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The Management of New Pain in Office-Based Ambulatory Care: National Ambulatory Medical Care Survey, 1980 and 1981

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Introduction

The office-based practitioner is no stranger to the management of acute and chronic pain. The problem of diagnosing and treating pain-producing conditions is especially challenging when the pain and its associated morbidity are encountered for the first time in a particular patient—that is, at the so-called *new-pain visit.* The purpose of this report is to present and analyze some of the defining features of these new-pain visits. To accomplish this end, the authors combined the 1980 and 1981 findings of the National Ambulatory Medical Care Survey, an annual sample survey of office-based physicians conducted from 1973 through 1981 by the National Center for Health Statistics.

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. A brief description of the sample design and guidelines for judging the precision of the estimates is provided in the "Technical notes" at the end of the report. Also provided are definitions of key terms used in the survey.

The reader will find it useful to refer to the data collection instrument (figure 1: Patient Record, National Ambulatory Medical Care Survey) as selected aspects of new-pain visits are discussed.

Data highlights

Over the 2-year span from January 1980 through December 1981, ambulatory patients made 1.2 billion visits to the offices of non-Federal, office-based physicians practicing in the coterminous United States. Of this total, 70,259,000 (6.1 percent) were new-pain visits. A new-pain visit is distinguished by the following characteristics:

- The visit was unreferred (figure 1, item 13).
- Pain was the chief symptom presented by the patient (figure 1, item 6a).
- The physician had not previously seen the patient for the condition associated with the pain (figure 1, item 10).

Symptoms

The pain symptoms most frequently associated with the new-pain visits are listed in table 1. (See figure 1, item 6a.) Symptoms have been classified and coded according to a previous publication.[1]

Though the list is headed by such diverse complaints as earache, headache, and general chest pain, it is musculoskeletal pain—with upper or lower back pain predominant—that accounts for the largest proportion (41 percent) of the pain symptoms associated with the new-pain visits.

Diagnostic effort

Confronted with a new-pain symptom, the office-based practitioner tends to intensify the diagnostic effort required to find its cause. At virtually every new-pain visit, one or more of the diagnostic procedures appearing in figure 1, item 8, was ordered or provided. Considering the dominating presence of

[1]National Center for Health Statistics, D. Schneider, L. Appleton, and T. McLemore: A reason for visit classification for ambulatory care. *Vital and Health Statistics.* Series 2, No. 78. DHEW Pub. No. (PHS) 79-1352. Public Health Service. Washington. U.S. Government Printing Office, Feb. 1979.

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, Education, and Welfare
Public Health Service
Office of Health Research, Statistics, and Technology
National Center for Health Statistics

C No. 499932

1. DATE OF VISIT ___/___/___ Month Day Year

PATIENT RECORD
NATIONAL AMBULATORY MEDICAL CARE SURVEY

2. DATE OF BIRTH ___/___/___ Month Day Year

3. SEX
1 ☐ FEMALE
2 ☐ MALE

4. COLOR OR RACE
1 ☐ WHITE
2 ☐ BLACK
3 ☐ ASIAN/PACIFIC ISLANDER
4 ☐ AMERICAN INDIAN/ ALASKAN NATIVE

5. ETHNICITY
1 ☐ HISPANIC ORIGIN
2 ☐ NOT HISPANIC

6. PATIENT'S COMPLAINT(S), SYMPTOM(S), OR OTHER REASON(S) FOR THIS VISIT *[In patient's own words]*
a. MOST IMPORTANT
b. OTHER

7. MAJOR REASON FOR THIS VISIT *[Check one]*
1 ☐ ACUTE PROBLEM
2 ☐ CHRONIC PROBLEM, ROUTINE
3 ☐ CHRONIC PROBLEM, FLAREUP
4 ☐ POST SURGERY/POST INJURY
5 ☐ NON-ILLNESS CARE (ROUTINE PRENATAL, GENERAL EXAM., WELL BABY, ETC.)

8. DIAGNOSTIC SERVICES THIS VISIT *[Check all ordered or provided]*
1 ☐ NONE
2 ☐ LIMITED HISTORY/EXAM.
3 ☐ GENERAL HISTORY/EXAM.
4 ☐ PAP TEST
5 ☐ CLINICAL LAB TEST
6 ☐ X-RAY
7 ☐ BLOOD PRESSURE CHECK
8 ☐ EKG
9 ☐ VISION TEST
10 ☐ ENDOSCOPY
11 ☐ MENTAL STATUS EXAM.
12 ☐ OTHER *(Specify)* ___

9. PHYSICIAN'S DIAGNOSES
a. PRINCIPAL DIAGNOSIS/PROBLEM ASSOCIATED WITH ITEM 6a.
b. OTHER SIGNIFICANT CURRENT DIAGNOSES

10. HAVE YOU SEEN PATIENT BEFORE?
1 ☐ YES 2 ☐ NO
IF YES, FOR THE CONDITION IN ITEM 9a?
1 ☐ YES 2 ☐ NO

11. MEDICATION THERAPY THIS VISIT ☐ NONE
[Using brand or generic names, record all new and continued medications ordered, injected, administered, or otherwise provided at this vist. Include immunizing and desensitizing agents]

a. FOR PRINCIPAL DIAGNOSES IN ITEM 9a.	b. FOR ALL OTHER REASONS.
1.	1.
2.	2.
3.	3.
4.	4.

12. NON-MEDICATION THERAPY *[Check all services ordered or provided this visit]*
1 ☐ NONE
2 ☐ PHYSIOTHERAPY
3 ☐ OFFICE SURGERY
4 ☐ FAMILY PLANNING
5 ☐ PSYCHOTHERAPY/ THERAPEUTIC LISTENING
6 ☐ DIET COUNSELING
7 ☐ FAMILY/SOCIAL COUNSELING
8 ☐ MEDICAL COUNSELING
9 ☐ OTHER *(Specify)* ___

13. WAS PATIENT REFERRED FOR THIS VISIT BY ANOTHER PHYSICIAN?
1 ☐ YES
2 ☐ NO

14. DISPOSITION THIS VISIT *[Check all that apply]*
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 *(Specify)* ___

15. DURATION OF THIS VISIT *[Time actually spent with physician]*
___ Minutes

PHS-6105-C (9/79) OMB No. 68-R1498

Figure 1. National Ambulatory Medical Care Survey Patient Record, 1980 and 1981

musculoskeletal pain, it is not surprising to find that X-ray was utilized about three times as often at the new-pain visit as it was at the average office visit. A visit for what is perhaps the most ominous of new-pain symptoms—general chest pain—is three times as likely to elicit an EKG as the average office visit and twice as likely to elicit a blood pressure reading.

Diagnoses

Findings on the principal (first-listed) diagnoses associated with new-pain visits are presented in tables 2 and 3. (See figure 1, item 9a.) In most cases their agreement with the symptoms in table 1 is close. For example, a new earache most frequently signals the presence of an otitis media or a disorder of the external ear. Musculoskeletal pain, presented at 41 percent of new-pain visits, results in a corresponding 40 percent of diagnoses being identified as injuries or diseases of the musculoskeletal system. The ominous overtones of chest-pain symptoms are for the most part relieved by the finding that the symptoms were most frequently linked to respiratory disease, musculoskeletal problems, or disorders of the digestive system. At only 6 percent of the 6,485,000 visits with new chest pain

Table 1. Number and percent distribution of new-pain visits by selected principal reasons for visit: United States, 1980 and 1981

Rank	Principal reason for pain visit and RVC code[1,2]		Number of visits in thousands	Percent distribution
	All principal reasons		70,259	100.0
1	Earache, pain	355.1	8,761	12.5
2	Chest pain and related symptoms	050.0	6,485	9.2
3	Headache, pain in head	210.0	6,190	8.8
4	Back pain, ache, soreness	905.1	5,939	8.5
5	Low back pain, ache, soreness	910.1	4,068	5.8
6	Stomach pain, cramps, spasms	545.0	3,375	4.8
7	Abdominal pain, cramps, spasms	550.0	3,086	4.4
8	Knee pain, ache, soreness	925.1	3,068	4.4
9	Pain, site not referrable to specific body system	055.0	2,951	4.2
10	Shoulder pain, ache, soreness	940.1	2,817	4.0
11	Foot and toe pain, ache, soreness	935.1	2,625	3.7
12	Neck pain, ache, soreness	900.1	2,334	3.3
13	Painful urination	650.0	2,108	3.0
14	Leg pain, ache, soreness	920.1	2,039	2.9
15	Pain and related symptoms, generalized, site unspecified	060.0	1,592	2.3
16	Arm pain, ache, soreness	945.1	1,509	2.1
17	Eye pain	320.1	1,434	2.0
18	Hand and finger pain, ache, soreness	960.1	1,292	1.8
19	Hip pain, ache,.soreness	915.1	1,027	1.5
20	Ankle pain, ache, soreness	930.1	935	1.3
21	Pain or soreness of breast	800.0	817	1.2
22	Elbow pain, ache, soreness	950.1	743	1.1
23	Wrist pain, ache, soreness	955.1	729	1.0
24	Pain in anus-rectum	605.1	710	1.0
	All other pain reasons[3]		3,625	5.2

[1]Based on codes in National Center for Health Statistics, D. Schneider, L. Appleton, and T. McLemore: A reason for visit classification for ambulatory care [RVC]. *Vital and Health Statistics.* Series 2, No. 78. DHEW Pub. No. (PHS) 79–1352. Public Health Service. Washington. U.S. Government Printing Office, Feb. 1979.
[2]Only principal reasons accounting for ≥1.0 percent of new-pain visits are listed.
[3]Includes the following symptom RVC codes: 265.0, 410.1, 455.2, 500.2, 510.1, 515.1, 610.1, 665.1, 670.1, 700.1, 715.1, 745.2, 765.1, 775.1, 790.1, 790.4, 825.0, 870.1, 965.1, 970.1, 980.0.

Table 2. Number and percent distribution of new-pain visits by selected principal diagnostic classes: United States, 1980 and 1981

Rank	Principal diagnostic class and ICD–9–CM codes[1,2]		Number of visits in thousands	Percent distribution
	All principal diagnostic classes		70,259	100.0
1	Musculoskeletal and connective tissue diseases	710–739	15,711	22.4
2	Injuries and poisonings	800–999	12,336	17.6
3	Nervous system and sense organ diseases	320–389	9,780	13.9
4	Genitourinary diseases	580–629	5,929	8.4
5	Digestive diseases	520–579	5,639	8.0
6	Respiratory diseases	460–519	5,509	7.8
7	Symptoms, signs, and ill-defined conditions	780–799	3,803	5.4
8	Circulatory diseases	390–459	2,641	3.8
9	Supplementary classification[3]	V01–V82	1,687	2.4
10	Skin and subcutaneous tissue diseases	680–709	1,659	2.4
11	Infectious and parasitic diseases	001–139	1,650	2.3
12	Mental disorders	290–319	1,634	2.3
13	Endocrine, nutritional, and metabolic diseases and immunity disorders	240–279	743	1.1

[1]Based on U.S. Public Health Service and Health Care Financing Administration: *International Classification of Diseases, 9th Revision, Clinical Modification* [ICD–9–CM]. DHHS Pub. No. (PHS) 80–1260. Public Health Service. Washington. U.S. Government Printing Office, Sept. 1980.
[2]Only principal diagnosis classes accounting for ≥1.0 percent of new-pain visits are listed.
[3]Contains categories for entries other than diseases and injuries.

as the chief presenting symptom did the pain signal a clear or suspected angina pectoris; at only 1.5 percent was the diagnosis one of ischemic heart disease; and fewer than 1 percent of the visits were listed as an acute myocardial infarction. (Interestingly, another 6 percent of the chest-pain visits were treated as "neurotic disorders," more than double the average appearance of these diagnoses in office practice.)

Patient characteristics

It was noted earlier that new-pain visits accounted for 6.1 percent of all office visits. Expressed as a new-pain rate, this amounted to an average of 61 new-pain visits per 1,000 office visits. The extent to which this average rate fluctuates with patient age and sex is shown in table 4 and figure 2. Ac-

Table 3. Number and percent distribution of new-pain visits by selected principal diagnoses: United States, 1980 and 1981

Rank	Principal diagnosis and ICD–9–CM code[1,2]	Number of visits in thousands	Percent distribution
	All principal diagnoses	70,259	100.0
1	Suppurative and unspecified otitis media. 382	4,176	5.9
2	Peripheral enthesopathies and allied syndromes. 726	2,482	3.5
3	Sprains and strains of other and unspecified parts of back 847	2,407	3.4
4	Other soft tissue disorders 729	2,341	3.3
5	Other and unspecified back disorders 724	2,214	3.2
6	External ear disorders 380	2,135	3.0
7	Sprains and strains of sacroiliac region 846	1,866	2.7
8	Other and unspecified arthropathies. 716	1,302	1.9
9	Other synovium, tendon, and bursa disorders 727	1,222	1.7
10	Osteoarthrosis and allied disorders 715	1,142	1.6
11	Acute upper respiratory infections of multiple or unspecified sites 465	1,120	1.6
12	Cystitis 595	1,110	1.6
13	Other urethra and urinary tract disorders 599	1,089	1.6
14	Other and ill-defined sprains and strains 848	1,070	1.5
15	Symptoms involving respiratory system and other chest symptoms 786	921	1.3
16	Influenza 487	840	1.2
17	Symptoms involving head and neck 784	819	1.2
18	Chronic sinusitis 473	811	1.2
19	Other symptoms involving abdomen and pelvis 789	771	1.1
20	Intervertebral disc disorders 722	766	1.1
21	Sprains and strains of ankle and foot 845	757	1.1
22	Special mental disorder symptoms or syndromes, not elsewhere classified 307	748	1.1
23	Gastritis and duodenitis. 535	712	1.0
24	Other noninfectious gastroenteritis and colitis 558	695	1.0
25	Neurotic disorders 300	692	1.0
26	Other and unspecified joint disorders. 719	687	1.0
27	Muscle, ligament, and fascia disorders 728	682	1.0

[1]Based on U.S. Public Health Service and Public Health Care Financing Administration: *International Classification of Diseases, 9th Revision, Clinical Modification* [ICD–9–CM]. DHHS Pub. No. (PHS) 80–1260. Public Health Service. Washington. U.S. Government Printing Office, Sept. 1980.
[2]Only principal diagnoses accounting for ≥1.0 percent of new-pain visits are listed.

Table 4. Number of office visits, number and percent distribution of new-pain visits, and new-pain visit rate by patient age and sex-age groups: United States, 1980 and 1981

Patient age and sex	All office visits	New-pain visits		
Both sexes	Number in thousands	Number in thousands	Percent distribution	New-pain visit rate[1]
All ages	1,160,922	70,259	100.0	61
Under 15 years	216,129	10,982	15.6	51
15–24 years	160,795	11,304	16.1	70
25–44 years	310,384	22,313	31.8	72
45–64 years	265,700	16,853	24.0	63
65 years and over	207,914	8,806	12.5	42
Female				
All ages	699,718	40,840	58.1	58
Under 15 years	102,633	5,462	7.8	53
15–24 years	107,276	6,634	9.4	62
25–44 years	206,395	12,854	18.3	62
45–64 years	157,031	10,252	14.6	65
65 years and over	126,383	5,638	8.0	45
Male				
All ages	461,204	29,419	41.9	64
Under 15 years	113,495	5,521	7.9	49
15–24 years	53,519	4,671	6.6	87
25–44 years	103,990	9,459	13.5	91
45–64 years	108,668	6,600	9.4	61
65 years and over	81,532	3,169	4.5	39

[1]Number of new-pain visits per 1,000 office visits.

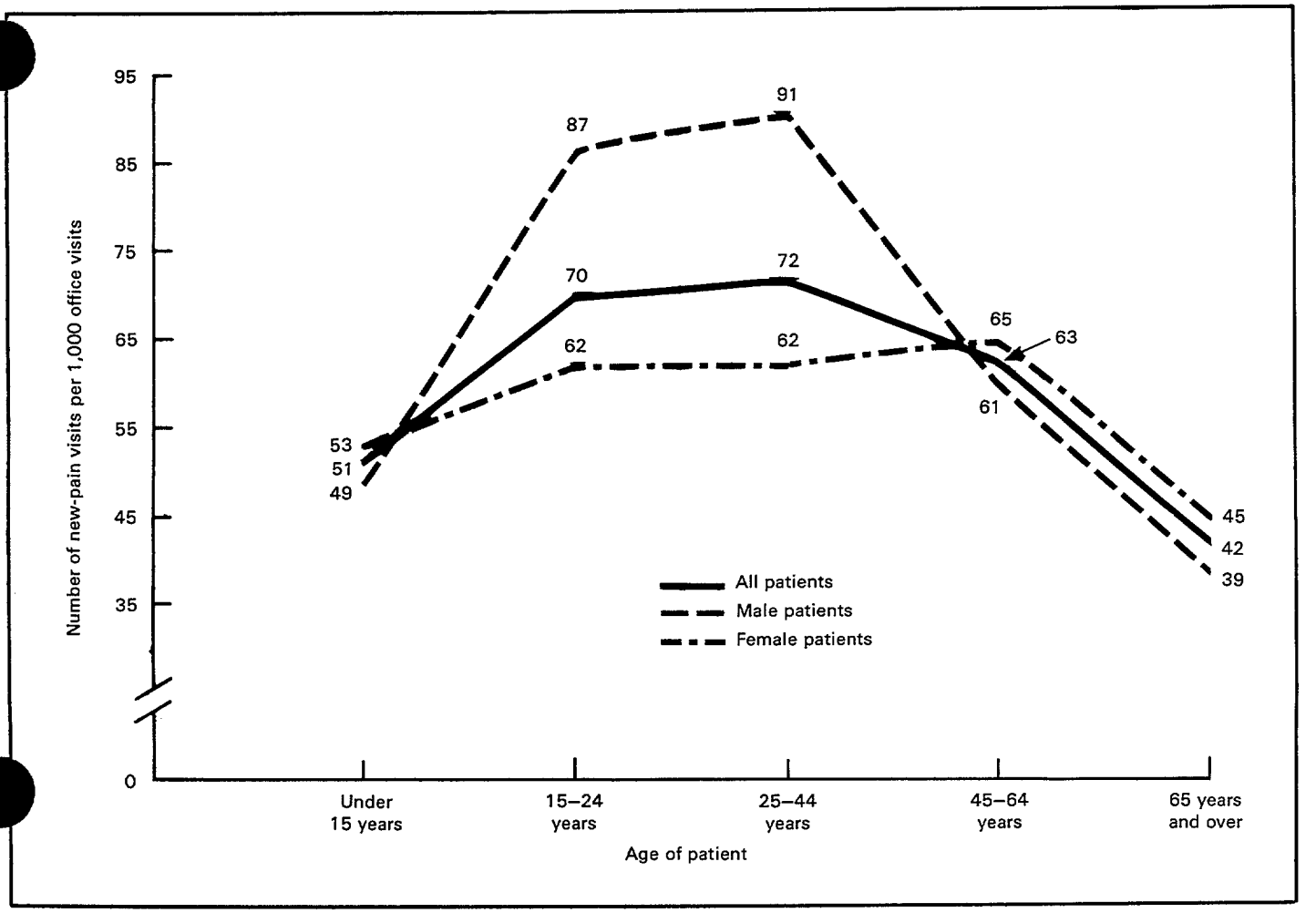

Figure 2. New-pain visit rates by sex and age of patient: United States, 1980–1981

cording to the findings, new-pain visits were most frequent among patients in age group 15–44 years. It is among these patients, for example, that many pain-producing injuries and acute diseases are most prevalent or that the physician observes the first warning signals of painful, chronic diseases that will continue into the later years of life. At the older extreme of the age spectrum the volume and rate of new-pain visits are at their lowest point. With this group the physician is probably more concerned with the management of chronic pain, which lost its newness some time before. New-pain visit rates for male and female patients do not differ markedly in the age groups under 15 years or over 44 years. It is in the age interval from the 15th to the 45th year that sex differences are most notable, revealed in male rates that substantially exceed those for female patients. In large part, this finding is explained by diagnostic evidence that the proportion of accidents or injuries in this age group was almost twice as great among male office patients as among females.

Variations in new-pain visit rates as they occurred among selected racial or ethnic groups of office patients are examined in table 5. Between black and white patients the apparent difference is not sufficiently marked to demonstrate statistical significance. (Much of it could be accounted for by sampling error.) It would be premature to infer that the significantly higher Hispanic rate points to any special ethnic predisposition toward the new-pain conditions. The difference may simply be due to the relative fractions of visits by patients in the 15–44 years of age interval—the interval with the highest volume and rate of new-pain visits. This proportion was about 7 percent higher among Hispanic patients than it was for their non-Hispanic counterparts.

Physician characteristics

The extent to which the various office-based specialties were involved in the new-pain visits is documented in table 6. In magnitude of new-pain visit rate (number of new-pain visits per 1,000 office visits), three specialties were appreciably more active than others; these were general or family practice, internal medicine, and orthopedic surgery. Owing to the essentially primary nature of a new-pain visit, it is not surprising that two of these three are conventionally classified as primary care specialties. In total volume of visits, the three specialties accounted for about 7 of every 10 new-pain visits.

Chiefly owing to their traditional involvement with musculoskeletal problems, it was predictable that osteopathic physicians would reveal a higher new-pain visit rate (77 per 1,000 visits) than doctors of medicine (59 per 1,000).

Table 5. Number of office visits, number and percent distribution of new-pain visits, and new-pain visit rate by patient race and Hispanic origin: United States, 1980 and 1981

Patient race and Hispanic origin	*All office visits*	*New-pain visits*		
	Number in thousands	Number in thousands	Percent distribution	New-pain visit rate[1]
All patients	1,160,922	70,259	100.0	61
Race[2]				
White	1,037,590	61,842	88.0	60
Black	110,546	7,384	10.5	67
Hispanic origin				
Hispanic	53,337	4,064	5.8	76
Non-Hispanic	1,107,585	66,195	94.2	60

[1]Number of new-pain visits per 1,000 office visits.
[2]Excludes 12,786,000 office visits by members of other racial groups such as American Indian or Asian.

Table 6. Number of office visits, number and percent distribution of new-pain visits, and new-pain visit rate by physician specialty: United States, 1980 and 1981

Physician specialty	*All office visits*	*New-pain visits*		
	Number in thousands	Number in thousands	Percent distribution	New-pain visit rate[1]
All specialties	1,160,922	70,259	100.0	61
General and family practice	381,710	33,966	48.3	89
Internal medicine	144,172	9,952	14.2	69
Pediatrics	128,762	6,181	8.8	48
Obstetrics and gynecology	109,035	3,148	4.5	29
Ophthalmology	62,485	1,561	2.2	25
General surgery	61,013	3,207	4.6	53
Orthopedic surgery	55,470	6,105	8.7	110
Otolaryngology	26,151	1,190	1.7	46
Cardiovascular disease	14,781	783	1.1	53
Urology	19,470	546	0.8	28
All other specialties	157,873	3,620	5.1	23

[1]Number of new-pain visits per 1,000 office visits.

Treatment

Ordered or provided at about 62 percent of all office visits, drug therapy is by far the most popular form of treatment in office practice. For new-pain visits, the utilization of drugs (at 70 percent of these visits) was even more intensive. The 25 drugs most frequently mentioned in the treatment of new-pain conditions are listed (using generic names) in table 7. On this list the largest single proportion of mentions (about 36 percent) are analgesics; the next largest fraction (33 percent) are anti-infectives; and the balance of the mentions are distributed diffusely among such drug classes as autonomic drugs, anti-inflammatory agents, antihistamines, diuretics, and the sedative-hypnotics. Perhaps the most useful insight to be derived from these findings is not the expected fact that the analgesic family dominated other drug families in frequency of mention, but rather the discovery that the utilization of analgesics was substantially less intensive than might have been anticipated. After all, every one of the new-pain visits was, by definition, associated with pain of varying degrees of severity. The obvious conclusion is that it would be a mistake to assume that an analgesic is routinely ordered whenever new pain appears as a symptom. The findings suggest that drug therapy at new-pain visits is more strongly linked to the associated diagnosis than it is to the pain that attends that diagnosis.

At 38 percent of the 70,259,000 new-pain visits, drug therapy was the only form of treatment utilized. At another 32 percent it was used in conjunction with some form(s) of nondrug therapy. (See figure 3 and table 8.) Thus, only at the remaining 30 percent of the new-pain visits did physicians choose an alternative approach that did not involve drug treatment. At about one-half of these nondrug visits, physicians specified the form of nondrug therapy used. At the remaining half of the nondrug visits, no alternative nondrug therapy was specified. In these cases, it seems safe to infer that physicians were at least partly relying on the self-restorative capacities of the body as an alternative to intervention by drugs or other means of treatment.

Table 7. Number of mentions and percent distribution of the 25 drugs most frequently ordered or provided for principal diagnoses of new-pain visits by generic name of drug: United States, 1980 and 1981

Rank	Generic name of drug	Number of mentions in thousands[1]	Percent distribution	Rank	Generic name of drug	Number of mentions in thousands[1]	Percent distribution
	Top 25 drugs	58,857	100.0	13	Polymixin B	2,201	3.7
1	Aspirin	6,863	11.7	14	Hydrocortisone	2,108	3.6
2	Acetaminophen	4,695	8.0	15	Bacitracin	1,907	3.2
3	Ampicillin	2,662	4.5	16	Chlorpheniramine	1,898	3.2
4	Phenylpropanolamine	2,607	4.4	17	Sulfamethoxazole	1,757	3.0
5	Amoxicillin	2,560	4.3	18	Hydrochlorothiazide	1,709	2.9
6	Neomycin	2,531	4.3	19	Erythromycin	1,638	2.8
7	Penicillin	2,529	4.3	20	Trimethoprim	1,632	2.8
8	Caffeine	2,481	4.2	21	Hyoscyamine	1,612	2.7
9	Phenacetin	2,410	4.1	22	Propoxyphene	1,598	2.7
10	Ibuprofen	2,398	4.1	23	Phenylbutazone	1,521	2.6
11	Phenylephrine	2,339	4.0	24	Codeine	1,461	2.5
12	Pseudoephedrine	2,281	3.9	25	Phenobarbital	1,459	2.5

[1]Combines the mentions of a generic substance as a single-ingredient agent with its mentions as an ingredient of a fixed-combination drug.

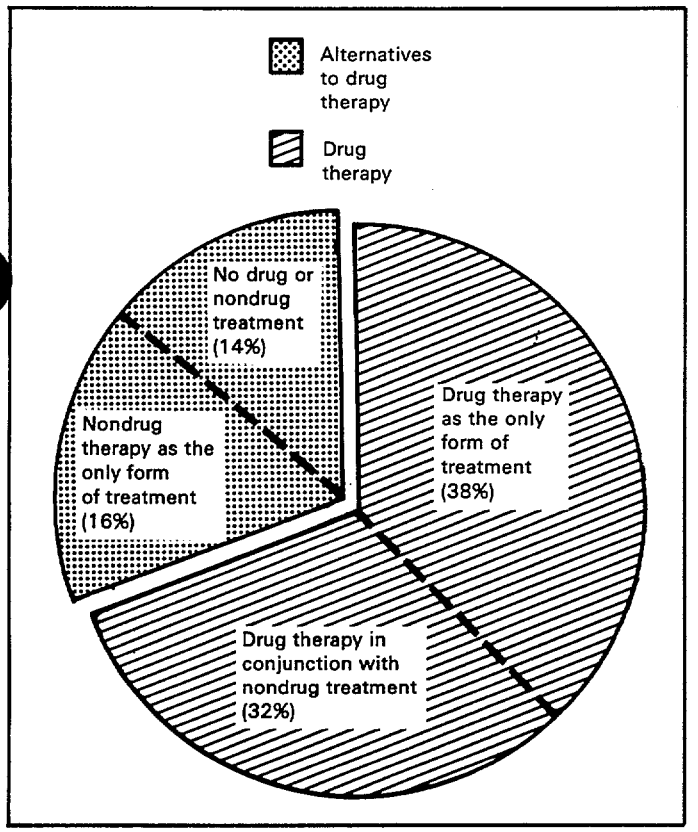

Figure 3. Percent of new-pain visits by treatment modalities: United States, 1980 and 1981

Table 8. Percent of visits by most frequent forms of nondrug therapy: United States, 1980 and 1981

Nondrug therapy	All visits	New-pain visits
	Percent	
Physiotherapy	4.8	12.2
Medical counseling	23.0	27.5

Table 9. Percent of visits by duration of physician-patient contact: United States, 1980 and 1981

Duration	All visits	New-pain visits
	Percent	
1–10 minutes	42.7	38.8
11 minutes or longer	54.7	60.7

Table 10. Percent of visits by selected forms of followup instructions for visits: United States, 1980–81

Followup	All visits	New-pain visits
	Percent	
No followup planned	11.5	12.3
Return at specified time	60.7	42.8
Return if needed	22.7	34.8
Telephone followup planned	3.4	6.5

Duration and followup instruction

Physician-patient contact was somewhat longer for the average new-pain visit than it was for the office visit in general (table 9), a difference probably due to the increased intensity of diagnostic effort at the new-pain visit.

As documented in table 10, the physician's followup of new-pain conditions was substantially less specific than it was for office visits in general. Helped to an undetermined extent by the self-restorative capacities of the body, the treating physician placed a below-average reliance on the formal return visit and an above-average reliance on the more tentative "telephone followup" or "return if needed."

Technical notes

Source of data and sample design

The estimates presented in this report are based on the findings of the National Ambulatory Medical Care Survey (NAMCS), a sample survey of office-based care conducted annually from 1973 through 1981 by the National Center for Health Statistics. The target universe of NAMCS is composed of office visits made by ambulatory patients to non-Federal and noninstitutional physicians who are principally engaged in office-based, patient-care practice. Visits to physicians practicing in Alaska and Hawaii are excluded from the range of NAMCS, as are visits to anesthesiologists, pathologists, and radiologists.

NAMCS uses a multistage probability sample design that involves a step-wise sampling of primary sampling units, physicians' practices within primary sampling units, and patient visits within physicians' practices. The physician sample (5,805 for the combined years 1980 and 1981) was selected from master files maintained by the American Medical Association and the American Osteopathic Association. Those members of the sample who proved to be in scope participated at a rate of 77.3 percent. Responding physicians completed visit records (figure 1) for a systematic random sample of their office visits made during a randomly assigned weekly reporting period. Telephone contacts were excluded. During 1980 and 1981 responding physicians completed a 2-year total of 89,447 Patient Record forms on which they recorded 97,796 drug mentions. Characteristics of the physician's practice, such as primary specialty and type of practice, were obtained during an induction interview. The National Opinion Research Center, under contract to the National Center for Health Statistics, was responsible for the field operations of the survey.

Sampling errors, statistical significance, and rounding

The standard error is a measure of the sampling variability that occurs by chance because only a sample, rather than the entire universe, is surveyed. The relative standard error of an estimate is obtained by dividing the standard error by the estimate itself and is expressed as a percent of the estimate. Table I should be used to obtain the relative standard error for aggregates of office visits or for mentions of drugs by generic name (for example, hydrocortisone). Standard errors for estimated percents of visits (or for new-pain visit rates per 1,000 visits) are shown in table II.

In this report, the determination of statistical significance is based on the *t*-test with a critical value of 1.96 (0.95 level of significance). Terms relating to differences, such as "higher" or "less," indicate that the differences are statistically significant. Terms such as "similar" or "no difference" mean that no statistical significance exists between the estimates being compared. A lack of comment in a comparison between any two

Table I. Approximate relative standard errors of estimated numbers of office visits and drug mentions, based on all physician specialties: National Ambulatory Medical Care Survey, 1980 and 1981

Estimated number of office visits or drug mentions in thousands	*Relative standard error in percent*
450	30.0
600	26.0
800	22.6
1,000	20.2
2,000	14.5
5,000	9.5
10,000	7.1
20,000	5.6
50,000	4.4
100,000	3.9
200,000	3.6
500,000	3.5
1,000,000	3.4

EXAMPLE OF USE OF TABLE: An aggregate estimate of 35,000,000 office visits has a relative standard error of 5.0 percent or a standard error of 1,750,000 visits (5.0 percent of 35,000,000 visits).

Table II. Approximate standard errors of percent of estimated numbers of office visits or of new-pain visit rates per 1,000 visits: NAMCS, 1980–81

Estimated number of office visits in thousands	*Estimated percent of office visits or estimated new-pain visit rates per 1,000 visits*					
	1 or 99	*5 or 95*	*10 or 90*	*20 or 80*	*30 or 70*	*50*
	Standard error in percent					
500	2.8	6.2	8.5	11.3	12.9	14.1
1,000	2.0	4.4	6.0	8.0	9.1	10.0
2,000	1.4	3.1	4.2	5.6	6.5	7.1
5,000	0.9	1.9	2.7	3.6	4.1	4.5
10,000	0.6	1.4	1.9	2.5	2.9	3.2
20,000	0.4	1.0	1.3	1.8	2.0	2.2
50,000	0.3	0.6	0.8	1.1	1.3	1.4
200,000	0.1	0.3	0.4	0.6	0.6	0.7
1,000,000	0.1	0.1	0.2	0.3	0.3	0.3

EXAMPLE OF USE OF TABLE: An estimate of 20 percent based on an aggregate of 3,500,000 visits has a standard error of 4.6 percent or a relative standard error of 23 percent (4.6 percent ÷ 20 percent).

estimates does not mean that the difference was tested and was not significant.

In the tables of this report estimates have been rounded to the nearest thousand. For this reason, detailed estimates do not always add to the total.

Definitions

Ambulatory patient—An individual seeking personal health services who is neither bedridden nor currently admitted to any health care institution on the premises.

Drug mention—The physician's entry of a pharmaceutical agent ordered or provided—by any route of administration—for prevention, diagnosis, or treatment. Generic as well as brand-name drugs are included, as are nonprescription as well as prescription drugs. The physician records all new drugs and continued medications when the patient is specifically instructed during the visit to continue the medication. (This report includes only those drug mentions that were associated with the principal diagnosis.)

Medical counseling— Instructions and recommendations regarding any health problem, including advice or counsel about change of habit or behavior. Physicians were instructed to check this category only if medical counseling was a critical part of the treatment.

Office—A place that physicians identify as a location for ambulatory practice. Responsibility over time for patient care and professional services rendered there generally resides with the individual physician rather than an institution.

Physiotherapy—Any form of physical therapy ordered or provided, including any treatment using heat, light, sound, physical pressure, or movement; for example, ultrasonic, ultraviolet, infrared, whirlpool, diathermy, cold therapy, and manipulative therapy.

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

X-ray—Any single or multiple X-ray examination for diagnostic or screening purposes. Radiation therapy is not included in this category.

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