance when only a sample, rather than an entire universe, is surveyed. The relative standard error 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. Table I shows provisional relative standard errors for estimated numbers of office visits in 1990, and table II presents provisional relative standard errors for estimated numbers of drug mentions. Provisional standard errors for estimated percents of visits are shown in table III.

Alternatively, 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 IV.

$$RSE(x) = \sqrt{A + \frac{B}{x}} \cdot 100.0$$

Similarly, relative standard errors for percents may be calculated using the following general formula, where p is the percent of interest and x is the denominator of the percent in thousands, using the appropriate coefficient from table IV.

$$RSE(p) = \sqrt{\frac{B \cdot (1-p)}{p \cdot x}} \cdot 100.0$$

Table IV. Provisional coefficients appropriate for determining relative standard errors by type of estimate and physician groups: National Ambulatory Medical Care Survey, 1990

Type of estimate and physician group	Coefficient	
	A	B
Visits		
Overall totals	0.00161075	48.44516000
Doctors of osteopathy, general surgery, orthopedic surgery, cardiovascular disease, psychiatry, urological surgery, dermatology, neurology, ophthalmology, otolaryngology	0.01798498	8.66482249
Pediatrics, obstetrics, and gynecology	0.01283754	24.17002721
Internal medicine, all other specialties	0.01498303	36.73205078
General and family practice	0.00573033	30.48694805
Drug mentions		
Overall totals	0.00258400	79.97392437
Doctors of osteopathy, general surgery, orthopedic surgery, cardiovascular disease, psychiatry, urological surgery, dermatology, neurology, ophthalmology, otolaryngology	0.03278417	9.67984575
Pediatrics, obstetrics, and gynecology	0.02355989	22.74292891
Internal medicine, all other specialties	0.02100443	61.17468903
General and family practice	0.00717830	53.42315388

Adjustments for nonresponse

Estimates from NAMCS data were adjusted to account for sample physicians who were in scope but did not participate in the study. This adjustment was calculated to minimize the impact of response on final estimates by imputing to nonresponding physicians data from visits to similar physicians. For this purpose, physicians were judged similar if they had the same specialty designation and practiced in the same PSU.

Test of significance and rounding

In this report, the determination of statistical inference is based on the t-test. The Bonferroni inequality was used to establish the critical value for statistically significant differences (0.05 level of confidence). 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 office 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 percents calculated from rounded data.

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.

Physician—A physician is a duly licensed doctor of medicine (M.D.) or doctor of osteopathy (D.O.) who is currently in office-based practice and who spends some time caring for ambulatory patients. Excluded from the NAMCS are physicians who are hospital based; who specialize in anesthesiology, pathology, or

radiology; who are federally employed; who treat only institutionalized patients; or who are employed full time by an institution and spend no time seeing ambulatory patients.

Office—Offices are the premises physicians identify as locations for their ambulatory practice. These customarily include consultation, examination, or treatment spaces that the patients associate with the particular physician.

Visit—A visit is a direct personal exchange between an ambulatory patient and a physician (or a staff member working under the physician's supervision) for the purpose of seeking care and rendering personal health services.

Drug mention—A drug mention is the physician's entry 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.

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

Suggested citation

Schappert SM. National Ambulatory Medical Care Survey: 1990 Summary. Advance data from vital and health statistics; no 213. Hyattsville, Maryland: National Center for Health Statistics. 1992.

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DHHS Publication No. (PHS) 92-1250