VITAL HEALTH STATISTICS

Sex Differences in Health and Use of Medical Care:
United States, 1979

Statistics are presented on sex differences in the incidence and prevalence of illnesses among the civilian noninstitutionalized population and in the utilization of nonfederally employed office-based physicians and non-Federal short-stay hospitals. Estimates are based principally on data collected in the 1979 National Health Interview Survey, the 1979 National Ambulatory Medical Care Survey, and the 1979 National Hospital Discharge Survey.

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Cooperation of the U.S. Bureau of the Census

Under the legislation establishing the National Health Interview Survey, the Public Health Service is authorized to use, insofar as possible, the services or facilities of other Federal, State, or private agencies.

In accordance with specifications established by the Division of Health Interview Statistics, the U.S. Bureau of the Census, under a contractual arrangement, participated in planning the survey and collecting the data.

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Symbols

- - -	Data not available
. . .	Category not applicable
-	Quantity zero
0.0	Quantity more than zero but less than 0.05
Z	Quantity more than zero but less than 500 where numbers are rounded to thousands
*	Figure does not meet standards of reliability or precision
#	Figure suppressed to comply with confidentiality requirements

Sex Differences in Health and Use of Medical Care

by Esther Hing, Division of Health Care Statistics, Mary Grace Kovar, Dr.P.H., Office of Interview and Examination Statistics, and Dorothy P. Rice, Regent's Lecturer, Department of Social and Behavioral Sciences, School of Nursing, University of California, San Francisco

Introduction

Women in the United States, as in most industrialized countries of the world, outlive men. Life expectancy for females born in the United States in 1978 was 77.2 years or almost 8 years longer than men. The gap in life expectancy between males and females has widened since 1900, reflecting dramatic changes in mortality and the major causes of death over the years, generally in women's favor. Mortality rates, however, are only one indicator of health status. Morbidity and medical care patterns of men and women show a different picture. Women have more illnesses and disabilities, make more physician visits, and are hospitalized at higher rates than men.

How can women have apparently poorer health and yet live longer than men? What are the differences between the sexes in the risk of disease? Are there differences in the use of medical care that might be associated with length of life? In this report, these questions will be explored by reviewing sex differences in some of the risk factors and in morbidity for the civilian noninstitutionalized population and sex differentials in the use of two medical care settings: physicians' offices and short-stay hospitals. The data presented in this report are primarily from the National Health Interview Survey, the National Ambulatory Medical Care Survey, and the National Hospital Discharge Survey.

NOTE: Certain sections of this report are based on D. P. Rice, E. Hing, M. G. Kovar, and K. Prager: Sex differences in disease risk, in E. Gold, ed., *The Changing Risk of Disease in Women: An Epidemiologic Approach.* Lexington, Mass. D.C. Heath. In press.

Highlights

The following conclusions are derived from data collected by the National Center for Health Statistics.

- Women with hypertension were twice as likely as men to be on medication and have their blood pressure under control.
- Women were more likely than men to be obese or overweight.
- Females generally have lower morbidity and mortality rates than males for the four leading causes of death even though they have higher overall morbidity rates.
- About 45 percent of females and 52 percent of males in the civilian noninstitutionalized population were perceived to be in excellent health.
- Females had 46 percent more bed-disability days due to acute conditions than males did.
- On the average, females made 43 percent more visits to office-based physicians than males did.
- But, 28 percent of all visits women 15–44 years of age made to physicians' offices were for gynecological (sex-specific) reasons. There were 859 visits for those reasons for every 1,000 women of that age.
- When visits for sex-specific reasons are excluded, females of all ages made 24 percent more visits to office-based physicians than males did.
- On the average, females were hospitalized in short-stay hospitals 40 percent more often than males were.
- But, 59 percent of all hospital stays for women 15–44 years of age were for gynecological (sex-specific) reasons. There were 125 discharges for those reasons for every 1,000 women of that age.
- When hospital stays for sex-specific reasons are excluded, males of all ages were hospitalized about as often as females were (135.3 discharges per 1,000 males versus 131.5 discharges per 1,000 females).

Sources and limitations of data

Detailed descriptions of the background and methodology used in the three primary surveys are presented in appendix I. Descriptions of other National Center for Health Statistics (NCHS) surveys cited in this report can be found in reference 1. The information in appendix I is needed to interpret the data from these surveys because there are differences in the survey populations, sample designs, data collection procedures, estimation procedures, definitions, and instruments used in each survey. The National Health Interview Survey (NHIS), for example, is a national probability sample survey of households, while the National Hospital Discharge Survey (NHDS) and the National Ambulatory Medical Care Survey (NAMCS) are national probability sample surveys of episodes of medical care in short-stay hospitals and in the offices of "office-based, patient care" physicians, respectively.

In NHIS, information about illness, disability, medical care, and other health-related items is reported by household members in personal interviews. NAMCS and NHDS, in contrast, are medical-record-based surveys. In NAMCS, information is recorded by the physician, aided by his office staff when possible, for a sample of medical encounters (visits). In NHDS, information for a sample of patients discharged from the hospital is transcribed by the hospital staff, NCHS representatives, or both, from hospital records to abstract forms. The value of NAMCS and NHDS data is in the precision and depth of diagnostic information. Information on the impact of illness in the general population and on illnesses not treated in the formal medical settings of the physician's office or short-stay hospital is provided by means of NHIS.

The data collected by means of the surveys do not include the total population, all ambulatory visits, or all hospital episodes. This will limit interpretation in some cases.

Data from NHIS includes only the civilian noninstitutionalized population living at the time of interview. Because there is a difference between the sexes in the proportion in military service or in institutions (such as nursing homes) and because those in service or institutions are different from those who are not, the comparisons are affected.

Only data on visits to office-based physicians are collected through NAMCS. If one sex is more likely than the other to use emergency rooms, outpatient departments, company clinics, or other such sources for ambulatory care, the comparisons will be affected.

Data on discharges from non-Federal short-stay hospitals are collected through NHDS. If one sex is more likely than the other to use Federal hospitals (such as Veterans Administration hospitals) or long-term hospitals, the comparisons will be affected.

Because data from all of these exclusions are not available, it is impossible to know how much the comparisons may be affected. In some cases, inclusion of the entire population would make no difference in the conclusions. In other, probably very specific cases, it might make a great difference.

Finally, these data are cross-sectional, not longitudinal. In many of the tables the information is shown by age so that comparisons can be made among age groups. The information is presented this way because many aspects of health and use of health care are associated with age. That does not necessarily mean the aspects are attributable to aging.

In appendix II definitions of terms used in this report are presented. Reference to the definitions is also essential to the interpretation of the data.

In this report, two types of morbidity rates are presented: crude rate and age-adjusted rates. The method of computing age-adjusted rates is found in appendix III; appendix IV contains a brief discussion of sampling errors for data that were not age-adjusted.

For the rates that were not age-adjusted, terms such as "similar" and "the same" mean that there is no statistically significant difference between the rates being compared. Terms such as "greater than" or "less than" indicate that the difference is statistically significant. Lack of comment regarding the difference between any two statistics does not mean that the difference was tested and found to be significant. For more details on statistical tests performed, see appendix IV.

Sampling errors were not computed for the age-adjusted rates. Although the sampling error of the non-adjusted (or crude) rate can be used as an approximation of the sampling error for the age-adjusted rate, the differences in the age-adjusted rates were not tested for statistical significance. Although the statements about such rates are, therefore, merely suggestive in most cases, the test of significance for the unadjusted rates is an additional basis for these statements. These tests are noted on the tables presenting the age-adjusted rates.

In this report, the terms "male" and "female" refer to people of all ages; the terms "men" and "women" refer to people at least 15 years old.

Risk of disease

What are the differentials between the sexes in disease risk? Rice, Hing, Kovar, and Prager, in the paper cited in the introduction, used "risk factor" to describe those characteristics in healthy people that relate to the subsequent appearance of disease. The concept is used in considering an individual's potential and leads to thinking in terms of prevention rather than possible therapeutic measures. The total risk is the aggregate of individual risks, some of which may interact, resulting in a total that may differ from the sum of the parts.

Some risk factors such as age, sex, and genetic background cannot be modified, although the effects can sometimes be ameliorated. Such risk factors will not be discussed in this report. Other factors such as cigarette smoking, alcohol and drug abuse, diet, obesity, and elevated blood pressure can be identified and sometimes modified. Those factors will be mentioned because in their modification lies one of our hopes for preventing disease and early death.

Cigarette smoking, for example, has been documented as a risk factor for a host of diseases. The associations have been summarized in a succession of Surgeon General's reports and documented in numerous research reports. Despite this documentation, a third of the adults in the United States still smoke. The proportion of adult men who smoked 15 years ago was much higher than the proportion of women. However, the proportion of men who smoke has been declining much faster than the proportion of women. By 1979, 38 percent of the adult men and 30 percent of the women smoked. Among adolescents, the proportion of girls who smoke is now close to the proportion of boys.[2]

Alcohol use, especially heavy use, has been indicated as a risk factor for some diseases and for deaths resulting from motor vehicle accidents. Men and boys use alcohol more frequently and drink more at one time than women and girls do.[3] In general, risk-taking behavior, such as engaging in violent sports or driving at high speed, is more common among men and boys than among women and girls.

Obesity has also been identified as a risk factor for some of the leading causes of death. Women were more likely to be overweight or obese than men.[4] In the early 1970's, 28 percent of women 20–74 years of age, compared with 19 percent of the men in that age range, were obese according to criteria developed for the National Health and Nutrition Examination Survey. About 22 percent of adult women were both obese and overweight.

In the early 1970's, serum cholesterol levels of women from their mid-thirties through mid-forties were lower than those of men, but women's cholesterol levels were higher than men's at older ages.[5] Some of the difference in later years may be the result of the death of men with high levels, but the crossover of the total mean cholesterol values at the end of the female reproductive period in these cross-sectional data suggests an advantage to women that disappears following menopause.

Hypertension has been documented as a risk factor for both ischemic heart disease and stroke. In the late 1970's, the prevalence of elevated blood pressure (defined as a systolic pressure of 160 mm Hg or greater and/or diastolic pressure of 95 mm Hg or greater) was higher among men 25–64 years of age than among women.[6] However, the difference was not statistically significant for any 10-year age group, perhaps because of small cell sample sizes.

The proportion of women who are hypertensive has not changed between 1960–62, when the first National Health Examination Survey was conducted, and 1976–80, the dates of the last Survey. However, the proportion of adult hypertensive women who were on medication and whose blood pressure was controlled increased from 22 to 40 percent of white women and from 20 to 38 percent of black women. Women, black and white, were twice as likely as men with hypertension to be on medication and have their blood pressure under control.[6]

Other risks to health are occupational. Men tend to be exposed to some occupational health hazards more often because of their concentration in industries with hazardous working conditions. Men are twice as likely as women to report having jobs in which they are exposed to special risk of accident or injury or to substances that could endanger their health. Men are also more likely to have changed jobs because of concern about occupational hazards.[2] However, there are suggestions that working conditions in health-service industries and in offices—places where there are more women—may also be hazardous.

This brief overview suggests that men may be at greater risk of developing major degenerative diseases or impairments than women. Men are more likely to smoke or drink. They are more likely to work in heavy industry. They are more likely to have elevated blood pressure. Obesity is the only risk factor that puts women at a disadvantage.

Sex differentials in health

Data on the sex differentials in perceived health status, incidence of acute conditions, and prevalence of chronic conditions and impairments are obtained through the National Health Interview Survey (NHIS).

Before considering these data, it is essential to be explicit about the population under consideration. Institutionalization for long-term care of health conditions is, despite current concerns, relatively rare in the United States. Even among the elderly, at any given time about 95 percent of the people 65 years of age and over are living in the community—not in nursing homes. However, women of that age are about twice as likely as men to be residents of nursing homes (59.7 versus 30.7 per 1,000 in 1977).[7] The elderly in nursing homes, who are likely to be ill or disabled and suffer from multiple chronic conditions, are not included in this large population-based survey of the civilian noninstitutionalized population. Thus, the estimates of the rates of illness, disability, and some kinds of medical care utilization, particularly the rates for women, would be higher if these ill, elderly people were included.

Perceived health status

How do people perceive their health? Women overall are less optimistic in their assessment of their health than men are. Females are less likely to assess their health as "excellent" (45 percent) than males (52 percent), and more likely to assess it as "fair" or "poor" (figure 1). Self-perceived health status, however, varies with age. Females assess their health as "fair" or "poor" more often than men do from the age of about 12 until about 57 years of age.[8] The difference is especially marked during the child-bearing years of women. However, after about 60 years of age, women tend to assess their health more positively than men do.[8]

In this context it is also interesting to note that women have lower levels of general psychological well-being and higher levels of depressive symptomatology than men. Among people 25–74 years of age, the mean level of general psychological well-being was 77.6 for women and 83.5 for men in the early 1970's.[9] The mean depressive score was 10.0 for women and 7.1 for men. Women were twice as likely as men to have scores of 16 or higher on the depression score of the Center for Epidemiology Studies (CES-D).[10] That is, on these rating scales women were less likely to exhibit general psychological well-being and more likely to exhibit symptoms of depression than men. There is a relationship between one's perception of health and psychological well-being. A cross-classification of

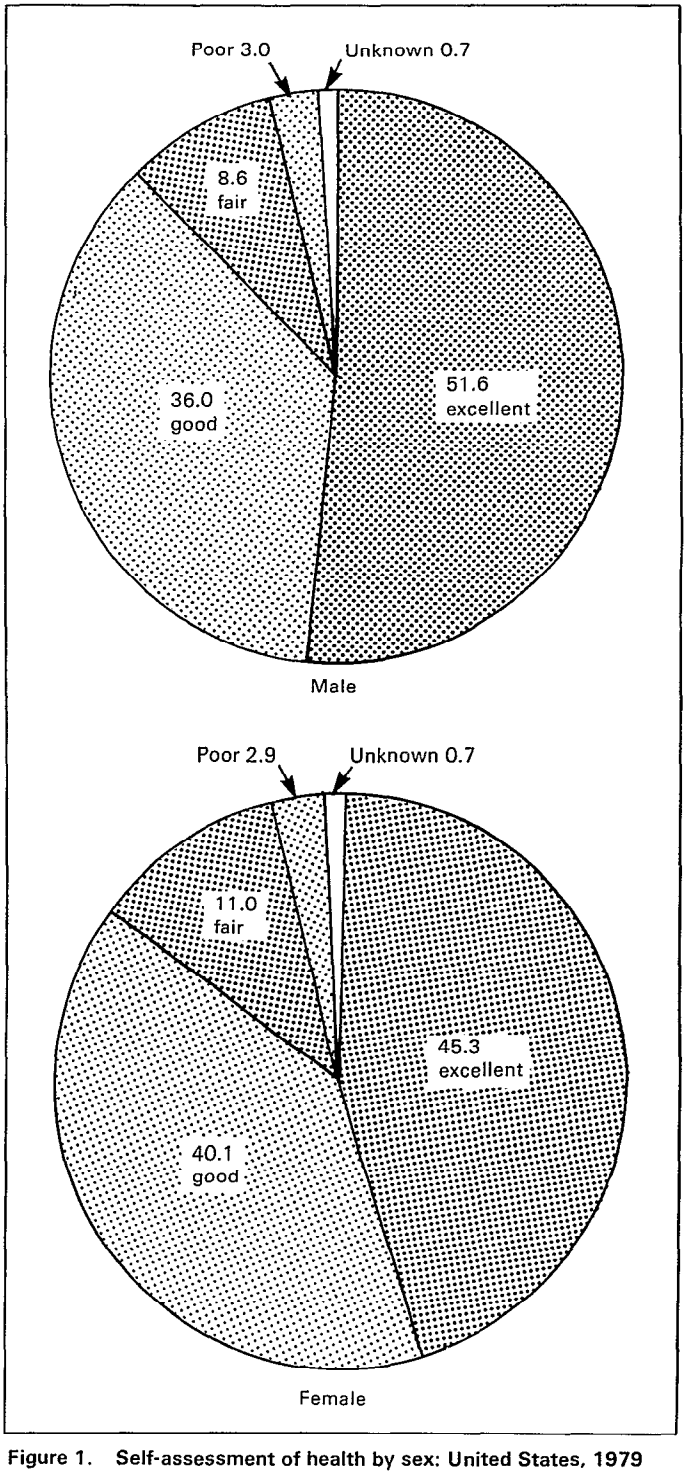

Figure 1. Self-assessment of health by sex: United States, 1979

depression and self-perceived health from the National Health and Nutrition Examination Survey demonstrates that people in "fair" or "poor" health are more likely to have scores of 16 or higher on the CES-D than people in "excellent" or "good" health.

Incidence of acute conditions

The incidence of acute conditions is higher for females than for males. There were 228 conditions reported per 100 females compared to 202 conditions per 100 males in 1979 (table 1). Age-specific rates were higher for females 15 years of age and older than for males, but were similar for both sexes for persons under 15 years of age (figure 2).

Females had higher incidence rates for infective and parasitic diseases, respiratory conditions, and digestive conditions. The only category in which males had higher incidence rates than females was injuries. Males, however, tend not to stay in bed for injuries as much as females do: Although the incidence rate for males was 43 percent greater than that for females, the number of restricted-activity days per 100 persons was only 27 percent higher, and the number of bed-disability days per 100 persons was the same for both sexes.

Other data from NHIS suggest that females slow down their activities as a result of all acute conditions to a greater extent than males do. While the incidence rate was 13 percent higher for females than for males, females had 27 percent more restricted-activity days per 100 persons and 46 percent more bed-disability days per 100 persons due to acute conditions than males (figure 3). This phenomenon persists for most categories of acute conditions; that is, for categories of acute conditions for which females have higher incidence, they also have higher rates of restricted-activity days per 100 persons and higher rates of bed-disability days per 100 persons.

The definition of an acute condition is needed to interpret these data. Only those acute conditions that caused restricted activity or received medical care are included. Thus, if men and women have an equal number of conditions, the incidence rates would be higher for women if they were more likely than men to restrict their activities or to receive medical care. Also, the incidence rate includes acute conditions due to delivery and disorders of the puerperium—solely female conditions. After these conditions are excluded, however, the excess for females is reduced, but still persists. The rate for acute conditions not related to reproduction is 11 percent greater for females than that for males (224 acute conditions per 100 females compared to 202 acute conditions per 100 males). Similarly, the number of restricted-activity days per 100 persons and the number of bed-disability days per 100 persons

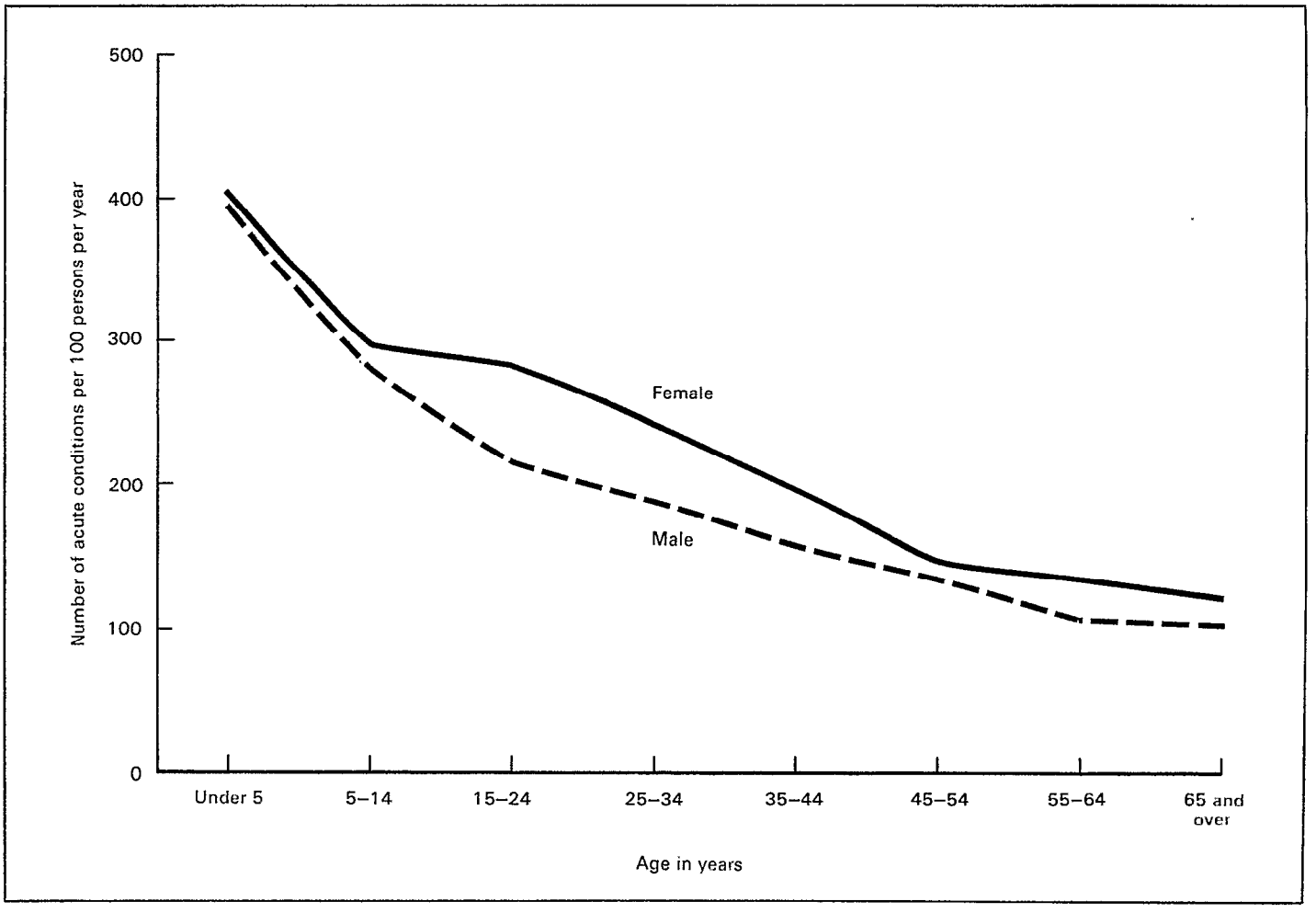

Figure 2. Incidence of acute conditions per 100 persons per year, by sex and age: United States, 1979

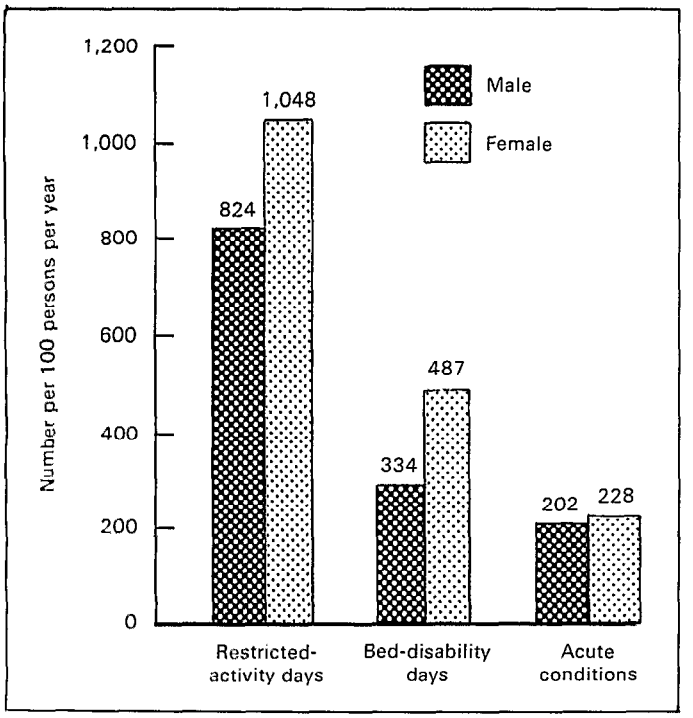

Figure 3. Number of restricted-activity days, bed-disability days, and acute conditions per 100 persons per year, by sex: United States, 1979

for these conditions is greater for females by 21 and 39 percent, respectively.

Prevalence of chronic conditions and impairments

Chronic conditions in NHIS are defined as those conditions with a duration of 3 months or more (prior to the interview) and certain conditions (listed in appendix II) that are considered chronic regardless of when they began. Age-specific prevalence rates of chronic conditions for males and females from the 1979 NHIS are shown in table 2.

Prevalence rates for many of these chronic conditions are higher among older people. For example, the prevalence of heart conditions, hypertensive disease, diabetes, arthritis, and visual and hearing impairments is associated with age for both sexes. To partially remove the effects of the differing age distributions, the prevalence rates were adjusted (using the four age groups presented in table 2) by the direct method to the 1970 civilian noninstitutionalized population of the United States. (See appendix III for details on the method of computing age-adjusted rates.) These adjusted rates and the morbidity-sex ratios are presented in table 3. To calculate these morbidity-sex ratios, age-adjusted rates for males were divided by those for females. Numbers less than unity represent a higher prevalence among females; numbers larger than unity represent a higher prevalence among males.

The morbidity-sex ratios were quite large for absence of extremities or parts of extremities (4.77), gout (2.12), emphysema (2.09), and coronary heart disease (1.85). Prevalence rates for women were higher (ratios below unity) for hypertensive disease, thyroid conditions, anemia conditions, gallbladder conditions, chronic enteritis and colitis, diverticula of the intestine, migraines, diseases of the urinary system, arthritis, and some skin conditions.

In reviewing these differentials, it should be noted that several of these chronic diseases are more common among members of one sex for biological reasons. Hormonal and biochemical factors, for example, are primarily responsible for the excess rates of gout among males.[11] Anemia and gallbladder disease are more common among women at all ages because of their reproductive role.[11]

In addition, some of the differences in rates may result from men being less aware that they have a condition than women are. For example, only 59 percent of white men versus 75 percent of white women who were found to have elevated blood pressure during a medical examination were aware of the condition prior to the examination. The findings were similar for black men (64 percent) and black women (85 percent).[6]

Overall, however, a pattern emerges from these data: The sex differences in reported prevalence are similar to the sex differences in mortality; that is, for those conditions that are leading causes of death, males generally have higher mortality and morbidity rates. Women, on the other hand, are more likely to have a higher prevalence of chronic diseases that are not leading causes of death.

In 1979, the four leading causes of death were diseases of heart, malignant neoplasms, cerebrovascular diseases, and accidents. The prevalence of coronary heart disease (based on age-adjusted rates) was 85 percent greater among males (table 3), and males were twice as likely as females to die from this cause (table 4). Coronary heart disease caused 90 percent of the deaths assigned to diseases of the heart.[12]

Malignant neoplasms, while not commonly reported in household interviews, are more common in males than in females based on data from the Surveillance and Epidemiology and End Results (SEER) program of the National Cancer Institute. In the mid-1970's, the incidence of all types of cancer combined was 25 percent greater among males than among females.[13] The age-specific rates were higher for males at the oldest and youngest ages. However, women had higher incidence rates between the ages of 20 and 55 years. Men are one-and-a-half times more likely to die from cancer than women are.

Among the civilian noninstitutionalized population, there is no statistically significant difference between the sexes in the prevalence of cerebrovascular diseases (table 3). However, the prevalence of stroke is high among the institutionalized population; 16 percent of the people in nursing homes are stroke survivors.[7] The age-adjusted prevalence rate among the total institutionalized and noninstitutionalized population was 18 percent greater among men than women. In 1979, men were 19 percent more likely to die from cerebrovascular diseases than women were. Finally as indicated earlier, the incidence of injuries was 43 percent greater among males, and males were about 3 times as likely to die from this cause as females in 1979 (table 4).

Women, in contrast, are more likely to have a higher prevalence of chronic diseases that are not among the leading

causes of death (diabetes is an exception). For example, the age-adjusted prevalence rates of arthritis, chronic sinusitis, and varicose veins of the extremities were higher among females. Thus, while women have a higher prevalence of a greater number of chronic conditions than men have, these conditions appear to cause disability and activity limitations rather than death.

Why do males have excess morbidity and mortality for these leading causes of death? Waldron[14] suggests that men have more heart disease because they smoke more, because they have higher serum cholesterol levels at ages 30–45 years, and because they display the hard-driving, rushed, competitive, coronary-prone behaviors more often than women. Data from the Framingham Heart Study suggest that women have a biological protective advantage during the reproductive years, because at any level of combined risk factors, women have only half the risk of men of the same age.[15] As was shown in table 4, mortality rates for heart disease for women at premenopausal ages are lower than for men, but the rates then rise to approach those of men.

Several of the risk factors associated with cerebrovascular disease are similar to those for heart disease. These include high serum cholesterol levels, smoking, high blood pressure, and diabetes.[16] Thus, one reason men have higher morbidity and mortality rates for that disease and for stroke is that they tend to have more of the associated risk factors (with the exception of diabetes).

Many factors have been identified as increasing the risk of cancer. Some of them, such as smoking, which increases the risk of many cancers in addition to lung cancers, are more prevalent among men. The relationship between diet and cancer is still the subject of intensive investigation. It is too soon to draw conclusions about sex differences. The status of this research has recently been reviewed and summarized.[17] Other risk factors are quite specific to certain body organs and tissues. Discussions and summaries of the evidence for causes of cancer can be found in Schottenfield and Fraumeni.[18]

Many of the risk factors for accidents and injuries are associated with personal behavior. For example, excessive driving speed and alcohol use are strongly associated with motor vehicle accident fatalities, which are more common among men than women. Male drivers are involved in 30 percent more accidents per mile driven, and 130 percent more fatal accidents per mile driven.[19] Males are also more likely to engage in contact sports than females are.

Table A. Age-adjusted percent distribution of persons by chronic activity limitation status, according to sex: United States, 1979

Chronic activity limitation status	*Male*	*Female*
	Percent distribution[1]	
Total	100.0	100.0
No limitation of activity	85.2	86.8
Limitation of activity	14.8	13.2
Limited, but not in major activity[2]	3.6	3.6
Limited in amount or kind of activity[2]	5.5	8.0
Unable to carry on major activity[2]	5.7	1.6

[1]Adjusted by the direct method to the 1970 civilian noninstitutionalized population of the United States, using 4 age groups.
[2]Major activity refers to ability to work, to keep house, or to engage in school or preschool activities.

SOURCE: National Center for Health Statistics, B. Feller: Health characteristics of persons with chronic activity limitation: United States, 1979. *Vital and Health Statistics.* Series 10-No. 137. DHHS Pub. No. (PHS) 82–1565. Public Health Service. Washington. U.S. Government Printing Office, Dec. 1981.

It is interesting to note that when the data were age-adjusted, the proportion of males with limitation of activity was somewhat higher than the proportion of females (15 percent versus 13 percent) as shown in table A. Also, men were more than 3 times as likely as women to be unable to carry on their major activity (6 percent of men compared with 2 percent of women). This may be a reflection of the more serious nature of chronic diseases prevalent among men or of the way the question on limitation was asked. Major activity includes the ability to work, keep house, or engage in school or preschool activities. Women who reported that their major activity was keeping house were asked if they were limited in their activity to keep house. They were not asked if they were limited in their ability to work outside the home.

Sex differentials in use of medical care

Ambulatory care

Data presented on ambulatory care are basically from the 1979 National Ambulatory Medical Care Survey (NAMCS), a continuing national sample of ambulatory medical encounters in the offices of office-based, patient-care physicians. Although ambulatory care is rendered in other settings, the physician's office is the primary setting for most ambulatory care.

However, according to data from the 1980 National Health Interview Survey (NHIS), a higher proportion of male's contacts with physicians are in hospital clinics or emergency rooms or in company or industry health units than are those of females. Of the 425 million contacts males had with physicians that year, 66 percent were in offices and 16 percent in clinics, health units, or emergency rooms. Of the 610 million contacts females had, 69 percent were visits to offices and 12 percent were visits to clinics, health units, or emergency rooms. The remainder of the contacts were telephone consultation, home visits, or visits to other places.[20]

Injuries are especially likely to be treated in emergency rooms and clinics. Thus, the restriction of visits to office-based physicians may affect some of the comparisons, especially where injuries account for a sizable proportion of the visits.

It is well known that females make more visits to doctors' offices than males do. In 1979, females made 3.0 visits per person to office-based physicians compared with 2.1 visits per person among males (tables 5 and 6). The visit rates for each sex by age are shown in figure 4. The visit rates for children decrease rapidly until 14 years of age. The visit rates for boys appear to be higher but are not significantly higher than those for girls. From 15 years of age on, women make more visits than men, with the differential greatest during the childbearing years. At ages 25–34, for example, women made, on the average, 3.6 visits per person and men made 1.7 visits per person. After 44 years of age, the differential decreases. The rates increase for each sex but more rapidly for men than for women. Between the age groups 45–54 years of age and 65 years of age and over, for example, the rate of increase in visit rates was 61 percent for men compared with 29 percent for women.

Clues to explaining the utilization patterns by sex in figure 4 may be found by examining the differentials in principal diagnoses associated with the visits. Although the overall visit rate for boys (under 15 years of age) is not statistically higher than that for girls, boys under 15 years of age do have a significantly higher visit rate for injury and poisonings (232 visits per 1,000 population among boys compared with 147 per 1,000 population among girls).

From 15 years of age on, rates of visits to office-based physicians are higher for women than for men. A large part of the sex difference in visit rates during the child-bearing years for women is due to the proportion of visits attributed to pregnancy and associated conditions including antenatal, prenatal, and post partum care. In 1979, the visit rate for such care among women 15–44 years of age was 563 visits per 1,000 population, accounting for 18 percent of the visits for women in that age group. After excluding visits associated with reproduction, however, the excess for women in visit rates persists (table B). The age-adjusted visit rate for females, after excluding visits associated with reproduction, was 26 percent greater than that for males.

It has been hypothesized in other studies of sex differentials in health that a large part of women's greater utilization of health services can be accounted for not only by pregnancy and related conditions but also by conditions that are specific to only one sex; that is, conditions affecting the genital organs.[21,22] Nathanson, for example, hypothesized that the sex differences in hospital utilization rates "may be largely explained by the way in which women use gynecological services and perhaps by the behavior of the physicians who provide these services."[21] In physicians' offices, gynecological visits by women account for a sizable proportion of visits among those 15–44 years of age. The visit rate for female-specific conditions (diseases of the female genital organs and breast including neoplasms of breast or female genital organs) was 859 visits for every 1,000 women 15–44 years of age. This rate was significantly greater than that for male-specific conditions (37 per 1,000 population) among men of the same age. When visits for all sex-specific conditions are excluded, however, the female rate of visits still exceeds that for males (table C). The age-adjusted rate for non-sex-specific visits was 19 percent greater for females than for males.

During the child-bearing years, women also have higher visit rates for infective and parasitic diseases, benign neoplasms, obesity, anemias, anxiety states and other neuroses and personality disorders, acute respiratory infections, and diseases of the urinary system. Males under 45 years of age have more visits for injuries and poisonings. They also have higher injury rates. Thus, the visit rates for injuries do seem to reflect real differences in the incidence rates, and the difference between the sexes in the rates might be even greater if we were able to include visits to emergency rooms.

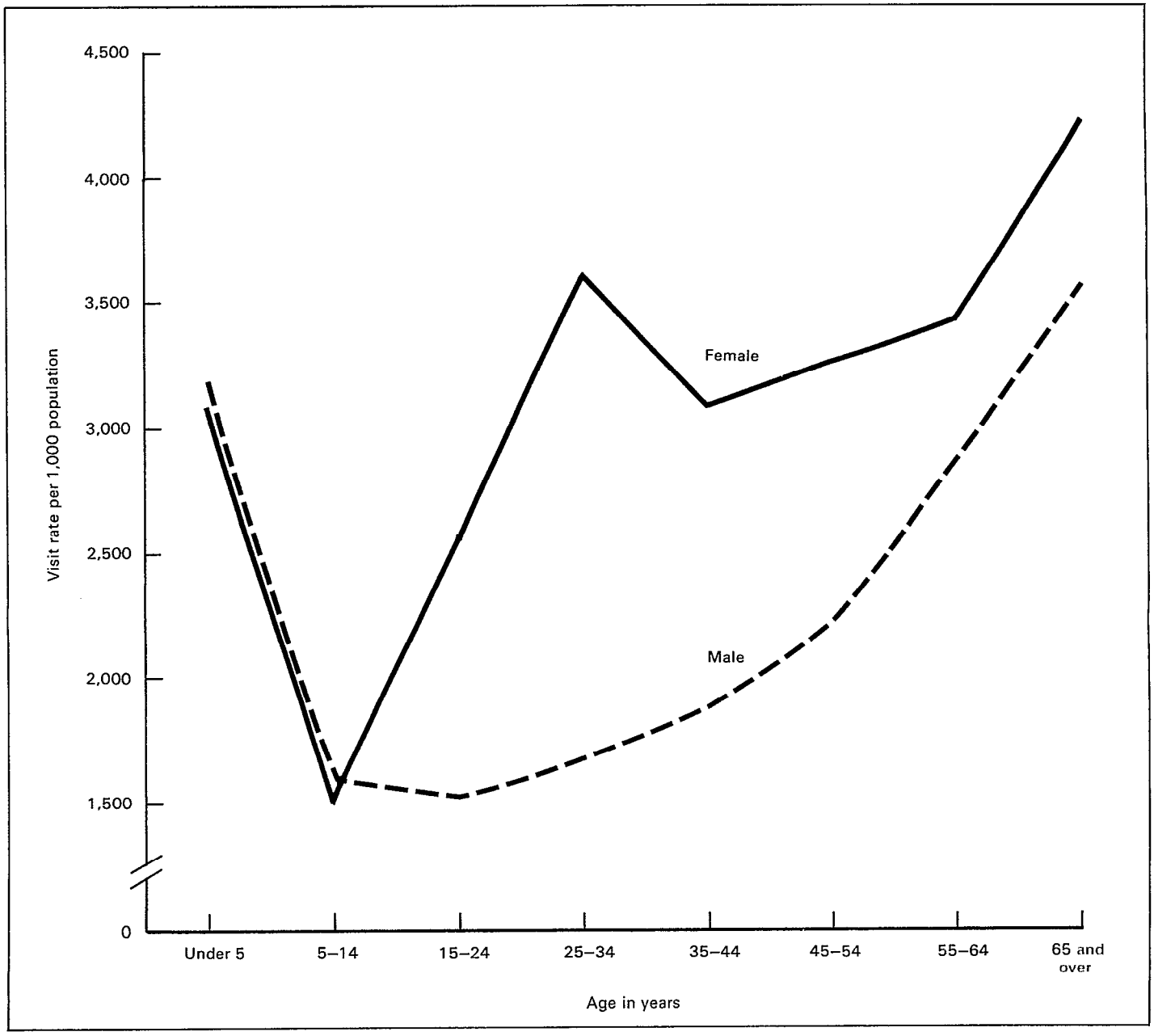

Figure 4. Visit rate to office-based physicians per 1,000 population, by sex and age: United States, 1979

Table B. Visit rate (excluding visits associated with reproduction) to office-based physicians per 1,000 population, by sex and age, and age-adjusted rate by sex: United States, 1979

Age and age-adjusted rate	*Male*	*Female*
	Visits per 1,000 population[1]	
All ages	2,119.4	2,781.6
Under 15 years	2,070.5	1,994.1
15–44 years	1,658.9	2,505.5
45–64 years	2,542.7	3,364.0
65 years and over	3,582.7	4,239.1
Age-adjusted rate[2]	2,146.2	2,702.2

[1]See appendix II for list of diagnoses excluded.
[2]Adjusted by the direct method to the 1970 civilian noninstitutionalized population of the United States, using 4 age groups.

Table C. Visit rate (excluding visits associated with sex-specific diagnoses) to office-based physicians per 1,000 population, by sex and age, and age-adjusted rate by sex: United States, 1979

Age and age-adjusted rate	*Male*	*Female*
	Visits per 1,000 population[1]	
All ages	2,067.6	2,564.0
Under 15 years	2,052.0	1,977.4
15–44 years	1,630.8	2,209.4
45–64 years	2,460.7	3,052.6
65 years and over	3,437.9	4,107.0
Age-adjusted rate[2]	2,098.4	2,499.5

[1]See appendix II for list of sex-specific diagnoses excluded.
[2]Adjusted by the direct method to the 1970 civilian noninstitutionalized population of the United States, using 4 age groups.

From 45 years of age on, the visit rates for chronic diseases increase for both sexes. In general, the differentials reflect the differences in prevalence found in the general population. Women had more visits for rheumatoid arthritis, diseases of the urinary system, anemias, essential hypertension, hypertensive heart disease, and fractures. The higher rate for fractures among women is a reversal from the younger ages. Osteoporosis, a condition in which bones become thin, brittle, and vulnerable to fractures, may be the underlying cause for the higher visit rate for fractures to women because it is more common among elderly women than among elderly men.[23]

Men 45 to 64 years of age had higher visit rates for hernia of the abdominal cavity and heart disease. The visit rate for ischemic heart disease among men 45–64 years of age was more than twice the rate for women in the same age group (119 visits per 1,000 men compared to 41 per 1,000 women). Women in the 45–64 age group, however, had more visits than men of the same age for malignant neoplasms. From 65 years and over, women had a higher visit rate for cataracts.

Overall, females had higher age-adjusted visit rates (table 7) for many of the same chronic diseases found more prevalent among women in the general population as shown in table 3. Women had higher visit rates for infectious and parasitic diseases; neoplasms, malignant and benign; diseases of the thyroid gland; obesity; anemias; mental disorders; cataracts; hypertension; hypertensive heart disease; varicose veins; gastritis and duodenitis; diverticula of intestine; cholelithiasis, cholecystitis, and cholangitis (gallbladder conditions); diseases of the genitourinary system; rheumatoid arthritis; and sprains and strains of back.

Males, overall, had higher age-adjusted visit rates for many of the diagnoses corresponding with the leading causes of death; the sex ratio of age-adjusted visit rates was 77 percent greater among males than females for ischemic heart disease, 32 percent greater for cerebrovascular disease, 130 percent greater for emphysema, and 30 percent greater for injuries and poisonings (table 7).

The greater visit rate for malignant neoplasms among women is interesting. Although incidence rates are higher among men, the age-adjusted visit rate for these diseases was 31 percent greater for women. Because men have both a higher incidence and die more often from malignant neoplasms, one possibility is that women utilize physicians' offices more frequently and have early diagnosis and treatment of this disease. If this is, indeed, the case, the benefits to women are significant. According to a recent study by the National Cancer Institute and the American Cancer Society, mammography combined with physical examination "resulted in a 30 percent reduction in the death rate from breast cancer in women over 50."[24] It may also reflect differences between men and women in specific types of causes and the differing survival rates and places where cancer is treated. Twenty-six percent of the cancer occurring in men 45–64 years of age is cancer of the lung and bronchus while 32 percent of the cancer among women that age is breast cancer (table D). Because lung cancer has a low survival rate (10 percent 5-year relative survival rate for white men and 8 percent for black men) while breast cancer has a high survival rate (72 percent 5-year relative survival rate for white women and 60 percent for black women),[25] it is likely that a part of the higher visit rates for women is due to their return for followup care after treatment for breast cancer.

Table D. Number and percent distribution of malignant neoplasms diagnosed by selected primary sites, according to age and sex: United States excluding Puerto Rico, 1973–77

Sex and selected primary site	*Age*			
	45–64 years	*65 years and over*	*45–64 years*	*65 years and over*
	Number		Percent distribution	
Male				
All sites	58,784	90,669	100.0	100.0
Colon, rectum, and rectosigmoid	8,065	14,617	13.7	16.1
Pancreas	1,975	3,055	3.4	3.4
Lung and bronchus	15,402	17,502	26.2	19.3
Prostate gland	5,636	22,060	9.6	24.3
Urinary bladder	3,679	6,733	6.3	7.4
Other sites	24,027	26,702	40.9	29.4
Female				
All sites	68,747	76,577	100.0	100.0
Colon, rectum, and rectosigmoid	7,169	16,142	10.4	21.1
Pancreas	1,351	3,040	2.0	4.0
Lung and bronchus	6,103	5,080	8.9	6.6
Breast	22,163	17,801	32.2	23.2
Cervix uteri	2,683	1,674	3.9	2.2
Corpus uteri	9,370	5,511	13.6	7.2
Ovary	3,581	2,728	5.2	3.6
Urinary bladder	1,142	2,626	1.7	3.4
Other sites	15,185	21,975	22.1	28.7

SOURCE: National Cancer Institute: Surveillance, Epidemiology and End Results: Incidence and Mortality Data, 1973–77. NIH Pub. No. 81–2330. Public Health Service. Washington. U.S. Government Printing Office, June 1981.

In summary, the higher visit rates by women are largely the result of their greater number of illnesses, or at least of the illnesses of which they are aware and willing to report, because the pattern of visits mirrors the illnesses reported in household interviews. The greater awareness of symptoms by women may also be related to their reproductive role in that exposure to physiological stress during pregnancy may result in conditions becoming manifest that would otherwise be subclinical. Because most women are receiving continuing care during pregnancy, these conditions may be more likely to be treated, or a protective regimen started that will prevent, delay, or minimize clinical diseases and disability, or postpone death.

Women's reproductive role, however, does not account solely for women's disproportionate use of ambulatory care because only 18 percent of visits by women 15–44 years of age can be attributed to pregnancy and related conditions. Even after these and all sex-specific conditions are excluded, the female visit rate remains higher than male visit rates.

Another explanation for the higher visit rate for females is behavioral. Women of all ages, but particularly women in their middle years, are more likely than men are to have a regular source of care, to have a private doctor, and to visit that private doctor for care.[26] With increasing age, men apparently acquire a regular source while women, who already

have one, continue at the same levels. When asked why, men of all ages were more likely than women to say they do not have one because they feel that they do not need one.[26]

Hospital care

In 1979, females used short-stay hospitals more often than males. The discharge rate per 1,000 females was 197 compared with 141 per 1,000 males. The discharge rate by age for the sexes is shown in figure 5. Boys under 15 years of age have a higher discharge rate than girls. At 15–54 years of age, women have higher discharge rates, with the differential greatest during the child-bearing years (15–44 years of age). At 45 years of age and over, the rates increase for each sex but more rapidly for men than for women. After 65 years of age, the discharge rate is higher for men than for women.

Clues to explaining the utilization patterns by the sexes may be found by examining the differentials in the first-listed diagnosis causing the hospital stay (tables 8 and 9). The higher utilization of hospitals by boys (under 15 years of age) was associated with higher discharge rates for hernia of the abdominal cavity; congenital anomalies; fractures, all sites; intracranial injury; pneumonia; bronchitis, chronic and unspecified; and asthma. Girls had a higher rate for chronic disease of tonsils and adenoids.

The tendency of boys (at least through age 14) to have higher utilization of hospital services may stem from the fact that male infants tend to be sicker than female infants. Male newborn infants had a higher (all-listed) illness rate than female newborn infants in 1979.[27] Mortality among infants is also higher for males than it is for females. In 1979, death rates for certain causes of mortality in early infancy and for congenital anomalies were, respectively, 26 percent and 15 percent greater among male than female infants.[12] In addition, some authors have concluded that the higher illness rates among boys is in part the result of the greater likelihood of boys to inherit various defects of the immune system passed along on the X chromosome, leaving boys less resistant to infection and diseases.[19,28,29] Waldron reports that there are more than 50 pathological conditions which occur almost exclusively in males because they are caused by X-linked recessive mutations.[19] The higher utilization among boys is also associated with their higher injury rates.

At ages 15–54, women are hospitalized more often than men of the same age. As in physicians' office encounters, a large proportion of the higher rate for women during the child-bearing years (15–44 years of age) can be attributed to pregnancy and associated conditions. In 1979, the discharge rate for these conditions was 95 per 1,000 women 15–44 years of age, and accounted for 45 percent of discharges for women in

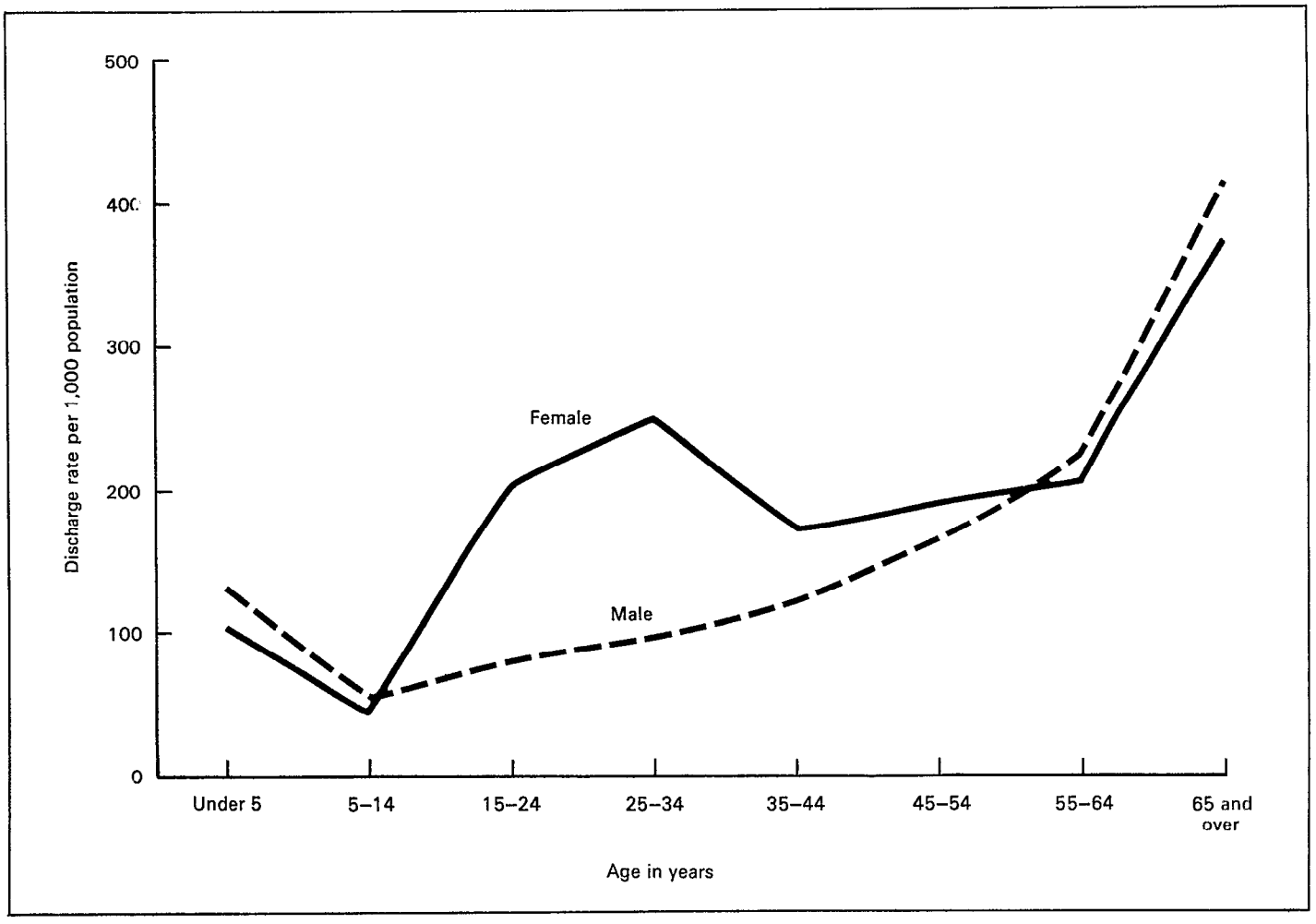

Figure 5. Hospital discharge rate per 1,000 population, by sex and age: United States, 1979

that age group. After excluding discharges associated with reproduction, the female excess in hospital discharge rates is nearly eliminated (table E). The age-adjusted discharge rate for females after excluding visits associated with reproduction was nearly the same as that for males.

A second component of the higher utilization of hospitals by women 15–54 years of age are hospital visits for gynecological disorders. For women 15–44 years of age, the second most frequent first-listed diagnosis (after deliveries and complications of pregnancy, childbirth, and the puerperium) involved diseases of the female genital organs (25 discharges per 1,000 women). Men of the same age, in contrast, were much less likely to be hospitalized for hyperplasia of the prostate and other disorders of the male genital organs (2 discharges per 1,000 men). When all sex-specific conditions are excluded, the age-adjusted discharge rate for males is 11 percent greater than that for females (table F). Thus, when only serious health problems that are not sex specific are considered, males are slightly more likely to be hospitalized than females are.

The sizable contribution of sex-specific conditions to the overall discharge rate for females is also illustrated by the rates for surgical procedures. In 1978, the surgical rate for females was 54 percent higher than that for males.[30] Gynecological surgery was the leading type of surgery performed in short-stay hospitals. When sex-specific surgical procedures are excluded from the overall surgical rates, the surgical rates for males and females in short-stay hospitals were similar. The non-sex-specific surgical rate was 70.9 per 1,000 males and was 67.3 per 1,000 females.[30]

Illnesses for which men 15–44 years of age were more likely than women of the same age to be hospitalized included ulcers of the stomach and duodenum, hernia of the abdominal cavity, derangement and displacement of intervertebral disc, and injuries and poisonings (table 8). After 45 years of age, hospital rates for chronic diseases were higher for both sexes. Men 45 years of age and over were more likely than women to be hospitalized for heart disease, injuries and poisonings, cerebrovascular disease, alcohol dependence syndrome, atherosclerosis, emphysema, ulcer of stomach and duodenum, hernia of the abdominal cavity, and chronic liver disease and cirrhosis. From 65 years of age on, men are also more likely than women to be hospitalized for malignant neoplasms; pneumonia; bronchitis, chronic and unspecified; and diseases of the urinary system.

When these data are adjusted for age, the same pattern holds in hospitals as in households and physicians' offices: For the leading causes of death, males have higher mortality and hospital discharge rates. The age-adjusted hospital discharge rates for males exceeded those for females (morbidity-sex ratios greater than unity) for malignant neoplasm; alcohol dependence syndrome; heart disease (including acute myocardial infarction, coronary atherosclerosis, other ischemic heart disease, cardiac dysrhythmias, and congestive heart failure); cerebrovascular disease; atherosclerosis; pneumonia; bronchitis, chronic and unspecified; emphysema; ulcer of stomach and duodenum, peptic ulcer of unspecified site, and gastrojejunal ulcer; hernia of the abdominal cavity; and chronic liver disease and cirrhosis (table 10).

From these data, it would appear that males use a different and more intensive mixture of hospital services than females do. This is illustrated not only by the sex differences in diagnosis causing the hospital stay, but also by the hospital fatality rate (number of deaths divided by the number of total discharges multiplied by 100). In 1979, males had a higher hospital fatality rate than females in every age group except the youngest (under 15 years). The largest difference occurred in the 65 years of age and over group in which the hospital fatality rate for men was 65 percent higher than that for women.[29] Males in the younger and oldest age groups also used more days of care per 1,000 population than females, but women exceeded men in the middle years.[29] When days of care for sex-specific conditions were excluded, males used more days of care than females did (table G).

Table E. Hospital discharge rate (excluding discharges associated with reproduction) per 1,000 population, by sex and age, and age-adjusted rate by sex: United States, 1979

Age and age-adjusted rate	*Male*	*Female*
	Discharges per 1,000 population[1]	
All ages	141.1	153.5
Under 15 years	80.3	63.8
15–44 years	96.9	117.7
45–64 years	193.2	197.4
65 years and over	410.5	373.6
Age-adjusted rate[2]	142.2	143.2

[1]See appendix II for list of diagnoses excluded.
[2]Adjusted by the direct method to the 1970 civilian noninstitutionalized population of the United States, using 4 age groups.

Table F. Hospital discharge rate (excluding discharges associated with sex-specific diagnoses) per 1,000 population, by sex and age, and age-adjusted rate by sex: United States, 1979

Age and age-adjusted rate	*Male*	*Female*
	Discharges per 1,000 population[1]	
All ages	135.3	131.5
Under 15 years	78.2	63.0
15–44 years	94.7	88.3
45–64 years	185.7	166.8
65 years and over	380.7	355.3
Age-adjusted rate[2]	136.3	122.9

[1]See appendix II for list of sex-specific diagnoses excluded.
[2]Adjusted by the direct method to the 1970 civilian noninstitutionalized population of the United States, using 4 age groups.

Comparison of data from households, physicians' offices, and short-stay hospitals

In the preceding sections sex differentials in health and in health care utilization of physicians' offices and short-stay hospitals were discussed. Data collection methodologies for

Table G. Days of care (excluding days associated with sex-specific diagnoses) in short-stay hospitals per 1,000 population, by sex and age, and age-adjusted rate by sex: United States, 1979

Age and age-adjusted rate	*Male*	*Female*
	Days of care per 1,000 population[1]	
All ages	1,036.6	1,078.8
Under 15 years	347.5	269.6
15–44 years	608.6	541.8
45–64 years	1,411.1	1,435.3
65 years and over	3,982.0	3,918.5
Age-adjusted rate[2]	1,023.1	972.4

[1]See appendix II for list of sex-specific diagnoses excluded.
[2]Adjusted by the direct method to the 1970 civilian noninstitutionalized population of the United States, using 4 age groups.

each of the data bases discussed varied: data from NHIS, for example, are based on self-reported data in a household personal interview, while data from NAMCS and the National Hospital Discharge Survey (NHDS) were based on patient health records in physicians' offices and short-stay hospitals, respectively. Despite these differences, the sex differentials reported in each of these surveys are generally consistent and of similar magnitude.

The morbidity-sex ratios (age-adjusted male rates divided by age-adjusted female rates) for selected diagnoses from NHIS, NAMCS, and NHDS are shown in table H. In all three surveys, the morbidity-sex ratios show excess morbidity among males (values greater than unity) for emphysema, ischemic heart disease, and displacement of intervertebral disc. All three surveys also show excess morbidity among females for hypertension, arthritis, gallbladder conditions, diverticula of intestine, anemias, and thyroid conditions.

Table H. Morbidity-sex ratios of selected diagnoses in households, physicians' offices, and short-stay hospitals: United States, 1979

Diagnosis	*Households*	*Physicians' offices*	*Short-stay hospitals*
	Morbidity-sex ratio[1]		
Emphysema	2.09	2.30	3.50
Ischemic heart disease	1.85	1.77	1.79
Displacement of intervertebral disc	1.29	1.21	1.32
Ulcer of stomach and duodenum	0.98	1.15	1.40
Diabetes mellitus	0.91	1.09	0.72
Cerebrovascular disease	0.90	1.32	1.09
Hypertension	0.86	0.79	0.78
Arthritis	0.65	0.57	0.56
Diverticula of intestine	0.65	0.73	0.63
Diseases of the urinary system	0.35	0.40	1.01
Gallbladder disease	0.33	0.38	0.48
Anemia conditions	0.26	0.52	0.82
Thyroid conditions	0.20	0.17	0.19

[1]Age-adjusted rate for males divided by age-adjusted rate for females. See tables 3, 7, and 10 for age-adjusted rates.

There are, however, exceptions to this rule. Cerebrovascular disease, for example, is reported to be slightly more prevalent among females in households, but males have higher rates of this disease in physicians' offices and short-stay hospitals. These differences may be the result of reporting differences by the sexes or differences in health-seeking behaviors, or both.

Other health services

Among some of the other health services (such as dental care, use of prescribed medications, nursing home care, and inpatient psychiatric care), rates of use are almost always higher for females than for males. In 1979, the age-adjusted dental visit rate for females was 20 percent greater than that for males (table J). Females also received more prescribed medications than males did, primarily because females made more visits to physicians offices than males did.[31,32] In 1980, drugs were ordered or provided in 63 percent of visits to office-based physicians.[31] The average number of drugs ordered or provided per office visit, however, was not significantly different for male and female patients. The average number of ordered or prescribed drugs per office visit was 1.84 for males and 1.89 for females.[31]

Women are also predominant users of nursing homes. In 1977, women 65 years of age and over were twice as likely as men in the same age group to reside in nursing homes (figure 6). The reason for this disproportionate use by women is primarily the longer life expectancy of women. In 1978, 69 percent of women 75 years of age and over were widowed, and nearly half of those women lived alone.[33] Thus, when elderly women become seriously ill, they are less likely to have a spouse at home, necessitating a stay in a nursing home. Among the elderly who do use nursing homes, women apparently use nursing homes on a long-term basis, while elderly men are more likely to use nursing homes for relatively shorter stays.[34]

Males, however, are more likely to be institutionalized in State and county mental hospitals than females are (table K). In 1975, males were twice as likely to be admitted to State

Table J. Number of dental visits per person per year, by sex and age, and age-adjusted rate by sex: United States, 1979

Age and age-adjusted rate	*Male*	*Female*
	Number of visits per person per year	
All ages	1.6	1.8
Under 17 years	1.5	1.7
17–44 years	1.5	1.9
45–64 years	1.8	2.0
65 years and over	1.3	1.5
Age-adjusted rate[1]	1.5	1.8

[1]Adjusted by the direct method to the 1970 civilian noninstitutionalized population of the United States, using 4 age groups.

SOURCE: National Center for Health Statistics, S. Jack and P. Ries: Current estimates from the National Health Interview Survey, United States, 1979. *Vital and Health Statistics.* Series 10-No. 136. DHHS Pub. No. (PHS) 81–1564. Public Health Service. Washington. U.S. Government Printing Office, Apr. 1981.

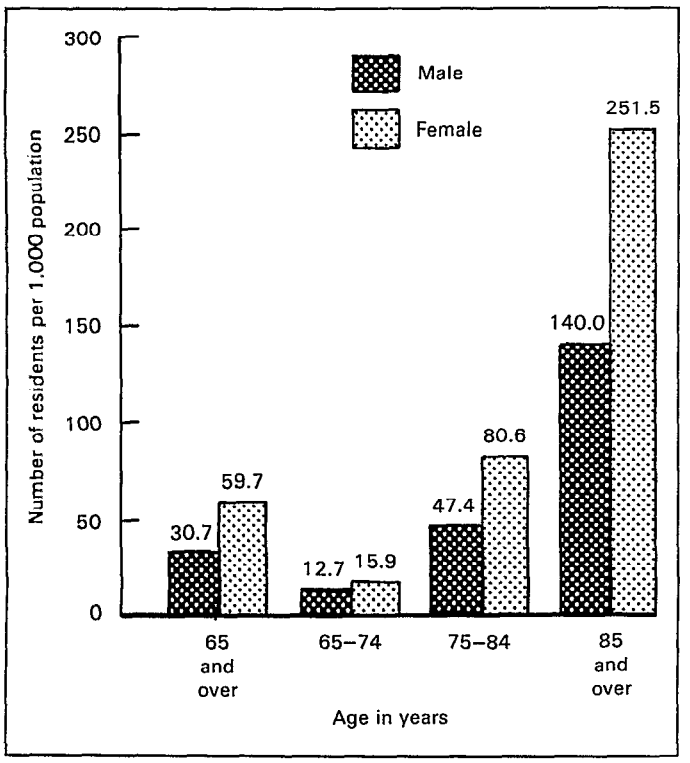

Figure 6. Number of nursing home residents per 1,000 population 65 years of age and over, by sex and age: United States, 1977

Table K. Age-adjusted admission rates by sex and selected types of mental health facility: United States, 1975

Type of mental health facility	*Male*	*Female*
	Age-adjusted admission rate	
State and county mental hospitals	245	124
Private mental hospitals	55	67
Non-Federal general hospitals with psychiatric units	209	276
Public	70	62
Nonpublic	139	214
Federally funded community mental health centers	427	441
Outpatient psychiatric centers	611	709

SOURCE: Task Panel Report: Mental Health—Nature and scope of the Problems, in *Report to the President From the President's Commission on Mental Health,* Volume II, Appendix. Feb. 15, 1978.

and county mental hospitals as females were. (The age-adjusted rate per 100,000 population for males was 245 compared with 124 for females). Females had higher age-adjusted admission rates for psychiatric services in private mental hospitals, psychiatric units of non-Federal general hospitals, federally funded community mental health clinics, and outpatient psychiatric settings.

Conclusions

Conclusions that attribute the female's advantage in morbidity and mortality to any factor or combination of factors can only be tentative. Both Moore[23] and Verbrugge[35] have observed that because the mortality advantage of females extends to every stage of their lives, no single explanation, such as lifestyle, occupation, or utilization of health care, can fully account for this advantage. The data on risk factors contained in this report can only suggest some of the possibilities.

The illness patterns of the sexes and their use of health services has been the main topic of this report. Although causal relationships cannot be generalized from the cross-sectional data presented, a general pattern of illness and use of health care services by the sexes does emerge. Females perceive more symptoms and, perhaps as a consequence, they more frequently reduce their activities and visit doctors more often than males do. Males do just the opposite of females in this regard, but they apparently have more serious illnesses when they do perceive symptoms. This is illustrated by the finding that age-adjusted illness rates for males reported in household settings, in physicians' offices, and in short-stay hospitals are usually higher for illnesses that may lead to death. Thus, males generally have both higher morbidity, utilization, and mortality rates for many of the leading causes of death (that is, diseases of heart, malignant neoplasms, cerebrovascular diseases, accidents, and pneumonia).

It has been hypothesized in other studies of sex differences in health behavior that the failure of men to care for their health (in a manner similar to that taken by women) may contribute to their higher hospitalization rates at older ages and to their higher mortality rates.[19,26] The data contained in this report tend to support this hypothesis, although further research is needed either to confirm it or to disprove it.

The data also suggest, but do not prove, that males may be biologically disadvantaged compared with females—starting at birth. Males have higher rates of infant mortality and higher death rates from congenital anomalies. Males may be subject to more diseases linked to the sex chromosomes than females are and possibly are more susceptible to infections because of their less active immune system.

There are biological mechanisms associated with women's reproductive capacity that may provide a protective advantage. The Framingham data suggest that such a protective mechanism operates for heart disease, and there are indications from other NIH-funded research for other diseases. Women, however, have higher morbidity due to reproduction and gynecological disorders. Thus, females have both an advantage and disadvantage because of their reproductive role.

References

[1]National Center for Health Statistics, N. Pearce: Data systems of the National Center for Health Statistics. *Vital and Health Statistics.* Series 1-No. 16. DHHS Pub. No. (PHS) 82–1318. Public Health Service. Washington. U.S. Government Printing Office, Dec. 1981.

[2]National Center for Health Statistics. *Health, United States, 1980,* Table 27, p. 232. DHHS Pub. No. (PHS) 81–1232. Public Health Service. Washington. U.S. Government Printing Office, Dec. 1980.

[3]National Center for Health Statistics, K. M. Danchik and C. A. Schoenberg: Highlights for Wave 1 of the National Survey of Personal Health Practices and Consequences, United States, 1979. *Vital and Health Statistics.* Series 15-No. 1. DHHS Pub. No. (PHS) 81–1162. Public Health Service. Washington. U.S. Government Printing Office, June 1981.

[4]National Center for Health Statistics, S. Abraham, H. D. Carroll, M. F. Najjar, and R. Fulwood: Obese and overweight adults in the United States. *Vital and Health Statistics.* Series 11-No. 230. DHHS Pub. No. (PHS) 82–1680. Public Health Service. Washington. U.S. Government Printing Office, Aug. 1982.

[5]National Center for Health Statistics, S. Abraham, C. Johnson, and M. Carroll: Total serum cholesterol levels of adults 18–74 years, United States, 1971–1974. *Vital and Health Statistics.* Series 11-No. 205. DHHS Pub. No. (PHS) 78–1652. Public Health Service. Washington. U.S. Government Printing Office, Apr. 1978.

[6]National Center for Health Statistics, M. Rowland and J. Roberts: Blood pressure levels and hypertension in persons 6–74 years, United States, 1976–80. *Advance Data From Vital and Health Statistics,* No. 84. DHHS Pub. No. (PHS) 82–1250. Public Health Service. Hyattsville, Md., Oct. 1982.

[7]National Center for Health Statistics, E. Hing: Characteristics of nursing home residents, health status and care received: National Nursing Home Survey, United States, May–December 1979. *Vital and Health Statistics.* Series 13-No. 51. DHHS Pub. No. (PHS) 81–1712. Public Health Service. Washington. U.S. Government Printing Office, Apr. 1981.

[8]National Center for Health Statistics, P. Ries: Americans assess their health, United States, 1978. *Vital and Health Statistics.* Series 10-No. 142. DHHS Pub. No. (PHS) 83–1570. Public Health Service. Washington. U.S. Government Printing Office, Mar. 1983.

[9]H. Dupuy: General Psychological Well-Being and Marital Status of American Adults (Age 25 Through 74), from an unpublished paper presenting data from the 1971–74 National Health and Nutrition Examination Survey.

[10]National Center for Health Statistics, R. B. Sayetta and D. P. Johnson: Basic data on depressive symptomology, United States, 1974–75. *Vital and Health Statistics.* Series 11-No. 216. DHHS Pub. No. (PHS) 80–1666. Public Health Service. Washington. U.S. Government Printing Office, Apr. 1980.

[11]C. E. Lewis and M. A. Lewis: The potential impact of sexual equality on health. *New Engl. J. Med.* 297(16):836–869, Oct. 20, 1979.

[12]National Center for Health Statistics: Advance report of final mortality statistics, 1979. *Monthly Vital Statistics Report.* Vol. 31-No. 6 Supp. DHHS Pub. No. (PHS) 82–1120. Public Health Service. Hyattsville, Md., Sept. 30, 1982.

[13]National Cancer Institute: *Surveillance, Epidemiology and End Results: Incidence and Mortality Data, 1973–77.* NIH Pub. No. 81–2330. Public Health Service. Washington. U.S. Government Printing Office, June 1981.

[14]I. Waldron: Sex Differences in the Coronary Prone Behavior Pattern, in T. M. Dembroski, S. M. Weiss, J. L. Shields, et al., eds. *Coronary Prone Behavior.* New York. Springer Verlag, 1978, pp. 199–205.

[15]National Institutes of Health: Some Characteristics Related to the Incidence of cardiovascular disease and death: Framingham Study, 16 Year Followup, in D. Shurtleff, W. B. Kannel, and T. Gordon, eds., *The Framingham Study.* NIH Pub. No. 74–599. Public Health Service. Washington. U.S. Government Printing Office, 1974.

[16]National Center for Health Statistics: Prevention profile, by K. Bauer and R. Wilson. *Health, United States, 1980.* DHHS Pub. No. (PHS) 81–1232. Public Health Service. Washington. U.S. Government Printing Office, Dec. 1980.

[17]National Academy of Sciences, Committee on Diet, Nutrition, and Cancer: *Diet, Nutrition and Cancer.* Washington. National Academy Press, 1982.

[18]D. Schottenfield and J. F. Fraumeni, Jr., eds., *Cancer Epidemiology and Prevention.* Philadelphia. W. B. Saunders Company, 1982.

[19]I. Waldron: Why do women live longer than men? *Soc. Sci. Med.* 10:349–362, 1976.

[20]National Center for Health Statistics, J. G. Collins: Physician visits, volume and interval since last visit, United States, 1980. *Vital and Health Statistics.* Series 10-No. 144. DHHS Pub. No. (PHS) 83–1572. Public Health Service. Washington. U.S. Government Printing Office, June 1983.

[21]C. Nathanson: Sex roles as variables in the interpretation of morbidity data: A methodological critique. *Int. J. Epidem.* 7(3):253–262, 1978.

[22]National Center for Health Statistics, B. K. Cypress: Use of health services for disorders of the female reproductive system, United States, 1977–78. *Vital and Health Statistics.* Series 13-No. 63. DHHS Pub. No. (PHS) 82–1724. Public Health Service. Washington. U.S. Government Printing Office, Mar. 1982.

[23]E. C. Moore: Women and health, United States, 1980. *Pub. Health Rep.,* pp. 80–81, Sept.–Oct. 1980 supp.

[24]*The Washington Post,* p. 2, July 8, 1982.

[25]L. G. Reis, E. S. Pollack, and J. L. Young: Cancer patient survival: The surveillance, epidemiology and end results program, 1973–1979. *J. Nat. Cancer Inst.* 70(4):693–707, Apr. 1983.

[26]M. G. Kovar: The Elderly Population: Use of Medical Care Services by Men and Women in Their Middle and Later Years. Paper presented at the 108th Annual Meeting of the American Public Health Association. Detroit, Oct. 1980.

[27]National Center for Health Statistics, E. McCarthy: Inpatient utilization of short-stay hospitals, by diagnosis, United States, 1979. *Vital and Health Statistics.* Series 13-No. 69. DHHS Pub. No. (PHS) 83–1730. Public Health Service. Washington. U.S. Government Printing Office, Dec. 1982.

[28]L. Wingerson: Executive women—Healthier than thou? *New Sci.* 91(1271):718–721, September 17, 1981.

[29]T. C. Washburn, D. N. Medearis, and B. Childs: Sex differences in susceptibility to infections. *Pediatrics* 35:57–64, January 1965.

[30]National Center for Health Statistics, R. Pokras, E. Graves, and C. Dennison: Surgical operations in short-stay hospitals, United States, 1978. *Vital and Health Statistics.* Series 13-No. 61. DHHS Pub. No. (PHS) 82–1722. Public Health Service. Washington. U.S. Government Printing Office, Mar. 1982.

[31]National Center for Health Statistics, H. Koch: Drug utilization in office practice by age and sex of the patient: National Ambulatory Medical Care Survey, 1980. *Advance Data From Vital and Health Statistics,* No. 81. DHHS Pub. No. (PHS) 82–1250. Public Health Service. Hyattsville, Md., July 26, 1982.

[32]National Center for Health Services Research, J. Kesper: National health care expenditures study, prescribed medicines: Use, expenditures and sources of payment. *Data Previews* 9. DHHS Pub. No. (PHS) 82–3320. Public Health Service. Hyattsville, Md., Apr. 1982.

[33]U.S. Bureau of the Census: Social and economic characteristics of the older population, 1978. *Current Population Reports.* Series P-23, No. 85. Washington. U.S. Government Printing Office, Aug. 1979.

[34]National Center for Health Statistics, E. Hing and B. K. Cypress: Use of health services by women 65 years of age and over, United States. *Vital and Health Statistics.* Series 13-No. 59. DHHS Pub. No. (PHS) 81–1720. Public Health Service. Washington. U.S. Government Printing Office, Aug. 1981.

[35]L. M. Verbrugge: Recent trend in sex mortality differentials in the United States. *Women and Health* 5(3), 17–37, Fall 1980.

[36]World Health Organization: *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death.* Based on the Recommendations of the Ninth Revision Conference, 1975. Geneva. World Health Organization, 1977.

[37]National Center for Health Statistics, S. Jack and P. Ries: Current estimates from the National Health Interview Survey, United States, 1979. *Vital and Health Statistics.* Series 10-No. 136. DHHS Pub. No. (PHS) 81–1564. Public Health Service. Washington. U.S. Government Printing Office, Apr. 1981.

[38]National Center for Health Statistics, B. Haupt: Utilization of short-stay hospitals: Annual summary for the United States, 1979. *Vital and Health Statistics.* Series 13-No. 60. DHHS Pub. No. (PHS) 82–1721. Public Health Service. Washington. U.S. Government Printing Office, Dec. 1981.

[39]National Center for Health Statistics, R. Gagnon, J. DeLozier, and T. McLemore: The National Ambulatory Medical Care Survey, United States, 1979 Summary. *Vital and Health Statistics.* Series 13-No. 66. DHHS Pub. No. (PHS) 82–1727. Public Health Service. Washington. U.S. Government Printing Office, Sept. 1982.

[40]W. Mosher: Infertility trends among U.S. couples: 1965–1976. *Family Perspectives* 14(1):22–27, Jan.–Feb. 1982.

[41]J. L. Fleiss: *Statistical Methods for Rates and Proportions.* New York. John Wiley & Sons, Inc., 1981.

[42]U.S. Bureau of the Census: Estimates of the population of the United States by age, sex and race: 1970 to 1977. *Current Population Reports.* Series P-25, No. 721. Washington. U.S. Government Printing Office, Apr. 1978.

[43]National Center for Health Statistics, P. J. McCarthy: Replication, an approach to the analysis of data from complex surveys. *Vital and Health Statistics.* Series 2-No. 14. DHEW Pub. No. (HSM) 73–1269. Health Services and Mental Health Administration. Washington. U.S. Government Printing Office, Apr. 1966.

[44]National Center for Health Statistics, P. J. McCarthy: Pseudoreplication, further evaluation and application of the balanced half-sample technique. *Vital and Health Statistics.* Series 2-No. 31. DHEW Pub. No. (HSM) 73–1270. Health Services and Mental Health Administration. Washington. U.S. Government Printing Office, Jan. 1969.

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Table 1. Number of acute conditions per 100 persons per year, days of restricted activity per 100 persons per year, and days of bed disability associated with acute conditions per 100 persons per year, by sex and condition group: United States, 1979

[Data are based on household interviews of the civilian noninstitutionalized population]

Condition group	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
	Number of acute conditions per 100 persons per year		Days of restricted activity per 100 persons per year		Days of bed disability per 100 persons per year	
All acute conditions	201.5	228.3	824.1	1,047.8	334.2	487.3
Infective and parasitic diseases	22.2	26.5	75.7	116.2	37.9	61.1
Common childhood diseases	2.3	2.5	10.9	14.3	5.4	6.1
Virus, n.o.s.	9.5	11.4	27.4	43.0	14.7	24.6
Other infective and parasitic diseases	10.4	12.6	37.3	58.8	17.7	30.4
Respiratory conditions	99.4	114.7	331.6	426.4	160.4	222.9
Upper respiratory conditions	56.4	63.7	156.1	196.7	68.2	87.6
Common cold	42.8	46.3	117.1	140.9	50.3	62.2
Other upper respiratory conditions	13.6	17.4	39.0	55.8	17.9	25.4
Influenza	36.6	44.1	126.0	163.0	68.5	100.0
Influenza with digestive manifestations	2.5	3.8	7.3	11.5	*2.9	6.3
Other influenza	34.0	40.3	118.7	151.5	65.6	93.6
Other respiratory conditions	6.5	6.9	49.5	66.7	23.7	35.4
Pneumonia	1.5	1.1	21.7	23.5	12.7	15.2
Bronchitis	2.5	3.3	15.0	25.2	7.2	12.8
Other respiratory conditions	2.5	2.5	12.9	18.0	*3.7	7.4
Digestive system conditions	10.2	12.5	44.9	61.7	19.4	33.3
Dental conditions	3.5	2.9	16.4	13.0	5.8	5.4
Functional and symptomatic upper gastrointestinal disorders, n.e.c.	5.1	6.3	8.9	15.4	*3.8	6.9
Other digestive system conditions	1.6	3.3	19.6	33.4	9.8	21.0
Injuries	40.8	28.5	241.0	190.1	62.9	63.2
Fractures, dislocations, sprains, and strains	12.9	9.6	129.1	104.5	31.6	31.6
Fractures and dislocations	4.2	2.7	66.4	61.7	18.6	20.5
Sprains and strains	8.7	6.8	62.6	42.8	13.0	11.1
Open wounds and lacerations	10.5	5.9	33.2	23.4	6.6	7.6
Contusions and superficial injuries	8.8	6.4	36.0	33.0	11.0	13.3
Other current injuries	8.7	6.6	42.7	29.2	13.7	10.7
All other acute conditions	28.8	46.0	131.0	253.3	53.6	106.9
Diseases of the ear	8.1	8.2	30.0	30.4	12.6	11.6
Headaches	1.5	2.4	4.9	5.1	*2.5	*2.7
Genitourinary disorders	2.4	11.9	11.3	60.7	*5.1	26.9
Deliveries and disorders of pregnancy and the puerperium	...	4.1	...	46.7	...	21.3
Diseases of the skin	2.2	2.7	9.3	11.9	*3.1	*3.8
Diseases of the musculoskeletal system	3.7	3.9	29.6	31.9	11.2	9.5
All other acute conditions	11.0	12.9	45.9	66.6	19.0	31.1

NOTES: n.e.c. = not elsewhere classified; n.o.s. = not otherwise specified.

SOURCE: National Center for Health Statistics, S. Jack and P. Ries: Current estimates from the National Health Interview Survey, United States, 1979. *Vital and Health Statistics.* Series 10-No. 136. DHHS Pub. No. (PHS) 81–1564. Public Health Service. Washington. U.S. Government Printing Office, Apr. 1981.

Table 2. Prevalence rates per 1,000 population for selected chronic conditions, by sex and age: United States, 1979

Chronic conditions[1]	Male					Female				
	All ages	Under 17 years	17–44 years	45–64 years	65 years and over	All ages	Under 17 years	17–44 years	45–64 years	65 years and over
Circulatory conditions										
Heart conditions	71.3	22.1	33.5	131.8	265.7	80.7	13.4	41.2	125.5	280.6
Coronary heart disease	30.0	-	*3.5	75.5	145.3	19.2	-	*1.1	34.3	96.1
Hypertensive disease, n.e.c.	95.2	*0.4	60.5	202.9	315.0	123.9	*3.4	57.1	225.0	434.2
Cerebrovascular disease	7.0	-	*1.0	14.4	40.1	9.0	-	*1.5	17.2	40.1
Atherosclerosis	17.3	-	*0.9	28.5	121.5	18.8	-	*0.7	15.3	125.0
Varicose veins, n.e.c.	10.2	*0.8	*4.6	23.3	36.9	44.5	-	31.8	77.0	126.3
Hemorrhoids	36.1	*1.4	44.7	59.9	52.3	45.3	*0.7	52.0	69.1	75.8
Poor circulation, n.o.s.	3.7	-	*1.3	*4.9	23.9	5.5	-	*1.8	*8.6	24.5
Respiratory conditions										
Chronic bronchitis and emphysema	44.7	49.3	20.1	62.5	104.5	44.3	35.3	35.4	55.2	76.0
Chronic bronchitis	31.6	49.3	17.8	33.5	36.3	37.4	34.8	34.9	37.4	51.7
Emphysema	13.1	-	*2.3	29.0	68.2	6.9	*0.5	*0.5	17.8	24.3
Asthma, with or without hay fever	29.9	45.5	22.1	27.8	*21.8	29.5	30.6	26.5	40.0	20.1
Chronic sinusitis	110.6	52.0	119.6	164.1	135.4	148.2	41.4	175.6	212.2	171.1
Digestive conditions										
Ulcer of stomach and duodenum	17.0	*0.4	19.4	33.7	*21.3	18.4	*2.7	18.2	25.9	39.4
Frequent constipation	8.2	*2.9	*2.3	12.8	41.5	27.1	*4.5	19.4	39.6	79.6
Gallbladder conditions	3.3	-	*0.8	*8.9	*13.4	11.4	-	12.5	16.6	22.4
Diverticula of intestine	4.5	*0.3	*0.2	13.8	*16.4	8.1	-	*0.8	15.8	37.2
Chronic enteritis and colitis	4.6	*2.2	*3.5	*7.7	*9.9	12.9	*2.3	13.0	19.7	23.1
Skin and musculoskeletal conditions										
Eczema, dermatitis, and urticaria, n.e.c.	28.8	29.8	26.4	31.9	30.4	42.6	42.9	47.5	43.6	24.0
Psoriasis and similar disorders	9.4	*1.8	9.6	18.0	*13.6	9.5	*2.3	7.0	18.1	19.0
Corns and callosities	13.5	*1.5	13.6	22.9	29.7	30.4	*3.4	21.4	56.6	73.9
Diseases of sebaceous glands, n.e.c. (acne)	29.3	28.7	41.8	13.3	*8.3	30.5	24.5	51.3	11.2	*4.0
Arthritis, n.e.c.	87.3	*4.6	36.9	188.4	354.6	150.4	*2.8	58.1	311.5	504.4
Displacement of intervertebral disc	12.9	*0.4	11.5	29.5	22.5	10.8	*0.3	9.3	20.0	22.7
Bunion	2.7	-	*1.6	*7.7	*4.8	13.5	*0.4	8.5	22.8	42.2
Synovitis, bursitis, and tenosynovitis	17.4	*1.9	14.2	46.0	*18.7	25.3	*1.4	19.6	56.2	43.2
Gout	10.5	-	*4.3	27.7	33.9	5.6	-	*1.4	11.2	22.5
Genitourinary, nervous, endocrine metabolic, and blood-forming systems and other selected conditions										
Thyroid conditions	4.2	*0.4	*3.0	*8.5	*11.8	22.3	*1.6	20.8	42.8	36.7
Diabetes	21.8	*1.0	8.4	56.0	73.7	26.6	*1.3	9.0	59.7	83.9
Anemia conditions	4.8	8.9	*1.8	*2.9	*9.7	21.0	*7.0	27.0	17.1	36.4
Migraine	11.8	*4.2	15.5	16.8	*7.7	36.9	*6.6	47.5	63.1	20.5
Neuralgia, neuritis, specified sites and types, n.e.c.	3.7	-	*0.5	*6.4	24.0	7.1	-	*2.5	16.3	22.5
Diseases of the urinary system	12.4	*4.8	10.3	16.7	36.3	38.6	11.6	42.4	45.1	71.2
Diseases of prostate	10.4	-	*4.7	15.3	58.0	...	...	...	...	...
Impairments										
Visual impairments	47.1	13.0	41.5	74.4	119.7	32.8	8.0	17.8	43.4	117.6
Hearing impairments	88.8	18.7	56.3	147.8	327.2	66.4	10.0	34.1	93.1	249.6
Speech impairments	11.7	18.7	9.5	*7.7	*9.3	6.7	13.1	*3.1	*5.4	*7.9
Absence of extremities or parts of extremities (excludes tips of fingers or toes only)	14.2	*1.7	7.2	34.0	42.0	3.3	-	*1.0	*6.8	*12.3
Paralysis, complete or partial, of extremities or parts of extremities	5.7	*1.7	*4.0	*8.2	*20.1	4.3	*1.9	*1.3	*5.2	18.3
Deformities or orthopedic impairments	84.7	12.6	102.6	122.3	144.8	85.5	15.8	88.2	113.8	174.2

[1]For coding information on these data, see table I.

NOTES: n.e.c. = not elsewhere classified; n.o.s. = not otherwise specified.

SOURCE: 1979 National Health Interview Survey. Rates based on estimates below 215,000 are considered statistically unreliable.

Table 3. Age-adjusted prevalence rates per 1,000 population for selected chronic conditions, by sex, and morbidity-sex ratios: United States, 1979

Chronic conditions[1]	*Age-adjusted rate*[2] *per 1,000 population*		*Morbidity-sex ratio*
	Male	*Female*	
Circulatory conditions			
Heart conditions	72.4	72.5	1.00
Coronary heart disease	30.9	16.7	[3]1.85
Hypertensive disease, n.e.c.	94.7	110.5	[3]0.86
Cerebrovascular disease	7.2	8.0	0.90
Atherosclerosis	17.9	15.4	1.16
Varicose veins, n.e.c.	10.3	39.8	[3]0.26
Hemorrhoids	34.3	41.0	[3]0.84
Poor circulation, n.o.s.	3.8	4.8	0.79
Respiratory conditions			
Chronic bronchitis and emphysema	46.6	43.4	1.07
Chronic bronchitis	33.2	37.0	0.90
Emphysema	13.4	6.4	[3]2.09
Asthma, with or without hay fever	31.0	30.0	1.03
Chronic sinusitis	108.1	138.6	[3]0.78
Digestive conditions			
Ulcer of stomach and duodenum	16.3	16.7	0.98
Frequent constipation	8.4	24.5	[3]0.34
Gallbladder conditions	3.4	10.2	[3]0.33
Diverticula of intestine	4.6	7.1	[3]0.65
Chronic enteritis and colitis	4.6	11.8	[3]0.39
Skin and musculoskeletal conditions			
Eczema, dermatitis, and urticaria, n.e.c.	29.0	42.9	0.68
Psoriasis and similar disorders	9.2	8.9	1.03
Corns and callosities	13.1	27.8	[3]0.47
Diseases of sebaceous glands, n.e.c. (acne)	28.4	29.6	0.96
Arthritis, n.e.c.	88.2	135.4	[3]0.65
Displacement of intervertebral disc	12.6	9.8	1.29
Bunion	2.6	12.0	[3]0.22
Synovitis, bursitis, and tenosynovitis	17.2	23.5	0.73
Gout	10.6	5.0	[3]2.12
Genitourinary, nervous, endocrine metabolic, and blood-forming systems and other selected conditions			
Thyroid conditions	4.1	20.6	[3]0.20
Diabetes	22.1	24.2	0.91
Anemia conditions	5.1	19.3	[3]0.26
Migraine	11.3	34.7	[3]0.33
Neuralgia, neuritis, specified sites and types, n.e.c.	3.8	6.5	[3]0.58
Diseases of the urinary system	12.3	35.6	[3]0.35
Diseases of prostate	10.5	...	...
Impairments			
Visual impairments	46.5	29.5	[3]1.58
Hearing impairments	88.9	59.1	[3]1.50
Speech impairments	12.1	7.3	[3]1.66
Absence of extremities or parts of extremities (excludes tips of fingers or toes only)	14.3	3.0	[3]4.77
Paralysis, complete or partial, of extremities or parts of extremities	5.7	3.9	1.46
Deformities or orthopedic impairments	81.1	78.0	1.04

[1]For coding information in these data, see table I.
[2]Adjusted by the direct method to the 1970 civilian noninstitutionalized population of the United States, using 4 age groups (as shown in table 2).
[3]Difference in crude prevalence rates between males and females is statistically significant.

NOTES: n.e.c. = not elsewhere classified; n.o.s. = not otherwise specified.

SOURCE: 1979 National Health Interview Survey. These data are based on a 1/6 subsample of households.

Table 4. Death rates for leading causes of death, by sex and age, and mortality-sex ratios by age: United States, 1979

Rank order	Age, cause of death, and ICD–9 code[1]		Death rate[2] Male	Death rate[2] Female	Mortality-sex ratio[3]
	All ages				
...	All causes (age-adjusted)[4]		780.3	433.5	1.80
1	Diseases of heart	390–398, 402, 404–429	282.5	140.3	2.01
2	Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues	140–208	165.6	109.6	1.51
3	Cerebrovascular diseases	430–438	46.7	39.2	1.19
4	Accidents and adverse effects	E800–E949	66.2	22.4	2.96
...	Motor vehicle accidents	E810–E825	35.8	12.1	2.96
...	All other accidents and adverse effects	E800–E807, E826–E949	30.4	10.2	2.98
5	Chronic obstructive pulmonary diseases and allied conditions	490–496	24.7	7.9	3.13
	1–4 years				
...	All causes		72.6	58.2	1.25
1	Accidents and adverse effects	E800–E949	31.6	22.3	1.42
...	Motor vehicle accidents	E810–E825	10.7	9.3	1.15
...	All other accidents and adverse effects	E800–E807, E826–E949	21.0	13.0	1.62
2	Congenital anomalies	740–759	8.7	7.8	1.12
3	Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues	140–208	5.0	4.3	1.16
4	Homicide and legal intervention	E960–E978	2.4	2.6	0.92
5	Diseases of heart	390–398, 402, 404–429	2.2	2.1	1.05
	5–14 years				
...	All causes		39.4	24.8	1.59
1	Accidents and adverse effects	E800–E949	22.3	10.4	2.14
...	Motor vehicle accidents	E810–E825	10.9	6.1	1.79
...	All other accidents and adverse effects	E800–E807, E826–E949	11.4	4.3	2.65
2	Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues	140–208	5.2	3.8	1.37
3	Congenital anomalies	740–759	1.7	1.6	1.06
4	Homicide and legal intervention	E960–E978	1.3	0.9	1.44
5	Diseases of heart	390–398, 402, 404–429	0.9	0.8	1.13
	15–24 years				
...	All causes		175.7	59.0	2.98
1	Accidents and adverse effects	E800–E949	100.9	27.1	3.72
...	Motor vehicle accidents	E810–E825	71.8	21.5	3.34
...	All other accidents and adverse effects	E800–E807, E826–E949	29.1	5.6	5.20
2	Homicide and legal intervention	E960–E978	23.2	6.5	3.57
3	Suicide	E950–E959	20.4	4.9	4.16
4	Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues	140–208	7.6	4.9	1.55
5	Diseases of heart	390–398, 402, 404–429	3.3	2.1	1.57
	25–44 years				
...	All causes		242.3	112.4	2.16
1	Accidents and adverse effects	E800–E949	70.4	17.6	4.00
...	Motor vehicle accidents	E810–E825	41.3	11.4	3.62
...	All other accidents and adverse effects	E800–E807, E826–E949	29.1	6.2	4.69
2	Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues	140–208	26.2	30.2	0.87
3	Diseases of heart	390–398, 402, 404–429	36.1	12.4	2.91
4	Homicide and legal intervention	E960–E978	28.1	6.1	4.61
5	Suicide	E950–E959	24.4	8.4	2.90
	45–64 years				
...	All causes		1,275.4	672.8	1.90
1	Diseases of heart	390–398, 402, 404–429	516.0	178.4	2.89
2	Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues	140–208	345.6	266.7	1.30
3	Cerebrovascular diseases	430–438	52.8	41.8	1.26
4	Accidents and adverse effects	E800–E949	63.2	22.1	2.86
...	Motor vehicle accidents	E810–E825	27.6	10.3	2.68
...	All other accidents and adverse effects	E800–E807, E826–E949	35.6	11.7	3.04
5	Chronic liver disease and cirrhosis	571	50.0	23.5	2.13

See footnotes and source at end of table.

Table 4. Death rates for leading causes of death, by sex and age, and mortality-sex ratios by age: United States, 1979—Con.

Rank order	*Age, cause of death, and ICD–9 code*[1]		*Death rate*[2]		*Mortality-sex ratio*[3]
			Male	*Female*	
	65 years and over				
...	All causes		6,294.2	4,379.2	1.44
1	Diseases of heart	390–398, 402, 404–429	2,751.7	1,989.5	1.38
2	Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues	140–208	1,364.3	759.9	1.80
3	Cerebrovascular diseases	430–438	571.8	598.4	0.96
4	Chronic obstructive pulmonary diseases and allied conditions	490–496	277.0	71.7	3.86
5	Pneumonia and influenza	480–487	184.0	124.1	1.48

[1]Based on the *International Classification of Diseases, 9th Revision.*
[2]Rate per 100,000 population in specified group.
[3]Mortality-sex ratio expressed as the ratio of death rate for males divided by death rate for females in each age group.
[4]Rate per 100,000 population in specified group. Computed by the direct method, using as the standard population the age distribution of the total population of the United States as enumerated in 1940. This type of age adjustment applies to this table only.

SOURCE: National Center for Health Statistics, Division of Vital Statistics.

Table 5. Number of visits to office-based physicians, by sex, age, and principal diagnoses: United States, 1979

Principal diagnosis and ICD–9–CM code[1]	Male					Female				
	All ages	Under 15 years	15–44 years	45–64 years	65 years and over	All ages	Under 15 years	15–44 years	45–64 years	65 years and over
	Number of visits in thousands									
All diagnoses	219,218	52,617	79,659	52,591	34,351	337,096	48,735	154,345	76,003	58,012
Infectious and parasitic diseases 001–139	8,502	3,033	3,926	1,218	*325	11,208	2,817	6,209	1,535	647
Neoplasms 140–239	5,277	*187	1,002	1,879	2,209	8,929	*215	2,458	3,596	2,659
Malignant neoplasms 140–208	3,479	*74	453	1,240	1,712	5,433	*72	765	2,500	2,096
Malignant neoplasm of breast or female genital organs 174–175, 179–184, 198.6, 198.81	*8	-	-	-	*8	1,857	-	*281	1,062	514
Malignant neoplasm of prostate 185	368	-	-	*78	*291	...	...	...	...	...
Benign neoplasms, carcinoma-in-situ, and neoplasms of uncertain behaviors 210–239	1,797	113	549	638	497	3,496	*143	1,694	1,096	564
Benign neoplasm of breast or female genital organs 217–221	*4	-	*4	-	-	831	-	574	*241	*16
Endocrine, nutritional, and metabolic diseases, and immunity disorders 240–279	7,115	*266	1,632	3,258	1,959	15,741	352	6,595	5,630	3,164
Diseases of the thyroid gland 240–246	*304	-	*167	*111	*27	1,946	*36	902	678	*330
Diabetes mellitus 250	4,237	*102	507	2,035	1,594	4,710	*37	464	2,097	2,113
Obesity 278.0	1,401	*85	667	611	*37	6,940	*201	4,358	2,123	*257
Diseases of the blood and blood-forming organs 280–289	1,128	422	*141	*275	*290	2,162	*206	726	514	717
Anemias 280–285	732	*202	*86	*213	*230	1,769	*120	540	417	692
Mental disorders 290–319	9,543	1,168	5,746	2,165	465	15,036	513	9,196	3,727	1,601
Anxiety states and other neuroses and personality disorders 300–301	4,923	*345	3,338	1,059	*180	8,776	*145	5,697	2,085	850
Diseases of the nervous system and sense organs 320–389	21,993	7,275	5,942	4,450	4,326	28,566	7,437	7,742	6,327	7,061
Cataract 366	1,100	*20	*62	350	667	2,298	*21	*55	301	1,921
Diseases of the circulatory system 390–459	21,647	358	3,600	9,389	8,299	27,960	*111	3,679	9,310	14,859
Essential hypertension 401	9,308	*115	1,856	4,700	2,638	14,298	*23	1,864	5,513	6,898
Heart disease 390–392.0, 393–398, 402, 404, 410–416, 420–429	8,242	116	638	3,459	4,030	8,862	*54	793	2,508	5,507
Hypertensive heart disease 402, 404	598	-	*24	*272	*302	1,278	*14	*67	490	708
Ischemic heart disease 410–414	5,254	-	264	2,458	2,532	3,879	*7	228	932	2,712
Cerebrovascular disease 430–438	911	*28	*59	*251	57.2	906	-	*22	*184	700
Varicose veins of lower extremities 454	*173	-	*41	*68	*63	551	-	*98	*234	*219
Hemorrhoids 455	1,118	-	639	*344	*135	790	-	367	*259	*164
Diseases of the respiratory system 460–519	32,904	13,349	11,149	5,190	3,216	40,529	12,819	16,287	7,172	4,251
Acute upper respiratory infections, except influenza 460–465	13,401	7,333	4,043	1,316	710	18,636	7,858	7,161	2,152	1,465
Chronic disease of tonsils and adenoids 474	*328	*195	*133	-	-	*274	*160	*113	-	-
Pneumonia, all forms 480–486	1,101	425	*261	*120	*295	1,182	394	478	*235	*76
Bronchitis, chronic and unspecified 490–491	3,277	1,046	1,132	712	388	3,023	659	987	794	583
Emphysema 492	460	-	*38	*197	*225	*247	-	-	*106	*141
Asthma 493	2,981	1,591	813	432	*146	3,805	1,301	1,327	717	460

[1]Based on the *International Classification of Diseases, 9th Revision, Clinical Modification.*

Table 5. Number of visits to office-based physicians, by sex, age, and principal diagnoses: United States, 1979—Con.

Principal diagnosis and ICD–9–CM code[1]	Male					Female				
	All ages	Under 15 years	15–44 years	45–64 years	65 years and over	All ages	Under 15 years	15–44 years	45–64 years	65 years and over
	Number of visits in thousands									
Diseases of the digestive system 520–579	10,537	1,521	3,802	3,221	1,994	14,174	1,792	5,270	4,044	3,068
Ulcer of stomach, duodenum, peptic ulcer of unspecified site, and gastrojejunal ulcer 531–534	1,203	*7	426	379	390	1,170	*33	402	507	*229
Gastritis and duodenitis 535	847	*85	398	*240	*124	1,067	*126	559	*211	*172
Hernia of the abdominal cavity 550–553	2,215	*348	605	808	454	1,363	*129	*215	433	586
Diverticula of intestine 562	*345	-	*9	*171	*165	592	-	*79	*236	*277
Cholelithiasis, cholecystitis, and cholangitis 574–576	445	-	*66	*213	*166	1,379	-	592	608	*179
Diseases of the genitourinary system 580–629	7,527	592	2,458	2,539	1,938	29,105	1,585	17,521	7,280	2,720
Diseases of the urinary system 580–599	3,034	*123	1,119	927	864	8,248	1,181	3,576	1,897	1,594
Hyperplasia of prostate and other disorders of the male genital organs 600–608	4,246	391	1,268	1,521	1,065	. . .	. . .	. . .	. . .	. . .
Diseases of the breast . . . 610, 611	*247	*78	*70	*91	*8	3,394	*102	2,115	1,012	*165
Cervicitis and endocervicitis and other inflammatory diseases of female pelvic organs 614–617	. . .	. . .	. . .	. . .	. . .	6,456	*163	5,209	917	*167
Genital prolapse (female) . . . 618	. . .	. . .	. . .	. . .	. . .	615	-	*146	*250	*219
Disorders of menstruation and other abnormal vaginal bleeding 626	. . .	. . .	. . .	. . .	. . .	2,584	*40	2,137	366	*41
Menopausal and postmenopausal disorders 627	. . .	. . .	. . .	. . .	. . .	3,042	-	635	2,169	*238
Other disruptions of the female genital tract 619–625, 628–629	. . .	. . .	. . .	. . .	. . .	4,766	*98	3,704	669	*295
Complications of pregnancy, childbirth, and the puerperium 630–676	. . .	. . .	. . .	. . .	. . .	1,911	-	1,911	-	-
Diseases of the skin and subcutaneous tissue 680–709	12,824	2,487	6,424	2,456	1,457	16,308	2,706	8,020	3,362	2,219
Diseases of the musculoskeletal system and connective tissue 710–739	15,210	832	6,012	5,397	2,968	21,795	880	7,007	7,660	6,247
Rheumatoid arthritis, osteoarthritis and allied disorders, except spine 714, 715	2,094	*23	392	942	738	4,446	*18	418	1,832	2,178
Derangement and displacement of intervertebral disc 722	1,138	-	616	479	*43	1,043	-	463	394	*186
Bursitis and synovitis except spine 726–727.0, 727.2–727.3	3,161	*110	1,351	1,320	380	3,009	*45	1,039	1,240	685
Congenital anomalies 740–759	1,240	871	296	*54	*20	1,405	617	482	*187	*118
Certain conditions originating in the perinatal period 760–779	*135	*135	-	-	-	*180	*148	-	*9	*24
Symptoms, signs, and ill-defined conditions 780–799	6,600	1,736	2,173	1,576	1,115	10,651	1,582	4,417	2,758	1,894
Injury and poisoning 800–999	28,405	5,903	16,302	4,698	1,502	23,377	3,587	10,946	5,686	3,158
Fractures, all sites 800–829	6,326	1,525	3,510	895	396	5,105	953	1,334	1,481	1,337
Dislocation without fracture 830–839	1,188	*157	718	*275	*37	*346	*71	*209	*40	*25
Sprains and strains of back (including neck) 846–847	3,352	*23	2,445	786	*98	4,361	-	2,639	1,243	479
Laceration and open wound 870–904	4,639	1,312	2,403	675	*249	2,519	624	1,258	499	*138

[1]Based on the *International Classification of Diseases, 9th Revision, Clinical Modification.*

Table 5. Number of visits to office-based physicians, by sex, age, and principal diagnoses: United States, 1979—Con.

Principal diagnosis and ICD–9–CM code[1]	*Male*					*Female*				
	All ages	*Under 15 years*	*15–44 years*	*45–64 years*	*65 years and over*	*All ages*	*Under 15 years*	*15–44 years*	*45–64 years*	*65 years and over*
	Number of visits in thousands									
Supplementary classifications..... V01–V82	25,357	11,773	7,738	4,023	1,824	62,546	10,553	43,004	5,885	3,105
Health supervision of infant or child..... V20	7,372	7,276	*96	-	-	6,650	6,558	*81	-	*10
Normal pregnancy..... V22	...	...	...	...	...	22,426	*75	22,289	*62	-
Post partum care and examination..... V24	...	...	...	...	...	1,714	*18	1,687	*8	-
Contraceptive and procreative management, antenatal screening and supervision of high-risk pregnancy V23, V25–28	436	-	402	*33	-	2,439	*9	2,424	*6	-
General medical examination..... V70	7,792	1,797	4,158	1,469	367	8,783	1,635	5,059	1,438	652

[1]Based on the *International Classification of Diseases, 9th Revision, Clinical Modification.*

Table 6. Visit rates to office-based physicians per 1,000 population, by sex, age, and principal diagnoses: United States, 1979

Principal diagnosis and ICD–9–CM code[1]	*Male*					*Female*				
	All ages	*Under 15 years*	*15–44 years*	*45–64 years*	*65 years and over*	*All ages*	*Under 15 years*	*15–44 years*	*45–64 years*	*65 years and over*
	Rate per 1,000 population									
All diagnoses	2,119.1	2,070.5	1,667.3	2,544.3	3,582.7	3,038.4	1,998.3	3,068.4	3,367.4	4,239.1
Infectious and parasitic diseases 001–139	82.2	119.4	82.2	58.9	*33.9	101.0	115.5	123.4	68.0	47.3
Neoplasms 140–239	51.0	*7.3	21.0	90.9	230.4	80.5	*8.8	48.9	159.3	194.3
Malignant neoplasms 140–208	33.6	*2.9	9.5	60.0	178.6	49.0	*3.0	15.2	110.8	153.1
Malignant neoplasm of breast or female genital organs 174–175, 179–184, 198.6, 198.81	*0.1	-	-	-	*0.8	76.2	-	*5.6	47.0	37.5
Malignant neoplasm of prostate 185	3.6	-	-	*3.8	*30.3	...	...	...	...	...
Benign neoplasms, carcinoma-in-situ, and neoplasms of uncertain behaviors 210–239	17.4	*4.4	11.5	30.9	51.8	31.5	*5.8	33.7	48.6	41.2
Benign neoplasm of breast or female genital organs 217–221	*0.0	-	*0.1	-	-	7.5	-	11.4	*10.7	*1.2
Endocrine, nutritional, and metabolic diseases, and immunity disorders 240–279	68.8	*10.5	34.1	157.6	204.4	141.9	14.4	131.1	249.4	231.2
Diseases of the thyroid gland 240–246	*2.9	-	*3.5	*5.4	*2.8	17.5	*1.5	17.9	30.0	*24.1
Diabetes mellitus 250	41.0	*4.0	10.6	98.4	166.2	42.5	*1.5	9.2	92.9	154.4
Obesity 278.0	13.5	*3.3	13.9	29.6	*3.9	62.5	*8.2	86.7	94.0	*18.8
Diseases of the blood and blood-forming organs 280–289	10.9	16.6	*2.9	*13.3	*30.2	19.5	*8.4	14.4	22.8	52.4
Anemias 280–285	7.1	*8.0	*1.8	*10.3	*24.0	15.9	*4.9	10.7	18.5	50.6
Mental disorders 290–319	92.3	46.0	120.3	104.7	48.5	135.5	21.0	182.8	165.1	117.0
Anxiety states and other neuroses and personality disorders 300–301	47.6	*13.6	69.9	51.3	*18.8	79.1	*5.9	113.3	92.4	62.1
Diseases of the nervous system and sense organs 320–389	212.6	286.3	124.4	215.3	451.2	257.5	304.9	153.9	280.3	516.0
Cataract 366	10.6	*0.8	*1.3	17.0	69.6	20.7	*0.8	*1.1	13.4	140.4
Diseases of the circulatory system 390–459	209.3	14.1	75.4	454.3	865.5	252.0	*4.6	73.1	412.5	1,085.8
Essential hypertension 401	90.0	*4.5	38.8	227.4	275.1	128.9	*1.0	37.1	244.3	504.0
Heart disease 390–392.0, 393–398, 402, 404, 410–416, 420–429	79.7	*4.6	13.3	167.3	420.3	79.9	*2.2	15.8	111.1	402.4
Hypertensive heart disease 402, 404	5.8	-	*0.5	*13.1	*31.5	11.5	*0.6	*1.3	21.7	51.7
Ischemic heart disease 410–414	50.8	-	5.5	118.9	264.1	35.0	*0.3	4.5	41.3	198.2
Cerebrovascular disease 430–438	8.8	*1.1	*1.2	*12.1	59.7	8.2	-	*0.4	*8.2	51.1
Varicose veins of lower extremities 454	*1.7	-	*0.9	*3.3	*6.6	5.0	-	*1.9	*10.4	*16.0
Hemorrhoids 455	10.8	-	13.4	*16.6	*14.1	7.1	-	7.3	*11.5	*12.0
Diseases of the respiratory system 460–519	318.1	525.3	233.3	251.1	335.4	365.3	525.6	323.8	317.8	310.6
Acute upper respiratory infections, except influenza 460–465	129.5	288.5	84.6	63.7	74.0	168.0	322.2	142.4	95.3	107.1
Chronic disease of tonsils and adenoids 474	*3.2	*7.7	*2.8	-	-	*2.5	*6.6	*2.2	-	-
Pneumonia, all forms 480–486	10.6	16.7	*5.5	*5.8	*30.7	10.7	16.1	9.5	*10.4	*5.6
Bronchitis, chronic and unspecified 490–491	31.7	41.1	23.7	34.4	40.4	27.2	27.0	19.6	35.2	42.6
Emphysema 492	4.4	-	*0.8	*9.5	*23.5	*2.2	-	0	*4.7	*10.3
Asthma 493	28.8	62.6	17.0	20.9	*15.2	34.3	53.3	26.4	31.8	33.6

[1]Based on the *International Classification of Diseases, 9th Revision, Clinical Modification.*

Table 6. Visit rates to office-based physicians per 1,000 population, by sex, age, and principal diagnoses: United States, 1979—Con.

Principal diagnosis and ICD–9–CM code[1]	*Male*					*Female*				
	All ages	*Under 15 years*	*15–44 years*	*45–64 years*	*65 years and over*	*All ages*	*Under 15 years*	*15–44 years*	*45–64 years*	*65 years and over*
	Rate per 1,000 population									
Diseases of the digestive system 520–579	101.9	59.8	79.6	155.8	207.9	127.8	73.5	104.8	179.2	224.2
Ulcer of stomach, duodenum, peptic ulcer of unspecified site, and gastrojejunal ulcer 531–534	11.6	*0.3	8.9	18.3	40.7	10.5	*1.3	8.0	22.5	*16.7
Gastritis and duodenitis 535	8.2	*3.3	8.3	*11.6	*13.0	9.6	*5.2	11.1	*9.3	*12.6
Hernia of the abdominal cavity 550–553	21.4	*13.7	12.7	39.1	47.3	12.3	*5.3	*4.3	19.2	42.8
Diverticula of intestine 562	*3.3	-	*0.2	*8.3	*17.2	5.3	-	*1.6	*10.5	*20.2
Cholelithiasis, cholecystitis, and cholangitis 574–576	4.3	-	*1.4	*10.3	*17.3	12.4	-	11.8	26.9	*13.1
Diseases of the genitourinary system 580–629	72.8	23.3	51.4	122.8	202.1	262.3	65.0	348.3	322.5	198.7
Diseases of the urinary system 580–599	29.3	*4.9	23.4	44.9	90.1	74.3	48.4	71.1	84.1	116.5
Hyperplasia of prostate and other disorders of the male genital organs 600–608	41.0	15.4	26.5	73.6	111.1	...	...	...	...	...
Diseases of the breast ... 610, 611	*2.4	*3.1	*1.5	*4.4	*0.8	30.6	*4.2	42.0	44.8	*12.1
Cervicitis and endocervicitis and other inflammatory diseases of female pelvic organs..... 614–617	...	...	...	...	...	58.2	*6.7	103.6	40.6	*12.2
Genital prolapse (female) 618	...	...	...	...	...	5.5	-	*2.9	*11.1	*16.1
Disorders of menstruation and other abnormal vaginal bleeding..... 626	...	...	...	...	...	23.3	*1.7	42.5	16.2	*3.0
Menopausal and postmenopausal disorders 627	...	...	...	...	...	27.4	-	12.6	96.1	*17.4
Other disruptions of the female genital tract..... 619–625, 628–629	...	...	...	...	...	43.0	*4.0	73.6	29.6	*21.6
Complications of pregnancy, childbirth, and the puerperium..... 630–676	...	...	...	...	...	17.2	-	38.0	-	-
Diseases of the skin and subcutaneous tissue 680–709	124.0	97.9	134.5	118.8	152.0	147.0	111.0	159.4	149.0	162.1
Diseases of the musculoskeletal system and connective tissue 710–739	147.0	32.8	125.8	261.1	309.5	196.4	36.1	139.3	339.4	456.5
Rheumatoid arthritis, osteoarthritis and allied disorders, except spine..... 714, 715	20.2	*0.9	8.2	45.6	76.9	40.1	*0.7	8.3	81.2	159.2
Derangement and displacement of intervertebral disc..... 722	11.0	-	12.9	23.2	*4.5	9.4	-	9.2	17.5	*13.6
Bursitis and synovitis except spine..... 726–727.0, 727.2–727.3	30.5	*4.3	28.2	63.9	39.7	27.1	*1.8	20.7	54.9	50.1
Congenital anomalies 740–759	12.0	34.3	6.2	*2.6	*2.1	12.7	25.3	9.6	*8.3	*8.6
Certain conditions originating in the perinatal period 760–779	*1.3	*5.3	-	-	-	*1.6	*6.1	-	*0.4	*1.7
Symptoms, signs, and ill-defined conditions 780–799	63.8	68.3	45.5	76.3	116.3	96.0	64.8	87.8	122.2	138.4
Injury and poisoning 800–999	274.6	232.3	341.2	227.3	156.7	210.7	147.1	217.6	251.9	230.7
Fractures, all sites 800–829	61.2	60.0	73.5	43.3	41.3	46.0	39.1	26.5	65.6	97.7
Dislocation without fracture 830–839	11.5	*6.2	15.0	*13.3	*3.9	*3.1	*2.9	*4.2	*1.8	*1.8
Sprains and strains of back (including neck)..... 846–847	32.4	*0.9	51.2	38.0	*10.2	*39.3	-	52.5	55.1	35.0
Laceration and open wound..... 870–904	44.8	51.6	50.3	32.6	*25.9	22.7	25.6	25.0	22.1	*10.1

[1]Based on the *International Classification of Diseases, 9th Revision, Clinical Modification.*

Table 6. Visit rates to office-based physicians per 1,000 population, by sex, age, and principal diagnoses: United States, 1979—Con.

Principal diagnosis and ICD–9–CM code[1]	Male					Female				
	All ages	Under 15 years	15–44 years	45–64 years	65 years and over	All ages	Under 15 years	15–44 years	45–64 years	65 years and over
	Rate per 1,000 population									
Supplementary classifications V01–V82	245.1	463.3	162.0	194.6	190.2	563.8	432.7	854.9	260.7	226.9
Health supervision of infant or child V20	71.3	286.3	*2.0	-	-	59.9	268.9	*1.6	-	*0.8
Normal pregnancy..... V22	...	...	...	...	...	202.1	*3.1	443.1	*2.8	-
Post partum care and examination..... V24	...	...	...	...	...	15.4	*0.8	33.5	*0.4	-
Contraceptive and procreative management, antenatal screening and supervision of high-risk pregnancy V23, V25–28	4.2	-	8.4	*1.6	-	21.9	*0.4	47.9	*0.3	-
General medical examination..... V70	75.3	70.7	87.0	71.1	38.3	79.2	67.0	100.6	63.7	47.6

[1]Based on the *International Classification of Diseases, 9th Revision, Clinical Modification.*

Table 7. Age-adjusted visit rates to office-based physicians per 1,000 population for principal diagnoses, by sex, and morbidity-sex ratios: United States, 1979

Principal diagnosis and ICD–9–CM code[1]	*Age-adjusted rate*[2] *per 1,000 population*		*Morbidity-sex ratio*
	Male	*Female*	
All diagnoses	2,149.9	2,933.1	[3]0.73
Infectious and parasitic diseases 001–139	83.5	102.3	[3]0.82
Neoplasms 140–239	51.6	74.2	[3]0.70
Malignant neoplasms 140–208	34.3	44.8	0.77
Benign neoplasms, carcinoma-in-situ, and neoplasms of uncertain behaviors 210–239	17.3	29.4	0.59
Endocrine, nutritional, and metabolic diseases, and immunity disorders 240–279	69.3	131.5	[3]0.53
Diseases of the thyroid gland 240–246	2.8	16.3	[3]0.17
Diabetes mellitus 250	41.9	38.3	1.09
Obesity 278.0	13.1	59.0	[3]0.22
Diseases of the blood and blood-forming organs 280–289	11.6	18.1	[3]0.64
Anemias 280–285	7.5	14.5	[3]0.52
Mental disorders 290–319	88.7	126.0	[3]0.70
Anxiety states and other neuroses and personality disorders 300–301	44.8	73.0	[3]0.61
Diseases of the nervous system and sense organs 320–389	221.5	258.6	[3]0.86
Cataract 366	11.0	16.9	[3]0.65
Diseases of the circulatory system 390–459	212.2	220.9	[3]0.96
Essential hypertension 401	90.8	114.5	0.79
Heart disease 390–392.0, 393–398, 402, 404, 410–416, 420–429	81.8	68.7	[3]1.19
Hypertensive heart disease 402, 404	5.9	10.2	[3]0.58
Ischemic heart disease 410–414	52.3	29.5	[3]1.77
Cerebrovascular disease 430–438	9.0	6.8	1.32
Varicose veins of lower extremities 454	1.7	4.5	0.38
Hemorrhoids 455	10.3	6.5	1.58
Diseases of the respiratory system 460–519	331.3	379.7	[3]0.87
Acute upper respiratory infections, except influenza 460–465	138.2	181.2	[3]0.76
Chronic disease of tonsils and adenoids 474	3.4	2.8	1.21
Pneumonia, all forms 480–486	11.2	11.2	1.00
Bronchitis, chronic and unspecified 490–491	32.6	27.2	1.20
Emphysema 492	4.6	2.0	2.30
Asthma 493	30.8	36.0	0.86
Diseases of the digestive system 520–579	102.0	122.7	[3]0.83
Ulcer of stomach, duodenum, peptic ulcer of unspecified site, and gastrojejunal ulcer 531–534	11.4	9.9	1.15
Gastritis and duodenitis 535	8.0	9.2	0.87
Hernia of the abdominal cavity 550–553	21.8	11.4	[3]1.91
Diverticula of intestine 562	3.5	4.8	0.73
Cholelithiasis, cholecystitis, and cholangitis 574–576	4.4	11.7	[3]0.38
Diseases of the genitourinary system 580–629	72.6	246.6	[3]0.29
Diseases of the urinary system 580–599	28.9	71.6	[3]0.40
Hyperplasia of prostate and other disorders of the male genital organs 600–608	41.2	...	...
Diseases of the breast 610, 611	2.5	28.8	[3]0.09
Cervicitis and endocervicitis and other inflammatory diseases of female pelvic organs 614–617	...	53.7	...
Genital prolapse (female) 618	...	5.0	...
Disorders of menstruation and other abnormal vaginal bleeding 626	...	21.4	...
Menopausal and postmenopausal disorders 627	...	26.8	...
Other disruptions of the female genital tract 619–625, 628–629	...	39.3	...
Complications of pregnancy, childbirth, and the puerperium 630–676	...	15.5	...
Diseases of the skin and subcutaneous tissue 680–709	122.3	143.5	[3]0.85
Diseases of the musculoskeletal system and connective tissue 710–739	144.6	181.5	[3]0.80
Rheumatoid arthritis, osteoarthritis and allied disorders, except spine 714, 715	20.5	35.7	[3]0.57
Derangement and displacement of intervertebral disc 722	10.5	8.7	1.21
Bursitis and synovitis except spine 726–727.0, 727.2–727.3	29.8	25.2	1.18
Congenital anomalies 740–759	13.2	13.8	0.96
Certain conditions originating in the perinatal period 760–779	1.5	2.0	0.75
Symptoms, signs, and ill-defined conditions 780–799	65.3	93.2	[3]0.70
Injury and poisoning 800–999	268.3	205.6	[3]1.30
Fractures, all sites 800–829	60.2	45.1	[3]1.33
Dislocation without fracture 830–839	11.0	3.1	3.55
Sprains and strains of back (including neck) 846–847	30.0	36.2	0.83
Laceration and open wound 870–904	44.7	23.1	[3]1.94
Supplementary classifications V01–V82	258.7	548.9	[3]0.47
Health supervision of infant or child V20	83.6	78.5	1.06
Normal pregnancy V22	...	181.7	...
Post partum care and examination V24	...	13.9	...
Contraceptive and procreative management, antenatal screening and supervision of high-risk pregnancy V23, V25–28	3.8	19.7	[3]0.19
General medical examination V70	74.3	78.1	0.95

[1]Based on the *International Classification of Diseases, 9th Revision, Clinical Modification.*
[2]Adjusted by the direct method to the 1970 civilian noninstitutionalized population of the United States, using 4 age groups.
[3]Difference in crude utilization rates between males and females is statistically significant.

Table 8. Number of discharges from short-stay hospitals, by sex, age, and first-listed diagnoses: United States, 1979

First-listed diagnosis and ICD–9–CM code[1]	Male					Female				
	All ages	Under 15 years	15–44 years	45–64 years	65 years and over	All ages	Under 15 years	15–44 years	45–64 years	65 years and over
	Discharges in thousands									
All diagnoses	14,705	2,053	4,680	4,017	3,955	22,042	1,588	10,808	4,515	5,131
Infectious and parasitic diseases 001–139	277	97	97	43	40	319	86	117	56	60
Neoplasms 140–239	994	30	114	341	508	1,408	35	370	522	481
Malignant neoplasms 140–208	846	19	73	291	463	899	18	100	360	421
Malignant neoplasm of breast or female genital organs 174–175, 179–184, 198.6, 198.81	*2	-	*1	Z	*1	365	*1	52	169	144
Malignant neoplasm of prostate 185	118	Z	*1	22	96	...	...	...	...	...
Benign neoplasms, carcinoma-in-situ, and neoplasms of uncertain behaviors 210–239	148	11	42	50	45	509	17	270	161	61
Benign neoplasm of breast or female genital organs 217–221	Z	-	Z	Z	-	254	*2	162	81	9
Endocrine, nutritional, and metabolic diseases, and immunity disorders 240–279	376	29	96	126	124	682	33	176	214	258
Diseases of the thyroid gland 240–246	13	Z	5	3	4	75	*2	26	28	19
Diabetes mellitus 250	227	8	64	85	69	374	13	71	132	158
Obesity 278.0	12	Z	6	4	*1	47	Z	33	11	*2
Diseases of the blood and blood-forming organs 280–289	155	41	45	20	49	193	34	51	33	75
Anemias 280–285	91	16	22	13	40	134	15	30	25	63
Mental disorders 290–319	887	24	526	248	89	836	26	457	217	137
Anxiety states and other neuroses and personality disorders 300–301	122	3	83	28	8	248	6	157	60	25
Alcohol dependence syndrome 303	341	*2	177	139	23	98	Z	48	42	8
Diseases of the nervous system and sense organs 320–389	714	188	163	163	200	912	149	203	217	342
Cataract 366	155	3	9	44	99	228	*1	6	36	185
Other disorders of the eye 360–365, 367–379	245	140	43	33	29	257	113	45	45	54
Diseases of the circulatory system 390–459	2,471	21	286	982	1,182	2,436	21	246	691	1,477
Essential hypertension 401	118	*1	31	53	33	181	1	30	71	77
Heart disease 390–392.0, 393–398, 402, 404, 410–416, 420–429	1,642	16	153	704	769	1,428	14	88	410	916
Hypertensive heart disease 402, 404	52	Z	5	20	27	80	Z	4	22	54
Acute myocardial infarction 410	271	Z	23	134	114	162	*1	3	53	105
Coronary atherosclerosis 414.0	317	*1	19	127	169	275	*1	3	56	214
Other ischemic heart disease 412–413, 414.1–414.9	426	*1	44	242	139	287	*1	17	123	146
Cardiac dysrhythmias 427	162	3	19	57	83	169	3	17	50	98
Congestive heart failure 428.0	174	3	4	38	129	203	*2	*2	29	169
Cerebrovascular disease 430–438	336	*1	10	88	236	411	3	15	74	319
Atherosclerosis 440	55	Z	*1	17	37	51	Z	*2	11	38
Varicose veins of lower extremities 454	28	-	10	12	7	60	-	19	24	16
Hemorrhoids 455	77	Z	39	29	9	82	Z	38	29	14
Diseases of the respiratory system 460–519	1,679	612	328	315	424	1,630	474	470	306	380
Acute upper respiratory infections, except influenza 460–465	150	107	30	7	6	149	82	43	11	13
Chronic disease of tonsils and adenoids 474	215	158	55	3	-	282	162	117	3	Z
Pneumonia, all forms 480–486	403	150	58	64	130	353	105	62	60	126
Influenza 487	28	10	8	5	5	40	6	16	8	9
Bronchitis, chronic and unspecified 490–491	114	31	14	30	39	113	20	21	34	38
Emphysema 492	43	Z	*1	18	24	14	-	*1	7	6
Asthma 493	143	63	27	29	24	196	36	68	54	39

See footnotes and source at end of table.

Table 8. Number of discharges from short-stay hospitals, by sex, age, and first-listed diagnoses: United States, 1979—Con.

First-listed diagnosis and ICD-9-CM code[1]	Male					Female				
	All ages	Under 15 years	15–44 years	45–64 years	65 years and over	All ages	Under 15 years	15–44 years	45–64 years	65 years and over
	Discharges in thousands									
Diseases of the digestive system 520–579	2,195	282	742	656	515	2,409	202	852	668	687
Ulcer of stomach, duodenum, peptic ulcer of unspecified site, and gastrojejunal ulcer ... 531–534	194	3	59	74	59	162	*2	42	60	58
Gastritis and duodenitis..... 535	140	7	61	47	26	158	10	67	49	33
Appendicitis..... 540.0–540.1, 540.9, 541–543	158	40	95	17	6	120	31	72	12	6
Hernia of the abdominal cavity 550–553	536	75	150	176	135	246	26	55	79	87
Diverticula of intestine..... 562	68	Z	7	29	32	137	Z	7	41	89
Chronic liver disease and cirrhosis..... 571	59	*1	16	30	12	43	Z	10	23	9
Cholelithiasis, cholecystitis, and cholangitis 574–576	175	*1	37	66	70	432	*1	172	143	115
Diseases of the genitourinary system 580–629	1,042	100	280	297	365	2,472	88	1,528	597	258
Diseases of the urinary system 580–599	561	45	177	164	174	633	70	251	152	159
Hyperplasia of prostate and other disorders of the male genital organs 600–608	464	52	94	130	187	...	...	...	...	...
Diseases of the breast..... 610, 611	19	*2	10	3	4	203	*2	108	78	15
Cervicitis and endocervicitis and other inflammatory diseases of female pelvic organs..... 614–617	...	...	...	...	...	415	4	362	42	7
Genital prolapse (female)..... 618	...	...	...	...	...	183	Z	76	68	39
Disorders of menstruation and other abnormal vaginal bleeding 626	...	...	...	...	...	450	4	350	94	*1
Menopausal and postmenopausal disorders..... 627	...	...	...	...	...	80	-	3	61	16
Other disruptions of the female genital tract ... 619–625, 628–629	...	...	...	...	...	508	7	378	101	22
Complications of pregnancy, childbirth, and the puerperium[2]..... 630–676	...	...	...	...	...	989	9	976	4	-
Ectopic pregnancy 633	...	...	...	...	...	46	-	46	Z	-
Induced abortion and other pregnancy with abortive outcome..... 630–632, 634–639	...	...	...	...	...	490	6	481	*2	-
Complications of pregnancy, childbirth, and the puerperium without delivery ..... 640–648, 651–676 with 5th digit 0, 3, 4	...	...	...	...	...	453	3	448	2	-
Diseases of the skin and subcutaneous tissue 680–709	284	48	129	65	42	316	33	122	79	82
Diseases of the musculoskeletal system and connective tissue 710–739	905	41	446	284	135	1,181	39	408	414	319
Rheumatoid arthritis, osteoarthritis and allied disorders, except spine..... 714, 715	77	*1	11	30	35	168	*2	14	63	89
Derangement and displacement of intervertebral disc 722	212	Z	117	79	15	173	Z	75	78	20
Bursitis and synovitis except spine.... 726–727.0, 727.2–727.3	60	5	28	21	6	75	3	21	36	15
Congenital anomalies 740–759	167	98	39	21	9	165	62	60	32	12
Certain conditions originating in the perinatal period..... 760–779	40	40	Z	-	-	31	30	*1	Z	-
Symptoms, signs, and ill-defined conditions 780–799	295	59	122	78	37	348	60	152	87	50

See footnotes and source at end of table.

Table 8. Number of discharges from short-stay hospitals, by sex, age, and first-listed diagnoses: United States, 1979—Con.

First-listed diagnosis and ICD–9–CM code[1]	*Male*					*Female*				
	All ages	*Under 15 years*	*15–44 years*	*45–64 years*	*65 years and over*	*All ages*	*Under 15 years*	*15–44 years*	*45–64 years*	*65 years and over*
	Discharges in thousands									
Injury and poisoning 800–999	2,057	318	1,192	340	206	1,578	175	613	310	480
Fractures, all sites 800–829	609	103	315	107	84	571	53	119	108	291
Dislocation without fracture 830–839	139	7	111	18	3	61	3	38	13	7
Sprains and strains of back (including neck) 846–847	166	*2	115	39	9	173	*2	97	53	21
Intracranial injury (excluding those with skull fracture) 850–854	192	59	109	15	19	117	32	57	13	15
Laceration and open wound 870–904	269	32	184	38	16	89	14	48	13	14
Supplementary classifications V01–V82	166	25	73	39	28	4,136	31	4,007	68	31
Persons admitted for sterilization V25.2	9	-	8	*1	Z	259	Z	253	5	-
Females with deliveries V27	-	-	-	-	-	3,646	13	3,607	27	-

[1]Based on the *International Classification of Diseases, 9th Revision, Clinical Modification.*
[2]Deliveries are included in the "Supplementary classification" category V27, Females with deliveries.

SOURCE: Unpublished data from the 1979 National Hospital Discharge Survey.

Table 9. Hospital discharge rates per 10,000 population, by sex, age, and first-listed diagnoses: United States, 1979

First-listed diagnosis and ICD–9–CM code[1]	Male					Female				
	All ages	Under 15 years	15–44 years	45–64 years	65 years and over	All ages	Under 15 years	15–44 years	45–64 years	65 years and over
	Rate per 10,000 population									
All diagnoses	1,411.5	803.2	971.0	1,932.4	4,105.2	1,973.2	647.3	2,129.9	1,989.6	3,735.5
Infectious and parasitic diseases 001–139	26.6	37.8	20.2	20.5	41.8	28.6	34.9	23.0	24.8	43.9
Neoplasms 140–239	95.4	11.8	23.8	164.0	527.3	126.0	14.3	72.9	229.9	350.4
Malignant neoplasms 140–208	81.2	7.5	15.1	139.9	481.0	80.5	7.5	19.6	158.8	306.2
Malignant neoplasm of breast or female genital organs 174–175, 179–184, 198.6, 198.81	*0.2	-	*0.1	*0.2	*0.7	32.7	*0.5	10.2	74.3	104.5
Malignant neoplasm of prostate 185	11.4	*0.0	*0.1	10.6	99.1	...	...	...	...	...
Benign neoplasms, carcinoma-in-situ, and neoplasms of uncertain behaviors 210–239	14.2	4.3	8.7	24.1	46.3	45.6	6.8	53.2	71.1	44.1
Benign neoplasms of breast or female genital organs 217–221	*0.0	-	*0.0	*0.0	-	22.7	*0.8	31.9	35.8	6.4
Endocrine, nutritional and metabolic diseases, and immunity disorders 240–279	36.1	11.5	20.0	60.7	128.5	61.0	13.5	34.8	94.2	188.1
Diseases of the thyroid gland 240–246	1.2	*0.2	1.1	1.6	4.0	6.7	*0.8	5.1	12.5	13.8
Diabetes mellitus 250	21.7	3.0	13.4	40.9	72.1	33.4	5.2	13.9	58.0	115.4
Obesity 278.0	1.1	*0.2	1.2	2.1	1.2	4.2	*0.2	6.5	4.8	1.6
Diseases of the blood and blood-forming organs 280–289	14.8	15.9	9.4	9.5	50.9	17.3	13.9	10.0	14.7	54.7
Anemias 280–285	8.7	6.1	4.6	6.2	41.9	12.0	6.2	6.0	11.0	46.1
Mental disorders 290–319	85.2	9.4	109.1	119.5	92.2	74.9	10.4	90.0	95.4	100.0
Anxiety states and other neuroses and personality disorders 300–301	11.7	1.3	17.2	13.5	7.9	22.2	2.6	30.9	26.4	18.4
Alcohol dependence syndrome 303	32.8	*0.7	36.7	66.9	24.0	8.8	*0.1	9.5	18.3	5.8
Diseases of the nervous system and sense organs 320–389	68.5	73.5	33.8	78.2	208.1	81.7	60.8	40.0	95.8	249.4
Cataract 366	14.8	1.0	1.9	21.0	103.0	20.4	*0.3	1.2	15.7	134.9
Other disorders of the eye 360–365, 367–379	23.5	54.8	8.8	15.9	30.2	23.0	46.0	8.8	19.7	39.4
Diseases of the circulatory system 390–459	237.2	8.4	59.3	472.6	1,226.5	218.1	8.7	48.5	304.6	1,075.4
Essential hypertension 401	11.3	*0.5	6.4	25.3	34.5	16.2	0.5	6.0	31.4	56.4
Heart disease 390–392.0, 393–398, 402, 404, 410–416, 420–429	157.6	6.1	31.8	338.7	798.1	127.8	5.7	17.4	180.5	666.7
Hypertensive heart disease 402, 404	5.0	*0.2	1.0	9.6	28.0	7.2	*0.2	0.8	9.5	39.5
Acute myocardial infarction 410	26.0	*0.1	4.8	64.6	118.2	14.5	*0.4	0.5	23.3	76.5
Coronary atherosclerosis 414.0	30.4	*0.6	4.0	61.2	175.9	24.6	*0.4	0.7	24.9	155.8
Other ischemic heart disease 412–413, 414.1–414.9	40.9	*0.5	9.2	116.3	144.5	25.7	*0.4	3.4	54.3	106.2
Cardiac dysrhythmias 427	15.5	1.0	4.0	27.5	86.0	15.1	1.2	3.4	22.2	71.4
Congestive heart failure 428.0	16.7	1.0	0.8	18.4	133.7	18.2	*0.9	*0.5	12.8	123.4
Cerebrovascular disease 430–438	32.2	*0.5	2.2	42.5	244.3	36.8	1.2	3.0	32.8	232.0
Atherosclerosis 440	5.3	*0.1	*0.1	8.1	38.7	4.6	*0.1	*0.4	4.7	27.9
Varicose veins of lower extremities 454	2.7	*0.0	2.0	5.6	6.9	5.3	-	3.8	10.7	11.7
Hemorrhoids 455	7.4	*0.2	8.2	13.8	8.9	7.3	*0.1	7.6	12.9	10.0
Diseases of the respiratory system 460–519	161.2	239.3	68.1	151.5	440.6	145.9	193.3	92.6	134.9	276.6
Acute upper respiratory infections, except influenza 460–465	14.4	41.9	6.2	3.2	6.2	13.3	33.6	8.5	4.6	9.2
Chronic disease of tonsils and adenoids 474	20.6	61.8	11.3	1.2	-	25.3	66.2	23.0	1.1	*0.2

See footnotes and source at end of table.

Table 9. Hospital discharge rates per 10,000 population, by sex, age, and first-listed diagnoses: United States, 1979—Con.

First-listed diagnosis and ICD–9–CM code[1]	Male					Female				
	All ages	Under 15 years	15–44 years	45–64 years	65 years and over	All ages	Under 15 years	15–44 years	45–64 years	65 years and over
	Rate per 10,000 population									
Diseases of the respiratory system—Con.										
Pneumonia, all forms . . . 480–486	38.7	58.7	12.1	30.9	135.4	31.6	42.9	12.3	26.6	91.4
Influenza 487	2.6	3.8	1.7	2.4	5.1	3.6	2.6	3.2	3.6	6.7
Bronchitis, chronic and unspecified 490–491	10.9	12.1	3.0	14.4	40.5	10.1	8.1	4.1	15.0	28.0
Emphysema 492	4.1	*0.1	*0.1	8.6	24.5	1.3	-	*0.1	3.3	4.7
Asthma 493	13.8	24.8	5.6	14.1	24.9	17.5	14.6	13.3	23.6	28.2
Diseases of the digestive system 520–579	210.7	110.3	154.0	315.5	534.8	215.7	82.5	167.8	294.4	500.1
Ulcer of stomach, duodenum, peptic ulcer of unspecified site, and gastrojejunal ulcer 531–534	18.6	1.1	12.2	35.7	60.4	14.5	*1.0	8.3	26.5	41.9
Gastritis and duodenitis 535	13.5	2.9	12.6	22.5	26.5	14.2	3.9	13.1	21.5	24.2
Appendicitis 540.0–540.1, 540.9, 541–543	15.2	15.6	19.8	8.1	6.0	10.8	12.5	14.2	5.1	4.3
Hernia of the abdominal cavity 550–553	51.4	29.4	31.0	84.6	140.4	22.1	10.5	10.8	34.7	63.2
Diverticula of intestine 562	6.5	*0.1	1.5	13.7	32.9	12.3	*0.1	1.3	18.0	64.8
Chronic liver disease and cirrhosis 571	5.6	*0.3	3.4	14.5	12.1	3.9	*0.2	2.0	10.3	6.8
Cholelithiasis, cholecystitis, and cholangitis 574–576	16.8	*0.4	7.8	31.9	73.0	38.7	*0.8	33.9	63.1	83.6
Diseases of the genitourinary system 580–629	100.1	39.0	58.2	142.9	379.3	221.3	35.8	301.2	263.2	187.9
Diseases of the urinary system 580–599	53.8	17.9	36.6	78.6	180.9	56.6	28.7	49.6	67.1	115.5
Hyperplasia of prostate and other disorders of the male genital organs 600–608	44.5	20.5	19.4	62.7	194.5	. . .	. . .	. . .	. . .	. . .
Diseases of the breast . . . 610, 611	1.8	0.7	2.1	1.6	3.9	18.2	*0.8	21.2	34.5	10.9
Cervicitis and endocervicitis and other inflammatory diseases of female pelvic organs . . . 614–617	. . .	. . .	. . .	. . .	. . .	37.2	1.6	71.4	18.7	4.7
Genital prolapse (female) 618	. . .	. . .	. . .	. . .	. . .	16.4	*0.1	15.0	30.0	28.1
Disorders of menstruation and other abnormal vaginal bleeding 626	. . .	. . .	. . .	. . .	. . .	40.3	1.7	69.1	41.4	*1.0
Menopausal and postmenopausal disorders 627	. . .	. . .	. . .	. . .	. . .	7.1	-	0.5	26.9	11.5
Other disruptions of the female genital tract . . . 619–625, 628–629	. . .	. . .	. . .	. . .	. . .	45.5	3.0	74.4	44.6	16.2
Complications of pregnancy, childbirth, and the puerperium[2] 630–676	. . .	. . .	. . .	. . .	. . .	88.5	3.6	192.4	1.7	-
Ectopic pregnancy 633	. . .	. . .	. . .	. . .	. . .	4.2	-	9.1	*0.1	-
Induced abortion and other pregnancy with abortive outcome 630–632, 634–639	. . .	. . .	. . .	. . .	. . .	43.8	2.5	94.9	*0.9	-
Complications of pregnancy, childbirth, and the puerperium without delivery . . . . . 640–648, 651–676 with 5th digit 0, 3, 4	. . .	. . .	. . .	. . .	. . .	40.5	1.1	88.4	0.8	-
Diseases of the skin and subcutaneous tissue 680–709	27.3	18.7	26.8	31.3	43.6	28.3	13.4	24.1	34.8	59.6
Diseases of the musculoskeletal system and connective tissue 710–739	86.8	15.9	92.5	136.4	139.6	105.7	16.1	80.3	182.5	232.6
Rheumatoid arthritis, osteoarthritis and allied disorders, except spine 714, 715	7.4	*0.3	2.3	14.5	36.4	15.1	*1.1	2.8	27.8	64.6
Derangement and displacement of intervertebral disc 722	20.3	0.1	24.2	38.1	15.9	15.5	Z0.2	14.8	34.5	14.4
Bursitis and synovitis except spine . . . 726–727.0, 727.2–727.3	5.8	2.1	5.8	10.2	6.4	6.7	1.2	4.2	16.0	10.6

See footnotes and source at end of table.

Table 9. Hospital discharge rates per 10,000 population, by sex, age, and first-listed diagnoses: United States, 1979—Con.

First-listed diagnosis and ICD–9–CM code[1]	*Male*					*Female*				
	All ages	*Under 15 years*	*15–44 years*	*45–64 years*	*65 years and over*	*All ages*	*Under 15 years*	*15–44 years*	*45–64 years*	*65 years and over*
	Rate per 10,000 population									
Congenital anomalies 740–759	16.0	38.4	8.0	10.1	9.5	14.8	25.1	11.9	13.9	8.7
Certain conditions originating in the perinatal period. . . . 760–779	3.9	15.7	*0.0	-	-	2.8	12.4	*0.2	*0.1	-
Symptoms, signs and ill-defined conditions 780–799	28.4	23.1	25.2	37.3	38.8	31.2	24.3	29.9	38.3	36.6
Injury and poisoning 800–999	197.5	124.5	247.4	163.7	214.1	141.3	71.3	120.8	136.6	349.3
Fractures, *all sites* 800–829	58.4	40.2	65.3	51.6	87.4	51.1	21.4	23.6	47.4	212.0
Dislocation without fracture. 830–839	13.3	2.8	22.9	8.6	3.6	5.5	1.3	7.4	5.9	5.0
Sprains and strains of back (including neck). 846–847	15.9	*0.9	23.9	18.7	9.6	15.5	*0.9	19.1	23.3	15.6
Intracranial injury (excluding those with skull fracture). 850–854	18.4	22.9	22.7	7.2	9.7	10.5	12.9	11.2	5.9	11.0
Laceration and open wound 870–904	25.9	12.5	38.1	18.2	16.3	8.0	5.5	9.5	5.9	10.3
Supplementary classifications V01–V82	15.9	9.9	15.2	18.7	29.5	370.3	12.8	789.6	29.8	22.3
Persons admitted for sterilization V25.2	0.9	-	1.7	*0.3	0.1	23.2	*0.1	50.0	2.3	-
Females with deliveries V27	. . .	. . .	. . .	. . .	. . .	326.4	5.1	710.8	11.7	-

[1]Based on the *International Classification of Diseases, 9th Revision, Clinical Modification.*
[2]Deliveries are included in the "Supplementary classification" category V27, Females with deliveries.

SOURCE: Unpublished data from the 1979 National Hospital Discharge Survey.

Table 10. Age-adjusted hospital discharge rates per 10,000 population for first-listed diagnoses, by sex, and morbidity-sex ratios: United States, 1979

First-listed diagnosis and ICD–9–CM code[1]	*Age-adjusted rate*[2] *per 10,000 population*		*Morbidity-sex ratio*
	Male	*Female*	
All diagnoses	1,422.7	1,825.5	[4]0.78
Infectious and parasitic diseases 001–139	27.4	28.8	0.95
Neoplasms 140–239	97.7	115.2	[4]0.85
Malignant neoplasms 140–208	83.5	72.5	1.15
Benign neoplasms 210–239	14.2	42.6	[4]0.33
Endocrine, nutritional, and metabolic diseases, and immunity disorders 240–279	36.4	55.7	[4]0.65
Diseases of the thyroid gland 240–246	1.2	6.2	[4]0.19
Diabetes mellitus 250	21.7	30.3	[4]0.72
Obesity 278.0	1.1	3.9	[4]0.28
Diseases of the blood and blood-forming organs 280–289	15.3	16.4	0.93
Anemias 280–285	8.9	10.9	[4]0.82
Mental disorders 290–319	80.8	69.1	1.17
Anxiety states and other neuroses and personality disorders 300–301	10.9	20.6	[4]0.53
Alcohol dependence syndrome 303	31.4	8.3	[4]3.78
Diseases of the nervous system and sense organs 320–389	71.2	77.7	[4]0.92
Cataract 366	15.3	16.8	[4]0.91
Other disorders of the eye 360–365, 367–379	25.6	24.8	1.03
Diseases of the circulatory system 390–459	242.4	188.6	1.29
Essential hypertension 401	11.3	14.5	[4]0.78
Heart disease 390–392.0, 393–398, 402, 404, 410–416, 420–429	161.6	110.1	[4]1.47
Hypertensive heart disease 402, 404	5.1	6.1	[4]0.84
Acute myocardial infarction 410	26.7	12.5	[4]2.14
Coronary atherosclerosis 414.0	31.4	20.5	[4]1.53
Other ischemic heart disease 412–413, 414.1–414.9	41.9	23.0	[4]1.82
Cardiac dysrhythmias 427	15.9	13.2	1.20
Congestive heart failure 428.0	17.2	14.9	1.15
Cerebrovascular disease 430–438	33.3	30.6	1.09
Atherosclerosis 440	5.5	3.8	1.45
Varicose veins of lower extremities 454	2.6	4.9	[4]0.53
Hemorrhoids 455	7.1	6.8	1.04
Diseases of the respiratory system 460–519	170.7	148.2	1.15
Acute upper respiratory infections, except influenza 460–465	15.9	15.0	1.06
Chronic disease of tonsils and adenoids 474	22.7	28.8	[4]0.79
Pneumonia, all forms 480–486	41.3	31.7	[4]1.30
Influenza 487	2.8	3.4	[4]0.82
Bronchitis, chronic and unspecified 490–491	11.6	9.8	1.18
Emphysema 492	4.2	1.2	[4]3.50
Asthma 493	14.8	17.2	[4]0.86
Diseases of the digestive system 520–579	211.4	201.3	1.05
Ulcer of stomach, duodenum, peptic ulcer of unspecified site, and gastrojejunal ulcer 531–534	18.5	13.2	[4]1.40
Gastritis and duodenitis 535	13.2	13.2	1.00
Appendicitis 540.0–540.1, 540.9, 541–543	14.8	10.9	[4]1.36
Hernia of the abdominal cavity 550–553	52.2	20.7	[4]2.52
Diverticula of intestine 562	6.6	10.5	[4]0.63
Chronic liver disease and cirrhosis 571	5.6	3.7	[4]1.51
Cholelithiasis, cholecystitis, and cholangitis 574–576	16.9	35.2	[4]0.48
Diseases of the genitourinary system 580–629	101.0	205.7	[4]0.49
Diseases of the urinary system 580–599	53.8	53.5	1.01
Hyperplasia of prostate and disorders of the male genital organs 600–608	...	...	...
Diseases of the breast 610, 611	1.8	17.1	[4]0.11
Cervicitis and endocervicitis and other inflammatory diseases of female pelvic organs 614–617	...	...	...
Genital prolapse (female) 618	...	...	...
Disorders of menstruation and other abnormal vaginal bleeding 626	...	...	...
Menopausal and post-menopausal disorders 627	...	...	...
Other disruptions of the female genital tract 619–625, 628–629	...	...	...
Complications of pregnancy, childbirth, and the puerperium[3] 630–676	...	...	...
Ectopic pregnancy 633	...	...	...
Induced abortion and other pregnancy with abortive outcome 630–632, 634–639	...	...	...
Complications of pregnancy childbirth, and the puerperium without delivery 640–648, 651–676 with 5th digit 0, 3, 4	...	...	...
Diseases of the skin and subcutaneous tissue 680–709	27.0	26.6	1.02
Diseases of the musculoskeletal system and connective tissue 710–739	84.0	97.6	[4]0.86
Rheumatoid arthritis, osteoarthritis, and allied disorders, except spine 714, 715	7.5	13.4	[4]0.56
Derangement and displacement of intervertebral disc 722	19.3	14.6	[4]1.32
Bursitis and synovitis except spine 726–727.0, 727.2–727.3	5.7	6.4	0.89
Congenital anomalies 740–759	17.4	15.8	1.10
Certain conditions originating in the perinatal period 760–779	4.5	3.7	1.22

See footnotes at end of table.

Table 10. Age-adjusted hospital discharge rates per 10,000 population for first-listed diagnoses, by sex, and morbidity-sex ratios: United States, 1979—Con.

First-listed diagnosis and ICD–9–CM code[1]	*Age-adjusted rate*[2] *per 10,000 population*		*Morbidity-sex ratio*	*First-listed diagnosis and ICD–9–CM code*[1]	*Age-adjusted rate*[2] *per 10,000 population*		*Morbidity-sex ratio*
	Male	*Female*			*Male*	*Female*	
Symptoms, signs, and ill-defined conditions 780–799	28.4	30.7	0.93	Injury and poisoning—Con.			
Injury and poisoning 800–999	191.2	131.6	[4]1.45	Laceration with open wound 870–904	24.5	7.7	[4]3.18
Fractures, all sites 800–829	57.3	46.0	1.25	Supplementary classifications V01–V82	15.8	333.2	[4]0.05
Dislocation without fracture 830–839	12.3	5.1	[4]2.41	Persons admitted for sterilization V25.2	0.8	20.8	[4]0.04
Sprains and strains of back (including neck) 846–847	14.8	14.4	1.03	Females with deliveries V27	. . .	. . .	. . .
Intracranial injury (excluding those with skull fracture) 850–854	18.3	10.6	[4]1.73				

[1]Based on the *International Classification of Diseases, 9th Revision, Clinical Modification.*
[2]Adjusted by the direct method to the 1970 civilian noninstitutionalized population of the United States, using 4 age groups.
[3]Deliveries are included in the "Supplementary classification" category V27, Females with deliveries.
[4]Difference in crude utilization rates between males and females is statistically significant.

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Appendix I
Sources of data

National Health Interview Survey

Background

The National Health Interview Survey (NHIS) is a principal source of information on the health of the civilian noninstitutionalized population of the United States. The National Health Survey Act of 1956 was passed to provide for a continuing survey and special studies to secure on a voluntary basis accurate and current statistical information on the amount, distribution, and effects of illness and disability in the United States and the services rendered for or because of such conditions. The survey referred to in the act, now called the National Health Interview Survey, was initiated in July 1957. In its early years the survey was known to many as the National Health Survey, the name now given to a broader program of surveys in the National Center for Health Statistics (NCHS).

Purpose and scope

The purpose of the survey is to provide national data on the incidence of acute illness and accidental injuries, the prevalence of chronic conditions and impairments, the extent of disability, the utilization of health care services, and other health-related topics. A major strength of this survey is that the results are categorized by selected demographic and socioeconomic characteristics of the U.S. civilian noninstitutionalized population.

Because NHIS data are obtained during household interviews from the people themselves, the statistics measure health status and experiences and reflect the social and economic dimensions of health as reported by individuals—the extent and impact of illness and disability and the resulting uses of health care services by the people experiencing them.

Interviews are conducted each week throughout the year in a probability sample of households. The interviewing is performed by a permanent staff of carefully trained and supervised interviewers of the U.S. Bureau of the Census under detailed specifications established by NCHS. Data collected over the period of a year form the basis for the development of annual estimates of the health characteristics of the population and for the analysis of trends in those characteristics.

The survey covers the civilian noninstitutionalized population of the United States. Because of technical and logistical problems, several segments of the population are not included in the sample or in the estimates from the survey. Persons excluded are patients in long-term care facilities (data are obtained on patients in some of these facilities through the National Nursing Home Survey of NCHS), persons on active duty with the Armed Forces (their dependents, however, are included), U.S. nationals living in foreign countries, and persons who died during the calendar year preceding the interview.

Sample design

NHIS is a cross-sectional household interview survey. The sampling plan follows a multistage probability design that permits the continuous sampling of households. The first stage consists of a sample of 376 primary sampling units drawn from approximately 1,900 geographically defined primary sampling units that cover the 50 States and the District of Columbia. A primary sampling unit consists of a county, a small group of contiguous counties, or a standard metropolitan statistical area. Within primary sampling units, smaller units called segments are defined in such a manner that each segment contains an expected four households. The sampling plan is designed to yield national estimates, but some estimates can be obtained separately for the four geographic regions.

The households selected for interview each week are a probability sample representative of the target population. Each calendar year, data are collected from approximately 40,000 households, including about 110,000 persons. The annual response rate of NHIS is usually at least 95 percent of the eligible households in the sample. The 5-percent nonresponse is divided equally between refusals and households where no eligible respondent could be found at home after repeated calls.

Data collection procedures

Data are collected through a personal household interview conducted by interviewers employed and trained by the U.S. Bureau of the Census according to procedures specified by NCHS.

All adult members of the household 17 years of age and over who are at home at the time of the interview are invited to participate and to respond for themselves. The mother is usually the respondent for children. For individuals not at home during the interview, information is provided by a responsible adult family member (19 years of age or over) residing in the household. Between 65 and 70 percent of the adults 17 years of age or over are self-respondents. On occasion, a random subsample of adult household members is selected to respond to questions on selected topics. There are also instances in which followup supplements are completed

either for the entire household or for individuals identified as having particular health problems. As required, these supplements are either left for the appropriate person to complete and return by mail, or the interviewer calls again in person or by telephone to secure the information directly.

Nationally there are approximately 110 interviewers, trained and directed by health survey supervisors in each of the 12 U.S. Bureau of the Census regional offices. The supervisors are career civil service employees whose primary responsibility is NHIS. The interviewers are part-time employees, selected through examination and testing. Interviewers receive thorough training in basic interviewing procedures and in the concepts and procedures unique to NHIS.

On average, the interviews require about 45 minutes per household. Depending upon family size and the nature and extent of health conditions of family members, the length of interview ranges between 15 and 90 minutes per household.

Content of questionnaire

The questionnaire consists of two basic parts: a core set of health, socioeconomic, and demographic items; and one or more sets of supplementary health items. The core items constitute approximately 70 percent of the questionnaire and are repeated each year. The arrangement of rotating and single-time supplements provides flexibility to respond to changing needs for data and for coverage of a wide variety of topics, while the core items provide continuous information on fundamental topics.

The questionnaire now provides for the following types of core data:

- Basic demographic characteristics of household members, including age, sex, race, education, and family income.
- Disability days, including restricted activity and bed days, and work- and school-loss days occurring during the 2-week period prior to the week of interview.
- Physician and dental visits occurring during the same 2-week period.
- Acute and chronic conditions responsible for these disability days and doctor visits.
- Long-term limitation of activity resulting from chronic disease or impairment and the chronic conditions associated with the disability.
- Short-stay hospitalization data, including the number of persons with hospital episodes during the past year and the number of discharges from short-stay hospitals.
- The intervals since the last doctor and dental visits.

The questionnaire also includes six lists of chronic conditions. Each condition list concentrates on a group of chronic conditions involving a specific system of the body (for example, digestive, skin and musculoskeletal, circulatory, and respiratory). The body systems approach to chronic conditions was adopted because it was found that organizing questions around a particular body system resulted in more thorough reporting and increased the number of conditions for which estimates of prevalence could be made. Beginning in 1978, each of six representative subsamples has been asked questions based on one of the six lists of chronic conditions. In this way national estimates on each of the six body systems are obtained during the same interview year. Prior to 1978 the questions from only one condition list were asked each year. Relevant portions of the questionnaire are included in an appendix to each Series 10 report, and each year's questionnaire is reproduced in its entirety in the annual "Current Estimates" report.

Data processing and quality control methods

Throughout the data collection and processing phases there are extensive quality control activities. Each interviewer edits all completed work before returning it to the regional supervisor, and in the regional office there is a preliminary edit of all questionnaires. As part of the quality control program, interviewers are provided feedback on their errors. In addition, a sample of households is reinterviewed by a supervisor or senior interviewer.

The U.S. Bureau of the Census regional offices forward the questionnaires to NCHS for coding and data processing. Each questionnaire is checked again at NCHS for completeness of field coverage, omissions, and other errors. Illnesses, diseases, and injuries reported by the households are coded to a modified version of the International Classification of Diseases.[36] All coding is subject to recoding on a sample basis to ensure a high level of accuracy.

Thus, potential nonsampling errors such as those in reporting, processing, and nonresponse, which are inherent in any sample survey, are kept to a minimum by methods built into the survey procedures. With regard to sampling error, standard error charts are created and provided so that a user can calculate the variations in the estimates that might occur because only a sample of the population is surveyed.

For more detailed information on the design of NHIS, and limitations of data, see reference 37.

National Hospital Discharge Survey

Background

The National Hospital Discharge Survey (NHDS) is the principal source of information on inpatient utilization of short-stay hospitals. Data collection began in 1964 and has been continuous since then.

Purpose and scope

The purpose of NHDS is to produce statistics that are representative of the experience of the U.S. civilian population discharged from short-stay hospitals. Specifically, the survey was established to provide information on characteristics of patients, lengths of stay, diagnoses, surgical operations, and patterns of use of care in hospitals of different size and ownership in the four major geographic regions of the country.

The scope of NHDS is limited to discharges from non-Federal hospitals in the 50 States and the District of Columbia. Only hospitals with six or more beds and an average length of stay for all patients of less than 30 days are included in the sample.

NOTE: A list of references follows the text.

Sample design

The unit of enumeration in the survey is a hospital discharge. The sample plan is basically a two-stage stratified design. The first stage is a sample of about 10 percent of the short-stay hospitals, excluding Federal hospitals, listed in the National Master Facility Inventory (a national list of hospitals maintained by NCHS). The primary stratification variables are bed size and geographic region. Hospitals are selected in direct proportion to size so that hospitals with 1,000 or more beds are selected with certainty and hospitals with less than 50 beds are sampled with a probability of approximately 1 in 40. Growth in the inventory of hospitals is represented in the survey by a sample of hospitals selected from a special universe of new hospitals.

The second stage of the design is a systematic sample of the discharges from the sampled hospitals. The sampling frame in nearly all hospitals is the daily listing of discharges. The size of the within-hospital sample varies inversely with the size of the hospital, from about 1 per 100 discharges in hospitals with 1,000 or more beds to 4 per 10 discharges in hospitals with less than 50 beds. The overall sampling rate for each bed-size group is about 1 per 100 discharges, the product of the first- and second-stage sampling rates.

In 1979 the sample consisted of 544 hospitals from a universe of approximately 8,000 short-stay hospitals. Of the 496 hospitals in the scope of the survey, information was collected from 416 participating hospitals (an approximately 84-percent response rate) on approximately 215,000 discharges.

Data collection procedures

The U.S. Bureau of the Census, acting as the data-collecting agent for NCHS, inducts sample hospitals into NHDS. After induction, hospitals are visited at least once a year by a representative of the U.S. Bureau of the Census. At that time survey procedures are reviewed, and information about the hospital is updated.

Discharge data are collected throughout the year. Sample discharges are systematically selected, usually on the basis of the final digit or digits of the patient's medical record number. For each sample discharge, an abstractor records personal, administrative, diagnostic, and surgical information from the face sheet of the patient's medical record onto a medical abstract form. Data collection frequency depends on the arrangement made with the hospital. In about 35 percent of the participating hospitals, a representative of the U.S. Bureau of the Census visits the hospital every 2 months, completes the abstract forms for records selected during the previous visit, and selects records for abstracting at the next visit. This allows time for records to be completed and properly filed (or pulled from file) prior to the visit. In about 65 percent of the hospitals, the same forms are completed by members of the hospital medical record department. All completed forms are forwarded to one of the regional offices of the U.S. Bureau of the Census for review and then to NCHS for coding and data processing.

Content of medical abstract form

The medical abstract form contains items relating to the personal characteristics of the patient, including date of birth, sex, race, and marital status, but not name and address; administrative information, including admission and discharge dates, discharge status, and medical record number; and medical information, including diagnoses and surgical operations or procedures. It is estimated that medical record personnel can sample and complete each form, on the average, in about 5 minutes.

The content of the medical abstract form did not change from the inception of the survey until 1977, when modifications were made so that it more nearly parallels the Uniform Hospital Discharge Data Set. The items added to the abstract at that time are residence of patient (zip code), expected source of payment, disposition of patient, and dates of procedures. In 1968–70 actual hospital charges by service and payments by source were recorded on a ledger abstract form for approximately one-third of the sample discharges. A copy of the medical abstract form is included as an appendix in Series 13 reports based on data from NHDS.

Data processing methods

After transmittal from the hospital, abstract forms are subject to two reviews, two machine edits, and two quality control procedures. Forms are reviewed for completeness at the Census regional offices and either forwarded to NCHS or returned to the hospital for more information. On receipt at NCHS, the forms are again checked and, if necessary, returned to the hospital. After review, up to seven diagnoses and four operations are coded according to the clinical modification of the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM). Coded information is then keyed from abstract to disk, and a preliminary machine-edit program checks for missing, invalid, and inconsistent codes. The information is corrected, if necessary, and then transferred from disk to computer tape. For 1970–78 data, up to five diagnoses and three operations were coded according to the eighth revision of the *International Classification of Diseases* (ICDA–8).

For more detailed information on the design of NHDS, see reference 38.

National Ambulatory Medical Care Survey

Background

In May 1973 NCHS inaugurated the National Ambulatory Medical Care Survey (NAMCS) on a continuing basis to gather and disseminate statistical data about ambulatory medical care provided by office-based physicians to the population of the United States.

Purpose and scope

The purpose of NAMCS is to meet the needs and demands for statistical information about the provision of ambulatory medical care services in the United States. Ambula-

NOTE: A list of references follows the text.

tory services are rendered in a wide variety of settings, including physicians' offices, neighborhood health centers, and hospital outpatient facilities. Currently, the NAMCS target population consists of all office visits within the conterminous United States made by ambulatory patients to non-Federal physicians who are in office-based practice and engaged in direct patient care. Excluded are visits to hospital-based physicians; visits to specialists in anesthesiology, pathology, and radiology; and visits to physicians who are principally engaged in teaching, research, or administration. Telephone contacts and visits other than office visits are also excluded. Because about 70 percent of all direct ambulatory medical care visits occur in physicians' offices, the current NAMCS design provides data on the majority of ambulatory care services.

Sample design

The most objective and reliable sources of data about physicians' services rendered to ambulatory patients during office visits are the physicians themselves and members of their office staffs. The sampling frame is a list of licensed physicians in "office-based, patient care" practice compiled from files that are classified and maintained by the American Medical Association and the American Osteopathic Association. These files are continuously updated by other associations, making them as current and correct as possible at the time of sample selection.

NAMCS uses a modified probability-proportional-to-size sampling procedure with separate sampling frames for standard metropolitan statistical areas and for nonmetropolitan counties. After sorting and stratifying by size, region, and demographic characteristics, each frame is divided into sequential zones of 1 million residents, and a random number is drawn to determine which primary sampling unit from each zone is included in the sample. The NAMCS final first-stage sample contains 87 primary sampling units, corresponding to individual counties or small groups of contiguous counties across the country.

The second-stage sample is selected from the list of physicians located in the sample primary sampling units, ordered by major specialty categories so that the overall probability for including any individual physician is approximately constant. The present annual sample consists of approximately 3,000 physicians. The sample physicians are randomly distributed across the 52 weeks of the year so that the resulting data reflect any seasonal variations. Because the assignment of the reporting week is an integral part of the sample design, each physician is required to report during his predetermined period, and no substitute reporting periods are permitted. Approximately 75 percent of the eligible physicians in the sample participate in the survey. From this size physician sample, information is secured from about 50,000 patient visits a year. Samples for subsequent years exclude physicians included during the preceding 2 years.

The final stage involves sampling patient visits within a physician's practice. The sampling rate, which is determined at the time of the interviewer's appointment, is dependent on the number of days during the reporting week that the physician is in practice and the number of patients expected to be seen. In actual practice, the sampling procedure is handled through the use of a Patient Log. (See "Data collection procedures.")

Field procedures

To maximize participation levels and minimize data reporting burden in the physician's office, NAMCS field procedures have been designed to accommodate the circumstances of individual physicians. Each physician is contacted by several means, including mail, telephone, and personal interview. Initially, each physician in the sample is sent an introductory letter from the Director of NCHS. The physician is then telephoned by an informed and trained interviewer who explains the survey briefly and arranges a personal appointment to relate more detailed instructions. During this appointment, the interviewer verifies the physician's eligibility for participation in the survey, delivers survey materials with printed instructions, provides detailed verbal instructions, and assigns a predetermined 7-day (Monday through Sunday) reporting period. Also, during this appointment, data concerning basic practice characteristics, such as the physician's specialty and staff makeup, are collected for use in analysis.

At the beginning and again during the physician's assigned reporting week, the interviewer contacts the sample physician to answer possible questions and to insure that procedures are going smoothly. At the end of the week, the participating physician mails the finished forms to the interviewer, who edits them for completeness before transmitting them for central data processing.

Data collection procedures

The actual data collection for the National Ambulatory Medical Care Survey is performed by the participating physician, aided by office assistants when possible. The physician completes a Patient Record for a sample of his patients seen during his assigned reporting week. Based on the physician's own estimate of patients expected to visit during the survey period, the physician is assigned to use an "every-patient" or a "patient-sampling" procedure. These sampling procedures are designed so that Patient Records are completed each day of practice for, at most, 10 patient visits. Physicians expecting 10 or fewer visits per day record data for all of them, while those expecting more than 10 visits per day record data after every second, third, or fifth visit, using a random start and observing the same predetermined sampling interval continuously. These procedures minimize the workload of data collection and maintain equal reporting levels among sample physicians, regardless of the size of their practice. Each form requires 1 to 2 minutes to complete, so approximately 15 minutes are required on days when patients are attended in the physician's office.

Two data collection forms are employed by the participating physician: The Patient Log and the Patient Record. The Patient Log is a sequential listing of patients that serves as a sampling frame to indicate which visits data should be recorded for. The Patient Record varies slightly from year to year, but it generally contains items of information about the visit such as its date and duration; the patient's date of birth, sex, race, ethnicity, and reason for visit; whether the patient had been

seen for the particular problem before and whether the patient was referred by another physician; the length of time since onset of the problem; diagnoses; diagnostic and therapeutic services; and disposition. Periodically, supplementary items are added to the basic Patient Record to investigate specific health conditions or other aspects of ambulatory care. For example, questions about specific medications were added for 1980–81, and questions about accident- or product-related illnesses were added for 1979. A copy of the Patient Record is included in the annual "Summary: NAMCS" *Advance Data* report and as an appendix in Series 13 reports based on NAMCS data.

Data processing methods

Initial edits for completeness of the Patient Record are made by the interviewer as the forms are received from the participating physician. These forms are then sent to central processing, where they are clerically edited for consistency. The two medical questions are then coded: the patient's reasons for visit are coded using the NAMCS "Reason for visit classification" (described in Series 2, No. 78) and the physician's diagnoses are coded using the *International Classification of Diseases*. The data are then keyed onto magnetic tape, at which time additional machine edits and consistency checks are run.

For more detailed information on the design of NAMCS, see reference 39.

NOTE: A list of references follows the text.

Appendix II
Definitions of terms

National Health Interview Survey—terms relating to conditions

Condition—A morbidity condition, or simply a condition, is any entry on the questionnaire that describes a departure from a state of physical or mental well-being. It results from a positive response to one of a series of "medical-disability impact" or "illness-recall" questions. In the coding and tabulating process, conditions are selected or classified according to a number of different criteria (such as whether they were medically attended, whether they resulted in disability, or whether they were acute or chronic) or according to the type of disease, injury, impairment, or symptom reported. For each published report or set of tables, only those conditions recorded on the questionnaire that satisfy certain stated criteria are included.

Conditions except impairments are classified by type according to the *International Classification of Diseases, 9th Revision,*[36] with certain modifications adopted to make the code more suitable for a household interview (shown in table I).

Acute condition—An acute condition is defined as a condition that has lasted less than 3 months and that has involved either medical attention or restricted activity. Because of the procedures used to estimate incidence, the acute conditions included in this report are the conditions that had their onset during the 2 weeks prior to the interview week and that involved either medical attention or restricted activity during the 2-week period. However, some conditions are excluded that are always classified as chronic even though the onset occurred within 3 months prior to the week of the interview. The codes refer to the *International Classification of Diseases, 9th Revision,* as modified by the *NHIS Medical Coding Manual.*

Acute condition groups—In this report all tables with data classified by type of condition employ a five-category regrouping plus several selected subgroups.

Chronic condition—A condition is considered chronic if (1) the condition is described by the respondent as having been first noticed more than 3 months before the week of the interview, or (2) it is one of the following conditions always classified as chronic regardless of the onset:

Tuberculosis.
Neoplasms (benign and malignant).
Diseases of the thyroid gland.
Diabetes.
Gout.
Psychoses and certain other mental disorders.
Multiple sclerosis and certain other diseases of the central nervous system.
Certain diseases and conditions of the eye.
Certain diseases of the circulatory system (includes rheumatic fever, hypertension, stroke, and all heart conditions).
Emphysema, asthma, hay fever, and bronchiectasis.
Ulcers and certain other diseases of the esophagus, stomach, and duodenum.
Hernia of abdominal cavity (includes rupture).
Gastroenteritis and colitis (with exceptions).
Calculus of kidney, ureter, and other parts of the urinary system.
Diseases of the prostate.
Chronic cystic diseases of the breast.
Eczema and certain other dermatitis.
Arthritis and rheumatism.
Cyst of the bone (except jaw).
All congenital anomalies.

National Ambulatory Medical Care Survey—terms relating to physician visits

Physician eligible for NAMCS—A duly licensed doctor of medicine or osteopathy currently in office-based practice whose primary job is caring for ambulatory patients is eligible for NAMCS. Excluded from NAMCS are physicians who are hospital based; physicians who specialize in anesthesiology, pathology, or radiology; physicians who are federally employed; physicians who treat only institutionalized patients; physicians employed full time by an institution; and physicians who spend no time seeing ambulatory patients.

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

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

NOTE: A list of references follows the text.

Table I. Selected chronic conditions and corresponding *International Classification of Diseases* code

Chronic condition	*ICD–9 code*[1]
Circulatory conditions	
Heart conditions	390; 392–398; 402.1,9; 404.1,9; 410–414; 415.0; 416; 417.8,9; 420.9; 422.9; 423; 424; 425.0–2,4,9; 426–428; 429.0–3,5,6,8,9; 785.0–3; 794.3
Coronary heart disease	410–414; 429.2,6; 794.3
Hypertensive disease, n.e.c.	401; 402.0; 403; 404.0; 405; 796.2
Cerebrovascular disease	348.5; 430–436; 437.0–2,4,6,8,9; 438
Atherosclerosis	440
Varicose veins, n.e.c.	454; 456
Hemorrhoids	455
Poor circulation, n.o.s.	459.9
Respiratory conditions	
Chronic bronchitis and emphysema	490; 491; 492; 518.1,2
Chronic bronchitis	490; 491
Emphysema	492; 518.1,2
Asthma, with or without hay fever	493
Chronic sinusitis	473
Digestive conditions	
Ulcer of stomach and duodenum	531–534
Frequent constipation	564.0
Gallbladder conditions	574; 575; 576.1–5,8,9; 793.3
Diverticula of intestine	562
Chronic enteritis and colitis	555; 556; 558
Skin and musculoskeletal conditions	
Eczema, dermatitis, and urticaria, n.e.c.	277.6; 373.3; 690–692; 693.1; 694.0–3; 708; 995.1,3
Psoriasis and similar disorders	696
Corns and callosities	700
Diseases of sebaceous glands, n.e.c. (acne)	706
Skin and musculoskeletal conditions—Con.	
Arthritis, n.e.c.	711.0,9; 712.8,9; 714; 715.0,1,3,8,9; 716; 719.3; 720.0,8,9; 721.0,2,3,5–7,9
Displacement of intervertebral disc	722.0–7
Bunion	727.1
Synovitis, bursitis, and tenosynovitis	719.2; 720.1; 726.1,3–9; 727.0,2–5
Gout	274
Genitourinary, nervous, endocrine, metabolic, and blood-forming systems and other selected conditions	
Thyroid conditions	226; 240–246; 648.1; 775.3; 794.5
Diabetes	250; 648.0; 775.1
Anemia conditions	280–285; 648.2; 776.6
Migraine	346
Neuralgia, neuritis, specified sites and types, n.e.c.	350.1,2; 351; 352.1; 355.1,2,8; 357.0
Diseases of the urinary system	099.4; 344.6; 580–583; 584.5–9; 585; 587; 588.0,8,9; 589–591; 592.0,1; 593; 595.0–3,8,9; 596–598; 599.0–6,8,9; 619.0; 788.6–8; 793.5; 794.4
Diseases of prostate	600; 601.0–3,8,9; 602
Impairments	
Visual impairments	X00–X04
Hearing impairments	X05–X09
Speech impairments	X10–X11
Absence of extremities or parts of extremities (excludes tips of fingers or toes only)	X20–X29
Paralysis, complete or partial, of extremities or parts of extremities	X40–X59
Deformities or orthopedic impairments	X70–X76, X78–X89

[1]Based on the *International Classification of Diseases, 9th Revision.*

NOTES: n.e.c. = not elsewhere classified; n.o.s. = not otherwise specified.

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

National Hospital Discharge Survey—terms relating to hospitalization

Patient—A person who is formally admitted to the inpatient service of a short-stay hospital for observation, care, diagnosis, or treatment is considered a patient. In this report the number of patients refers to the number of discharges during the year including any multiple discharges of the same individual from one short-stay hospital or more. Infants admitted on the day of birth, directly or by transfer from another medical facility, with or without mention of a disease, disorder, or immaturity are included. All newborn infants, defined as those admitted by birth to the hospital, are excluded. The terms "patient" and "inpatient" are used synonymously.

Discharge—Discharge is the formal release of a patient by a hospital; that is, the termination of a period of hospitalization by death or by disposition to place of residence, nursing home, or another hospital. The terms "discharges" and "patients discharged" are used synonymously.

Discharge rate—The ratio of the number of hospital discharges during a year to the number of persons in the civilian noninstitutionalized population on July 1 of that year determines the discharge.

Days of care—The total number of patient days accumu-

lated at time of discharge by patients discharged from short-stay hospitals during a year constitutes days of care. A stay of less than 1 day (patient admission and discharge on the same day) is counted as 1 day in the summation of total days of care. For patients admitted and discharged on different days, the number of days of care is computed by counting all days from (and including) the date of admission to (but not including) the date of discharge.

Rate of days of care—The rate of days of care is the ratio of the number of patient days accumulated at time of discharge by patients discharged from short-stay hospitals during a year to the number of persons in the civilian noninstitutionalized population on July 1 of that year.

Discharge diagnoses—One or more diseases or injuries (or some factor that influences health status and contact with health services which is not itself a current illness or injury) listed by the attending physician on the medical record of patients constitute the discharge diagnoses. In the NHDS all discharge (or final) diagnoses listed on the face sheet (summary sheet) of the medical record for patients discharged from the inpatient service of short-stay hospitals are transcribed in the order listed. Each sample discharge is assigned a maximum of seven 5-digit codes according to ICD–9–CM. The number of principal or first-listed diagnoses is equivalent to the number of discharges.

Principal diagnosis—The condition established after study to be chiefly responsible for occasioning the admission of the patient to the hospital for care is the principal diagnosis.

First-listed diagnosis—The coded diagnosis identified as the principal diagnosis or listed first on the face sheet of the medical record is the first-listed diagnosis. The number of first-listed diagnoses is equivalent to the number of discharges.

Diagnoses associated with reproduction

For the purposes of comparing sex differences in the utilization of physicians' offices and short-stay hospitals independent of reproduction, the following conditions (and their associated ICD–9–CM codes) were excluded from tables B and E:

Diagnosis	*ICD–9–CM code*
Complications of pregnancy, childbirth, and the puerperium	630–676
Normal pregnancy	V22
Post partum care and examination	V24
Contraceptive and procreative management, antenatal screening and supervision of high-risk pregnancy	V23, V25–V28

In hospitals, the last category (contraceptive and procreative management, antenatal screening, and supervision of high-risk pregnancy) includes the following:

Persons admitted for sterilization	V25.2
Females with deliveries	V27

The category of persons admitted for sterilization was included as a condition related to reproduction because of the growing numbers of U.S. couples opting to have surgical sterilization for contraceptive purposes.[40] Between 1965 and 1976, the proportion of U.S. couples to use sterilization for this purpose nearly doubled: it increased from 8 percent in 1965 to 19 percent in 1976.[40]

Diagnoses associated with only one sex

For the purpose of comparing sex differences in the utilization of physicians' offices and short-stay hospitals independent of conditions associated with only one sex, the following sex-specific diagnoses (and their associated ICD–9–CM codes) were excluded from tables C and F:

Diagnosis	*ICD–9–CM code*
Malignant neoplasm of breast and female genitals	174–175, 179–184, 198.6, 198.81
Malignant neoplasm of prostate	185
Benign neoplasm of breast	217–221
Hyperplasia of prostate and other disorders of male genital organs	600–608
Diseases of breast (including male breast)	610–611
Cervicitis and endocervicitis and other inflammatory diseases of female pelvic organs	614–617
Genital prolapse (female)	618
Disorders of menstruation and abnormal vaginal bleeding	626
Menopausal and postmenopausal disorders	627
Other disruptions of the female genital tract	619–625, 628–629
Complications of pregnancy, childbirth, and the puerperium	630–676
Females with delivery	V27
Normal pregnancy	V22
Post partum care and examination	V24
Antenatal screening and supervision of high-risk pregnancy and contraceptive and procreative management	V23, V25, V26, V28

NOTE: A list of references follows the text.

Appendix III
Notes on age-adjusted rates

The age-adjusted rates presented in this report were computed by the direct method; that is, by applying the age-specific morbidity rates for a given condition or diagnosis to the standard population distributed by age. To age-adjust data by this method,[41] two basic pieces of information are needed:

1. Age-specific rates for the population being studied, say $C_1, C_2, \ldots, C_n$.
2. The distribution across the same age groups for a selected standard population, say $P_{s1}, P_{s2}, \ldots, P_{sn}$. For this report, the standard population chosen was the total civilian noninstitutionalized population of the United States as enumerated in 1970.[42]

NOTE: A list of references follows the text.

The direct adjusted rate is then simply

$$C_{direct} = \sum_{i=1}^{n} C_i P_{si}$$

As an example, the age distribution of the standard population (total civilian noninstitutionalized U.S. population) and the 1979 age-specific visit rates to office-based physicians for males and females are shown in table II.

The conclusion drawn from the comparison of these age-adjusted rates is that the physician visit rate for females (2,933.1) is greater than that for males (2,149.9).

Standard errors were not computed for the age-adjusted statistics. However, the standard error for an adjusted rate (or percent) may be approximated by using the standard error of the nonadjusted statistics.

Table II. Calculation of age-adjusted visit rates to office-based physicians per 1,000 population

Age	*Distribution for standard population* P_{si}	*Male*		*Female*	
		C_i	C_iP_{si}	C_i	C_iP_{si}
Total	1.00000	...	2,149.9	...	2,933.1
Under 15 years	0.289325	2,070.5	599.05	1,998.3	578.16
15–44 years	0.406789	1,667.3	678.24	3,068.4	1,248.19
45–64 years	0.208117	2,544.3	529.51	3,367.4	700.81
65 years and over	0.095769	3,582.7	343.11	4,239.1	405.97

Appendix IV
Notes on standard errors and statistical tests

Standard errors

The three surveys used as primary sources for the data contained in this report are all based on multistage probability samples. The sampling errors for each survey were calculated taking their complex sample designs into account.

For the National Health Interview Survey (NHIS) and the National Ambulatory Medical Care Survey (NAMCS), estimates of sampling variability were calculated using the method of half-sample replication. A description of the development and evaluation of the replication technique for error estimation has been published.[43,44] For the National Hospital Discharge Survey (NHDS), estimates of sampling variability were calculated directly.

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.

Rather than calculate standard errors for particular estimates S_X, the calculated variances for a wide variety of estimates for each of these surveys were fitted into curves using the empirically determined relationship between the size of an estimate X and its relative variance (rel var X). This relationship is expressed as

$$\text{rel var } X = \frac{S_X^2}{X^2} = a + \frac{b}{X}$$

where a and b are regression estimates determined by an iterative procedure.

The relative standard error is then derived by taking the square root of the relative variance curve. The relative standard error estimates used for this report were read directly from these curves. Because of the relationship between the relative standard error of an estimate and the estimate, the standard error S_X can be derived from its relative standard error by multiplying the relative standard error of the estimate by the estimate itself.

General relative standard error curves for NHIS are presented in figures I–III. Figure I contains the relative standard errors for number of acute conditions, figure II contains the relative standard errors for disability days and figure III contains the relative standard errors for prevalence of chronic conditions.

To obtain the estimated number of conditions or days, multiply the rate by the population denominator (table III), then look the estimate up in the appropriate figure. To calculate sampling errors for acute conditions (table 1), use figure I; for disability days (table 1), use figure II; and for chronic conditions (table 2), use figure III. An example of the use of these figures follows:

> There were 280.6 heart conditions per 1,000 females age 65 and over (table 2). Thus, there were an estimated 3,852,000 heart conditions (0.2806 times 13,726,000). The estimate 3,852 (in thousands on scale at the bottom of figure III) has a relative standard error of 7 percent or a standard error of 270,000.

General relative standard error curves for NAMCS and NHDS are presented in figures IV and V, respectively. Figure IV contains the relative standard errors for number of visits to office-based physicians, and figure V contains the relative standard error for the number of discharges from short-stay hospitals. An example of the use of these figures follows:

> There were 5,254,000 visits to office-based physicians by males with a principal diagnosis of ischemic heart disease (table 5). The estimate 5,254,000 (on scale at the bottom of figure IV) has a relative standard error of 8.5 percent or a standard error of 447,000. Figure V can be used in a similar manner to calculate the relative standard error and standard error of number of hospital discharges.

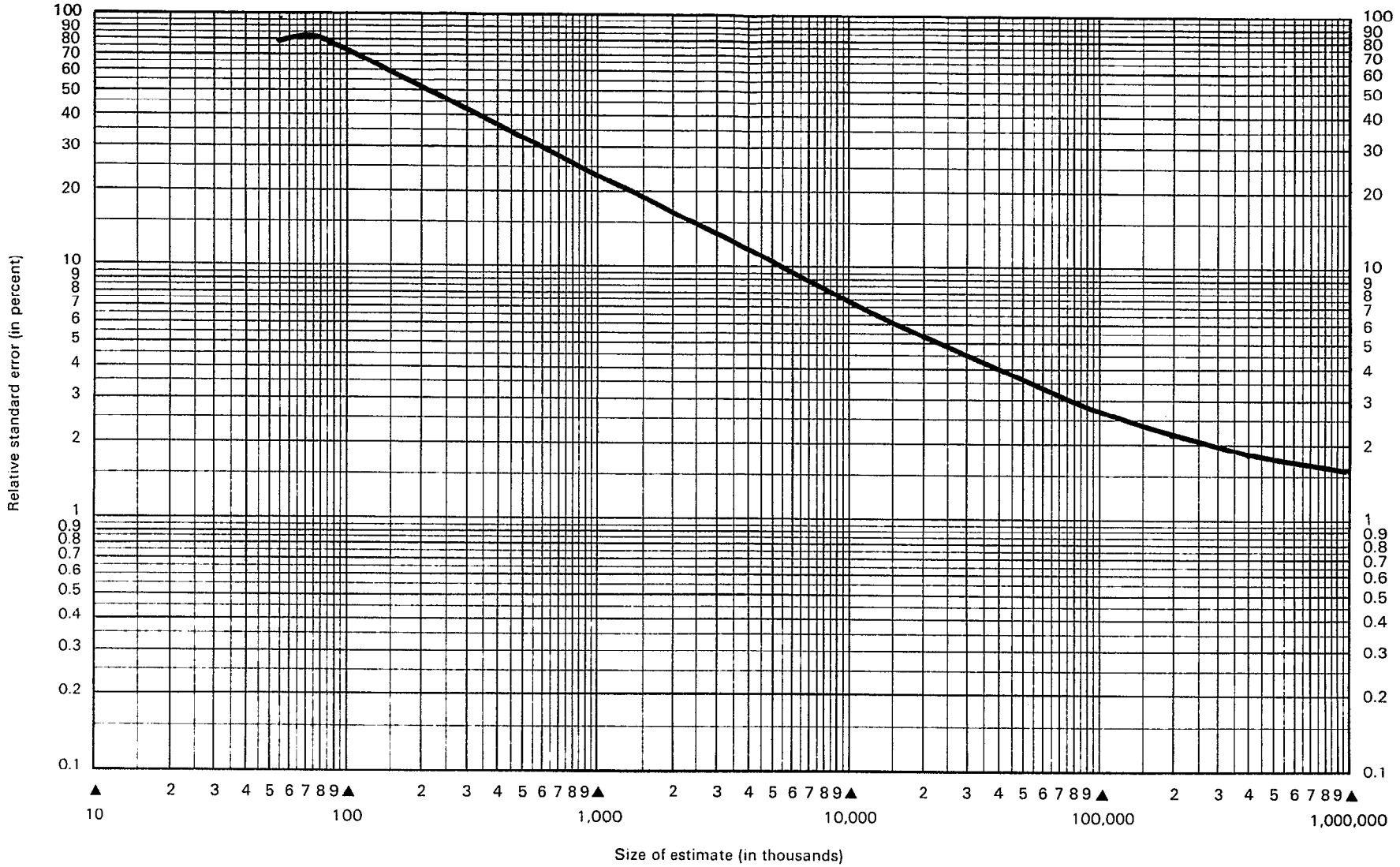
Table III. Population denominators by sex and age

Age	*Males*	*Females*
	Numbers in thousands	
All ages	104,097	111,626
Under 17 years	29,714	28,537
17–44 years	43,993	46,680
45–64 years	20,773	22,684
65 years and over	9,617	13,726

Statistical tests

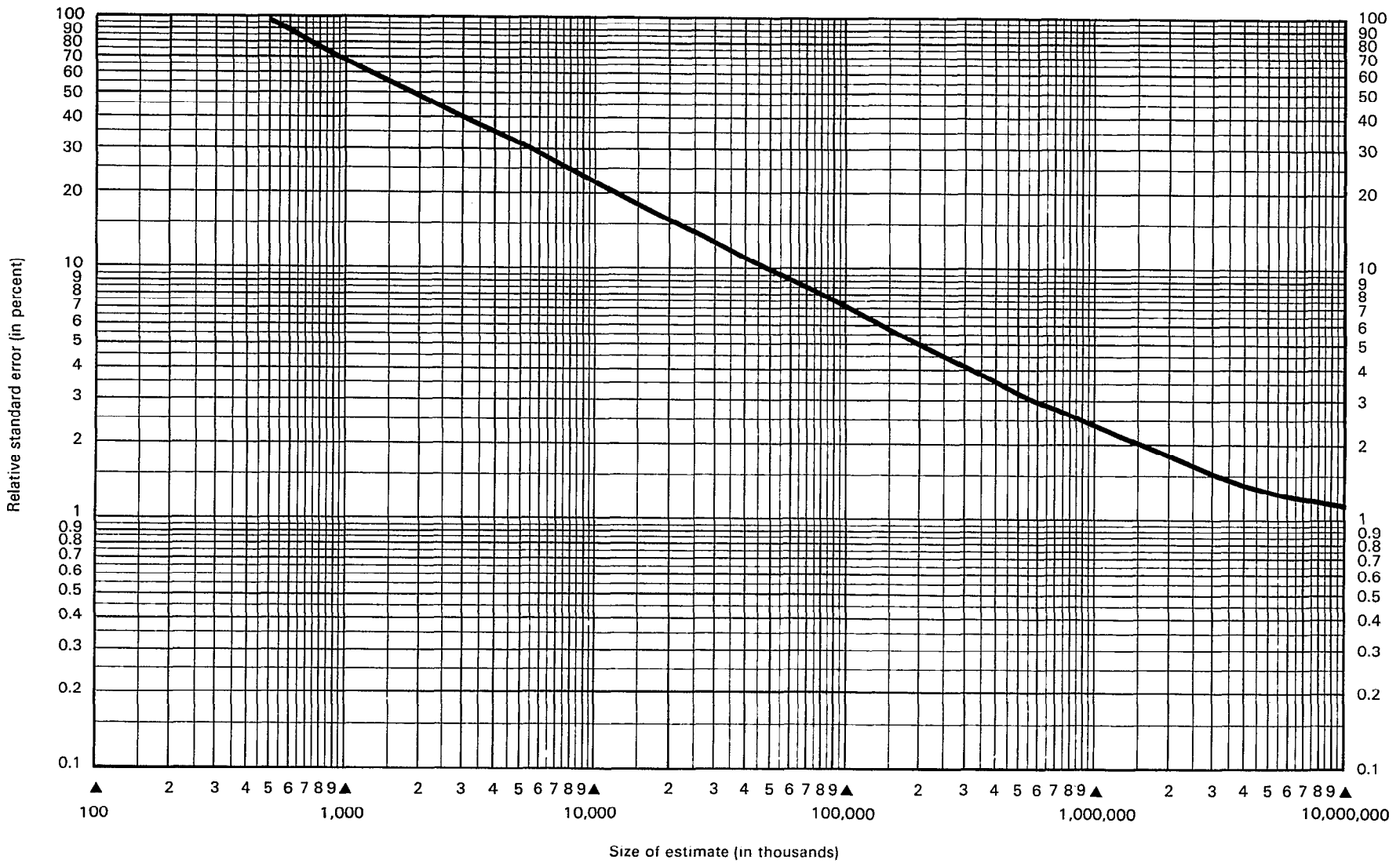
In this report, the determination of statistical inference of rates that were not age adjusted is based on the t-test with a critical value of 1.96 (0.05 level of significance). For more details on hypothesis testing performed for NHIS, NHDS, and NAMCS, see references 36–38, respectively.

NOTE: A list of references follows the text.



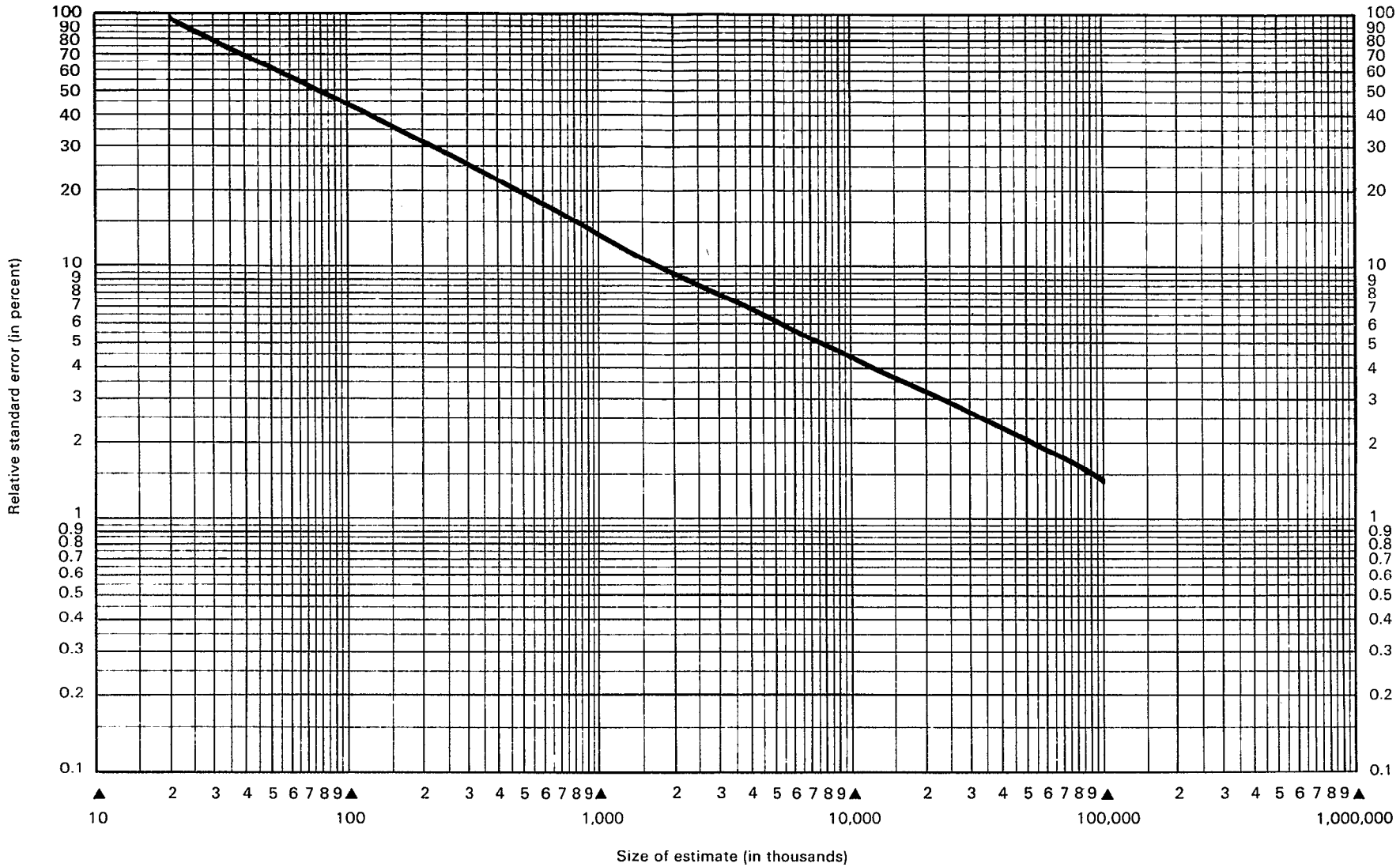
NOTE: This curve represents estimates of relative standard errors based on 1 to 4 quarters of data collection for narrow range estimates of aggregates using a 2-week reference period.

Figure I. Relative standard errors for estimated numbers of acute conditions, 1979 National Health Interview Survey



NOTE: This curve represents estimates of relative standard errors based on 1 to 4 quarters of data collection for wide range estimates of aggregates using a 2-week reference period.

Figure II. Relative standard errors for estimated days of restricted activity or bed disability, 1979 National Health Interview Survey



NOTE: Based on a one-sixth subsample over 4 quarters of data collection for narrow range estimates of aggregates.

Figure III. Relative standard errors for estimated prevalence of chronic conditions, 1979 National Health Interview Survey

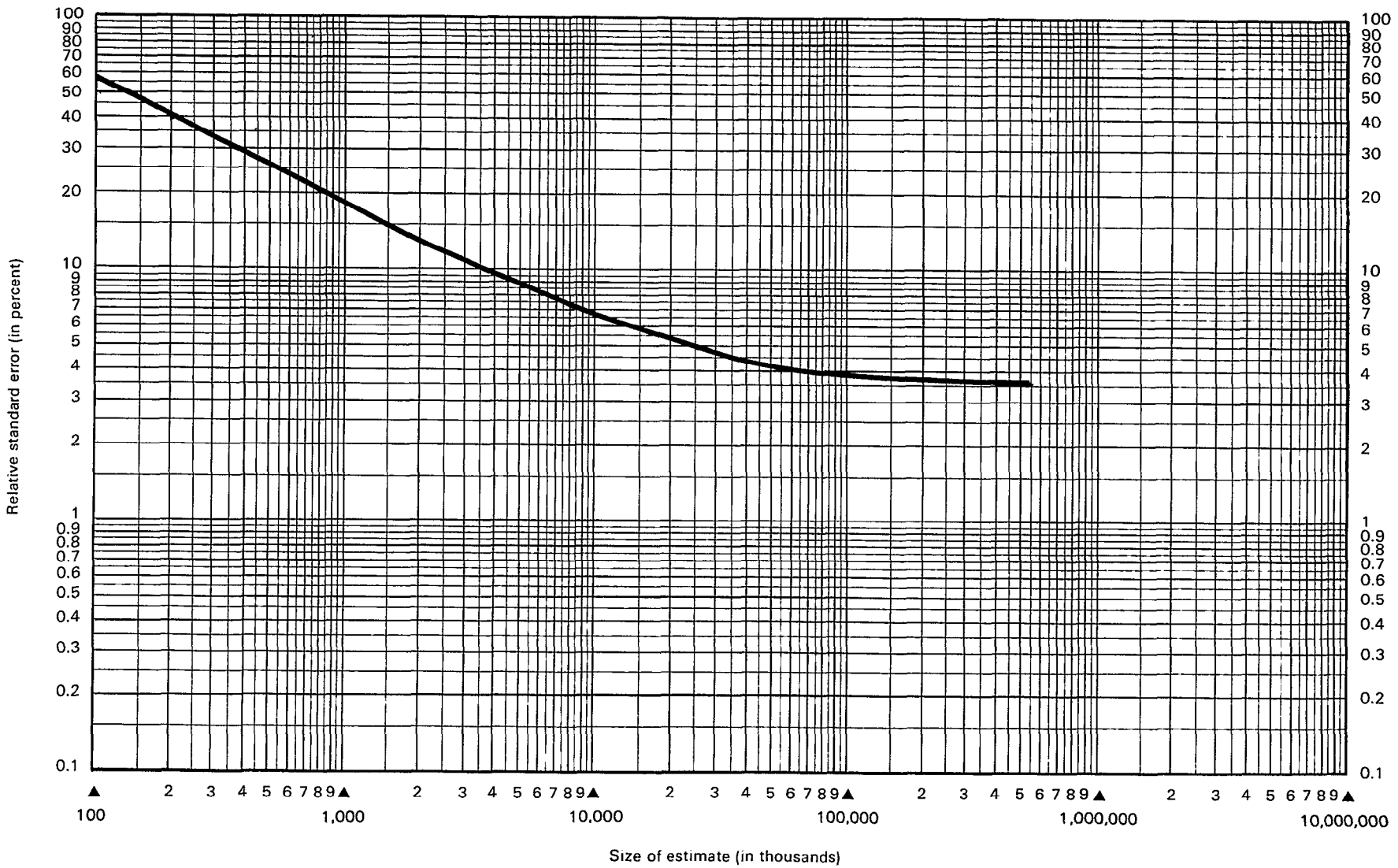


Figure IV. Relative standard errors for estimated numbers of visits to office-based physicians, 1979 National Ambulatory Medical Care Survey

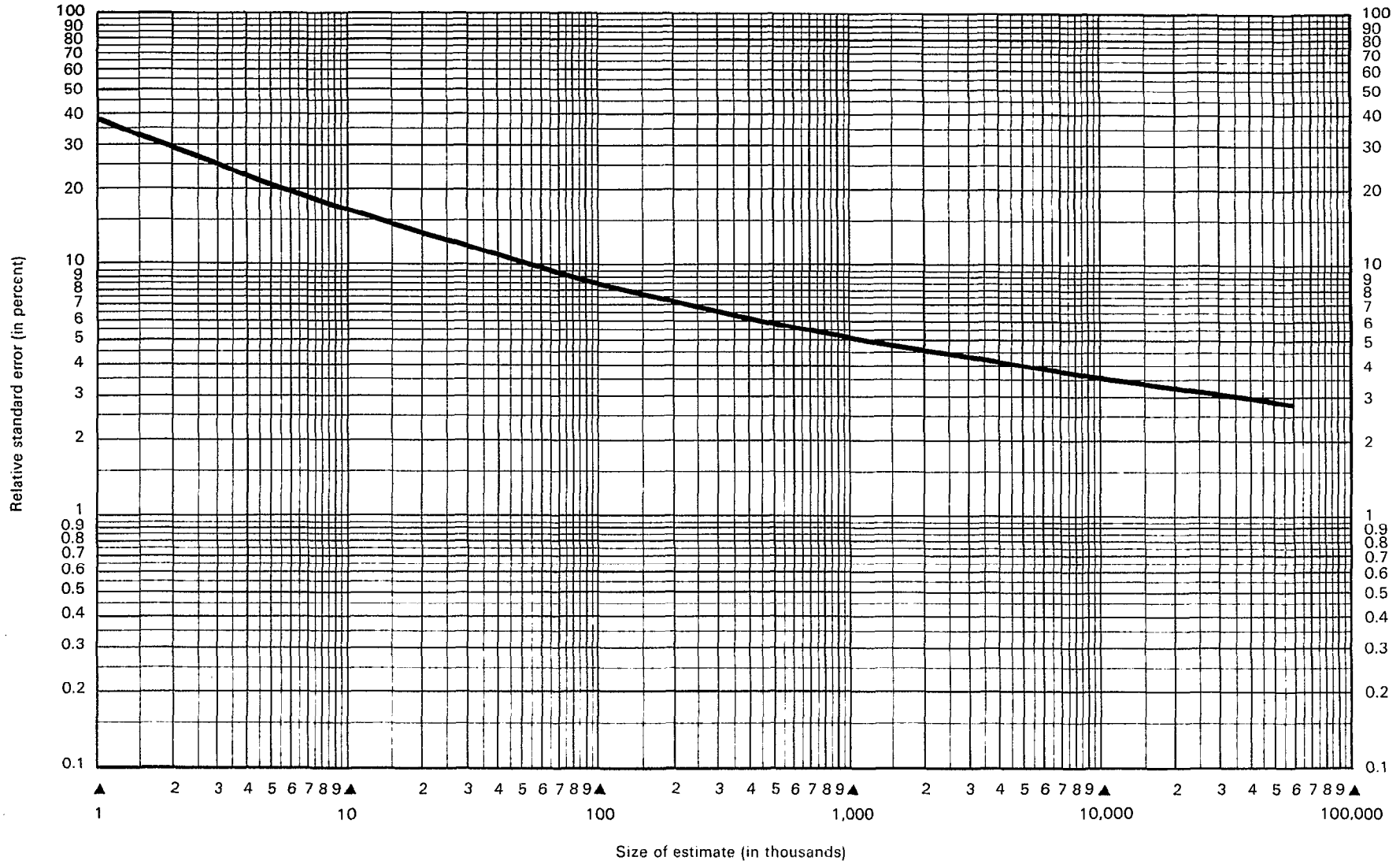


Figure V. Relative standard errors for estimated numbers of discharges from short-stay hospitals, 1979 National Hospital Discharge Survey

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