

## Office Visits to Neurologists: 1985

by Cheryl Nelson, M.S.P.H., Division of Health Care Statistics

In 1985, an estimated 5 million ambulatory care visits (96,000 visits per week) were made to office-based neurologists. This estimate represented 0.8 percent of all patient visits to all office-based physicians in the United States (table 1). Of these visits, 60 percent were to partnership and group practices (table 2). Since 1980 the number of visits to neurologists has almost doubled and the visit rate has increased 90 percent to 21 visits per 1,000 persons per year (table 3).

This report is based on data from the 1985 National Ambulatory Medical Care Survey (NAMCS). NAMCS, a year-long probability sample survey of the Nation's office-based physicians, was conducted annually from 1973 through 1981 and again in 1985 by the Division of Health Care Statistics of the National Center for Health Statistics. General findings from the 1985 NAMCS have been published (NCHS, 1987a). In this report, a neurologist is defined as a physician who reports that the majority of his practice is in the specialty of neurology. Neurosurgery is excluded from this definition.

Of the patient visits to neurologists, 25 percent were

referrals from other physicians (table 4). This was about 4.5 times the rate of patients referred to all physicians. Of the visits to neurologists, 31 percent were by new patients, almost twice the percent of visits by new patients to all physicians (NCHS, 1987a). The majority of all visits were made by returning patients.

Visits to neurologists by patients 25 years of age and older represented over 80 percent of all visits. The mean age of patients visiting neurologists was 45.3 years, compared with a mean age of 39.6 years for all patients visiting all physicians. Visits by female patients and white patients represented 56 percent and 90 percent, respectively, of the visits to office-based neurologists (table 5).

### Patient's reason for visiting the physician

A symptom was more often given by patients as the major reason for visiting a neurologist than as the major reason for visiting all physicians. Of visits to neurologists, 75 percent were for symptoms, compared with less than 55 percent of the visits to all physicians (NCHS, 1987a). Symptoms relating to the nervous system were given in 34 percent of the visits and symptoms of the musculoskeletal system in 24 percent (table 6).

Headache and convulsions accounted for nearly 21 percent of all patient complaints to neurologists (table 7). There were 1.2 million patient visits made to all physicians in which

**Table 1. Number and percent distribution of office visits by physician specialty: United States, 1985**

Physician specialty	Number of visits in thousands	Percent distribution
All visits . . . . .	636,386	100.0
General and family practice . . . . .	193,995	30.5
Internal medicine . . . . .	73,727	11.6
Pediatrics . . . . .	72,693	11.4
Obstetrics and gynecology . . . . .	56,642	8.9
Ophthalmology . . . . .	40,062	6.3
Orthopedic surgery . . . . .	31,482	4.9
General surgery . . . . .	29,858	4.7
Dermatology . . . . .	24,124	3.8
Psychiatry . . . . .	17,989	2.8
Otorhinolaryngology . . . . .	16,097	2.5
Urological surgery . . . . .	11,699	1.8
Cardiovascular disease . . . . .	10,617	1.7
Neurology . . . . .	4,992	0.8
All other specialties . . . . .	52,408	8.2

**Table 2. Number and percent distribution of office visits to neurologists by type of practice: United States, 1985**

Type of practice	Number of visits in thousands	Percent distribution
All visits . . . . .	4,992	100.0
Solo . . . . .	1,992	39.9
Partnership . . . . .	1,141	22.8
Group . . . . .	1,859	37.3

**Table 3. Number, percent, and rate of office visits to neurologists and all physician specialties, by year of survey: United States, 1985**

Physician specialty	1985	1981	1980	1979	1978	1977	1976	1975	
	Number of visits in thousands								
All specialties	636,386	585,177	575,745	556,313	584,498	570,052	588,300	567,600	
Neurology	4,992	3,879	2,499	1,874	2,419	2,690	1,752	2,032	
	Percent								
All specialties	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Neurology	0.78	0.66	0.43	0.34	0.41	0.47	0.30	0.36	
	Visit rate per 1,000 persons								
All specialties	2,740	2,620	2,660	2,590	2,750	2,700	2,810	2,730	
Neurology	21	17	11	9	11	13	8	10	

**Table 4. Number and percent distribution of office visits to neurologists by referral status and prior visit status: United States, 1985**

Referral status and prior visit status	Number of visits in thousands	Percent distribution
All visits	4,992	100.0
Referral status		
Referred by another physician	1,274	25.5
Not referred by another physician	3,718	74.5
Prior visit status		
New patient	1,581	31.7
Old patient	3,411	68.3
New problem	*259	5.2
Old problem	3,152	63.1

**Table 5. Number and percent distribution of office visits to neurologists by age, sex, and race of patient: United States, 1985**

Age, sex, and race	Number of visits in thousands	Percent distribution
All visits	4,992	100.0
Age		
Under 15 years	402	8.1
15-24 years	500	10.0
25-44 years	1,587	31.8
45-64 years	1,454	29.1
65 years and over	1,048	21.0
Sex		
Female	2,804	56.2
Male	2,188	43.8
Race		
White	4,533	90.8
Black and other	459	9.2

the patient's principal reason for the visit was convulsions. Of those patient visits, 424,000 (34 percent) were made to office-based neurologists. In contrast, less than 10 percent of all headache visits were made to office-based neurologists. Hence, a patient having convulsions seems more likely to visit a neurologist than a patient having pain in the head. A patient having headaches seems more likely to visit a general practitioner.

**Table 6. Number and percent distribution of office visits to neurologists by patient's principal reason for visit: United States, 1985**

Principal reason for visit and RVC code <sup>1</sup>	Number of visits in thousands	Percent distribution
All visits	4,992	100.0
Symptom module	3,742	75.0
General symptoms	419	8.4
Symptoms referable to the nervous system (excluding sense organs)	1,710	34.3
Symptoms referable to the musculoskeletal system	1,216	24.3
Disease module	448	9.0
Diseases of the nervous system	*246	4.9
Diagnostic, screening, and preventive module	*238	4.8
Treatment module	371	7.4
Progress visit, NEC	*215	4.3
All other <sup>2,3</sup>	*192	3.8

<sup>1</sup>Based on "A Reason for Visit Classification for Ambulatory Care" (RVC), *Vital and Health Statistics*, Series 2, No. 78, Feb. 1979.

<sup>2</sup>Includes injuries and adverse effects module, test results module, administrative module, and uncodable entries.

<sup>3</sup>Each element represents fewer than 74,000 visits.

### Physician diagnoses

Diagnoses of diseases of the nervous system and sense organs (codes 320-28) were made in 33 percent of office visits to neurologists (table 8). Diseases of the musculoskeletal system and connective tissue (codes 710-39) and symptoms, signs, and ill-defined conditions (codes 780-99) were each diagnosed in 17 percent of the patient visits. General symptoms (code 780) was the most common principal diagnosis in 11 percent of patient visits (table 9). Specifically, 81 percent of the visits diagnosed as general symptoms were convulsions. The most frequent type of diagnostic service given during an office visit was a blood pressure check (table 10). The types of nonmedication therapy provided are shown in table 11.

### Medication therapy

In 57 percent of the visits, some type of medication was prescribed or provided by the neurologist. However, three or more medications were prescribed in only 7.8 percent of the visits (table 12). A neurologist's drug therapy utilization

**Table 7. Number and percent distribution of office visits to neurologists by the 10 most common principal reasons for visit: United States, 1985**

Rank	Most common principal reason for visit and RVC code <sup>1</sup>	Number of visits in thousands	Percent distribution
	All reasons for visits . . . . .	4,992	100.0
1	Headache, pain in head . . . . . S210	610	12.2
2	Convulsions . . . . . S205	424	8.5
3	Disturbances of sensation . . . . . S220	*235	4.7
4	Neck symptoms . . . . . S900	*235	4.7
5	Back symptoms . . . . . S905	*233	4.7
6	Leg symptoms . . . . . S920	*200	4.0
7	Vertigo, dizziness . . . . . S225	*180	3.6
8	Arm symptoms . . . . . S945	*169	3.4
9	Abnormal involuntary movements . . . . . S200	*142	2.9
10	Low back symptoms . . . . . S910	*110	2.2
	All other reasons . . . . .	2,453	49.1

<sup>1</sup>Based on "A Reason for Visit Classification for Ambulatory Care" (RVC), *Vital and Health Statistics*, Series 2, No. 78, Feb. 1979.

**Table 8. Number and percent distribution of office visits to neurologists by the most common principal diagnosis: United States, 1985**

Principal diagnosis and ICD-9-CM code <sup>1</sup>	Number of visits in thousands	Percent distribution
All diagnoses . . . . .	4,992	100.0
Mental disorders . . . . . 290-319	*276	5.5
Diseases of the nervous system and sense organs . . . . . 320-389	1,673	33.5
Diseases of the circulatory system . . . . . 390-459	442	8.8
Diseases of the musculoskeletal system and connective tissue . . . . . 710-739	893	17.9
Symptoms, signs, and ill-defined conditions . . . . . 780-799	919	18.4
Injury and poisoning . . . . . 800-999	390	7.8
All other diagnoses <sup>2,3</sup> . . . . .	400	8.0

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

<sup>2</sup>Includes infection and parasitic diseases (001-139); neoplasms (140-239); endocrine, nutritional, and metabolic diseases and immunity disorders (240-279); diseases of the respiratory system (460-519); diseases of the digestive system (520-579); diseases of the genitourinary system (580-629); diseases of the skin and subcutaneous tissue (680-709); supplementary classification (V01-V82); all other diagnoses: diseases of the blood and blood-forming organs (280-289); complications of pregnancy, childbirth, and the puerperium (630-676); congenital anomalies (740-759); certain conditions originating in the prenatal period (760-779); and unknown diagnoses, blank diagnosis, uncodable diagnosis, and illegible diagnosis.

<sup>3</sup>Each element represents fewer than 105,000 visits.

was not different from the drug therapy utilization of all physicians. However, it was far less frequent and less intense than the drug therapy utilization of primary care providers (general and family practitioners and internists—NCHS, 1987b). Of all drugs, those for the central nervous system (CNS) were mentioned most often during a patient office visit (table 13). CNS drugs represented 58 percent of all prescribed medications. Analgesics and antipyretics were the CNS drugs most often mentioned. The generic ingredients most often ordered or prescribed included acetaminophen, phenytoin, and aspirin (table 14).

**Duration and disposition of visit**

Neurology patient visits had a mean duration of 27 minutes, with 64 percent of all the visits lasting 16 minutes

**Table 9. Number and percent distribution of office visits to neurologists by the 10 most common principal diagnoses: United States, 1985**

Rank	Most common principal diagnosis and ICD-9-CM code <sup>1</sup>	Number of visits in thousands	Percent distribution
	All diagnoses . . . . .	4,992	100.0
1	General symptoms . . . . . 780	563	11.3
2	Other and unspecified disorders of the back . . . . . 724	*305	6.1
3	Migraine . . . . . 346	*265	5.3
4	Symptoms involving head and neck . . . . . 784	*232	4.7
5	Parkinson's disease . . . . . 332	*205	4.1
6	Sprains and strains of other and unspecified parts of back . . . . . 847	*202	4.0
7	Mononeuritis of upper limb and mononeuritis multiplex . . . . . 354	*173	3.5
8	Other disorders of cervical region . . . . . 723	*169	3.4
9	Multiple sclerosis . . . . . 340	*164	3.3
10	Epilepsy . . . . . 345	*151	3.0
	All other diagnoses . . . . .	2,563	51.3

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

**Table 10. Number and percent distribution of office visits to neurologists by the most common type of diagnostic service: United States, 1985**

Diagnostic service	Number of visits in thousands	Percent distribution
All diagnostic services . . . . .	4,992	100.0
None . . . . .	1,376	27.6
Blood chemistry . . . . .	391	7.8
Blood pressure check . . . . .	2,114	42.3
Radiology (other than chest) . . . . .	518	10.4
Other . . . . .	1,790	35.8
All other <sup>1,2</sup> . . . . .	772	15.5

<sup>1</sup>Includes breast exam, visual acuity, urinalysis, hematology, other lab test, chest x ray, EKG, and ultrasound.

<sup>2</sup>Each element represents fewer than 215,000 visits.

**Table 11. Number and percent distribution of office visits to neurologists by the most common nonmedication therapy ordered or provided: United States, 1985**

Nonmedication therapy	Number of visits in thousands	Percent distribution <sup>1</sup>
All nonmedication therapies . . . . .	4,992	100.0
None . . . . .	3,859	77.3
Physical therapy . . . . .	480	9.6
Counseling (other than diet) . . . . .	416	8.3
All other <sup>2,3</sup> . . . . .	378	7.6

<sup>1</sup>May not add to 100.0 percent because more than one nonmedication therapy was possible.

<sup>2</sup>Includes ambulatory surgery, radiation therapy, psychotherapy, family planning, diet counseling, corrective lenses, and other.

<sup>3</sup>Each element represents fewer than 135,000 visits.

or more (table 15). This was greater than the mean duration of 16 minutes for visits to all physicians (NCHS, 1987a).

Of the visiting patients, 84 percent were given some type of "Return" disposition (table 16); most were given the disposition "Return at a specified time."

**Table 12. Number and percent distribution of office visits to neurologists in which medications were prescribed or ordered: United States, 1985**

Type of visit and number of medications	Number of visits in thousands	Percent distribution
All visits . . . . .	4,992	100.0
No drug visit (0 medications) . . . . .	2,124	42.6
Drug visit . . . . .	2,868	57.4
Number of medications		
1 . . . . .	1,614	32.3
2 . . . . .	866	17.3
3 . . . . .	*285	5.7
4 or more . . . . .	*103	2.1

**Table 13. Number and percent distribution of the most common drug mentions in the office-based practice of neurologists, by therapeutic category: United States, 1985**

Therapeutic category <sup>1</sup>	Number of drug mentions in thousands	Percent distribution
All drugs . . . . .	4,664	100.0
Central nervous system drugs . . . . .	2,740	58.7
Analgesics and antipyretics . . . . .	1,075	23.0
Anticonvulsants . . . . .	698	15.0
Psychotherapeutic agents . . . . .	473	10.1
Anxiolytics, sedatives, and hypnotics . . . . .	426	9.1
Autonomic drugs . . . . .	612	13.1
Anticholinergic agents . . . . .	344	7.4
Skeletal muscle relaxants . . . . .	169	3.6
Cardiovascular drugs . . . . .	532	11.4
Cardiac drugs . . . . .	235	5.0
All other <sup>2,3</sup> . . . . .	780	16.7

<sup>1</sup>Based on the American Hospital Formulary Service Classification System Drug Product Information File, The American Druggist Blue Book Data Center. San Bruno, Calif., 1985.  
<sup>2</sup>Includes antihistamine drugs; anti-infective agents; antineoplastic agents; blood formation and coagulation agents; diagnostic agents; electrolytic, caloric, and water balance agents; antitussives, expectorants, and mucolytic agents; eye, ear, nose, and throat (EENT) preparations; gastrointestinal drugs; hormones and synthetic substitutes; local anesthetics; oxytocics; skin and mucous membrane agents; and other or undetermined drugs.  
<sup>3</sup>Each element represents fewer than 130,000 drug mentions.

**Table 14. Number and percent of the 10 most frequently prescribed or provided drugs in the office-based practice of neurologists, by generic ingredients: United States, 1985**

Rank	Generic ingredient	Number of drug mentions in thousands	Percent
	All <sup>1</sup> . . . . .	6,144	100.0
1	Acetaminophen . . . . .	*363	5.9
2	Phenytoin . . . . .	*317	5.2
3	Aspirin . . . . .	*275	4.5
4	Amitriptyline . . . . .	*252	4.1
5	Carbamazepine . . . . .	*219	3.6
6	Caffeine . . . . .	*213	3.5
7	Phenobarbital . . . . .	*198	3.2
8	Codeine . . . . .	*171	2.8
9	Propranolol . . . . .	*157	2.6
10	Levodopa . . . . .	*150	2.4

<sup>1</sup>The total on table 14 is greater than the total on table 13 because multiple ingredients equal multiple counts.

**Table 15. Number and percent distribution of office visits to neurologists by duration of visit: United States, 1985**

Duration	Number of visits in thousands	Percent distribution
All durations . . . . .	4,992	100.0
0 minutes <sup>1</sup> . . . . .	*13	0.3
1–5 minutes . . . . .	*167	3.3
6–10 minutes . . . . .	493	9.9
11–15 minutes . . . . .	1,089	21.8
16–30 minutes . . . . .	2,029	40.6
31–60 minutes . . . . .	1,056	21.1
61 minutes and over . . . . .	*145	2.9

<sup>1</sup>Represents office visits in which there were no face-to-face contacts between the patient and the physician.

**Table 16. Number and percent distribution of office visits to neurologists by disposition: United States, 1985**

Disposition	Number of visits in thousands	Percent distribution <sup>1</sup>
All dispositions . . . . .	4,992	100.0
No followup planned . . . . .	436	8.7
Return at specified time . . . . .	3,306	66.2
Return if needed . . . . .	459	9.2
Telephone followup planned . . . . .	*270	5.4
Referred to other physician . . . . .	*276	5.5
Return to referring physician . . . . .	458	9.2
Admit to hospital . . . . .	*125	2.5
Other . . . . .	*21	0.4

<sup>1</sup>May not add to 100.0 percent because more than one disposition was possible.

## References

National Center for Health Statistics, T. McLemore and J. DeLozier. 1987a. 1985 summary: National Ambulatory Medical Care Survey. *Advance Data From Vital and Health Statistics*. No. 128. DHHS Pub. No. (PHS) 87-1250. Public Health Service. Hyattsville, Md.

National Center for Health Statistics, H. Koch. 1987b. Highlights of drug utilization in office practice, National Ambulatory Medical Care Survey, 1985. *Advance Data From Vital and Health Statistics*. No. 134. DHHS Pub. No. (PHS) 87-1250. Public Health Service. Hyattsville, Md.

# 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 March 1985 through February 1986. The target universe of NAMCS includes office visits made within the conterminous 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 1985, a sample of 5,032 non-Federal, office-based physicians was selected from master files maintained by the American Medical Association and American Osteopathic Association. The physician response rate for the 1985 NAMCS was 70.2 percent; the response rate for neurologists was 66 percent. Sample physicians were asked to complete patient records (see text figure) for a systematic random sample of office visits occurring during a randomly assigned 1-week reporting period. Responding physicians completed 71,594 patient records; 1,097 patient records

<b>Assurance of Confidentiality</b> —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 Public Health Service National Center for Health Statistics																																										
<b>1. DATE OF VISIT</b> _____/_____/_____ <small>Month Day Year</small>		<b>PATIENT RECORD</b> <b>NATIONAL AMBULATORY MEDICAL CARE SURVEY</b>		OMB No. 0937-0141 Expires 9/30/86 (PHS) 6105-D 456-232																																								
<b>2. DATE OF BIRTH</b> _____/_____/_____ <small>Month Day Year</small>	<b>3. SEX</b> 1 <input type="checkbox"/> FEMALE 2 <input type="checkbox"/> MALE	<b>4. COLOR OR RACE</b> 1 <input type="checkbox"/> WHITE 2 <input type="checkbox"/> BLACK 3 <input type="checkbox"/> ASIAN/PACIFIC ISLANDER 4 <input type="checkbox"/> AMERICAN INDIAN/ALASKAN NATIVE	<b>5. ETHNICITY</b> 1 <input type="checkbox"/> HISPANIC ORIGIN 2 <input type="checkbox"/> NOT HISPANIC	<b>6. EXPECTED SOURCE(S) OF PAYMENT</b> <i>[Check all that apply]</i> 1 <input type="checkbox"/> SELF-PAY    4 <input type="checkbox"/> BLUE CROSS/BLUE SHIELD    7 <input type="checkbox"/> NO CHARGE 2 <input type="checkbox"/> MEDICARE    5 <input type="checkbox"/> OTHER COMMERCIAL INSURANCE    8 <input type="checkbox"/> OTHER <i>[Specify]</i> 3 <input type="checkbox"/> MEDICAID    6 <input type="checkbox"/> HMO/PRE-PAID PLAN	<b>7. WAS PATIENT REFERRED FOR THIS VISIT BY ANOTHER PHYSICIAN?</b> 1 <input type="checkbox"/> YES    2 <input type="checkbox"/> NO																																							
<b>8. PATIENT'S COMPLAINT(S), SYMPTOM(S), OR OTHER REASON(S) FOR THIS VISIT</b> <i>[In patient's own words]</i> a. MOST IMPORTANT _____ b. OTHER _____		<b>9. GLUCOSE TESTS THIS VISIT</b> <i>[Check all ordered or provided]</i> 1 <input type="checkbox"/> NONE 2 <input type="checkbox"/> BLOOD 3 <input type="checkbox"/> URINE 4 <input type="checkbox"/> ORAL		<b>10. OTHER DIAGNOSTIC SERVICES THIS VISIT</b> <i>[Check all ordered or provided]</i> 1 <input type="checkbox"/> NONE    6 <input type="checkbox"/> URINALYSIS    11 <input type="checkbox"/> BLOOD PRESSURE CHECK 2 <input type="checkbox"/> BREAST EXAM    7 <input type="checkbox"/> HEMATOLOGY    12 <input type="checkbox"/> EKG 3 <input type="checkbox"/> PELVIC EXAM    8 <input type="checkbox"/> BLOOD CHEMISTRY    13 <input type="checkbox"/> CHEST X-RAY 4 <input type="checkbox"/> RECTAL EXAM    9 <input type="checkbox"/> PAP TEST    14 <input type="checkbox"/> OTHER RADIOLOGY 5 <input type="checkbox"/> VISUAL ACUITY    10 <input type="checkbox"/> OTHER LAB TEST    15 <input type="checkbox"/> ULTRASOUND 16 <input type="checkbox"/> OTHER SERVICE <i>[Specify]</i> _____																																								
<b>11. PHYSICIAN'S DIAGNOSES</b> a. PRINCIPAL DIAGNOSIS/PROBLEM ASSOCIATED WITH ITEM 8a. _____ b. OTHER SIGNIFICANT CURRENT DIAGNOSES _____		<b>12. HAVE YOU SEEN PATIENT BEFORE?</b> 1 <input type="checkbox"/> YES    2 <input type="checkbox"/> NO IF YES, FOR THE CONDITION IN ITEM 11a? 1 <input type="checkbox"/> YES    2 <input type="checkbox"/> NO		<b>13. NON-MEDICATION THERAPY</b> <i>[Check all services ordered or provided this visit]</i> 1 <input type="checkbox"/> NONE    5 <input type="checkbox"/> PSYCHOTHERAPY    9 <input type="checkbox"/> CORRECTIVE LENSES 2 <input type="checkbox"/> PHYSIOTHERAPY    6 <input type="checkbox"/> FAMILY PLANNING    10 <input type="checkbox"/> OTHER <i>[Specify]</i> 3 <input type="checkbox"/> AMBULATORY SURGERY    7 <input type="checkbox"/> DIET COUNSELING 4 <input type="checkbox"/> RADIATION THERAPY    8 <input type="checkbox"/> OTHER COUNSELING																																								
<b>14. MEDICATION THERAPY</b> <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.]</i> IF NONE, CHECK HERE <input type="checkbox"/>				<b>15. DISPOSITION THIS VISIT</b> <i>[Check all that apply]</i> 1 <input type="checkbox"/> NO FOLLOW-UP PLANNED 2 <input type="checkbox"/> RETURN AT SPECIFIED TIME 3 <input type="checkbox"/> RETURN IF NEEDED, P.R.N. 4 <input type="checkbox"/> TELEPHONE FOLLOW-UP PLANNED 5 <input type="checkbox"/> REFERRED TO OTHER PHYSICIAN 6 <input type="checkbox"/> RETURNED TO REFERRING PHYSICIAN 7 <input type="checkbox"/> ADMIT TO HOSPITAL 8 <input type="checkbox"/> OTHER <i>[Specify]</i> _____																																								
<table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2" style="text-align: center;">a.</th> <th colspan="2" style="text-align: center;">b.</th> </tr> <tr> <th colspan="2" style="text-align: center;">NEW MEDICATION?</th> <th colspan="2" style="text-align: center;">FOR DX IN ITEM 11a?</th> </tr> <tr> <th></th> <th style="text-align: center;">YES</th> <th style="text-align: center;">NO</th> <th style="text-align: center;">YES</th> <th style="text-align: center;">NO</th> </tr> </thead> <tbody> <tr> <td>1 _____</td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> </tr> <tr> <td>2 _____</td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> </tr> <tr> <td>3 _____</td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> </tr> <tr> <td>4 _____</td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> </tr> <tr> <td>5 _____</td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> </tr> </tbody> </table>					a.		b.		NEW MEDICATION?		FOR DX IN ITEM 11a?			YES	NO	YES	NO	1 _____	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	2 _____	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 _____	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	4 _____	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 _____	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____ Minutes	
	a.		b.																																									
	NEW MEDICATION?		FOR DX IN ITEM 11a?																																									
	YES	NO	YES	NO																																								
1 _____	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>																																								
2 _____	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>																																								
3 _____	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>																																								
4 _____	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>																																								
5 _____	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>																																								

Figure. 1985 National Ambulatory Medical Care Survey patient record

were from neurologists. Characteristics of the physician's practice, such as primary specialty and type of practice, were obtained during an induction interview. NORC (formerly known as the National Opinion Research Center), under contract to NCHS, was responsible for the survey's data collection and processing operations.

### 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 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. Approximate relative standard errors of visits to neurologists are shown in table I. Approximate relative standard errors for aggregate estimates of drug mentions for neurologists are shown in table II.

### Statistical inference and rounding

The determination of statistical inference is based on a two-sided *t*-test with a critical value of 1.960 (0.05 level of confidence). Terms relating to differences, such as "greater than" or "less than," indicate that the differences are statistically significant. Terms such as "similar" or "roughly equal" mean that no statistical significance exists between the estimates compared. In the tables, estimates of office visits have been rounded to the nearest thousand. Consequently, estimates

**Table I. Relative standard errors of estimated numbers of office visits to neurologists: National Ambulatory Medical Care Survey, 1985**

<i>Estimated number of office visits in thousands</i>	<i>Relative standard error in percent</i>
200*	39.3
300	32.4
500	25.5
1,000	18.8
2,000	14.4
5,000	10.8
10,000	9.3
20,000	8.5
50,000	8.0
100,000	7.8

*Example of use of table:* An aggregate estimate of 50,000,000 visits has a relative standard error of 8 percent, or a standard error of 4,000,000 visits (8 percent of 50,000,000).

**Table II. Relative standard errors of estimated numbers of drug mentions in the office-based practice of neurologists: National Ambulatory Medical Care Survey, 1985**

<i>Estimated number of drug mentions in thousands</i>	<i>Relative standard error in percent</i>
200*	44.2
400	31.8
700	24.6
1,000	21.1
2,000	16.0
5,000	12.0
10,000	10.3
20,000	9.3
50,000	8.7
100,000	8.5

*Example of use of table:* An aggregate estimate of 50,000,000 drug mentions has a relative standard error of 8.7 percent, or a standard error of 4,350,000 drug mentions (8.7 percent of 50,000,000).

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.

### Definitions 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 NAMCS are physicians who are hospital-based; who specialize in anesthesiology, pathology, or radiology; who are federally employed; who treat only institutionalized patients; who are employed full time by an institution; and who spend no time seeing ambulatory patients.

*Office*—Offices are the premises physicians identify as locations for their ambulatory practices; these customarily include consultation, examination, or treatment spaces 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.

---

### 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 standards of reliability or precision
  - # Figure suppressed to comply with confidentiality requirements
-

**Recent Issues of *Advance Data From Vital and Health Statistics***

**No. 157.** Health of the Foreign Born Population: United States, 1985-86 (Issued June 13, 1988)

**No. 156.** Utilization of Short-Stay Hospitals by Patients With AIDS: United States, 1984-86 (Issued May 24, 1988)

**No. 155.** Prevalence of Chronic Conditions: United States, 1983-85 (Issued May 24, 1988)

**No. 154.** Relationships Between Smoking and Other Unhealthy Habits: United States, 1985 (Issued May 27, 1988)

**No. 153.** AIDS Knowledge and Attitudes for December 1987 (Issued May 16, 1988)

---

**Suggested citation**

National Center for Health Statistics, C. Nelson. 1988. Office visits to neurologists: 1985. *Advance Data From Vital and Health Statistics*, No. 158. DHHS Pub. No. (PHS) 88-1250. Public Health Service, Hyattsville, Md.

---

**Copyright information**

This report may be reprinted without further permission.

---

U.S. DEPARTMENT OF HEALTH AND  
HUMAN SERVICES  
Public Health Service  
Centers for Disease Control  
National Center for Health Statistics  
3700 East-West Highway  
Hyattsville, Maryland 20782

BULK RATE POSTAGE & FEES PAID PHS/NCHS PERMIT NO. G-281
--

---

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE, \$300

---

To receive this publication regularly, contact  
the National Center for Health Statistics by  
calling 301 436-8500

---