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Utilization of Analgesic Drugs in Office-Based Ambulatory Care: National Ambulatory Medical Care Survey, 1980-81

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Introduction

The purpose of this report is to describe the utilization of analgesic drugs in office-based ambulatory care. The report combines 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. The National Ambulatory Medical Care Survey (NAMCS) is scheduled to take the field again in 1985 and every third year following.

The term *utilization* is limited to the ordering or providing of an analgesic drug by the office-based physician in the course of an office visit. It does not include drugs ordered by phone contact, nor does it attempt to measure ultimate patient compliance with the doctor's instruction.

The drugs described are those classified as *Central Nervous System Drugs: Analgesics and Antipyretics*, according to the American Hospital Formulary Service Classification System.¹ Description centers on drugs of this class that were named by physician respondents in 1980-81. A list of the named analgesics appears in figure 1. Along with all *new* analgesics ordered or provided, the physician also recorded *continued* analgesics if the patient was specifically instructed during the visit to continue the medication. (However, the data base does not distinguish between the new and the continued medication.) The listed agents appear as brand² or generic names, depending on the choice made by the physician in ordering the analgesic. They are divided into two subcategories:³

Opioids: Produce analgesia by their interaction with specific opioid binding sites in the central nervous system. (The terms "opioid" and "opiate" are interchangeable).

- Nonopioids: Do not bind to the opioid receptors. (Indeed, the exact mechanism of their analgesic action remains unknown).

By restricting its scope to an arbitrarily selected class of analgesics this study understates the overall use of pain-relieving drugs in office practice. For example, it does not account for the presence of analgesic ingredients in drugs primarily classified under other rubrics, as in the following cases:

<i>Drug class</i>	<i>Members with analgesic ingredients</i>
Psychotropic agents	such as Equagesic, Fiorinal
Skeletal muscle relaxants	such as Parafon forte, Soma compound
Antihistamines	such as Synalgos
Antitussives	codeine combinations
Antidiarrheal agents	opium combinations

Because the estimates presented in this report are based on a sample of office visits and drug mentions rather than the entire universe of visits and mentions, they are subject to sampling variability. The technical notes at the end of the report provide a brief description of the sample design, an explanation of sampling errors, and guidelines for judging the precision of the estimates.

¹*American Hospital Formulary Service Classification System and Therapeutic Category Codes*; Copyright, 1980, American Society of Hospital Pharmacists, Inc.

²The use of trade names is for identification only and does not imply endorsement by the Public Health Service of the U.S. Department of Health and Human Services.

³Based on *AMA Drug Evaluations, Fifth Edition*; Chapter 4: American Medical Association, 1983.

Opioids			Nonopioids			
Aceta w/codeine	Dilaudid	pentazocine	Aceta	Bufferin	Gemnisyn	phenylbutazone
acetaminophen	Dolacet	Percocet-5	acetaminophen	Bufferin arthritis	ibuprofen	alka
w/codeine	Dolene	Percodan	Acetycol	strength	Indocin	Ponstel
Anexsia-D	Dolene	Percodan-demi	Aluprin	Butazolidin	indomethacin	Presalin
Anexsia w/codeine	compound-65	Phenaphen	Amphenol	Butazolidin alka	Liquiprin	SK-APAP
Anodynos-DHC	Dolophine	w/codeine	Anacin	Cama	Magan	sodium
APAP w/codeine	Dovaphen	propoxyphene	Anaprox	Capron	Measurin	salicylate
aspirin, phenacetin,	Duradyne DHC	propoxyphene	APAP	choline salicylate	Meclomen	sulindac
caffeine, codeine	Empirin w/codeine	compound 65	aspirin, phenacetin,	Cirin	Mobidin	Suppap
Ascriptin w/codeine	Empirin compound	propoxyphene	caffeine	Clinoril	Motrin	Tandearil
aspirin w/codeine	w/codeine	w/acetaminophen	caffeine compound	colchicine	Nalfon	Tempra
B&O supprettes	Empracet	propoxyphene	Arthralgen	Colsalide	Naprosyn	Thiolate
Capital w/codeine	innovar	w/APAP	Arthritis pain	Dasin	naproxen	Thioral
Christodyne-DHC	Lévo-dromoran	SK-65	formula	Datril	Neopap	Thiosal
Codap	Liquix C	SK-65 APAP	Arthrolate	Dimindol	Norgesic	Tolectin
codeine	Mepergan	SK-65 compound	Arthropan	Disalcid	Os-cal-gesic	tolmetin
Copavin	meperidine	Stadol	Ascriptin	Ecotrin	Oxalid	Trigesic
Damason-P.	methadone	Talwin	Aspergum	Empirin	P-A-C compound	Trilisate
Darvocet-N	morphine	Talwin compound	aspirin	Empirin compound	Pabalate	Tylenol
Darvon	Nubain	Tylenol	aspirin compound	Esgic	Pain reliever-E	Valacet
Darvon compound	opium and	w/codeine	Azolid	Excedrin	Persistin	Vanquish
Darvon w/A.S.A.	belladonna	Tylox	B-A	Febrinol	Phenaphen	Zactirin
Darvon-N	opium extract	Unigesic-A	Buffadyne	Fever reducer	phenylbutazone	Zomax
Darvon-N w/A.S.A.	P-A-C compound	Vicodin		St. Joseph		
Demerol	w/codeine	Wygesic				
Demerol-APAP						

NOTES: Included in the category Opioids are all opioid-nonopioid combinations; included in the category Nonopioids are nonopioid-nonopioid combinations.
Drug names are listed in brand or generic form, according to actual survey responses.

Figure 1. Analgesic drugs named by physician respondents: United States, 1980-81

General findings

According to findings from the National Ambulatory Medical Care Survey for 1980 and 1981 combined, an estimated 1,160,922,000 visits were made to physicians who identified themselves as primarily engaged in office-based, patient care practice. Of this total, 717,775,000 (62 percent) were *drug visits*; that is, visits at which one or more of any type of drug was ordered or provided. The total number of drug mentions for the 2-year span amounted to an estimated 1,330,746,000 mentions.

Visits involving the utilization of an inscope analgesic numbered 106,718,000, about 9 percent of the overall number of office visits and about 15 percent of all drug visits. The total number of analgesic drug mentions was 116,641,000. Of these an estimated 31,380,000 (27 percent) were opioids. The remaining 85,261,000 (73 percent) were nonopioids.

Table 1 lists the 25 analgesic products most frequently mentioned. They accounted for virtually nine-tenths of all analgesic mentions. The generic names most frequently represented among these 25 products are shown in the following listing:

Generic name	Number of mentions in thousands
aspirin	28,448
acetaminophen	21,318
codeine	12,794
ibuprofen	11,786
sulindac	6,670
propoxyphene	6,497
naproxen	6,431
indomethacin	6,288
phenylbutazone	4,252
zomepirac	3,495

Table 1. The 25 analgesic drugs most frequently mentioned in office-based practice, by name of drug and number and percent distribution of mentions: United States, 1980-81

R a n k	Name of drug	Number of mentions in thousands	Percent distribution
	All analgesics	116,641	100.0
	25 drugs most frequently mentioned		
1	aspirin (includes A.S.A.)	16,342	14.0
2	Motrin (ibuprofen)	11,786	10.1
3	Tylenol w/codeine (acetaminophen, codeine)	7,746	6.6
4	Tylenol (acetaminophen)	7,086	6.1
5	Clinoril (sulindac)	6,670	5.7
6	Naprosyn (naproxen)	6,431	5.5
7	Indocin (indomethacin)	6,288	5.4
8	Darvocet-N (acetaminophen, propoxyphene)	5,199	4.4
9	Zomax (zomepirac)	3,495	3.0
10	Nalfon (fenopropfen)	3,153	2.7
11	Butazolidin alka (phenylbutazone, aluminum hydroxide, magnesium trisilicate)	3,092	2.7
12	Norgesic (orphenadrine, aspirin, phenacetin, caffeine)	2,691	2.3
13	Empirin w/codeine (aspirin, codeine)	2,519	2.2
14	Ascriptin (aspirin)	2,368	2.0
15	Percodan and Percodan-demi (oxycodone, aspirin)	2,144	1.8
16	Tolectin (tolmetin)	2,077	1.8
17	Demerol (meperidine)	1,703	1.5
18	Talwin (pentazocine)	1,505	1.3
19	Meclomen (meclofenamate)	1,346	1.2
20	Darvon and Darvon-N (propoxyphene)	1,298	1.1
21	Phenaphen w/codeine (acetaminophen, codeine)	1,287	1.1
22	Empirin compound w/codeine (aspirin, codeine)	1,242	1.1
23	Butazolidin (phenylbutazone)	1,160	1.0
24	Bufferin (buffered aspirin)	1,142	1.0
25	Tandearil (oxyphenbutazone)	1,051	0.9

Table 2. Number and percent distribution of analgesic mentions by category of analgesic, according to selected drug dimensions: United States, 1980-81

Selected drug dimensions	Analgesic mentions		
	All analgesics	Opioids	Nonopioids
Number in thousands			
Total mentions	116,641	31,380	85,261
Percent distribution			
	100.0	100.0	100.0
Entry status ¹			
Generic name	19.2	10.1	22.6
Brand name	80.7	89.9	77.3
Prescription status			
Prescription drug	72.8	100.0	62.8
Nonprescription drug	27.2	-	37.1
Federal control status			
Controlled by DEA ²	26.4	100.0	-
Schedule II	5.7	21.1	-
Schedule III	11.9	46.1	-
Schedule IV	8.7	32.4	-
Schedule V	*0.1	*0.4	-
Not controlled	73.5	-	100.0
Composition status			
Single-ingredient drug	74.4	21.2	93.9
Combination drug	25.6	78.8	6.0

¹The form of the drug name (brand or generic) represents the choice of the physician in preparing the order.
²Drug Enforcement Administration.

Drug dimensions

Table 2 describes some key dimensions of the analgesic drugs.

Entry status—In ordering an analgesic, physicians showed a strong tendency to favor brand name choices over their generic counterparts. About 4 of every 5 of the overall class were identified by trade name. The tendency was strongest in the opioid subclass; here, only 1 of every 10 mentions was generically identified.

Prescription status—The utilization of nonprescription drugs, apparent in 27 percent of analgesic mentions, was more than double their proportionate use in overall, office-based drug therapy (12 percent).

Control status—Because of its opioid component, the analgesic family has a substantial proportion of controlled agents among its members. Controlled agents accounted for 26 percent of analgesic mentions, the majority of their number classified in Schedules III and IV. Thus the prescribing physician, faced with the need to moderate pain, also needs to weigh the desired therapeutic effect against the potential hazards of dependence or habituation.

Composition status

The proportionate use of combination products among analgesics (apparent in about 26 percent of mentions) conforms closely to the proportionate use of combinations throughout office-based drug therapy. By far the most common analgesic mixtures involved the combination of an opioid

with a nonopioid, with codeine or propoxyphene appearing as the most common opioid ingredient. Ample support for the use of this type of analgesic combination is provided by the *AMA Drug Evaluations, Fifth Edition*:

The combination of an opiate or opioid with a non-opiate (analgesic-antipyretic) appears to be rational because the mechanism of action of each drug differs and the results of controlled studies have shown that the analgesic effects of the individual drugs are additive. Since the nonopioids have a ceiling analgesic effect and the dosage of opiates should be limited to prevent adverse effects, a combination of this type may provide greater pain relief with a minimum of adverse effects in a convenient form for the patient.⁴

Apparent in only 6 percent of analgesic mentions, the combination of a nonopioid with another nonopioid is manifestly uncommon in the office-based utilization of analgesics, possibly because of the reason stated in *AMA Drug Evaluations, Fifth Edition*: "...it can be concluded that mixtures of analgesic-antipyretic drugs with or without caffeine have not been proved to be superior to optimal doses of their individual components."⁴

Diagnosis

By far the most intensive use of analgesic therapy occurs within two diagnostic groups: "Injuries" and "Diseases of the Musculoskeletal System" (table 3).⁵ This is demonstrated more clearly in the following listing of the specific conditions most frequently associated with analgesic utilization:

<i>Opioid therapy</i>	
Rank	Diagnosis and ICD-9-CM Code ⁵
1	Back sprains and strains 847
2	Intervertebral disc disorders 722
3	Other and unspecified back disorders 724
4	Sprains and strains of the sacroiliac 846
5	Osteoarthritis 715
<i>Nonopioid therapy</i>	
Rank	Diagnosis and ICD-9-CM Code ⁵
1	Osteoarthritis 715
2	Other and unspecified arthropathies 716
3	Peripheral enthesopathies 726
4	Rheumatoid arthritis 714
5	Acute upper respiratory infection 465

In contrast to other drug classes, the rate of analgesic utilization in the category "Symptoms and ill-defined conditions" is relatively higher, documenting the physician's tendency to respond to symptomatic pain in advance of a clearly established diagnosis. However, it would be a mistake to assume that an analgesic is automatically ordered whenever pain appears as a symptom. Indeed, according to another NAMCS study (in preparation), about 70 percent of nearly 70 million newly encountered problems where pain was the chief presenting symptom did not involve the use of an inscope analgesic.

⁴*AMA Drug Evaluations*, op cit, p 101.

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

Table 3. Number of office visits, number of analgesic mentions, and number of mentions per 1,000 visits, by principal diagnosis and problem categories; and percent distribution by opioid and nonopioid mentions, according to principal diagnosis and problem category: United States, 1980-81

Principal diagnosis and problem category	Number of visits in thousands	Analgesic mentions			
		All analgesics		Opioids	Nonopioids
		Number in thousands	Rate per 1,000 visits	Percent of all analgesic mentions	Percent of all analgesic mentions
All principal diagnoses	1,160,922	99,581	86	28.3	71.7
Major diagnostic groups (selected)					
Infectious and parasitic diseases	37,714	2,451	65	21.9	78.1
Neoplasms	30,707	1,300	42	57.0	43.0
Endocrine, nutritional, and metabolic diseases, and immunity disorders	45,371	2,281	50	16.1	83.9
Mental disorders	47,624	1,622	34	50.5	49.5
Diseases of nervous system and sense organs	109,573	4,465	41	43.1	56.9
Diseases of circulatory system	112,344	8,142	72	19.5	80.5
Diseases of respiratory system	146,014	10,255	70	22.3	77.7
Diseases of digestive system	49,080	2,610	53	44.2	55.8
Diseases of genitourinary system	68,504	3,394	50	52.5	47.5
Diseases of skin and subcutaneous tissue	69,421	1,303	19	39.5	60.5
Diseases of musculoskeletal system	79,206	37,208	470	18.9	81.0
Symptoms, signs, and ill-defined conditions	38,526	3,261	85	39.4	60.6
Injury and poisoning	94,723	16,561	175	38.1	61.9
Normal pregnancy	51,307	*205	*4
Problem categories					
Acute problem	422,223	48,386	115	29.0	71.0
Chronic problem, routine	325,791	25,066	77	24.2	75.8
Chronic problem, flareup	106,393	16,239	153	27.9	72.1
Postsurgery or postinjury	101,792	7,125	70	41.8	58.2
Nonillness care	204,722	2,765	14	*20.6	79.4

*Includes only those analgesics ordered or provided for the principal diagnosis, excluding some 17,060,000 mentions where analgesics were utilized for "all other reasons."

Table 4. Number of office visits, number of analgesic mentions, and number of mentions per 1,000 visits, by age and sex of patient; and percent distribution by opioid and nonopioid mentions, according to age and sex of patient: United States, 1980-81

Age and sex of patient	Number of visits in thousands	Analgesic mentions			
		All analgesics		Opioids	Nonopioids
		Number in thousands	Rate per 1,000 visits	Percent of all analgesic mentions	Percent of all analgesic mentions
All visits	1,160,922	116,641	100	26.9	73.1
Age					
Under 15 years	216,128	9,310	43	9.8	90.2
15-24 years	160,795	10,044	62	34.2	65.8
25-44 years	310,384	28,899	93	39.0	61.0
25-29 years	97,109	7,159	74	42.6	57.4
30-34 years	86,896	7,421	85	37.4	62.6
35-39 years	69,611	7,053	101	37.8	62.2
40-44 years	56,768	7,266	128	38.3	61.7
45-64 years	265,700	36,838	139	26.3	73.7
45-49 years	56,265	6,459	115	29.6	70.4
50-54 years	68,032	9,907	146	30.9	69.1
55-59 years	70,825	10,390	147	24.2	75.8
60-64 years	70,578	10,081	143	21.7	78.3
65 years and over	207,915	31,550	152	19.3	80.7
65-69 years	67,884	9,549	141	22.8	77.2
70-74 years	57,577	8,925	155	19.5	80.5
75-79 years	43,309	6,931	160	15.2	84.8
80 years and over	39,145	6,145	157	17.9	82.1
Sex					
Female	699,718	69,856	100	26.7	73.3
Male	461,204	46,785	101	27.2	72.8

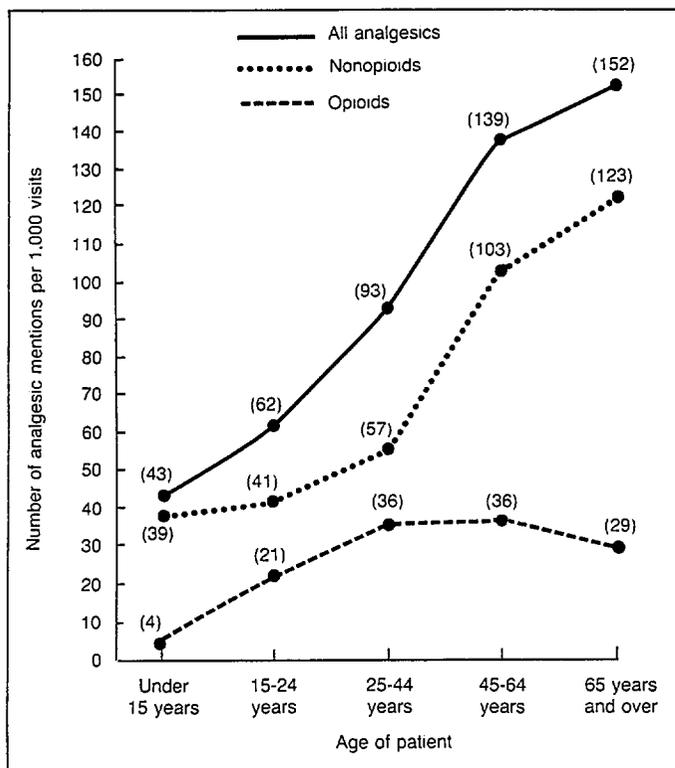


Figure 2. Analgesic utilization rates by category of analgesic and age of patient: United States, 1980-81

Patient characteristics

From its lowest rate, for patients under 15 years of age, the overall utilization of analgesics generally increased in each successive age group throughout the age spectrum, the sharpest acceleration occurring in the age interval from the 25th through the 64th year (table 4 and figure 2). It is the utilization rates for the nonopioids that chiefly determine the shape of the overall curve; these rates, in their turn, largely reflected the strong preference for the nonopioids in the treatment of the musculoskeletal diseases. Opioid utilization, probably due chiefly to the above-average preference for opioids in the treatment of injuries, rises steadily up to the 45th year (the injury-prone period), levels off in the 45-to-64 age group, and probably declines slightly in the later years of life.

Although the average overall rates of analgesic utilization were the same for both male and female patients (table 4), there were marked differences between the sexes in the age intervals at which the analgesic therapy was most intensely applied (table 5 and figure 3). The male rate, substantially higher in the age interval 15-44 years, results chiefly from the fact that the proportion of visits for injuries in this age group was almost twice as great among male patients as among females. The female rate, higher among patients age 45 years and over, largely reflects a growing proneness toward musculoskeletal disease that is proportionately greater among older females than among their male counterparts.

Table 5. Number of office visits, number of analgesic mentions, and number of mentions per 1,000 visits, by selected patient characteristics; and percent distribution by opioid and nonopioid mentions, according to selected patient characteristics: United States, 1980-81

Selected patient characteristic	Number of visits in thousands	Analgesic mentions			
		All analgesics		Opioids	Nonopioids
		Number in thousands	Rate per 1,000 visits	Percent of all analgesic mentions	Percent of all analgesic mentions
All visits	1,160,922	116,641	100	26.9	73.1
Sex and age					
Female					
Under 15 years	102,633	4,394	43	*8.0	92.0
15-24 years	107,276	5,525	52	37.4	62.6
25-44 years	206,394	16,352	79	39.5	60.5
45-64 years	157,031	22,311	142	26.4	73.6
65 years and over	126,383	21,275	168	18.1	81.9
Male					
Under 15 years	113,495	4,916	43	*11.4	88.6
15-24 years	53,519	4,519	84	30.4	69.6
25-44 years	103,990	12,548	121	38.3	61.7
45-64 years	108,668	14,527	134	26.1	73.9
65 years and over	81,532	10,275	126	21.6	78.4
Race ¹					
White	1,037,590	100,634	97	25.5	74.5
Black	110,546	14,784	134	36.4	63.6
Ethnicity					
Hispanic	53,337	6,144	115	25.7	74.3
Not Hispanic	1,107,585	110,497	100	27.0	73.0

¹Excludes about 12,786,000 visits by patients of races other than white or black.

The significantly higher rate among black office patients (table 5) is chiefly related to the finding that black patients suffered proportionately more than white patients from the four conditions that command the highest rates of analgesic use: musculoskeletal diseases, injuries, circulatory diseases, and symptoms and ill-defined conditions.

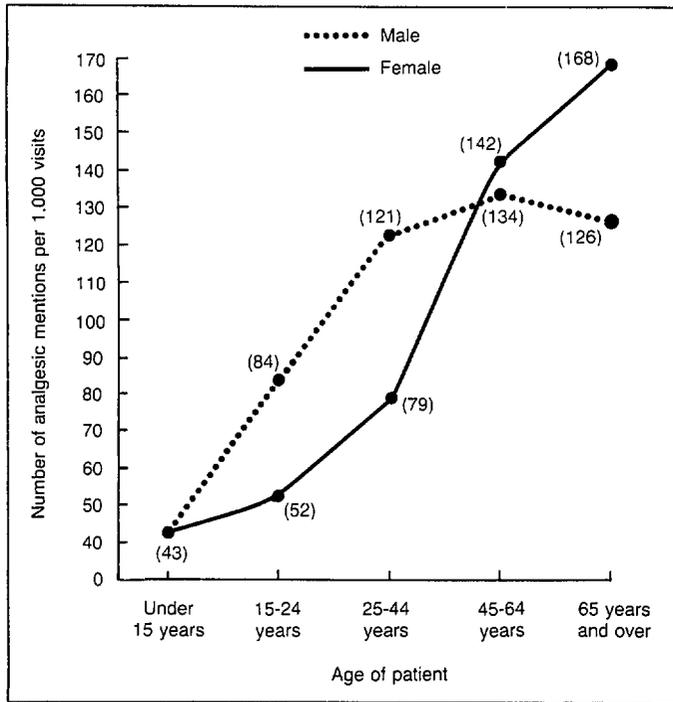


Figure 3. Analgesic utilization rates by sex and age of patient: United States, 1980-81

Physician characteristics

Of the most-visited, office-based specialties, five exceeded the average rate of analgesic utilization (table 6). Ranked by magnitude of rate, these specialties were:

Rank	Specialty
1	Orthopedic surgery
2	Internal medicine
3	Neurology
4	General and family practice
5	Cardiovascular disease

Shifting attention from rate of analgesic utilization to sheer volume of use, it is worthy of note, however, that two primary-care providers, the internist and the general or family practitioner, accounted for fully two-thirds of all analgesic mentions and nearly the same proportion (62 percent) of opioid mentions.

Other visit characteristics

The most conservative utilization of analgesics occurred with new patients (table 7), a pattern common throughout all office-based drug therapy. The most intensive use occurred when a new problem was presented by a patient with whom the doctor already had a clinical relationship. Thus, given what may be the same problem, the physician's decision whether or not to use an analgesic is obviously influenced by familiarity with the patient's history, including possible drug reactions.

The findings in table 8 document the associations of analgesic therapy with the forms of nondrug treatment that most frequently accompanied it. Perhaps most arresting is

Table 6. Number of office visits, number of analgesic mentions, and number of mentions per 1,000 visits, by selected physician characteristics; and percent distribution by opioid and nonopioid mentions, according to selected physician characteristics: United States, 1980-81

Selected physician characteristic	Number of visits in thousands	Analgesic mentions			
		All analgesics		Opioids	Nonopioids
		Number in thousands	Rate per 1,000 visits	Percent of all analgesic mentions	Percent of all analgesic mentions
All office-based physicians	1,160,922	116,641	100	26.9	73.1
Selected specialties					
General and family practice	381,710	51,255	134	27.9	72.1
Internal medicine	144,172	26,252	182	19.8	80.2
Pediatrics	128,762	5,429	42	*10.6	89.4
Obstetrics and gynecology	109,035	2,669	24	38.1	61.9
General surgery	61,013	5,823	95	38.7	61.2
Orthopedic surgery	55,470	12,071	218	26.3	73.7
Cardiovascular disease	14,781	1,887	128	*21.9	78.1
Psychiatry	31,810	*615	*19	*57.6	*42.4
Neurology	6,379	1,117	175	*19.7	80.3
Professional identity					
Doctor of medicine	1,089,638	108,468	100	27.0	73.0
Doctor of osteopathy	71,284	8,173	115	25.3	74.7
Type of practice					
Solo	635,651	63,624	100	27.4	72.6
Multiple member	525,271	53,017	101	26.3	73.7

Table 7. Number of office visits, number of analgesic mentions, and number of mentions per 1,000 visits, by selected visit characteristics; and percent distribution by opioid and nonopioid mentions, according to selected visit characteristics: United States, 1980–81

Selected visit characteristic	Number of visits in thousands	Analgesic mentions			
		All analgesics		Opioids	Nonopioids
		Number in thousands	Rate per 1,000 visits	Percent of all analgesic mentions	Percent of all analgesic mentions
All visits	1,160,922	116,641	100	26.9	73.1
Referral status					
Referred by another physician	51,392	4,513	88	28.9	71.1
Not referred by another physician	1,109,530	112,128	101	26.8	73.2
Patient visit status					
New patient	166,675	15,346	92	31.0	69.0
Old patient	994,247	101,294	102	26.3	73.7
New problem	258,778	31,793	123	26.4	73.6
Old problem	735,469	69,501	94	26.2	73.8
Problem status					
New problem	425,453	47,140	111	27.9	72.1
Return visit for old problem	735,469	69,501	94	26.2	73.8

the broad extent to which drug therapy was the exclusive form of treatment employed. At about one-half of the visits that involved the use of an analgesic—alone or accompanied by agents of other drug classes—there was no concurrent use of any form of nondrug therapy.

Table 8. Number and percent distribution of analgesic visits, by nonmedication therapy: United States, 1980–81

Nonmedication therapy ¹	Analgesic visits ²	
	Number in thousands	Percent distribution
Total visits	106,718	100.0
None	52,070	48.8
Medical counseling	31,454	29.5
Physiotherapy	14,891	14.0
Office surgery	4,178	3.9
Psychotherapy or therapeutic listening	3,557	3.3
Other	12,436	11.7

¹Because it was possible to use more than one form of nonmedication therapy at a given visit, estimates will exceed the totals at the top of the columns.

²An analgesic visit is an office visit at which one or more analgesic agents was utilized.

provided in office practice. Further, when they do use a drug, physicians tend to use more than one. The overall average is about two drugs per drug visit, but larger multiples are not uncommon, especially when the patient suffers from more than one disorder. With co-occurrence the rule rather than the exception, it is instructive to explore the patterns of concomitant utilization of drugs that occurred in the office visits at which an analgesic agent was ordered or provided.

At the 106.7 million visits at which an analgesic agent was utilized, its use (expressed as a percent of these visits) co-occurred most frequently with the use of one or more members of the following ten therapeutic families:

Co-occurring therapeutic family ³	Percent of co-occurrence
Antibiotics	12.2
Diuretics	12.2
Antianxiety agents, sedatives, hypnotics	8.3
Cardiac drugs	6.9
Adrenals	6.6
Antihypertensives	6.4
Gastrointestinal drugs	5.3
Skeletal muscle relaxants	3.9
Antidepressives and antipsychotics	3.4
Expectorants and cough preparations	3.0

³American Hospital Formulary Classification System, op cit.

Co-occurrence

Utilized at 62 percent of all office visits, drug therapy (of all types) is by far the most frequent form of treatment

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 sampling of primary sampling units (PSU's), physicians' practices within PSU's, and patient visits within physicians' practices. The physician sample (5,805 physicians for 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 and eligible participated at a rate of 77.3 percent. Responding physicians completed visit records for a systematic random sample of office visits made during a randomly assigned weekly reporting period. Telephone contacts were excluded. During 1980 and 1981 responding physicians completed 89,447 visit records 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.

Table I. Approximate relative standard errors of estimated numbers of office visits and of drug mentions when drug is listed by product name (for example, Darvon), based on all physician specialties: National Ambulatory Medical Care Survey, 1980-81

<i>Estimated number of office visits or specific drug mentions</i>	<i>Relative standard error</i>
Number in thousands	Percent
*200	*44.8
*400	*31.7
*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).

Sampling errors 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. In this report, any estimate that exceeds a relative standard error of 30 percent is marked with an asterisk. Table I should be used to obtain the relative standard error for aggregates of office visits or for mentions of drugs by specific name (for example, Darvon). Table II should be used to obtain the relative standard error for drug mentions expressed as drug groups (for example, the analgesic drug family).

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

Table II. Approximate relative standard errors of estimated numbers of drug mentions when drugs appear in groups (for example, the analgesic drug family), based on all physician specialties: National Ambulatory Medical Care Survey, 1980-81

<i>Estimated number of grouped drug mentions</i>	<i>Relative standard error</i>
Number in thousands	Percent
*200	*54.2
*400	*38.5
*600	*31.5
*650	*30.0
800	27.3
1,000	24.5
2,000	17.6
5,000	11.6
10,000	8.7
20,000	6.8
50,000	5.3
100,000	4.7
200,000	4.4
500,000	4.2
1,000,000	4.1

Example of use of table: An aggregate estimate of 30,000,000 drug mentions has a relative standard error of 7.0 percent or a standard error of 2,100,000 mentions (7.0 percent of 30,000,000 mentions).

Definitions

An *office* is a place that physicians identify as a location for their ambulatory practice. Responsibility for patient care and professional services rendered in an office resides with the individual physician rather than an institution.

A *visit* is a direct personal exchange between an ambulatory patient seeking health care and a physician, or staff member working under the physician's supervision, who provides the health services.

A *drug mention* is the physician's entry on the visit record of a pharmaceutical agent ordered or provided 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 also records all continued medications if the patient is specifically instructed during the visit to continue the medication.

An *acute problem* is a morbid condition with a relatively sudden or recent onset (within 3 months of the visit).

A *chronic problem* is a morbid condition that existed for 3 months or longer before the visit. The care indicated

is of a regular, maintenance nature.

A *chronic problem flare up* is a sudden exacerbation of a preexisting chronic condition.

Nonillness care denotes health examinations and care provided for presumably healthy persons. Examples of nonillness care include prenatal and postnatal care, annual physicals, well-child examinations, and insurance examinations.

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

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