

Drug Utilization in Office Practice by Age and Sex of the Patient: National Ambulatory Medical Care Survey, 1980

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The relationship between the age and sex of ambulatory patients and the drugs ordered or provided for them by physicians in office-based practice is explored. Data are presented using findings from the 1980 National Ambulatory Medical Care Survey.

The National Center for Health Statistics uses the National Ambulatory Medical Care Survey (NAMCS) to collect descriptive data about the medical care provided in doctors' offices. Each year NAMCS data collectors contact a representative sample of the Nation's doctors of medicine and osteopathy whose primary jobs are office-based, patient-care practice. The sampled physicians in turn complete records (figure 1) for a systematic random sample of their office visits over a weekly reporting period. When the sampled findings were expanded to approximate the entire universe of office-based care, the result was an estimated total of 575,745,000 office visits in calendar 1980.

The year 1980 was the first in the 8-year history of NAMCS that respondents reported the number and names of the specific drugs they used. (See figure 1, item 11.) This resulted in an estimated 679,593,000 mentions of pharmaceutical agents ordered or provided—by any route of administration—for the purpose of prevention, diagnosis, or treatment. Mentions included new or continued medications and nonprescription as well as prescription drugs. The methodology used to collect, classify, and process drug information for the 1980 NAMCS is reported elsewhere.¹

¹National Center for Health Statistics, H. Koch: The collection and processing of drug information, National Ambulatory Medical Care Survey, United States, 1980. *Vital and Health Statistics*. Series 2-No. 90. DHHS Pub. No. (PHS) 82-1364. Public Health Service. Washington. U.S. Government Printing Office. In press.

Actual findings of drug utilization for the year have appeared in two prior publications.^{2,3}

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

General patterns of drug utilization

Drug utilization may be viewed from differing perspectives and measured in differing ways, depending on the needs of the data user (table 1). Three evaluative terms require clarification at the outset.

- A *drug visit* is an office visit at which one or more drugs are ordered or provided. In 1980 there were an estimated 363.5 million drug visits, comprising 63 percent of the total 575.7 million office visits.
- The *drug mention rate* is the average number of drugs utilized per office visit, obtained by dividing the number of office visits into the number of drug mentions. For the entire universe of 575.7 million office visits, the overall drug mention rate was 1.18 drugs per average office visit.

²National Center for Health Statistics, T. McLemore and H. Koch: 1980 Summary, National Ambulatory Medical Care Survey. *Advance Data From Vital and Health Statistics*, No. 77. DHHS Pub. No. (PHS) 82-1250. Public Health Service. Hyattsville, Md. Feb. 22, 1982.

³National Center for Health Statistics, H. Koch: Drugs most frequently used in office-based practice, National Ambulatory Medical Care Survey, United States, 1980. *Advance Data From Vital and Health Statistics*, No. 78. DHHS Pub. No. (PHS) 82-1250. Public Health Service. Hyattsville, Md. In preparation.

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		A No. 001736	
1. DATE OF VISIT _____/_____/_____ <small>Month Day Year</small>		PATIENT RECORD NATIONAL AMBULATORY MEDICAL CARE SURVEY			
2. DATE OF BIRTH _____/_____/_____ <small>Month Day Year</small>	3. SEX 1 <input type="checkbox"/> FEMALE 2 <input type="checkbox"/> MALE	4. COLOR OR RACE 1 <input type="checkbox"/> WHITE 2 <input type="checkbox"/> BLACK 3 <input type="checkbox"/> ASIAN/PACIFIC ISLANDER 4 <input type="checkbox"/> AMERICAN INDIAN/ALASKAN NATIVE	5. ETHNICITY 1 <input type="checkbox"/> HISPANIC ORIGIN 2 <input type="checkbox"/> 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 <input type="checkbox"/> ACUTE PROBLEM 2 <input type="checkbox"/> CHRONIC PROBLEM, ROUTINE 3 <input type="checkbox"/> CHRONIC PROBLEM, FLAREUP 4 <input type="checkbox"/> POST SURGERY/POST INJURY 5 <input type="checkbox"/> NON-ILLNESS CARE (ROUTINE PRENATAL, GENERAL EXAM, WELL BABY, ETC.)	8. DIAGNOSTIC SERVICES THIS VISIT [Check all ordered or provided] 1 <input type="checkbox"/> NONE 2 <input type="checkbox"/> LIMITED HISTORY/EXAM. 3 <input type="checkbox"/> GENERAL HISTORY/EXAM. 4 <input type="checkbox"/> PAP TEST 5 <input type="checkbox"/> CLINICAL LAB TEST 6 <input type="checkbox"/> X-RAY 7 <input type="checkbox"/> BLOOD PRESSURE CHECK 8 <input type="checkbox"/> EKG 9 <input type="checkbox"/> VISION TEST 10 <input type="checkbox"/> ENDOSCOPY 11 <input type="checkbox"/> MENTAL STATUS EXAM. 12 <input type="checkbox"/> 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 <input type="checkbox"/> YES 2 <input type="checkbox"/> NO IF YES, FOR THE CONDITION IN ITEM 9a? 1 <input type="checkbox"/> YES 2 <input type="checkbox"/> NO	11. MEDICATION THERAPY THIS VISIT <input type="checkbox"/> NONE [Using brand or generic names, record all new and continued medications ordered, injected, administered, or otherwise provided at this visit. Include immunizing and desensitizing agents] a. FOR PRINCIPAL DIAGNOSES IN ITEM 9a. 1. _____ 2. _____ 3. _____ 4. _____ b. FOR ALL OTHER REASONS. 1. _____ 2. _____ 3. _____ 4. _____				
12. NON-MEDICATION THERAPY [Check all services ordered or provided this visit] 1 <input type="checkbox"/> NONE 2 <input type="checkbox"/> PHYSIOTHERAPY 3 <input type="checkbox"/> OFFICE SURGERY 4 <input type="checkbox"/> FAMILY PLANNING 5 <input type="checkbox"/> PSYCHOTHERAPY/THERAPEUTIC LISTENING 6 <input type="checkbox"/> DIET COUNSELING 7 <input type="checkbox"/> FAMILY/SOCIAL COUNSELING 8 <input type="checkbox"/> MEDICAL COUNSELING 9 <input type="checkbox"/> OTHER (Specify) _____		13. WAS PATIENT REFERRED FOR THIS VISIT BY ANOTHER PHYSICIAN? 1 <input type="checkbox"/> YES 2 <input type="checkbox"/> NO	14. DISPOSITION THIS VISIT [Check all that apply] 1 <input type="checkbox"/> NO FOLLOW-UP PLANNED 2 <input type="checkbox"/> RETURN AT SPECIFIED TIME 3 <input type="checkbox"/> RETURN IF NEEDED, P.R.N. 4 <input type="checkbox"/> TELEPHONE FOLLOW-UP PLANNED 5 <input type="checkbox"/> REFERRED TO OTHER PHYSICIAN 6 <input type="checkbox"/> RETURNED TO REFERRING PHYSICIAN 7 <input type="checkbox"/> ADMIT TO HOSPITAL 8 <input type="checkbox"/> OTHER (Specify) _____	15. DURATION OF THIS VISIT [Time actually spent with physician] _____ <small>Minutes</small>	

PHS-6105-A (9/79)

OMB No. 68-R1498

Figure 1. Patient Record from the National Ambulatory Medical Care Survey

• The *drug intensity rate* is the average number of drugs utilized per drug visit, obtained by dividing the number of drug visits into the number of drug mentions. For the entire 363.5 million drug visits, the rate was 1.87 drugs per average drug visit.

If simple volume of utilization is the desired criterion, then—depending on the degree of precision required—the data user may count the number of drug visits or drug mentions. When this simple enumeration is applied to a study of sex differences, it becomes readily apparent that drug visits or mentions for female patients substantially outnumbered drug

visits and mentions for males. The ratio of about 6 to 4 in favor of female patients closely parallels the ratio for office visits in general. However, when drug utilization by the sexes is explored from other perspectives, especially those of average usage, a different picture emerges. Examine, for example, the respective proportions of all office visits represented by the drug visits. For female patients it was 63.3 percent, for males 62.8 percent. The difference between the two proportions is not statistically significant, since it could be due to sampling error or variability. In addition, there is no significant difference between the average female and male patient in terms of their respective drug mention rates or drug intensity rates.

Table 1. Number and percent distribution of office visits and drug mentions, number of drug visits and their percent of office visits, drug mention rate, and drug intensity rate, by age and sex of the office patient: United States, 1980

Age and sex of patient	Office visits		Drug visits ¹		Drug mentions		Drug mention rate ²	Drug intensity rate ³
	Number in thousands	Percent distribution	Number in thousands	Percent of office visits	Number in thousands	Percent distribution		
All patients	575,745	100.0	363,489	63.1	679,593	100.0	1.18	1.87
Sex								
Female	346,106	60.1	219,216	63.3	413,570	60.9	1.19	1.89
Male	229,639	39.1	144,274	62.8	266,023	39.1	1.16	1.84
Age								
Under 15 years	109,356	19.0	71,763	65.6	115,643	17.0	1.06	1.61
15-24 years	81,561	14.2	46,353	56.8	75,213	11.1	0.92	1.62
25-44 years	154,695	26.9	87,343	56.5	148,126	21.8	0.96	1.70
45-64 years	129,645	22.5	86,327	66.6	175,572	25.8	1.35	2.03
65 years and over	100,488	17.5	71,704	71.4	165,038	24.3	1.64	2.30
Sex and age								
Female								
Under 15 years	50,503	8.8	33,395	66.1	54,723	8.1	1.08	1.64
15-24 years	54,879	9.5	31,350	57.1	49,823	7.3	0.91	1.59
25-44 years	103,562	18.0	58,025	56.0	97,947	14.4	0.95	1.69
45-64 years	76,385	13.3	52,223	68.4	106,333	15.6	1.39	2.04
65 years and over	60,777	10.6	44,222	72.8	104,745	15.4	1.72	2.37
Male								
Under 15 years	58,852	10.2	38,368	65.2	60,920	9.0	1.04	1.59
15-24 years	26,682	4.6	15,003	56.2	25,391	3.7	0.95	1.69
25-44 years	51,134	8.9	29,318	57.3	50,179	7.4	0.98	1.71
45-64 years	53,260	9.3	34,105	64.0	69,239	10.2	1.30	2.03
65 years and over	39,712	6.9	27,481	69.2	60,294	8.9	1.52	2.19

¹An office visit at which one or more drugs were ordered or provided.

²The average number of drugs ordered or provided per office visit.

³The average number of drugs ordered or provided per drug visit.

The same measurements may be applied to drug utilization by age groups. When the criterion is a simple number of drug visits or mentions, the volume of utilization is greatest in the middle years, diminishing in the age interval over 64 years. However, applying the drug mention rate produces a different pattern, one showing that average utilization steadily increases after the 14th year, reaching its highest point in the age group 65 years and over (figure 2). For the sex-age groups (figure 3) the drug mention rates for female and male patients follow the general pattern shown in figure 2, pursuing closely parallel paths until they diverge for the age group 65 years and over where, at a rate of 1.72 drug mentions per office visit, drug utilization by female patients significantly exceeds that for males (1.52).

Drug utilization: therapeutic categories

Table 2 measures drug utilization from another perspective. Here the differences between the sexes and the age groups are described in terms of the therapeutic effects that the drugs were intended to produce. For example, an examination of total usage (by all patients) shows the clear preeminence of men-

tion enjoyed by three therapeutic categories: anti-infective agents, cardiovascular drugs, and central nervous system drugs. Together they accounted for 41 percent of the total 679.6 million drug mentions.

A comparison of the sexes reveals that:

Female patients exceeded male patients in the proportion of their drug mentions represented by the following therapeutic categories:

- Antineoplastic agents.
- Central nervous system drugs (here, the difference between the sexes was very slight).
- Electrolytic, caloric, and water balance substances, e.g., diuretics (again, the sex difference was slight).
- Hormones and synthetic substances.
- Vitamins.

Male patients exceeded female patients in the proportion of their drug mentions represented by the following therapeutic categories:

- Antihistamine drugs.
- Anti-infective agents.
- Cardiovascular drugs.

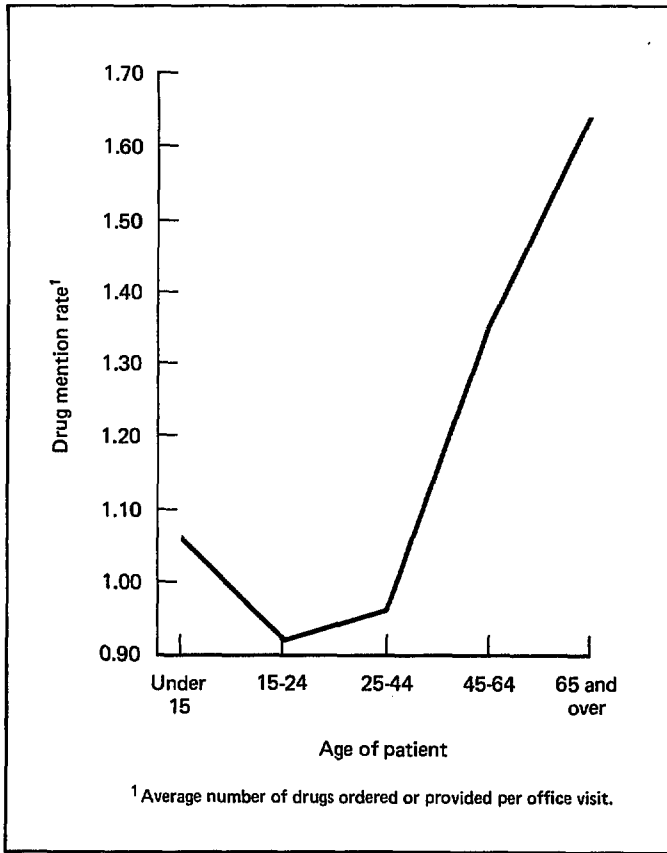


Figure 2. Drug mention rate by age of patient: United States, 1980

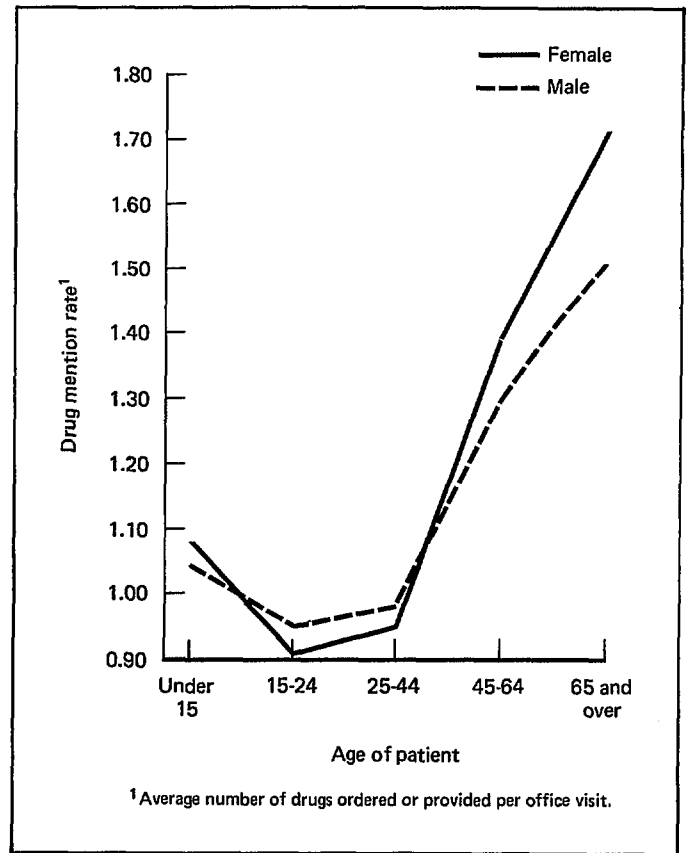


Figure 3. Drug mention rate by sex and age of patient: United States, 1980

Table 2. Percent distribution of drug mentions by therapeutic category, according to sex and age of the patient: United States, 1980

Therapeutic category ¹	Drug mentions							
	All patients	Sex of patient		Age of patient				
		Female	Male	Under 15 years	15-24 years	25-44 years	45-64 years	65 years and over
Number in thousands								
All categories	679,593	415,570	266,023	115,643	75,213	148,126	175,572	165,038
Percent distribution								
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Antihistamine drugs	6.47	5.94	7.28	14.60	7.75	7.16	3.90	2.29
Anti-infective agents	15.44	14.36	17.11	29.49	26.10	17.17	8.73	6.30
Antibiotics	13.26	11.99	15.22	27.03	23.68	14.41	7.01	4.46
Antineoplastic agents	0.79	0.99	0.47	*0.07	*0.18	*0.45	1.48	1.14
Autonomic drugs	3.71	3.70	3.73	2.78	3.09	4.91	4.14	3.12
Blood formation and coagulation	1.22	1.38	0.97	*0.46	1.42	1.19	1.18	1.75
Cardiovascular drugs	9.49	8.55	10.94	*0.34	*0.53	2.90	13.66	21.44
Cardiac drugs	3.87	3.23	4.87	*0.15	*0.36	1.09	5.28	9.08
Hypotensive agents	3.33	3.42	3.19	*0.11	*0.12	1.32	5.46	6.59
Vasodilating agents	2.16	1.79	2.72	*0.06	*0.05	*0.38	2.78	5.52
Central nervous system drugs	16.29	17.06	15.09	5.84	11.55	21.75	20.72	16.16
Analgesics and antipyretics	8.51	8.35	8.74	4.47	6.42	9.89	10.33	9.10
Psychotherapeutic agents	2.41	2.62	2.10	*0.29	1.44	3.39	3.58	2.22
Sedatives and hypnotics	3.68	4.05	3.12	0.70	2.25	4.76	4.98	4.09
Electrolytic, caloric, and water balance	7.65	8.05	7.02	*0.56	1.59	4.62	11.67	13.81
Diuretics	6.30	6.70	5.69	*0.21	*0.93	3.85	9.63	11.69
Expectorants and cough preparations	2.78	2.53	3.17	6.49	3.30	2.69	1.80	1.07
Eye, ear, nose, and throat preparations	3.84	3.58	4.24	4.01	3.10	3.46	3.28	4.98
Gastrointestinal drugs	3.55	3.47	3.67	2.13	2.41	3.42	4.14	4.56
Hormones and synthetic substances	8.22	9.98	5.48	1.93	9.76	9.37	10.44	8.52
Adrenals	2.69	2.67	2.74	1.45	2.42	3.03	3.48	2.56
Serums, toxoids, and vaccines	3.49	2.94	4.34	14.50	2.52	0.81	0.99	1.28
Skin and mucous membrane preparations	8.12	7.86	8.53	8.43	15.77	10.75	5.72	4.61
Spasmolytic agents	1.70	1.40	2.15	1.77	*0.53	1.03	1.84	2.64
Vitamins	3.57	4.67	1.86	0.75	6.57	4.87	2.95	3.66
Other therapeutic categories	2.22	2.04	0.97	4.82	2.37	1.82	1.52	1.42
Unknown	1.47	1.49	1.45	1.03	1.47	1.64	1.84	1.25

¹Based on the pharmacologic-therapeutic classification of the American Society of Hospital Pharmacists. Selected categories reproduced with the Society's permission.

- Serums, toxoids, and vaccines.
- Spasmolytic agents.

There was no significant difference between the sexes in their respective utilization of drugs in the following therapeutic categories:

- Autonomic drugs.
- Blood formation and coagulation agents.
- Expectorants and cough preparations.
- Eye, ear, nose, and throat preparations.
- Gastrointestinal drugs.
- Skin and mucous membrane preparations.

Table 2 also shows the effect of advancing age on the utilization of the therapeutic categories. Figure 4 graphically pictures this effect by tracing an age curve for the three, most mentioned, therapeutic categories. All three are age sensitive. The utilization curve for the anti-infective agents shows a steady descent with advancing years while the curve for cardiovascular drugs rises gradually till the 45th year, then steeply to a peak in the age group over 64. The utilization curve for central nervous system drugs shows its steepest ascent at ages 15-44 years, levels off for the rest of the middle years, and finally begins a gradual descent in the older years of life.

Drug utilization: specific drugs

The data user will note that—in its attempt to explore differences related to sex and age of the patient—this report has moved progressively in the direction of increasing specificity. The exploration ends with the descriptive data in table 3, which list in rank order the 10 drugs most frequently mentioned for each of the sex-age groups. (Inclusion of trade names is for identification only and does not imply endorsement by the Public Health Service or the United States Department of Health and Human Services.)

The drugs are listed by *entry name*, that is, by the trade or generic name that the doctor recorded on the

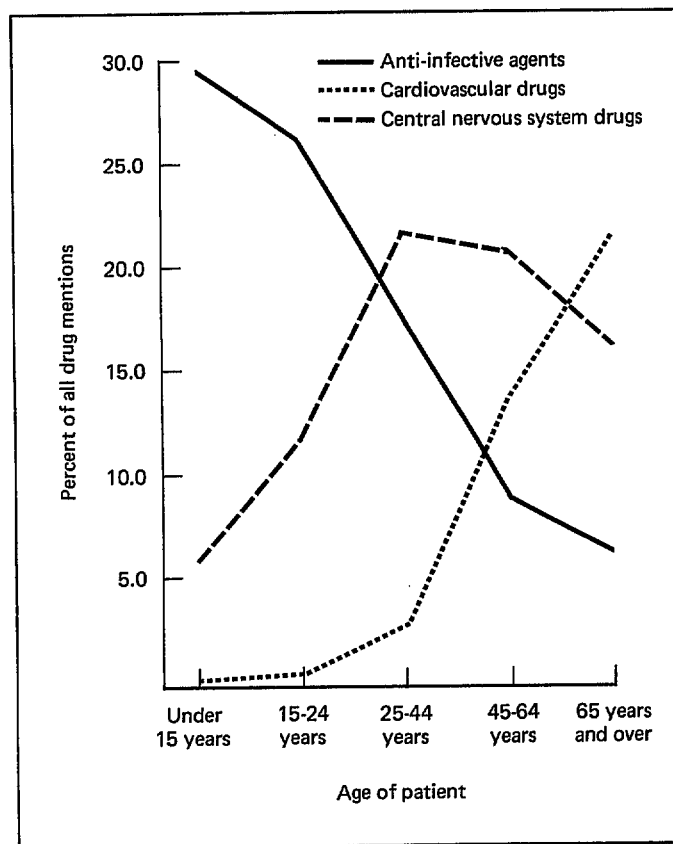


Figure 4. Utilization of three therapeutic categories of drugs by age of patient, based on percent of drug mentions within respective age groups: United States, 1980

NAMCS visit record (figure 1). (Note: NAMCS respondents were instructed to use the same entry name on the NAMCS visit record that they used on the patient's medical record and/or on any prescription written.)

A superscript^f following a listed drug indicates a *drug family*; a grouping of drugs whose members have the same core name and the same or a closely similar therapeutic effect. For example, the drug family Aristocort^f includes the following members: Aristocort, Aristocort A, Aristocort Forte, Aristocort HP, Aristocort Intralesional, and Aristocort R.

Table 3. Number of drug mentions and drug mention rate per 1,000 visits for the 10 drugs most frequently ordered or provided to patients in selected sex-age groups: United States, 1980

Rank	Entry name and generic name(s) of drug	Number of mentions in thousands	Drug mention rate per 1,000 visits	Rank	Entry name and generic name(s) of drug	Number of mentions in thousands	Drug mention rate per 1,000 visits
Female patients under 15 years				Male patients under 15 years			
1	Polio vaccine	3,114	61.7	1	Polio vaccine	3,067	52.1
2	Diphtheria tetanus toxoid pertussis	3,028	60.0	2	Diphtheria tetanus toxoid pertussis	2,835	48.2
3	Amoxicillin	1,906	37.7	3	Allergy relief, unspecified	2,511	42.7
4	Tuberculin tine test	1,752	34.7	4	Amoxicillin	2,462	41.8
5	Ampicillin	1,648	32.6	5	Dimetapp (brompheniramine, phenylephrine, phenylpropanolamine)	2,212	37.6
6	Penicillin ^f	1,646	32.6	6	Penicillin ^f	1,720	29.2
7	Dimetapp (brompheniramine, phenylephrine, phenylpropanolamine)	1,471	29.1	7	Tuberculin tine test	1,696	28.8
8	Allergy relief, unspecified	1,325	26.2	8	Ampicillin	1,635	27.8
9	Aspirin	1,096	21.7	9	Aspirin	1,324	22.5
10	E.E.S.	1,041	20.6	10	Amoxil (amoxicillin)	1,230	20.9
Female patients 15-24 years				Male patients 15-24 years			
1	Tetracycline ^f	1,642	29.9	1	Tetracycline ^f	1,394	52.2
2	Ampicillin	1,291	23.5	2	Penicillin ^f	828	31.0
3	Penicillin ^f	1,183	21.6	3	Allergy relief, unspecified	801	30.0
4	Ortho-Novum (norethindrone, mestranol)	1,000	18.2	4	Cleocin ^f (clindamycin)	773	29.0
5	Prenatal vitamins	972	17.7	5	Ampicillin	664	24.9
6	Cleocin ^f (clindamycin)	969	17.7	6	Aspirin	473	17.7
7	Lo/Ovral (norgestrel, ethinyl, estradiol)	796	14.5	7	Minocin (minocycline)	*376	*14.1
8	Allergy relief, unspecified	725	13.2	8	Tetanus toxoid	*326	*12.2
9	Materna (multivitamins prenatal)	692	12.6	9	Erythromycin	*313	*11.7
10	Monistat ^f (miconazole)	682	12.4	10	Desquam-X ^f (benzoyl peroxide, disodium edetate, etc.)	*299	*11.2
Female patients 25-44 years				Male patients 25-44 years			
1	Tetracycline ^f	1,961	18.9	1	Allergy relief, unspecified	1,062	20.8
2	Allergy relief, unspecified	1,579	15.2	2	Penicillin ^f	1,022	20.0
3	Ampicillin	1,565	15.1	3	Tetracycline ^f	987	19.3
4	Penicillin ^f	1,370	13.2	4	Ampicillin	971	19.0
5	Lasix (furosemide)	1,209	11.7	5	Valium (diazepam)	644	12.6
6	Prenatal vitamins	1,109	10.7	6	Aspirin	607	11.9
7	Vitamin B-12	1,095	10.6	7	Erythromycin	585	11.4
8	Valium (diazepam)	1,091	10.5	8	Keflex (cephalexin)	571	11.2
9	Monistat ^f (miconazole)	1,069	10.3	9	Actifed (tripolidine, pseudoephedrine)	552	10.8
10	Chorionic gonadotropin	1,001	9.7	10	Darvocet-N (acetaminophen, propoxyphene napsylate)	549	10.7
Female patients 45-64 years				Male patients 45-64 years			
1	Inderal (propranolol)	1,904	24.9	1	Inderal (propranolol)	2,295	43.1
2	Lasix (furosemide)	1,804	23.6	2	Dyazide (triamterene)	1,258	23.6
3	Premarin (conjugated estrogens)	1,704	22.3	3	Lasix (furosemide)	1,157	21.7
4	Dyazide (triamterene)	1,675	21.9	4	Valium (diazepam)	1,105	20.7
5	Motrin (ibuprofen)	1,652	21.6	5	Hydrochlorothiazide	1,000	18.8
6	Valium (diazepam)	1,594	20.9	6	Insulin	950	17.8
7	Hydrochlorothiazide	1,548	20.3	7	Lanoxin (digoxin)	947	17.8
8	Vitamin B-12	1,348	17.6	8	Tagamet (cimetidine)	936	17.6
9	Aldomet (methyldopa)	1,295	17.0	9	Lopressor (metoprolol)	877	16.5
10	Thyroid	1,246	16.3	10	Hydrodiuril (hydrochlorothiazide)	871	16.4
Female patients 65 years and over				Male patients 65 years and over			
1	Lanoxin (digoxin)	3,089	50.8	1	Lasix (furosemide)	2,247	56.6
2	Lasix (furosemide)	2,931	48.2	2	Lanoxin (digoxin)	2,078	52.3
3	Dyazide (triamterene)	2,613	43.0	3	Inderal (propranolol)	1,609	40.5
4	Inderal (propranolol)	2,576	42.4	4	Digoxin	1,512	38.1
5	Aldomet (methyldopa)	2,067	34.0	5	Isordil (isosorbide)	1,143	28.8
6	Vitamin B-12	1,987	32.7	6	Dyazide (triamterene)	956	24.1
7	Digoxin	1,793	29.5	7	Aspirin	765	19.3
8	Motrin (ibuprofen)	1,467	24.1	8	Hydrochlorothiazide	761	19.2
9	Insulin	1,382	22.7	9	Hydrodiuril (hydrochlorothiazide)	742	18.7
10	Hydrochlorothiazide	1,340	22.0	10	Prednisone	715	18.0

Superscript^f denotes drug family.

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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Technical notes

Source of data and sample design

The estimates presented in this report are based on data collected during 1980 by the National Center for Health Statistics by means of the National Ambulatory Medical Care Survey. The target universe of NAMCS comprises office visits made by ambulatory patients to non-Federal 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 physicians who specialize in anesthesiology, pathology, and radiology.

NAMCS uses a multistage probability sample design that involves a step-wise sampling of: primary sampling units (PSU's), physicians' practices within PSU's, and patient visits within physicians' practices. For 1980 a sample of 2,959 physicians was selected from master files maintained by the American Medical Association and the American Osteopathic Association. The physician response rate was 77.2 percent. Sampled physicians were asked to complete Patient Records (figure 1) for a systematic random sample of office visits made during a randomly assigned weekly reporting period. Telephone contacts were excluded. During 1980, responding physicians completed 46,081 Patient Records, on which they recorded 51,372 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 survey's field operations.

For a more detailed discussion of the limitations, qualifications, and definitions of the data collected by NAMCS, see Vital and Health Statistics, Series 13, Number 44.

Sampling errors and rounding of numbers

The standard error is a measure of the sampling variability that occurs by chance because only a sample, rather than an entire universe, is surveyed. The relative standard error of the estimate is obtained by dividing the standard error by the estimate itself and is expressed as a percent of the estimate. Tables I and II apply these measurements to office visits; Tables III and IV apply them to drug mentions.

Estimates have been rounded to the nearest thousand. For this reason detailed figures within tables do not always add to totals. Rates and percents were calculated from original, unrounded figures and will not necessarily agree precisely with rates or percents calculated from rounded data.

Table 1. Approximate relative standard errors of estimated number of office visits based on all physician specialties: NAMCS, 1980

<i>Estimated number of office visits in thousands</i>	<i>Relative standard error in percent</i>
500	27.3
1,000	19.5
2,000	14.1
5,000	9.4
10,000	7.3
20,000	5.9
50,000	4.9
100,000	4.5
550,000	4.1

Example of use of table: An aggregate of 75,000,000 visits has a relative standard error of 4.7 percent, or a standard error of 3,525,000 visits (4.7 percent of 75,000,000).

Table II. Approximate standard errors of percents of estimated number of office visits based on all physician specialties: NAMCS, 1980

Base of percent (number of office visits in thousands)	Estimated percent					
	1 or 99	5 or 95	10 or 90	20 or 80	30 or 70	50
	Standard error in percent					
500	2.7	5.9	8.1	10.8	12.4	13.5
1,000	1.9	4.2	5.7	7.6	8.7	9.5
2,000	1.3	2.9	4.0	5.4	6.2	6.7
5,000	0.8	1.9	2.6	3.4	3.9	4.3
10,000	0.6	1.3	1.8	2.4	2.8	3.0
20,000	0.4	0.9	1.3	1.7	2.0	2.1
50,000	0.3	0.6	0.8	1.1	1.2	1.3
100,000	0.2	0.4	0.6	0.8	0.9	1.0
500,000	0.1	0.2	0.3	0.3	0.4	0.4

Example of use of table: An estimate of 30 percent based on an aggregate of 15,000,000 visits has a standard error of 2.4 percent, or a relative standard error of 8 percent (2.4 percent ÷ 30 percent).

Table III. Approximate relative standard errors of estimated number of drug mentions based on all physician specialties: NAMCS, 1980

Estimated number of drug mentions in thousands	Relative standard error in percent
1,000	27.3
2,000	19.7
5,000	13.2
10,000	10.1
20,000	8.2
50,000	6.8
100,000	6.2
300,000	5.8
650,000	5.7

Example of use of table: An aggregate estimate of 75,000,000 drug mentions has a relative standard error of 6.5 percent or a standard error of 4,875,000 mentions (6.5 percent of 75,000,000).

Definitions

An *ambulatory patient* is an individual seeking personal health service who is neither bedridden nor currently admitted to any health care institution on the premises.

A *physician eligible for NAMCS* is a duly licensed doctor of medicine or osteopathy currently in office-

based practice whose primary job is caring for ambulatory patients. Excluded from NAMCS are: physicians who are hospital based; physicians who specialize in anesthesiology, pathology, or radiology; physicians who are Federally employed; physicians who treat only institutionalized patients; physicians employed full time by an institution; and physicians who spend no time seeing ambulatory patients.

An *office* is a place that the physician identifies as a location for his ambulatory practice. Responsibility over time for patient care and professional services rendered there generally resides with the individual physician rather than an institution.

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

A *drug mention* is 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. Along with all new drugs, the physician also records continued medications, if the patient was specifically instructed during the visit to continue the medication.

Table IV. Approximate standard errors of percents of estimated numbers of drug mentions based on all physician specialties: NAMCS, 1980

<i>Base of percent (number of drug mentions in thousands)</i>	<i>Estimated percent</i>					
	<i>1 or 99</i>	<i>5 or 95</i>	<i>10 or 90</i>	<i>20 or 80</i>	<i>30 or 70</i>	<i>50</i>
	Standard error in percentage points					
1,000	2.7	5.8	8.0	10.7	12.2	13.3
2,000	1.9	4.1	5.7	7.6	8.7	9.4
5,000	1.2	2.6	3.6	4.8	5.5	6.0
20,000	0.6	1.3	1.8	2.4	2.7	3.0
100,000	0.3	0.6	0.8	1.1	1.2	1.3
600,000	0.1	0.2	0.3	0.4	0.5	0.5

Example of use of table: An estimate of 30 percent based on an aggregate of 12,500,000 drug mentions has a standard error of 4.1 percent or a relative standard error of 13.7 percent (4.1 percent \div 30 percent).

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