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# The Management of Chronic Pain in Office-Based Ambulatory Care: National Ambulatory Medical Care Survey

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## Introduction

The management of chronic pain is one of the most unrewarding tasks of the physician. New pain, with its attendant fear of an unknown threat, can be sharply distressful to the sufferer, but it also may produce certain beneficial effects. For example, probably more than any other symptom, it motivates the sufferer to visit a doctor. Also, the location and nature of the new pain are helpful clues to the physician in the discovery of the appropriate diagnosis. Added to these positive effects is the assuring fact that most new pain is transient, that is, associated with acute conditions that largely correct themselves or yield readily to short-term therapies. Chronic pain, on the other hand, is almost wholly malefic in its effects. For the most part, its diagnostic linkages have already been established, too often to impairments that offer little or no hope of complete cure. Unable to consummate the healing function, physicians are denied their deepest professional satisfaction. Patients afflicted with chronic pain may become the prey of increasing hopelessness and pain-centered disability. Pain may become the center of their universe, conditioning most of their life responses and leading, in some, to the creation of the chronic pain syndrome.

Furthermore, the treatment of chronic pain in the ambulatory setting presents a challenge different from that found in the inpatient environment. This is chiefly due to a lack of control over outpatients and the fact that, unlike the sheltered inpatient, the outpatient usually must carry on with the demands of day-to-day living. This report will focus on the presentation and management of chronic pain in one ambulatory setting—the physician's office. It uses the findings of the National Ambulatory Medical Care Survey (NAMCS), an annual sample survey of office-based physicians conducted from 1973 through 1981 by the National Center for Health Statistics. Its data base is composed of 72,374,000 chronic pain visits made to the offices of non-Federal, office-based physicians practicing in the coterminous United States over the 2-year span from January 1980 through December 1981. A chronic pain visit is distinguished by the following characteristics:

- The condition under treatment was a problem of 3 months' duration or longer (subitems 1 and 2 of item 7 on the data collection form, figure 1).
- The most important reason the patient gave for visiting the physician was a complaint or symptom of pain (item 6a, figure 1).

It is readily acknowledged that, with its focus on a first-listed pain symptom, this type of analysis does not account for all the chronic pain met with in office practice. For example, it patently excludes the visits at which chronic pain appeared as a second- or third-listed reason for visiting the physician (item 6b, figure 1). Inclusion of these visits, while probably increasing the data base by about 40 percent, would have obscured direct correlations between the pain symptom and other aspects of office-based care, such as the physician's diagnosis and treatment mechanisms.

The data presented here are estimates, based on a sample of office visits rather than the actual number, and thus are subject to sampling variability. The smaller an estimate, or any percent or rate based on that estimate, the more imprecise it is likely to be. An asterisk preceding any estimate indicates that it exceeds 30 percent relative standard error. Guidelines for judging the precision of estimates are provided in the Technical

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

C 549400

# PATIENT RECORD
# NATIONAL AMBULATORY MEDICAL CARE SURVEY

**1. DATE OF VISIT** — Month / Day / Year

**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**

notes at the end of the report, along with a brief description of the survey design.

## Data highlights

Of the 72,374,000 chronic pain visits that form the data base for this report, all but a handful were motivated by the 25 complaints or symptoms listed in table 1. A dominant 52 percent of the visits were caused by the first five symptoms on the list: back pain, headache, chest pain, abdominal pain, and knee pain. These five symptoms led the list for both male and female sufferers. Their relative proportions, however, varied between the sexes (figure 2). Headache, for example, was nearly twice as evident at chronic pain visits made by female patients, while back and chest pain were clearly more troublesome among males.

Tables 2 and 3 direct attention to the impairments associated with chronic pain symptoms, as the principal (first-listed) diagnoses rendered by the attending physicians. From the pain symptoms listed in table 1, it comes as no surprise that by far the largest proportion (34 percent) of these impairments were diseases of the musculoskeletal system. Indeed, a dominant 64 percent of all chronic pain visits fell into only four diagnostic groups:

| *Diagnostic group* | *Chronic pain visits* Percent distribution |
|---|---|
| Musculoskeletal disease | 34.0 |
| Circulatory disease | 12.7 |
| Digestive disease | 8.4 |
| Injuries | 8.4 |

**Table 1. Number of chronic pain visits, and percent distribution and cumulative distribution of chronic pain visits by the 25 pain symptoms that most frequently motivated the visit: United States, 1980 and 1981**

| Rank | Pain symptoms most frequently motivating chronic pain visits | Chronic pain visits | | Rank | Pain symptoms most frequently motivating chronic pain visits | Chronic pain visits | |
|---|---|---|---|---|---|---|---|
| | | Number in thousands | | | | Percent distribution | Cumulative distribution |
| ... | All patients | 72,374 | | 12 | Stomach pain | 2.8 | 77.8 |
| | | Percent distribution | Cumulative distribution | 13 | Earache | 2.7 | 80.5 |
| ... | All patients | 100.0 | ... | 14 | Pain, site not referable to a specific body system[1] | 2.6 | 83.1 |
| 1 | Back pain (upper or lower) | 17.8 | 17.8 | 15 | Hip pain | 2.5 | 85.6 |
| 2 | Headache | 11.5 | 29.3 | 16 | Foot and toe pain | 2.4 | 88.0 |
| 3 | Chest pain | 9.3 | 38.6 | 17 | Hand and finger pain | 1.6 | 89.6 |
| 4 | Abdominal pain | 7.6 | 46.2 | 18 | Painful urination | 1.6 | 91.2 |
| 5 | Knee pain | 6.0 | 52.2 | 19 | Arm pain | 1.3 | 92.5 |
| 6 | Shoulder pain | 4.3 | 56.5 | 20 | Eye pain | 1.0 | 93.5 |
| 7 | Leg pain | 4.1 | 60.6 | 21 | Breast pain | 0.7 | 94.2 |
| 8 | Neck pain | 4.0 | 64.6 | 22 | Pelvic pain | 0.7 | 94.9 |
| 9 | Generalized pain, site unspecified | 3.6 | 68.2 | 23 | Ankle pain | 0.7 | 95.6 |
| 10 | Throat pain | 3.5 | 71.7 | 24 | Elbow pain | 0.7 | 96.3 |
| 11 | Pain of unspecified joints | 3.3 | 75.0 | 25 | Wrist pain | *0.6 | 96.9 |
| | | | | ... | Other chronic pain symptoms | 3.1 | 100.0 |

[1] Rib pain, side or flank pain, groin pain, and facial pain.

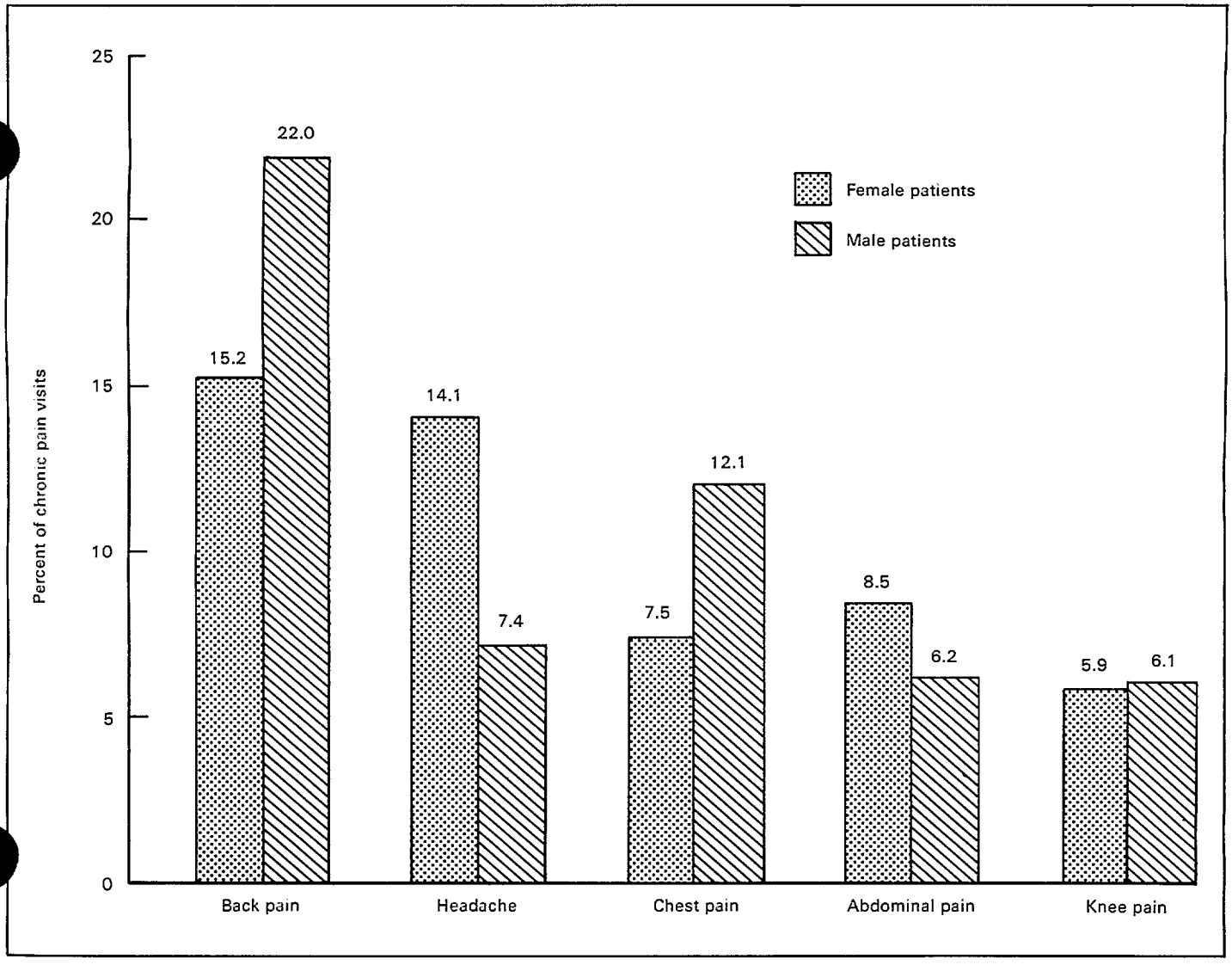


**Figure 2. Percent of chronic pain visits for the 5 most frequent symptoms, according to sex of patient: United States, 1980 and 1981**

**Table 2. Number of chronic pain visits, and percent distribution and cumulative distribution of chronic pain visits, by the 25 principal (first-listed) diagnoses most frequently associated with the visits: United States, 1980 and 1981**

| *Rank* | *Most common principal diagnoses and ICD–9–CM code*[1] | *Chronic pain visits* | | |
|---|---|---|---|---|
| | | Number in thousands | | |
| ... | All diagnoses | 72,374 | | |
| | | Percent distribution | Cumulative distribution | |
| ... | All diagnoses | 100.0 | ... | |
| 1 | Osteoarthrosis and allied disorders 715 | 6.0 | 6.0 | |
| 2 | Essential hypertension 401 | 4.1 | 10.1 | |
| 3 | Other and unspecified disorders of back 724 | 4.0 | 14.1 | |
| 4 | Other and unspecified arthropathies 716 | 3.8 | 17.9 | |
| 5 | Rheumatoid arthritis and other inflammatory polyarthropathies 714 | 3.1 | 21.0 | |
| 6 | Sprains and strains, other and unspecified parts of back 847 | 3.1 | 24.1 | |
| 7 | Intervertebral disc disorders 722 | 3.1 | 27.2 | |
| 8 | Other forms of chronic ischemic heart disease 414 | 2.6 | 29.8 | |
| 9 | Peripheral enthesiopathies and allied syndromes 726 | 2.5 | 32.3 | |
| 10 | Spondylosis and allied disorders 721 | 2.5 | 34.8 | |
| 11 | Other disorders of soft tissue 729 | 2.3 | 37.1 | |
| 12 | Sprains and strains, sacroiliac region 846 | 2.0 | 39.1 | |
| 13 | Symptoms involving head and neck 784 | 2.0 | 41.1 | |
| 14 | Functional digestive disorders, not elsewhere classified 564 | 1.7 | 42.8 | |
| 15 | Migraine 346 | 1.4 | 44.2 | |
| 16 | Angina pectoris 413 | 1.4 | 45.6 | |
| 17 | Pharyngitis 462 | 1.3 | 46.9 | |
| 18 | Suppurative and unspecified otitis media 382 | 1.3 | 48.2 | |
| 19 | Neurotic disorders 300 | 1.2 | 49.4 | |
| 20 | Other symptoms involving abdomen and pelvis 789 | 1.2 | 50.6 | |
| 21 | Special symptoms or syndromes, not elsewhere classified 307 | 1.1 | 51.7 | |
| 22 | Chronic sinusitis 473 | 1.0 | 52.7 | |
| 23 | Other disorders of synovium, tendon, and bursa 727 | 1.0 | 53.7 | |
| 24 | Other and unspecified disorders of joint 719 | 1.0 | 54.7 | |
| 25 | Gastritis and duodenitis 535 | 0.9 | 55.6 | |

[1]Terminology and codes are those of the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM).

**Table 3. Number of chronic pain visits, and percent distribution of chronic pain visits by the principal diagnoses associated with each: United States, 1980 and 1981**

| *Diagnostic group and ICD–9–CM code*[1] | *Chronic pain visits* | *Diagnostic group and ICD–9–CM code*[1] | *Chronic pain visits* |
|---|---|---|---|
| | Number in thousands | | Percent distribution |
| All diagnoses | 72,374 | Diseases of the circulatory system 390–459 | 12.7 |
| | Percent distribution | Essential hypertension 401 | 4.1 |
| All diagnoses | 100.0 | Ischemic heart disease 410–414 | 4.5 |
| Infectious and parasitic diseases 001–139 | 0.7 | Diseases of the respiratory system 460–519 | 6.1 |
| Neoplasms 140–239 | 1.9 | Diseases of the digestive system 520–579 | 8.4 |
| Endocrine, nutritional, and metabolic diseases and immunity disorders 240–279 | 1.8 | Diseases of the genitourinary system 580–629 | 6.2 |
| Diseases of endocrine glands 240–259 | 1.0 | Diseases of the skin and subcutaneous tissue 680–709 | 1.1 |
| Mental disorders 290–319 | 3.1 | Diseases of the musculoskeletal system and connective tissue 710–739 | 34.0 |
| Nonpsychotic mental disorders 300–319 | 3.0 | Arthropathies and related disorders 710–719 | 13.0 |
| Diseases of the nervous system and sense organs 320–389 | 6.5 | Symptoms, signs, and ill-defined conditions 780–799 | 5.6 |
| Diseases of the central nervous system 320–349 | 1.9 | Injury and poisoning 800–999 | 8.4 |
| Eye disorders 360–379 | 1.1 | Other and unknown | 3.5 |
| Otitis media 382 | 1.3 | | |

[1]Based on principal (first-listed) diagnoses classified by the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM).

Although most chronic pain can be readily traced to somatic disease or injury, it is also instructive to consider the 9 percent of chronic pain visits that were not clearly linked to a known physiological impairment. Specifically, these were visits assigned by the physician to the diagnostic classes Mental disorders or Symptoms, signs, and ill-defined conditions. This psychosomatic/symptomatic proportion varied considerably, depending on the pain symptom under study. For example, it was well below average for musculoskeletal symptoms such as back or knee pain (2 percent or less), and most pronounced

among three nonmusculoskeletal complaints—chest pain (14 percent), abdominal pain (15 percent), and headache (a sharply prominent 33 percent). It is illustrative that of the six specific diagnoses most frequently associated with chronic headache, three belonged to this psychosomatic/symptomatic category (table 4).

The 72,374,000 visits chiefly motivated by chronic pain produced an average rate of 62 chronic pain visits per 1,000 office visits. The extent to which this average rate fluctuated with patient age, sex, race, and Hispanic origin is shown in table 5.

The findings reveal that chronic pain visits were most frequent among middle-aged patients in the age-group 45–64 years, increasing in that interval to a rate of about 95 per 1,000 office visits. The mean patient age at chronic pain visits was about 50 years, exceeding by 11 years the mean of 39 years found for all office patients. In mean age and average rate per 1,000 office visits, females presenting chronic pain did not differ much from their male counterparts. However, though their average visit rates were about the same, there were important rate differences between the sexes at two points along the age continuum, a finding made graphically apparent in figure 3. One of these points is the age interval from the 25th through the 44th year, during which time the male rate of chronic pain visits significantly exceeded the female rate. The chronic impairments chiefly responsible for this disparity were injuries (markedly more prevalent among males of this age than females) and musculoskeletal disease (which, largely in the form of rheumatoid arthritis, made an earlier appearance among males than among females) (table 6). Among patients aged 65 years and over, on the other hand, it is the female rate of chronic pain visits that somewhat exceeds the male rate. In large part, this is due to the fact that musculoskeletal disease—notably, osteoporosis and the osteoarthropathies—persists at a higher level of activity among older females than among older males (table 6).

Gender and age differences are also apparent in the presence of psychosomatic/symptomatic pain (table 6). It is noteworthy that this kind of pain was most evident among patients under 45 years of age and was more often presented by female patients than by males. It was most apparent among female patients in their 25th through 44th year, where it accounted for 17 percent of their chronic pain visits.

The chronic pain visit rates for black and Hispanic patients were modestly higher than those found among their white or non-Hispanic counterparts (table 5). The reasons for these disparities are open to conjecture, but they may lie partly in the findings that black office patients suffered more frequently than white patients from injuries and circulatory diseases, while Hispanic patients seen in the doctor's office suffered somewhat more than non-Hispanic patients from the musculoskeletal diseases. Neither of these minority groups exceeded the average in their presentation of psychosomatic/symptomatic pain.

A study of the forms of treatment applied in the management of chronic pain can be helpful in understanding the nature

**Table 4. Percent distribution of visits for chronic headache by the 6 principal diagnoses most frequently associated with it: United States, 1980 and 1981**

| *Principal diagnoses and ICD–9–CM codes*[1] *most frequently associated with visits for chronic headache* | | *Visits for chronic headache* |
|---|---|---|
| | | Percent distribution |
| All diagnoses | | 100.0 |
| Essential hypertension | 401 | 20.4 |
| Symptoms involving head and neck | 784 | 15.8 |
| Migraine | 346 | 11.8 |
| Special (psychopathological) symptoms or syndromes, not elsewhere classified | 307 | 8.6 |
| Chronic sinusitis | 473 | 5.8 |
| Neurotic disorders | 300 | *3.8 |
| Cumulative subtotal | | 66.2 |

[1]Based on *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM).

**Table 5. Number of chronic pain visits, and percent distribution and number of chronic pain visits per 1,000 office visits by selected characteristics: United States, 1980 and 1981**

| *Patient characteristic* | *Chronic pain visits* | |
|---|---|---|
| | Number in thousands | Number per 1,000 office visits |
| All patients | 72,374 | 62 |
| | Percent distribution | |
| All patients | 100.0 | 62 |
| AGE | | |
| Under 15 years | 5.4 | 18 |
| 15–24 years | 7.0 | 31 |
| 25–44 years | 27.0 | 63 |
| 45–64 years | 34.9 | 95 |
| 65 years and over | 25.7 | 89 |
| 65–74 years | 15.5 | 90 |
| 75–84 years | 8.6 | 92 |
| 85 years and over | 1.5 | 77 |
| SEX | | |
| Female | 60.7 | 63 |
| Male | 39.3 | 62 |
| SEX AND AGE | | |
| Female | | |
| Under 15 years | 3.0 | 21 |
| 15–24 years | 4.4 | 30 |
| 25–44 years | 15.7 | 55 |
| 45–64 years | 21.0 | 97 |
| 65 years and over | 16.6 | 95 |
| Male | | |
| Under 15 years | 2.4 | 15 |
| 15–24 years | 2.6 | 35 |
| 25–44 years | 11.3 | 79 |
| 45–64 years | 13.9 | 93 |
| 65 years and over | 9.1 | 81 |
| RACE[1] | | |
| White | 86.6 | 60 |
| Black | 12.6 | 82 |
| HISPANIC ORIGIN | | |
| Hispanic | 6.0 | 81 |
| Non-Hispanic | 94.0 | 61 |

[1]Because of their very minor representation in the data base (0.9 percent), other races are omitted from this study.

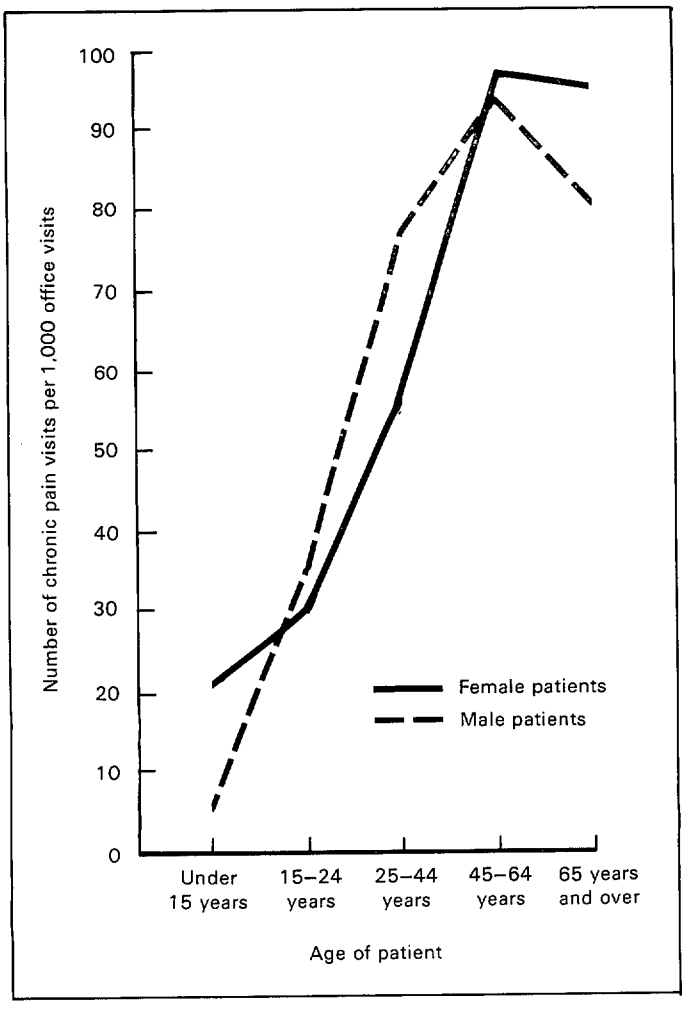


**Figure 3. Number of chronic pain visits per 1,000 office visits by sex and age of patient: United States, 1980 and 1981**

and effects of this kind of pain. Clearly, the use of drugs was the therapeutic approach most frequently documented. At 72 percent of chronic pain visits, one or more drugs were ordered or provided (table 7), averaging about two drugs per visit. Most of the drugs (for example, antacids, vasodilators, anti-inflammatory agents, and muscle relaxants) were not aimed directly at conquest of pain but, rather, at the treatment of its cause or, as in the case of psychotropic drugs, at the relief of its effects.

Table 8 documents the use of analgesic agents, the drugs aimed directly at pain reduction. By dividing the analgesic class into its opioid and nonopioid subclasses, the findings support inferences about the severity of the chronic pain encountered in office practice. (It is assumed that opioids are most effective for relieving pain that is moderate to severe,

**Table 7. Percent of chronic pain visits and of all office visits, by selected classes of agents used in drug therapy: United States, 1980 and 1981**

| Drug class | Drug visits[1] | |
|---|---|---|
| | *Percent of chronic pain visits* | *Percent of all office visits* |
| All drug classes | 72.0 | 62.0 |
| Autonomic drugs | 9.2 | 3.7 |
| Cardiovascular-renal drugs | 30.3 | 16.6 |
| Analgesic agents | 34.4 | 8.8 |
| Psychotropic drugs[2] | 11.9 | 6.0 |
| Hormones | 14.2 | 8.3 |
| Adrenal corticosteroids | 8.0 | 2.9 |
| Gastrointestinal drugs | 8.2 | 3.6 |

[1]Visits at which 1 or more members of a drug class were ordered or provided.
[2]Includes antianxiety agents, sedatives, hypnotics, antidepressants, and antipsychotic drugs.

**Table 6. Number of chronic pain visits by sex and age of patient, and percent distribution of chronic pain visits by associated diagnoses, according to sex and age of patient: United States, 1980 and 1981**

| Diagnostic group and ICD–9–CM code[1] | Chronic pain visits | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Female patients | | | | Male patients | | | |
| | *All ages* | *Under 45 years* | *45–64 years* | *65 years and over* | *All ages* | *Under 45 years* | *45–64 years* | *65 years and over* |
| | Number in thousands | | | | | | | |
| All principal diagnoses | 43,945 | 16,372 | 15,193 | 12,020 | 28,429 | 11,771 | 10,087 | 6,570 |
| | Percent distribution | | | | | | | |
| All principal diagnoses | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Neoplasms 140–239 | 1.6 | *1.3 | *2.5 | *1.1 | 2.4 | *0.5 | *2.2 | *6.2 |
| Mental disorders 290–319 | 4.0 | 6.4 | 3.4 | *1.6 | 1.7 | *3.0 | *1.2 | *0.3 |
| Diseases of the nervous system and sense organs 320–389 | 6.6 | 10.3 | 4.7 | 4.2 | 6.2 | 9.7 | *4.1 | *3.2 |
| Diseases of the circulatory system 390–459 | 12.2 | 4.3 | 13.9 | 21.3 | 13.4 | 4.0 | 15.7 | 26.9 |
| Diseases of the respiratory system 460–519 | 6.0 | 9.3 | 5.3 | *2.5 | 6.2 | 8.0 | *3.6 | 7.0 |
| Diseases of the digestive system 520–579 | 7.9 | 9.0 | 8.2 | 6.1 | 9.1 | 9.0 | 9.2 | 9.4 |
| Diseases of the genitourinary system 580–629 | 7.7 | 14.1 | 4.3 | *3.4 | 3.9 | 5.4 | *2.3 | *4.0 |
| Diseases of the musculoskeletal system and connective tissue 710–739 | 34.1 | 20.6 | 40.2 | 46.0 | 33.8 | 31.2 | 40.4 | 28.6 |
| Symptoms, signs, and ill-defined conditions 780–799 | 6.0 | 9.4 | 4.4 | *3.6 | 4.9 | 5.9 | *4.1 | *4.3 |
| Injury and poisoning 800–999 | 7.0 | 9.6 | 6.7 | 4.1 | 10.5 | 14.6 | 9.9 | *4.3 |
| Other and unknown | 6.9 | 5.7 | 6.4 | 6.1 | 7.9 | 8.7 | 7.3 | 5.7 |

[1]Based on *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM).

**Table 8. Number of chronic pain visits by patient characteristics, most frequent pain symptoms, and selected principal diagnoses, and percent of chronic pain visits that involved the use of 1 or more analgesic agents or 1 or more psychotropic drugs, by patient characteristics, most frequent pain symptoms, and selected principal diagnoses: United States, 1980 and 1981**

| Patient characteristic, most frequent pain symptom, and diagnostic group | Chronic pain visits | Analgesic visits[1] | | | Psychotropic visits:[2] |
|---|---|---|---|---|---|
| | | Percent of chronic pain visits | Opioid proportion | Nonopioid proportion | Percent of chronic pain visits |
| | Number in thousands | Percent of analgesics | | | |
| All chronic pain visits | 72,364 | 34.4 | 26.9 | 73.1 | 11.9 |
| PATIENT CHARACTERISTIC | | | | | |
| Age | | | | | |
| Under 45 years | 28,503 | 26.6 | 35.5 | 64.5 | 10.1 |
| 45–64 years | 25,281 | 38.1 | 27.3 | 72.7 | 13.8 |
| 65 years and over | 18,590 | 41.4 | 18.0 | 82.0 | 12.1 |
| Sex | | | | | |
| Female | 43,945 | 35.5 | 26.7 | 73.3 | 13.4 |
| Male | 28,429 | 32.8 | 27.4 | 72.6 | 9.6 |
| Race[3] | | | | | |
| White | 62,647 | 33.7 | 24.9 | 75.1 | 12.0 |
| Black | 9,097 | 38.2 | 38.6 | 61.4 | 12.1 |
| Hispanic origin | | | | | |
| Hispanic | 4,310 | 37.5 | *19.2 | 80.8 | *18.2 |
| Non-Hispanic | 68,064 | 34.2 | 27.5 | 73.4 | 11.5 |
| MOST FREQUENT PAIN SYMPTOM | | | | | |
| Back pain | 12,899 | 46.7 | 30.8 | 69.2 | 12.8 |
| Headache | 8,297 | 21.9 | 54.7 | 45.3 | 32.8 |
| Chest pain | 6,762 | 16.6 | *23.1 | 76.9 | 14.6 |
| Abdominal pain | 5,518 | 12.0 | *56.2 | 43.7 | 11.5 |
| Knee pain | 4,321 | 50.4 | *9.1 | 90.9 | *4.3 |
| DIAGNOSTIC GROUP (SELECTED) | | | | | |
| Neoplasms | 1,402 | 34.5 | *70.0 | *30.0 | *7.7 |
| Mental disorders | 2,257 | 20.5 | *55.7 | *44.3 | 61.8 |
| Diseases of the nervous system and sense organs | 4,670 | 17.9 | *44.1 | 55.9 | 13.7 |
| Diseases of the circulatory system | 9,193 | 20.1 | *20.6 | 79.4 | 14.9 |
| Diseases of the respiratory system | 4,396 | *10.2 | *39.6 | *60.4 | *6.1 |
| Diseases of the digestive system | 6,053 | 12.0 | *43.8 | *56.2 | 10.2 |
| Diseases of the genitourinary system | 4,480 | 19.8 | *48.2 | 51.8 | *3.3 |
| Diseases of the musculoskeletal system | 24,625 | 60.0 | 20.3 | 59.7 | 9.5 |
| Symptoms, signs, and ill-defined conditions | 4,014 | 22.5 | 54.8 | 45.2 | 20.5 |
| Injury and poisoning | 6,074 | 34.2 | 28.2 | 71.8 | 7.8 |

[1]Visits at which 1 or more analgesic agents were ordered or provided. Included in the opioid proportion are all opioid-nonopioid combinations.
[2]Visits at which 1 or more psychotropic drugs were ordered or provided. The psychotropic category includes antianxiety agents, sedatives, hypnotics, antidepressants, and antipsychotic drugs.
[3]Because of their very minor representation in the data base, other races are omitted from this study.

while nonopioids are more frequently associated with the treatment of mild to moderate pain.) In ambulatory care, the salutary effects of the opioids must always be weighed against certain of their adverse effects; for example:

- Over the long period required in the management of chronic pain, opioids may create a state of drug dependence or conditioned pain behavior.
  Substance abuse is a more serious threat in outpatient treatment because there are fewer controls over patient compliance with the dosage regimen.
- Fully effective doses of the opioids usually cause a sedation or dulling of mental processes, altering behavior to a degree harmful to the needs of the outpatient, who generally must carry on with the requirements of everyday life.

The findings in table 8 support an approach to analgesic therapy that, in most cases, seems conservative and clinically appropriate; for example:

- An analgesic was ordered at only 1 of every 3 chronic pain visits; an opioid at only 1 in 10.
- While analgesic therapy intensifies in direct proportion to advancing age, the use of opioids shows an opposite tendency, reaching its lowest point among chronic pain sufferers over 64 years of age, the age at which the opioids may produce their most serious adverse effects.

- While musculoskeletal pain accounted for the most liberal use of analgesics, a conservative 60 percent of these were nonopioids.
- The most intensive use of opioids occurs predictably in the treatment of neoplastic pain.
- Gender differences in the use of the analgesics were modest to insignificant.

Some findings, however, evade full explanation; for example:

- The author cannot account for the more intensive use of opioids among black patients. Diagnostic correlates alone are not adequate to explain it.
- A somewhat more marginal application of opioid therapy is its prominent use in the treatment of psychosomatic/symptomatic pain, where it is second in intensity only to the treatment of neoplastic pain. In treating psychosomatic/symptomatic pain (surely the most subjective of the pain symptoms) physicians seem to be taking an indirect approach to dulling the pain by making use of another function of the opioids—their power to suppress the anxiety and apprehension that in turn may intensify the perceived severity of the pain.

Psychotropic agents were utilized at a conservative 12 percent of chronic pain visits (table 8). By far their greater proportion (70 percent) consisted of antianxiety agents, sedatives, and hypnotics. Antidepressants made up 23 percent of their number, while the antipsychotic subclass accounted for a very minor 7 percent.

By their direct alteration of the psychological states associated with the chronic pain, the psychotropics may indirectly perform a function similar to that of the opioids, that is, they may reduce the perceived severity of the pain itself. However, in common with the opioids, they also involve an increased risk of drug dependence, substance abuse, and conditioned pain behavior.

The findings in table 8 reveal a psychotropic usage that was somewhat more intensive for female than for male patients, and more evident among Hispanic than non-Hispanic patients, although because of sampling error much of the latter difference may be more apparent than real.

It was predictable that the most intensive use of psychotropic therapy would occur at chronic pain visits that were associated with psychosomatic/symptomatic pain.

Nondrug therapy was provided or ordered at 52 percent of the chronic pain visits (table 9 and figure 4). Though it was clearly less intensive than the use of drug therapy, it still exceeded by a respectable margin the customary use of nondrug procedures by the office-based physician. Contributing significantly to this heightened tempo of nondrug therapy was an increase in the amount of counseling brought to bear in the treatment of chronic pain and its disruptive effects. For the purpose of this analysis, "counseling" is interpreted as including the following:

- General medical instructions and recommendations.
- Instruction in the proper use of medications.
- Advice regarding diet or dietary habits.
- Advice designed to alter psychological states.

**Table 9. Percent distribution of all office visits and of chronic pain visits by nondrug therapy provided or ordered at the visit: United States, 1980 and 1981**

| *Nondrug therapy provided or ordered* | *All office visits* | *Chron. pain visits* |
|---|---|---|
| | Percent distribution | |
| All treatments[1] | 100.0 | 100.0 |
| None | 53.8 | 48.4 |
| Physiotherapy | 4.8 | 14.5 |
| Office surgery | 7.4 | 2.5 |
| Counseling[2] | 38.1 | 43.9 |
| Other nondrug procedures | 2.9 | 2.5 |

[1]Totals exceed 100.0 because more than 1 procedure could be applied per visit.
[2]Counseling includes general medical instructions and recommendations, advice about diet or dietary habits, and advice designed to alter psychological states or to cope with problems of family relationships and social adjustment.

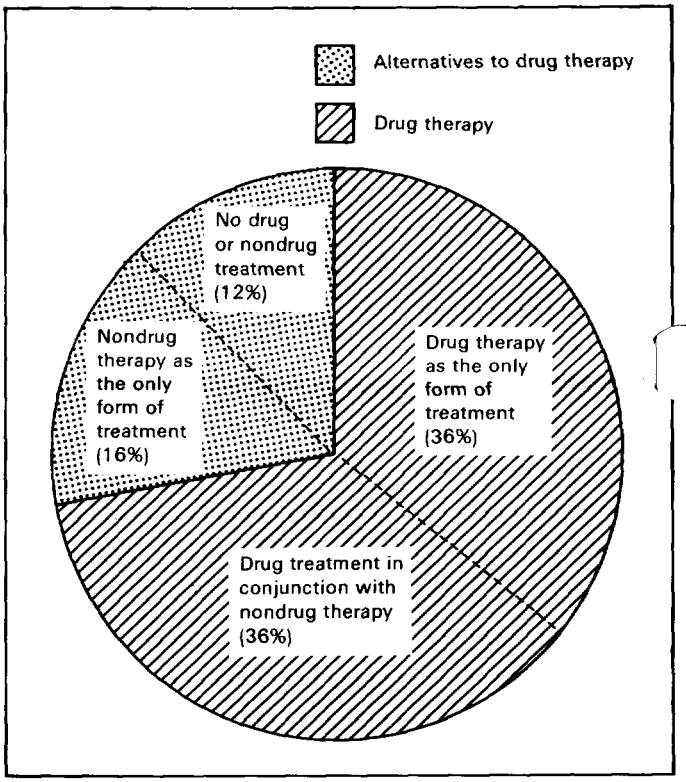


**Figure 4. Percent of chronic pain visits by treatment modalities: United States, 1980 and 1981**

- Advice to help the patient cope with problems of family relationships and social adjustment.

Counseling was applied at an average 44 percent of chronic pain visits (table 9). Its maximum use (80 percent) was apparent at visits for neoplastic pain and for the psychogenic pain associated with a diagnosis of Mental disorder.

It is something of a contretemps to discover that symptomatic pain (that is, pain associated with the diagnosis of Symptoms, signs, and ill-defined conditions) did not elicit above-average counseling effort. For the first time in this analysis, the conceptual unity of psychosomatic/symptomatic pain is no longer operative.

Continuity of care is a hallmark in the management of

**Table 10. Percent of all office visits, chronic pain visits, and acute pain visits by referral status, followup, and mean visit duration: United States, 1980 and 1981**

| Referral status, followup, and mean visit duration | All office visits | Chronic pain visits | Acute pain visits[1] |
|---|---|---|---|
| | | Percent | |
| All visits | 100.0 | 100.0 | 100.0 |
| Patient referred for this visit by another physician? | | | |
| Yes | 4.4 | 4.5 | 6.0 |
| No | 95.6 | 95.5 | 94.0 |
| Followup (selected instructions) | | | |
| No followup | 11.5 | 6.2 | 13.0 |
| Return at specified time | 60.7 | 61.5 | 41.3 |
| Return if needed | 22.7 | 24.5 | 35.2 |
| Telephone followup planned | 3.4 | 4.1 | 7.1 |
| | | Minutes | |
| Mean visit duration[2] | 15.9 | 16.8 | 14.8 |

[1]Visits for a condition with an onset of fewer than 90 days prior to the visit, for which the most important reason for the visit was a complaint or symptom of pain.
[2]Limited to time spent in face-to-face contact between physician and patient.

chronic pain. An estimated 88 percent of chronic pain encounters were return visits to a parent physician. Of the remaining 12 percent, at which the chronic pain patient was being seen by the physician for the first time, roughly 7 percent were the result either of voluntary walk-ins or of referral from sources other than physician colleagues. Only a very minor proportion (4–5 percent) were referred between physicians (table 10). This average referral rate did not vary greatly with the changing, clinical substratum of the pain, the most intensive use of referral (at 6–7 percent of visits) appearing at visits for musculoskeletal pain and for pain of psychosomatic/symptomatic origin.

In their followup instructions at the end of the chronic pain visits (table 10), physicians were substantially more demanding and specific than they were at visits motivated by acute pain (pain with an onset of less than 3 months prior to the visit). Helped to a larger extent by the self-restorative capacities of the body, the physician treating acute pain could place an above-average reliance on the more tentative "telephone followup" or "return if needed." Chronic pain and its associated impairments, on the other hand, offered no such assurance of unassisted remission of symptoms. Both the pain and its impairments required maintenance therapy to keep them at a therapeutically acceptable level, and a rigorous monitoring of a drug regimen that, with its continuing, above-average reliance on opioids and psychotropic drugs, held an increased threat of drug dependence or pain conditioned behavior.

Measured by face-to-face contact between physician and patient, the average chronic pain visit lasted about 17 minutes (table 10). This somewhat exceeded the mean contact time found for all office visits, in large part because of the increased counseling effort typical of the management of chronic pain.

The survey findings presented in tables 11 and 12 document the variations in the management of chronic pain that occurred among different physician specialties. Many of these variations can be explained by the survey findings already presented. Some, however, warrant highlighting or interpretive comment; for example:

- The largest single proportion (one-third) of the 72,374,000 chronic pain visits were made to general or family physicians. Together with internists and orthopedic surgeons, these physicians accounted for 7 of every 10 chronic pain visits.
- As a relative part of a physician's total practice, the involvement with chronic pain reached its highest levels among neurologists, orthopedic surgeons, and internists.
- Considering the disruptive emotional effects potential to chronic pain, it is somewhat surprising that the psychiatrist was only minimally active in its treatment.
- Of the chronic pain treated by the neurologist, psychosomatic/symptomatic pain accounted for about one-third—nearly four times the average presence of this kind of pain in office practice. Because this most elusive type of pain is

**Table 11. Percent distribution and number of chronic pain visits per 1,000 office visits by characteristics of the attending physician: United States, 1980 and 1981**

| Physician characteristic | Chronic pain visits | |
|---|---|---|
| | Number in thousands | Number per 1,000 office visits |
| All physicians | 72,374 | 62 |
| | Percent distribution | |
| All physicians | 100.0 | 62 |
| Professional identity | | |
| Doctor of medicine | 91.6 | 61 |
| Doctor of osteopathy | 8.4 | 86 |
| Specialty | | |
| General or family practice | 33.5 | 64 |
| Internal medicine | 23.1 | 116 |
| Pediatrics | 2.4 | 14 |
| General surgery | 5.1 | 59 |
| Obstetrics and gynecology | 3.1 | 20 |
| Orthopedic surgery | 13.8 | 180 |
| Cardiovascular medicine | 1.9 | 91 |
| Dermatology | *0.5 | *8 |
| Urology | 2.2 | 82 |
| Psychiatry | 0.9 | 20 |
| Neurology | 1.8 | 208 |
| Ophthalmology | 1.3 | 14 |
| Otolaryngology | 2.2 | 60 |
| Type of practice | | |
| Solo | 55.1 | 63 |
| Multiple member | 44.9 | 62 |
| Region of practice | | |
| Northeast | 22.6 | 60 |
| North Central | 24.5 | 60 |
| South | 32.8 | 63 |
| West | 20.1 | 68 |

**Table 12. Percent of chronic pain visits by key aspects of its presentation and management and selected physician characteristics: United States, 1980 and 1981**

| Physician characteristic | Chronic pain visits | Visits for psychosomatic or symptomatic pain[1] | Drug visits[2] | Analgesic visits[3] | Opioid or psychotropic visits[4] | Nondrug therapy visits[5] | Counseling visits[6] | New patient visits: Referred by another physician | New patient visits: Walk-in or referred from another source | Mean visit duration[7] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number in thousands | Percent of chronic pain visits | | | | | | | | Minutes |
| All physicians | 72,364 | 8.6 | 72.1 | 34.4 | 21.2 | 51.6 | 43.9 | 4.5 | 7.2 | 16.8 |
| Professional identity | | | | | | | | | | |
| Doctor of medicine | 66,256 | 9.1 | 72.2 | 34.7 | 21.4 | 54.9 | 45.1 | 4.8 | 7.5 | 17.0 |
| Doctor of osteopathy | 6,118 | *4.7 | 71.0 | 31.4 | 18.8 | 77.1 | 30.1 | *1.7 | *4.0 | 14.3 |
| Specialty | | | | | | | | | | |
| General or family practice | 24,265 | 8.6 | 80.7 | 38.1 | 26.8 | 51.6 | 38.4 | *0.5 | 5.7 | 14.4 |
| Internal medicine | 16,721 | 8.8 | 85.6 | 45.5 | 24.4 | 55.7 | 63.4 | 3.8 | 3.7 | 19.8 |
| General surgery | 3,681 | 13.6 | 57.4 | 23.7 | 15.0 | 38.5 | 30.5 | *5.2 | 15.2 | 15.0 |
| Orthopedic surgery | 9,986 | *1.1 | 47.3 | 38.0 | 10.1 | 56.0 | 24.8 | 10.3 | 12.2 | 15.3 |
| Urology | 1,592 | *5.4 | 62.0 | *7.9 | *6.8 | 49.2 | 34.3 | *4.8 | *7.2 | 17.3 |
| Neurology | 1,324 | *32.0 | 70.5 | *29.6 | 43.1 | 47.5 | 43.2 | *21.6 | *7.8 | 27.8 |
| Otolaryngology | 1,561 | *3.5 | 62.1 | *7.3 | *9.4 | 46.6 | 37.9 | *11.8 | *17.4 | 13.7 |

[1]Includes visits associated with a diagnosis in the diagnostic groups Mental disorders or Symptoms, signs, and ill-defined conditions.
[2]Visits at which 1 or more drugs of any kind were ordered or provided.
[3]Visits at which an analgesic agent was ordered or provided.
[4]Visits at which an opioid analgesic or a psychotropic drug was ordered or provided.
[5]Visits at which 1 or more nondrug treatments were provided or ordered.
[6]Counseling includes general medical instructions and recommendations, advice about diet or dietary habits, and advice designed to alter psychological states or to cope with problems of family relationships and social adjustment.
[7]Limited to time spent in face-to-face contact between physician and patient.

the form most frequently referred, it is not surprising that neurologists report a proportion of referred chronic pain visits that exceeds the referral rate for any other specialty. It is also probable that their substantially longer visit durations are at least partly a result of their diagnostic efforts to find a neurological basis for this psychosomatic/symptomatic pain.

- Survey findings are not adequate to describe the use of surgical intervention in the control of recalcitrant pain, but clues to its apparently infrequent utilization probably lie not only in the visits to neurologists but also in the nature and management of the chronic pain presented to the general surgeon.
- Though the two primary-care providers, internists and general (or family) practitioners, agree in their above-average application of drug therapy—including the use of opioid analgesics and psychotropic drugs—internists are markedly more inclined to make use of counseling and to devote more contact time to their chronic pain patients.

Questions, comments, or suggestions for further analysis are encouraged and may be directed to—

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# Technical notes

## urce 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 of which 5,869 were records of chronic pain visits. 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.

**Table I. Approximate relative standard errors of estimated numbers of office visits and chronic pain visits, 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* |
|---|---|
| 50 | 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).

## 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 class name (for example, analgesic visits). Standard errors for estimated percents of visits (or for chronic 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 1.12 (0.75 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 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.

**Table II. Approximate standard errors of percent of estimated numbers of office visits or of chronic-pain visit rates per 1,000 visits: NAMCS, 1980 and 1981**

| *Estimated number of office visits in thousands* | *Estimated percent of office visits or estimated chronic-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).

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### 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 (more than 30-percent relative standard error) |
| # | Figure suppressed to comply with confidentiality requirements |

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