VITAL AND HEALTH STATISTICS

Drug Utilization in Office-Based Practice, A Summary of Findings

National Ambulatory Medical Care Survey: United States, 1980

This report uses the findings of the 1980 National Ambulatory Medical Care Survey to highlight the utilization of drugs in the physician's office-based practice. It establishes several unique indexes for measuring the frequency and intensity with which drugs were ordered or provided, using these indexes to evaluate patterns of drug use as they varied with different patients, physicians, diagnoses, and other variables of office-based ambulatory care. The report also presents findings on certain key characteristics of the drugs: their entry status (generic or brand name), prescription status (prescription or over-the-counter), level of potential abuse, and composition (single ingredient or combination form).

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Contents

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

Drug Utilization in Office-Based Practice, A Summary of Findings: National Ambulatory Medical Care Survey

by Hugo Koch, Division of Health Care Statistics

Introduction

> If mortality rates for certain diseases prevailed today as they did at the turn of the century, almost 400,000 Americans would lose their lives this year to tuberculosis, almost 300,000 to gastroenteritis, 80,000 to diphtheria, and 55,000 to poliomyelitis. Instead, the combined toll of all four diseases is projected to be less than 10,000 lives. That the toll is 10,000 instead of 835,000 is largely due to medicines. . . . The curative revolution is, in essence, a drug revolution.[1]

With so much popular attention currently being directed to the tragic *misuse* of drugs, there is sometimes a tendency to forget the overwhelming benefits that result from their rational *use,* and the vital role that they play in the prevention, diagnosis, and treatment of disease. The purpose of this report is to describe this role in one treatment setting—a setting that often does not receive its proper share of attention—the doctor's office.

To accomplish this task, the report uses the findings of the National Ambulatory Medical Care Survey for calendar 1980. Each year since 1973 the National Center for Health Statistics has used the National Ambulatory Medical Care Survey (NAMCS) to collect descriptive data about the medical care provided in the doctor's office. NAMCS data collectors contact a representative sample of the Nation's doctors of medicine and osteopathy whose primary professional effort lies in office-based, patient care practice. The sampled physicians in turn complete records (figure 1, Patient Record) for a systematic random sample of their office visits over a weekly reporting period. When the sampled findings for 1980 were expanded to approximate the national universe of office visits, the result was an estimated 575,745,000 visits. A summary of general NAMCS findings, based on these 575.7 million office visits, has been published.[2]

The year 1980 was the first in the 8-year history of NAMCS that the respondents reported the number and names of the specific drugs that they used. On the collection instrument (figure 1, item 11) four spaces were allowed for drugs associated with the principal diagnosis and an additional four spaces for drugs used "for all other reasons." Physicians responded with 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 immunizing and desensitizing agents and nonprescription as well as prescription drugs. Along with all new drugs, the physician also recorded continued medications if the patient was specifically instructed during the visit to continue the medication. The methodology used to collect, classify, and process drug information for the 1980 NAMCS is reported elsewhere.[3]

It should be emphasized from the outset that NAMCS drug findings are designed to measure *utilization*—that is, the ordering or providing of medications (drugs) in a given treatment setting—the doctor's office. They are not intended to serve as a market barometer. In the few places in this report where trade names appear, they are used only to illustrate patterns of utilization; their appearance does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services. Further, the term *utilization* does not extend beyond the ordering or providing of a drug in the physician's office. Ultimate utilization of a drug depends on the patient's compliance with the doctor's instruction and cannot be determined from NAMCS findings.

In the pages that follow, the 1980 findings on drug utilization will be presented in two sections:

Section I. General patterns of drug utilization, by diagnosis, patient, physician, and other visit characteristics.

Section II. Dimensions of the drugs utilized, namely: entry choice (generic or brand name), prescription status (prescription or nonprescription), level of potential abuse, and composition status (single-ingredient or combination), by patient, physician, and visit characteristics.

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PATIENT LOG

As each patient arrives, record name and time of visit on the log below. For the patient entered on line #5, also complete the patient record to the right.

	PATIENT'S NAME	TIME OF VISIT
1		a.m. / p.m.
2		a.m. / p.m.
3		a.m. / p.m.
4		a.m. / p.m.
5		a.m. / p.m.

Record items 1-15 for this patient.

CONTINUE LISTING PATIENTS ON NEXT PAGE

ASSURANCE OF CONFIDENTIALITY—All information which would permit identification of an individual, a practice, or an establishment will be held confidential, will be used only by persons engaged in and for the purposes of the survey and will not be disclosed or released to other persons or used for any other purpose.

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

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PATIENT RECORD
NATIONAL AMBULATORY MEDICAL CARE SURVEY

1. DATE OF VISIT — Month / Day / Year

2. DATE OF BIRTH — Month / Day / Year

3. SEX
1 ☐ FEMALE
2 ☐ MALE

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

5. ETHNICITY
1 ☐ HISPANIC ORIGIN
2 ☐ NOT HISPANIC

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

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

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

9. PHYSICIAN'S DIAGNOSES
a. PRINCIPAL DIAGNOSIS/PROBLEM ASSOCIATED WITH ITEM 8a.
b. OTHER SIGNIFICANT CURRENT DIAGNOSES

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

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

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

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

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

14. DISPOSITION THIS VISIT *[Check all that apply]*
1 ☐ NO FOLLOW-UP PLANNED
2 ☐ RETURN AT SPECIFIED TIME
3 ☐ RETURN IF NEEDED, P.R.N.
4 ☐ TELEPHONE FOLLOW-UP PLANNED
5 ☐ REFERRED TO OTHER PHYSICIAN
6 ☐ RETURNED TO REFERRING PHYSICIAN
7 ☐ ADMIT TO HOSPITAL
8 ☐ OTHER *(Specify)* _____

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

PHS-6105-D (9/79)

OMB No. 68-R1498

Figure 1. Patient Record

Data users are urged to review the two appendixes to this report. They provide information necessary for the proper understanding and interpretation of the statistics presented. Appendix I contains a general description of the survey methods, sample design, and data collection and processing procedures. Imputation methods, estimation techniques, and estimates of sampling variation are also presented. Since the statistics in the report are based on a sample of ambulatory visits rather than on all visits, they are subject to sampling errors. Therefore, particular attention should be paid to the section in appendix I entitled "Reliability of estimates." Appendix II presents definitions of the terms used in this report and in the survey operations.

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Section I. General patterns of office-based drug utilization

The survey findings presented in this section explore general patterns of drug utilization in the doctor's office. Several terms used in this general evaluation require clarification at the outset.

The term *drug* is interchangeable with the term *medication.*

A *drug mention* is the physician's entry of a pharmaceutical agent ordered or provided—by any route of administration—for the purpose of prevention, diagnosis, or treatment. Mentions include immunizing and desensitizing agents, and nonprescription as well as prescription drugs. Along with all new drugs, the physician also recorded continued medication if the patient was specifically instructed during the visit to continue the medication. An estimated 679,593,000 drug mentions resulted from the 1980 survey.

A *drug visit* is an office visit at which one or more drugs were ordered or provided. In 1980 there were an estimated 363,489,000 drug visits, comprising 63 percent of the total 575,745,000 office visits. The percent of office visits represented by the drug visits will sometimes be called the *drug visit proportion.*

The *drug mention rate* is the average number of drugs utilized per office visit, obtained by dividing the number of drug mentions by the number of office visits. Its magnitude is therefore influenced by the number of office visits where no drug was utilized. For the entire universe of 575,745,000 office visits, the overall drug mention rate was 1.18 drugs per average office visit.

The *drug intensity rate* is the average number of drugs utilized per drug visit, obtained by dividing the number of drug mentions by the number of drug visits. This index of utilization is especially useful when it is desired to ignore the non-drug visits and to focus on the sheer volume of the drug therapy given, along with its potentials for drug-drug interactions. For the entire 363,489,000 drug visits, the intensity rate was 1.87 drugs ordered or provided per average drug visit.

Overview

Table 1 offers the data user an alphabetized listing of the 100 agents most frequently utilized by physicians in office practice. The listed drugs are in the form of generic substances. Their frequency of mention combines their mentions as single-entity agents with their mentions as ingredients of combination products. Thus, the 26,334,000 total mentions of the ranking generic substance, hydrochlorothiazide, include 11,604,000 mentions of hydrochlorothiazide as a single-entity drug and its 14,730,000 mentions as an ingredient of a combination product. An earlier publication borrows from the 1980 NAMCS findings to list the 200 brand or generic names most frequently entered by responding physicians.[4]

A second useful overview of office-based drug utilization appears in table 2. Here, the total 679,593,000 drug mentions are described by the chief therapeutic effect that each was intended to produce. A comprehensive listing of 68 therapeutic categories is used.[5] The therapeutic categories were selected from the American Hospital Formulary Classification System, copyright American Society of Hospital Pharmacists (reproduced with the Society's permission). Table A recaps the 16 major therapeutic groupings according to their relative prominence of mention. The data user may note the obvious preeminence enjoyed by nontopical anti-infective agents and by central nervous system drugs. Together they accounted for 32 percent of all drug mentions.

Diagnosis

Proper evaluation of the patterns of drug utilization requires that the data user look first to the diseases that the drugs were intended to prevent, diagnose, or cure. The most direct and frequent linkage occurs here. A drug is seldom if ever utilized for the sole reason that the patient is over 65, or a female; or that the physician is an

Table A. Number and percent distribution of all drug mentions by major therapeutic categories: United States, 1980

Major therapeutic categories[1]	*Number of mentions in thousands*	*Percent distribution*
All categories	679,593	100.0
Antihistamine drugs	43,939	6.5
Anti-infective agents (nontopical)	104,898	15.4
Antineoplastic agents	5,371	0.8
Autonomic drugs	25,237	3.7
Blood formation and coagulation	8,312	1.2
Cardiovascular drugs	64,463	9.5
Central nervous system drugs	110,706	16.3
Electrolytic, caloric, and water balance	51,956	7.6
Expectorants and cough preparations	18,899	2.8
Eye, ear, nose, and throat preparations	26,076	3.8
Gastrointestinal drugs	24,140	3.6
Hormones and synthetic substances	55,843	8.2
Serums, toxoids, and vaccines	23,711	3.5
Skin and mucous membrane preparations	55,188	8.1
Spasmolytic agents	11,541	1.7
Vitamins	24,244	3.6
Residual (other agents and therapeutic effect undetermined)	25,068	3.7

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

internist, or a pediatrician. When variations in the rhythm of utilization occur, they usually reflect differing patterns of morbidity.

It is fundamental then to examine drug utilization in terms of the diagnoses rendered in office-based care. Table 3 makes this exploration, using the drug mentions specific to the first-listed (principal) diagnosis associated with each office visit (figure 1, item 11a). It is readily evident that two major diagnostic categories—respiratory disease and circulatory disease—dominate the world of office-based ambulatory care. Their dominance appears in the number of office visits in which they figure as a principal diagnosis; it also can be seen in most of the various measures of drug utilization associated with their treatment. For example:

- Respiratory and circulatory diseases lead other major diagnostic categories in the proportion of their office visits at which one or more drugs was given (about 89 percent for respiratory disease and 79 percent for circulatory.)
- The two disease groups also command the highest proportions of total drug mentions (about 20 percent for respiratory disease and 15 percent for circulatory).
- With about 1.6 drug mentions for each category per average office visit, they outrank the other major disease categories in drug mention rate.
- In its drug intensity rate, the circulatory disease category clearly outranks all others; for example, chronic ischemic heart disease, with 2.4 drug mentions per average drug visit, dramatically exceeds the other disease categories or specific diseases within those categories.

Drug utilization by diagnosis has received detailed attention in two reports based on the 1980 NAMCS findings.[5,6] Therefore, it will not undergo extensive analysis in this general report.

Patient

Tables 4–8 examine the manner in which drug utilization varies with selected characteristics of the office patient. (An earlier report has used advance findings of the 1980 NAMCS to highlight variations in utilization based on the age and sex of the patient.)[7]

Table 4, with its application of drug mention and intensity rates, reveals two peaks occurring along the spectrum of patient age—a minor peak at the youngest end and a major peak at the oldest. The provision of prophylactic immunizations helps to explain the minor peak. But the most arresting fact emerging from the age findings is the steep increase in average drug utilization beginning with age 45 and reaching its highest point at 65 years and over. Higher rates in this group, of course, signal the onset—and sometimes concomitant presence—of the chronic, debilitating diseases that afflict the aging.

Table 5 measures drug utilization from another perspective. Here the differences between the age groups are described in terms of the therapeutic effects that the drugs were intended to produce. Note especially the dramatic increase in the utilization of the diuretics and cardiovascular drugs that begins with age 45 years and continues beyond age 64. More than any other category of drugs, these agents contribute chiefly to the peak in average utilization that characterizes the oldest age group.

Not all the therapeutic categories, however, show similar increases in drug utilization with advancing age. Figure 2 graphically shows varying patterns by the three most-mentioned categories—cardiovascular drugs, central nervous system drugs, and systemic anti-infectives. In direct contrast with the cardiovascular category, the anti-infectives are most frequently utilized by the age group under 25 years; their usage then falls away abruptly in an inverse relationship to advancing years. The use of the central nervous system drugs increases sharply between ages 25–44 years, then subsides gradually throughout the later years of life.

The relationship between the sex of the patient and drug utilization requires careful evaluation.

The findings in table 4 supply the general framework for this evaluation. 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 or 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

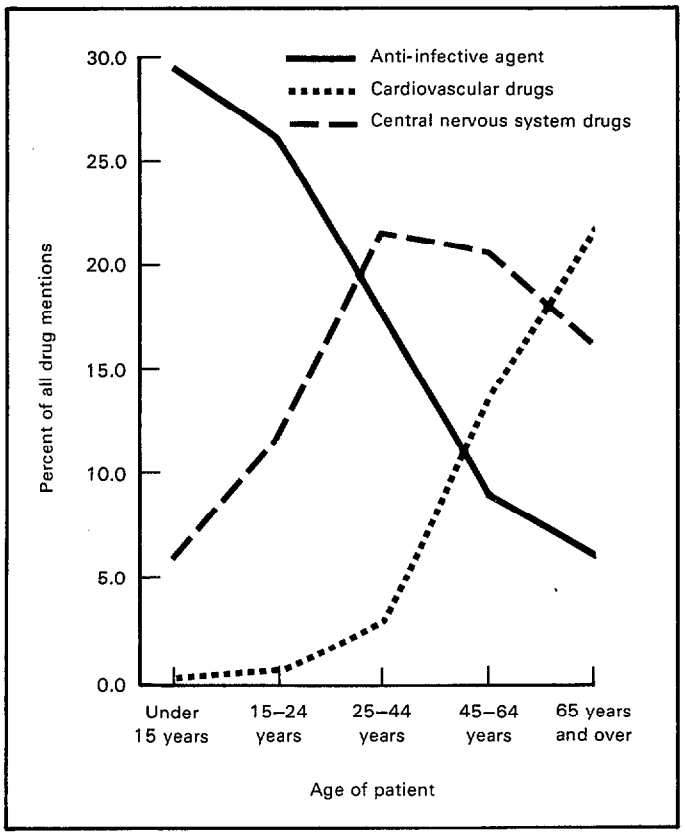

Figure 2. Utilization of three therapeutic categories of drugs by age of patient, based on percent of drug mentions within respective age groups: United States, 1980

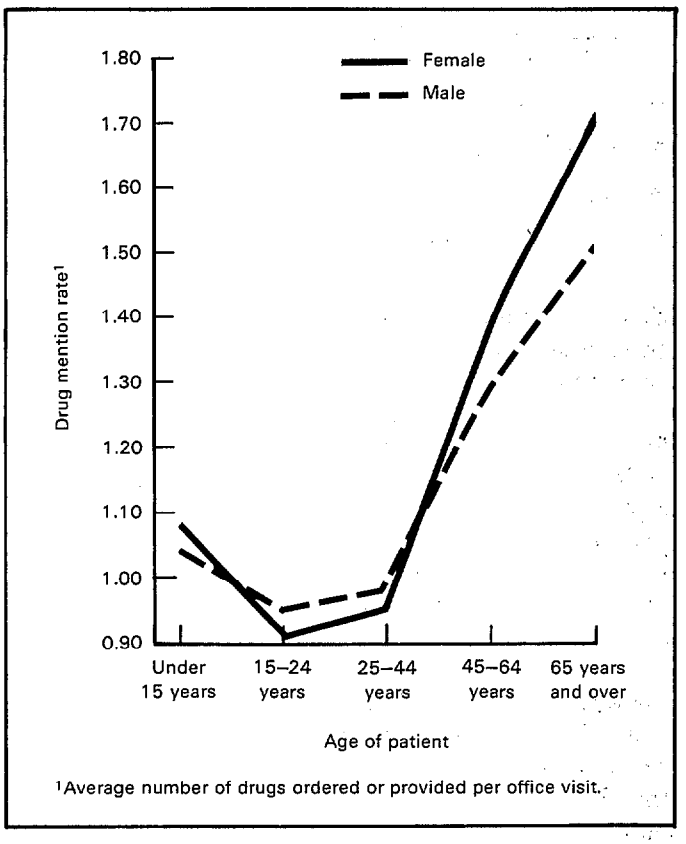

Figure 3. Drug mention rate by sex and age of patient: United States, 1980

is viewed from other perspectives, especially those of average usage, a different picture emerges—for example, the respective drug visit proportions. For female patients, the drug visit proportion was 63.3 percent, for male patients 62.8. The difference is not statistically significant; it could be due to sampling error or variability. In terms of the drug mention rates or drug intensity rates, there is also no marked difference between the average female and male patient. In fact, if the mentions of prenatal multivitamins, estrogens, and oral contraceptives—agents unique to female use—are subtracted from the female total of drug mentions, the drug mention rate for the average female patient is reduced to 1.14, suggesting an even closer agreement in average drug use.

This near equivalence in average drug utilization prevails up to age 65 (table 4 and figure 3). Beyond that point the utilization paths for the sexes diverge perceptibly, an effect probably due to a more intensive female use of the central nervous system drugs—chiefly, analgesics, psychotherapeutic agents, sedatives, and hypnotics (table 7).

Thus the general indexes of average utilization seldom reveal any marked differences between men and women. Proceeding to a more specific level, tables 6 and 7 explore sex variations in the utilization of selected therapeutic groups of drugs. 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 (however, the use of analgesics, anticonvulsants, and tranquilizers was roughly equivalent between the sexes).
- Electrolytic, caloric, and water balance substances.
- Hormones and synthetic substances (however, there was no difference in the use of adrenals and of antidiabetic agents between the sexes).
- Vitamins.

Male patients exceeded female patients in their utilization of:

- Antihistamine drugs.
- Anti-infective agents.
- Cardiovascular drugs (except hypotensives, used about equally by both sexes).
- Serums, toxoids, and vaccines.
- Spasmolytic agents.

In the utilization of the following drug categories, there was either no difference between male and female proportions or the difference was so slight that much of it may be explained by the presence of sampling error.

- Autonomic drugs.
- Blood formation and coagulation agents (females

made more use of anti-anemia drugs; males made more use of anticoagulants).

- Gastrointestinal drugs.
- Expectorants and cough preparations.
- Eye, ear, nose, and throat preparations.
- Skin preparations.

By listing the 10 generic substances (in single-ingredient plus combination form) most frequently utilized by each sex-age group, table 8 shows a final perspective of utilization as it varied with patient age and sex.

Table 4 provides general indexes of drug utilization for three categories of race: white, black, and "other," which chiefly includes American Indians and patients of Asian or Pacific Island origin. For the "other" category, drug utilization deserves the attention of the analyst. Although their drug visit proportion is about equivalent to the proportion for white patients, their indexes of average drug utilization, as expressed in drug mention and intensity rates, are somewhat lower than those of the white or black patients. It is not in the scope of this general report to explore all the reasons for these lower rates, but the explanation seems to lie partly in the fact that 75 percent of these "other" visits were made by patients under 45 years of age. For black visits, the contrasting proportion was 65 percent; for white visits, a relatively modest 59 percent. Since the "other" patients were more youthful, their visits were less frequently involved with such drug-intensive conditions as Circulatory disease. In fact, Circulatory disease as a principal diagnosis appeared in only 4 percent of their visits compared with 9 percent for white visits.

Except that black patients showed a slightly higher drug visit proportion, the findings in table 4 reveal no marked difference between white and black visits in average, overall drug utilization. Nor were there many marked differences in their respective utilization of the specific drug categories (table 9). For the following major therapeutic groups, the differences were so slight that they were probably due in large part to the presence of sampling error:

- Adrenals.
- Antihistamine drugs.
- Anti-infective agents.
- Autonomic drugs.
- Blood formation and coagulation agents.
- Cardiac drugs.
- Electrolytic, caloric, and water balance agents.
- Expectorants and cough preparations.
- Eye, ear, nose, and throat preparations.
- Gastrointestinal drugs.
- Sedatives and hypnotics.
- Serums, toxoids, and vaccines.
- Spasmolytic agents.
- Vitamins.

White patients significantly exceeded black patients in only three of the categories—antineoplastic agents, psychotherapeutic agents, and skin preparations. Black patients exceeded white patients only in their use of analgesics, hypotensives, and antidiabetic agents.

Physician

Drug utilization, as it varies with physician characteristics, will receive detailed attention in a separate series of NAMCS reports.[8] Therefore, it will not undergo extensive exploration in these pages.

Table 10 directs attention to the physicians who order or provide the drugs utilized in office practice, by providing general indexes of drug utilization according to the physician's specialty, geographic region of practice, type of practice, and age.

Note the considerable variation that exists among the individual specialties in the frequency and intensity of their drug utilization. Drug visit proportions, for example, range from a high of 76.9 percent for dermatologists to a low of 29.6 percent for orthopedic surgeons. Drug intensity rates range from a high of 2.44 for cardiovascular specialists to a low of 1.28 for urologists. The variation in drug mention rates is graphically displayed in figure 4.

In sheer volume of utilization, however, it is the general or family practitioner who clearly dominates the scene. With 41 percent of the total 679,593,000 mentions, this physician led all other specialities (table 10), maintaining this dominance throughout 12 of the 16 major drug categories (table B).

Table 10 reports several other findings that are worthy of note. Regardless of the measure of utilization applied, the following contrasts emerge sharply enough to warrant further exploration in separate NAMCS reports:

- The West Region fell substantially below the other geographic areas.
- Solo practitioners utilized drugs more frequently and intensively than their counterparts in multiple member practice.
- Physicians under 45 years of age were less likely to resort to drug therapy than older physicians.

Other visit characteristics

Table 11 applies the familiar indexes of drug utilization to various other dimensions of the office visit. Certain of the findings are highlighted below. Some point the way to more detailed analysis.

An examination of drug visit proportions reveals that the new patient is much less likely to receive drug

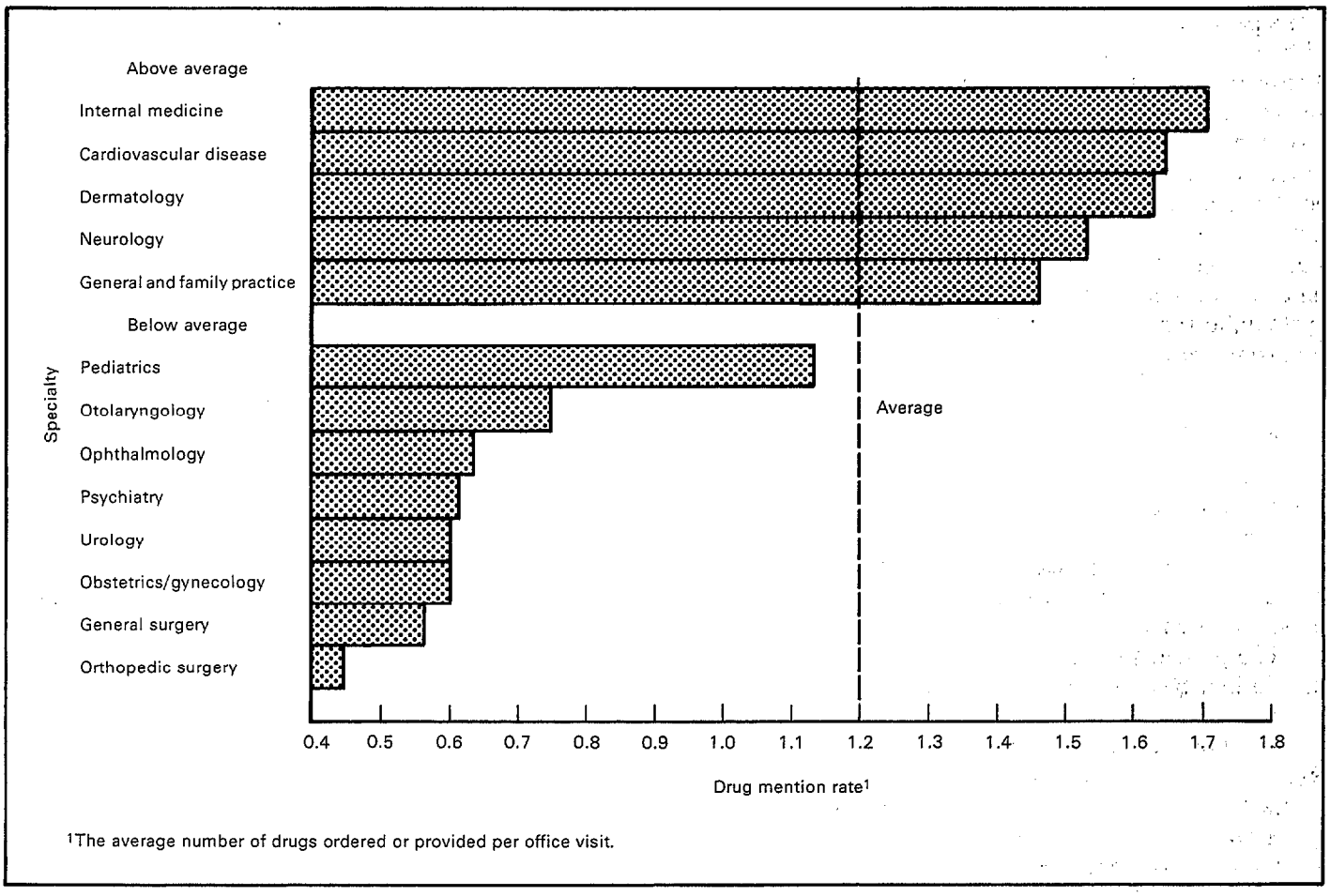

Figure 4. Drug mention rate by specialty: United States, 1980

therapy than the patient whom the doctor has seen before. This is especially true if the new patient has been referred by another physician. If one or more drugs are utilized, however, the drug intensity rates suggest that a *new problem*—whether it is a problem presented by a new patient or a problem not encountered before in an old patient—will probably result in fewer drugs ordered or provided. Thus newness of patient or problem (or

Table B. Number of mentions of major drug categories by physician specialty with the largest fraction of mentions for each category: United States, 1980

Major drug categories	*All specialties*	*Specialty with the largest single fraction of mentions*
	Total number of mentions in thousands	
All categories	679,593	General and family practice (41.1 percent)
Antihistamine drugs	43,939	General and family practice (46.6 percent)
Anti-infective agents (nontopical)	104,898	General and family practice (44.9 percent)
Antineoplastic agents	5,371	Internal medicine (85.0 percent)
Autonomic drugs	25,237	General and family practice (54.3 percent)
Blood formation and coagulation	8,312	General and family practice (52.3 percent)
Cardiovascular drugs	64,463	General and family practice (46.4 percent)
Central nervous system drugs	110,706	General and family practice (49.8 percent)
Electrolytic, caloric, and water balance	51,956	General and family practice (53.2 percent)
Expectorants and cough preparations	18,899	General and family practice (51.4 percent)
Eye, ear, nose, and throat preparations	26,076	Ophthalmologists (61.2 percent)
Gastrointestinal drugs	24,140	General and family practice (58.2 percent)
Hormones and synthetic substances	55,843	General and family practice (44.1 percent)
Serums, toxoids, and vaccines	23,711	Pediatrics (56.9 percent)
Skin and mucous membrane preparations	55,188	Dermatology (46.1 percent)
Spasmolytic agents	11,541	General and family practice (48.9 percent)
Vitamins	24,244	General and family practice (50.4 percent)

both) seems to invite a more conservative approach to drug therapy.

Does the use of drug therapy tend to preclude the use of other treatment mechanisms? The answer depends directly on the specific condition being treated. Detailed analysis by diagnosis is required. However, the evidence presented in table 11 does point up the fact that drug therapy was the only form of treatment utilized in the majority (54 percent) of the 363,489,000 drug visits.

The data on visit disposition show that drugs are more frequently and intensely utilized when a followup of some kind has been ordered by the doctor. In fact, the intensity of the drug therapy may to some extent determine the specificity of the followup instruction. Thus a scheduled return visit is associated with a drug intensity rate of 1.97, a planned telephone contact with an intensity rate of 1.89, and the least specific "return if needed" with the relatively low rate of 1.78.

Does the utilization of drugs substitute for time spent in face-to-face contact with the physician? The drug intensity rates for visit duration suggest that the opposite is true. They vary in direct proportion to the encounter time between physician and patient, from a low of 1.40 for drug visits that involved no face-to-face contact to a high of 2.03 for drug visits that exceeded 15 minutes in the duration of encounter time.

Section II. Key drug dimensions

In this section, attention is focused on four key characteristics of the drug products used in 1980 office practice:

- Their *entry status:* generic or brand name?
- Their *prescription status:* prescription (℞) or over-the-counter (OTC)?
- Their *Federal control status:* level of potential abuse or dependence.
- Their *composition status:* single-ingredient or combination?

Table 12 summarizes the overall distribution of these drug variables.

Table 17 describes their utilization according to the major therapeutic categories of drugs.

Tables 18–20 show the degree to which the drug dimensions varied with different diagnoses, patients, and physicians.

Tables 13–16 use the names of specific products to list the generic entries, nonprescription drugs, controlled drugs, and combination agents most frequently utilized.

Entry status

The NAMCS drug data base permits the description of drug mentions by their entry status, that is, whether the doctor recorded the medication by brand name or by generic name. (NAMCS respondents were instructed to use the same form of entry on the NAMCS visit record that they used on the patient's medical record and on any prescription written.)

During the past decade, extensive interest has centered on the merits of prescribing by brand-name drug versus prescribing by the (usually) less costly generic drug. Since 1970, the generic drug business has grown faster than the total pharmaceutical market. By 1980, about 15 percent of all new prescriptions were written generically.

It should be emphasized that the extent of generic utilization revealed by the NAMCS data in table 12 (24.2 percent of all drugs mentioned) reflects the *total* utilization of generic drugs in one treatment setting—the doctor's office. Thus, along with generically written prescriptions (new ones or refills), the NAMCS generic fraction includes nonprescription generics (for example, aspirin or insulin); most serums, toxoids, and vaccines (for example, diphtheria tetanus toxoid pertussis); many diagnostic agents (for example, tuberculin); and a substantial number of other agents (chiefly the antibiotic injectibles) administered in the doctor's office.

Table 13 lists the 38 generics most frequently entered by office-based physicians.

Of the major drug groups, the following exceeded the overall average in the proportion of their mentions that were generically identified (table 17):

- Anti-infective agents.
- Antineoplastic agents.
- Serums, toxoids, and vaccines.
- Vitamins.

Of the major diagnostic groups, the following were significantly above average in the proportion of generic agents applied to their treatment (table 18):

- Neoplasms.
- Endocrine, nutritional, and metabolic diseases and immunity disorders.
- Diseases of blood and blood-forming organs.
- Health supervision of infant or child.

Prescription status

Drugs are subdivided into two major classifications—prescription (legend or ℞) and nonprescription (over-the-counter or OTC) drugs. The use of a prescription drug represents the judgment of a physician about a patient's medical care needs. The use of an over-the-counter drug represents a much greater reliance on self-care by the patient. In many cases there are also significant cost differences between prescription and nonprescription

drugs used for the same purpose, for example, aspirin or Darvon used for analgesic effect. Furthermore, some over-the-counter drugs are extremely important in medical care (for example, aspirin for fever, insulin for diabetes, antacids for peptic ulcer). For these reasons the NAMCS drug data base distinguishes between prescription and nonprescription drugs.

Nonprescription drugs accounted for 85,344,000 (12.6 percent) of the 679,593,000 drug mentions (table 12). Table 14 lists the 30 nonprescription drugs most frequently utilized in office-based drug therapy.

Of the major drug groups, the following significantly exceeded the overall average in their proportion of nonprescription drug mentions (table 17):

- Blood formation and coagulation substances.
- Central nervous system drugs (chiefly the analgesics).
- Expectorants and cough preparations.
- Eye, ear, nose, and throat preparations.
- Gastrointestinal drugs.
- Skin and mucous membrane preparations.
- Vitamins.

Of the major diagnostic groups, the following were significantly above average in the proportion of nonprescription drugs applied to their treatment (table 18):

- Infectious and parasitic diseases.
- Endocrine, nutritional, and metabolic diseases and immunity disorders.
- Diseases of blood and blood-forming organs.
- Acute upper respiratory infections.
- Diseases of digestive system.
- Symptoms, signs, and ill-defined conditions.
- Normal pregnancy.

Federal control status

A very important issue in health and social policy is the use of medications having significant potential for addiction or habituation. Such medications are under the regulatory control of the Drug Enforcement Administration (DEA), an agency of the U.S. Department of Justice. In table 12, the medications used in office practice are characterized by their DEA control category (Schedule). Each successive Schedule, from II through V, reflects a decreasing potential for abuse, as follows:

- Schedule II (morphine, amphetamine, and so forth.) High potential for abuse. Abuse may lead to severe psychological or physical dependence.
- Schedule III (paregoric, chlorphentermine, and so forth.) Potential for abuse less than for drugs in Schedule II. Abuse may lead to moderate or low physical dependence or high psychological dependence.
- Schedule IV (diazepam, phenobarbital, and so forth.) Potential for abuse less than for drugs in Schedule III. Abuse may lead to limited physical or psychological dependence.
- Schedule V (Lomotil, Donnagel-PG, and so forth.) Potential for abuse and dependence less than for drugs in Schedule IV.

NAMCS data in table 12 reveal that a small, but critical, proportion (8.6 percent) of all drug mentions were controlled drugs, with drugs in Schedule IV showing the highest frequency of mention.

Table 15 lists the 20 controlled drugs most frequently utilized by office-based physicians.

All except a handful of controlled drugs belonged in three therapeutic categories (table 17):

- Central nervous system drugs (accounted for nearly 80 percent of all controlled mentions).
- Expectorants and cough preparations.
- Gastrointestinal drugs (chiefly, antidiarrhea agents).

Of the diagnoses encountered in office practice, the following were significantly above average in the proportion of controlled drugs applied to their treatment (table 18):

- Obesity.
- Mental disorders.
- Diseases of central nervous system.
- Diseases of digestive system.
- Diseases of musculoskeletal system.
- Symptoms, signs, and ill-defined conditions.
- Injury and poisoning.

From the findings in table 19, it is evident that patient age 25–54 years was the period of life most frequently associated with controlled drug therapy. Female patients slightly exceeded males in their utilization of controlled agents, the difference being most prominent in the age groups over 44 years.

Composition status

Table 12 reveals that 26.4 percent of the 679,593,000 drug mentions were combination drugs. (The proportion includes the mentions of multivitamins.) An issue of long-standing debate in drug utilization concerns the use of drugs in fixed-ratio combinations as opposed to single-ingredient drugs. Combination drugs offer more potential convenience to the patient; however, they usually cost more and permit less flexibility in dosage adjustment. The NAMCS drug database allows for differentiating single-ingredient drugs from combination drugs and can identify the specific ingredients of the combinations if this information is required.

Table 16 lists the 39 combination drugs most fre-

quently utilized, along with their active ingredients and the therapeutic effect or effects desired.

Of the major drug groups, 10 significantly exceeded the average in the proportion of their mentions represented by combination drugs (table 17):

- Antihistamine drugs.
- Autonomic drugs.
- Hypotensive agents.
- Expectorants and cough preparations.
- Eye, ear, nose, and throat preparations.
- Gastrointestinal drugs.
- Serums, toxoids, and vaccines.
- Skin preparations.
- Spasmolytic agents.
- Vitamins.

Of the primary diagnoses encountered in office practice, the following were significantly above average in the proportion of combination drugs applied to their treatment (table 18):

- Diseases of eye and adnexa.
- Otitis media.
- Acute upper respiratory infections.
- Diseases of digestive system.
- Diseases of genitourinary system.
- Injury and poisoning.
- Normal pregnancy (largely due to prenatal multivitamins.
- Health supervision of infant or child (largely due to combined vaccines).

The following specialties significantly exceeded the average in their utilization of combination drugs (table 20):

- Pediatrics (largely due to the use of combined vaccines).
- General surgery.
- Obstetrics and gynecology (largely due to the use of prenatal multivitamins).
- Urology.
- Otolaryngology.

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List of detailed tables

Table 1. Number of drug mentions and therapeutic use of the 100 generic substances most frequently utilized: United States, 1980

Rank	100 generic substances most frequently utilized	Number of mentions in thousands[1]	Therapeutic use
9	Acetaminophen	11,990	Analgesic, antipyretic
54	Aluminum hydroxide	4,396	Antacid
70	Amitriptyline	3,159	Antidepressant
13	Amoxicillin	11,114	Antibiotic
12	Ampicillin	11,549	Antibiotic
2	Aspirin	18,840	Analgesic, antipyretic
41	Atropine	5,790	Anticholinergic
57	Benzoyl peroxide	4,097	Keratolytic, acne treatment
55	Betamethasone	4,343	Glucocorticoid
20	Brompheniramine	8,319	Expectorant
27	Caffeine	7,031	Stimulant
56	Cephalexin	4,334	Antibiotic
59	Chlordiazepoxide	4,057	Emotional disturbance, sedative
81	Chlorothiazide	2,800	Diuretic
11	Chlorpheniramine	11,902	Antihistaminic
68	Chlorpropamide	3,215	Hypoglycemic agent
46	Chlorthalidone	5,203	Diuretic, antihypertensive
49	Cimetidine	4,852	Ulcer and gastro-intestinal disease
75	Clindamycin	2,994	Antibacterial
92	Clorazepate	2,383	Tranquilizer
17	Codeine	9,171	Analgesic, antitussive
48	Dexamethasone	4,853	Anti-inflammatory
67	Dextromethorphan	3,268	Cough suppressant
32	Diazepam	6,674	Sedative, tranquilizer
10	Digoxin	11,906	Cardiotonic
38	Diphtheria tetanus toxoids pertussis	6,092	Immunization
52	Diphenhydramine	4,588	Antihistaminic
98	Doxepin	2,153	Antidepressant
99	Ephedrine	2,122	Adrenegic (bronchodilator)
5	Erythromycin	15,693	Antibiotic
37	Estradiol	6,154	Estrogen replacement therapy
80	Estrogens	2,854	Estrogen replacement therapy
96	Flurazepam	2,202	Hypnotic
15	Furosemide	10,001	Diuretic
18	Guaifenesin	8,837	Cough suppressant
61	Hydralazine	3,625	Antihypertensive
1	Hydrochlorothiazide	26,334	Diuretic
19	Hydrocortisone	8,654	Anti-inflammatory
69	Hydroxyzine	3,209	Tranquilizer
42	Hyoscyamine	5,491	Anticholinergic
40	Ibuprofen	5,819	Anti-inflammatory
66	Indomethacin	3,275	Anti-inflammatory
87	Influenza virus vaccine	2,556	Immunization
44	Insulin	5,264	Antidiabetic
63	Iron preparations	3,467	Iron deficiency
60	Isopropamide iodide	4,013	Anticholinergic
47	Isosorbide	4,957	Coronary vasodilator
89	Levothyroxine	2,478	Thyroid hormone
83	Lidocaine	2,641	Local anesthetic
86	Meclizine	2,592	Antinauseant
88	Meprobamate	2,535	Tranquilizer, sedative
82	Metoprolol	2,692	Beta-adrenergic blocker
22	Methyldopa	7,710	Antihypertensive
84	Methylprednisolone	2,626	Glucocorticoid
91	Miconazole	2,475	Antifungal
25	Multivitamins general	7,096	Vitamins
33	Multivitamins prenatal	6,404	Vitamins
71	Naproxen	3,158	Anti-inflammatory, antipyretic, analgesic
16	Neomycin	9,719	Antibiotic
43	Nitroglycerin	5,452	Vasodilator
90	Norethindrone	2,475	Oral contraceptive
97	Norgestrel	2,200	Oral contraceptive
79	Nystatin	2,875	Antifungal
3	Penicillin	16,937	Antibiotic
36	Phenacetin	6,255	Antipyretic, analgesic
28	Phenobarbital	7,014	Anticonvulsant, hypnotic, sedative
72	Phentermine	3,114	Anorexiant
94	Phenylbutazone	2,296	Anti-inflammatory
6	Phenylephrine	15,369	Sympathomimetic

See footnote at end of table.

Table 1. Number of drug mentions and therapeutic use of the 100 generic substances most frequently utilized: United States, 1980—Con.

Rank	100 generic substances most frequently utilized	Number of mentions in thousands[1]	Therapeutic use
4	Phenylpropanolamine	16,565	Sympathomimetic
31	Polio vaccine	6,686	Immunization
21	Polymixin B	7,784	Antibacterial
35	Potassium replacement solutions	6,274	Potassium replacement therapy
51	Potassium guaiacolsulfonate	4,760	Cough preparations
76	Prednisolone	2,924	Anti-inflammatory
39	Prednisone	6,051	Anti-inflammatory
85	Prochlorperazine	2,600	Antiemetic
26	Promethazine	7,042	Antihistamine, antiemetic, sedative
14	Propranolol	10,351	Beta blocker
58	Propoxyphene	4,062	Analgesic
8	Pseudoephedrine	12,321	Antihistamine, cough suppressant
45	Reserpine	5,216	Antihypertensive
74	Salicylic acid	3,048	Antifungal, keratolytic
65	Scopolamine	3,376	Hypnotic, sedative, anticholinergic
78	Simethicone	2,884	Antiflatulent
100	Sodium citrate	2,094	Anticoagulant
77	Spironolactone	2,887	Diuretic
34	Sulfamethoxazole	6,296	Antibacterial
95	Sulfisoxazole	2,275	Anti-infective sulfa
64	Sulindac	3,446	Analgesic, antipyretic
7	Tetracycline	12,991	Antibiotic
30	Theophylline	6,750	Coronary vasodilator, diuretic
73	Thyroid	3,071	Thyroid hormone
29	Triamcinolone	6,846	Anti-inflammatory
23	Triamterene	7,628	Diuretic
50	Triprolidine	4,831	Antihistaminic
53	Tuberculin	4,488	TB skin test
24	Vitamin B-12	7,610	Vitamins
93	Warfarin	2,340	Anticoagulant
62	Zinc topical agents	3,536	Skin disease (astringent, antiseptic)

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

Table 2. Number and percent distribution of drug mentions, by selected therapeutic categories: United States, 1980

Selected therapeutic categories[1]	Number of mentions in thousands	Percent distribution
All categories	679,593	100.00
Antihistamine drugs	43,939	6.47
Anti-infective agents	104,898	15.44
Antibiotics	90,081	13.26
Cephalosporins	7,532	1.11
Erythromycins	14,989	2.21
Penicillins	41,529	6.11
Tetracyclines	17,507	2.58
Sulfonamides	8,315	1.22
Antineoplastic agents	5,371	0.79
Autonomic drugs	25,237	3.71
Parasympatholytic agents	11,353	1.67
Sympathomimetic agents	7,114	1.05
Skeletal muscle relaxants	5,041	0.74
Blood formation and coagulation	8,312	1.22
Anti-anemia drugs	5,820	0.86
Anticoagulants	2,457	0.36
Cardiovascular drugs	64,463	9.49
Cardiac drugs	26,331	3.87
Hypotensive agents	22,633	3.33
Vasodilating agents	14,646	2.16
Central nervous system drugs	110,706	16.29
Analgesics and antipyretics	57,800	8.51
Anticonvulsants	2,745	0.40
Psychotherapeutic agents	16,395	2.41
Antidepressants	10,403	1.53
Tranquilizers	5,077	0.75
Respiratory and cerebral stimulants	8,719	1.28
Sedatives and hypnotics	25,036	3.68
Electrolytic, caloric, and water balance	51,956	7.65
Replacement solutions	7,132	1.05
Diuretics	42,834	6.30
Expectorants and cough preparations	18,899	2.78
Eye, ear, nose and throat preparations	26,076	3.84
Anti-infectives	6,740	0.99
Antibiotics	4,747	0.70
Eye, ear, nose and throat preparations—Con.		
Anti-inflammatory agents	4,411	0.65
Local anesthetics	2,642	0.39
Miotics	1,583	0.23
Mydriatics	2,696	0.40
Vasoconstrictors	3,012	0.44
Gastrointestinal drugs	24,140	3.55
Antacids and adsorbents	3,732	0.55
Antidiarrhea agents	3,734	0.55
Antiflatulents	2,884	0.42
Cathartics and laxatives	3,755	0.55
Emetics and anti-emetics	4,282	0.63
Hormones and synthetic substances	55,843	8.22
Adrenals	18,312	2.69
Contraceptives	7,807	1.15
Estrogens	6,133	0.90
Gonadotropins	1,668	0.25
Insulins and antidiabetic agent	11,198	1.65
Insulins	5,264	0.77
Thyroid and antithyroid	6,846	1.01
Serums, toxoids and vaccines	23,711	3.49
Toxoids	9,355	1.38
Vaccines	13,655	2.01
Skin and mucous membrane preparations	55,188	8.12
Anti-infectives	12,570	1.85
Fungicides	5,332	0.78
Anti-inflammatory agents	22,307	3.28
Antipruritics and local anesthetics	4,053	0.60
Emollients, demulcents and protectants	3,014	0.44
Keratolytic agents	7,213	1.06
Spasmolytic agents	11,541	1.70
Vitamins	24,244	3.57
Vitamin B complex	7,888	1.16
Multivitamin preparations	12,800	1.88

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

Table 3. 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 major clinical problems: United States, 1980

[Drug information is limited to drugs ordered or provided for *principal diagnosis only* according to Patient Record]

Major clinical problem	Office visits		Drug visits[1]		Drug mentions		Drug mention rate[3]	Drug intensity rate[4]
	Number in thousands	Percent distribution	Number in thousands	Drug visit proportion[2]	Number in thousands	Percent distribution		
All major clinical problems	575,745	100.0	347,536	60.4	581,231	100.0	1.01	1.67
Principal diagnosis[5]								
Infectious and parasitic diseases	19,628	3.4	14,274	72.7	21,007	3.6	1.07	1.47
Neoplasms	16,021	2.8	5,103	31.9	9,546	1.6	0.60	1.87
Endocrine, nutritional, and metabolic diseases and immunity disorders	24,166	4.2	18,064	74.7	33,240	5.7	1.38	1.84
Diseases of endocrine glands	13,558	2.4	9,986	73.7	16,523	2.8	1.22	1.65
Obesity and other hyperalimentation	8,081	1.4	6,346	78.5	13,554	2.3	1.68	2.14
Diseases of blood and blood-forming organs	3,077	0.5	2,088	67.9	3,457	0.6	1.12	1.66
Mental disorders	24,343	4.2	12,039	49.5	18,324	3.2	0.75	1.52
Nonpsychotic disorders	20,753	3.6	9,593	46.2	13,925	2.4	0.67	1.45
Diseases of nervous system and sense organs	52,593	9.1	30,422	57.8	48,964	8.4	0.93	1.61
Diseases of central nervous system	3,722	0.6	2,932	78.8	5,413	0.9	1.45	1.85
Disorders of eye and adnexa	25,362	4.4	10,634	41.9	15,855	2.7	0.63	1.49
Otitis media (suppurative and unspecified)	11,748	2.0	10,009	85.2	17,398	3.0	1.48	1.74
Diseases of the circulatory system	53,691	9.3	42,526	79.2	84,213	14.5	1.57	1.98
Essential hypertension	25,137	4.4	21,527	85.6	38,463	6.6	1.53	1.79
Ischemic heart disease	10,430	1.8	8,489	81.4	20,599	3.5	1.97	2.43
Diseases of respiratory system	72,886	12.7	64,718	88.8	116,302	20.0	1.60	1.80
Acute upper respiratory infections	15,050	2.6	13,942	92.6	26,300	4.5	1.75	1.89
Asthma	5,921	1.0	5,447	92.0	10,594	1.8	1.79	1.94
Diseases of digestive system	23,421	4.1	14,282	61.0	24,646	4.2	1.05	1.73
Diseases of genitourinary system	32,936	5.7	19,435	59.0	26,658	4.6	0.81	1.37
Diseases of male genital organs	4,267	0.7	2,460	57.7	3,023	0.5	0.71	1.23
Diseases of female genital organs	14,718	2.6	8,761	59.5	12,550	2.2	0.85	1.43
Diseases of skin and subcutaneous tissue	36,214	6.3	28,162	77.7	53,416	9.2	1.48	1.90
Diseases of musculoskeletal system	36,839	6.4	23,075	62.6	37,544	6.5	1.02	1.63
Arthropathies	10,684	1.9	8,449	79.1	14,447	2.5	1.35	1.71
Symptoms, signs, and ill-defined conditions	19,020	3.3	10,512	55.3	17,093	2.9	0.90	1.63
Injury and poisoning	46,187	8.0	20,227	43.8	27,264	4.7	0.59	1.35
Normal pregnancy	26,256	4.6	8,166	31.0	9,908	1.7	0.38	1.21
Health supervision of infant or child	17,496	3.0	9,701	55.4	15,219	2.6	0.87	1.57
Residual	70,971	...	...	...	...	...	...	...
Problem categories								
Acute problem	208,428	36.2	147,587	70.8	241,946	41.6	1.16	1.64
Chronic problem, routine	162,075	28.2	108,692	67.1	194,718	33.5	1.20	1.79
Chronic problem, flareup	52,703	9.2	38,303	72.7	68,903	11.9	1.31	1.80
Post surgery/post injury	50,169	8.7	11,961	23.8	18,019	3.1	0.36	1.51
Non-illness care	102,370	17.8	40,993	40.0	57,645	9.9	0.56	1.41

[1] An office visit at which one or more drugs were ordered or provided.
[2] Percent of office visits at which one or more drugs were ordered or provided.
[3] The average number of drugs ordered or provided per office visit.
[4] The average number of drugs ordered or provided per drug visit.
[5] Based on the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM).

Table 4. 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 patient characteristics: United States, 1980

Patient characteristic	Office visits		Drug visits[1]		Drug mentions		Drug mention rate[3]	Drug intensity rate[4]
	Number in thousands	Percent distribution	Number in thousands	Drug visit proportion[2]	Number in thousands	Percent distribution		
All patients	575,745	100.0	363,489	63.1	679,593	100.0	1.18	1.87
Age								
Under 5 years	56,557	9.8	38,854	68.7	65,167	9.6	1.15	1.68
5–14 years	52,799	9.2	32,910	62.3	50,476	7.5	0.96	1.53
15–24 years	81,561	14.2	46,353	56.8	75,213	11.1	0.92	1.62
25–34 years	93,167	16.2	50,889	54.6	83,802	12.4	0.90	1.65
35–44 years	61,529	10.7	36,454	59.2	64,324	9.5	1.05	1.76
45–54 years	61,472	10.7	40,006	65.1	78,351	11.5	1.27	1.96
55–64 years	68,173	11.8	46,320	67.9	97,221	14.3	1.43	2.10
65–74 years	60,917	10.6	43,906	72.1	98,924	14.5	1.62	2.25
75 years and over	39,571	6.9	27,798	70.2	66,115	9.7	1.67	2.38
Sex								
Female	346,106	60.1	219,216	63.3	413,570	60.9	1.19	1.89
Male	229,639	39.9	144,274	62.8	266,023	39.1	1.16	1.84
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
Race								
White	516,616	89.7	324,648	62.8	608,346	89.5	1.18	1.87
Black	52,872	9.2	34,903	66.0	64,808	9.5	1.23	1.86
Other[5]	6,257	1.1	3,938	62.9	6,439	0.9	1.03	1.64
Ethnicity								
Hispanic	28,720	5.0	18,949	66.0	34,239	5.0	1.19	1.81
Not Hispanic	547,025	95.0	344,540	63.0	645,354	95.0	1.18	1.87

[1] An office visit at which one or more drugs were ordered or provided.
[2] Percent of office visits at which one or more drugs were ordered or provided.
[3] The average number of drugs ordered or provided per office visit.
[4] The average number of drugs ordered or provided per drug visit.
[5] Asian, Pacific Islander, American Indian, or Alaskan Native.

Table 5. Number and percent distribution of drug mentions by selected therapeutic categories, according to age of patient: United States, 1980

Selected therapeutic categories[1]	Age of patient							
	Under 25 years		25–44 years		45–64 years		65 years and over	
	Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent distribution
All categories	190,856	100.00	148,126	100.00	175,572	100.00	165,038	100.00
Antihistamine drugs	22,710	11.90	10,611	7.16	6,840	3.90	3,779	2.29
Anti-infective agents	53,728	28.15	25,435	17.17	15,334	8.73	10,402	6.30
Antibiotics	49,068	25.70	21,351	14.41	12,308	7.01	7,353	4.46
Cephalosporins	3,562	1.87	1,957	1.32	1,241	0.71	772	0.47
Erythromycins	8,132	4.26	3,259	2.20	2,322	1.32	1,275	0.77
Penicillins	26,658	13.97	8,305	5.61	4,394	2.50	2,173	1.32
Tetracyclines	6,338	3.32	5,517	3.72	3,235	1.84	2,417	1.46
Sulfonamides	3,202	1.68	1,683	1.14	1,698	0.97	1,732	1.05
Antineoplastic agents	*218	*0.11	*672	*0.45	2,591	1.48	1,889	1.14
Autonomic drugs	5,537	2.90	7,273	4.91	7,275	4.14	5,153	3.12
Parasympatholytic agents	2,344	1.23	3,263	2.20	3,133	1.78	2,612	1.58
Sympathomimetic agents	2,437	1.28	1,582	1.07	1,785	1.02	1,311	0.79
Skeletal muscle relaxants	*622	*0.33	2,102	1.42	1,727	0.98	*589	*0.36
Blood formation and coagulation	1,595	0.84	1,757	1.19	2,078	1.18	2,883	1.75
Anti-anemia drugs	1,581	0.83	1,496	1.01	1,080	0.62	1,663	1.01
Anticoagulants	Z	0.00	*241	*0.16	982	0.56	1,220	0.74
Cardiovascular drugs	794	*0.42	4,293	2.90	23,991	13.66	35,386	21.44
Cardiac drugs	*450	*0.24	1,620	1.09	9,272	5.28	14,990	9.08
Hypotensive agents	*220	*0.12	1,956	1.32	9,585	5.46	10,872	6.59
Vasodilating agents	*110	*0.06	*557	*0.38	4,877	2.78	9,102	5.52
Central nervous system drugs	15,442	8.09	32,221	21.75	36,375	20.72	26,669	16.16
Analgesics and antipyretics	9,997	5.24	14,656	9.89	18,135	10.33	15,013	9.10
Psychotherapeutic agents	1,420	0.74	5,022	3.39	6,281	3.58	3,672	2.22
Antidepressants	*632	*0.33	3,064	2.07	4,144	2.36	2,562	1.55
Tranquilizers	*748	*0.39	1,539	1.04	1,763	1.00	1,027	0.62
Respiratory and cerebral stimulants	927	0.49	4,629	3.13	2,342	1.33	821	0.50
Sedatives and hypnotics	2,500	1.31	7,044	4.76	8,743	4.98	6,750	4.09
Electrolytic, caloric, and water balance	1,845	0.97	6,839	4.62	20,485	11.67	22,787	13.81
Replacement solutions	*535	*0.28	*702	*0.47	2,913	1.66	2,982	1.81
Diuretics	943	0.49	5,697	3.85	16,909	9.63	19,285	11.69
Expectorants and cough preparations	9,988	5.23	3,980	2.69	3,166	1.80	1,766	1.07
Eye, ear, nose, and throat preparations	6,969	3.65	5,128	3.46	5,756	3.28	8,223	4.98
Anti-infectives	2,633	1.38	1,864	1.26	1,293	0.74	950	0.58
Antibiotics	1,831	0.96	1,348	0.91	905	0.52	*663	*0.40
Anti-inflammatory agents	919	0.48	1,052	0.71	1,176	0.67	1,264	28.65
Gastrointestinal drugs	4,278	2.24	5,063	3.42	7,268	4.14	7,530	4.56
Antacids and adsorbents	*469	*0.25	808	0.55	1,362	0.78	1,093	0.66
Antidiarrhea agents	1,638	0.86	*753	*0.51	*748	0.43	*596	*0.36
Antiflatulents	*353	*0.18	*669	*0.45	1,058	0.60	804	0.49
Cathartics and laxatives	*570	*0.30	*745	*0.50	1,069	0.61	1,372	0.83
Emetics and antiemetics	893	0.47	*740	*0.50	944	0.54	1,705	1.03
Hormones and synthetic substances	9,566	5.01	13,883	9.37	18,335	10.44	14,060	8.52
Adrenals	3,500	1.83	4,483	3.03	6,109	3.48	4,220	2.56
Contraceptives	4,534	2.38	3,136	2.12	*124	*0.07	Z	0.00
Estrogens	*178	*0.09	1,138	0.77	3,694	2.10	1,123	0.68
Insulins and antidiabetic agents	*331	*0.17	1,113	0.75	4,335	2.47	5,419	3.28
Insulins	*263	*0.14	826	0.56	2,124	1.21	2,051	1.24
Thyroid and antithyroid	*322	*0.17	1,912	1.29	2,531	1.44	2,082	1.26
Serums, toxoids, and vaccines	18,660	9.78	1,205	0.81	1,738	0.99	2,109	1.28
Toxoids	8,050	4.22	*603	*0.41	*527	*0.30	*176	*0.11
Vaccines	10,341	5.42	*359	*0.24	1,093	0.62	1,861	1.13
Skin and mucous membrane preparations	21,612	11.32	15,917	10.75	10,047	5.72	7,613	4.61
Anti-infectives	5,149	2.70	3,932	2.65	1,938	1.10	1,551	0.94
Fungicides	2,059	1.08	1,930	1.30	854	0.49	*489	*0.30
Anti-inflammatory agents	7,497	3.93	6,310	4.26	5,027	2.86	3,473	2.10
Antipruritics and local anesthetics	843	0.44	1,431	0.97	934	0.53	845	0.51
Emollients, demulcents, and protectants	856	0.45	993	0.67	*610	*0.35	*555	*0.34
Keratolytic agents	4,769	2.50	1,705	1.15	*427	*0.24	*312	*0.19

See footnote at end of table.

Table 5. Number and percent distribution of drug mentions by selected therapeutic categories, according to age of patient: United States, 1980—Con.

Selected therapeutic categories[1]	Age of patient							
	Under 25 years		25–44 years		45–64 years		65 years and over	
	Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent distribution
Spasmolytic agents	2,447	1.28	1,520	1.03	3,223	1.84	4,350	2.64
Vitamins	5,807	3.04	7,214	4.87	5,179	2.95	6,043	3.66
Vitamin B complex	*437	*0.23	1,502	1.01	2,498	1.42	3,451	2.09
Multivitamin preparations	4,169	2.18	4,801	3.24	1,866	1.06	1,964	1.19

[1] From the pharmacologic-therapeutic classification of the American Society of Hospital Pharmacists; selected categories reproduced with the Society's permission.

Table 6. Number and percent distribution of drug mentions by selected therapeutic categories, according to sex of patient: United States, 1980

Selected therapeutic categories[1]	Sex of patient			
	Female		Male	
	Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent distribution
All categories	413,570	100.00	266,023	100.00
Antihistamine drugs	24,580	5.94	19,360	7.28
Anti-infective agents	59,385	14.36	45,513	17.11
Antibiotics	49,594	11.99	40,487	15.22
Cephalosporins	3,848	0.93	3,684	1.38
Erythromycins	8,026	1.94	6,963	2.62
Penicillins	22,346	5.40	19,183	7.21
Tetracyclines	9,938	2.40	7,568	2.84
Sulfonamides	4,722	1.14	3,594	1.35
Antineoplastic agents	4,114	0.99	1,257	0.47
Autonomic drugs	15,312	3.70	9,925	3.73
Parasympatholytic agents	7,107	1.72	4,245	1.60
Sympathomimetic agents	3,933	0.95	3,181	1.20
Skeletal muscle relaxants	2,914	0.70	2,127	0.80
Blood formation and coagulation	5,721	1.38	2,591	0.97
Anti-anemia drugs	4,637	1.12	1,183	0.45
Anticoagulants	1,065	0.26	1,392	0.52
Cardiovascular drugs	35,360	8.55	29,103	10.94
Cardiac drugs	13,370	3.23	12,961	4.87
Hypotensive agents	14,135	3.42	8,498	3.19
Vasodilating agents	7,401	1.79	7,244	2.72
Central nervous system drugs	70,576	17.06	40,131	15.09
Analgesics and antipyretics	34,544	8.35	23,256	8.74
Anticonvulsants	1,535	0.37	1,210	0.45
Psychotherapeutic agents	10,817	2.62	5,578	2.10
Antidepressants	7,239	1.75	3,164	1.19
Tranquilizers	3,065	0.74	2,011	0.76
Respiratory and cerebral stimulants	6,928	1.68	1,791	0.67
Sedatives and hypnotics	16,746	4.05	8,290	3.12
Electrolytic, caloric, and water balance	33,285	8.05	18,671	7.02
Replacement solutions	4,589	1.11	2,543	0.96
Diuretics	27,700	6.70	15,134	5.69
Expectorants and cough preparations	10,460	2.53	8,439	3.17
Eye, ear, nose, and throat preparations	14,807	3.58	11,269	4.24
Anti-infectives	3,342	0.81	3,398	1.28
Anti-inflammatory agents	2,536	0.61	1,875	0.70
Local anesthetics	1,658	0.40	985	0.37
Miotics	1,010	0.24	*573	0.22
Mydriatics	1,572	0.38	1,124	0.42
Vasoconstrictors	1,535	0.37	1,477	0.56
Gastrointestinal drugs	14,371	3.47	9,768	3.67
Antacids and adsorbents	2,004	0.48	1,728	0.65
Antidiarrhea agents	2,367	0.57	1,367	0.51
Antiflatulents	1,628	0.39	1,256	0.47
Cathartics and laxatives	2,482	0.60	1,273	0.48
Emetics and anti-emetics	2,817	0.68	1,465	0.55
Hormones and synthetic substances	41,266	9.98	14,577	5.48
Adrenals	11,034	2.67	7,279	2.74
Contraceptives	7,807	1.89	-	-
Estrogens	5,792	1.40	*341	*0.13
Gonadotropins	1,411	0.34	*257	*0.10
Insulins and antidiabetic agents	6,699	1.62	4,499	1.69
Insulins	3,180	0.77	2,084	0.78
Thyroid and antithyroid	5,832	1.41	1,015	0.38
Serums, toxoids, and vaccines	12,154	2.94	11,557	4.34
Toxoids	4,768	1.15	4,587	1.72
Vaccines	7,036	1.70	6,619	2.49
Skin and mucous membrane preparations	32,487	7.86	22,701	8.53
Anti-infectives	7,559	1.83	5,011	1.88
Fungicides	3,511	0.85	1,821	0.68
Anti-inflammatory agents	12,556	3.04	9,751	3.67
Antipruritics and local anesthetics	2,430	0.59	1,623	0.61
Emollients, demulcents, and protectants	1,549	0.37	1,465	0.55
Keratolytic agents	4,536	1.10	2,677	1.01

See footnote at end of table.

Table 6. Number and percent distribution of drug mentions by selected therapeutic categories, according to sex of patient: United States, 1980—Con.

Selected therapeutic categories[1]	Sex of patient			
	Female		Male	
	Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent distribution
Spasmolytic agents	5,809	1.40	5,732	2.15
Vitamins	19,301	4.67	4,943	1.86
Vitamin B complex	5,678	1.37	2,210	0.83
Multivitamin preparations	10,779	2.61	2,021	0.76

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

Table 7. Number and percent distribution of drug mentions by selected therapeutic categories, according to age and sex of patient: United States, 1980

	Selected therapeutic categories[1]	Age and sex of patient					
		Under 25 years				25–44 years	
		Female		Male		Female	
		Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent distribution
1	All categories	104,546	100.00	86,311	100.00	97,947	100.00
2	Antihistamine drugs	10,713	10.25	11,998	13.90	6,878	7.02
3	Anti-infective agents (non-topical)	28,333	27.10	25,395	29.42	16,633	16.98
4	Antibiotics	25,253	24.15	23,815	27.59	13,322	13.60
5	Antineoplastic agents	Z	0.00	*166	*0.19	*486	*0.50
6	Autonomic drugs	2,557	2.45	2,980	3.45	4,654	4.75
7	Blood formation and coagulation	1,457	1.39	*138	*0.16	1,528	1.56
8	Cardiovascular drugs	*343	*0.33	*451	*0.52	2,103	2.15
9	Cardiac drugs	*116	*0.11	*333	*0.39	770	0.79
10	Hypotensive agents	*132	*1.26	*88	*0.10	1,022	1.04
11	Vasodilating agents	*79	*0.07	Z	0.00	*227	*0.23
12	Central nervous system drugs	8,709	8.33	6,732	7.80	20,332	20.76
13	Analgesics and antipyretics	5,188	4.96	4,809	5.57	8,086	8.26
14	Psychotherapeutic agents	843	0.81	*577	*0.67	3,131	3.20
15	Sedatives and hypnotics	1,593	1.52	907	1.05	4,713	4.81
16	Electrolytic, caloric, and water balance	1,320	1.26	*525	*0.61	4,833	4.93
17	Diuretics	*763	*0.73	*180	*0.21	4,189	4.28
18	Expectorants and cough preparations	5,165	4.94	4,824	5.59	2,226	2.27
19	Eye, ear, nose, and throat preparations	3,599	3.44	3,370	3.90	2,581	2.64
20	Gastrointestinal drugs	2,526	2.42	1,752	2.03	2,907	2.97
21	Hormones and synthetic substances	7,498	7.17	2,067	2.39	11,274	11.51
22	Adrenals	1,901	1.82	1,600	1.85	2,781	2.84
23	Insulins and antidiabetic agents	*165	*0.16	*166	*0.19	*659	*0.67
24	Serums, toxoids, and vaccines	9,206	8.81	9,454	10.95	*645	*0.66
25	Skin and mucous membrane preparations	11,756	11.24	9,856	11.42	10,409	10.63
26	Anti-inflammatory agents	3,736	3.57	3,760	4.36	3,817	3.90
27	Spasmolytic agents	864	0.83	1,584	1.84	992	1.01
28	Vitamins	5,109	4.89	*699	*0.81	6,433	6.57

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

Table 7. Number and percent distribution of drug mentions by selected therapeutic categories, according to age and sex of patient: United States, 1980—Con.

Age and sex of patient—Con.										
25–44 years—Con.		45–64 years				65 years and over				
Male		Female		Male		Female		Male		
Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent distribution	
50,179	100.00	106,333	100.00	69,239	100.00	104,745	100.00	60,294	100.00	1
3,733	7.44	4,431	4.17	2,409	3.48	2,558	2.44	1,220	2.02	2
8,802	17.54	8,912	8.38	6,422	9.27	5,507	5.26	4,895	8.12	3
8,030	16.00	7,188	6.76	5,120	7.39	3,831	3.66	3,522	5.84	4
*186	*0.37	2,119	1.99	*472	*0.68	1,457	1.39	*432	*0.72	5
2,619	5.22	4,562	4.29	2,713	3.92	3,540	3.38	1,613	2.67	6
*229	*0.46	1,068	1.00	1,009	1.46	1,669	1.59	1,214	2.01	7
2,190	4.36	11,432	10.75	12,559	18.14	21,483	20.51	13,903	23.06	8
850	1.69	3,791	3.57	5,481	7.92	8,694	8.30	6,296	10.44	9
934	1.86	5,579	5.25	4,006	5.79	7,402	7.07	3,470	5.76	10
*330	*0.66	1,982	1.86	2,896	4.18	5,113	4.88	3,989	6.62	11
11,889	23.69	23,025	21.65	13,349	19.28	18,509	17.67	8,160	13.53	12
6,570	13.09	11,033	10.38	7,101	10.26	10,237	9.77	4,776	7.92	13
1,891	3.77	4,027	3.79	2,254	3.26	2,815	2.69	856	1.42	14
2,331	4.64	5,742	5.40	3,001	4.33	4,698	4.49	2,051	3.40	15
2,006	4.00	12,525	11.78	7,960	11.50	14,607	13.95	8,179	13.57	16
1,508	3.01	10,282	9.67	6,627	9.57	12,466	11.90	6,818	11.31	17
1,754	3.50	2,120	1.99	1,046	1.51	951	0.91	815	1.35	18
2,547	5.08	3,437	3.23	2,320	3.35	5,191	4.96	3,031	5.03	19
2,156	4.30	4,136	3.89	3,132	4.52	4,802	4.58	2,728	4.52	20
2,609	5.20	13,201	12.41	5,134	7.41	9,292	8.87	4,768	7.91	21
1,702	3.39	3,771	3.55	2,338	3.38	2,581	2.46	1,639	2.72	22
*453	*0.90	2,468	2.32	1,867	2.70	3,407	3.25	2,012	3.34	23
*560	*1.12	1,044	0.98	*693	*1.00	1,260	1.20	849	1.41	24
5,508	10.98	5,807	5.46	4,240	6.12	4,515	4.31	3,097	5.14	25
2,493	4.97	2,817	2.65	2,210	3.19	2,186	2.09	1,287	2.14	26
*528	1.05	1,710	1.61	1,513	2.19	2,244	2.14	2,107	3.49	27
781	1.56	3,387	3.18	1,792	2.59	4,372	4.17	1,671	2.77	28

Table 8. Number of mentions and number of mentions per 1,000 office visits of the 10 generic substances most frequently utilized, by sex-age groups of patient: United States, 1980

Rank	Sex-age group and generic substances most frequently utilized	Number of mentions in thousands[1]	Number of mentions per 1,000 office visits[2]	Rank	Sex-age group and generic substances most frequently utilized	Number of mentions in thousands[1]	Number of mentions per 1,000 office visits[2]
	Female patients under 15 years				**Male patients under 15 years**		
1	Phenylpropanolamine	3,833	76	1	Phenylephrine	4,621	79
2	Penicillin	3,511	70	2	Amoxicillin	4,583	78
3	Phenylephrine	3,427	68	3	Phenylpropanolamine	4,564	78
4	Amoxicillin	3,359	67	4	Erythromycin	3,469	59
5	Polio vaccine	3,178	63	5	Penicillin	3,455	59
6	Diphtheria tetanus toxoids pertussis	3,028	60	6	Polio vaccine	3,144	53
7	Erythromycin	2,981	59	7	Brompheniramine	3,037	52
8	Ampicillin	2,267	45	8	Diphtheria tetanus toxoids pertussis	2,860	49
9	Brompheniramine	2,070	41	9	Pseudoephedrine	2,429	41
10	Chlorpheniramine	2,031	40	10	Guaifenesin	2,311	39
	Female patients 15–24 years				**Male patients 15–24 years**		
1	Estradiol	3,025	55	1	Tetracycline	1,884	71
2	Multivitamins prenatal	2,931	53	2	Penicillin	1,366	51
3	Tetracycline	2,097	38	3	Benzoyl peroxide	1,140	43
4	Penicillin	1,979	36	4	Erythromycin	891	33
5	Norethindrone	1,446	26	5	Aspirin	873	33
6	Ampicillin	1,371	25	6	Clindamycin	792	30
7	Erythromycin	1,348	25	7	Ampicillin	756	28
8	Benzoyl peroxide	1,315	24	8	Pseudoephedrine	740	28
9	Norgestrel	1,293	24	9	Phenylpropanolamine	678	25
10	Aspirin	1,272	23	10	Acetaminophen	636	24
	Female patients 25–44 years				**Male patients 25–44 years**		
1	Multivitamins prenatal	3,382	33	1	Aspirin	2,104	41
2	Aspirin	3,144	30	2	Penicillin	1,582	31
3	Tetracycline	2,651	26	3	Acetaminophen	1,510	30
4	Pseudoephedrine	2,144	21	4	Tetracycline	1,485	29
5	Penicillin	2,109	20	5	Pseudoephedrine	1,334	26
6	Erythromycin	2,041	20	6	Erythromycin	1,251	24
7	Acetaminophen	2,037	20	7	Chlorpheniramine	1,088	21
8	Hydrochlorothiazide	2,028	20	8	Phenylephrine	1,083	21
9	Estradiol	2,017	19	9	Caffeine	1,065	21
10	Phenylpropanolamine	1,930	19	10	Phenylpropanolamine	1,056	21
	Female patients 45–64 years				**Male patients 45–64 years**		
1	Hydrochlorothiazide	6,575	86	1	Hydrochlorothiazide	4,062	76
2	Aspirin	2,699	35	2	Propranolol	2,427	46
3	Propranolol	2,085	27	3	Aspirin	1,862	35
4	Methyldopa	1,912	25	4	Digoxin	1,791	34
5	Estrogens	1,828	24	5	Triamterene	1,279	24
6	Furosemide	1,820	24	6	Diazepam	1,186	22
7	Acetaminophen	1,799	24	7	Furosemide	1,157	22
8	Triamterene	1,721	23	8	Nitroglycerin	1,102	21
9	Potassium replacement solutions	1,663	22	9	Isosorbide	1,089	20
10	Ibuprofen	1,652	22	10	Erythromycin	1,037	19
	Female patients 65 years and over				**Male patients 65 years and over**		
1	Hydrochlorothiazide	8,133	134	1	Hydrochlorothiazide	4,156	105
2	Digoxin	4,882	80	2	Digoxin	3,590	90
3	Methyldopa	3,037	50	3	Furosemide	2,258	57
4	Furosemide	3,026	50	4	Propranolol	1,776	45
5	Aspirin	2,941	48	5	Isosorbide	1,461	37
6	Propranolol	2,720	45	6	Nitroglycerin	1,345	34
7	Vitamin B-12	2,658	44	7	Aspirin	1,266	32
8	Triamterene	2,642	43	8	Methyldopa	1,172	30
9	Reserpine	1,937	32	9	Theophylline	1,073	27
10	Nitroglycerin	1,809	30	10	Potassium replacement solutions	1,073	27

[1] Frequency of mention combines the mentions of a generic substance as a single-ingredient agent with its mentions as an ingredient of a combination drug.
[2] For each sex-age group, the number of office visits may be obtained from table 4.

Table 9. Number and percent distribution of drug mentions by selected therapeutic categories, according to race and ethnicity of patient: United States, 1980

Selected therapeutic categories[2]	Race of patient[1]				Ethnicity of patient			
	Black		White		Hispanic		Non-Hispanic	
	Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent distribution	Number of mentions in thousands	Percent
All categories	64,808	100.00	608,346	100.00	34,239	100.00	645,354	100.00
Antihistamine drugs	3,565	5.50	39,924	6.56	1,602	4.68	42,337	6.56
Anti-infective agents	9,541	14.72	94,050	15.46	6,143	17.94	98,755	15.30
Antibiotics	8,050	12.42	80,818	13.28	5,149	15.04	84,931	13.16
Antineoplastic agents	*254	*0.39	5,103	0.84	*40	*0.12	5,331	0.83
Autonomic drugs	3,130	4.83	21,844	3.59	1,551	3.71	23,686	3.67
Blood formation and coagulation	1,190	1.84	7,049	1.16	*213	0.62	8,099	1.25
Cardiovascular drugs	6,342	9.79	57,785	9.50	1,858	5.43	62,605	9.70
Cardiac drugs	2,022	3.12	24,219	3.98	*610	1.78	25,721	3.99
Hypotensive agents	3,174	4.90	19,270	3.17	*696	2.03	21,937	3.40
Vasodilating agents	1,101	1.70	13,487	2.22	*513	1.50	14,133	2.19
Central nervous system drugs	11,386	17.57	98,137	16.13	6,376	18.62	104,330	16.17
Analgesics and antipyretics	6,697	10.33	50,316	8.27	3,112	9.09	54,688	8.47
Psychotherapeutic agents	990	1.53	15,320	2.52	994	2.90	15,401	2.39
Sedatives and hypnotics	2,365	3.65	22,481	3.70	1,630	4.76	23,406	3.63
Electrolytic, caloric, and water balance	5,608	8.65	46,009	7.56	1,677	4.90	50,279	7.79
Diuretics	4,765	7.35	37,862	6.22	1,368	4.00	41,466	6.43
Expectorants and cough preparations	2,117	3.27	16,553	2.72	1,321	3.86	17,578	2.72
Eye, ear, nose, and throat preparations	2,485	3.83	23,392	3.85	912	2.66	25,165	3.90
Gastrointestinal drugs	2,323	3.59	21,581	3.55	1,313	3.83	22,827	3.54
Hormones and synthetic substances	5,854	9.03	49,503	8.14	3,097	9.05	52,746	8.17
Adrenals	1,459	2.25	16,757	2.75	780	2.28	17,532	2.72
Insulins and antidiabetic agents	1,864	2.88	9,117	1.50	*712	2.08	10,486	1.62
Serums, toxoids, and vaccines	1,835	2.83	21,555	3.54	1,481	4.33	22,230	3.44
Skin and mucous membrane preparations	3,998	6.17	50,804	8.35	3,033	8.86	52,155	8.08
Anti-inflammatory agents	1,488	2.30	20,605	3.39	1,409	4.11	20,898	3.24
Spasmolytic agents	1,172	1.81	10,234	1.68	809	2.36	10,732	1.66
Vitamins	2,198	3.39	21,792	3.58	1,490	4.35	22,754	3.53

[1] Excludes data on Asians, Pacific Islanders, American Indians, and Alaskan Natives.

[2] Based on the pharmacologic-therapeutic classification of the American Society of Hospital Pharmacists; selected categories reproduced with the Society's permission.

Table 10. 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 physician characteristics: United States, 1980

Physician characteristic	Office visits		Drug visits[1]		Drug mentions		Drug mention rate[3]	Drug intensity rate[4]
	Number in thousands	Percent distribution	Number in thousands	Drug visit proportion[2]	Number in thousands	Percent distribution		
All office-based physicians	575,745	100.0	363,489	63.1	679,593	100.0	1.18	1.87
Specialty								
General and family practice	191,744	33.3	144,478	75.3	279,186	41.1	1.46	1.93
Internal medicine	69,481	12.1	53,091	76.4	118,943	17.5	1.71	2.24
Pediatrics	64,223	11.2	45,575	71.0	72,825	10.7	1.13	1.60
General surgery	28,315	4.9	28,329	34.8	15,881	2.3	0.56	1.61
Obstetrics and gynecology	55,123	9.6	23,984	43.5	33,026	4.9	0.60	1.38
Orthopedic surgery	26,326	4.6	7,787	29.6	11,529	1.7	0.44	1.48
Cardiovascular disease	6,154	1.1	4,159	67.6	10,162	1.5	1.65	2.44
Dermatology	27,857	4.8	21,434	76.9	45,287	6.7	1.63	2.11
Urology	8,761	1.5	4,106	46.9	5,265	0.8	0.60	1.28
Psychiatry	15,856	2.8	5,706	36.0	9,655	1.4	0.61	1.69
Neurology	2,499	0.4	1,848	73.9	3,824	0.6	1.53	2.07
Ophthalmology	30,810	5.4	12,666	41.1	19,281	2.8	0.63	1.52
Otolaryngology	12,282	2.1	6,269	51.0	9,229	1.4	0.75	1.47
Region of practice								
Northeast	147,396	25.6	94,525	64.1	172,835	25.4	1.17	1.83
North Central	139,623	24.3	89,324	64.0	165,899	24.4	1.19	1.86
South	182,275	31.7	120,250	66.0	234,866	34.6	1.29	1.95
West	106,451	18.5	59,389	55.8	105,994	15.6	1.00	1.78
Type of practice								
Solo	313,963	54.5	205,830	65.6	390,716	57.5	1.24	1.90
Multiple member	261,783	45.5	157,659	60.2	288,877	42.5	1.10	1.83
Age of physician (M.D.s only)								
Under 45 years	199,050	36.9	115,863	58.2	207,714	33.2	1.04	1.79
45–60 years	251,252	46.6	160,923	64.0	306,001	48.9	1.22	1.90
60 years or over	89,291	16.5	59,765	66.9	112,271	17.9	1.26	1.88

[1] An office visit at which one or more drugs was ordered or provided.
[2] The percent of office visits at which one or more drugs were ordered or provided.
[3] The average number of drugs ordered or provided per office visit.
[4] The average number of drugs ordered or provided per drug visit.

Table 11. 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 selected visit characteristics: United States, 1980

Selected visit characteristic	Office visits		Drug visits[1]		Drug mentions		Drug mention rate[3]	Drug intensity rate[4]
	Number in thousands	Percent distribution	Number in thousands	Drug visit proportion[2]	Number in thousands	Percent distribution		
All	575,745	100.0	363,489	63.1	679,593	100.0	1.18	1.87
Referral status								
Referred by another physician	25,370	4.4	10,983	43.3	18,958	2.8	0.75	1.73
Not referred by another physician	550,375	95.6	352,506	64.0	660,635	97.2	1.20	1.87
Patient visit status								
New patient	85,519	14.9	46,371	54.2	80,380	11.8	0.94	1.73
Old patient	490,226	85.1	317,118	64.7	599,213	88.2	1.22	1.89
Old patient, new problem	130,294	22.6	93,626	71.9	164,279	24.2	1.26	1.75
Old patient, old problem	359,932	62.5	223,492	62.1	434,934	64.0	1.21	1.95
Non-drug therapy[5]								
None	303,017	52.6	195,028	64.4	356,386	52.4	1.18	1.83
Physiotherapy	29,281	5.1	18,013	61.5	32,923	4.8	1.12	1.83
Office surgery	43,089	7.5	20,945	48.6	34,055	5.0	0.79	1.63
Family planning	12,828	2.2	7,888	61.5	10,360	1.5	0.81	1.31
Psychotherapy/therapeutic listening	29,024	5.0	15,601	53.8	31,127	4.6	1.07	2.00
Diet counseling	48,886	8.5	39,128	80.0	85,155	12.5	1.74	2.18
Family/social counseling	13,148	2.3	8,970	68.2	16,468	2.4	1.27	1.86
Medical counseling	133,425	23.2	90,523	67.8	183,126	26.9	1.37	2.02
Other	15,618	2.7	5,136	32.9	8,467	1.2	0.54	1.65
Disposition[5]								
No followup planned	67,442	11.7	34,528	51.2	55,116	8.1	0.82	1.60
Return at specified time	346,414	60.2	225,443	65.1	443,719	65.3	1.28	1.97
Return if needed	131,404	22.8	92,796	70.6	165,113	24.3	1.26	1.78
Telephone followup planned	19,955	3.5	13,924	69.8	26,266	3.9	1.32	1.89
Referred to another physician	15,157	2.6	6,934	45.7	13,123	1.9	0.87	1.89
Returned to referring physician	3,677	0.6	1,942	52.8	3,699	0.5	1.01	1.90
Admit to hospital	13,088	2.3	2,644	20.2	4,617	0.7	0.35	1.75
Other	1,380	0.2	*453	*32.8	*763	*0.1	*0.55	*1.68
Duration[6]								
0 minutes (no face-to-face contact with physician)	13,813	2.4	10,606	76.8	14,868	2.2	1.08	1.40
1–5 minutes	71,894	12.5	40,758	56.7	64,169	9.4	0.89	1.57
6–10 minutes	175,660	30.5	117,290	66.8	214,321	31.5	1.22	1.83
11–15 minutes	157,619	27.4	104,288	66.2	202,437	29.8	1.28	1.94
16 minutes or more	156,758	27.2	90,548	57.8	183,798	27.0	1.17	2.03

[1] An office visit at which one or more drugs were ordered or provided.
[2] The percent of office visits at which one or more drugs were ordered or provided.
[3] The average number of drugs ordered or provided per office visit.
[4] The average number of drugs ordered or provided per drug visit.
[5] May not add to 100.0 since more than one treatment or disposition was possible.
[6] Time spent in face-to-face contact between physician and patient.

Table 12. Number and percent distribution of drug mentions by entry status, prescription status, Federal control status, and composition status: United States, 1980

Drug dimension	*Number of mentions in thousands*	*Percent distribution*
Total	679,593	100.0
Entry status		
Generic name	164,464	24.2
Brand name	483,587	71.2
Unknown	31,542	4.6
Prescription status		
Prescription drug	561,228	82.6
Nonprescription drug	85,344	12.6
Unknown	33,021	4.9
Federal control status		
Controlled by DEA[1]	58,550	8.6
Schedule II	5,763	0.8
Schedule III	12,037	1.8
Schedule IV	30,305	4.5
Schedule V	10,445	1.5
Uncontrolled	588,022	86.5
Unknown	33,021	4.9
Composition status		
Single-ingredient drug	468,752	69.0
Combination drug	165,798	24.4
Multivitamins	13,500	2.0
Unknown	31,542	4.6

[1] Drug Enforcement Administration.

Table 13. Number of mentions and therapeutic use of the generic agents most frequently named by physicians as entry choices: United States, 1980

Generics most frequently named as entry choices	*Number of mentions in thousands*	*Therapeutic use*
All generic entry choices	164,464	
Aminophylline	887	Smooth muscle relaxant
Amoxicillin	5,506	Antibiotic
Ampicillin	9,795	Antibiotic
Aspirin	8,800	Analgesic, antipyretic
Chorionic gonadotropin	1,568	Hypogonadotropic conditions
Cortisone	1,100	Anti-inflammatory
Digoxin	4,801	Cardiotonic
Diphtheria tetanus toxoids	1,167	Immunization
Diphtheria tetanus toxoids pertussis	6,067	Immunization
Erythromycin	5,363	Antibiotic
Estrogens	1,043	Hormones
Fluorouracil	1,609	Antineoplastic
Hydrochlorothiazide	5,751	Diuretic
Hydrocortisone	1,732	Anti-inflammatory
Influenza virus vaccine	2,225	Immunization
Insulin	5,248	Antidiabetic
Iron preparations	874	Hematinic
Liver	747	Hematinic
Meprobamate	945	Tranquilizer, sedative
Methotrexate	1,044	Antineoplastic
Multivitamins prenatal	2,082	Vitamins
Nitroglycerin	3,132	Vasodilator
Penicillin	9,736	Antibiotic
Phenobarbital	1,790	Anticonvulsant, hypnotic, sedative
Phentermine	718	Anorexiant
Pilocarpine	979	Miotic, parasympathomimetic
Polio vaccine	6,535	Immunization
Potassium	2,161	Potassium replacement
Prednisone	5,879	Anti-inflammatory
Quinidine	1,107	Cardiac depressant
Reserpine	1,170	Antihypertensive
Rubella virus vaccine	581	Immunization
Salicylic acid	922	Keratolytic, antifungal
Tetanus toxoid	1,583	Immunization
Tetracycline	9,478	Antibiotic
Thyroid	3,071	Hormones
Tuberculin	4,488	Diagnostic aid
Vitamin B-12	5,813	Vitamins

Table 14. Number of mentions and therapeutic use of the nonprescription drugs most frequently named by physicians as entry choices: United States, 1980

Nonprescription drugs most frequently named as entry choices, with their generic names	*Number of mentions in thousands*	*Therapeutic use*
All nonprescription entry choices	85,344	
Anusol (bismuth salts, zinc oxide, etc.)	652	Skin irritation/inflammation
Ascriptin (aspirin)	1,389	Analgesic, antipyretic
Aspirin	8,800	Analgesic, antipyretic
Betadine (povidone-iodine)	767	Antiseptic
Dimetane (brompheniramine)	2,824	Antihistamine, decongestant, expectorant
Donnagel (hyosciamine, atropine, etc.)	924	Antidiarrheal
Dramamine (dimenhydrinate)	825	Motion sickness
Duofilm (salicylic acid, lactic acid)	545	Warts, keratolytic agent
Feosol (ferrous sulfate)	696	Iron deficiency
Ferrous sulfate	834	Iron deficiency
Gaviscon (aluminum hydroxide, magnesium trisilicate)	443	Antacid
Insulin	5,248	Hypoglycemia
Maalox (aluminum hydroxide, magnesium hydroxide)	1,400	Antacid
Materna (prenatal multivitamins)	1,491	Multivitamins
Metamucil (psyllium)	1,160	Laxative
Mylanta (aluminum hydroxide, magnesium hydroxide)	1,598	Antacid, antiflatulent
Mylicon (simethicone)	619	Antiflatulent
Neo-synephrine (phenylephrine)	952	Decongestant
Niacin (3-pyridinecarboxylic acid)	491	Vitamin B-complex component
Novahistine (dextromethorphan, pseudoephedrine)	904	Antitussive, decongestant, expectorant
Podophyllum	460	Caustic
Prenatal vitamins (unspecified)	2,082	Multivitamins
Robitussin (guaifenesin, dextromethorphan, phenylpropanolamine)	1,617	Antitussive, decongestant, expectorant
Salicylic acid	776	Antifungal
Stresstabs (general multivitamins)	594	Multivitamins
Sudafed (pseudoephedrine)	1,435	Decongestant
Triaminic (pyrilamine, pheniramine, phenylpropanolamine)	953	Antitussive, decongestant, expectorant
Tylenol (acetaminophen)	3,815	Analgesic
Vitamin B-12	1,815	Vitamins

Table 15. Number of mentions and therapeutic use of controlled drugs most frequently named by physicians as entry choices: United States, 1980

Controlled drugs most frequently named as entry choices, with their generic names	*DEA[1] control schedule*	*Number of mentions in thousands*	*Therapeutic use*
All controlled entry choices		58,550	
Ativan (lorazepam)	IV	1,503	Tranquilizer
Dalmane (flurazepam)	IV	2,202	Hypnotic agent
Darvocet-N (propoxyphene, acetaminophen)	IV	3,043	Analgesic
Darvon (propoxyphene)	IV	1,104	Analgesic
Demerol (meperidine)	II	879	Analgesic
Empirin with codeine (aspirin and codeine)	III	1,687	Analgesic
Fastin (phentermine)	IV	1,012	Appetite suppressant
Fiorinal (butalbital, aspirin, phenacetin, caffeine)	III	1,435	Analgesic, sedative
Ionamin (phentermine)	IV	1,108	Appetite suppressant
Librium (chlordiazepoxide)	IV	1,343	Anxiety relief
Limbitrol (chlordiazepoxide, amitriptyline)	IV	900	Depression therapy
Lomotil (diphenoxylate, atropine)	V	1,610	Antidiarrhea
Meprobamate	IV	945	Tranquilizer, sedative
Percodan (oxycodone, aspirin)	II	1,105	Analgesic
Phenergan with codeine (promethazine and codeine)	V	2,783	Expectorant
Phenobarbital	IV	1,790	Anticonvulsant, hypnotic, sedative
Talwin (pentazocine)	IV	779	Analgesic
Tranxene (clorazepate)	IV	2,217	Tranquilizer
Tylenol with codeine (acetaminophen and codeine)	III	3,661	Analgesic
Valium (diazepam)	IV	6,499	Anxiety relief

[1] Drug Enforcement Administration.

Table 16. Number of mentions and therapeutic use of combination drugs most frequently named by physicians as entry choices: United States, 1980

Combination drugs most frequently named as entry choices, with their generic ingredients	*Number of mentions in thousands*	*Therapeutic use*
Actifed (triprolidine, pseudoephedrine)	4,019	Common cold, allergic rhinitis
Aldactazide (spironolactone, hydrochlorothiazide)	2,257	Antihypertensive
Aldoril (methyldopa, hydrochlorothiazide)	2,133	Antihypertensive
Bactrim (sulfamethoxazole, trimethoprim)	2,943	Urinary infections, otitis media, pneumonitis
Combid (isopropamide iodide, prochlorperazine)	1,443	Gastro-intestinal disorders
Cortisporin (polymixin-B, bacitracin, neomycin, hydrocortisone)	3,009	Anti-inflammatory
Darvocet-N (propoxyphene, acetaminophen)	3,043	Analgesic
Dimetapp (brompheniramine, phenylephrine, phenylpronolamine)	5,377	Antihistaminic, decongestant
Donnagel (hyoscyamine, atropine)	924	Antidiarrhea
Donnatal (hyoscyamine, atropine, hyoscine, phenobarbital)	2,520	Sedative, antispasmodic
Drixoral (brompheniramine, pseudoephedrine)	1,656	Decongestant, antihistamine
Dyazide (triamterene, hydrochlorothiazide)	7,435	Diuretic
Empirin with codeine (aspirin and codeine)	1,687	Analgesic, antipyretic
Fiorinal (butalbital, caffeine, aspirin, phenacetin)	1,435	Analgesic, sedative
Fluress (fluorescein, chlorobutamol)	952	Aplanation tonometry
Librax (clidinium bromide, chlordiazepoxide)	1,670	Gastro-intestinal disorders
Lomotil (diphenoxylate, atropine)	1,610	Antidiarrhea
Lo/ovral (norgestrel, estradiol)	1,244	Oral contraceptive
Maalox (aluminum hydroxide, magnesium hydroxide)	1,400	Antacid
Maxitrol (dexamethasone, neomycin, polymixin-B)	1,162	Ocular inflammation
Mycolog (triamcinolone, neomycin, nystatin)	1,649	Anti-inflammatory (skin)
Mylanta (magnesium hydroxide, aluminum hydroxide)	1,598	Antacid, antiflatulent
Naldecon (phenylephrine, phenylpropanolamine, chlorpheniramine)	1,166	Hayfever, sinus, congestion
Neosporin (polymixin-B, neomycin)	2,386	Bacterial infections, topical
Norgesic (orphenadrine, aspirin, caffeine, phenacetin)	1,224	Analgesic
Novahistine (dextromethorphan, guaifenesin, etc.)	1,557	Antitussive, decongestant, antihistamine
Ornade (chlorpheniramine, phenylpropanolamine, isopropamide iodide)	1,511	Decongestant
Ortho-novum (norethindrone, estradiol)	1,697	Oral contraceptive
Ovral (norgestrel, estradiol)	956	Oral contraceptive
Parafon forte (chlorzoxazone, acetaminophen)	1,171	Skeletal muscle relaxant
Percodan (aspirin, oxycodone)	1,105	Analgesic
Phenergan with codeine (promethazine and codeine)	2,783	Expectorant
Rondec (pseudoephedrine, carbinoxamine maleate)	1,241	Decongestant, antitussive
Septra (sulfamethoxazole, trimethoprim)	2,781	Urinary infections, otitis media, pneumonitis
Ser-Ap-Es (reserpine, hydralazine, hydrochlorothiazide)	1,306	Hypertension
Triaminic (pyrilamine maleate, pheniramine, phenylpropanolamine)	997	Antitussive, decongestant, expectorant
Triavil (perphenazine, amitriptyline)	1,305	Tranquilizer, antidepressant
Tuss-Ornade (chlorpheniramine, phenylpropanolamine, isopropamide iodide)	929	Antitussive, decongestant
Tylenol with codeine (acetaminophen and codeine)	3,661	Analgesic

Table 17. Number and percent of drug mentions according to entry status, prescription status, Federal control status, and composition status, by selected therapeutic categories: United States, 1980

Selected therapeutic categories[1]	Number of drug mentions in thousands	Entry status		Prescription status		Federal control status		Composition status	
		Generic name	Brand name	Prescription drug	Non-prescription drug	Controlled drug	Uncontrolled drug	Single-ingredient drug	Combination drug[3]
		Percent of drug mentions							
All categories	679,593	24.2	71.2	82.6	12.6	8.6	86.5	69.0	26.4
Antihistamine drugs	43,939	1.3	73.8	67.6	7.5	*0.5	74.6	26.9	48.2
Anti-infective agents	104,898	40.4	58.9	98.8	*0.5	-	99.3	90.0	9.2
Antibiotics	90,081	46.3	52.8	99.1	-	-	99.1	98.1	1.1
Antineoplastic agents	5,371	61.9	37.8	99.8	-	-	99.8	99.8	-
Autonomic drugs	25,237	5.5	93.9	92.0	7.2	*0.9	98.3	52.2	47.1
Blood formation and coagulation	8,312	24.2	75.3	64.4	35.1	-	99.5	77.7	21.6
Cardiovascular drugs	64,463	19.1	80.5	99.0	*0.6	*0.1	99.5	86.2	13.5
Cardiac drugs	26,331	25.9	74.1	98.4	*1.6	-	100.0	100.0	-
Hypotensive agents	22,633	9.4	89.5	98.9	-	-	98.9	61.2	37.7
Vasodilating agents	14,646	23.0	77.0	100.0	-	*0.5	99.5	99.1	*0.9
Central nervous system drugs	110,706	17.0	81.8	83.3	15.5	41.5	57.3	79.0	19.8
Analgesics and antipyretics	57,800	20.9	79.1	70.4	29.6	27.2	72.7	73.6	26.3
Psychotherapeutic agents	16,395	10.3	89.3	99.6	-	7.2	92.3	83.7	15.9
Sedatives and hypnotics	25,036	13.7	85.7	99.4	-	88.7	10.7	87.4	12.0
Electrolytic, caloric, and water balance	51,956	19.1	79.9	97.1	1.9	-	99.0	76.9	22.1
Diuretics	42,834	16.0	83.8	98.7	*0.2	-	98.8	75.5	23.3
Expectorants and cough preparations	18,899	*3.2	95.1	67.5	30.8	44.0	54.3	9.9	88.4
Eye, ear, nose, and throat preparations	26,076	11.8	85.8	80.8	16.8	-	97.6	59.3	38.3
Gastrointestinal drugs	24,140	4.1	92.6	36.8	59.9	13.2	83.5	56.7	40.0
Hormones and synthetic substances	55,843	37.1	61.5	88.6	10.0	-	98.6	83.9	14.7
Adrenals	18,312	43.8	56.2	100.0	-	-	100.0	97.0	*3.0
Serums, toxoids, and vaccines	23,711	80.3	14.5	94.8	-	-	94.8	48.0	46.8
Skin and mucous membrane preparations	55,188	10.9	86.2	72.1	23.5	-	95.5	62.6	34.4
Spasmolytic agents	11,541	16.6	83.4	95.2	*4.8	*4.7	95.3	70.5	29.5
Vitamins	24,244	52.3	38.9	37.4	53.8	-	91.2	38.5	52.7

[1] Based on the pharmacologic-therapeutic classification of the American Society of Hospital Pharmacists; selected categories reproduced with the Society's permission.
[2] The totals in this column contain a residual for which entry status, prescription status, Federal control status, and composition status are unknown.
[3] Includes multivitamins (with 13,500,000 mentions).

Table 18. Number and percent of drug mentions according to entry status, prescription status, Federal control status, and composition status, by selected principal diagnoses: United States, 1980

[Drug information is limited to drugs ordered or provided for *principal diagnosis only* (Patient Record, item 11a)]

Selected principal diagnoses[1]	Number of drug mentions in thousands[2]	Entry status		Prescription status		Federal control status		Composition status	
		Generic name	Brand name	Prescription drug	Non-prescription drug	Controlled drug	Uncontrolled drug	Single ingredient drug	Combination drug[3]
		Percent of drug mentions							
All principal diagnoses	581,231	24.8	70.3	82.4	12.4	8.6	86.5	68.2	26.8
Infectious and parasitic diseases	21,007	25.7	70.1	75.1	19.7	4.4	90.4	70.8	25.0
Neoplasms	9,546	40.7	56.2	90.4	*6.4	*7.3	89.5	83.5	13.4
Endocrine, nutritional, and metabolic diseases and immunity disorders	33,240	34.9	61.9	82.0	14.6	16.5	80.1	86.2	10.6
Diseases of endocrine glands	16,523	35.7	62.7	74.2	23.9	*3.5	94.5	88.7	9.7
Obesity and other hyperalimentation	13,554	37.8	56.8	90.1	*4.5	34.5	60.4	84.1	10.5
Diseases of blood and blood-forming organs	3,457	46.4	50.5	74.8	22.1	*4.6	92.3	72.5	24.5
Mental disorders	18,324	13.1	84.4	90.7	6.6	30.9	66.5	80.7	16.8
Nonpsychotic disorders	13,925	12.2	84.7	88.8	7.9	36.6	60.1	77.3	19.6
Diseases of nervous system and sense organs	48,964	20.6	76.5	85.6	11.4	5.0	92.1	61.9	35.2
Diseases of central nervous system	5,413	15.9	79.8	90.2	*5.5	23.2	72.6	71.8	23.9
Disorders of eye and adnexa	15,855	15.9	80.5	87.0	9.5	*0.4	96.1	67.8	28.5
Otitis media (suppurative and unspecified)	17,398	26.7	71.0	87.3	10.3	*3.4	94.2	57.8	39.8
Diseases of circulatory system	84,213	21.0	77.0	90.6	7.3	4.0	93.8	79.5	18.4
Essential hypertension	38,463	17.4	80.7	93.7	4.4	4.2	93.9	73.2	24.9
Ischemic heart disease	20,599	24.5	74.1	92.6	6.0	*3.7	94.9	90.8	7.5
Diseases of respiratory system	116,302	25.2	66.8	79.4	12.5	7.9	84.0	63.6	28.3
Acute upper respiratory infections	26,300	23.1	73.8	79.9	17.0	10.0	86.9	59.0	37.8
Asthma	10,594	18.5	66.0	78.7	5.7	*4.1	80.3	69.8	14.6
Diseases of digestive system	24,646	15.4	80.4	70.3	25.4	13.2	82.6	55.8	40.0
Diseases of genitourinary system	26,658	16.2	80.2	91.0	5.4	5.7	90.7	63.2	33.3
Diseases of male genital organs	3,023	18.6	79.6	93.8	*4.4	*4.4	93.8	62.8	35.4
Diseases of female genital organs	12,550	18.9	77.2	89.5	6.6	*6.2	89.8	65.0	31.1
Diseases of skin and subcutaneous tissue	53,416	25.4	71.5	83.6	12.2	*1.1	94.7	78.9	18.0
Diseases of musculoskeletal system	37,544	20.0	77.9	85.0	13.0	13.1	84.9	77.3	20.6
Arthropathies	14,447	24.0	74.0	82.3	15.7	8.4	89.6	84.7	13.3
Symptoms, signs, and ill-defined conditions	17,093	16.2	79.3	79.5	16.0	15.9	79.5	66.6	28.9
Injury and poisoning	27,264	20.6	68.3	77.1	11.7	17.7	71.2	58.6	30.3
Normal pregnancy	9,908	26.8	65.2	41.6	50.4	*0.3	91.6	17.8	74.2
Health supervision of infant or child	15,219	77.6	18.4	92.2	*3.8	*0.4	95.6	54.3	41.7

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

[2] The totals in this column contain a residual for which entry status, prescription status, Federal control status and composition status are unknown.

[3] Includes multivitamins (with 11,705,000 mentions).

Table 19. Number and percent of drug mentions according to entry status, prescription status, Federal control status, and composition status, by patient characteristics: United States, 1980

Patient characteristic	Number of drug mentions in thousands[1]	Entry status		Prescription status		Federal control status		Composition status	
		Generic name	Brand name	Prescription drug	Non-prescription drug	Controlled drug	Uncontrolled drug	Single ingredient drug	Combination drug[2]
		Percent of drug mentions							
All patients	679,593	24.2	71.2	82.6	12.6	8.6	86.5	69.0	26.4
Age									
Under 5 years	65,167	36.5	59.8	81.8	14.4	4.3	91.9	58.4	37.9
5–14 years	50,476	27.2	62.8	76.6	13.3	4.8	85.1	61.0	29.0
15–24 years	75,213	25.8	67.9	74.1	15.3	6.9	86.5	60.4	33.3
25–34 years	83,802	22.4	71.6	79.7	14.0	12.4	81.4	62.9	31.1
35–44 years	64,324	21.0	74.6	83.9	11.2	13.3	81.9	70.6	25.0
45–54 years	78,361	21.5	73.6	84.8	10.2	11.5	83.4	72.8	22.3
55–64 years	97,221	21.7	74.8	85.1	11.1	9.1	87.2	75.2	21.2
65–74 years	98,924	22.0	75.3	87.5	11.5	7.3	89.8	76.1	21.1
75 years and over	66,115	23.5	74.2	84.3	13.0	6.2	91.1	76.8	20.8
Sex									
Female	413,570	23.6	71.9	82.7	12.7	9.1	86.2	68.3	27.2
Male	266,023	25.2	69.9	82.4	12.4	7.8	87.0	70.0	25.1
Sex and age									
Female									
Under 15 years	54,723	33.4	61.0	80.4	13.9	4.8	89.5	60.4	34.1
15–24 years	49,823	24.0	69.7	77.3	16.3	6.8	86.8	56.5	37.2
25–44 years	97,947	21.5	73.2	81.4	13.0	12.6	81.8	65.3	29.5
45–64 years	106,333	21.3	74.5	85.4	10.2	11.0	84.7	73.5	22.2
65 years and over	104,745	22.5	75.0	84.9	12.4	7.4	89.8	75.6	21.9
Male									
Under 15 years	60,920	31.6	61.1	78.7	14.0	4.2	88.4	58.8	33.9
15–24 years	25,391	29.3	64.3	79.7	13.3	7.1	86.0	68.0	25.7
25–44 years	50,179	22.3	72.4	81.9	12.4	13.2	81.2	68.2	26.5
45–64 years	69,239	22.2	73.9	84.4	11.4	9.0	86.8	75.2	20.9
65 years and over	60,294	22.7	74.6	85.6	11.5	5.8	91.3	77.9	19.4
Race									
White	608,346	24.2	70.9	82.5	12.4	8.5	86.4	69.1	26.0
Black	64,808	23.7	73.5	83.6	13.5	9.9	87.2	67.8	29.4
Other[3]	6,439	25.9	70.5	79.3	17.1	9.6	86.8	66.1	30.3
Ethnicity									
Hispanic	34,239	22.4	72.3	81.2	13.1	10.6	83.7	66.0	28.7
Not Hispanic	645,354	24.3	71.1	82.7	12.5	8.5	86.7	69.1	26.3

[1] The totals in this column contain a residual for which entry status, prescription status, Federal control status, and composition status are unknown.
[2] Includes multivitamins (with 13,500,000 mentions).
[3] Asian, Pacific Islander, American Indian, or Alaskan Native.

Table 20. Number and percent of drug mentions according to entry status, prescription status, Federal control status, and composition status, by physician characteristics: United States, 1980

Physician characteristic	Number of drug mentions in thousands[1]	Entry status		Prescription status		Federal control status		Composition status	
		Generic name	Brand name	Prescription drug	Non-prescription drug	Controlled drug	Uncontrolled drug	Single ingredient drug	Combination drug[2]
		Percent of drug mentions							
All office-based physicians	679,593	24.2	71.2	82.6	12.6	8.6	86.5	69.0	26.4
Specialty									
General and family practice	279,186	24.3	71.2	83.3	12.0	10.9	84.5	68.3	27.2
Internal medicine	118,943	24.3	72.8	84.6	12.5	8.2	88.9	78.2	18.9
Pediatrics	72,825	34.9	57.8	79.5	13.1	4.6	88.0	58.9	33.8
General surgery	15,881	17.2	80.5	83.1	14.4	15.7	81.7	66.3	31.4
Obstetrics and gynecology	33,026	17.5	77.8	75.9	19.3	5.2	90.0	47.5	47.8
Orthopedic surgery	11,529	11.4	86.0	88.6	8.8	22.5	74.8	69.9	27.5
Cardiovascular disease	10,162	25.9	71.3	87.9	9.3	*6.2	91.0	81.8	15.4
Dermatology	45,287	24.2	71.4	79.1	15.1	*0.5	93.6	76.5	19.1
Urology	5,265	14.0	83.6	93.0	*4.5	*5.5	92.0	68.3	29.3
Psychiatry	9,655	15.9	82.6	92.9	*5.3	23.8	74.4	86.9	11.6
Neurology	3,824	*15.4	83.7	89.4	*9.7	*14.9	84.2	84.3	*14.7
Ophthalmology	19,281	15.8	80.4	85.5	10.7	*0.8	95.4	68.0	28.2
Otolaryngology	9,229	14.2	81.2	82.9	11.9	*4.0	90.8	54.9	40.5
Region of practice									
Northeast	172,835	29.1	64.0	80.2	12.7	7.3	85.6	69.4	23.8
North Central	165,899	23.4	73.3	82.8	13.5	6.9	89.5	68.9	27.7
South	234,866	20.2	75.4	82.9	12.6	10.8	84.8	67.8	27.8
West	105,994	26.3	70.0	85.3	10.6	8.7	87.3	71.0	25.4
Type of practice									
Solo	390,716	24.4	70.1	82.2	12.6	9.1	85.8	69.4	25.7
Multiple member	288,877	23.3	71.7	83.0	12.5	8.0	87.5	68.4	27.3
Age of physician (M.D.s only)									
Under 45 years	207,714	23.3	72.7	82.5	13.2	6.3	89.4	68.9	27.1
45–60 years	306,001	24.6	70.8	82.3	13.0	8.9	86.4	68.8	26.7
60 years or over	112,271	24.5	70.2	82.9	11.5	10.3	84.1	69.4	25.3

[1]The totals in this column contain a residual for which entry status, prescription status, Federal control status, and composition status are unknown.
[2]Includes multivitamins (with 13,500,000 mentions).

Appendixes

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Appendix I. Technical notes

This report is based on data collected during 1980 in the National Ambulatory Medical Care Survey (NAMCS), an annual sample survey of office-based physicians conducted by the Division of Health Care Statistics of the National Center for Health Statistics.

Statistical design

Scope of the survey

The target population of NAMCS encompasses office visits made within the conterminous United States by ambulatory patients to nonfederally employed physicians who are principally engaged in office-based patient care practice, but not in the specialties of anesthesiology, pathology, or radiology. Telephone contacts and nonoffice visits are excluded.

Sample design

The NAMCS utilizes a multistage probability design that involves probability samples of primary sampling units (PSU's), physician practices within PSU's, and patient visits within physician practices. The first-stage sample of 87 PSU's was selected by the National Opinion Research Center (NORC) of the University of Chicago, the organization responsible for NAMCS field and data processing operations under contract to NCHS. A PSU is a county, a group of adjacent counties, or a standard metropolitan statistical area (SMSA). A modified probability-proportional-to-size procedure using separate sampling frames for SMSA's and for nonmetropolitan counties was used to select the sample PSU's. After sorting and stratifying by size, region, and demographic characteristics of the PSU's, each frame was divided into sequential zones of 1 million residents, then a random number was drawn to determine which PSU came into the sample from each zone.

The second stage consisted of a probability sample of practicing physicians selected from the masterfiles maintained by the American Medical Association (AMA) and the American Osteopathic Association (AOA) as of December 31, 1979, who met the following criteria:

- Office-based, as defined by AMA and AOA.
- Principally engaged in patient care activities.
- Nonfederally employed.
- Not in the specialties of anesthesiology, pathology, or radiology.

The 1980 NAMCS physician universe included 217,500 doctors of medicine and 10,058 doctors of osteopathy (see table I).

Within each PSU, all eligible physicians were arranged by nine specialty groups: general and family practice, internal medicine, pediatrics, other medical specialties, general surgery, obstetrics and gynecology, other surgical specialties, psychiatry, and all other specialties. Then, within each PSU, a systematic random sample of physicians was selected so that the overall probability of selecting any physician in the United States was approximately constant.

During 1980 the NAMCS physician sample included 2,959 physicians. Sample physicians were screened at the time of the survey to ensure that they met the aforementioned criteria; 611 physicians did not meet all the criteria and were, therefore, ruled out of scope (ineligible) for the study. The most common reasons for being out of scope were that the physician was retired, deceased, or employed in teaching, research, or administration. Of the 2,348 inscope (eligible) physicians, 1,869 (79.6 percent) participated in the study. The physician sample size and response data by physician specialty are shown in table I.

The final stage was the selection of patient visits within the annual practices of the sample physicians. This stage involved two steps. First, the total physician sample was divided into 52 random subsamples of approximately equal size, and each subsample was randomly assigned to 1 of the 52 weeks in the survey year. Of the participating physicians, 249 saw no patients

Table I. Distribution of physicians in the universe (AMA and AOA)[1] and in the National Ambulatory Medical Care Survey sample, by physician's specialty: United States, 1980

Physician specialty	Universe	Gross total	Out of scope	Net total	Non-respondents	Respondents	Response rate
All specialties	227,558	2,959	611	2,348	479	1,869	79.6
General and family practice	53,147	676	155	521	133	388	74.5
Medical specialties	66,692	864	172	692	138	554	80.1
Internal medicine	35,199	458	92	366	85	281	76.8
Pediatrics	16,043	204	46	158	19	139	88.0
Other medical specialties	15,450	202	34	168	34	134	79.8
Surgical specialties	77,625	1,002	131	871	164	707	81.2
General surgery	21,486	269	39	230	60	170	73.9
Obstetrics and gynecology	18,246	247	36	211	27	184	87.2
Other surgical specialties	37,893	486	56	430	77	353	82.1
Other specialties	30,094	417	153	264	44	220	83.3
Psychiatry	16,662	223	55	168	22	146	86.9
Other specialties	13,432	194	98	96	22	74	77.1

[1] AMA = American Medical Association, AOA = American Osteopathic Association.

during their assigned reporting period because of vacations, illnesses, or other reasons for being temporarily out of office-based practice. Second, a systematic random sample of visits was selected by the physician during the assigned week. The sampling rate varied for this final step from a 100 percent sample for very small practices to a 20 percent sample for very large practices. The method by which the sampling rate was determined is described later in this appendix. During 1980, 46,081 usable Patient Record forms were completed by physicians participating in NAMCS.

Data collection and processing

Field procedures

Both mail and telephone contacts were used to enlist sample physicians for NAMCS. Initially, physicians were sent introductory letters from the Director of NCHS. When appropriate, a letter from the physician's specialty organization endorsing the survey and urging participation was enclosed with the NCHS letter. Approximately 2 weeks prior to the physician's assigned reporting period, a field representative telephoned the physician to explain briefly the study and arrange an appointment for a personal interview. Physicians who did not initially respond were usually recontacted via telephone or special explanatory letter and requested to reconsider participation in the study.

During the personal interview the field representative determined the physician's eligibility for the study, obtained his or her cooperation, delivered survey materials with verbal and printed instructions, and assigned a predetermined Monday-Sunday reporting period. A short induction interview concerning basic practice characteristics, such as type of practice and expected number of office visits, was conducted. Office staff who were to assist with data collection were invited to attend the instructional session or were offered separate instructional sessions.

Before the beginning and again during the week assigned for data collection, the field representative telephoned the sample physician to answer questions that might have arisen and to ensure that survey procedures were going smoothly. At the end of the reporting week, the participating physician mailed the completed survey materials to the field representative, who edited the forms for completeness before transmitting them for central data processing. At this stage problems of missing or incomplete data were resolved by telephone followup by the field representative to the sample physician; if no problems were found, field procedures were considered complete regarding the sample physician's participation in NAMCS.

Data collection

The actual data collection for NAMCS was carried out by the physician, assisted by office staff when possible. Two data collection forms were employed by the physician: the Patient Log and the Patient Record form (figure 1). The Patient Log, a sequential listing of patients seen in the physician's office during his or her assigned reporting week, served as the sampling frame to indicate the office visits for which data were to be recorded. A perforation between the patient's name and patient visit information permitted the physician to detach and retain the listing of patients, thus protecting the confidentiality of the physician's patients.

Based on the physician's estimate of the expected number of office visits and expected number of days in practice, each physician was assigned a patient-sampling rate. The patient-sampling rates were designed so that about 30 Patient Record forms would be completed by each physician during the assigned reporting week. Physicians expecting 10 or fewer visits each day recorded data for all visits, those expecting more than 10

visits per day recorded data for every second, third, or fifth visit, based on the predetermined sampling interval. These patient-sampling procedures minimized the physician's data collection workload and maintained approximately equal reporting levels among sample physicians regardless of practice size. For physicians recording data for every second, third, or fifth patient visit, a random start was provided on the first page of the Patient Log so that predesignated sample visits recorded on each succeeding page of the Patient Log provided a systematic random sample of patient visits during the reporting period.

Data processing

In addition to followups for missing and inconsistent data made by the field staff, numerous clerical edits were performed on data received for central data processing. These manual procedures proved quite efficient, reducing item nonresponse rates to 2 percent or less for most data items.

The patient's problem or reason for visit (item 6 of the Patient Record form) was coded according to the *Reason for Visit Classification for Ambulatory Care* (RVC). Diagnostic information (item 9 of the Patient Record form) was coded according to the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM). A maximum of three entries were coded from each of these items. Prior to coding, Patient Record forms were grouped into batches with approximately 650 Patient Record forms per batch. Quality control for the medical coding operation involved a two-way 5 percent independent verification procedure. Error rates were defined as the number of incorrectly coded entries divided by the total number of coded entries. The estimated error rates for the medical coding operation were 1.9 percent for item 6 and 2.8 percent for item 9. A dependent procedure was used to review and adjudicate all records in batches with excessive error rates. This procedure further reduced the estimated error rates to 1.8 percent for item 6 and 2.5 percent for item 9.

The NAMCS medication data (item 11 of the Patient Record form) was classified and coded according to a scheme developed at NCHS based on the American Society of Hospital Pharmacists' Drug Product Information File. A detailed description of the development of the new drug coding scheme and of the NAMCS drug data processing procedures are contained in *Vital and Health Statistics* Series 2—No. 90. A two-way 100 percent independent verification procedure was used to control the medication coding operation. All Patient Record forms with differences between drug coders or with illegible drug entries were reviewed and adjudicated at NCHS.

Information from the Induction Interview and Patient Record forms was keypunched with 100 percent verification and converted to computer tape. At this point, extensive computer consistency and edit checks were performed to ensure complete and accurate data. Incomplete items were imputed by assigning a value from a randomly selected Patient Record form with similar characteristics; patient sex and age, physician specialty, and broad diagnostic categories were used as the basis for these imputations.

Estimation procedures

Statistics from the 1980 NAMCS were derived by a multistage estimation procedure which produces essentially unbiased national estimates and has three basic components: (1) inflation by reciprocals of the probabilities of selection, (2) adjustment for nonresponse, and (3) a ratio adjustment to fixed totals. A description of each component follows.

Inflation by reciprocals of probabilities of selection

Because the survey utilized a three-stage sample design, three probabilities of selection existed: (1) the probability of selecting the PSU, (2) the probability of selecting the physician within the PSU, and (3) the probability of selecting a patient visit within the physician's practice. The last probability was defined as the exact number of office visits during the physician's assigned reporting week divided by the number of Patient Record forms completed. All weekly estimates were inflated by a factor of 52 to derive annual estimates.

Adjustment for nonresponse

Estimates from NAMCS data were adjusted to account for sample physicians who did not participate in the study. This adjustment was calculated in order to minimize the impact of response on final estimates by imputing to nonresponding physicians the practice characteristics of similar responding physicians. For this purpose, physicians were judged similar if they had the same specialty designation and practiced in the same PSU.

Ratio adjustment to fixed totals

A poststratification adjustment was made within each of nine physician specialty groups. The ratio adjustment was a multiplication factor which had as its numerator the number of physicians in the universe in each physician specialty group and as its denominator the estimated number of physicians in that particular specialty group. The numerator was based on figures obtained from the AMA and AOA masterfiles, and the denominator was based on data from the sample.

Reliability of estimates

As in any survey, results are subject to both sampling and nonsampling errors. Nonsampling errors include reporting and processing errors, as well as biases due to nonresponse or incomplete response. The magnitude of the nonsampling errors cannot be computed. However, these errors were kept to a minimum by procedures built into the survey's operation. Careful attention and extensive pretesting were given to the phrasing of the questions, terms, and definitions employed to eliminate ambiguities and encourage uniformity of reporting. The steps taken to reduce bias in the data are discussed in the sections on field procedures and data collection. Quality control procedures and consistency and edit checks discussed in the data processing section reduced errors in data coding and processing. However, because survey results are subject to sampling and nonsampling errors, the total error will be larger than the error due to sampling variability alone.

Because the statistics presented in this report are based on a sample, they differ somewhat from the figures that would be obtained if a complete census had been taken using the same forms, definitions, instructions, and procedures. However, the probability design of NAMCS permits the calculation of sampling errors. The standard error is primarily a measure of sampling variability that occurs by chance because only a sample rather than the entire population is surveyed. The standard error, as calculated in this report, also reflects part of the variation that arises in the measurement process. It does not include estimates of any systematic biases that may be in the data. The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 95 out of 100 that the difference would be less than twice the standard error, and about 99 out of 100 that it would be less than 2½ times as large.

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. For this report, an asterisk (*) precedes any estimate with more than a 30 percent relative standard error.

Estimates of sampling variability were calculated using the method of half-sample replication. This method yields overall variability through observation of variability among random subsamples of the total sample. A description of the development and evaluation of the replication technique for error estimation has been published. Approximate relative standard errors for aggregate estimates are presented in figures I and II. To derive error estimates that would be applicable to a wide variety of statistics and could be prepared at moderate cost, several approximations were required. As a result, the relative standard errors shown in figures I and II should be interpreted as approximate rather than exact for any specific estimate. Directions for determining approximate relative standard errors follow.

Estimates of aggregates

Approximate relative standard errors (in percent) for aggregate statistics are presented in figures I and II. Figure I presents approximate relative standard errors for estimates of office visits, while figure II presents approximate relative standard errors for estimates of drug mentions. In each figure, curve *A* represents the relative standard errors appropriate for estimates based on all physician specialties, and curve *B* represents relative standard errors appropriate for estimates based on an individual physician specialty.

Alternatively, relative standard errors for aggregate estimates may be calculated directly using the following formulae where x is the aggregate of interest in thousands. For visit estimates based on all physician specialties,

$$\mathrm{RSE}(x) = \sqrt{0.00164987 + \frac{36.36433}{x}} \cdot 100.0$$

For visit estimates based on an individual physician specialty,

$$\mathrm{RSE}(x) = \sqrt{0.00434821 + \frac{36.97024}{x}} \cdot 100.0$$

For drug mention estimates based on all physician specialties,

$$\mathrm{RSE}(x) = \sqrt{0.00316979 + \frac{71.26431}{x}} \cdot 100.0$$

For drug mention estimates based on an individual physician specialty,

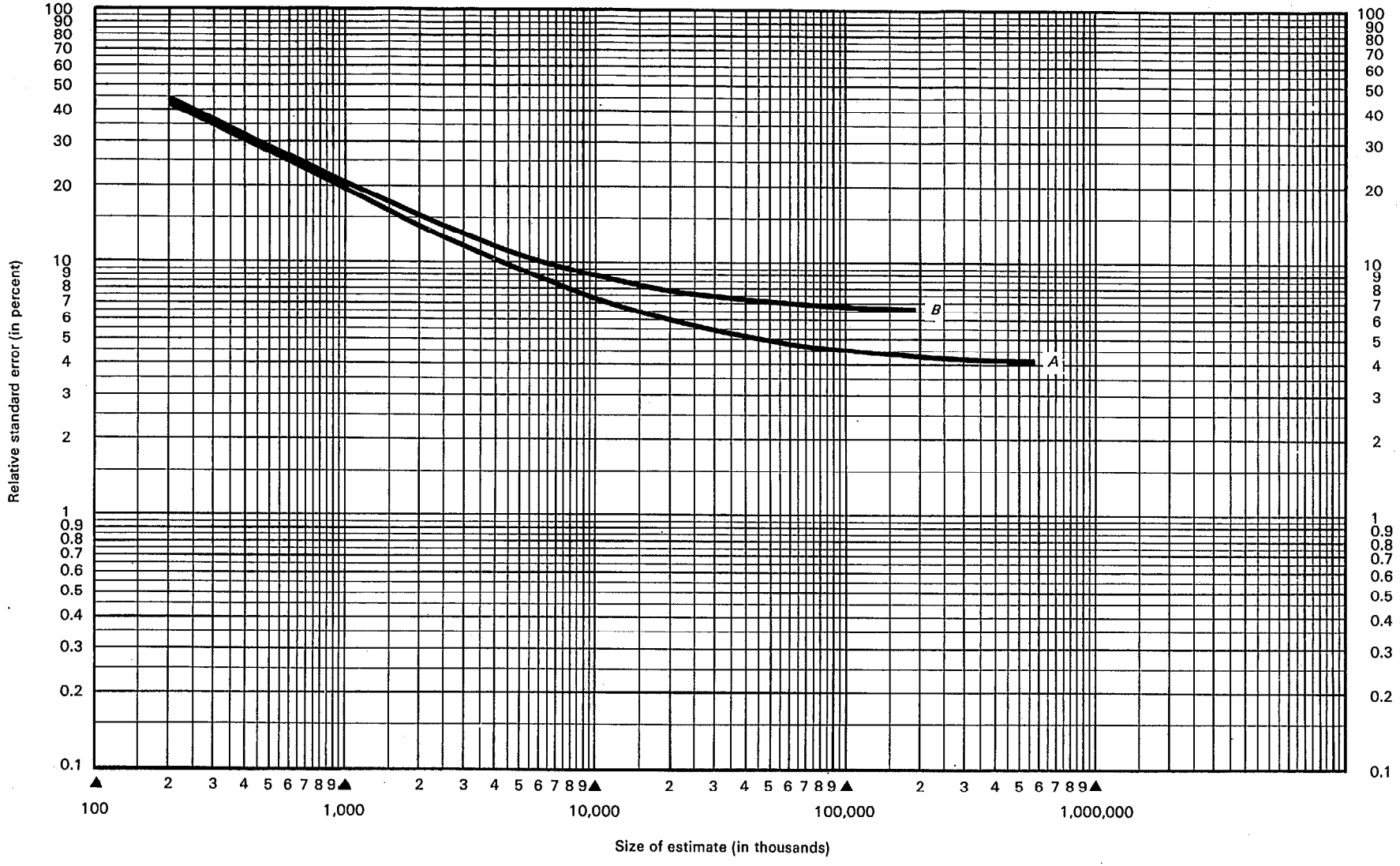
$$\mathrm{RSE}(x) = \sqrt{0.00827256 + \frac{69.54527}{x}} \cdot 100.0$$

Estimates of percentages

Approximate relative standard errors (in percent) for estimates of percentages may be calculated from figures I and II as follows. From the appropriate curve obtain the relative standard error of the numerator and denominator of the percentage. Square each of the relative standard errors, subtract the resulting value for the denominator from the resulting value for the numerator, and extract the square root. This approximation is valid if the relative standard error of the denominator is less than .05 percent or if the relative standard errors of the numerator and denominator are both less than .10 percent.

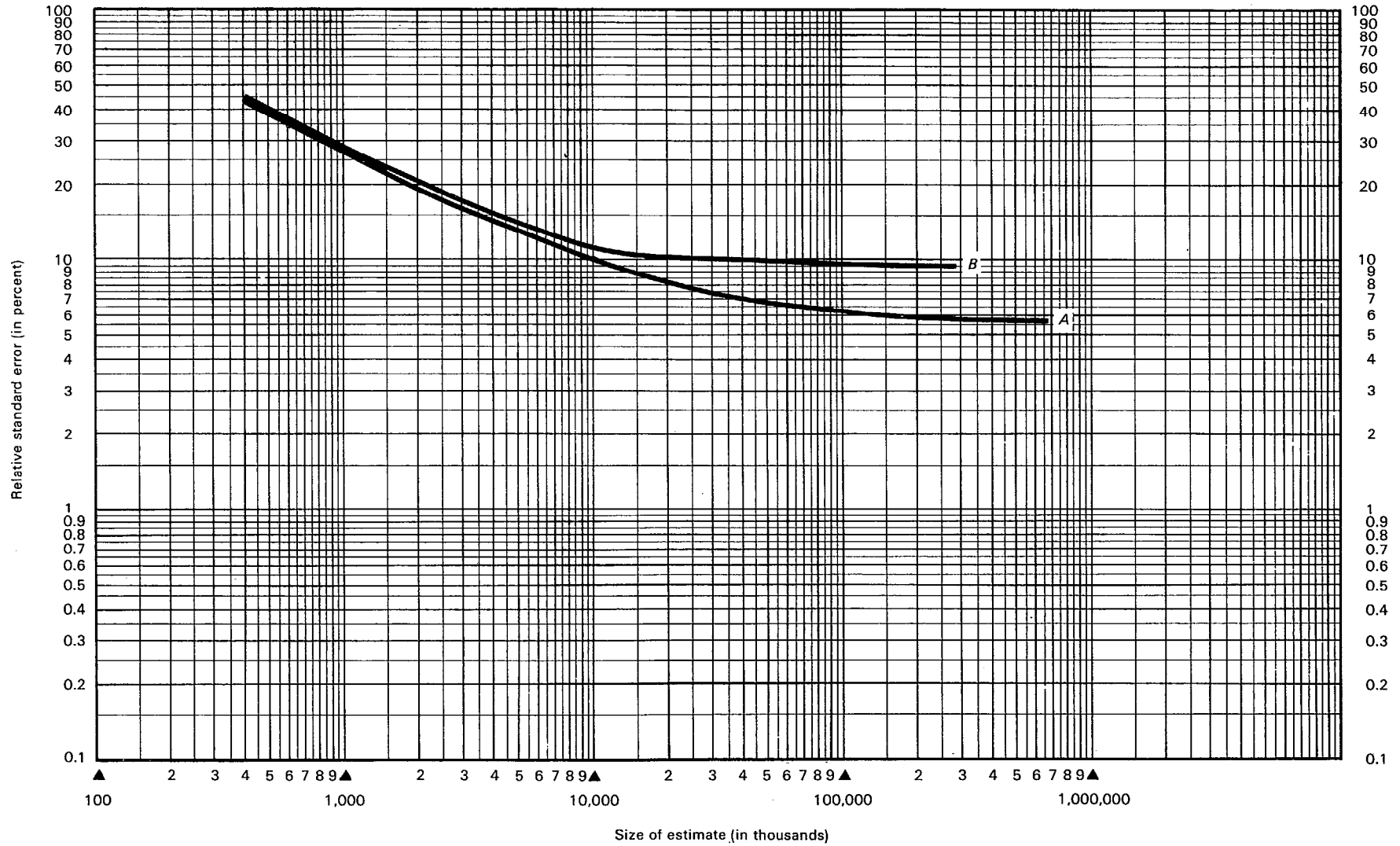
Alternatively, relative standard errors for percentages may be calculated directly using the following formulae where p is the percent of interest and x is the base of the percentage in thousands. For visit percentage based on all physician specialties,

$$\mathrm{RSE}(p) = \sqrt{\frac{36.36433 \cdot (1 - p)}{p \cdot x}} \cdot 100.0$$



Example of use of chart: An estimate of 20 million office visits to general surgeons (read from scale at bottom of chart) has a relative standard error of 7.9 percent (read from curve *B* on scale at left of chart) or a standard error of 1,580,000 office visits (7.9 percent of 20 million office visits).

Figure I. Approximate relative standard errors for estimated numbers of office visits based on all physician specialties (*A*) and individual specialties (*B*), 1980 National Ambulatory Medical Care Survey



Example of use of chart: An estimate of 60 million drug mentions to general practitioners (read on scale at bottom of chart) has a relative standard error of 9.7 percent (read from curve *B* on scale at left of chart) or a standard error of 5,820,000 drug mentions (9.7 percent of 60 million drug mentions).

Figure II. Approximate relative standard errors for estimated numbers of drug mentions based on all physician specialties (*A*) and individual specialties (*B*), 1980 National Ambulatory Medical Care Survey

For visit percentages based on an individual physician specialty,

$$\text{RSE}(p) = \sqrt{\frac{36.97024 \cdot (1-p)}{p \cdot x}} \cdot 100.0$$

For drug mention percentages based on all physician specialties,

$$\text{RSE}(p) = \sqrt{\frac{71.26431 \cdot (1-p)}{p \cdot x}} \cdot 100.0$$

For drug mention percentages based on an individual physician specialty,

$$\text{RSE}(p) = \sqrt{\frac{69.54527 \cdot (1-p)}{p \cdot x}} \cdot 100.0$$

Estimates of rates where the numerator is not a subclass of the denominator

Approximate relative standard errors for rates in which the denominator is the total United States population or one or more of the age-sex-race groups of the total population are equivalent to the relative standard error of the numerator that can be obtained from figures I and II.

Estimates of differences between two statistics

The relative standard errors shown in this appendix are not directly applicable to differences between two sample estimates. The standard error of a difference is approximately the square root of the sum of squares of each standard error considered separately. This formula represents the standard error quite accurately for the difference between separate and uncorrelated characteristics, although it is only a rough approximation in most other cases.

Tests of significance

In this report, the determination of statistical inference is based on the *t*-test with a critical value of 1.96 (0.05 level of significance). Terms relating to differences, such as "higher," "less," and so forth, indicate that the differences are statistically significant. Terms such as "similar" or "no difference" mean that no statistical significance exists between the estimates being compared. A lack of comment regarding the difference between any two estimates does not mean that the difference was tested and found to be not significant.

Rounding of numbers

Estimates presented in this report 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 the original, unrounded figures and may not necessarily agree precisely with percents calculated from rounded data.

Systematic bias

No formal attempt was undertaken to determine or measure systematic bias in the NAMCS data. But it should be noted that there are several factors affecting the data which indicate that these data underrepresent the total number of office visits.

1. Although physicians who participated in NAMCS did a thorough and conscientious job in keeping the Patient Log, postsurvey interviews with participating physicians indicate that a small number of patient visits may have been accidentally omitted from the Patient Log. While this number is quite small, such omissions would result in an undercoverage of office visits.

   The same postsurvey interviews indicate that the inclusion of patient visits which did not actually occur was infrequent and would have a negligible effect on survey estimates.

2. As previously stated, the universe for the 1980 NAMCS included all nonfederal, office-based, patient-care physicians in the AMA and AOA masterfiles. The NAMCS was designed to provide statistically unbiased estimates of office visits to this designated population. Not included in the universe were physicians classified in such categories as federally employed, hospital-based, research, teaching, administration, or other nonpatient care activity. Consequently, any ambulatory patient visits to physicians not in the NAMCS universe, an included in NAMCS estimates.

   In an attempt to measure the number of office visits to physicians not in the NAMCS universe, an NAMCS Complement Survey was conducted in 1980. This study involved a sample of approximately 2,000 physicians selected from among the 226,000 physicians in the AMA and AOA masterfiles who were not eligible (inscope) for the 1980 NAMCS. Details of the Complement Survey methodology and results are forthcoming. Preliminary results indicate that about 17 percent of the Complement Survey universe saw some ambulatory patients in an office setting. An estimated 69 million office visits were made to these physicians in 1980. This indicates that the total number of office visits to all physicians during 1980 was about 645 million (69 million plus 576 million).

Appendix II. Definition of terms

Terms relating to the survey

Office.—Premises identified by the physician as locations for his or her ambulatory practice. The responsibility over time for patient care and professional services rendered there generally resides with the individual physician rather than with any institution.

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

Physician.—Classified as either:

- *Inscope.*—All duly licensed doctors of medicine and doctors of osteopathy currently in practice who spend some time caring for ambulatory patients at an office location.
- *Out of scope.*—Those physicians who treat patients only indirectly, including physicians in the specialties of anesthesiology, pathology, and radiology, and the following physicians:
  - Physicians who are federally employed including those physicians in military service.
  - Physicians who treat patients only in an institutional setting, for example, patients in nursing homes and hospitals.
  - Physicians employed full time by an industry or institution and having no private practice, for example, physicians who work for the Veterans Administration, the Ford Motor Company, and so forth.
  - Physicians who spend no time seeing ambulatory patients, for example, physicians who only teach, are engaged in research, or are retired.

Patients.—Classified as either:

- *Inscope.*—All patients seen by the physician or a staff member in his or her office(s).
- *Out of scope.*—Patients seen by the physician in a hospital, nursing home, or other extended care institution, or the patient's home. Note: If the physician has a private office, meeting the definition of "office," located in a hospital, the ambulatory patients seen there are considered inscope. The following types of patients are considered out of scope:
  - Patients seen by the physician in an institution, including outpatient clinics of hospitals, for whom the institution has primary responsibility over time.
  - Patients who contact and receive advice from the physician via telephone.
  - Patients who come to the office only to leave a specimen, pick up insurance forms, or pay their bills.
  - Patients who come to the office only to pick up medications previously prescribed by the physician.

Visit.—A direct, personal exchange between an ambulatory patient and a physician or a member of his or her office staff for the purpose of seeking care and rendering health services.

Physician specialty.—Principal specialty, including general practice, as designated by the physician at the time of the survey. Those physicians for whom a specialty was not obtained were assigned the principal specialty recorded in the physician masterfiles maintained by the American Medical Association or the American Osteopathic Association.

Region of practice location.—The four geographic regions, excluding Alaska and Hawaii, that correspond to those used by the U.S. Bureau of the Census:

Region	*States included*
Northeast	Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont
North Central	Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin
South	Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Loui-

Region—Con.	*States included*—Con.
	siana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia
West	Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

Metropolitan status of practice location.—A physician's practice is classified by its location in a metropolitan or nonmetropolitan area. Metropolitan areas are standard metropolitan statistical areas (SMSA's) as defined by the U.S. Office of Management and Budget.

The definition of an individual SMSA involves two considerations: first, a city or cities of specified population which constitute the central city and identify the county in which it is located as the central county; second, economic and social relationships with "contiguous" counties which are metropolitan in character so that the periphery of the specific metropolitan area may be determined. SMSA's may cross State lines. In New England, SMSA's consist of cities and towns rather than counties.

Terms relating to the Patient Record form

Age.—The age calculated from date of birth was the age at last birthday on the date of visit.

Color or race.—On the Patient Record form, color or race includes four categories: White, Black, Asian/Pacific Islander, and American Indian/Alaskan Native. The physician was instructed to mark the category which in his or her judgment was most appropriate for the patient based on observation or prior knowledge. The following definitions were provided to the physician:

- *White.*—A person having origins in any of the original peoples of Europe, North Africa, or the Middle East.
- *Black.*—A person having origins in any of the black racial groups of Africa.
- *Asian/Pacific Islander.*—A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes, for example, China, India, Japan, Korea, the Philippine Islands, and Samoa.
- *American Indian/Alaskan Native.*—A person having origins in any of the original peoples of North America, and who maintains cultural identification through tribal affiliation or community recognition.

Ethnicity.—The physician was instructed to mark the category which in his or her judgment was most appropriate. The following definitions were provided.

- *Hispanic origin.*—A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.
- *Not Hispanic.*—Any person who is not of Hispanic origin.
- *Patient's complaint(s), symptom(s), or other reason(s) for this visit (in patient's own words).*—The patient's principal problem, complaint, symptom, or other reason for this visit as expressed by the patient. Physicians were instructed to record key words or phrases verbatim to the extent possible, listing that problem first which, in the physician's judgment, was most responsible for the patient's visit.

Major reason for this visit.—The physician was instructed to check one major reason for the patient's visit.

- *Acute problem:* A visit primarily for a condition or illness having a relatively sudden or recent onset (within three months of the visit).
- *Chronic problem, routine:* A visit primarily to receive regular care or examination for a pre-existing chronic condition or illness (onset of condition was three months or more before the visit).
- *Chronic problem, flareup:* A visit primarily to receive care for a sudden exacerbation of a pre-existing chronic condition or illness.
- *Post surgery and/or post injury:* A visit primarily for followup care of injuries or for care required following surgery, for example, removal of sutures or cast.
- *Non-illness care (routine prenatal, general exam, well baby, etc.):* General health maintenance examinations and routine periodic examinations of presumably healthy persons, both children and adults. Includes prenatal and postnatal care, annual physicals, well child examinations, and insurance examinations.

Diagnostic services this visit.—Physicians were instructed to check any of the following services that were ordered or provided during the current visit:

- *Limited history and/or exam:* History or physical examination which is limited to a specific body site or system or which is concerned primarily with the patient's chief complaint, for example, pelvic examination or eye examination.
- *General history and/or exam:* History or physical examination of a comprehensive nature, including all or most body systems.
- *Pap test:* Papanicolaou test, self-explanatory.
- *Clinical lab test:* One or more laboratory procedures or tests, including examination of blood, urine, sputum, smears, exudates, transudates, feces, and gastric content, and including chemistry, serology, bacteriology, and pregnancy test. Excludes Pap test.

- *X-ray:* Any single or multiple X-ray examination for diagnostic or screening purposes. Excludes radiation therapy.
- *Blood pressure check:* Self-explanatory.
- *EKG:* Electrocardiogram, self-explanatory.
- *Vision test:* Visual acuity test.
- *Endoscopy:* Examination of the interior of any body cavity, except ear, nose, and throat, by means of an endoscope.
- *Mental status exam:* Any formal, clinical evaluation designed to assess the mental or emotional status of the patient.
- *Other:* All other diagnostic services ordered or provided which are not included in the preceding categories.

Principal diagnosis.—The physician's diagnosis of the patient's principal problem, complaint, or symptom. In the event of multiple diagnoses, the physician was instructed to list them in order of decreasing importance. The term "principal" refers to the first-listed diagnosis. The diagnosis represents the physician's best judgment at the time of the visit and may be tentative, provisional, or definitive.

Other significant current diagnoses.—The diagnosis of any other condition known to exist for the patient at the time of the visit. Other diagnoses may or may not be related to the patient's reason for visit.

Have you seen patient before?—"Seen before" means provided care for at any time in the past. The second part of item 10 refers to the patient's current episode of illness.

Medication therapy this visit.—The physician was instructed to list, using brand or generic names, all medications, including drugs, vitamins, hormones, ointments, and suppositories, ordered, injected, administered, or provided this visit. Included are prescription and non-prescription drugs, vaccinations, immunization and desensitization agents. Also included are drugs and medications which were ordered or provided prior to the visit and which the physician instructed or expected the patient to continue taking. Medications for the principal diagnosis are listed in item 11a; and all other drugs in item 11b.

Nonmedication therapy.—Physicians were instructed to check any of the following services that were ordered or provided during the current visit:

- *Physiotherapy:* Any form of physical therapy ordered or provided, including any treatment using heat, light, sound, or physical pressure or movement, for example, ultrasonic, ultraviolet, infrared, whirlpool, diathermy, cold, and manipulative therapy.
- *Office surgery:* Any surgical procedure performed in the office this visit, including suture of wounds, reduction of fractures, application or removal of casts, incision and draining of abscesses, application of supportive materials for fractures and sprains, and irrigations, aspirations, dilations, and excisions.
- *Family planning:* Services, counseling, or advice that might enable patients to determine the number and spacing of their children. Includes both contraception and infertility services.
- *Psychotherapy and/or therapeutic listening:* All treatments designed to produce a mental or emotional response through suggestion, persuasion, reeducation, reassurance, or support, including psychological counseling, hypnosis, psychoanalysis, and transactional therapy.
- *Diet counseling:* Instructions, recommendations, or advice regarding diet or dietary habits.
- *Family and/or social counseling:* Advice regarding problems of family relationship, including marital or parent-child problems, or social problems, including economical, educational, occupational, legal, or social adjustment difficulties.
- *Medical counseling:* Instructions and recommendations regarding any health problem, including advice or counsel about a change of habit or behavior. Physicians were instructed to check this category only if medical counseling was a significant part of the treatment. Excludes family planning, diet counseling, and family or social counseling.
- *Other:* Treatments or non-medication therapies ordered or provided which are not listed or included in the above categories.

Was patient referred for this visit by another physician?—Referrals are any visits that are made at the advice or direction of a physician other than the one being visited. The interest is in referrals for the current visit and not in referrals for any prior visit.

Disposition this visit.—Eight categories are provided to describe the physician's disposition of the case. The physician was instructed to check as many of the categories as apply:

- *No followup planned:* No return visit or telephone contact was scheduled for the patient's problem.
- *Return at specified time:* Patient was told to schedule an appointment or was instructed to return at a particular time.
- *Return if needed, P.R.N.:* No future appointment was made, but the patient was instructed to make an appointment with the physician if the patient considered it necessary.
- *Telephone followup planned:* Patient was instructed to telephone the physician on a particular day to report either on his or her progress, or if the need arose.
- *Referred to other physician:* Patient was instructed to

consult or seek care from another physician. The patient may or may not return to this physician at a later date.

- *Returned to referring physician:* Patient was referred to this physician and was not instructed to consult again with the physician who referred him or her.
- *Admit to hospital:* Patient was instructed that further care or treatment would be provided in a hospital. No further office visits were expected prior to hospital admission.
- *Other:* Any other disposition of the case not included in the above categories.

Duration of this visit.—Duration includes time the physician spent with the patient, not including time the patient spent waiting to see the physician, time the patient spent receiving care from someone other than the physician without the presence of the physician, and time the physician spent in reviewing records, test results, etc. If the patient was provided care by a member of the physician's staff but did not see the physician during the visit, the duration of visit was recorded as zero minutes.

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