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## Drugs Most Frequently Used in Office Practice: National Ambulatory Medical Care Survey, 1981

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This report offers descriptive data about the drugs utilized in office practice in the calendar year 1981, highlighting those pharmaceutical agents that were most frequently ordered or provided. The data, based on the findings of the National Ambulatory Medical Care Survey (NAMCS), were produced by a representative sample of the Nation's physicians who are primarily engaged in office-based, patient-care practice. Non-Federal doctors of medicine and osteopathy in all states except Alaska and Hawaii participated by completing records (figure 1, Patient Record) on a sample of their office visits over a weekly reporting period.

Item 11 of the Patient Record (figure 1) requires that the respondents report the names of the specific drugs that they "utilized" (that is, ordered or provided) in the course of their office visits. This resulted in an estimated 651,153,000 drug mentions. All routes of administration were allowed, and the mentions included immunizing and desensitizing agents, and nonprescription as well as prescription drugs. The physician recorded all new drugs and continued medications when the patient was specifically instructed during the visit to continue the medication. Drugs ordered through telephone contact were not included.

Because the estimates presented here are based on a sample rather than on the entire universe of office visits, the data are subject to sampling variability. Because of problems with statistical significance, the data user should avoid too literal an acceptance of closely ranked estimates. The technical notes at the end of this report provide a brief explanation of the sampling errors and guidelines for judging the precision of estimates. All subsequent references to drug mentions should be interpreted as *estimated* drug mentions, based on the sample of office-based physicians used in this study.

The 100 drug entries that respondents most frequently recorded are listed in rank order in table 1. The listing is arbitrarily restricted to the drugs that were specifically named—either by brand<sup>1</sup> or by generic name. This led to the exclusion of two entry choices that did not identify a specific agent, indicating only the therapeutic effect desired. These two therapeutic effects were

- *Allergy relief or shots* (unspecified), with 10,833,000 mentions.
- *Vitamin(s)* (unspecified), with 1,520,000 mentions.

The 100 drugs comprise only 4 percent of the 2,325 agents named by respondents. However, they account for about 341,427,000 mentions, or 52 percent of the total 651,153,000 drug mentions.

The 11 drugs most frequently named in 1981 were also the leading 11 in 1980. The rank order of the specific drugs, however, varied somewhat between the years (table 2). The two most notable gains in rank position were registered by Inderal, a beta-adrenergic blocking agent, and Dyazide, a diuretic agent.

In table 3, drug utilization in 1981 is expressed entirely in generic terms. Listed in alphabetical order are the 100 generic substances most frequently ordered or provided, either in single-entity form or as ingredients of combination products. Thus, the 29,687,000 total mentions of the ranking generic substance, hydrochlorothiazide, include its 11,583,000 mentions as a single-entity drug and its 18,105,000 mentions as an active component of a combination drug.

<sup>1</sup>Inclusion of trade names is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

ASSURANCE OF CONFIDENTIALITY—All information which would permit identification of an individual, a practice, or an establishment will be held confidential, will be used only by persons engaged in and for the purposes of the survey and will not be disclosed or released to other persons or used for any other purpose.		Department of Health, Education, and Welfare Public Health Service Office of Health Research, Statistics, and Technology National Center for Health Statistics		C No. 499932
<b>PATIENT RECORD</b> <b>NATIONAL AMBULATORY MEDICAL CARE SURVEY</b>				
<b>1. DATE OF VISIT</b> _____ / _____ / _____ <small>Month Day Year</small>				
<b>2. DATE OF BIRTH</b>  _____ / _____ / _____ <small>Month Day Year</small>	<b>3. SEX</b> 1 <input type="checkbox"/> FEMALE 2 <input type="checkbox"/> MALE	<b>4. COLOR OR RACE</b> 1 <input type="checkbox"/> WHITE 2 <input type="checkbox"/> BLACK 3 <input type="checkbox"/> ASIAN/PACIFIC ISLANDER 4 <input type="checkbox"/> AMERICAN INDIAN/ALASKAN NATIVE	<b>5. ETHNICITY</b> 1 <input type="checkbox"/> HISPANIC ORIGIN 2 <input type="checkbox"/> NOT HISPANIC	<b>6. PATIENT'S COMPLAINT(S), SYMPTOM(S), OR OTHER REASON(S) FOR THIS VISIT</b> <i>[In patient's own words]</i> a. MOST IMPORTANT _____ b. OTHER _____
<b>7. MAJOR REASON FOR THIS VISIT</b> <i>[Check one]</i>  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.)	<b>8. DIAGNOSTIC SERVICES THIS VISIT</b> <i>[Check all ordered or provided]</i> 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 <i>(Specify)</i> _____		<b>9. PHYSICIAN'S DIAGNOSES</b> a. PRINCIPAL DIAGNOSIS/PROBLEM ASSOCIATED WITH ITEM 6a. _____ b. OTHER SIGNIFICANT CURRENT DIAGNOSES _____	
<b>10. HAVE YOU SEEN PATIENT BEFORE?</b>  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	<b>11. MEDICATION THERAPY THIS VISIT</b> <input type="checkbox"/> NONE <i>[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]</i> a. FOR PRINCIPAL DIAGNOSES IN ITEM 9a. 1. _____ 2. _____ 3. _____ 4. _____ b. FOR ALL OTHER REASONS. 1. _____ 2. _____ 3. _____ 4. _____			
<b>12. NON-MEDICATION THERAPY</b> <i>[Check all services ordered or provided this visit]</i>  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 <i>(Specify)</i> _____	<b>13. WAS PATIENT REFERRED FOR THIS VISIT BY ANOTHER PHYSICIAN?</b>  1 <input type="checkbox"/> YES 2 <input type="checkbox"/> NO	<b>14. DISPOSITION THIS VISIT</b> <i>[Check all that apply]</i> 1 <input type="checkbox"/> NO FOLLOW-UP PLANNED 2 <input type="checkbox"/> RETURN AT SPECIFIED TIME 3 <input type="checkbox"/> RETURN IF NEEDED, P.R.N. 4 <input type="checkbox"/> TELEPHONE FOLLOW-UP PLANNED 5 <input type="checkbox"/> REFERRED TO OTHER PHYSICIAN 6 <input type="checkbox"/> RETURNED TO REFERRING PHYSICIAN 7 <input type="checkbox"/> ADMIT TO HOSPITAL 8 <input type="checkbox"/> OTHER <i>(Specify)</i> _____	<b>15. DURATION OF THIS VISIT</b> <i>[Time actually spent with physician]</i>  _____ <small>Minutes</small>	

PHS-6105-C (9/79)

Figure 1. Patient Record

OMB No. 68-R1498

Another useful overview of 1981 drug utilization appears in table 4. Here the 651,153,000 drug mentions are described by the chief therapeutic effect that each was intended to produce. A comprehensive listing of 67 therapeutic categories is used. (The categories were selected from the American Hospital Formulary Classification System.<sup>2</sup>) The data user may note the obvious preeminence enjoyed by the nontopical anti-infective agents, the central nervous system drugs, and the combination of cardiovascular drugs and diuretics used to

combat circulatory disease. Together these three categories accounted for virtually one-half of all drug mentions.

From 1980 to 1981, the use proportion (percent of all drug mentions) did not vary greatly for most of the therapeutic categories (table 5). The largest single decrease (0.6 percent) was registered by skin preparations. Their estimated number of mentions fell by about 6.2 million in 1981. These findings directly parallel a 0.6 percent drop found in 1981 for the number of office visits with skin disease as the principal diagnosis. The largest single increase in use proportion (1.8 percent) was achieved by the combination of cardiovascular drugs and diuretics. Their estimated number of mentions rose by about 6.7 million in 1981. This increase

<sup>2</sup>American Society of Hospital Pharmacists, Inc.: *The American Hospital Formulary Classification System*. Washington, Jan. 1980.

appears directly related to the 0.7-percent increase found in 1981 for the number of office visits with circulatory disease as the principal diagnosis. Also contributing to the increase was the sharp surge in popularity enjoyed by certain new cardiovascular drugs, especially the beta-adrenergic blocking agents. They are useful in treating hypertension, angina, cardiac arrhythmia, and in preventing the recurrence of myocardial infarction.

Measured in terms of drug-visit proportion (that is, the percent of office visits at which one or more drugs were ordered or provided), the overall utilization of drugs by office-based physicians fell from 63.1 percent in 1980 to 60.5 percent in 1981, a decrease of 2.6 percent.

NAMCS drug findings for 1981 are reportable by product name, generic name, entry status (generic versus brand name), prescription status (prescription versus nonprescription), level of potential abuse (Federal con-

trol schedules), composition (single-ingredient versus combination), and therapeutic effect. These drug dimensions may be contrasted with other NAMCS variables to show the influence on drug utilization produced by prescriber characteristics, patient demographics, referral status, duration and disposition of the visit, and by such clinical features as symptoms, diagnosis, diagnostic procedures, and other (nondrug) forms of treatment. Inquiries about the NAMCS drug database may be directed to

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Table 1. The 100 drugs most frequently ordered or provided in office practice by drug name (as recorded by the physician), number of mentions, and therapeutic use: United States, 1981

<i>R a n k</i>	<i>Name of drug</i>	<i>Number of mentions in thousands</i>	<i>Therapeutic use</i>
	All drugs . . . . .	651,153	
1	Inderal (propranolol) . . . . .	11,847	Arrhythmia, angina pectoris, hypertension, migraine
2	Lasix (furosemide) . . . . .	10,770	Diuretic, antihypertensive
3	Dyazide (triamterene, hydrochlorothiazide) . . . . .	10,422	Diuretic, edema, hypertension
4	Ampicillin . . . . .	9,173	Antibiotic
5	Penicillin . . . . .	8,581	Antibiotic
6	Aspirin . . . . .	7,543	Analgesic, antipyretic
7	Lanoxin (digoxin) . . . . .	7,311	Cardiotonic
8	Tetracycline . . . . .	7,030	Antibiotic
9	Diphtheria tetanus toxoids pertussis . . . . .	6,583	Immunization
10	Polio vaccine . . . . .	6,237	Immunization
11	Valium (diazepam) . . . . .	6,063	Anxiety disorders
12	Motrin (ibuprofen) . . . . .	5,967	Anti-inflammatory, analgesic
13	Amoxicillin . . . . .	5,877	Antibiotic
14	Erythromycin . . . . .	5,606	Antibiotic
15	Prednisone . . . . .	5,575	Anti-inflammatory
16	E.E.S. (erythromycin) . . . . .	5,535	Antibiotic
17	Aldomet (methyldopa) . . . . .	5,418	Antihypertensive
18	Tagamet (cimetidine) . . . . .	5,375	Ulcer and gastrointestinal disease
19	Hydrochlorothiazide . . . . .	5,326	Diuretic
20	Insulin . . . . .	5,285	Antidiabetic
21	Digoxin . . . . .	5,086	Cardiotonic
22	Hydrodiuril (hydrochlorothiazide) . . . . .	5,020	Diuretic
23	Amoxil (amoxicillin) . . . . .	4,349	Antibiotic
24	Hygroton (chlorthalidone) . . . . .	4,314	Diuretic, antihypertensive
25	Keflex (cephalexin) . . . . .	4,195	Antibiotic
26	Dimetapp (brompheniramine, phenylephrine, phenylpropanolamine) . . . . .	4,141	Antihistaminic, decongestant
27	Tylenol with codeine (acetaminophen, codeine) . . . . .	4,085	Analgesic
28	Actifed (triprolidine, pseudoephedrine) . . . . .	3,892	Common cold, allergic rhinitis
29	Isordil (isosorbide) . . . . .	3,782	Coronary vasodilator
30	Vitamin B-12 . . . . .	3,758	Vitamins
31	Naprosyn (naproxen) . . . . .	3,575	Anti-inflammatory, analgesic, antipyretic
32	Septra (sulfamethoxazole, trimethoprim) . . . . .	3,476	Urinary infections, otitis media, pneumonitis
33	Tuberculin tine test . . . . .	3,397	Tuberculosis skin test
34	Bactrim (sulfamethoxazole, trimethoprim) . . . . .	3,337	Urinary infections, otitis media, pneumonitis
35	Clinoril (sulindac) . . . . .	3,277	Analgesic, anti-inflammatory
36	Tylenol (acetaminophen) . . . . .	3,271	Analgesic
37	Lopressor (metoprolol) . . . . .	3,270	Antihypertensive, beta-blocker
38	Phenergan (promethazine) . . . . .	3,258	Expectorant
39	Indocin (indomethacin) . . . . .	3,106	Anti-inflammatory
40	Benadryl (diphenhydramine) . . . . .	3,096	Antihistaminic
41	Decadron (dexamethasone) . . . . .	2,999	Anti-inflammatory
42	Nitroglycerin . . . . .	2,988	Vasodilator
43	Slow-K (potassium replacement solutions) . . . . .	2,904	Potassium replacement therapy
44	Zomax (zolamine) . . . . .	2,872	Analgesic
45	Diabinese (chlorpropamide) . . . . .	2,871	Hypoglycemic agent
46	Pen-Vee K (penicillin) . . . . .	2,854	Antibiotic
47	Premarin (estrogens) . . . . .	2,801	Estrogen replacement therapy
48	Depo-medrol (methylprednisolone) . . . . .	2,670	Glucocorticoid
49	Kenalog (triamcinolone) . . . . .	2,607	Anti-inflammatory
50	Donnatal (hyosциamine, atropine, hyoscine, phenobarbital) . . . . .	2,589	Sedative, antispasmodic
51	Influenza virus vaccine . . . . .	2,556	Immunization
52	Coumadin (warfarin) . . . . .	2,386	Anticoagulant
53	Ceclor (cefaclor) . . . . .	2,317	Antibiotic
54	Neosporin (polymixin-B, neomycin) . . . . .	2,278	Bacterial infections, topical
55	Synthroid (levothyroxine) . . . . .	2,269	Thyroid hormone
56	Dimetane (brompheniramine) . . . . .	2,253	Expectorant
57	E-mycin (erythromycin) . . . . .	2,252	Antibiotic
58	Aldoril (methyldopa, hydrochlorothiazide) . . . . .	2,241	Antihypertensive
59	Bicillin (penicillin) . . . . .	2,238	Antibiotic
60	Xylocaine (lidocaine) . . . . .	2,231	Local anesthetic
61	Butazolidin (phenylbutazone) . . . . .	2,229	Anti-inflammatory
62	Naaldecon (phenylephrine, phenylpropanolamine, chlorpheniramine) . . . . .	2,182	Hay fever, sinus, congestion
63	Darvocet-N (propoxyphene, acetaminophen) . . . . .	2,156	Analgesic
64	Mylanta (magnesium hydroxide, aluminum hydroxide) . . . . .	2,077	Antacid, antilululent
65	Antivert (meclizine) . . . . .	2,063	Antinauseant
66	Elavil (amitriptyline) . . . . .	2,055	Antidepressant

Table 1. The 100 drugs most frequently ordered or provided in office practice by drug name (as recorded by the physician), number of mentions, and therapeutic use: United States, 1981—Con.

<i>R a n k</i>	<i>Name of drug</i>	<i>Number of mentions in thousands</i>		<i>Therapeutic use</i>
67	Dilantin (phenytoin) . . . . .	2,054		Anticonvulsant
68	Empirin with codeine (aspirin, codeine) . . . . .	2,042		Analgesic, antipyretic
69	Dalmane (flurazepam) . . . . .	2,041		Hypnotic
70	Cleocin (clindamycin) . . . . .	2,033		Antibiotic
71	Potassium . . . . .	2,028		Potassium replacement therapy
72	Theo-dur (theophylline) . . . . .	2,026		Coronary vasodilator, diuretic
73	Cortisporin (polymixin-B, bacitracin, neomycin, hydrocortisone) . . . . .	1,979		Anti-inflammatory
74	Phenergan with codeine (promethazine, codeine) . . . . .	1,978		Expectorant
75	Vibramycin (doxycycline) . . . . .	1,957		Antibiotic
76	V-cillin (penicillin) . . . . .	1,946		Antibiotic
77	Persantine (dipyridamole) . . . . .	1,932		Coronary or myocardial insufficiency
78	Rondec (pseudoephedrine, carbinoxamine maleate) . . . . .	1,928		Decongestant, antitussive
79	Timoptic (timolol) . . . . .	1,914		Treatment of glaucoma, ocular hypertension
80	Prenatal vitamins (multivitamins prenatal) . . . . .	1,873		Vitamins
81	Minipress (prazosin) . . . . .	1,789		Antihypertensive
82	Aldactazide (spironolactone, hydrochlorothiazide) . . . . .	1,788		Antihypertensive
83	Aristocort (triamcinolone) . . . . .	1,766		Anti-inflammatory
84	Monistat (miconazole) . . . . .	1,743		Antifungal
85	Phenobarbital . . . . .	1,694		Anticonvulsant, sedative, hypnotic
86	Ilosone (erythromycin) . . . . .	1,692		Antibiotic
87	Larotid (amoxicillin) . . . . .	1,640		Antibiotic
88	Librax (clidinium bromide, chlordiazepoxide) . . . . .	1,635		Gastro-intestinal disorders
89	Robitussin (guaifenesin, dextromethorphan, phenylpropanolamine) . . . . .	1,633		Antitussive, decongestant, expectorant
90	Sudafed (pseudoephedrine) . . . . .	1,604		Decongestant
91	Tuss-ornade (chlorpheniramine, phenylpropanolamine) . . . . .	1,580		Antitussive, decongestant
92	Ativan (lorazepam) . . . . .	1,579		Psychotherapeutic agent
93	Librium (chlordiazepoxide) . . . . .	1,569		Psychotherapeutic agent
94	Flexeril (cyclobenzaprine) . . . . .	1,568		Skeletal muscle relaxant
95	Zyloprim (allopurinol) . . . . .	1,567		Antigout
96	Drixoral (brompheniramine, pseudoephedrine) . . . . .	1,561		Decongestant, antihistamine
97	Corgard (nadolol) . . . . .	1,550		Antihypertensive, beta-blocker
98	Celestone (betamethasone) . . . . .	1,544		Glucocorticoid
99	Parafon forte (chlorzoxazone, acetaminophen) . . . . .	1,528		Skeletal muscle relaxant
100	Ortho-novum (norethindrone, estradiol) . . . . .	1,519		Oral contraceptive

Table 2. The 11 drugs most frequently named in 1980 and 1981 by frequency of mention and rank order: United States, 1981

<i>Name of drug</i>	<i>Number of mentions in thousands</i>		<i>Rank</i>	
	<i>1981</i>	<i>1980</i>	<i>1981</i>	<i>1980</i>
	Inderal . . . . .	11,847	9,625	1
Lasix . . . . .	10,770	9,879	2	1
Dyazide . . . . .	10,422	7,435	3	7
Ampicillin . . . . .	9,173	9,795	4	2
Penicillin . . . . .	8,581	9,736	5	3
Aspirin . . . . .	7,543	8,800	6	6
Lanoxin . . . . .	7,311	7,105	7	8
Tetracycline . . . . .	7,030	9,478	8	5
Diphtheria tetanus toxoids pertussis . . . . .	6,583	6,067	9	11
Polio vaccine . . . . .	6,237	6,535	10	9
Valium . . . . .	6,063	6,499	11	10

Table 3. Number of drug mentions, rank, and therapeutic use of the 100 generic substances most frequently utilized in office practice: United States, 1981

<i>Generic substance</i>	<i>Number of mentions in thousands<sup>1</sup></i>	<i>R a n k</i>	<i>Therapeutic use</i>
Acetaminophen	10,830	14	Analgesic, antipyretic
Acetaminophen with codeine	4,092	59	Analgesic, antipyretic
Allopurinol	2,193	97	Antigout
Aluminum hydroxide	4,670	53	Antacid
Aluminum subacetate	2,137	98	Astringent wash
Amitriptyline	4,674	52	Antidepressant
Amoxicillin	12,356	11	Antibiotic
Ampicillin	10,270	17	Antibiotic
Aspirin	17,268	3	Analgesic, antipyretic
Atropine	5,871	38	Anticholinergic
Bacitracin	5,265	47	Antibiotic
Benzoyl peroxide	3,343	73	Keratolytic, acne treatment
Betamethasone	3,509	70	Glucocorticoid
Bismuth antidiarrhea agents	3,393	72	Antidiarrhea
Brompheniramine	8,165	20	Expectorant
Caffeine	6,111	33	Stimulant
Cefaclor	2,317	96	Antibiotic
Cephalexin	4,195	56	Antibiotic
Chlordiazepoxide	4,018	60	Emotional disturbance, sedative
Chlorpheniramine	12,789	9	Antihistaminic
Chlorpropamide	2,876	87	Hypoglycemic agent
Chlorthalidone	5,494	42	Diuretic, antihypertensive
Cimetidine	5,696	41	Ulcer and gastrointestinal disease
Codeine	7,433	23	Analgesic, antitussive
Dexamethasone	5,438	43	Anti-inflammatory
Dextromethorphan	3,246	78	Cough suppressant
Diazepam	6,165	32	Sedative, tranquilizer
Digoxin	12,397	10	Cardiotonic
Diphenhydramine	4,163	57	Antihistaminic
Diphtheria tetanus toxoids pertussis	6,583	29	Immunization
Doxycycline	2,782	90	Antibiotic
Erythromycin	17,468	2	Antibiotic
Estradiol	5,755	39	Estrogen replacement therapy
Estrogens	2,883	86	Estrogen replacement therapy
Furosemide	10,861	13	Diuretic
Guafenesin	8,222	18	Cough suppressant
Hydralazine	3,903	62	Antihypertensive
Hydrochlorothiazide	29,687	1	Diuretic
Hydrocortisone	6,670	26	Anti-inflammatory
Hydroxyzine	3,140	80	Sedative, tranquilizer
Hyoscyamine	5,401	44	Anticholinergic
Ibuprofen	5,984	35	Anti-inflammatory
Indomethacin	3,199	79	Anti-inflammatory
Influenza virus vaccine	2,912	85	Immunization
Insulin	5,314	46	Antidiabetic
Ipecac	3,849	64	Emetic
Iron preparations	5,975	36	Iron deficiency
Isopropamide iodide	3,995	61	Anticholinergic
Isosorbide	4,842	51	Coronary vasodilator
Levothyroxine	2,588	94	Thyroid hormone
Lidocaine	2,956	83	Local anesthetic
Magnesium antacids	5,122	49	Antacid
Meclizine	3,321	74	Antinauseant
Methyldopa	7,757	21	Antihypertensive
Methylprednisolone	3,579	67	Glucocorticoid
Metoprolol	3,270	76	Beta-adrenergic blocker
Multivitamins	11,951	12	Vitamins
Naproxen	4,127	58	Anti-inflammatory, analgesic, antipyretic
Neomycin	8,216	19	Antibiotic
Nitroglycerin	5,077	50	Vasodilator
Norethindrone	3,014	82	Oral contraceptive
Nystatin	2,599	93	Antifungal
Oxycodone	2,757	91	Narcotic analgesic
Penicillin	17,035	4	Antibiotic
Phenacetin	5,384	45	Antipyretic, analgesic
Pheniramine	2,083	100	Antihistaminic

See footnote at end of table.

Table 3. Number of drug mentions, rank, and therapeutic use of the 100 generic substances most frequently utilized in office practice: United States, 1981—Con.

<i>Generic substance</i>	<i>Number of mentions in thousands<sup>1</sup></i>	<i>R a n k</i>	<i>Therapeutic use</i>
Phenobarbital . . . . .	6,011	34	Anticonvulsant, sedative, hypnotic
Phenylbutazone . . . . .	2,742	92	Anti-inflammatory
Phenylephrine . . . . .	14,140	6	Sympathomimetic
Phenylpropanolamine . . . . .	16,455	5	Sympathomimetic
Phenyltoloxamine . . . . .	3,037	81	Antihistaminic
Polio vaccine . . . . .	6,248	31	Immunization
Polymixin B . . . . .	6,259	30	Antibacterial
Potassium guaiacolsulfonate . . . . .	3,858	63	Cough preparations
Potassium replacement solutions . . . . .	7,665	22	Potassium replacement therapy
Prednisolone . . . . .	3,778	66	Anti-inflammatory
Prednisone . . . . .	5,706	40	Anti-inflammatory
Promethazine . . . . .	5,939	37	Antihistaminic, anti-emetic, sedative
Propoxyphene . . . . .	3,551	68	Analgesic
Propranolol . . . . .	12,813	8	Beta-blocker
Pseudoephedrine . . . . .	12,933	7	Antihistaminic, cough suppressant
Reserpine . . . . .	4,204	55	Antihypertensive
Salicylic acid . . . . .	2,126	99	Antifungal, keratolytic
Scopolamine . . . . .	3,528	69	Hypnotic, sedative, anticholinergic
Simethicone . . . . .	2,926	84	Antiflatulent
Spirolactone . . . . .	2,826	89	Diuretic
Sulfacetamide . . . . .	3,258	77	Antibacterial
Sulfamethoxazole . . . . .	7,393	24	Antibacterial
Sulindac . . . . .	3,318	75	Analgesic, antipyretic
Tetracycline . . . . .	10,316	16	Antibiotic
Theophylline . . . . .	6,647	27	Coronary vasodilator, diuretic
Triamcinolone . . . . .	6,616	28	Anti-inflammatory
Triamterene . . . . .	10,681	15	Diuretic
Trimethoprim . . . . .	7,150	25	Antibacterial
Tripolidine . . . . .	4,647	54	Antihistaminic
Tuberculin . . . . .	3,423	71	Tuberculosis skin test
Vitamin B-12 . . . . .	5,137	48	Vitamins
Warfarin . . . . .	2,536	95	Anticoagulant
Zinc topical agents . . . . .	3,805	65	Skin disease (astringent, antiseptic)
Zolamine . . . . .	2,872	88	Antihistaminic, local anesthetic

<sup>1</sup>Combines the mentions of a generic substance as a single-ingredient agent with its mentions as an ingredient of a combination drug.

Table 4. Number and percent distribution of drug mentions by selected therapeutic categories: United States, 1981

<i>Selected therapeutic categories</i> <sup>1</sup>	<i>Number of mentions in thousands</i>	<i>Percent distribution</i>	<i>Selected therapeutic categories</i> <sup>1</sup>	<i>Number of mentions in thousands</i>	<i>Percent distribution</i>
All categories	651,153	100.0	Eye, ear, nose, and throat preparations—Con.		
Antihistamine drugs	43,511	6.68	Anti-inflammatory agents	4,772	0.73
Anti-infective agents	104,804	16.10	Local anesthetics	1,947	0.30
Antibiotics	89,209	13.70	Miotics	1,590	0.24
Cephalosporins	8,355	1.28	Mydriatics	1,666	0.26
Erythromycins	16,119	2.48	Vasoconstrictors	2,004	0.31
Penicillins	41,524	6.38	Gastrointestinal drugs	24,196	3.72
Tetracyclines	15,010	2.31	Antacids and adsorbents	3,562	0.55
Sulfonamides	9,236	1.42	Antidiarrhea agents	3,324	0.51
Antineoplastic agents	4,019	0.62	Antiflatulents	2,947	0.45
Autonomic drugs	24,102	3.70	Cathartics and laxatives	3,655	0.56
Parasympatholytic agents	9,574	1.47	Emetics and anti-emetics	3,776	0.58
Skeletal muscle relaxants	5,737	0.88	Hormones and synthetic substances	53,999	8.29
Sympathomimetic agents	7,235	1.11	Adrenals	20,731	3.18
Blood formation and coagulation	8,020	1.23	Contraceptives	6,141	0.94
Anti-anemia drugs	5,325	0.82	Estrogens	6,877	1.06
Anticoagulants	2,675	0.41	Insulins and antidiabetic agents	10,901	1.67
Cardiovascular drugs	68,779	10.56	Insulins	5,314	0.82
Cardiac drugs	30,184	4.64	Thyroid and antithyroid	4,328	0.66
Hypotensive agents	24,263	3.73	Serums, toxoids, and vaccines	22,068	3.39
Vasodilating agents	13,730	2.11	Toxoids	8,813	1.35
Central nervous system drugs	104,391	16.03	Vaccines	12,655	1.94
Analgesics and antipyretics	58,841	9.04	Skin and mucous membrane preparations	49,026	7.53
Anticonvulsants	2,858	0.44	Anti-infectives	12,049	1.85
Antidepressants	9,892	1.52	Fungicides	4,781	0.73
Respiratory and cerebral stimulants	4,501	0.69	Anti-inflammatory agents	17,463	2.68
Tranquilizers, sedatives, and hypnotics	27,574	4.23	Antipruritics and local anesthetics	4,506	0.69
Electrolytic, caloric, and water balance	55,277	8.49	Emollients, protectants, demulcents	2,989	0.46
Diuretics	45,239	6.95	Keratolytic agents	5,860	0.90
Replacement solutions	8,527	1.31	Spasmolytic agents	10,654	1.64
Expectorants and cough preparations	17,864	2.74	Vitamins	20,507	3.15
Eye, ear, nose, and throat preparations	23,546	3.62	Multivitamin preparations	11,638	1.79
Anti-infective agents	6,330	0.97	Vitamin B complex	5,939	0.91
Antibiotics	3,830	0.59	Other agents or therapeutic category		
			undetermined	16,393	2.52

<sup>1</sup>Based on the pharmacologic-therapeutic classification of the American Society of Hospital Pharmacists, Inc.; selected categories reproduced with permission.



Table 5. Use proportion of selected therapeutic categories of drugs utilized in office practice in 1980 and 1981: United States, 1981

Selected therapeutic category <sup>1</sup>	Use proportion		Selected therapeutic category <sup>1</sup>	Use proportion	
	1981	1980		1981	1980
	Number of mentions in thousands			Percent distribution	
All categories .....	651,153	679,593	Contraceptives .....	0.9	1.2
	Percent distribution		Expectorants and cough preparations .....	2.7	2.8
All categories .....	100.0	100.0	Eye, ear, nose, and throat preparations .....	3.6	3.8
Adrenals .....	3.2	2.7	Gastrointestinal drugs .....	3.7	3.6
Analgesics and antipyretics .....	9.0	8.5	Serums, toxoids, and vaccines .....	3.4	3.5
Antidepressants .....	1.5	1.5	Skin and mucous membrane preparations .....	7.5	8.1
Antihistamine drugs .....	6.7	6.5	Spasmolytic agents .....	1.6	1.7
Anti-infective agents .....	16.1	15.4	Tranquilizers, sedatives, hypnotics ....	4.2	4.4
Antineoplastic agents .....	0.6	0.8	Vitamins .....	3.2	3.6
Autonomic drugs .....	3.7	3.7	Other agents or therapeutic category undetermined .....	9.5	11.2
Blood formation and coagulation .....	1.2	1.2			
Cardiovascular drugs and diuretics ....	17.6	15.8			

<sup>1</sup>Based on the pharmacologic-therapeutic classification of the American Society of Hospital Pharmacists, Inc.; selected categories reproduced with permission.

## Technical notes

### Source of data and sample design

The estimates presented in this report are based on data collected during 1981 by the National Center for Health Statistics by means of the National Ambulatory Medical Care Survey (NAMCS). 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 1981 a sample of 2,846 physicians was selected from master files maintained by the American Medical Association and the American Osteopathic Association. The physician response rate was 77.5 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 1981, responding physicians completed 43,366 Patient Records, on which they recorded 46,424 drug mentions. Characteristics of the physician's practice, such as primary specialty and type of practice, were obtained during an induction interview. The National Opinion Research Center, under contract to the National Center for Health Statistics, was responsible for the field operations of the survey.

### Sampling errors and rounding of numbers

The standard error is primarily 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. Relative standard errors of selected aggregate visit statistics are shown in table I. Standard errors for estimated percents of visits are shown in table II. Similar standard errors for drug statistics and percents are shown in tables III and IV. Tables I and II should be used to obtain the standard error of a specific drug mention (for example, Dyazide). Tables III and IV should be used to obtain the standard error of a group of drug mentions (for example, all antibiotics).

Estimates of office visits 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 on the basis of original, unrounded figures and will not necessarily agree precisely with percents calculated from rounded data.

Table I. Approximate relative standard errors of estimated number of office visits based on all physician specialties: NAMCS, 1981

<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 estimate 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 numbers of office visits based on all physician specialties: NAMCS, 1981

<i>Base of percent (number of office visits 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 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, 1981

<i>Estimated number of drug mentions in thousands</i>	<i>Relative standard error in percent</i>
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 of terms

An *ambulatory patient* is an individual seeking personal health services 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 (M.D.) or doctor of osteopathy (D.O.)

currently in office-based practice who spends time in 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 physicians identify as a location for ambulatory practice. Responsibility over time for patient care and professional services rendered there generally resides with the individual physician rather than with 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 and 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. The physician records all new drugs and continued medications when the patient is 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, 1981

<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 percent					
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 ÷ 30 percent).

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